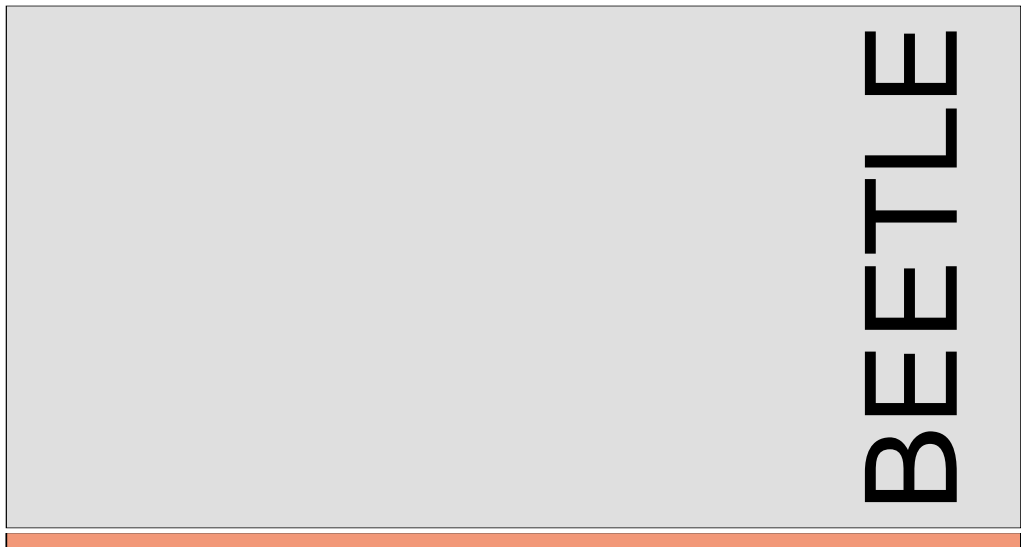


WINCOR
NIXDORF



BEETLE /20

PC based Cash Register

User Manual

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User Manual

Edition March 2000

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Manufacturer's Certification



The device complies with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility" and 73/23/EEC "Low Voltage Directive".

Therefore, you will find the CE mark on the device or packaging.

FCC-Class A Declaration

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense

Le présent appareil numérique ne génère pas de bruits radioélectriques dépassant les limites applicables aux appareils numérique de la "Class A" prescrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

Important information

Tested Safety



The BEETLE /20 has been provided with the symbol for "Tested Safety"



In addition, the BEETLE has received the UL and cUL symbols.



Boards with ESDs (Electrostatic Sensitive Devices) may be identified by this label.

When you handle boards fitted with ESDs, you must observe the following points under all circumstances:

- You must always discharge yourself (e.g. by touching a grounded object) before working with boards containing ESDs.
- The equipment and tools you use must be free of static charges.
- Pull out the power plug before inserting or pulling out boards containing ESDs.
- Always hold boards with ESDs by their edges..
- Never touch pins or conductors on boards fitted with ESDs.

Important information

The BEETLE /20 POS system fulfills all the relevant safety requirements for data processing equipment.

- If this device is taken to the room where it is to be used from a cold environment, condensation may form. Before it is put into operation, the device must be completely dry; you should therefore wait for an acclimatization period of at least two hours.

Important information

- This device is equipped with a safety-tested power cable and may be connected only to a prescribed grounded-contact utility power socket.
- When setting up the device, ensure that the power socket on the device and the grounded-contact utility power socket can be easily accessed.
- To fully disconnect the device from the mains voltage, switch it off and remove the power plug.
- Ensure that no foreign objects (such as paper clips) get inside the device, since this can lead to electric shocks or short circuits.
- In case of transporting your BEETLE /20 never take hold of the cable cover or the keyboard but always of the sides.
- To ensure that the device is well ventilated and does not overheat, make sure that its ventilation slots are not obstructed.
- Never connect or disconnect data cables during a thunderstorm.
- Protect the device from vibrations, dust, moisture and heat. Set up your BEETLE system in a splash water protected area.
- *Dispose* of consumables, such as the battery, in the appropriate way, so as not to harm the environment.
- There is a *lithium battery* on the system board. Only authorized and trained personnel should change this. There is a risk of *explosion* if it is not changed properly.
- The lithium battery must be disposed of in accordance with local regulations for special waste.
- In the event of an emergency (e.g. damage to the housing or power cable, or liquid or foreign bodies in the device), switch the device off immediately, disconnect the power plug, and get in touch with the Wincor Nixdorf (WN) customer service or your dealer's authorized service partner.

Important information

- Your BEETLE POS system is the result of modern technical innovation. So please see for according structural and technical surroundings to guarantee a faultless and efficient work of your BEETLE. Therefore, you should connect your BEETLE or other IT-devices only to power supply systems with separately guided protective earth conductor (PE). This kind of electricity system is known as TN-S network. Do not use PEN conductors! Please also observe the recommendations of the norm DIN VDE 0100, Part 540, Appendix C2 as well as EN50174-2, §5.4.3. Thus you can help to avoid possible malfunctions



Only authorized, trained personnel may carry out repairs to the device. If you open the device without authorization or carry out repairs improperly, you not only expose yourself to considerable danger; you also lose all your rights to make warranty and liability claims.

Introduction

As the first representative of the new PCR (**PC-based Cash Register**) generation, the BEETLE /20 provides the link between POS and ECR systems.

Fit for the POS future: That was the underlying concept of developing the BEETLE /20! The basic variants consist of compact and modular systems. The compact systems unite all the essential POS components including a POS printer, a customer and a cashier display in one housing. With the modular systems, on the other hand, you have the free choice and configurability of printers and displays.

With the BEETLE /20, in addition to being able to store data on a hard disk or floppy disks, you also have the option of using BEETLE cards to save data. This ensures a high level of data security and protection against data manipulation.

For monitor applications we offer an integrated monitor on a swivel arm.

The BEETLE /20 can be networked.

It is quick to install, easy to use, and provides extensive functionality. At the same time, it requires a minimum of maintenance effort.

About this manual

This manual will help you get to know your POS system and serve as a reference work. The detailed table of contents and index will enable you to find the information you need quickly and easily.

After the two beginning chapters the following section describes:

- Everything you have to do before switching the terminal on.
- How to connect peripherals to the BEETLE /20.

The following chapter contents the graphs of BEETLE/20 systems:

- modular and
- with swivel arm.

The fourth chapter contains:

- An overview of the components of your BEETLE POS system.

The fifth up to ninth chapter contain:

- The components like cashier display and printer. You will find detailed descriptions of things you will have to do again and again, such as changing the receipt roll in the chapter of the printer.

The tenth section provides:

- The subject 'care and cleaning' of your BEETLE system, to offer you an overview in a central passage.

The following five sections explain other hardware components, for example keyboard and BEETLE card.

The next chapter provides:

- A quick overview of the system software of your BEETLE /20 POS system.

The following sections explain:

- How to put the system into operation.
- The BIOS setup.

You require technical knowledge in order to understand these chapters.

The appendix contains:

A list of the most important technical data and discription of installations for example installing an expansion card.

A list of the possible error messages and a glossary, which also contains important abbreviations, you will find in the last two sections of this book.



This sign draws your attention to important information in the manual.



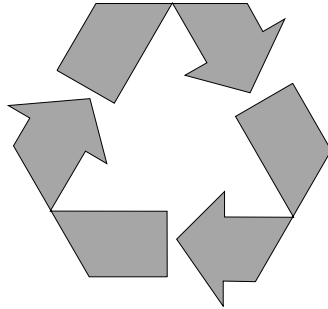
This sign is used to draw your attention to cautionary notes.

Since the type and scope of the application programs used depend on what each customer chooses, the manual does not deal with software except for the setup program and a brief description of the most important WN programs.

Separate manuals are included in the delivery for the peripherals that can be connected, which is why this equipment is not described in any detail here. Please refer to the relevant manuals.

Recycling

Recycling the BEETLE /20



Recycling begins at manufacture, not at disposal.

Our BEETLE /20 system is made without CFCs or chlorinated hydrocarbons, and the great majority of the parts and materials used can be recycled.

The recyclable parts of the housing are identified as such, and much of the precious metals can be recovered as well. This saves energy and valuable raw materials.

There are still a few parts that are not reusable. Wincor Nixdorf disposes of these in an environment-friendly manner in a Recycling Center, which has ISO 9001 certification.

During its active life, your BEETLE POS system uses consumables that have to be disposed of in an ecologically sound manner. Wincor Nixdorf provides a recycling box for used ribbons, which you should set up at your company. The very reasonable price for the box also includes the collection and complete recycling of the ribbons. Contact your Wincor Nixdorf branch or authorized dealer for information.

If you have any questions about **environmental protection** Wincor Nixdorf's environmental protection section in Paderborn, Germany, will be glad to help.

Please contact:

Fax: +49 (0) 5251 8-26709

email: referat.umweltschutz@wincor-nixdorf.com

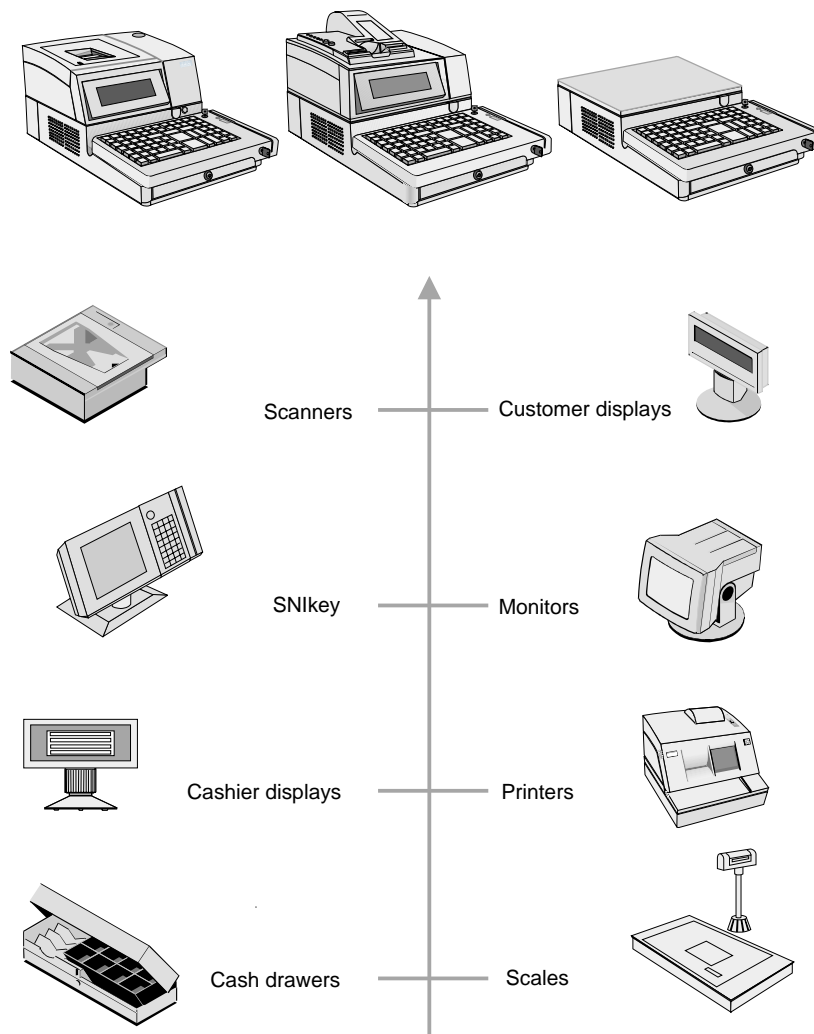
BEETLE /20 configuration options

This chapter introduces all the equipment that is currently available for the BEETLE /20. You can:

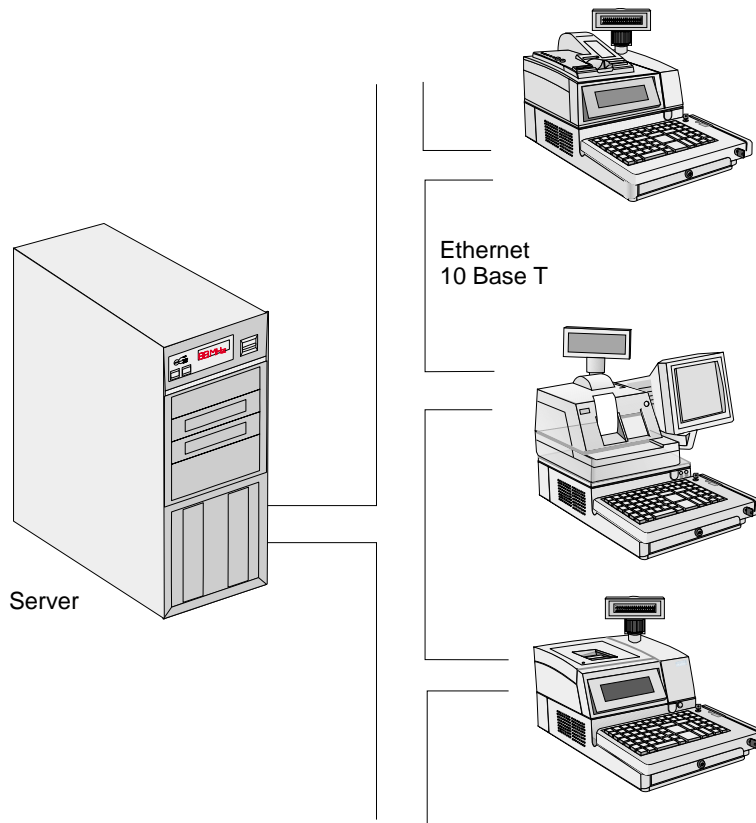
- Connect an external alphanumeric customer display.
- Connect an external cashier display and various cash drawers.
- Use different types of scanners, such as distance, touch or stationary scanners.
- Use the SNIkey.
- Connect scales and scanner scales (please comply with the official certification regulations).
- Select from a range of printers.
- Use a swivel arm with monitor on the BEETLE/20 modular.
- Connect a POS keyboard (with or without a magnetic card reader and waiter keylock) or a PC keyboard.
- Use a catering keyboard with/without a waiter keylock.
- Connect a monitor to the BEETLE /20.
- Order the BEETLE /20 with a financial controller.
- Install a LAN connection to integrate the BEETLE in a network, connect a modem, and thus transfer data.

The illustrations below show you the options available for expanding your BEETLE /20 system - from a scanner to integration in a network.

Configuration options



The BEETLE /20 in a network



Before switching the system on

Before switching the system on

Unpacking and checking the delivery

Unpack everything, and check that what has been delivered corresponds to what is specified on the delivery note.

If you find that anything has been damaged during transportation or that there are differences between the delivery and what is on the delivery note, please notify your SNI branch or dealer immediately. We recommend that you keep the original packaging in case you want to transport the device again (the packaging protects it against knocks and bumps).



Always take hold of the sides of your BEETLE /20 and never of the cable cover or the keyboard as both are movable and can be removed without any tools

Setting up the device

Set up the BEETLE POS system where it will not be subjected to extreme ambient conditions. Protect it from shocks, dust, moisture, heat and powerful magnetic fields.



Make sure that the ventilation slots at both sides of the BEETLE POS system are clear (at least 50 mm on both sides) to ensure that the device has adequate ventilation.

Cabling the BEETLE

Install the devices in the following order:

- Ensure that the device is switched off before you connect the cables.
- Connect the power cable to the BEETLE /20.
- Connect the plug of the power cable to a grounded-contact utility power socket.

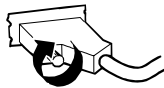
Before switching the system on

- Connect and secure the data cables.

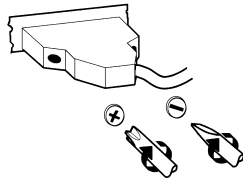


Never connect or disconnect data cables during a thunderstorm.

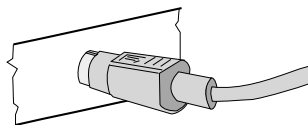
Securing the data cables



Interface connectors with knurled screws can be secured manually.



Interface connectors with screws can be secured with a screwdriver.



Mini-DIN plugs lock in when you insert them.

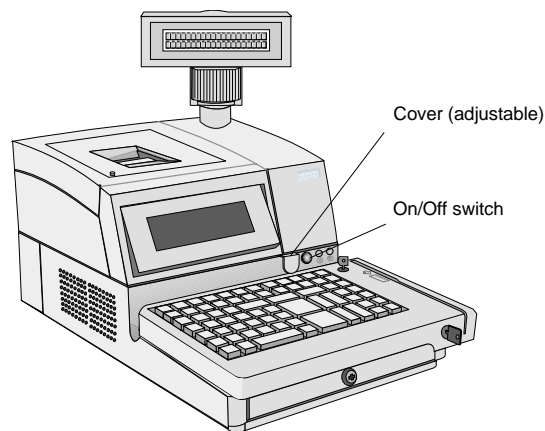
Connecting to the mains power supply

Connecting to the mains power supply

All devices that belong to the BEETLE /20 and have a separate power cable must be connected to the same circuit. The terminal automatically identifies the local mains voltage when it is switched on, and there is therefore no need for you to make any adjustments in or on the device.

- Ensure that the device is switched off (the on/off switch must be out). To access the switch, you may have to push the cover aside.
- Ensure that all data cables on the system unit and the peripherals are properly connected.
- Plug all the power cables of the peripherals and the BEETLE /20 into the grounded-contact utility power sockets.

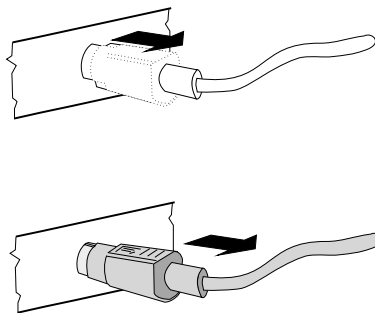
You can now switch the BEETLE /20 on using the switch at the front of the housing.



Disconnecting cables

Never unplug a cable by pulling the cable itself; always hold the plug. To disconnect the cables, proceed as follows:

- Ensure that all the power and equipment switches are in the off position.
- Disconnect all the data cables from the sockets of the data networks.
- Disconnect all the power cables from the grounded-contact utility power sockets.
- Disconnect all cables from the devices.



Mini-DIN plugs remain plugged in until they are released. First push the cable to the plug housing and then use your thumb to pull the plastic cover of the plug housing away from the connecting socket. This releases the lock, and the metal of the plug becomes visible.

Remove the plug from the connecting socket.

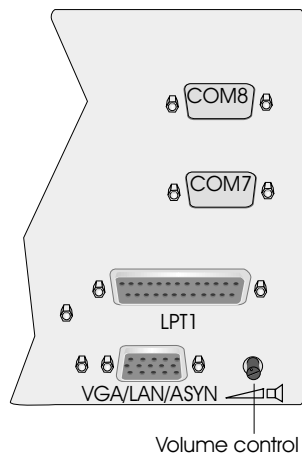
Disconnecting cables

Basic settings

The BEETLE /20 is configured in the factory to the specifications on your order. Additional equipment such as scanners must be adapted to your configuration subsequently. Contact your technician or customer service.

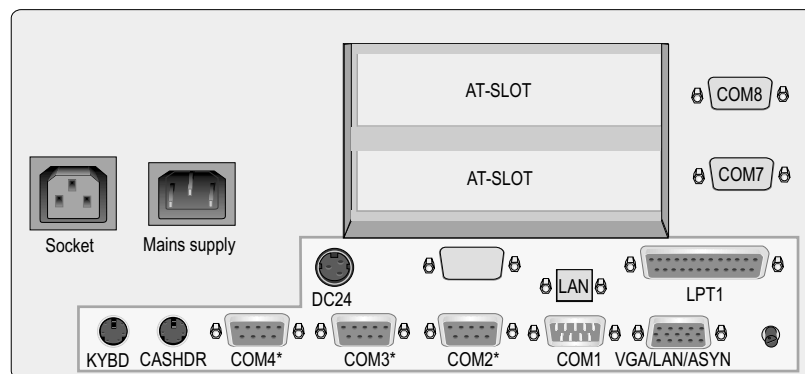
Adjusting the volume

You can adjust the volume using the control at the bottom on the right on the back of the terminal housing.



Connecting peripherals

The illustration shows part of the rear panel of the BEETLE /20, with the position of the connecting sockets and connectors. A SVGA/VGA graphics adapter is necessary to connect a monitor. If you install a network adapter, you can also connect the system to a network.



Some of the peripherals mentioned in the following pages are available as options. There are separate manuals for all the equipment that can be connected, so if you want more detailed information, please refer to the relevant manual.



Before connecting peripherals, you must ensure that all power and equipment switches are in the off position. Otherwise, the central processing unit (CPU) of the POS system may malfunction.

If the peripherals are supplied with power through the system (+5V/+12V), you must ensure that the maximum permissible current for the entire configuration is not exceeded.

Keyboard

The BEETLE POS system has a 6-pin mini-DIN socket for connecting a keyboard (KYBD). To prevent malfunctioning, make sure that the plug is firmly plugged into the socket. The keyboard is supplied with power via this socket.



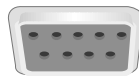
Cash drawer

The BEETLE POS system has a second 6-pin mini-DIN plug for connecting a cash drawer (CASHDR). To prevent malfunctioning, make sure that the plug is firmly plugged into the socket. The cash drawer is supplied with power via this socket.



Scanner

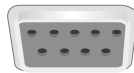
Depending on the existing configuration, scanners are connected to the COM2*, COM3* or COM4* serial interface. This is a 9-pin D-sub socket. To prevent malfunctioning, make sure that the plug is well secured to the socket. The scanner can be supplied with power via this socket.



Note the maximum current intensity permitted at the COM interfaces (see "Technical data").

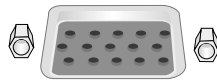
Customer display

An alphanumeric customer display is preferably connected to COM4*. This is a 9-pin D-sub socket. To prevent malfunctioning, make sure that the plug is well secured to the socket. Power is supplied via this socket.



Monitor

If a SVGA or VGA adapter or SVGA or VGA submodule is installed, you can connect a monitor to the BEETLE POS system. It is connected to the system via the 15-pin D-sub socket (SVGA/VGA/LAN/ASYNC) or the socket of the SVGA/VGA submodule. The monitor is also connected to the subsocket of the POS system, which supplies it with power.



Standard PC peripherals and scales

Additional standard peripherals are connected to the COM1 serial interface. Scales with their own power supply are also connected to COM1.



If you connect scales to the BEETLE that you have not obtained from WN, you must get an WN license for the driver software.



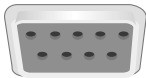
Network

If a network adapter is installed or there is a LAN submodule on the rear panel of the terminal, you can connect the system to a network (LAN). If there is no LAN connection, there is a cover over the relevant position on the rear panel (see also the appendix).



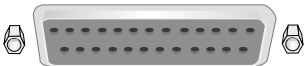
Printer (integrated)

Ex works the printer is connected to the COM2* interface and the 24V supply is used internally.



Printer (LPT1 / V24, 24V, max. 2A)

The standard parallel interface (LPT1)



or the serial interface (V24)



is designed for a printer.
Suitable POS printers connected to the modular version of the BEETLE /20 can also be supplied with power via a +24V 2A max. low-voltage socket. A connecting cable with a HOSIDEN plug is required for this.



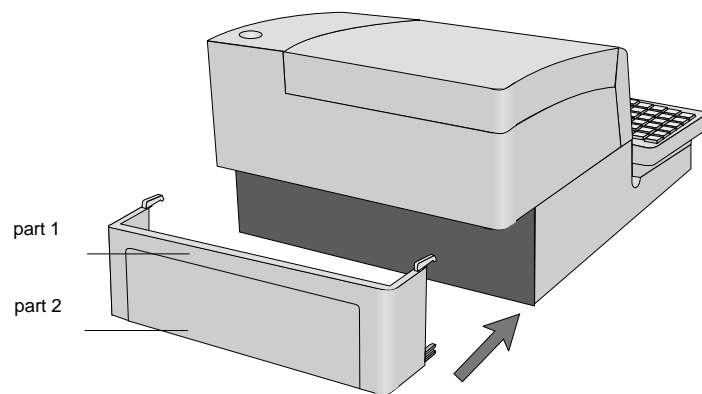
Connect only cable to the 24V connector which are marked with DP-1 or DP-2.



Cable cover

Fixing the cable cover

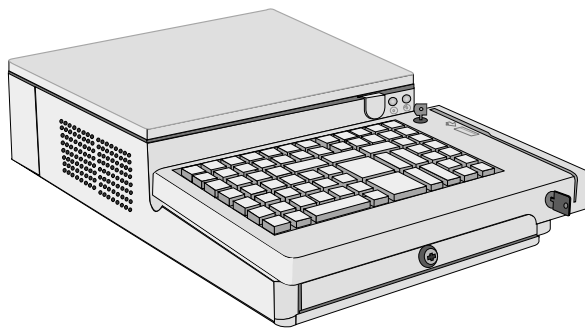
Fit together part 1 and 2 of the cable cover. Lift the cable from the front and push it onto the housing.



In the case of transporting your BEETLE never take hold of the cable cover but of the sides.

BEETLE /20 modular

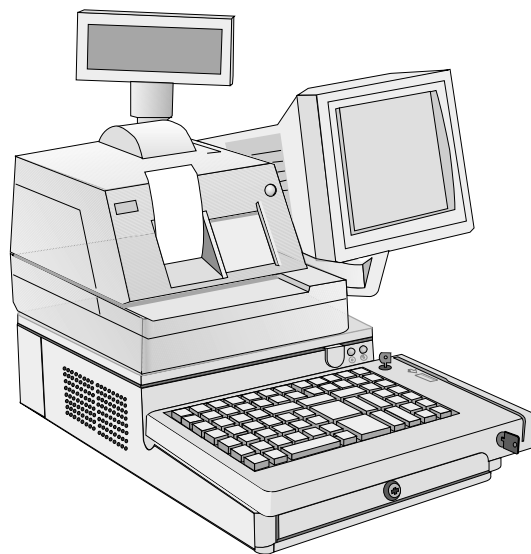
The picture shows the BEETLE /20 in the modular version without printer, customer- and cashier display.



BEETLE /20 modular

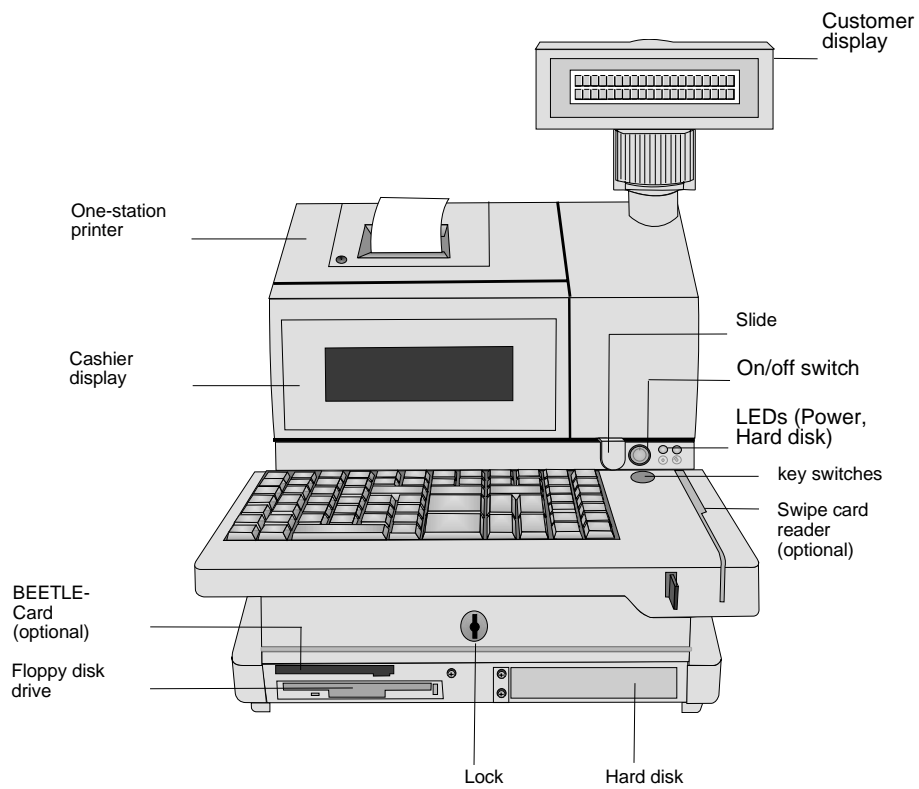
BEETLE /20 modular with swivel arm

The picture shows the BEETLE /20 in the modular version with printer ND77, swivel arm with cashier display BA63 and monitor MO34.



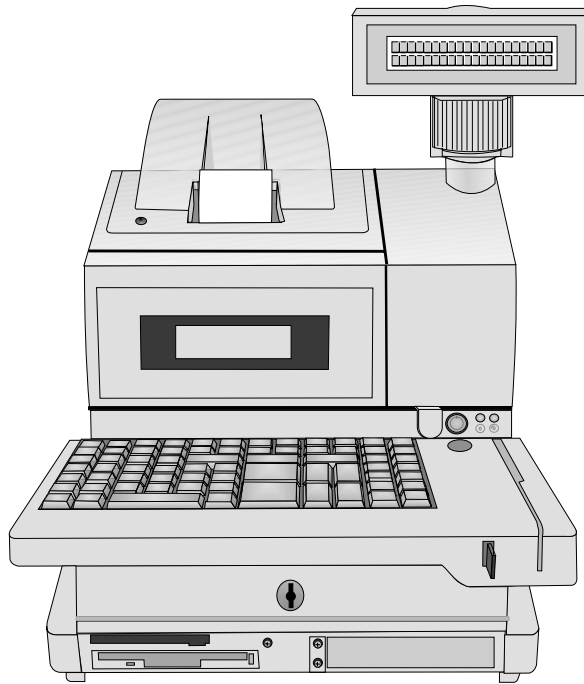
BEETLE /20 Overview

The illustration below shows the possible components of the BEETLE POS system (the keyboard is tilted up in the picture).



BEETLE /20 - One-station printer

BEEBLE /20 Overview

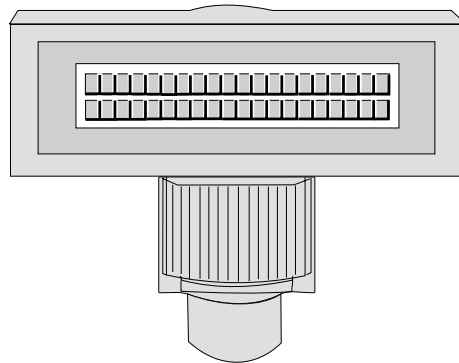


BEETLE /20 One-station printer with winder

Customer display

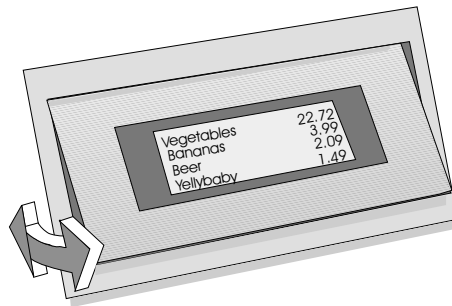
This is a Vacuum Fluorescent Display (VFD) with two lines of 20 alphanumeric or graphic characters with a character height of 9.5 mm and a width of 6.2 mm. The standard character set and the corresponding country code are used. The VFD technology ensures that the customer display can be read easily regardless of the customer's angle of view.

The display can be rotated at 320°, thus allowing it to be positioned in the best possible position for the customer.



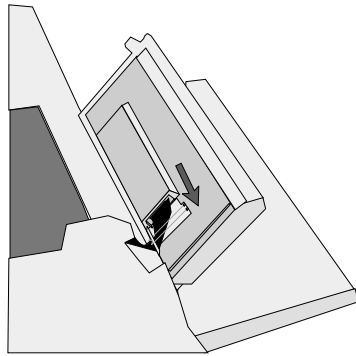
Cashier display

The BEETLE /20 has a 4-line, 20-character alphanumeric or a graphic cashier display. The backlighting of the display makes it easy to read the information displayed. The display can be tilted by stages to prevent glare and to reach an optimum of reading quality. In addition to the journal, operating instructions and error messages are displayed.

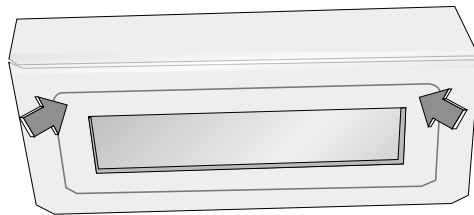


Changing the window of the cashier display

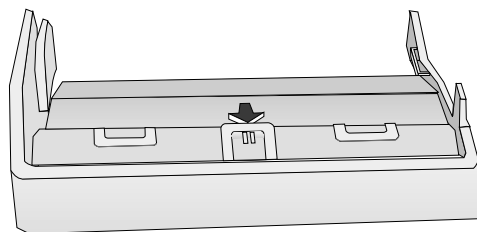
Depending on the environmental conditions the window of the cashier display may get opaque after some time, especially when cleaning agents are used that contain alcohol. Therefore, you can easily change the window of the cashier display. Please proceed as follows:



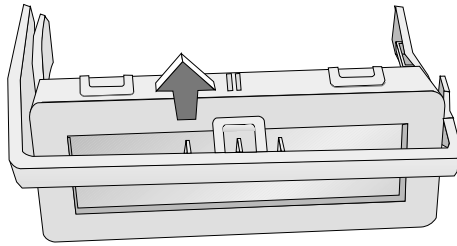
Open the paper compartment of the printer, tilt the cashier display forward, and disconnect the ribbon cable inside on the left. To do this, open the clamps by which the cable is attached to the housing, and remove the connector.



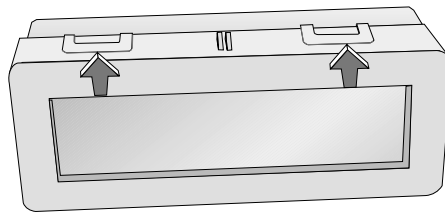
Tilt the mobile part of the cashier display to the back.



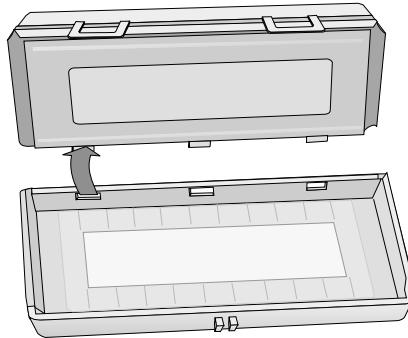
Loose the connection by lifting the top over the catches.



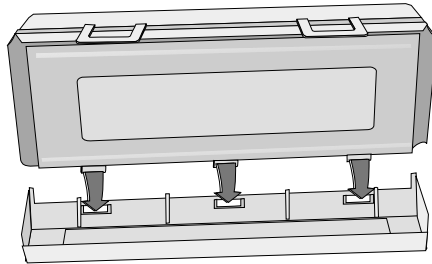
Tilt the cashier display further to the back and pull the mobile part out of the fixing.



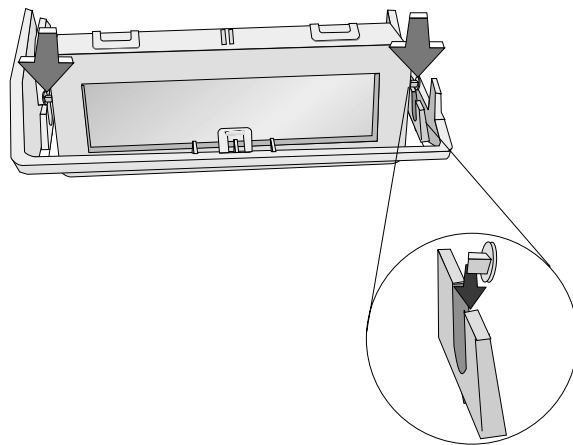
Lift the clamps and separate both parts.



Take the back part out of the fixing carefully.



Exchange the window.
Take care that the fixing is corresponding with the holes. Fold up both parts. When you hear a click, you know that the cashier display has engaged.



Put the complete cashier display into the first two gaps of the lid.

Close the connection.
When you hear a click the cashier display is locked into place of the lid.

Do not forget to plug the ribbon cable.

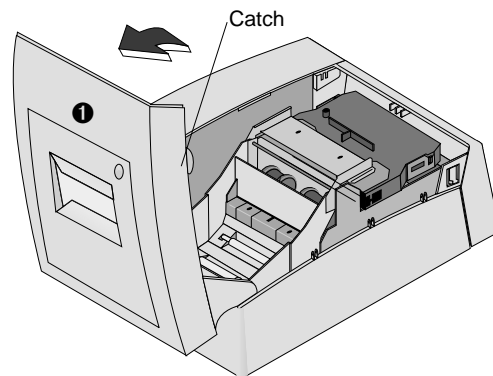
One-station printer

The one-station printer used with the BEETLE /20 is a 9-pin dot-matrix printer with a single print station.

For the sake of the environment, always dispose of consumables properly. For more information, read the section on recycling.

Changing the receipt roll

When you see a red strip on the receipt roll, you know that you have reached the end of the roll. To change the receipt roll, proceed as follows:



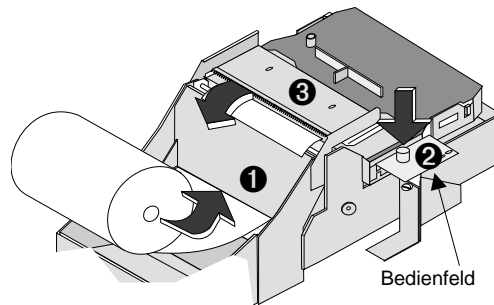
Take hold of the paper compartment's catch ❶, and flip it upward in order to gain access to the paper compartment.



Ensure that the end of the new receipt roll is cut straight.



Do not remove the paper against the rotational direction of paper.



Place the new paper roll in the paper compartment, ensuring that the roll of paper ❶ rotates in the correct direction and that it is aligned correctly. Lead the paper by hand to the drive shaft.

Hold down the paper advance key ❷, let the paper go of and wait until the paper comes out of the guide ❸.

Remove surplus paper using the tear-off edge, and close the paper compartment cover again. Your terminal is now ready for operation.



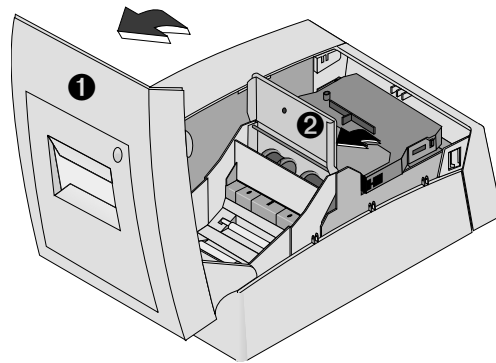
Please remove paper residues at the tear-off edge with a small vacuum cleaner from time to time.



Make sure not to print without loaded receipt paper.

Changing the ribbon cassette

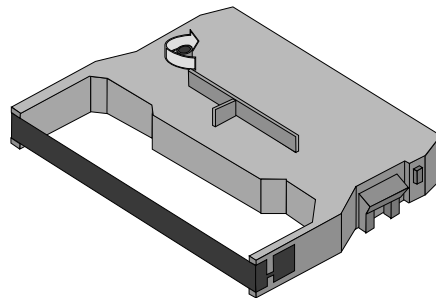
To change the ribbon cassette, proceed as follows:



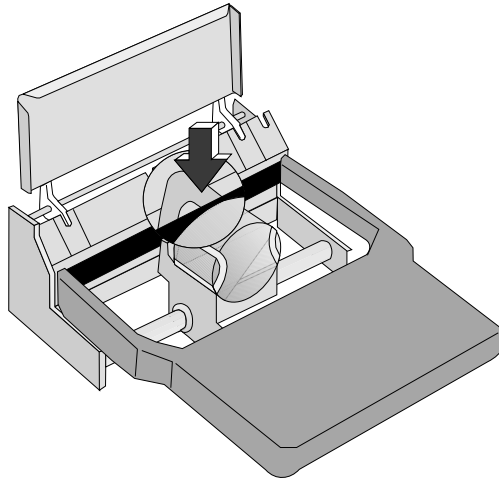
Flip up first the paper compartment cover **1** and then the tear-off device **2**.

Hold the ribbon cassette by the handle in the middle, and pull the cassette out of the holder in a smooth movement.

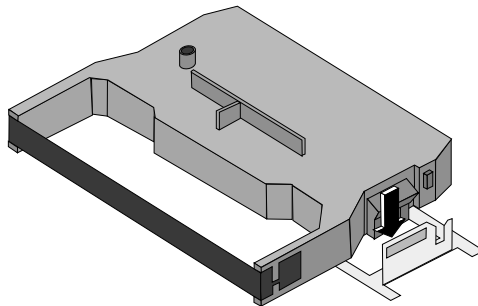
Take the new ribbon cassette out of its packaging. Make sure that the ribbon is not slack.



Rotate the wheel on the ribbon cassette in the direction of the arrow. When you feel a slight resistance, the ribbon is taut enough.



Insert the ribbon in the space between the print head and the ribbon guide.



Press the ribbon cassette into the holder until you feel it engage.

Rotate the wheel in the direction of the arrow again until the ribbon is taut.

Move the tear-off device back to its original position, and close the paper compartment cover. The terminal is now ready for operation again.



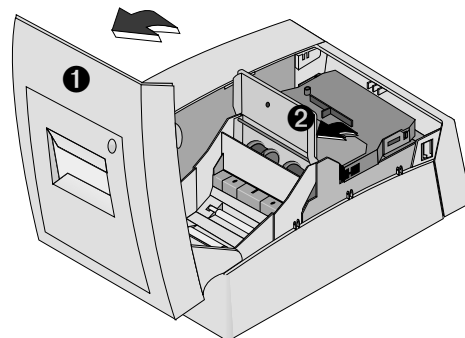
Please note not to print without inserted ribbon!

Changing the print head

Switch off the device.

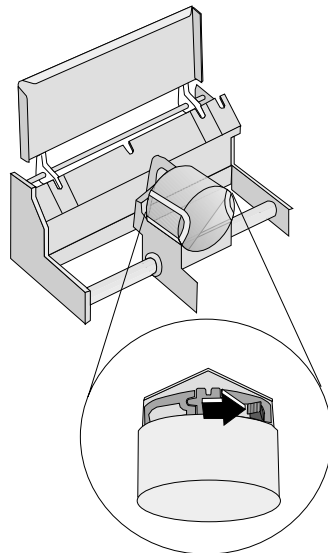


Caution! The print head may be hot. If so, let it cool for a few minutes.



Flip open the paper compartment cover **1** and the tear-off device **2**. The print head is under this metal cover. You can now remove the ribbon cassette.

To disengage the print head, push the small black lever to the right.

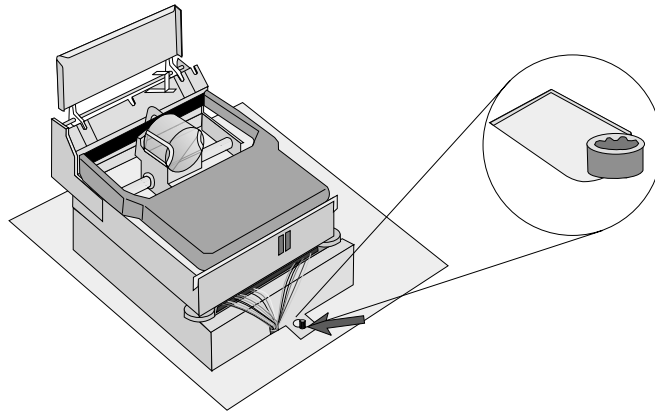


You can now lift the print head and disconnect the cable. The connection is very secure.

Take the new print head, connect the cable (by inserting the cable precisely into the guide on the print head), and press the print head into the holder. When you hear a click, you know that the print head has engaged.

Changing the printer

To change the printer, open the paper compartment cover, and tilt the cashier display forward. Then disconnect the printer cable from the rear of the printer housing, loosen the knurled screw indicated by an arrow in the drawing below. Now lift the printer a little at the front and pull it forward over the larger recess, and lift it up. There will still be a cable connected to the underside. Disconnect this cable and remove the printer.



When installing a printer, remember the following:

- You must connect the power cable to the underside.
- The two projections on the rear of the printer must fit into the corresponding recesses in the terminal housing.



Do not jam the cable!

Once you have inserted the printer, push it back until the knurled screw is in the narrower recess.

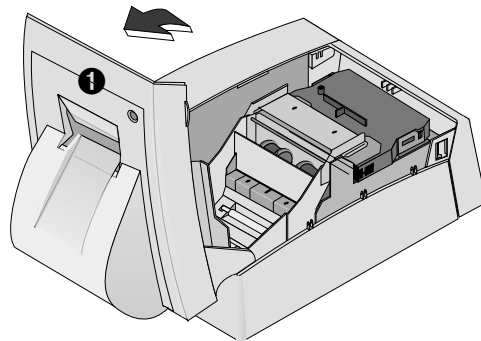
One-station printer with winder

The one-station printer used with the BEETLE /20 is a 9-pin dot-matrix printer with a single print station. While printing the receipt, the journal print will be created by the press copy. It then is threaded on a spool.

Changing the print head and the ribbon cassette is the same as described in the section "One station printer". To change the receipt and journal roll proceed as follows.

Changing the receipt and journal roll

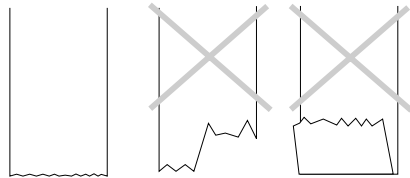
You will need special receipt and journal paper. For the paper specification see the appendix "Technical data". When you see a red strip on the paper roll, you know that you have reached the end of the roll.



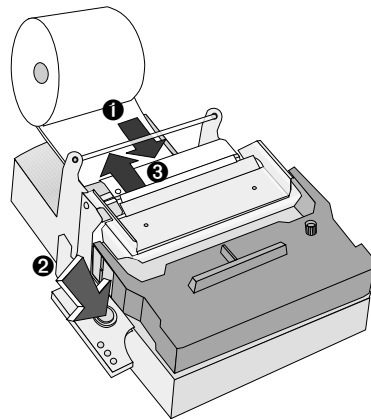
Take hold of the paper compartment's catch ❶, and flip it upward in order to gain access to the paper compartment.



Do not remove the paper against the rotational direction of paper.

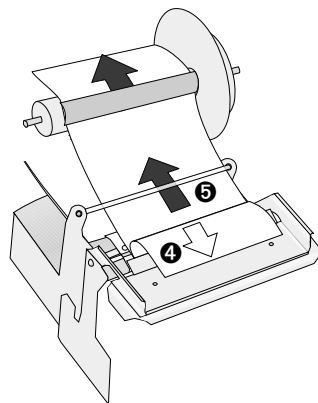


The end of the paper must be evenly cut.



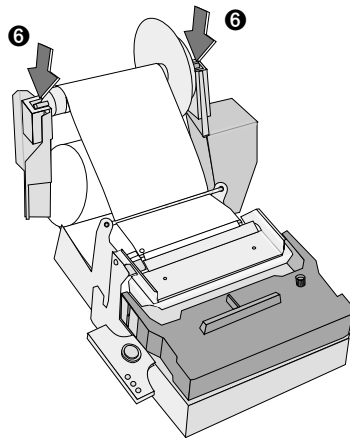
Place the new paper roll in the paper compartment, ensuring that the roll of paper rotates in the correct direction and that it is aligned correctly. Lead the paper by hand to the drive shaft **1**.

Hold down the paper advance key **2**, let the paper go of and wait until the paper comes out of the guide **3**.



Cut the paper and fold the receipt paper **4**. The press copy paper has to be inserted into the reception spool below the guide **5**.

After threading in the paper wrap several inches of journal paper around the roll by rotating it, to ensure that the paper is securely fastened.



Next, return the spool to the guide 6 and check whether the paper is straight.

Remove surplus paper using the tear-off edge, and close the paper compartment cover again. Your terminal is now ready for operation.



Please remove the receipt paper residues at the tear-off edge with a small vacuum cleaner from time to time.



Make sure not to print without loaded receipt paper.

Two-stations printer

The printer used in the BEETLE is a 9-dot matrix printer with two print stations (receipt and journal). In addition, 1-line document printing is also possible. The characters are represented in a 9 x 9 or 7 x 9 matrix, depending on the line spacing selected in your application program.

Using the integrated stamp, you can print logos on the individual receipts.

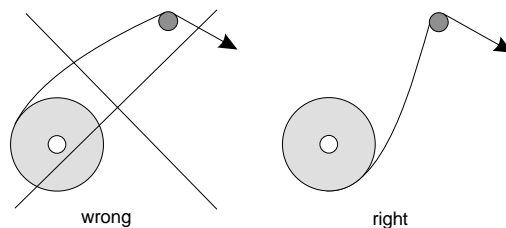
For the sake of our environment, always dispose of consumables properly. For more information, please read the section on recycling.



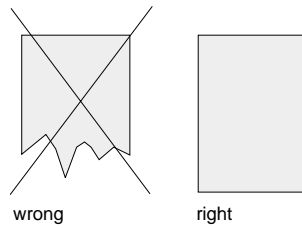
Make sure never to print without loaded receipt and journal paper.

Changing receipt and journal paper rolls

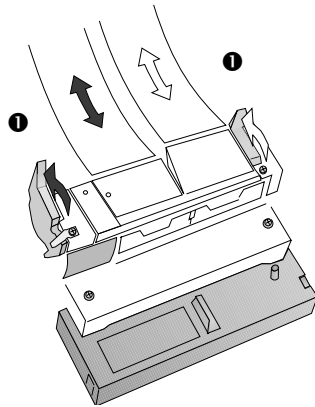
Perform the most important actions:



Rotational direction of the receipt and journal paper rolls over the metal clip.

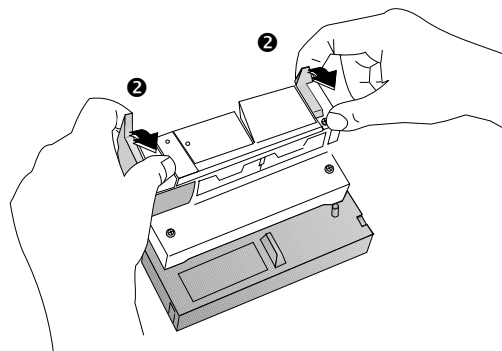


The end of the paper must be evenly cut.

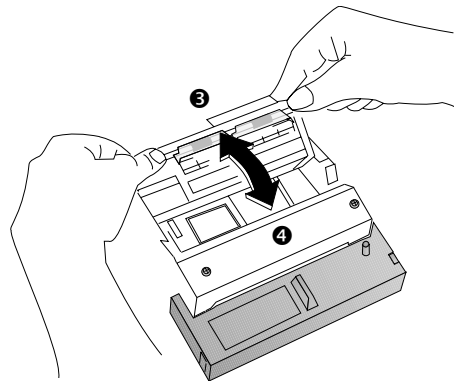


Press the levers to unlatch (1), with the printing unit lifted up or closed, to remove the paper.

Loading and removing the receipt paper (black arrow) and journal paper (white arrow) is reached by

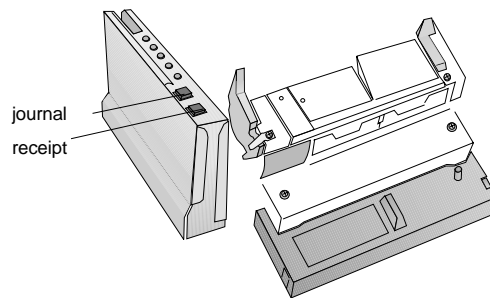


unlatching (2),



opening (3), loading, removing the paper and closing (4) the printing unit.

If you realize a paper jam unlatching levers again and proceed as described above (steps 2 to 4).

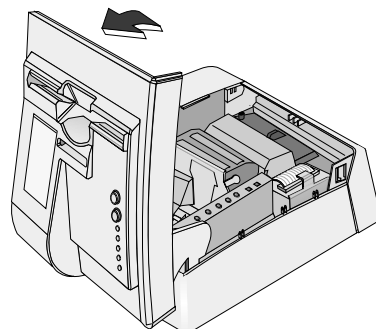


Press the receipt and journal button for an easy paper feed.

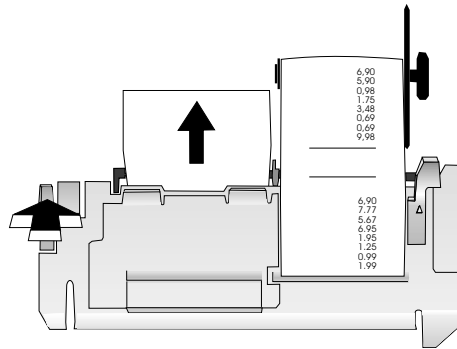
The individual steps are described below.

Changing the receipt roll

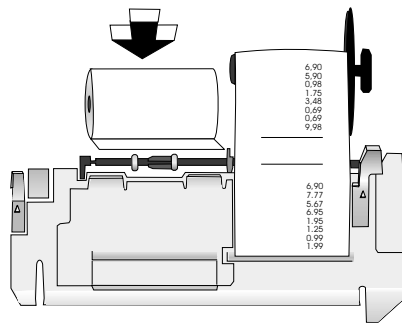
You have reached the end of the receipt roll when your POS system issues a message to this effect. Change the receipt roll as follows:



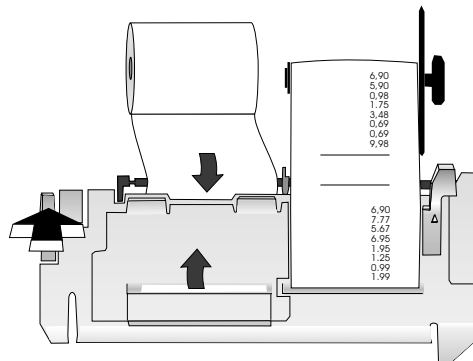
Lift up the paper compartment cover to access the paper roll compartments.



To remove the remaining receipt paper, hold down the left-hand green key of the paper guide and slowly pull the paper from behind out of the guide.



Make sure that the paper on the new receipt roll is evenly cut. Insert the new receipt roll in the paper compartment, making sure that the roll rotates in the correct direction (see the chapter changing receipt and journal paper rolls).



Hold down the left-hand green key and place the paper over the plastic clip. Push the paper into the paper guide until it protrudes from the top of the guide. Check whether the paper is straight and then release the left-hand green key. The paper is now secured in the guide.

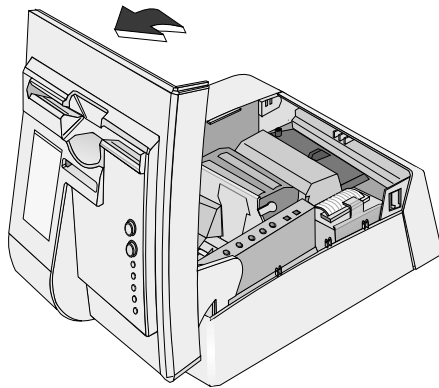


Do not use the advance button to insert the receipt paper.

Tear off the surplus receipt paper and shut the paper compartment cover. Your POS system is again ready for operation.

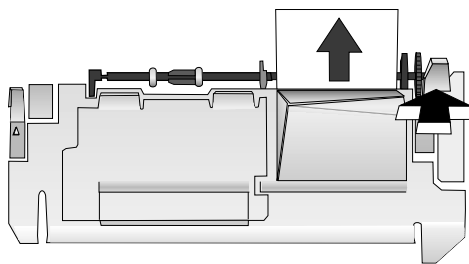
Changing the journal roll

You have reached the end of the journal roll when a red stripe appears on the roll or when your POS program issues a message to this effect.



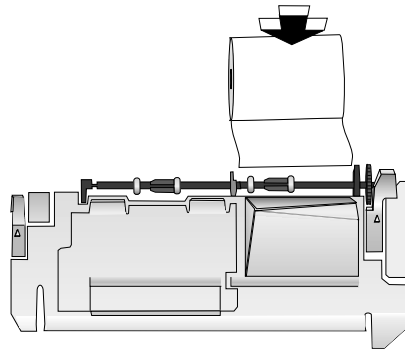
Lift up the paper compartment cover to access the compartments for the paper rolls.

Hold down the journal paper feed button until you see the printout in the journal window. Tear off the journal paper after the last journal entry.



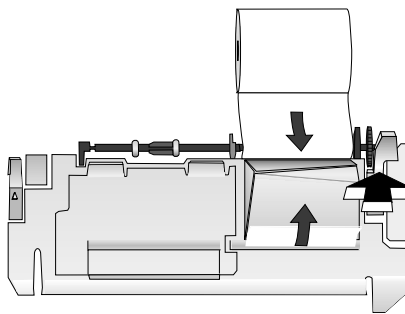
You can now remove the rest of the journal paper. To do this, hold down the righthand green key and slowly pull the paper from behind, out of the guide.

Slide the printed journal paper off the spool.



Insert the new journal roll, making sure the tear at the end of the paper is even.

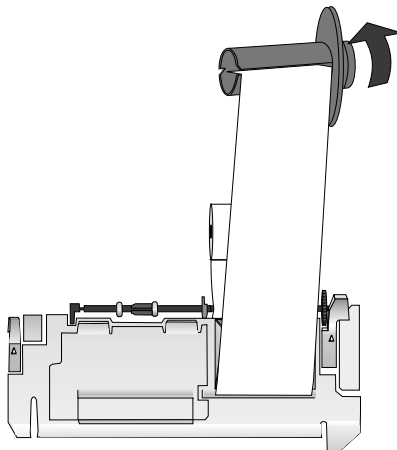
Make sure the paper roll is rotating in the correct direction.



Hold down the right-hand green key and pull the paper over the plastic clip.

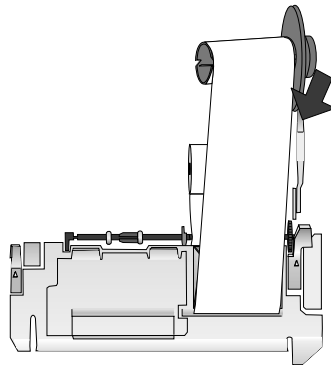
Push the paper into the paper guide until it protrudes from the top of the guide.

Check whether the paper is straight and then release the right-hand green key. The paper is now secured in the guide.



Thread the paper into the slit in the spool.

After threading in the paper, wrap several inches of journal paper around the roll by rotating it, to ensure that the paper is securely fastened.



Next, return the spool to the guide so that the gear wheels of the roll and drive engage correctly.



Do not use the advance button to insert the receipt paper.

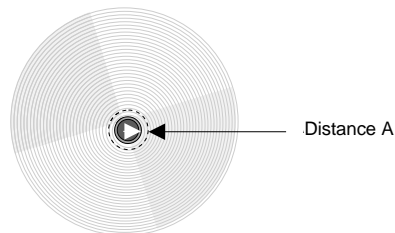
Tear off the surplus receipt paper and shut the paper compartment cover. The POS system is again ready for operation.

Adjusting the paper end detectors

The paper end detectors detect when the paper is almost gone by measuring the diameter of the paper roll.

If you want to change the amount of paper remaining when the printer stops printing, follow the steps below:

- Open the housing cover and remove the paper roll.
- Determine the point on the paper roll at which you want the paper roll end detection to be triggered. Then measure the distance A shown in the illustration.



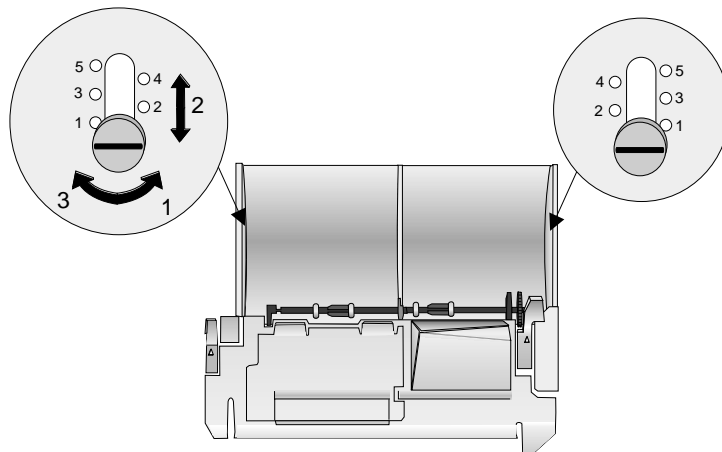
Find the corresponding adjustment position number from the table below.

Adjustment position	Distance A	Rest length* (m) approx.
1	0 mm	0
2	2 mm	0 + 0.5
3	4 mm	1.2 ± 1.0
4	6 mm	3.0 ± 1.0
5	8 mm	4.5 ± 1.0

factory
setting

*The remaining paper length indicated refers to a core diameter of the paper roll of 17.5 mm (inside) 21.5 mm (outside) and a paper thickness of 0.08 mm.

Locate the adjusting screws shown in the illustration below.

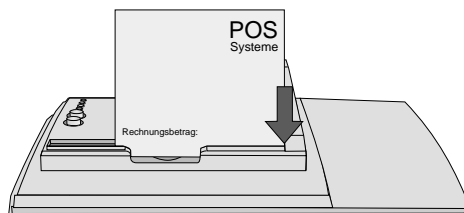


For changing the adjustment position please proceed as follows:

- Loosen the appropriate adjusting screw with a coin or a screw-driver (1).
- Move the screw in the position as requested (2).
- Tighten the adjusting screw (3).

There may be some difference between the measured distance A and the actual sensing position.

Inserting a validation



Ensure that the validation is smooth. Insert the bottom, right-hand end of the paper in the right guide limit. The side on which the validation is to be printed must face the cashier. Hold the paper straight and slide it into the guide as far as the bottom stop.

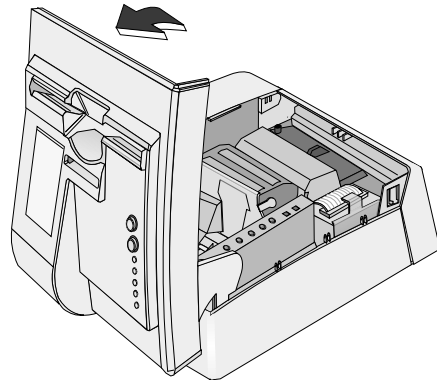
The yellow LED is on when you can insert a validation and it starts blinking when the validation printing is done.



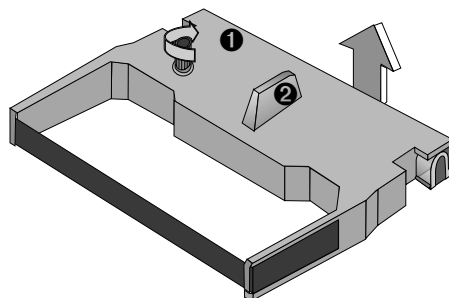
In order to ensure that the paper is printed properly, avoid pressing the paper downwards or pulling it upwards while it is being printed.

Changing the ribbon cassette

To change the ribbon cassette, follow these steps:

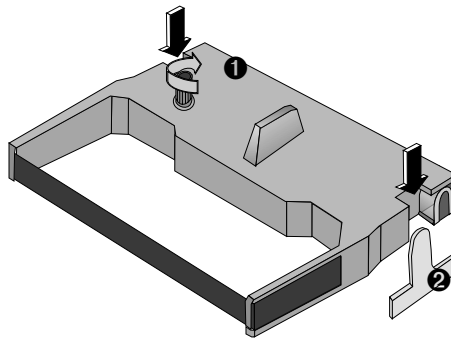


Flip up the paper compartment cover.



Rotate the wheel on the ribbon cassette ① in the direction of the arrow. When you feel a slight resistance, the ribbon is taut enough.

Hold the ribbon cassette by the handle in the middle, and pull the cassette out of the holder in a smooth movement ②.



Take the new ribbon cassette out of its packaging. Make sure that the ribbon is not slack ①. Press the ribbon cassette into the holder until you feel it engage ②. Please make sure that the ribbon is taut.

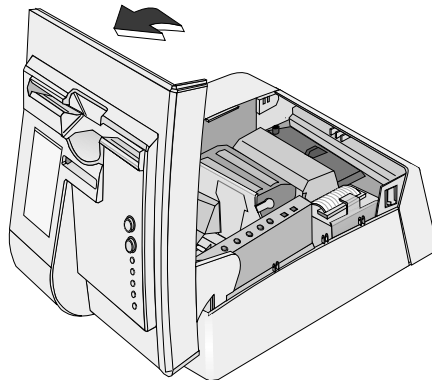
Tear off the surplus receipt paper and shut the paper compartment cover. The POS system is now ready for operation again.



Please make sure never to print without an inserted ribbon.

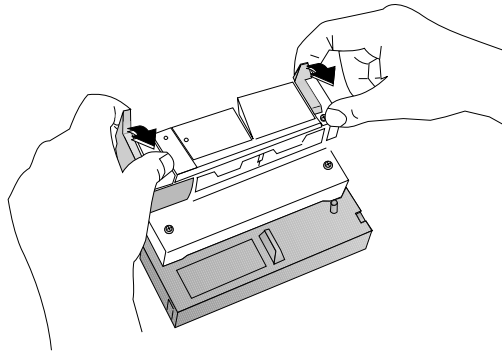
Clearing paper jams

If you should need, for example, to clear the paper compartment of residual paper, open the receipt and journal guide as follows:

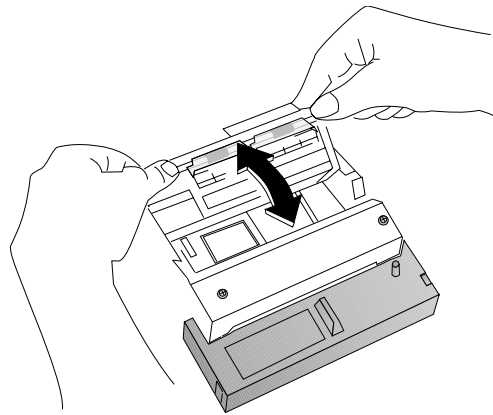


Lift up the paper compartment cover to access the compartments for the paper rolls.

The printing mechanism is now accessible. Remove the journal paper spool.



Pull up the left-hand and right-hand keys on either side of the receipt and journal simultaneously and hold them in place.



Flip back the receipt and journal guide.

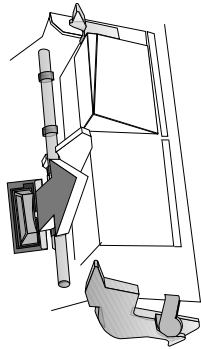
You can now remove any residual paper.

Close the receipt and journal guide until you hear it lock into place.

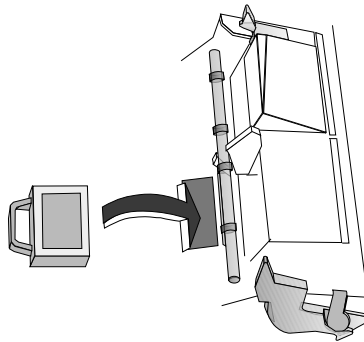
Now reinsert the spool into the guide. Tear off the surplus receipt paper and shut the paper compartment cover. The POS system is now ready for operation again.

Changing the stamp

Lift up the paper compartment cover. Next, remove the receipt roll from the chute. The handle for the stamp is now visible under the metal clip.



Grasp the handle of the stamp and pull it out slowly and evenly upward, being careful to keep the stamp straight.



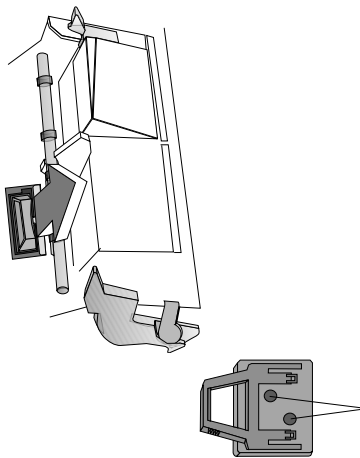
When reinserting the stamp, make sure that the print side is facing upwards.

Now reinsert the receipt paper (see "Changing the receipt roll").

Close the paper compartment cover. The device is ready again for operation.

Adding stamp ink

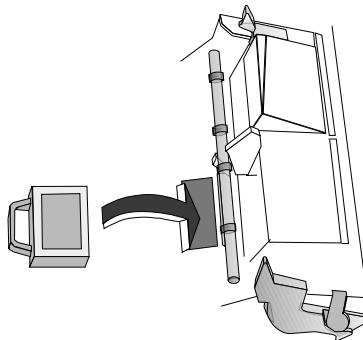
If the logo stamp becomes too light, you must add commercially available ink. Follow these steps:



Lift up the paper compartment cover and remove the receipt roll.

Grasp the handle of the stamp and pull it out slowly and evenly upward, being careful to keep the stamp straight.

Pour 2 or 3 drops of ink into the ink inlets on the back of the stamp.



When reinserting the stamp, make sure that the print side is facing upwards.

Reinsert the receipt roll and close the paper compartment cover. The device is ready again for operation.

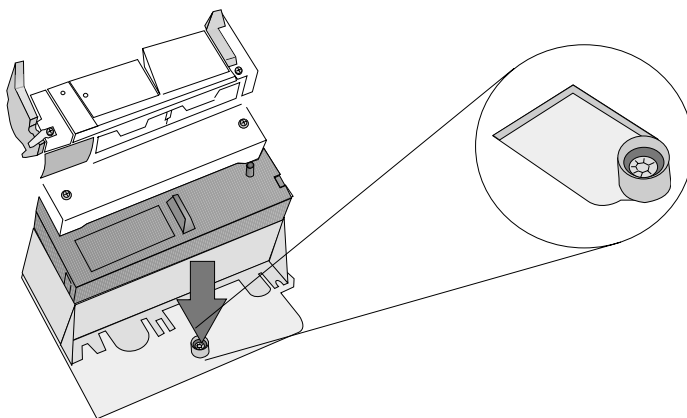


The new stamp ink requires several hours penetration time before it provides a clear slogan stamp. For this reason, we recommend that you add ink at business closing time.

Changing the printer

To change the printer, open the paper compartment cover. Then disconnect the printer cable from the rear of the printer housing.

Loosen the knurled screw indicated by an arrow in the drawing below. Now lift the printer a little at the front and pull it forward over the larger recess, and lift it up. There will still be a cable connected to the underside. Disconnect this, and remove the printer.



When installing a printer, remember the following:

- You must connect the power cable to the underside.
- The two projections on the rear of the printer must fit into the corresponding recesses in the terminal housing.

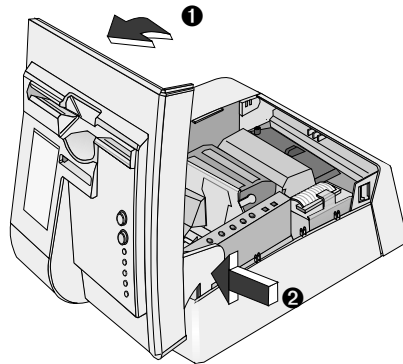


Do not jam the cable!

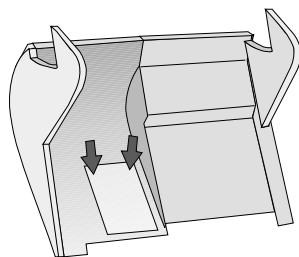
- Once you have inserted the printer, push it back until the knurled screw is in the narrower recess. Tighten the knurled screw.
- Do not forget to plug in the printer cable.

Changing the journal window

Depending on the environmental conditions the journal window may get opaque after some time, especially when cleansing agents are used that contain alcohol. Therefore, you can easily change the journal window. You can order new journal windows at your service organization. Please proceed as follows:



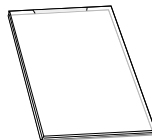
Lift up the paper compartment cover **1** and pull it out by slightly pushing on the fixing **2**.



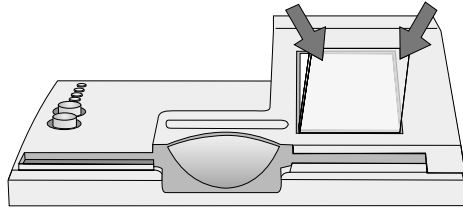
Turn the compartment cover around and push the journal window on the upper edge from inside to the outside.

upper edge
(with recess)

bottom edge
(with heightening)



When inserting a new journal window please pay attention to the edging of the window and to the edge of the compartment cover.



Insert the new journal window with the broader bottom edge into the opening of the journal compartment so that it engages at both sides.

Finally reinsert the compartment cover.

Care and Cleaning

Care of the BEETLE /20

Clean the surface of your BEETLE /20 regularly using a computer cleaning set suitable for plastic surfaces. You can make enquiries at your Wincor Nixdorf branch or ask your dealer.



Always make sure before you clean the system that it is switched off, the power plug is disconnected, and that no moisture gets inside it.

Cleaning the printer

Please follow the cleaning steps below. You thus can avoid errors and malfunctions in printing.

You should clean your printer thoroughly each time you insert a new ribbon cassette and when the print quality gets worse.

- For cleaning the inner housing of the one station or two stations printer use a soft brush or a lint-free cloth.
- Please note to clean the paper tear-off edge with a small vacuum cleaner from time to time.

Please mind the following cleaning steps to ensure a long life time of your two stations printer.

Cleaning the document detection sensor

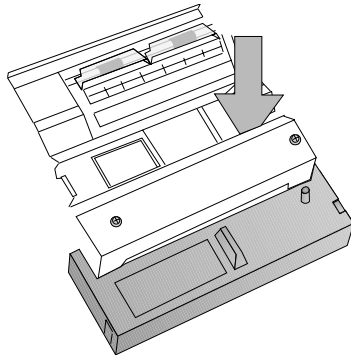
Printer malfunctions may also be caused by dust on the document detection sensor. For this reason, it is important to clean the sensor at regular intervals.

We recommend to clean the sensor every 2 months or after every 10 receipt rolls. The sensor should be cleaned immediately if the following printer malfunctions occur:

- The system detects a document although no document has been inserted.
- The journal station outputs an error when a receipt/journal is printed, although there is still enough paper in the journal tray and no apparent paper jam in the printer. The error message is based on the above-stated point, as journal printing is not possible as a result.

Clean the sensor as described below. If the malfunction is still not corrected, contact your WN branch office.

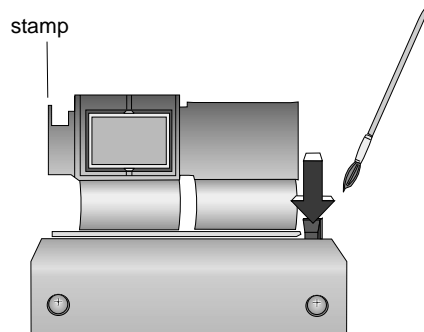
Flip back the receipt and journal guide.



The sensor, an U-shaped plastic part is located in front at the right side (see arrow).

Remove the ribbon cassette.

Care and cleaning



Remove any dirt and dust from the opening using a soft paint brush. The sensor can also be cleaned using compressed air. Press the ribbon cassette into the holder.

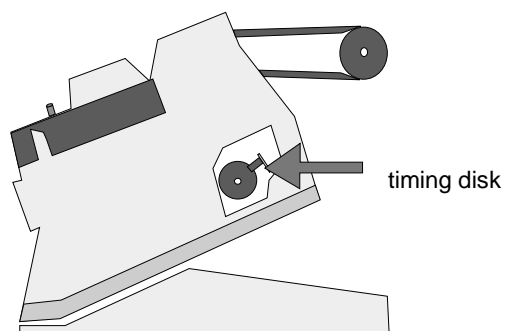
Finally close the receipt/journal guide and the upper POS housing.

Cleaning the printer motor timing disk

Dust and dirt on the printer motor timing disk may lead to print malfunctions. It is therefore necessary to clean the timing disk at regular intervals. Frequency of cleaning depends on the respective ambient conditions.

Clean the timing disk as described below. If the malfunction persists, contact your appropriate Service Division.

Open the front screen of the POS housing. To open the upper section of the housing, gently press against the housing cover from the inside and fold back.



The timing disk is located at the right of the printer unit behind a recess (see illustration).

Care and cleaning

Use a soft brush to remove dust and dirt from the timing disk openings.
Alternatively, the timing disk can be cleaned with compressed air.



When cleaning the printer motor make sure not to damage the timing disk.

Tear off the surplus receipt paper and shut the paper compartment cover.

The BEETLE card (optional)

The BEETLE card, a memory card the size of a credit card, provides the BEETLE POS system with a standardized storage medium. The card has a number of advantages over other storage media, such as floppy disks. These include:

- High storage capacity
- Compactness and thus low space requirements
- Mechanical robustness/no wear on rotating mechanical parts
- High data security (not magnetically sensitive)
- Relatively insensitive to moisture and heat
- Rapid data access (no mechanically moving parts)

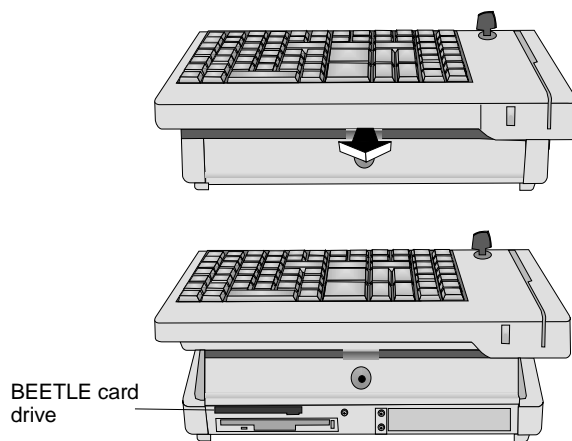
BEETLE cards have a large number of applications. For example, they can be used to:

- Load programs
- Save data (e.g. daily sales figures)
- Implement access control (“electronic key”)

There is an internationally valid standard for BEETLE cards (PCMCIA/JEIDA). This means you can use the same type of card from different manufacturers.

The BEETLE /20 lets you use cards with a storage capacity of up to 64 MB.

Inserting the BEETLE card



If appropriate, open the lock. Pull the catch out from under the front of the keyboard. The keyboard will be lifted upward.

Lift the keyboard fully up.

You can now access the BEETLE card drive.



When pushing the keyboard down, if a BEETLE card is inserted but not engaged, it will be damaged, so be careful.

The card type

You can use FLASH EPROM cards in the BEETLE/20.

These cards can be written and read electronically. This makes them suitable for data that is subject to constant updating. FLASH EPROM cards do not require a battery in order to retain their data.

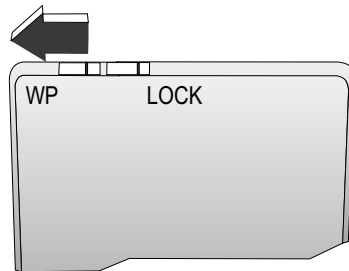


If you require any more information on BEETLE cards, please contact your WN branch office.

The BEETLE card

Write protection for BEETLE cards

The BEETLE card is write-protected when you slide the tab shown in the illustration to the WP position (WP stands for write protection).



Floppy disk drive

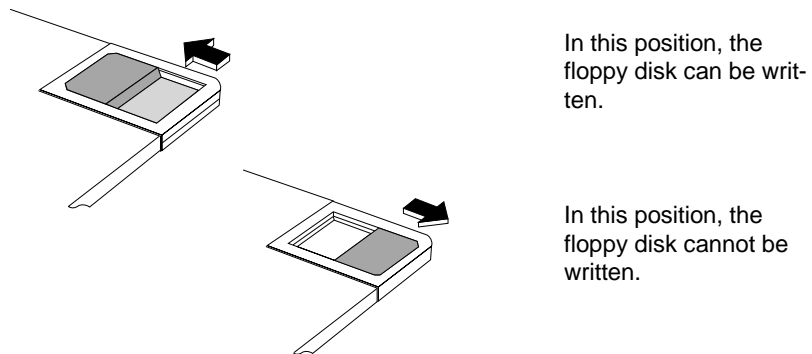
General

The BEETLE /20 is supplied with a floppy disk drive for 3.5" floppy disks. Whenever the system accesses the drive, the drive's LED comes on. The floppy disk drive is only visible when the keyboard is tilted up.

Floppy disks have a large number of applications. For example, they can be used to:

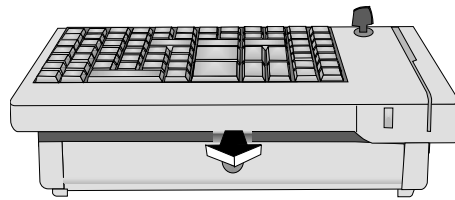
- Load programs
- Save data (e.g. daily sales figures)
- Implement access control ("electronic key")

Floppy disks can be write-protected. You write-protect your data by means of the sliding tab on the back of the floppy disk (bottom left).

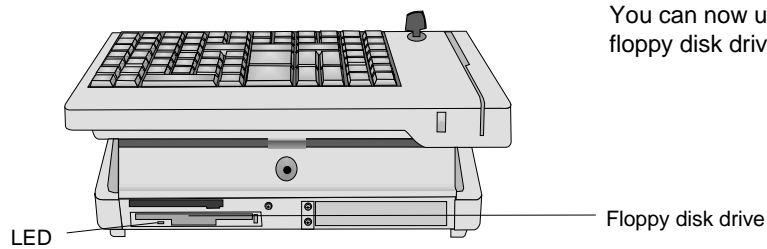


Floppy disk drive

Inserting the floppy disk



Open the lock, and pull out the catch from under the front of the keyboard. Then tilt the keyboard up.



You can now use the floppy disk drive.

Hold the floppy disk so that the arrow on the floppy disk is facing up and pointing in the direction of the drive. Then insert the floppy disk into the drive. You know that the floppy disk is inserted correctly when the gray eject button is out.



When pushing the keyboard down, if a floppy disk is inserted but not engaged, it will be damaged, so be careful.

Removing the floppy disk

Press the gray eject button next to the insertion slot. You can then remove the floppy disk.



Never remove the floppy disk when the drive is being accessed (i.e. when the LED is on). This could damage the drive and floppy disk and lead to data loss.



Please make sure that there is no dust and dirt on the desk in front of the floppy disk drive, which could get into the drive while inserting or removing the disk.

The central processing unit

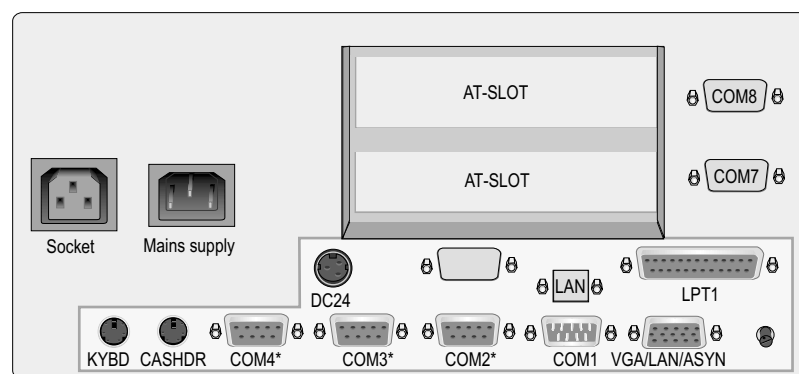
General

There are various types of central processing units (CPU) available for the BEETLE /20 POS system: the 80486DX2/66 type and a central processing unit suited to the technical progress.

The central processing unit consists of a PC-compatible board. In addition to the components and interfaces typical for a PC, this has POS-specific functional units, such as non-volatile memory (NV RAM), the memory card logic system, the cash drawer interface and support for the uninterruptible power supply (UPS) function.

The central processing unit also has a separate slot that can be used for a SVGA, VGA, LAN, ASYNC or SVGA or VGA/LAN submodule.

The connection panel contains the sockets for the external peripherals. To find out the layout of the connections on the central processing unit, refer to the illustration.



Interfaces

COM1 is the interface for connecting standard peripherals with their own power supply or for data transfer.

COM2*, COM3* and COM4* are for connecting POS peripherals that do not have their own power supply, such as scanners and displays. COM2*, COM3* and COM4* make +5V and +12V voltage available.

The BEETLE /20 also has a parallel interface and a DC24 (24V)/2A(max) power supply interface for connecting a POS printer and two mini-DIN sockets for connecting a keyboard and a cash drawer.

The SVGA/VGA/LAN/ASYNC interface is connected optionally to a SVGA;VGA, LAN, SVGA or VGA/LAN adapter. Non-identified sockets are reserved for a subsequent purpose.



Only equipment that has been approved by WN can be connected to the BEETLE /20. If in doubt, contact your WN branch or authorized dealer.

Loudspeaker

An internal loudspeaker is connected to the central processing unit. You can adjust the volume using the control knob on the back of the BEETLE /20 (see page 15).

Non-volatile RAM (NV RAM)

With the appropriate software, this memory chip can be used to store important data, such as sales totals or diagnostics entries, without the need for a power supply. The data retention time is five years.

Central processing unit

Main memory

The operating system and application require this memory during runtime. It consists of SIMM modules (see the technical data).

Connection options

The central processing unit is designed in such a way that expansion is possible at any time.

Connecting a hard disk

A 3.5" hard disk with a height of 1" can be connected to the central processing unit in order to store the operating system and the POS-specific software. It can also be used for the long-term storage of the electronic journal. The hard disk has a 16-bit IDE (Integrated Drive Electronic) AT bus system interface and an integrated controller. To find out the default settings and technical data of the hard disk, refer to the configuration label.

Free slots

The system has two free slots. You can select the configuration:

- 1 ISA-slot and 1 PCI-slot or
- 2 ISA slots

These can be used for half-length expansion boards.

Additional slot on the central processing unit

The central processing unit has an additional slot, to which one of the available controllers (SVGA or VGA or LAN or ASYNC or SVGA/VGA/LAN or MF) can optionally be connected.

Power supply unit

The power supply unit can be connected to all the usual mains power supply systems. It adjusts automatically to the voltage supplied.



The power supply unit may be replaced by authorized trained personnel only.

The power supply receptacle and the power socket for the monitor are on the back of the BEETLE /20, and the power switch is on the front.

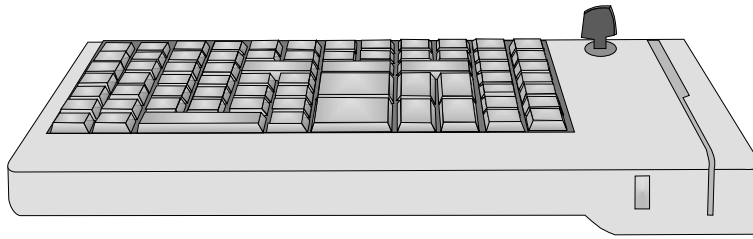
Power supply unit and accumulator battery

The battery can bridge power failures lasting up to 4 minutes. If the power supply is interrupted for more than 20 ms, the system sends a message to the application, which switches on the battery.

Peripherals that have their own power supply are not supplied by the battery.

Keyboard

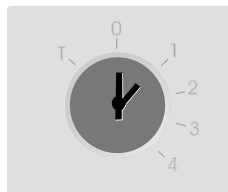
The keyboard has 84 keys, which can be combined flexibly to form double and quadruple keys (except for numeric keys). As an option dummy keys are available. In addition the keyboard is equipped with a keyswitch. The magnetic card reader and a waiter keylock are available as an option.



Please refer the TA61 user manual for further details.

Keyswitch

The keyswitch has a total of 6 switch positions.



Switch position 0 is the basic position; switch positions 1 - 4 are provided for customer-specific applications. In positions 0 and 1, the key can be removed.

Switch position 6, which is designated on the lock by T, is intended for use by Field Engineering. From switch position 0, the key provided can be turned to position T only. This key is not included in the scope of supply.

The keyswitch has one tumbler arrangement, i.e. there is one set of keys for all keylocks with the above-mentioned key variants for the various switch positions.

Swipecard reader

The optionally available 2- or 3-track swipecard reader enables up to 3 tracks to be read simultaneously when the card is swiped through once.

Pull the magnetic card evenly and quickly, from the top through the slot on the swipecard reader. Make sure that the magnetic stripe is facing to the right (see pictogram on the keyboard).

Note the following precautions when handling magnetic cards:

- Never allow magnetic cards to come into contact with liquids
- Never bend or fold magnetic cards.
- Never expose magnetic cards to a magnetic field.

Cleaning instructions

Clean the keyboard using a slightly moistened cloth. Make sure no moisture penetrates the spaces between keys.

Clean the spaces between keys using a small, soft brush. Never insert sharp objects in these spaces.

Software

Operating system

The BEETLE /20 POS system runs under the MS-DOS operating system, which has been especially enhanced for the POS applications. It is possible, for example, to display all the system messages on the cashier display. These messages have been adapted to fit the display format. You will find more information on the following programs in the BEETLE system manual and detailed descriptions in the relevant manuals.

Retail device interface

The retail device interface (RDI) is a standardized C programming interface for the BEETLE POS system. It provides application programmers with a simple means of programming retail-specific applications and devices.

Application programs

Application programs are available for the BEETLE /20 POS system that meet retail-specific requirements. For more information, contact your WN branch office.

Retail message handler

In a local area network (LAN), the retail message handler (RMH) transfers data in the form of messages between processes on the local or remote hosts, regardless of whether these hosts are SINIX or MS-DOS systems. For more information, contact your WN branch office.

Retail presentation manager

The retail presentation manager (RPM) is a standardized tool (MS-DOS and UNIX) for input and output format specification. The RPM significantly reduces the development outlay required for POS applications. For more information, contact your WN branch office.

Retail transaction manager

The retail transaction manager (RTM) forms the link between the POS application and the operating system. The RTM allows shared data, including price look-up data, to be shared and transaction files to be maintained. For more information, contact your WN branch office.

High frequency table

Price look-ups (PLUs) in retailing are performed using the high frequency table (HFT). The HFT provides function libraries with uniform interfaces for this purpose. For more information, contact your WN branch office.

Hash file access method

Like the HFT, the hash file access method (HSF) is primarily used for price look-ups. The extensive article data on mass storage media can be managed with HSF. To this effect, the article file is given a special structure when it is created. In conjunction with the access method for "hash" files, this structure ensures very short search times. For more information, contact your WN branch office.

Putting the system into operation

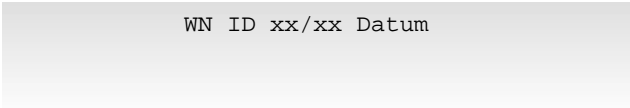
The configuration of your BEETLE /20 POS system is described on the configuration label. You will find an example in the appendix. This label is under the POS system's keyboard. You will need the data it contains when entering the setup parameters (see the chapter on BIOS setup).

Startup behavior

Once you have installed the BEETLE /20, switch it on using the power switch on the front of it.

The system then carries out an automatic self-test to check its basic functions.

The following message appears on the four-line cashier display or monitor, for example:



```
WN ID xx/xx Datum
```

The system then determines the medium from which the operating system and POS application are to be started. Each medium is assigned to a logical drive. This varies depending on how your BEETLE /20 is configured.

The following media can be assigned to a drive:

- Floppy disk
- BEETLE card as an option
- Network
- Hard disk

The logical drives are designated A:, B:, C: and D:.

If the system is to be started from a BEETLE card or floppy disk, they must always be assigned drive A:. However, it is also possible to assign drive B: to the BEETLE card or floppy disk if you want to use it purely as a data carrier. The network is always assigned drive C: during startup. The hard disk can be assigned to drive C: or D:. It is only bootable when configured as drive C:.

The BEETLE /20 POS system can be started from two drives. Please note the following:

The system can only be started from drive A: or C:.

The storage medium must be bootable.

The following priorities apply:

BEETLE card or floppy disk (A:)	High priority
Network (C:)	Medium priority
Hard disk (C:)	Low priority

If the BEETLE card or floppy disk is inserted, the POS system always accesses this first.

Startup behavior

If the POS system does not find a BEETLE card or floppy disk in drive A:, startup continues from drive C:.



If a BEETLE card or floppy disk is inserted in drive A: that does not contain the operating system, the POS system cannot start up. In this case, remove the card or disk, or replace it with a bootable one.

The operating system responds with further messages on the cashier display or monitor:

```
C > P:
```

If the operating system starts up correctly, the software for the POS application may also be started automatically.

As soon as the POS workstation is ready for operation, this is indicated by an appropriate message. For more information on this, please refer to the description of your application program.

Output of MS-DOS system error messages

All system error messages are output on the cashier display or monitor. The messages have a two-line format, as follows:

```
M e1 0000 ddddddd
mmmmmmmmmmmmmmmmmmmm
```

The entries have the following meanings:

M	Reserved
e	MS-DOS error no. 0..C HEX
I	Indicates where the error occurred
	0 Reserved sector (MS-DOS area)
	1 File allocation table (FAT)
	2 Directory
	3 Data area

00000 "Read" or "Write" operation

ddddddd Block device driver:
Drive, e.g. "C: "
Character device driver:
Name, e.g. "COM1 "

mm...mm Message text:
e.g. "Write protect error"

If an error message like this appears, acknowledge it by pressing the C key on the POS keyboard. In this case, the operating system repeats the previous statement.

Power On Self Test

Power On Self Test (POST)

The Phoenix POST is used as standard. This checks the functioning of the standard PC AT components on the motherboard. To enable it to test POS-specific functions, relevant function tests have been added to the Phoenix POST.

The error messages are output on the cashier display, the external cashier display or the VGA monitor. The cashier display and the monitor have a high priority, but if a VGA adapter is plugged in, the messages always appear on the monitor. Error messages only appear on the external cashier display when there is no monitor or standard cashier display.

The messages are output on the cashier display in the following format:

TEST POS TEST TYPE ERROR NUMBER
Error text

Here is an example of an error message on the cashier display:

TEST POS MC 02
BATTERY EMPTY
ANY KEY TO RETRY



In the Power On Self Test, static errors are reliably localized, whereas sporadically occurring errors are determined only to a limited extent.

If the POST indicates that there is an error, contact your technician or customer service. You will find a list of the POST error messages in the appendix.

BIOS setup

BIOS setup is used to carry out important basic settings that are necessary to ensure that the POS system runs perfectly. These include the setting of the date and time, the assignment of a specific logical drive name (A: or B:) for the BEETLE card or floppy disk, and hard disk settings.

There are a number of different ways of calling setup:

- If you are using a standard PC keyboard, you can press the **Ctrl**, **Alt** and **ESC** keys simultaneously during startup.
- Setup is called if the **keyswitch** of the POS keyboard is in position **4** during startup.
- If there is a configuration error, you can decide whether to ignore the error or call setup.

The default output medium of the BEETLE POS system is the cashier display. When a VGA monitor is connected, output is sent to it instead.



If no monitor is connected although a VGA adapter is installed, the system messages are not displayed at all.

If there is no VGA adapter, you have to set the display entry to "MONO" or "OPERATOR" (80486DX2/66 processor and higher). The output will then appear on the connected cashier display.

The following entries in the menus are to be understood as **examples**. If you are in any doubt, consult the configuration label.

If your BEETLE/20 is equipped with a Pentium type processor, you will be provided with a separate booklet. The BIOS-Setup for Pentium type processors is described in this booklet.

BIOS setup

When you call setup, the copyright message appears:

```
Copyright (C)
WN 1998
Setup Rel. 0.xy
(22/07/1998)
```

The first menu then appears. You work your way around the menus by pressing the keys corresponding to the numbers displayed in parentheses.

```
ReBoot with      (7)
Help with        (5)
Enter Setup with (2)
```

If you press key 2, a menu appears in which you can set the date and time. If you press key 7, the system is restarted.

```
Time          12:34:56
Date          Okt. 31 1998
(8)Prev      (6)Incr
(2)Next      (4)Decr
```

In this and the subsequent examples, keys (8), (2), (6), (4), (5) and (7) have the following effects:

(8) Prev (Previous)	Positions the cursor in a previous field or menu
(2) Next	Positions the cursor in the next field or menu
(6) Incr (Increment)	Increments a value in the field
(4) Decr (Decrement)	Decrements a value in the field
(5)	Calls the help function (key assignment)
(7)	Restarts the system

The menu for setting the time and date is followed by the menu for the drive settings.

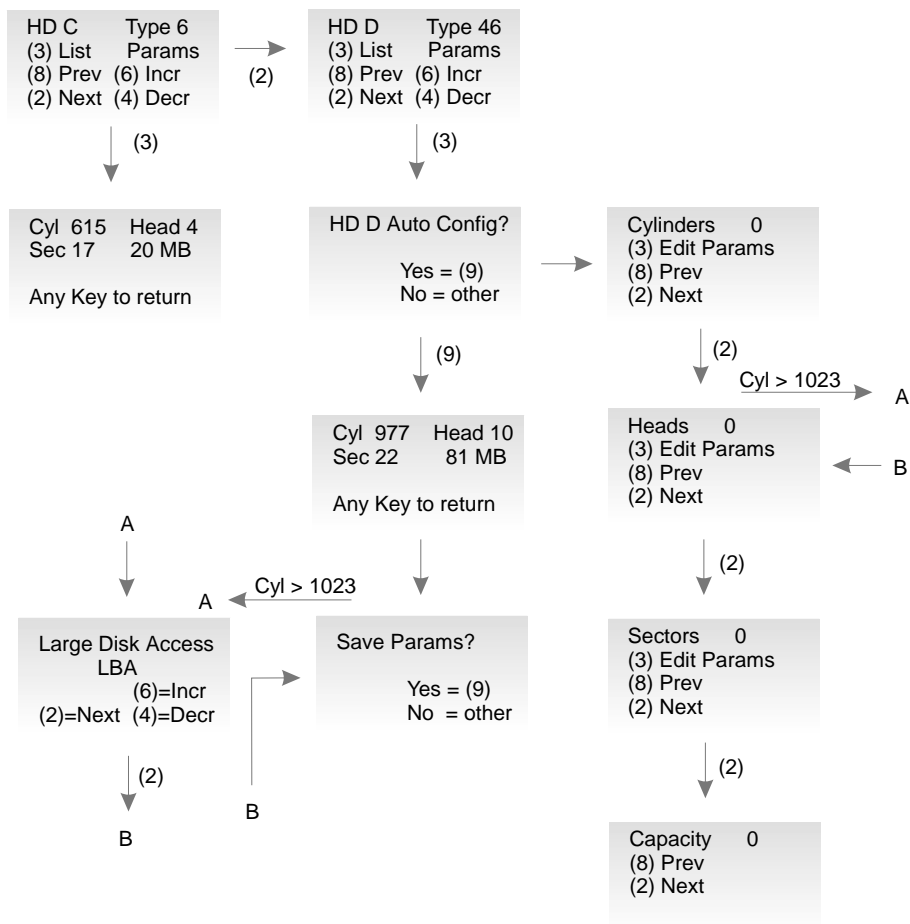
```
FD A MEM-Card
FD B Not installed
  (8) Prev          (6) Incr
  (2) Next          (4) Decr
```

In this menu, you can make settings for drives A: and B: (BEETLE MEM card or floppy disk).

BIOS setup

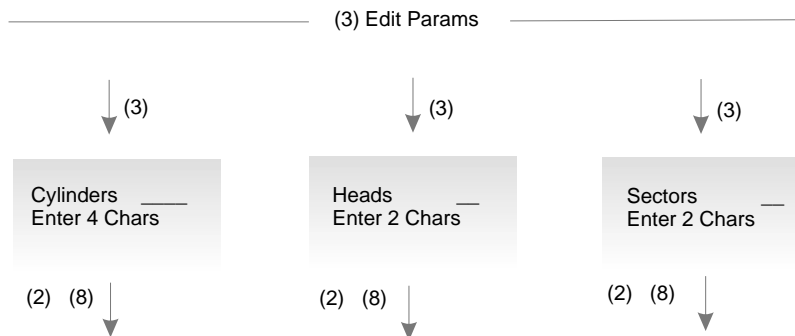
Hard disks can be configured automatically in setup. The required parameters are read from the hard disk and stored in the CMOS RAM.

The following screens show the possible configurations for hard disk D:





In the case of the 80486DX2 CPU, hard disk types 1-39 and User Type exist. Thus, in the figure above, the entry "Type 46" must be replaced by "User Type".



As the following diagram shows, you have three basic alternatives:

1. You can use the automatic configuration option offered in setup, in which the parameters are automatically read from the hard disk and entered.
2. You can enter a configuration manually using the parameters specified in the documentation for IDE hard disks.
3. You can select a drive that corresponds to one of the types specified (numbers 1 to 44 or, in the case of the 80486DX2 CPU, numbers 1 to 39 and User Type).

BIOS setup

Memory

In another menu, you will see the memory configuration, as shown in the following screen.

Memory	640 KB
XMS	1408 KB
(8) Prev	
(2) Next	

XMS stands for Extended Memory Specification (above a memory capacity of 1 MB).

LPT1 mode

As of the 80486DX2 system, the LPT1 parallel interface can be run in ECP, EPP V1.7 and EPP V1.9 modes as well as in standard mode. You make the selection in the following screen:

LPT1 Mode	
Standard	
(8) Prev	(6) Incr
(2) Next	(4) Decr



If you are using an WN printer, you must set standard mode.

Power management

The 80486DX2 system recognizes different operating mode settings (power management). If you set "NO", the CPU is in normal mode; in other words, the system is working at full power consumption. If you set "YES", you enable power management.

PowerMan	Yes
(8) Prev	(6) Incr
(2) Next	(4) Decr

The "OFF Timer" switches the CPU to sleep mode after a predefined period of inactivity (5 - 15 - 60 minutes). You must not have a screen saver active. In sleep mode, the microprocessor is stopped at intervals and then clocked at full speed again, thus reducing power consumption.

In addition, the backlighting of the cashier display is activated and, if a monitor is connected, it is blanked.

OFF Timer	60 Min
(8) Prev	(6) Incr
(2) Next	(4) Decr

You can set a deactivation time for the hard disk (OFF and 60 minutes).

If HD Timer is set to "60 Min", the hard disk is switched to standby mode after 60 minutes.

HD Timer	OFF
(8) Prev	(6) Incr
(2) Next	(4) Decr

COM interfaces

BIOS also lets you specify whether or not the power supply to the serial interfaces COM2* to COM4* (COM Supply ON) is to be disabled in sleep mode (COM Supply OFF).

COM Supply	OFF
(8) Prev	(6) Incr
(2) Next	(4) Decr

BIOS setup

Interrupts

If one of the interrupts IRQ1 (keyboard), IRQ3 (COM2), IRQ4 (COM1) or IRQ8 (RTC) occurs, the CPU changes from sleep mode to normal mode.



All interrupts are processed in sleep mode; none are lost.

Shadowing

The shadowing function allows you to improve the overall performance of the system. If you enable this function, both the BIOS EPROM and the VGA EPROM are copied to the DRAM.

```
Shadowing Yes
(8) Prev      (6) Incr
(2) Next      (4) Decr
```

As a result, the accesses of the CPU are accelerated. When the shadowing function is *disabled*, an additional 384 KB of memory is available to the system.

Cache

```
486 Cache                ON
(8) Prev      (6) Incr
(2) Next      (4) Decr
```



As of the 80486DX2 processor, the cache can no longer be disabled.

In the next screen, you can enter the graphics adapter you are using (mono for the cashier display or VGA for the monitor).



If there is no VGA adapter, the display entry must be set to MONO or OPERATOR (80486DX2 and higher) to make the outputs appear on the cashier display.

```
Display Operator
(5) Help
(8) Prev      (6) Incr
(2) Next      (4) Decr
```

If you press key (7), you terminate configuration by restarting the system.

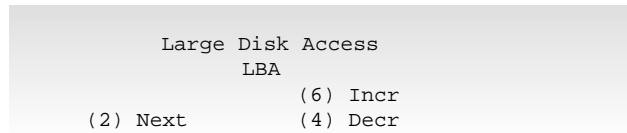
Additional I/O adapters

In the case of an 80486DX2 system, up to two interface adapters can be installed (addresses 3F8 and 2F8). The on-board interfaces are then deactivated automatically.

```
Port 3F8 Enabled
(5) Help
(8) Prev      (6) Incr
(2) Next      (4) Decr
```

You only see the following screen in the setup menu of BEETLE systems that have an 80486DX2 processor and a hard disk with more than 1023 cylinders. As of this size, the hard disk data must be handled differently by the BIOS and the MS-DOS operating system.

BIOS setup



Setup offers you the following options:

- **Standard**
In this setting, MS-DOS can only be started from a partition that is smaller than or equal to 504 MB in size. The rest can only be used by other operating systems (e.g. Windows NT or OS/2).
- **LBA**
In this setting, MS-DOS can be started from a partition of up to 7.8 GB in size.
- **Non DOS**
You select this setting if you want to install operating systems different from MS-DOS.

Appendix

Technical data for the BEETLE/20

BEETLE/20 with 1-station printer Width Depth Height Weight	316 mm 480 mm (with cable cover) 224 mm (without customer display) 10.7 kg	
BEETLE/20 with 2-stations printer Width Depth Height Weight	316 mm 485 mm (with cable cover) 258 mm (without customer display) 11.1 kg	
Climatic category	IEC 721-3-3 class 3K3	
Operating temperature	5° - 40° C	
Input voltage Power consumption max. AC outlet max.	100 V - 120 V 5A 2A	200 V - 240 V 3A 1A
Frequency of mains voltage	45 Hz - 65 Hz	
Noise level	58 dB (A) active 40 dB (A) ready	

Central processing unit

Microprocessor	80486 DX2/66 MHz, Pentium class
Architecture	PC-compatible board with expansion options for POS-specific functions
Main memory	4 MB expandable to 32 MB Pentium: 8MB expandable to 64 MB
BIOS	128 kB
Keyboard	MF2-compatible
Loudspeaker	Volume adjustable
Hard disk connection	IDE interface
Floppy disk connection	NEC765A-compatible floppy disk controller
Submodule (optional)	SVGA or VGA controller or LAN controller or ASYNC connection or SVGA/VGA/LAN combined controller
Non-volatile RAM	32kB, 128kB, 512 kB, Retention of data approx. 5 years
BEETLE card connection	Standard interface (PCMCIA), max. 64 MB
Cash drawer interface	Mini-DIN socket, 6-pin
Serial interfaces	Standard: COM1 (9-pin D-SUB socket) Live ⁽¹⁾ : COM2, COM3, COM4 (9-pin D-SUB socket, 12V (+5%, -10%) or 5V (+/- 5%))
Parallel interfaces	LPT1 (25-pin D-SUB socket)
DC connection for external printer	+24V/ max. 2A interface, with power supply

(1) = The total power consumption of all power-supplied serial interfaces (COM2*, COM3*, COM4* and ASYNC) must not exceed 900mA at 12V. The power consumption for a single interface isn't more than 600 mA at +12V. The total power consumption of all power-supplied serial interfaces (COM2*, COM3*, COM4* and ASYNC) must not exceed 300mA at +5V.

ASYNc controller

NS16C552 UART chip	16 bytes FIFO
I/O base address area	02E8H - 02EFH
Interrupt	IRQ12 activated by jumper
Connection	9-pin D-SUB socket

VGA controller

CL-GD5429 chip	512 kB video RAM
Resolution	up to 1024*768 with 16 colors I
Number of colours	up to 256
Screen refresh rate	72 Hz, interlaced 87 Hz
Monitor connection	15-pin HDD-SUB socket

SVGA controller

You can use the SVGA controller only in combination with the Pentium CPU.

CL-GD5429 chip	1 MB video RAM
Resolution	up to 1280*1024 with 16 colors I
Number of colours	up to 256
Screen refresh rate	72 Hz, interlaced 87 Hz
Monitor connection	15-pin HDD-SUB socket

SVGA/LAN controller, VGA/LAN controller

The same values apply as for SVGA or VGA and LAN controllers individually. Exception : The LAN controller here has 16KB RAM.

LAN controller

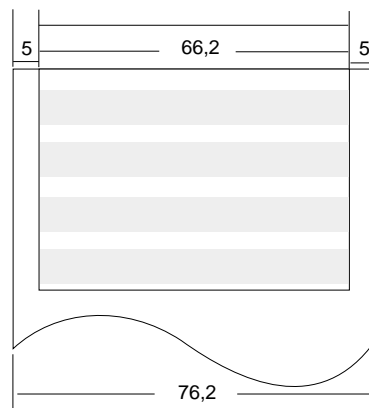
DP83905 AT/LANTIC chip	
RAM	8KB, default CC00h - CDFFh (only in shared memory mode)
I/O address area	32 bytes, default 240h - 25Fh
Interrupt	IRQ5
BOOT PROM	16 KB, default C8000h - CBFFFh
Connection	8-pin RJ45 telephone socket 10BaseT (max. 100 m cable length)

One-station printer

Number of characters for receipt	max. 40
Print	bidirectional
Print method	9-dot matrix
Print stations	1 receipt, journal as copy is possible, requires winder
Max. print rate	3 lines/sec.
Head service life	approx. 80 million characters
Weight	2.8 kg

Receipt paper

Roll outside diameter	80 mm or smaller without winder
Roll width	76 mm \pm 0.5 mm
Paper weight	min. 52.3 g/qm max. 64.0 g/qm
Paper thickness	min. 0.075 mm max. 0.1 mm

Printable area (the values are indicated in mm)

One-station printer with winder

Number of characters for receipt	max. 40
Print	bidirectional
Print method	9-dot matrix
Print stations	1 receipt, journal as copy is possible, requires winder
Max. print rate	3 lines/sec.
Head service life	approx. 80 million characters
Weight	2.9 kg

Receipt-/Journal paper

Roll outside diameter	approx. 80 mm
Roll width	76 mm ± 0.5 mm
Paper weight	min. 52.3 g/qm max. 64.0 g/qm
Paper thickness	min. 0.075 mm max. 0.1 mm

Two-stations printer

Number of characters for receipt	max. 24
Number of characters for journal	max. 24
Number of characters for document	max. 55
Print	bidirectional
Print method	9-dot matrix
Print stations	2: receipt and journal, one line printing validation is possible
Max. print rate	3 lines/sec.
Head service life	approx. 150 million characters
Usable surface of stamp	30 x 20 mm
Weight	3.2 kg

Validation paper (single-ply or multi-ply: original and 1 copy)

Paper dimension	max. 148 mm width, min. 70 mm height one line
Paper thickness	max. 0.14 mm min. 0.07 mm

Receipt-/Journal paper

Single-ply

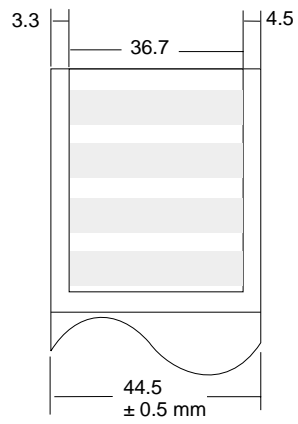
Roll outside diameter	max. 70 mm
Roll width	max. 44.5 ± 0.5 mm
Paper weight	min. 52.3 g/qm max. 64 g/qm
Paper thickness	max. 0.085 mm min. 0.06 mm
Paper length	approx. 37 m, paper end not glued on paper roll

Multi-ply: Original and 1 copy

Paper thickness	max. 0.085 mm min. 0.06 mm
Paper weight	min. 47 g/qm max. 64 g/qm

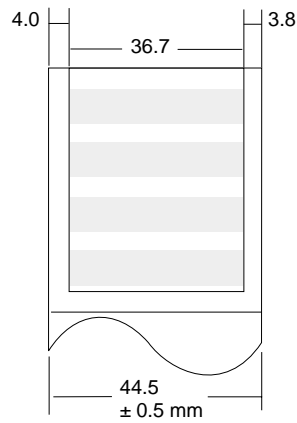
Printable area (the values are indicated in mm)

Journal Paper



two-stations printer

Receipt Paper



two-stations printer

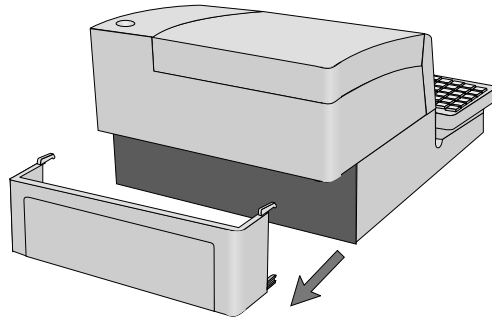
Installing an expansion card

Remove the housing

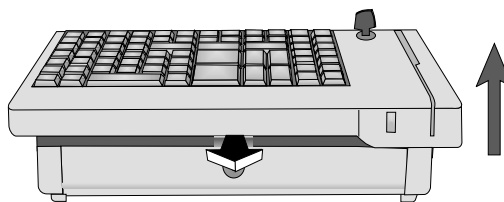


Before you begin, make sure that the device is switched off and the power plug disconnected.

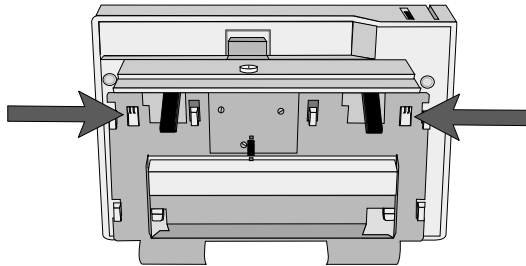
Remove the cable cover from the device. Tilt it back slightly, and then pull it over.



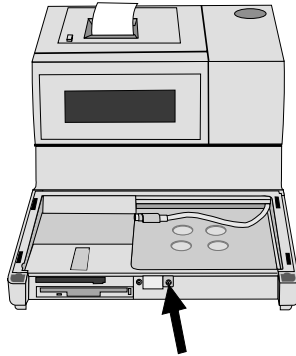
Open the lock for the drives, if necessary, pull the keyboard's locking device forward, and lift the keyboard up.

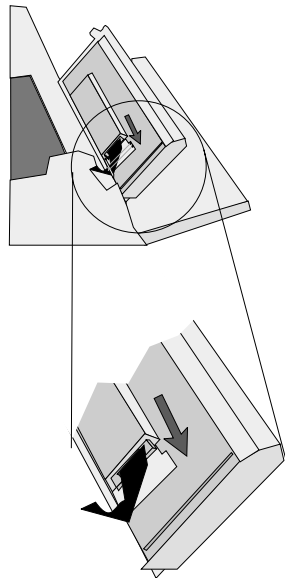


Remove the keyboard. To do this, press the plastic parts indicated by arrows in the drawing below, and pull the keyboard forward a few millimeters. Disconnect the connector of the keyboard cable, which is plugged into a recess at the rear of the keyboard. To do so, push the cable into the direction of the plug-in connection and then pull the plug housing downwards (see arrow marks on plughousing). Then remove the keyboard and lift the keyboard mounting up.



Undo and remove the screw indicated by arrow in the drawing below.





Open the paper compartment of the printer, tilt the cashier display forward, and disconnect the ribbon cable on the inside on the left. To do this, open the clamps by which the cable is attached to the housing, and remove the connector.

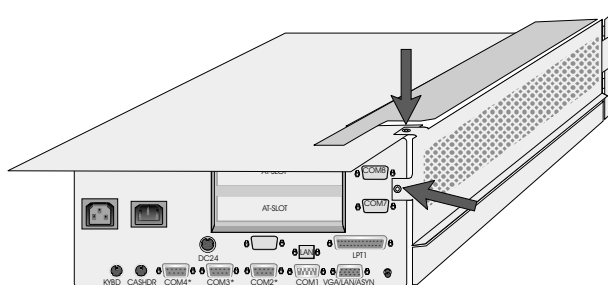
You can then remove the housing.



The cable of the cashier display is still plugged in, so exercise care when removing the housing.

Take off the metal cover

Undo the two screws indicated by arrows in the drawing below, and take the metal cover off the housing. This gives you access to the expansion slots.



Installing an expansion card

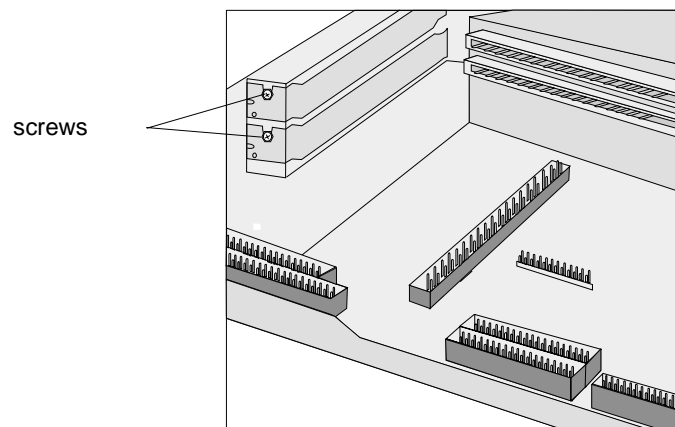
All the expansion slots are for half-size expansion cards. To install an expansion card, you first have to remove the slot's metal cover. Remove the screw by which the cover is attached the BEETLE/20. It is easy to remove the cover.



Be careful not to let the cover fall on the CPU board. This could cause a short circuit, since the CPU components are still supplied with power by the system accumulator battery.

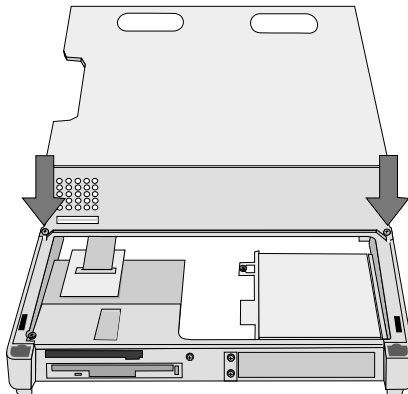
If the card has any jumpers, check that they are set correctly. To find out the correct settings, refer to the card's documentation. Then insert the expansion card in the slot provided. Ensure that the card is firmly in position.

Secure the card with the screw that you removed from the cover.



Installing a submodule

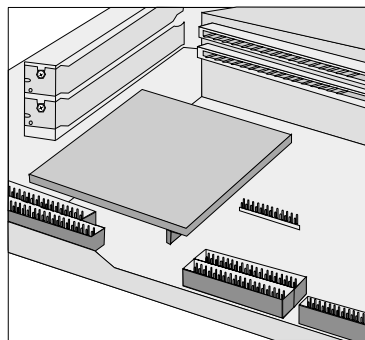
First remove the housing (see page 100 - 102) and the printer (see page 37, e.g. 55).



Then loosen the cable of the cashier display and remove the two screws of the chassis cover, pull the cover a little forward and then lift it up.

Please mind the cable!

Then remove the metal cover of the recess needed on the housing. Loosen the two screws by using a 5mm socket wrench. Bring the socket of the plug-in card through the SVGA/VGA/LAN/ASYN recess from the inside (when installing a LAN/VGA/SVGA sandwich module, through the LAN recess on the housing as well) and only then insert the card into the slot provided in front of the battery. Attach the socket using the screws of the cover.



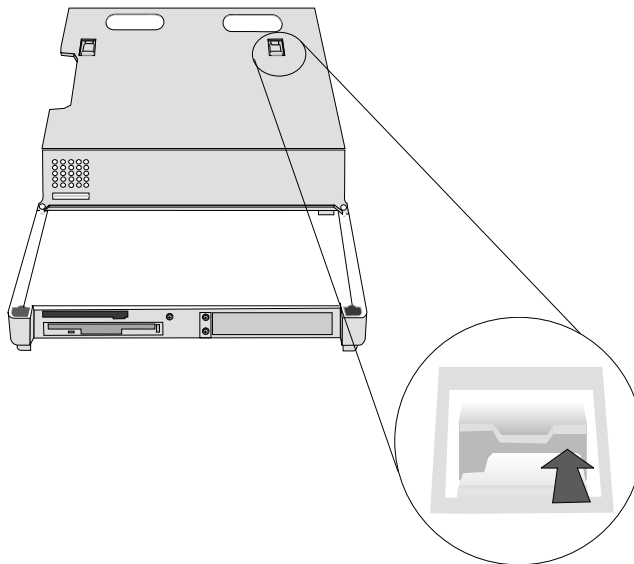


For information on how to configure the submodule, please refer to the documentation that comes with the card.

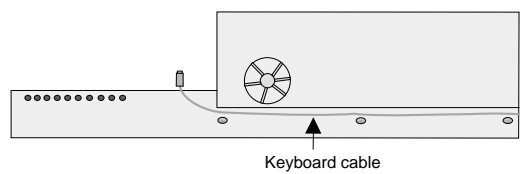
Put the POS terminal together again by proceeding in the reverse order to that when dismantling it.



Make sure that the splicing plates of the chassis cover fit into the chassis as shown in the drawing below.

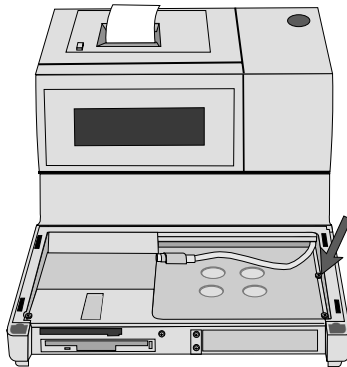


Be sure to lay the keyboard cable as shown in the drawing below.

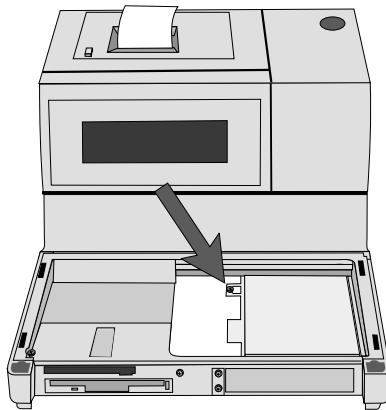


Changing the hard disk

It is also easy to change the hard disk of the BEETLE/20. Begin by removing the keyboard (see the section on installing an expansion card on page GB - 100). Then remove the screw indicated by an arrow in the drawing below.



Push back the cover plate to the terminal's housing, and lift it out. You will then be able to see the card.



Undo the screw indicated by an arrow in the drawing beside.

Push the hard disk to the left a little, then lift it a little at the front and pull it towards you. You will be able to see the two connectors on the rear of the hard disk. Disconnect these, and remove the hard disk.

To install the new hard disk, proceed as described above but in the reverse order.

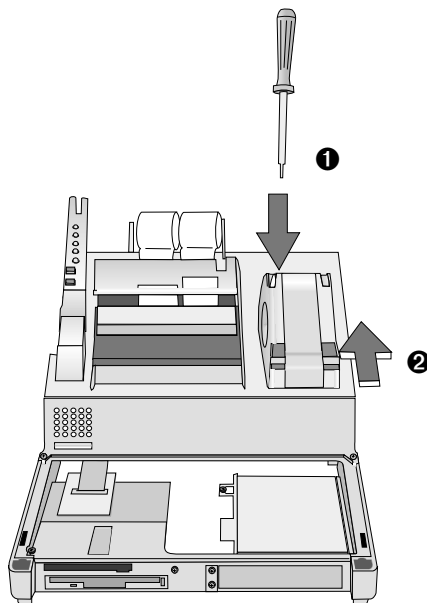
Changing the battery

Every battery has a limited service life. In order to protect yourself from any loss of data, we recommend that you change the battery every two years.

Use only batteries approved by WN.

To change the battery, follow these steps:

Make sure that the device is switched off and the power plug is disconnected. Remove the housing cover (see page 100-102). The battery is located on the right side, next to the printer.



Remove the screw on the back of the battery **1** and push the battery to the back **2**.

Unplug the connection to the system. You can now remove the battery.

Always dispose of batteries in an environmentally safe manner observing your country's regulations.

The configuration label

The label is located under the keyboard. The picture shows an *example* of the label which can differ in accordance to the features of your POS system.

Master-HD: Master BD _____ 86500. _____	OP-System: DOS	Submodules: <input type="checkbox"/> VGA <input type="checkbox"/> ASYNC: IRQ12/ <input type="checkbox"/> disab. I/O: 2EB/ _____ <input type="checkbox"/> LAN <input type="checkbox"/> VGA/LAN
CPU: Type: <input type="checkbox"/> 486SLC <input type="checkbox"/> 486DX/2 <input type="checkbox"/> _____ COM3/4: <input type="checkbox"/> IRQ disab. <input type="checkbox"/> IRQ10/11 <input type="checkbox"/> IRQ 10 both CMOS: <input type="checkbox"/> none <input type="checkbox"/> 32KB <input type="checkbox"/> _____ KB RAM: <input type="checkbox"/> 2MB <input type="checkbox"/> 4MB <input type="checkbox"/> 8MB <input type="checkbox"/> _____ BIOS Rev: _____	LAN: <input type="checkbox"/> ATC 1650 <input type="checkbox"/> ATC 1660 <input type="checkbox"/> _____ BOOT PROM: <input type="checkbox"/> TCP/IP <input type="checkbox"/> _____	IRQ I/O RAM base ROM base ROM size Default: 5 240 CC000 C8000 0KB modified: _ _ _ _ _
Harddisk: Type: <input type="checkbox"/> 3,5" <input type="checkbox"/> 2,5" Size (MB): _____ cyl./ _____ head/ _____ sec		

Error messages

MS-DOS critical errors

Error code	Meaning
0	Attempt to write on write-protected disk
1	Unknown unit
2	Drive not ready
3	Unknown command
4	CRC data error
5	Invalid call structure
6	SEEK error with disks
7	Unknown data medium
8	Sector not found
9	Printer paper end
A	Write error
B	Read error
C	General error

Error messages

POST (Power On Self Test) error messages

Test type	Test	Message	Error no.
Cashier display	1	DATE ERROR ADDRESS ERROR	1 2
Customer display	2	TEST POS LCD	Not applicable
Memory card	3	CARD IN FALSE POS BATTERY EMPTY CHANGE BATTERY UNKNOWN SIZE DATA ERROR CHANGE MC ERROR	1 2 3 4 5 6
NV-RAM	4	ADDRESS ERROR DATA ERROR (5555) DATA ERROR (ABAB) DATA ERROR (0000)	1 2 3 4
Printer controller	5	UNKNOWN PRINTER RESET ERROR UNKNOWN STATUS CPU ERROR CPU RAM ERROR TIMEOUT LPT ERROR ASIC ID ERROR ASIC REGISTER ERROR ASIC TIME ERROR ASIC RAM ERROR Z-RAM ERROR ROM CHECKSUM ERROR	1 2 3 4 5 6 7 8 9 10 11 12 13
Cash drawer	6	CASHDRAW CLOSED CASHDRAW OPEN	Not applicable Not applicable

Error messages

Test type	Test	Message	Error no.
MF module	7	TIMEOUT	1
		RESET ERROR	2
		UNKNOWN STATUS	3
		CPU INSTERROR	4
		CMOS MEMORY ERROR	5
		EPROM ERROR	6
		EM RTC BATTERY	7
		MF MEM NOT CONECTED	8
		BYTE NOT BURNED	9
		TKD OVERRUN	10
		MEMORY DEFEKT	11
		MEMORY CHECKSUM	12
		MEMORY FULL	13
		POINTER ERROR	14
		SNR BL COMPARE ERR	15
		HARDWARE DATA ERROR	16
		PRINTER TIMEOUT	17
		PRINTER POWERUP ERR	18
		CMOS CHECKSUM ERROR	19
		PRINTER ERROR	20
		EM PRINT TIMEOUT	21
		PRINTER ERRORLINE	22
		NO OPERATOR DISPLAY	23
		NO INT CUST DISPLAY	24
		NO EXT CUST DISPLAY	25
		WRONG CMD ORDER	26
		INST BUFFEROVERRUN	27
		NO MFC1	28
		NO MFC2	29
		TH WRONG FORMAT	30
		DATE WRONG FORMAT	31
		NO HARDWARE DATA	32
		MEM NOT FORMATTED	33
		UNKNOWN_COMMAND	34
		DATE NOT ALLOWED	35
		WRONG TEXT	36
		TOTAL OVERFLOW	37
		BON SUM WRONG	38
		PROGRAM ERROR	39
		BLOCKADE BY	40

Error messages

Phoenix BIOS POST and startup messages

Message	Possible cause	Remedy
Diskette drive failure	Diskette drive failure	Change the drive
Diskette drive B: failure	Drive B: defective or missing	Change drive B:
Diskette drive A: failure	Drive A: defective or missing	Change drive A:
Diskette read failure strike 7 to retry boot	Disk unformatted or defective	Replace diskette and reboot
Display adapter failed;	Primary adapter failure	Change graphics adapter
Gate A20 failure	Protected mode cannot be enabled	Change CPU
Fixed disk configuration error	The specified configuration is not supported	Correct the hard disk configuration
HD controller failure	Controller failure	Replace the hard disk controller
Fixed disk failure 0 1	Defective hard disk 0 = C: 1 = D:	
Hard disk read failure - strike 7 to retry boot	Defective hard disk	Try to reboot. If not possible change hard disk
Invalid config info	<input type="radio"/> Memory size not correct <input type="radio"/> Display adapter not correctly configured <input type="radio"/> Incorrect number of diskette drives	Start SETUP
Keyboard clock line failure Keyboard data line failure	Keyboard or keyboard cable connection defective	Check that keyboard and cable are properly connected

Error messages

Message	Possible cause	Remedy
No boot device available - strike 7 to retry boot	Drive A: hard disk or diskette defect	Reboot. If still not possible replace defective part
Keyboard controller failure	Failure of firmware of the keyboard controller	Change the keyboard controller
Keyboard stuck key failure	One or more keys stuck	Try to press the key(s) again
Memory address line failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure of memory chips connected to circuit	Change memory chips
Memory data line failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure of a memory chip or circuit	Replace the memory chip
Memory high address line failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure of memory chips connected to circuit	Replace the memory chip
Memory double word logic failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Memory chip circuit failure	Replace the memory chip
Memory odd/even logic failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure of memory chips connected to circuit	Replace the memory chip
Memory parity failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure of one of the parity memory chips	Replace the memory chip

Error messages

Message	Possible cause	Remedy
Memory write/read failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure of one of the memory chips	Replace the memory chip
No boot sector on hard disk - strike 7 to reboot	Drive C unformatted or not bootable	Format the drive
Not a boot diskette - strike 7 to retry boot	Diskette in drive A unformatted or start not possible	Replace diskette and reboot
No timer tick interrupt	Timer chip failure	Check timer chip on CPU
Hex-value optional ROM bad checksum = hex - value	Peripheral card has defective ROM	Replace the card
Shutdown failure	Failure of the keyboard controller or logical circuit connecting it	Check the keyboard controller
Time-of-day not set - Please run SETUP program	Timer not set	Start SETUP
Timer chip counter 2 failed	Chip failure	Replace the timer chip
Unexpected interrupt in protected mode	The non-maskable interrupt (NMI) cannot be deactivated	Check the CPU, especially the logical circuit of the interrupt
Unexpected type 02 I/O card parity or memory parity interrupt at <i>xxxx:yyyy</i> Type (S)hut off NMI, (R)eboot; other keys to continue	Error writing to the system memory or using the I/O registers	Replace the memory chip
Internal cache test failed	Error in CPU	Replace the CPU

Additional messages

Decreasing available memory	This message comes immediately after a memory error message. The memory chips are faulty.
Strike the 7 key to continue	An error has occurred during the POST; press key 7 to reboot the system.
Base Memory size = 64K	Specifies the size of main memory for functions.
Extended Memory size = 00000K	Specifies the size of extended memory for functions.

The errors detected by the Power On Self Test (POST) are indicated on the monitor or cashier display. If one of the above error message appears, contact your technician or customer service.

MCBATT status messages

Message	Meaning
Battery voltage is ok!	The supply of power to the BEETLE card is adequate.
Battery voltage is ok, but the battery should be replaced	The supply of power to the BEETLE card is adequate. Recommendation: back up data and change battery.
Battery voltage is too low. There is no guarantee for your data!	The supply of power from the battery is inadequate. When the POS terminal is switched off, the data on the BEETLE card will be lost.
Battery voltage is too low, maybe there is no battery present. There is no guarantee for your data!	The supply of power to the BEETLE card is inadequate. There may be no battery. When you switch off the POS terminal, the data on the BEETLE card will be lost.

Error messages

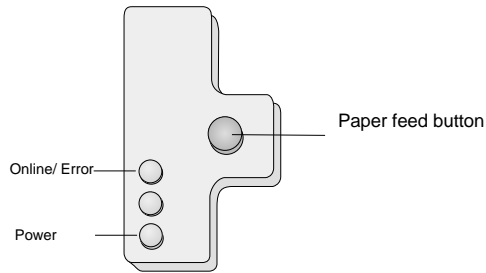
Error messages via blink codes (one station printer)

Error detection

The printer can be recovered from an error state by turning off the power, correcting the error and then turning the power back on.
The DTR interface single is set to MARK, i.e. data entry is prohibited (serial I/F) and the printer automatically goes OFF-LINE.

Error display

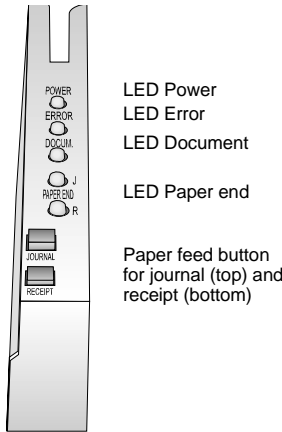
The printer error is indicated by the ON-LINE indicator.



The following table lists the indicator states:

Error	Light flashing pattern (1sec)	Content
Printer Error	<p>The diagram shows a square wave pulse with a period of 1000 msec. The pulse is high for 500 msec (labeled 'On') and low for 500 msec (labeled 'Off'). The unit 'msec' is indicated at the end of the time axis.</p>	The timing signal can not be detected that is caused by printer when the motor starting.

Error messages via blink codes (two station printer)



After having lift up the paper compartment cover, you will see the marked LED left to the printer. However, you can see the blinking of the LED from the outside too.

LED "ERROR"

Blinking of the red LED "ERROR" indicates that an error has occurred. The respective blink codes are shown graphically in the following. The blinking cycle is about 2 sec.

Recoverable errors

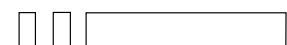
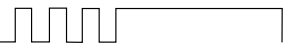
Type of error	Light flashing pattern (2 sec.)	Source of error
Print head overheated error		The print head ist overheated. The following error recovers automatically by cooling the print head.
Automatic cutter error		Error can be recovered by DLE ENQ 1 or DLE ENQ 2 control command.
Home position detection error *		
Carriage detection error*		

* see the section cleaning of BEETLE/20 two-stations printer

Error messages




Unrecoverable errors

The following errors are unrecoverable. Turn off the power switch immediately and contact your technical support.

Type of error	Light flashing pattern (2 sec.)	Source of error
High voltage error		The power supply voltage is extremely high.
Low voltage error		The power supply voltage is extremely low.



All LEDs

The following unrecoverable errors may occur when switching on the printer, all LEDs will be blinking in a cycle of approx. 4 sec.

Type of error	Light flashing pattern (4 sec.)	Source of error
Hardware error		This error refers to RAM, ROM, microcontroller. The blink code will be repeated continuously.
Loading error		With a loading error (wrong checksum), the blink code will be repeated continuously.
Firmware error		With a firmware error (wrong checksum) the blink code will be repeated three times. After that, the printer will be in load mode. The yellow LED "Document" is on.

Error messages

The following unrecoverable errors may occur when switching on the printer, all LEDs will be blinking in a cycle of approx. 2 sec., however only one time and will not be repeated.

Type of error	Light flashing pattern (2 sec.)	Source of error
ASIC		All LEDs will be blinking only once followed by the normal start.
Selftest/SW-Stamp CHARSET (Checksum Error)		

Glossary

BIOS

Basic Input/Output System. The part of the operating system responsible for communication with the peripheral units.

Bit

A bit is a binary digit (0 or 1). It is the smallest unit used in data processing.

CMOS-RAM

Complementary Metal-Oxide Semiconductor-Random Access Memory

COM

Communication port (V.24 serial interface)

Controller

Controls the input and output of data in a data processing system or between a computer and its peripheral devices.

CPU

Central Processing Unit. This is the main component of a data processing system. It monitors all processes and makes data and programs available. The CPU consists of the input/output control unit, the processor and the main memory, which is subdivided into ROM and RAM.

ECR

Electronic Cash Register

EMS

Expanded Memory Specification. Standard for communication between programs for expanded memory management and applications that require expanded memory.

FLASH EPROM

Flash Eraseable Programmable Read Only Memory. A memory chip that is programmable using flash technology.

Interface

The point of connection between different hardware units and software units or between hardware and software units of computers and their peripheral devices.

JEIDA

Japan Electronic Industry Development Association. Industry standard for memory cards.

LAN

Local Area Network. Data network for data interchange within a local area (e.g. a building).

MASK ROM

Mask Read Only Memory

Operating system

All those programs residing in a computer that are required to run the system and the application programs.

OTPROM

One Time Programmable Read Only Memory

PCMCIA

Personal Computer Memory Card International Association. Industry standard for memory cards.

POS

Point of Sale /Point of Service

RAM

Random Access Memory. Working memory accessed (read from/written to) by the microprocessor and other hardware devices.

Retail Device Interface

Program developed by Wincor Nixdorf for programming POS-specific functions.

ROM

Read Only Memory

Glossary

Server

A unit whose services are made available to all participants in a local area network (LAN).

SIMM

Single Inline Memory Modules

SRAM

Static Random Access Memory

SVGA

Super Video Graphics Array. Interface for connecting color monitors.

VGA

Video Graphics Array. Interface for connecting color monitors.

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