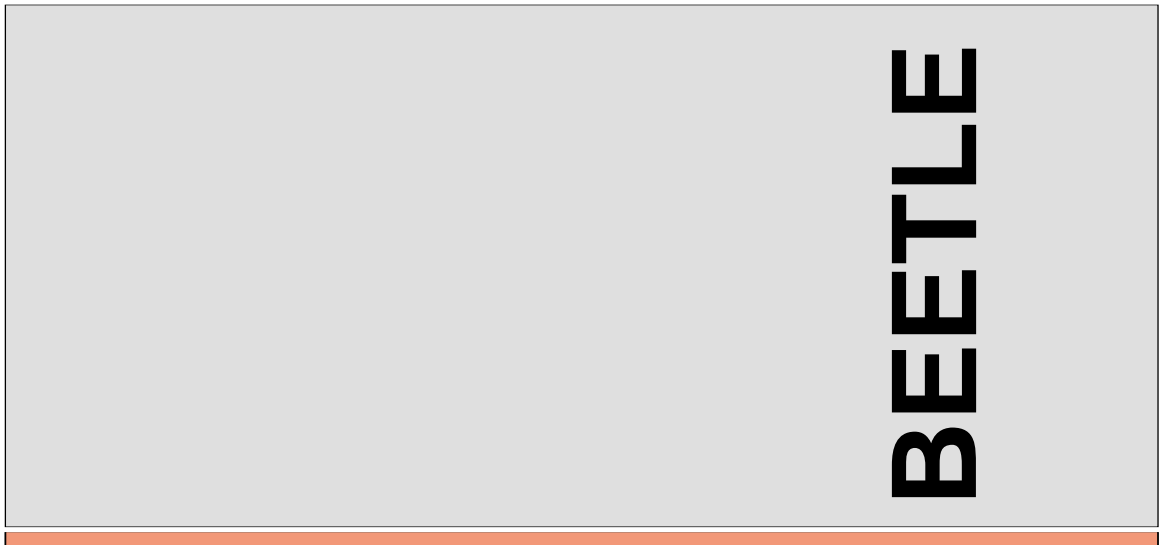


**WINCOR**  
**NIXDORF**



# BEETLE /60

POS System

User Guide

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POS System

User Guide

Edition May 2000

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## Manufacturer's Certification



If there is a CE symbol on the back of the device then:  
The device complies with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility".

## 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.

This digital apparatus does not exceed the "Class A" limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulations on the Canadian Dept. of Communications.

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



## Tested Safety



The BEETLE /60 has been provided with the symbol for "Tested Safety".



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

## Important notes

The BEETLE /60 POS system conforms to the current safety standards for data processing equipment.

- Condensation may form if the device is brought into the operating room from a cold environment. The device must be completely dry before it is put into operation. Wait at least two hours, therefore, to enable the device to acclimatize.
- This device is equipped with a safety-tested power cable and may be connected only to a grounded-contact power socket.
- When setting up the device, ensure that the power socket on the device or the grounded-contact utility power socket is easily accessible.
- The supply leads and cables must be laid in such a way as to avoid anyone stepping on or tripping over them.
- To disconnect the device from the supply voltage completely, switch off the device and disconnect the power plug.
- Take necessary precautions to avoid any objects (such as paper clips) or liquids coming into contact with the inside of the device in order to avoid electric shocks or short circuits.
- In order to ensure that the device is well ventilated and to prevent overheating, do not obstruct the ventilation slots on your device.

- Never plug in or unplug data communication lines during thunderstorms.
- Protect devices from vibrations, dust, moisture and heat.
- The device should be transported in its original packing only (in order to provide the necessary protection against knocks and shocks).
- In emergencies (e.g. damaged housing or mains cable or if liquids or foreign bodies have come into contact with the inside of the device), the device must be switched off immediately, the mains connector unplugged and the customer service department of Wincor Nixdorf GmbH & Co. KG (WN) notified.
- Always dispose of used parts, such as batteries and ribbons, in an environmentally safe manner.



The device may be repaired by authorized qualified personnel only. Unauthorized opening of the device and inexpertly carried-out repairs may not only seriously jeopardize the safety of the user, but also cancel all warranty and liability agreements.

---

## Introduction

The BEETLE /60 is a powerful, economical, compact POS system that requires very little space.

The BEETLE POS system conforms to the PC industry standard. This means that you can add any expansions you wish in order to adapt it to your growing requirements.

A variety of peripheral devices are also available, such as a scanner for reading bar codes, a swipecard reader for check, credit and customer cards, or a monitor.

With the exception of the keyboard and the optionally connectable devices, all components of the BEETLE POS system are accommodated in a single housing.

The base plate of the BEETLE POS system houses the CPU's boards and plug connector strips, and the power pack. All ports for peripherals and the power supply are located on the back of the housing.

The integrated printer is characterized by a high print rate. A 9-dot matrix print head is used for receipt and journal printing. Document printing is also possible.

The BEETLE POS system has a 4-line, 20-position alphanumeric cashier display. In addition to the currently posted items, the cashier display also outputs error messages and operating instructions.

The system supports the operation of the BA63 customer display, which can display a total of 40 characters on two lines. The customer display is optionally available.

The BEETLE POS system is network-capable; when the appropriate network board has been installed, the BEETLE also operates in a POS network.

Due to the integrated battery and with the aid of corresponding software, programs are terminated correctly in the event of a power failure and your data is saved.

The BEETLE POS system allows you to use the BEETLE card (memory card). This storage medium requires very little space, is mechanically robust and provides a high rate of data security. Some possible application areas for a BEETLE card would be program loading and data storage.

The BEETLE POS system is optionally available with a floppy drive as a supplementary storage medium. Like BEETLE cards, diskettes are mechanically robust and can be used for program loading and data storage.

Hard disks of varying storage capacities can also be used in the BEETLE as a further, optional storage medium. They mainly serve to store large datasets and to boot the system.

The system software is based on the standard operating system MS-DOS. The operating system has been expanded in order to take account of specific retailing requirements.

The POS-specific functions can be programmed by means of the software interface RDI (Retail Device Interface) developed by Wincor Nixdorf GmbH & Co. KG.

A series of expansion products are available from WN for developing application programs which

- support the object-oriented design of applications, paying special attention to POS-specific user interfaces (RPM),
- offer typical functions required by networked POS systems (fail-safe facility, database functions etc.) in heterogeneous client/server environments with standardized SQL interfaces (RTM),
- control data exchange in the form of messages within a local network (LAN) (RMH),

- feature the standard service functions for POS systems (HSF, HFT).

The BEETLE software is thus both sophisticated and extremely flexible.

We wish you a profitable future with your BEETLE /60.

## About this manual

The BEETLE is an easy-to-use POS system. Following a brief familiarization period, you will already know how to use all its functions.

This manual is intended to help you work with the POS system and to serve as a reference work. The detailed table of contents and the index help you find the desired information quickly and easily.

The manual is divided into five main sections.

The first section describes

- everything you need to do before switching on the POS terminal and
- how to connect peripherals to the BEETLE.

The second section contains

- a brief overview of the components of your BEETLE POS system. Here, you will also find a detailed description of recurring actions (changing paperrolls, handling the BEETLE card, etc.).

The third section provides

- information on the software of the BEETLE POS system.

The fourth section explains

- the procedure for starting up the system. This section is aimed primarily at staff with technical training.

### The Appendix

- contains the most important technical data, a glossary, a list of abbreviations and instructions on how to install an expansion board.



Notes in the manual are marked by this symbol.



This symbol is used for cautionary notes.

Apart from the information on the setup program and a brief description of the most important WN programs, this manual contains no further details on software as the type and scope of the application programs depend on the individual requirements of the customer.

Separate manuals are included in the scope of supply of a number of connectable peripherals. For this reason, a more detailed description of these devices will not be provided here. For more information, see the relevant manuals.

## Care of the BEETLE

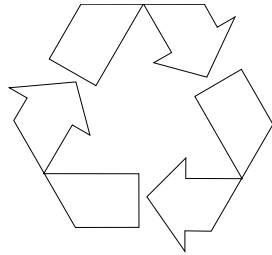
Clean your BEETLE at regular intervals with a suitable surface cleaner. Suitable products are available via WN Plus.



Make sure that the power plug is disconnected and that no liquid finds its way into the device.

To maintain your BEETLE in good working order, clean its printer regularly. You will find information on how to do this in the chapter on the printer on page GB-45.

## Recycling the BEETLE POS system



Environmental protection is important right from the very beginning of the manufacturing process and not just when a POS system is disposed of.

The BEETLE POS system is manufactured without CFCs and CHCs and comprises mostly reusable components and materials.

The materials used are for the most part recyclable. The precious metals can also be recovered. This saves energy and valuable raw materials.

At this time, there are still some parts that are not reusable. Wincor Nixdorf GmbH & Co. KG guarantees that these parts will be disposed of in an environmentally-friendly manner in the WN recycling center which is certified in accordance with ISO 9001.

So don't simply throw your BEETLE POS system on the scrap heap when it has served its time, but take advantage of the environmentally smart, up-to-date recycling methods!

The operation of your BEETLE POS system also produces consumables that must be disposed of in an ecologically sound manner. Wincor Nixdorf GmbH & Co. KG provides a recycling box for used ribbons that you can set up at your company. The low price you pay for the box also includes pickup and complete recycling of the ribbons. For more information, contact the WN branch office responsible for your area.

Our environmental protection section in Paderborn, Germany (Email: [referat.umweltschutz@wincor-nixdorf.com](mailto:referat.umweltschutz@wincor-nixdorf.com)) is always ready to answer any questions you may have about WN's environmental protection policies.

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## **BEETLE /60 POS terminal and system**

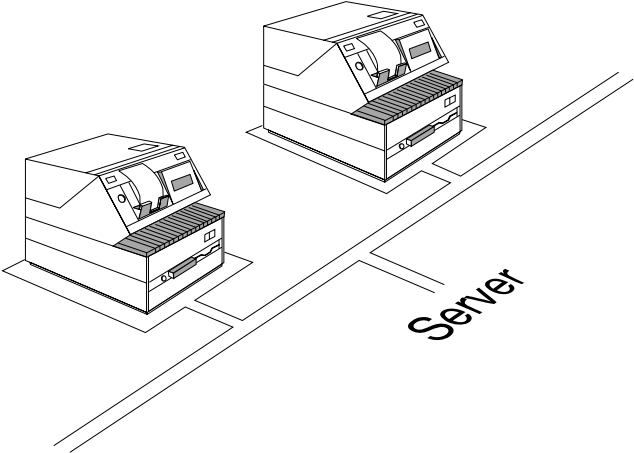
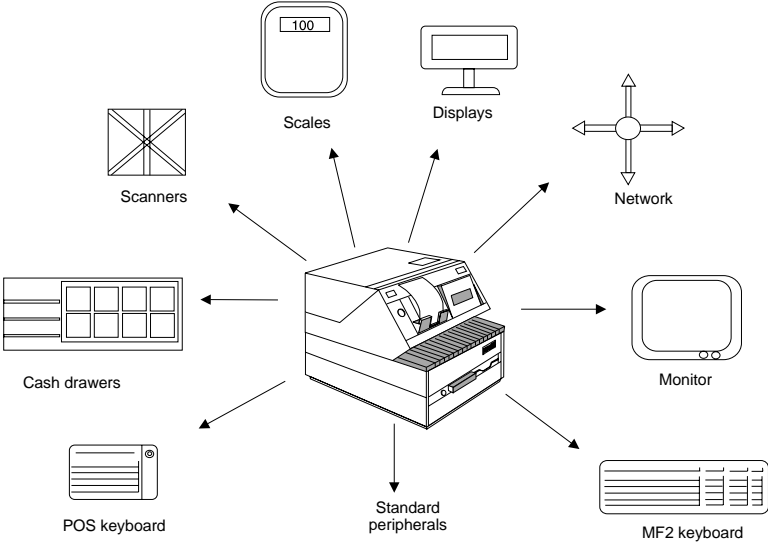
The BEETLE is a growth-oriented POS system. To meet your growing requirements, a number of optionally connectable peripherals are available for the BEETLE. Thus, you can also

- connect one two or four-line alphanumeric customer display and one four-line cashier display,
- use different types of scanners such as distance, touch or stationary scanners,
- connect scales and scanner scales (observe the relevant official standards),
- use POS keyboards with or without a swipecard reader or a PC keyboard,
- use different types of cash drawer,
- connect a monitor,
- install SNIkey,
- integrate the BEETLE in a network after installing a LAN board and
- upgrade the BEETLE, since it can accommodate several expansion boards.

This means that the BEETLE can meet your requirements at all times, without your having to exchange the complete system for a new one, thus saving you time and money.

The illustrations on the next page show you how your BEETLE POS system can grow - from a scanner to integration in a network.





## Before switching on the system

### Unpacking and verifying the scope of supply

Unpack the parts and check to see whether the delivery matches the information on the delivery note.

The carton contains the basic unit and a country-specific accessories kit. The basic unit can also be equipped with a network board, floppy drive, hard disk or a VGA board, or a combination of these components.

If damage has occurred during shipping or if the package contents do not match the delivery note, inform your WN branch immediately.



Transport the device only in its original packaging (to protect it against impact and shock).

### Setting up the device

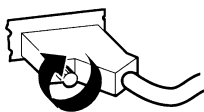
Set up the BEETLE POS system where it will not be exposed to extreme environmental conditions. Protect the device from vibrations, dust, moisture, heat and strong magnetic fields.

Make sure that the side ventilation slots on the BEETLE POS system are not obstructed in order to ensure that the device has sufficient ventilation.

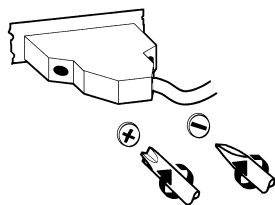
**Cabling of the BEETLE**

Follow the steps below in the order given when installing devices:

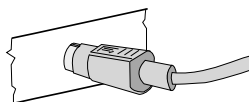
- Make sure that the power switch on the back of the housing is set to "0".
- Plug in and secure the data cable.
- Plug the power cable into the rubber connector of the BEETLE.
- Plug the power cable into the grounded-contact utility power socket.

**Securing the data cable**

Secure interface connectors with knurled screws using your fingers.



Secure interface connectors with standard screws using a screwdriver.



Mini-DIN connectors are locked when inserted.

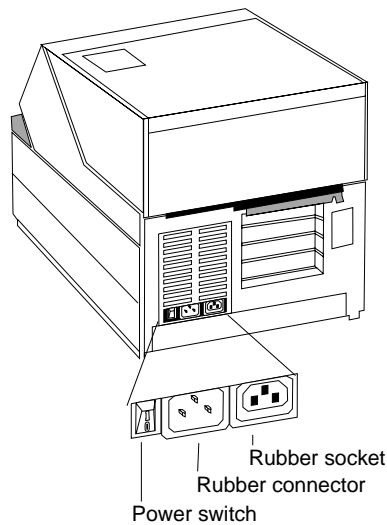
### Connecting to the mains power supply

All devices belonging to the BEETLE POS system that have a separate power cable must be connected to the same electric circuit.

- Ensure that the power switch on the POS terminal housing is switched off.
- Make sure that all data cables on the system unit and peripherals are connected correctly.
- Plug all power cables belonging to the peripherals and the BEETLE into the grounded-contact utility power sockets.



The power-supply unit of the BEETLE POS system adapts itself to the local system voltage so that you do not have to make any adjustments yourself.



You can now switch on the power switch at the rear of the housing (position I).

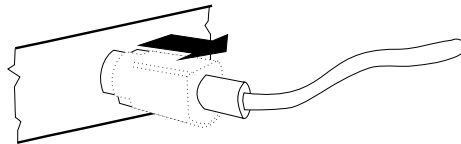


The power output of devices connected to the BEETLE system must not be more than 200 V AC.

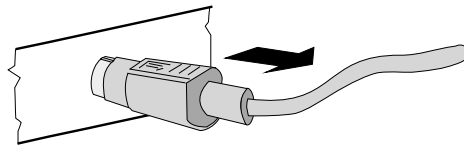
**Disconnecting cables**

Never unplug a cable by pulling on the cable itself; always take hold of the actual plug. Follow the procedure below when disconnecting cables:

- Turn off all power and equipment switches.
- Unplug all power plugs from the grounded-contact utility power sockets.
- Unplug all data communication cables from the sockets of the data networks.
- Unplug all cables from the devices.



The Mini-DIN connectors remain connected until they are unlocked.



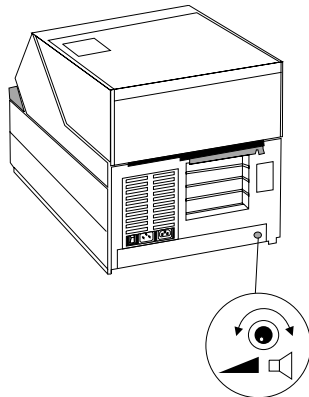
Use your thumb to move the plastic casing around the connector shell away from the socket. This unlocks it, and the metal on the connector becomes visible.

Now remove the connector from the socket.

**Basic settings**

Ex works, the BEETLE POS system is configured to your order. Your configuration must be subsequently adapted to support supplementary devices such as scanners. For more information, please contact the WN branch office responsible for your area.

**Adjusting the loudspeaker**

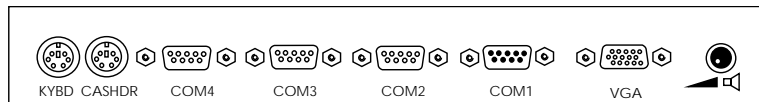


You can set the volume as desired by means of the volume control on the back of the POS terminal housing.

**Connecting peripherals**

Some of the peripherals mentioned here are available as options and are not part of the basic configuration. A separate manual is provided for each of the connectable components. For more detailed information, consult the relevant documentation.

The figure shows the back panel of the BEETLE POS system with the locations of the connecting sockets and connecting plugs.



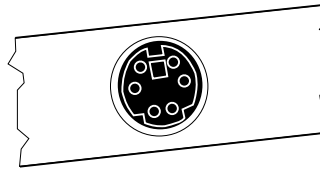
You can connect a maximum of seven peripherals. If you wish to connect a monitor, however, you must also have a video board. You can connect the system to a network via an expansion board.



The chapter “Installing an expansion board” in the appendix contains details on installing expansion boards of this type in the BEETLE.

**Keyboard (KYBD)**

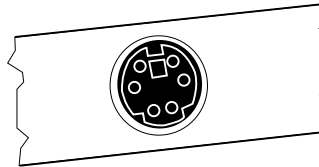
The BEETLE POS system has a 6-pin Mini-DIN jack for connecting a keyboard. Make sure that the connector is plugged firmly into the socket to prevent malfunctioning. Power is supplied to the keyboard via this socket. If you wish to connect a standard PC keyboard, you must use a special adapter cable, obtainable from the WN office responsible for your area.



When using cables with connector locking mechanisms, take hold of the cable by the connector when disconnecting it.

**Cash drawer (CASHDRW)**

The BEETLE POS system has a second 6-pin Mini-DIN jack for connecting a cash drawer. Make sure that the connector is plugged firmly into the socket to prevent malfunctioning. Power is supplied to the cash drawer via this socket.



When using cables with connector locking mechanisms, take hold of the cable by the connector when disconnecting it.

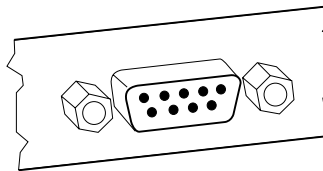
**Scanners and scales (COM1, COM2\*, COM3\* oder COM4\*)**

Depending on the system configuration, scanners and scales without their own power-supply units are connected to the serial interface COM2\*, COM3\* or COM4\* (default setting is COM3\*). Scales with their own power supply units must be connected to COM1. COM1 is a 9-pin connector whereas COM2\* - COM4\* are 9-pole D-sub jacks.



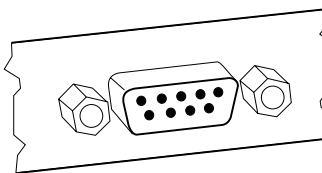
If you connect scales to the BEETLE system which were not supplied by WN, an appropriate WN licence must be acquired for the driver software.

Make sure that the scanner connector is plugged securely into the socket to prevent possible malfunctioning. The power for COM2\*, COM3\* and COM4\* is supplied via these jacks.

**Customer display (COM2\*, COM3\* oder COM4\*)**

Depending on the system configuration, the displays are connected to the serial interface COM2\*, COM3\* or COM4\* (default setting: customer display - COM4\*, cashier display - COM3\*). The interface connection on the BEETLE POS system is a 9-pin D-sub jack.

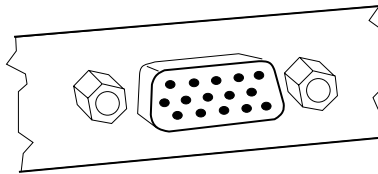
Make sure that the connectors for the displays are plugged firmly into their sockets to prevent possible malfunctioning. Power is supplied via these jacks.





## Monitor

If a VGA board or VGA submodule is installed, you can connect a monitor to the BEETLE POS system via the 15-pin D-sub jack on the VGA board. Power is supplied to the monitor via the rubber connector on the BEETLE, located on the back of the housing.



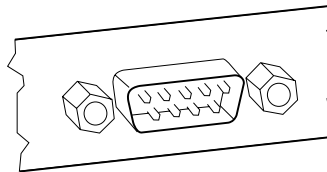
The power output of devices connected to the rubber socket of the BEETLE system must not be more than 200 V AC.

## Connecting standard PC peripherals

You can connect supplementary standard peripherals via the COM1 serial interface.



Make sure that all supplementary devices have been tested for RFI suppression pursuant to the legal requirements of your country.



## Network

If a network board or LAN submodule is installed, the system can be connected to a network (LAN) from the POS terminal back panel. If there is no LAN port, this location on the back panel is closed by a dummy cover.

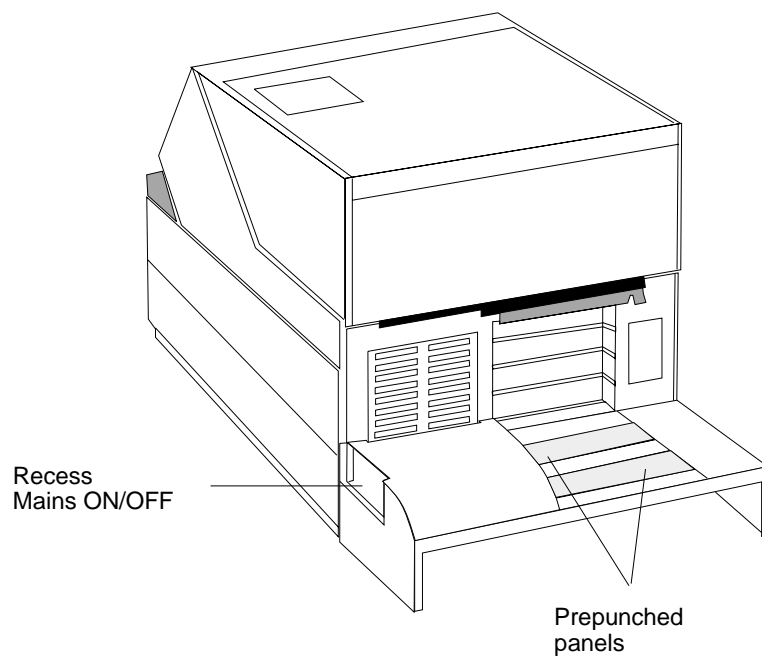
### Cable cover

The cable cover is used to prevent the cables from being disconnected inadvertently. It also tidies up the rear of the BEETLE/60 system.

One of the two prepunched panels on the cable cover must be removed if an expansion board is installed in the BEETLE. The second panel must also be removed if two expansion boards are installed.

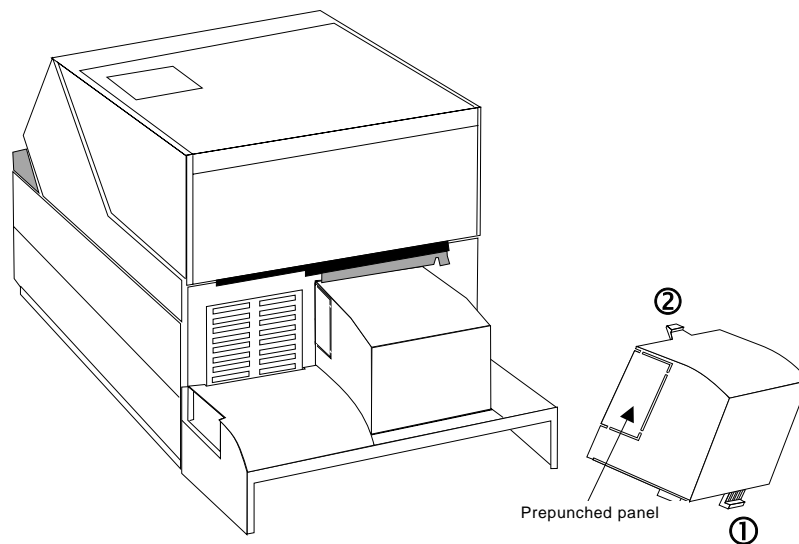
The cable cover is pushed downwards over the brackets mounted on the rear panel of the BEETLE. Make sure that the cable cover also locks into the slot which is located underneath the expansion boards.

The BEETLE can also be switched on and off via the recess on the side if the cable cover is mounted at the rear.



**Cable cover for expansion boards**

Fit the second cable cover (see drawing) supplied once all of the connections have been made. Remove the outer prepunched panel of the lower cable cover. Then hook the bracket at the bottom of the cable cover into the panel you have removed from the lower cable cover ①. Then push the cable cover upwards, pressing the upper bracket gently downwards until this locks into the POS housing ②.



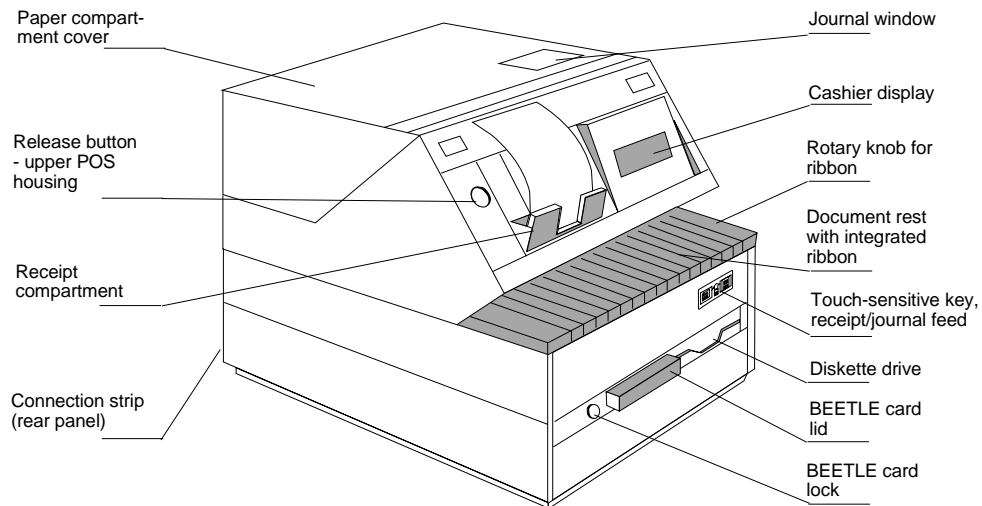
The prepunched panels on the right and left-hand side of the cable cover can be removed by hand in order to route the cables.

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## The BEETLE components

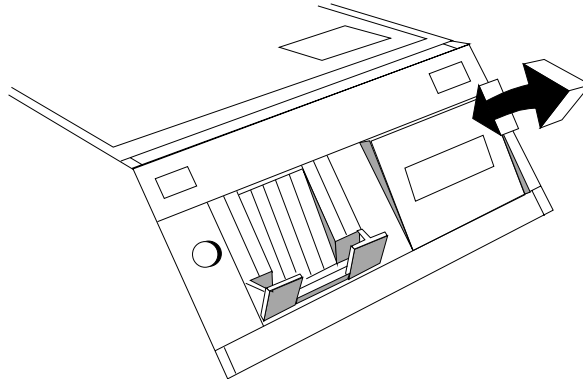
### Overview

The illustration below shows the components of the BEETLE POS system.



## Cashier display

The BEETLE has a 4-line, 20-position, alphanumeric cashier display. The display field is backlit, making it easy to read any information that is displayed. In addition, the cashier display can be tilted gradually to prevent glare. Along with the journal, this display also shows operating instructions and error messages.



## The BEETLE printer

The printer used in the BEETLE has a needle head with nine needles that services the three print stations for receipt, journal and document printing. The characters are represented in a 9 x 9 or 7 x 9 matrix, depending on the line spacing selected in your application program.

The BEETLE provides you with the option of controlling receipt and journal paper feed by means of two touch-sensitive keys on the front panel. A green paper feed button is located inside the housing for changing the receipt and journal paper.

For reasons of safety, the printing mechanism and cut-off blade are disabled whenever the printer cover is opened.

Insertion of the receipt and journal paper is facilitated by a semiautomatic paper feed.

You can generate an individual, graphics-quality company logo by means of the pixel printing function. The logo is generated in your application program and loaded to the printer memory.

The printer is further characterized by a high print rate, low noise level and ease of operation.



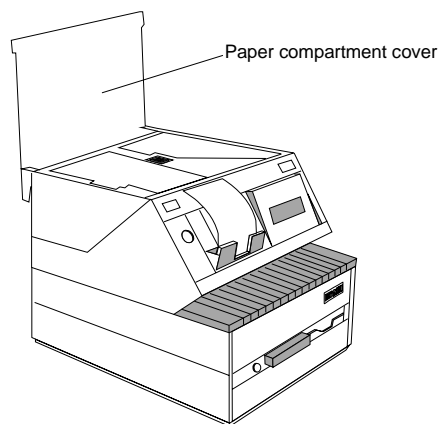
Always dispose of consumables properly (see section on recycling).

## Operation

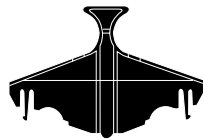
The ribbon cassette is not installed in the document rest when the printer is delivered. For more information, read the section "Changing the ribbon cassette".

The BEETLE is delivered with receipt and journal paper in the paper compartments. The paper rolls are covered by cardboard sleeves to protect them during shipping. Remove these sleeves and insert the paper as described in subsequent sections. Since the BEETLE POS system allows different paper widths for the receipt and journal, it may be necessary to "reduce" the paper compartments for narrower paper rolls by means of the spacers provided. This procedure is described in the next section, "Inserting spacers".

### Inserting spacers



First of all fold the paper compartment cover upwards.



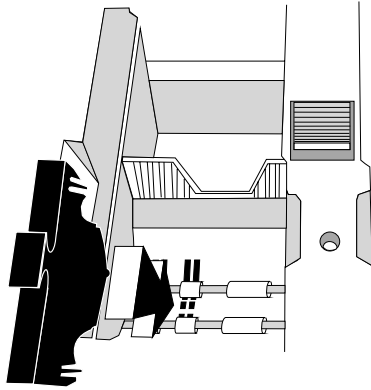
The accessories kit contains two large spacers and two rectangular spacers for separating the receipt and journal compartments. The larger spacers are suitable for both compartments.



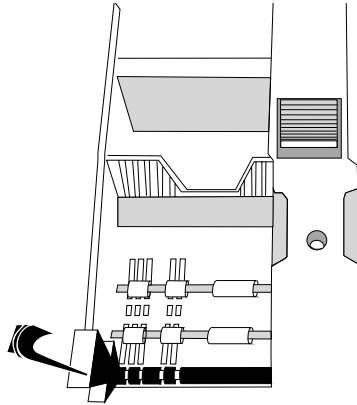
The rectangular spacers differ for the receipt and journal (mirror-inverted)!



When installing the parts, make sure that the flat surfaces face the divider between the receipt and journal compartments.



There are five possible insertion positions for each of the two compartments. Insert the large spacers in the grooves provided in the paper compartment in accordance with the paper width.



Now insert the appropriate rectangular spacer in the paper feed compartment, as shown in the illustration.

### Changing the receipt and journal paper

The following sections provide a detailed description of how to change the paper. A brief description in the form of pictograms can be found on the underside of the paper compartment cover.



The BEETLE must be switched on in order to change the receipt and journal paper.



If neither the receipt nor the journal paper is installed (especially relevant for initial startup), you must first thread the receipt paper through the paper feed. It is then possible to install the journal paper.

#### Green paper feed button

The green paper feed button (see drawing overleaf), which is active for the receipt or journal station, can be seen when the cover is open. Push this button to thread new paper rolls in. Actuating the button will change the position of the feed rollers mechanically in addition to initiating line feeds electrically.

If the button is actuated after the cover has been opened, the paper will only be fed in the station in which the end-of-paper sensor outputs the signal "paper present" to the printer controller. If paper was present in both stations when the cover was opened, it will be fed on both stations simultaneously.

If one of the print stations does not contain any paper, the feed motor of this station will switch on automatically after the cover has been opened in order to eject any remaining paper that may be present.

If paper is fed on one of the print stations after the cover has been opened, the feed motor of this station will switch on automatically at low speed.

If the end-of-paper sensor outputs the "paper present" signal to the controller again after paper has been inserted, only the paper at this station will be fed when the paper feed button is actuated.

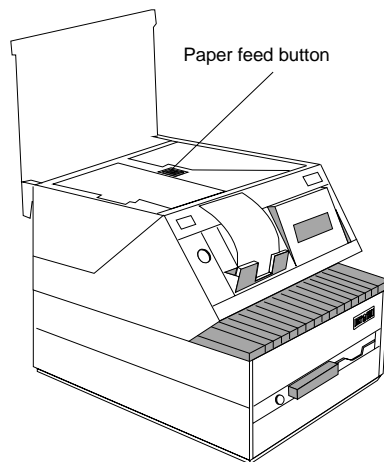
If paper has been inserted for the receipt station, the paper is advanced automatically and thus pulled taught after the cover has been closed. It is then cut off in order to obtain a clean leading edge.

The paper feed button is only active when the cover switch outputs the signal "cover open" to the printer controller.

### Changing the receipt roll

If a red stripe appears on the printed receipt or if the "End of receipt" message appears on the cashier display, install a new receipt roll following the instructions below:

#### Remove receipt roll



Lift up the paper compartment cover to access the paper rolls. To remove the remaining paper, press the green paper feed button (see illustration). Then remove the empty paper core. Now skip to the instructions under "Insert receipt roll".

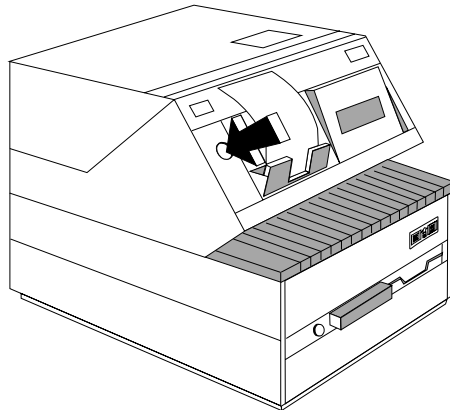
If unused receipt paper still remains on the receipt roll, remove it as follows:

Remove the receipt roll from the paper compartment and sever the receipt paper so that you have an even edge. Now use the green button to remove the remaining paper. For more details, see the description of your POS application program.

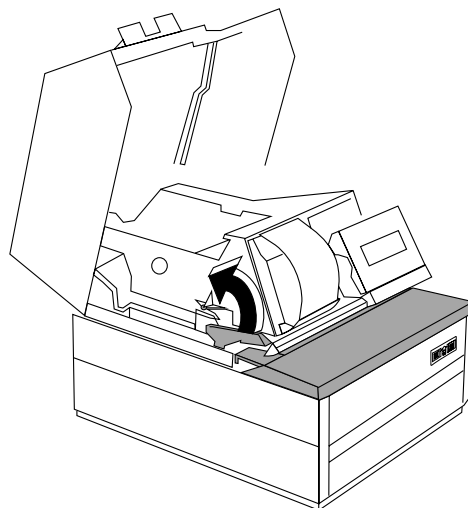


Be careful to leave enough receipt paper so that it can be removed. If it is not possible to remove the paper using the paper feed buttons, you can also remove it easily by hand.

If you are unable to remove the receipt paper using the paper feed buttons, you can remove the paper as follows:



Open the upper POS housing by pressing the release button while flipping back the POS housing.



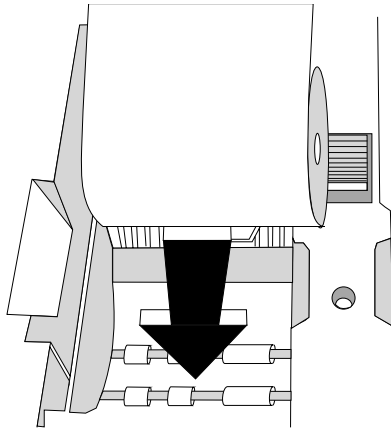
Push back the green lever until the entire printing unit is raised. Now pull the receipt paper **straight up** and out of the paper compartment.



Do not pull the leftover paper from the paper compartment while the paper is still clamped in the paper feed. You must first lift the printing unit.

Pull the green lever towards you to lower the printing unit. Now close the POS housing until you hear it lock into place.

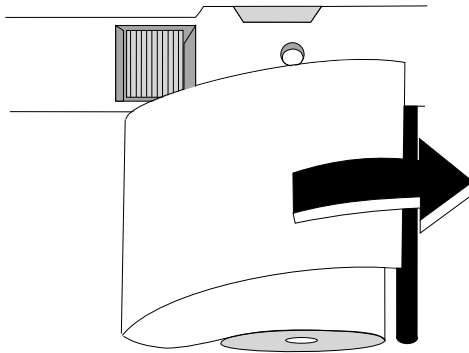
## Insert receipt roll



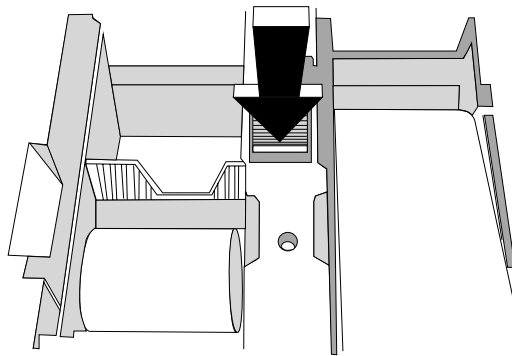
Open the paper compartment cover. Make sure that the paper on the new receipt roll is evenly cut. Insert the new receipt roll in the paper compartment as shown in the illustration.



Use only paper that is intended for your application and is approved for the printer. You may also have to install the spacers (see "Inserting spacers").



Now place the end of the paper over the drive roll in the paper feed compartment. It has reached the insertion position when the paper feed motor is momentarily triggered.



The receipt paper is fed in and threaded automatically when the green button is fully depressed. Hold the button down until the paper is pulled taut and there is no longer a loop in the paper.

Check whether the paper is straight and then close the paper compartment cover. When you close the cover, the paper is automatically advanced and the end is cut off. Your POS terminal is once again ready for operation.



Always finish changing the paper on one print station before beginning another, since a paper feed is possible on one print station only. It is not possible to change stations or install paper in two stations at once.

### Changing the journal roll

You should check regularly that there is still enough paper in the paper compartment.

A new journal roll should be inserted if a red strip on the journal paper becomes visible in the journal window or the message "End of journal" appears on the cashier display. Proceed as follows in order to replace the journal roll.

#### Remove journal paper

If the message "End of journal", for example, appears on the cashier display, only a few inches of journal paper remain in the paper compartment. Lift up the paper compartment cover to access the paper rolls.

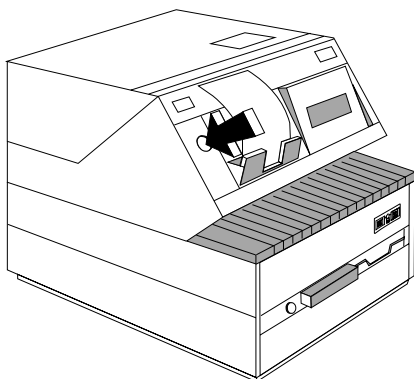
To remove the remaining journal paper, hold down the green button for the journal until the paper is completely ejected from the paper guide.



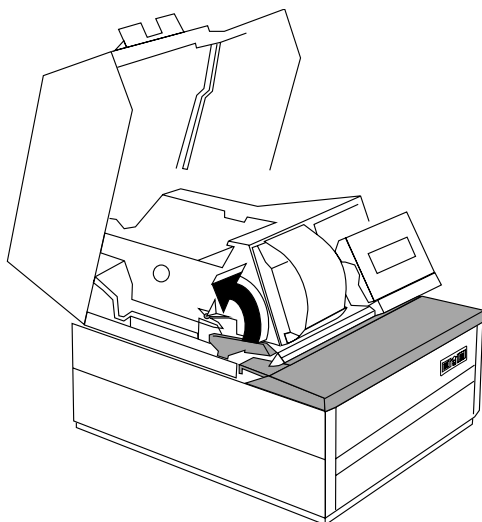
Be careful to leave enough receipt/journal paper for it to be removed. If it is not possible to remove the paper using the paper feed buttons, you can also remove it easily by hand.

Now remove the journal paper from the take-up spool and remove the empty paper core from the journal compartment. Next, skip to the instructions under "Insert journal roll".

Journal paper which has not yet be completely used up can also be removed without using the automatic paper feed function.



To do so, open the upper POS housing by pressing the release button while flipping back the POS housing.



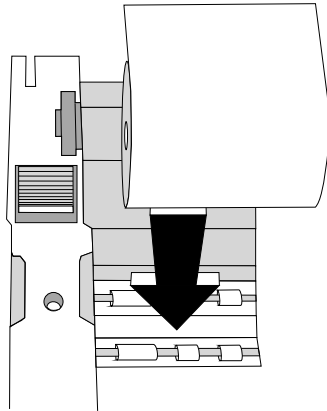
Remove the spool with the journal from the paper compartment, sever the journal paper and remove it from the spool. Then push back the green lever (see illustration) to lift up the printing unit. You can now pull the unused journal paper up and out of the paper compartment.



Do not pull the leftover paper from the paper compartment while the paper is still clamped in the paper feed.

Pull the lever toward you to lower the printing unit. Now close the POS housing until you hear it lock into place.

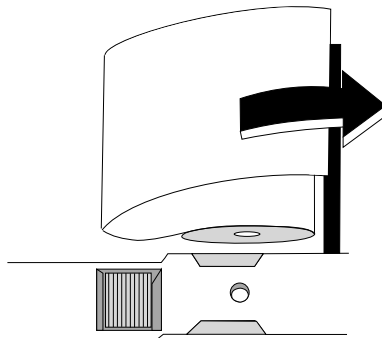
#### Insert journal roll



Open the paper compartment cover. Make sure that the paper on the new journal roll is evenly cut. Insert the new journal roll in the paper compartment as shown in the illustration.

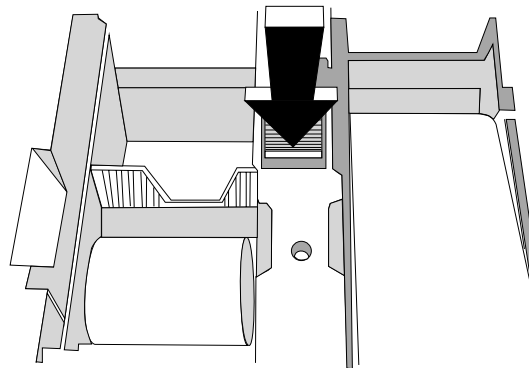


Use only paper that is intended for your application and is approved for the printer. You may also have to install the spacers (see "Inserting spacers").

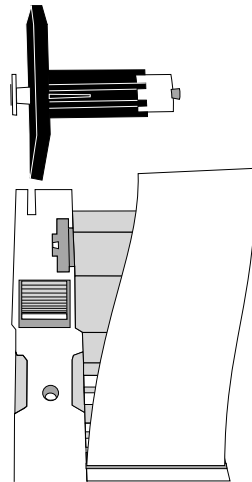


Now place the end of the paper over the drive roll in the paper feed compartment. It has reached the insertion position when the paper feed motor is momentarily triggered.

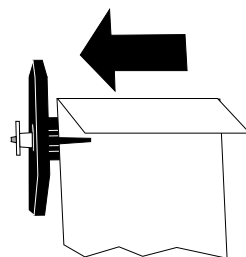




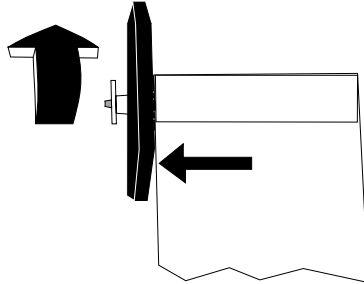
The journal paper is fed in when the green feed key is fully depressed.



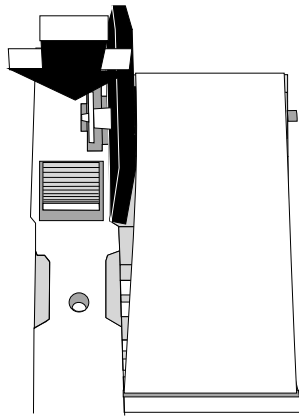
Hold the button down until the paper protrudes from the journal opening far enough to be threaded onto the spool.



Fold the paper over approx. 2 cm from the edge and tread it underneath the black pin onto the spool.



The paper should be flush left on the spool. Rotate the roll backwards several turns in order to ensure that the paper is securely fastened.



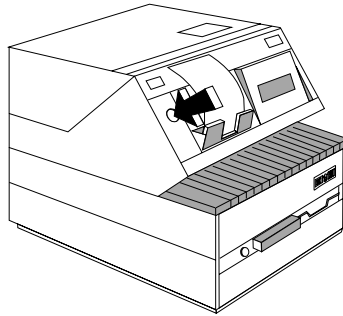
Then place the spool in the take-up slot and press the green button once again until the journal paper is taught and there is no longer a loop in the paper.

Close the paper compartment cover. Your POS terminal is once again ready for operation.

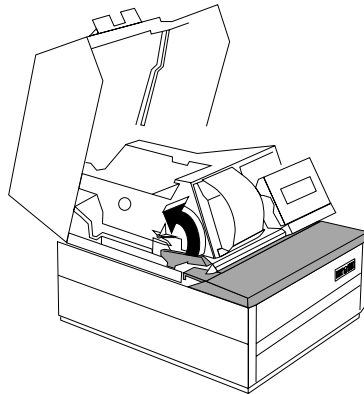


Always finish changing the paper on one print station before beginning another, since a paper feed is possible on one print station only. It is not possible to change stations or install paper in two print stations at once.

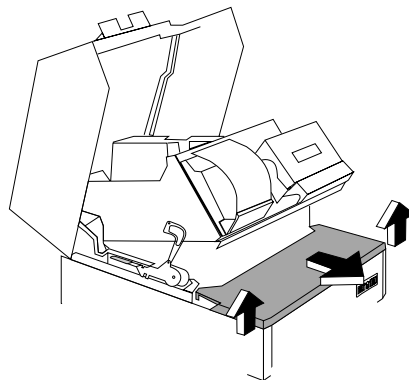
### Changing the ribbon cassette



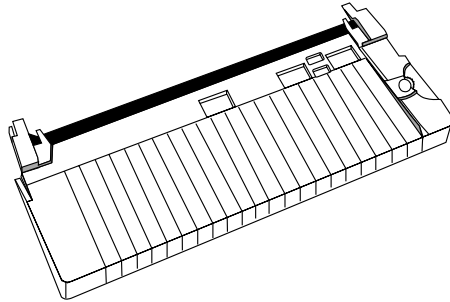
Open the upper POS housing by pressing the release button while flipping back the POS housing.



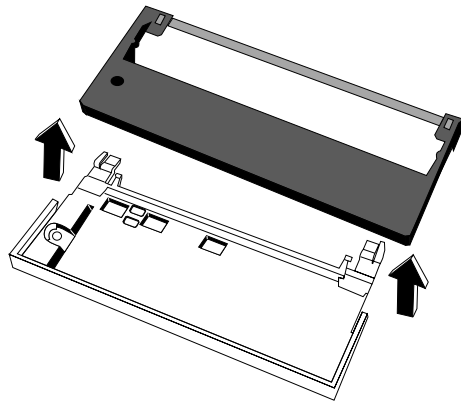
Push back the green lever (see illustration) to lift up the printing unit. The document rest is now accessible.



Grasp the dark-gray document rest on the right- and left-hand sides between your thumbs and forefingers. Lift the rest slightly and remove it by pulling it out of the POS housing.



The ribbon cassette is located on the underside of the document rest. The ribbon can be pulled taut using the rotary knob on the right-hand side of the cassette.

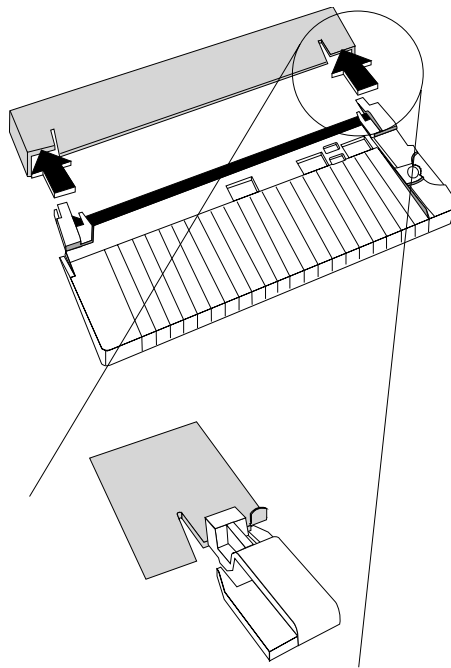


You can now remove the ribbon cassette from the document rest.



Make sure that ribbon cassettes are disposed of in the correct manner (see chapter "Recycling").

Remove the new ribbon cassette from its packaging. Place the new ribbon cassette in the back of the document rest, making sure that it locks correctly into place. Before replacing the cassette in the POS housing, tension the ribbon by rotating the knob at the end.



Replace the document rest in the POS housing.

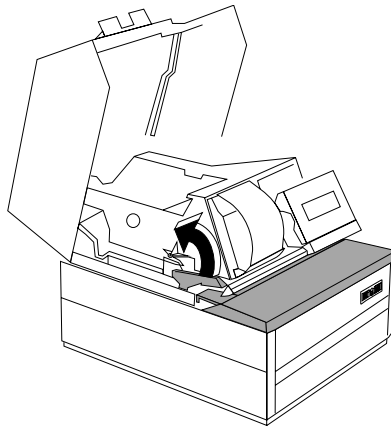
It is possible that the document rest is pushed in at the wrong angle. Make sure that the guide clips fit correctly into place.

Push the document rest lightly until it snaps into place.

Pull the lever toward you to lower the printing unit. Close the housing until you hear it lock into place. Your POS terminal is once again ready for operation.

### Clearing paper jams

First open the upper POS housing by pressing the release button to the left of the receipt output and holding it down while flipping back the POS housing.



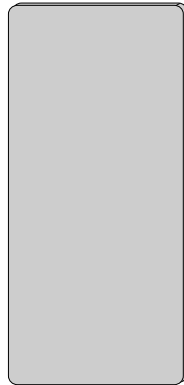
Push back the green lever (see illustration) to lift up the printing unit. Remove the paper roll. You can now locate the jam.

After clearing the paper jam, pull the lever toward you, then put the paper back in the paper feed chute.

Close the POS housing until you hear it lock into place.

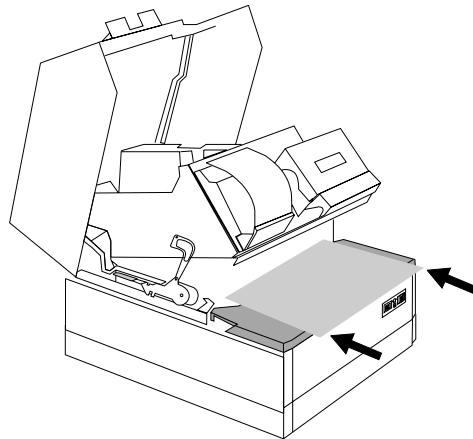


Always remove residual paper carefully in order to avoid damaging the unit.

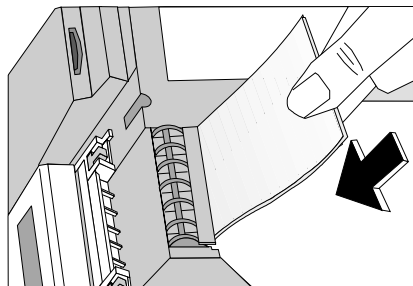


Have a look into the paper feed chute too.

Any residual paper that has accumulated can be removed using the special slide supplied.



First of all, place a sheet of DIN A4 paper underneath the printing unit in order to protect the ribbon underneath against dirt.

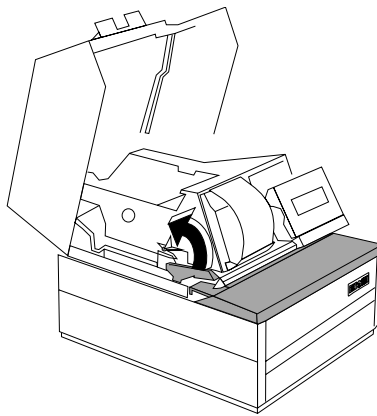


Insert the slide in the paper feed chute until the residual paper falls out on the sheet of DIN A4. Now you can remove the residual paper together with the sheet carefully.

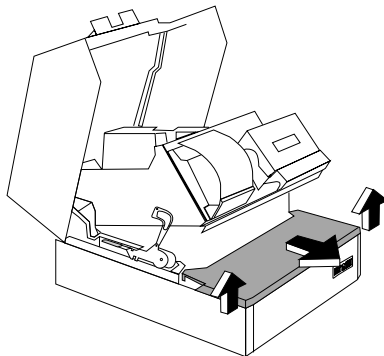
### Changing the print head

The print head is underneath the document rest.

To change the print head, proceed as follows:  
Switch off the power switch on the back of the POS housing and disconnect the power plug from the power supply. Now open the upper POS housing by pressing the release button to the left of the receipt output and holding it down while flipping back the POS housing.



Push back the green lever to lift up the printing unit.

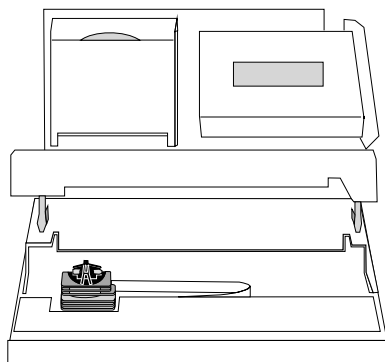


Remove the document rest with the ribbon.  
The print head is now visible.



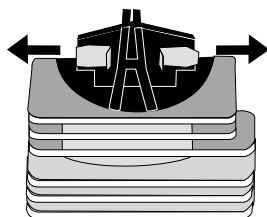


**Caution!** The **print head** may be **hot**. Allow it to cool before handling.



Position the print head in front of the recess of the metal plate by pushing it to the side.

To remove the print head from the carriage, you must first open the retaining clips.



Press the clips to either side. The print head is now loose on the carriage and can be easily removed.

Then disconnect the connector of the flexible cable by pulling it downwards.

To install the new print head, follow the steps above in reverse order.

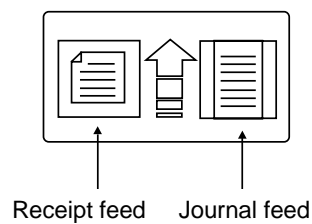
### Checking the receipt and journal entries

A receipt and journal feed key is located on the front panel of the BEETLE. This touchsensitive key can be used to advance the receipt and journal paper. The last entries on the receipt and journal can thus, for example, be checked if there are any discrepancies.

### Receipt and journal feed key

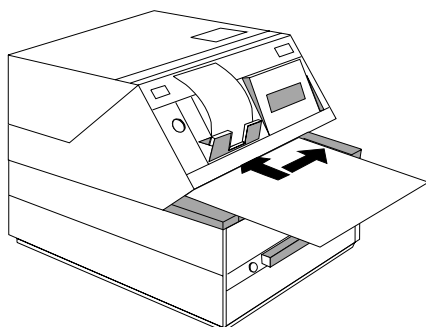
A line feed is performed on the appropriate station by pressing one of these touchsensitive keys. The printer performs continuous line feeds if the touch-sensitive key is held depressed for longer than 2 seconds (approx.).

The line feeds are performed slowly (approx. 7 lines/sec.) if the cover is closed and quickly if the cover is open.



## Document printing

The printer of the BEETLE/60 prints documents of various sizes up to A4. The printable area and the paper specifications are given in the appendix.

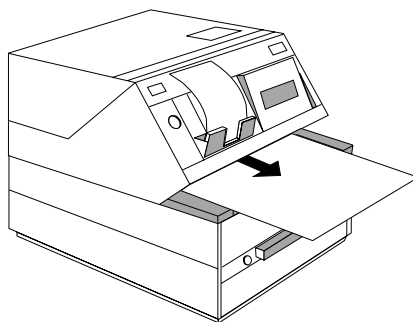


When requested to do so by the application program (by means of a message on the cashier display, for example), place the document against the guide edge on the right of the document rest.

This applies particularly to documents that are narrower than A4, so that the document sensors can detect the paper and so that the paper can be drawn in correctly. Push the document toward the input mechanism until the paper is taken by the rollers (and the transport motors start).



Always place the side of the paper to be printed face down.



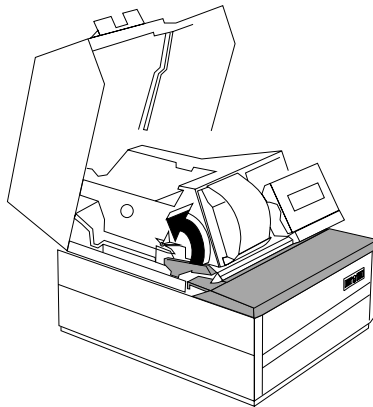
When the document has been printed, it is output from the printer and can be removed.



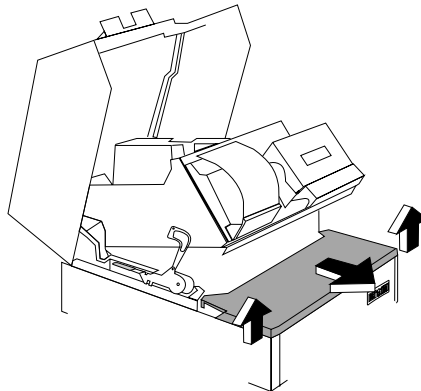
If the document sensors detect the end of a document during document processing although there is still print data in the printer controller, printing terminates.

### Cleaning the printing unit

To ensure that the printing unit functions perfectly at all times, it must be cleaned at regular intervals. To do this, set the power switch on the back of the POS housing to position 0 (off) and remove the connector from the mains power supply. Then open the upper POS housing by pressing and holding down the release button next to where the receipts are output, and tipping back the POS housing.



Push the green lever back to raise the printing unit.

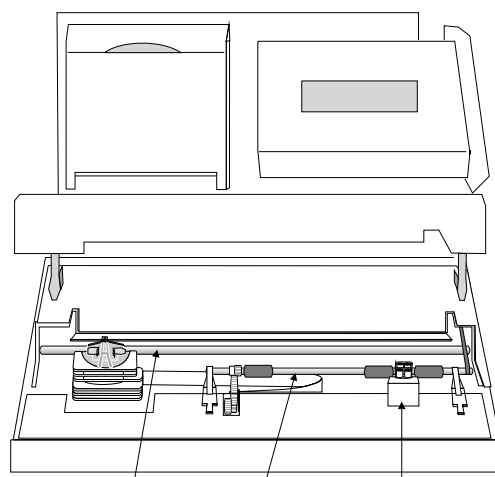


Remove the document rest together with the ribbon. You will now be able to see the printing unit.

Clean the document transport rollers and pressure rollers and the receipt/journal drive rollers with a soft, clean, non-fluffy cloth, which you

can moisten slightly with spirit. The whole document area can be cleaned in the same way. You can use a brush or cotton bud to reach inaccessible places.

Clean the document sensor housing and the reflector opposite it using a clean cloth **without cleaning solution**.



Transport axis      Drive axis      Document sensor housing

#### Cleaning the transport axes of the print head

To avoid a slow operation of the print head carrier, from time to time you should clean the transport axes while they are mounted using a soft, clean, non-fluffy cloth or a soft brush.



Never use a cleaning fluid such as spirit, since this impairs the bearing's own lubrication. After cleaning the transport axes, do **not** grease or oil them.

## The BEETLE card

The BEETLE card, which is a credit-card-sized memory card, provides the BEETLE POS system with a storage medium characterized by a number of advantages, including:

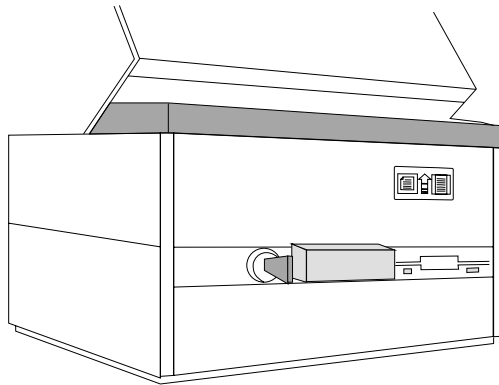
- High storage capacity
- Small size, thus taking up less space
- Mechanical robustness
- High data security (not magnetically sensitive)
- Relative insensitivity to moisture and heat
- Rapid data access, since it has no mechanically moving parts

BEETLE cards can be used for a variety of applications, such as:

- Loading programs
- Saving data (e.g. daily sales figures)
- Access control ("electronic key")

There is already an internationally valid standard for memory cards (PCMCIA/JEIDA). This means that you can use cards of the same type made by different manufacturers.

The BEETLE allows you to use cards with a storage capacity of up to 64 MB.



The slot for the BEETLE cards has a locking cover. The lock is located to the left of the slot.

### The various card types

You can use the following memory cards as standard BEETLE Cards:

SRAM card	Readable and writeable
MASK ROM card	Readable
OTPROM card	Readable
FLASH EPROM card	Readable (with 80486DX/2 and Pentium CPU: deletable, writeable, readable)

The following briefly describes the characteristics of the useable cards.

#### SRAM Card

This card type can be read and written to by the system any number of times. You can write protect the SRAM card to prevent accidental overwriting of the stored data.

An integral battery is used for the retention of data. The length of time data is retained depends on the life of the battery, which in turn depends on the storage capacity of the card used.

### MASK ROM Card

The data contents of this card are determined by the manufacturer of its memory chips and cannot be subsequently modified.

### OTPROM Card

Data can be written to this card once and can then no longer be modified. The card is written to in special memory disk drives only.

### FLASH EPROM Card

Data can be written to and erased from these cards electronically. Consequently, they are ideal for data subject to frequent modification. The cards can be written to in special memory card drives only (with the 80486DX/2 and pentium CPU, also in the BEETLE). FLASH EPROM cards do not require batteries for data retention.

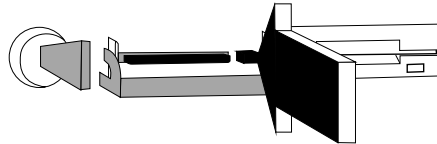


If you have any further questions about BEETLE cards, contact the WN branch office responsible for your area.

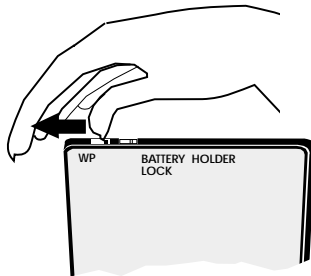
### Inserting the BEETLE Card

Insert the card, connector-end first, in the slot for the BEETLE card. The card has been correctly inserted if the black ejection button next to the slot has popped out.



**Removing the BEETLE card**

If necessary, first unlock the cover. Then press the black ejection button next to the slot. You can now remove the card.

**Write protection for SRAM cards**

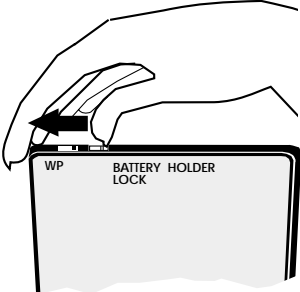
To write protect the SRAM-type BEETLE card, slide the lock shown in the illustration to the WP (write protection) position.

**Changing the battery for SRAM cards**

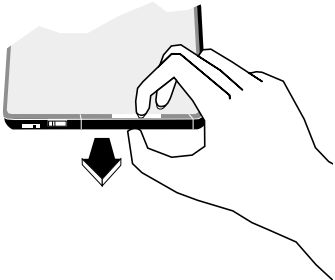
The illustrations below show you how to change the battery for this type of BEEBLE card.



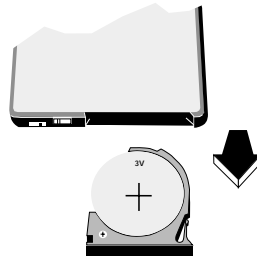
Changing the battery without losing the stored data is possible only in the case of memory cards made by certain manufacturers. For more information, contact the WN branch office responsible for your area.



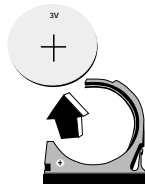
Unlatch the battery lock



Remove the battery holder and battery from the BEEBLE card



Battery in the holder.  
The battery's positive  
terminal is face up.



Lift the battery up  
and out.

To insert the new battery, follow the steps above in reverse order.



Avoid touching the plus and minus pole at the same time as this can shorten the service life of the battery. Dispose of used batteries in an environmentally safe manner.

## Floppy drive

### General

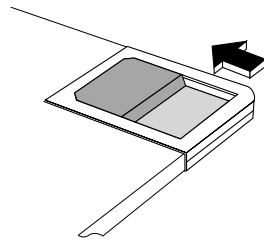
The BEETLE POS system can, if desired, be supplied with a 3 1/2 disk drive.

The floppy drive has an LED indicator that lights up whenever the system accesses the drive.

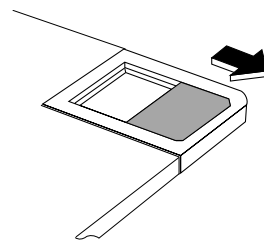
The disk is an economical storage medium which can be used for a variety of applications, such as:

- Loading programs
- Saving data (e.g. daily sales figures)

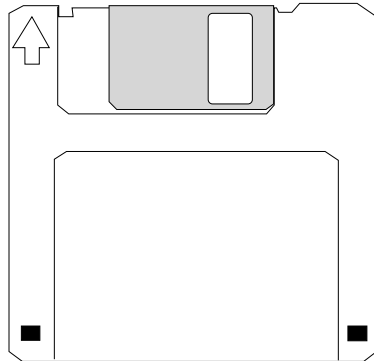
The diskette can be write protected to protect your data from accidentally being overwritten.



Writing to the diskette is possible.



Writing to the diskette is not possible.

**Inserting a diskette**

Hold the diskette so that the arrow symbol is at the top and points away from you. Then insert the diskette in the drive slot.

The diskette has been correctly inserted if the gray ejection button has popped out.

**Removing a diskette**

Press the gray ejection button next to the drive slot. You can now remove the diskette.



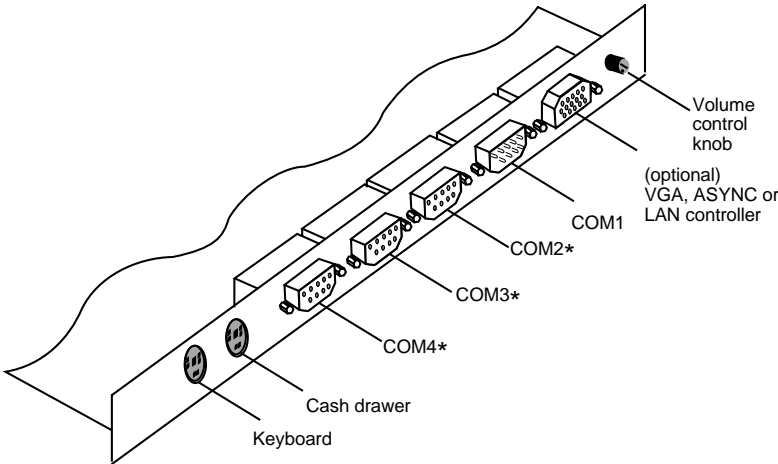
Never remove the diskette while the drive is being accessed, i.e. when the LED indicator for the drive is illuminated. Otherwise, you could damage the drive and the diskette.

# CPU

## General

The CPU of the BEETLE POS system comprises a specially developed board which, in addition to the PC-specific modules and interfaces, also houses components such as a non-volatile memory and **one** optional submodule such as a VGA controller, an LAN controller or an ASYNC connection etc.

The connecting plate of the board has the sockets for the external peripherals. The illustration below shows the connector assignments for both CPUs.



### Interfaces

The BEETLE/60 is equipped with the interface COM1 for connecting standard peripherals that have a separate power supply (e.g. scales). The interfaces COM2, COM3 and COM4 are used in order to connect special POS peripherals that do not have a separate power supply.



Connect only devices approved by WN to your BEETLE POS system. If you have any questions, contact the WN branch office responsible for your area.

### Loudspeaker

The CPU controls a loudspeaker in the BEETLE, the volume of which can be set by means of the volume control knob on the back of the BEETLE POS housing.

Further features of the CPU are:

### Nonvolatile RAM

This memory chip (32, 128, 512 KB) can be used to store important data - such as sales totals or diagnostic entries - by means of the appropriate software and independently of the power supply. The data is retained for more than 5 years.

### Dynamic RAM

This memory (2, 4, 8, 16 MB) is required for the operating system and the application program whilst these are being executed.

### Connection options

The CPU is designed so that expansions are possible at any time, as desired.

#### Connecting a hard disk

A hard disk can be connected to the CPU. This disk serves to store the operating system and POS-specific software. It can also be used for the long-term storage of the electronic journal. 3.5" hard disks are available. These disks have a 16-bit IDE (integrated drive electronics) AT-bus system interface and an integrated controller. For the default settings and technical data for the hard disks, see the Appendix or the configuration label. The configuration label is located on the cover panel of the lower section of the POS housing (visible after demounting the upper housing).

#### Free AT slots

The POS housing with a 486 CPU has four free slots. Three of these slots can be used for half-length standard PC boards and one slot is provided for full-length expansion boards. Along with a Pentium CPU three short slots are provided.

#### VGA slot

If a VGA board or VGA submodule is installed, you can connect a VGA monitor to the BEETLE. Some system messages will not be displayed if there is no monitor connected in spite of the fact that a VGA board is installed.

#### ASYNC controller (VGA slot)

The RS232 interface board is an additional serial interface (without separate power supply) for connecting various peripherals. It should be noted here that the total power supply of all of the powered interfaces must not exceed 900 mA at +12 V and 300 mA at +5 V.



LAN controller ((VGA slot))

This controller can be used to connect the BEETLE to a network.

## Connecting to a network

If you wish to operate the BEETLE POS system in a network, you must have a network controller is required which can be plugged into the CPU has a submodule or into a free AT slot as a board. For instructions on how to install expansion boards, see the Appendix.

## Power pack and battery

The power pack can be connected to all conventional power supply networks. It automatically adjusts itself to the particular voltage and is fan-cooled. The power output of the power pack is maximum 160 W.



The power pack must be removed or replaced by authorized qualified personnel only.

The POS system is also equipped with a battery, which serves to bridge a possible power failure, thus allowing the relevant software to correctly terminate the POS program.

The switchover is made by means of an internal POWER management interface.

In addition, the power pack has a charging circuit for the battery.



Battery charging time is approx. 8 hours after initial startup. The battery is then float-charged. The application program can, if necessary, switch to quick-charge mode. The battery is charged only while the system is switched on.

The power cord receptacle (rubber connector), the power switch and the power output socket (rubber socket) for the monitor are located on the back of the BEETLE POS system.

The table below provides an overview of how long the BEETLE is supplied with battery power in the event of a power failure (with the battery fully charged).

During of power supply	Power output	Operation
1 minute	Full load (max. 160W)	with external peripherals
5 minutes	Medium load (ca. 100 W)	e.g. printer running
10 minutes	Low load (ca. 50 W)	e. g. device switched on



A monitor connected to the power output socket of the POS terminal is not powered during a power failure.

### Changing the battery

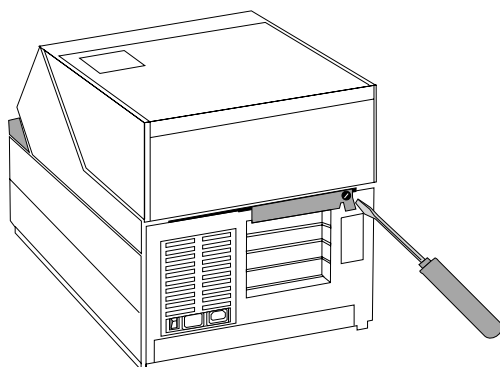
All batteries have a limited service life. In order to prevent any loss of data, you must change the battery regularly (after five years at the latest).



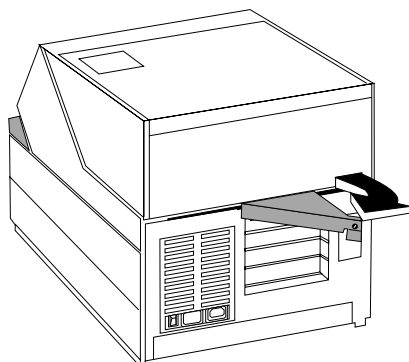
Use only batteries approved by WN.

To change the battery, proceed as follows:

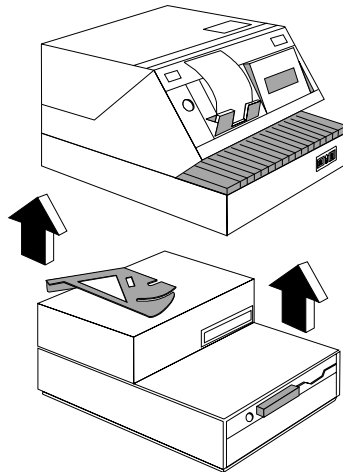
Make sure that the device is switched off and the power plug is disconnected. To access the battery, lift up the upper POS housing with the printer and remove the left-hand side section from the lower section.



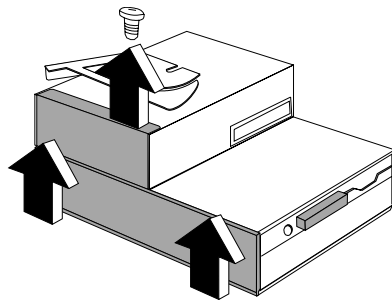
First loosen and remove the fastening screw for the release lever on the back of the POS housing.



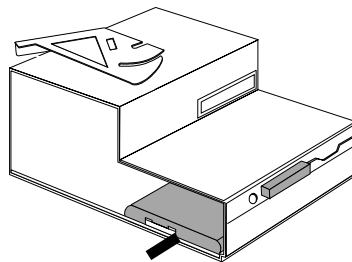
Now push the release lever back as far as it will go; the upper POS housing is pushed forward and the plug-in connections to the printer are disconnected. The upper POS housing is now completely separated from the lower housing.



Pull the upper housing another inch or two toward you and lift it up and off the lower housing.



Unscrew the screw on the upper side of the left-hand side section and then remove this section: Pull the side section upwards out of the guide.



The battery is located at the front of the lower POS housing (see arrow). Release this holder and remove the battery from the housing. Unplug the connection.

The battery is now fully disconnected from the system.

When installing the battery, follow the steps above in reverse order. Pay special attention to the following:

- Make sure the cable with the plug-in connection faces left and is securely connected to the system.
- The side section must be correctly introduced into the guides from above, fully locked into place and fastened from above by means of the screw.
- Be careful when replacing the upper POS housing on the lower. The release lever must be moved fully into the release position.
- The connection is reestablished by pulling the release lever toward the POS housing, thus drawing the upper POS housing onto the lower housing. The two housing sections are again flush with one another.
- Secure the release lever using the appropriate screw.



Always dispose of batteries in an environmentally safe manner. The local regulations for the disposal of hazardous waste must be observed

**Security against power failure**

An important feature of the BEETLE POS system is the security facilities that operate in the event of a power failure.

When the power fails, the system remains fully functional for a short period of time. The power needed for further operation is supplied by the battery.

This means that a system power failure is delayed for a short time.

Due to the fact that operation is maintained with the aid of a battery, an application program designed with this in mind can be terminated correctly without any loss of data.

The power failure is reported to the application program by means of the retail device interface (RDI). The application program then terminates the program correctly by, for example, closing open files and writing important information to the nonvolatile memory (CMOS RAM).

The termination of these actions is reported by means of the retail device interface. This causes the system to be switched off, which also prevents it from being discharged too severely.



A monitor connected to the power output jack of the POS terminal is not powered during a power failure.

## Changing the BEETLE/60 battery

The BEETLE is equipped with a lithium battery mounted on the CPU that ensures that the correct time and date are maintained.

Please contact the customer service department of Wincor Nixdorf GmbH & Co. KG if it should be necessary to change the battery.



The lithium battery in the unit must only be replaced by **trained personnel**. There is a danger of the unit exploding if the battery is not replaced correctly. Batteries should only be replaced with batteries of the same type or with batteries recommended by the manufacturer. The local regulations for the disposal of hazardous waste must be observed when disposing of batteries.

## Software

### Operating system

The BEETLE /60 POS system runs under the MS-DOS operating system that was specially expanded for POS applications.

This makes it possible, for example, to display all system messages on the cashier display. These messages are appropriately adapted to the format of the cashier display.

Further information on the following programs can be found in the BEETLE system manual and detailed descriptions in the respective manuals.

### Retail device interface

The retail device interface (RDI) is a uniform C programming interface for the BEETLE POS system.

This interface provides the application programmer with a simple means of programming retail-specific applications and devices.

### Application programs

Application programs are available for the BEETLE /60 POS system that meet retail-specific requirements. For more information, contact the Wincor Nixdorf GmbH & Co. KG branch office responsible for your area.



## **Retail message handler**

The Retail Message Handler (RMH) transfers data in a local area network (LAN) in the form of messages between processes on the local or remote hosts. It is irrelevant whether these hosts are SINIX or MS-DOS systems.

## **Retail presentation manager**

The retail presentation manager (RPM) is provided as a uniform tool (MS-DOS and UNIX) for input and output format specification. The RPM significantly reduces the development outlay for POS applications. For more information, see the RPM manual.

## **Retail transaction manager**

The retail transaction manager (RTM) forms the link between the POS application and the operating system. The RTM allows the accessing of shared data, including price lookup and the maintenance of transaction files. For more information, see the RTM manual.

## **High frequency table**

The price look ups (PLU) in the retail area are performed using the High Frequency Table (HFT). The HFT provides functional libraries with uniform interfaces for this purpose.

## **Hash file access method**

Similar to the HFT, the Hash File Access Method (HSF) is primarily used for price look ups. The extensive article data on the mass storage can be managed with HSF. To this effect, the article file is specially structured when it is created. This structure, in conjunction with the access method for "hash" files, provides particularly short search times.

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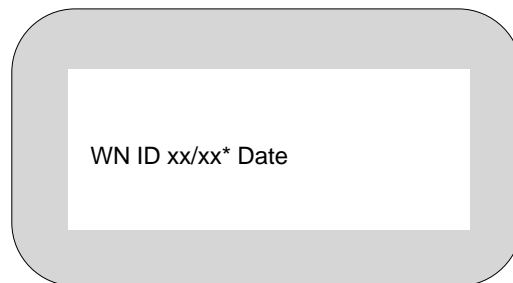
## Starting up the system

The configuration label shows you the equipment included in your BEETLE /60 POS system. A sample is contained in the Appendix (page GB-97). The label is located on the cover panel of the lower POS housing. The data specified on this label is required when entering the setup parameters (see setup).

### Start and runup behavior

After installing the BEETLE, switch on the POS system by means of the power switch on the back of the housing. The system first performs an automatic self-test to test its basic functions.

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



\* xx/xx is the placeholder for the version number

The system then determines the medium from which the operating system and POS application are to be booted. Each medium is assigned a logical drive according to the configuration of your BEETLE POS system.

The following media can be assigned a drive:

- Diskette
- BEETLE card
- Network
- Hard disk

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

If the system is to be booted from the BEETLE card or from a diskette, this medium must always be assigned drive A:. It is also possible however, to assign B: to the BEETLE card or diskette if you wish to use the card/diskette as a pure storage medium. The network is always assigned drive C:. The hard disk can be assigned drive C: or D:.

The BEETLE POS system can be booted from two drives. However, please note the following restrictions:

- The system can be booted from drives A: and C: only.
- The storage medium must be system-boot-capable.

The following priorities apply:

BEETLE Card or diskette (A:)	High priority
Network (C:)	Medium priority
Hard disk (C:)	Low priority

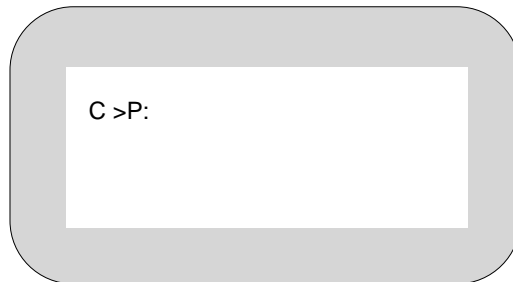
The POS system always attempts to boot from the BEETLE card or diskette first, if they are inserted in the appropriate drive.

If the POS system does not find a BEETLE card or diskette in drive A:, it automatically continues the loading process from drive C:, i.e. from the network (medium priority) or from the hard disk (low priority).



If drive A: contains a BEETLE card or diskette on which the operating system is not stored, the POS system cannot be booted. In this case, either replace the card or diskette with one that is system-boot-capable or remove the card or diskette altogether.

The operating system responds with additional messages on the cashier display or on the monitor, as shown in the illustration below.

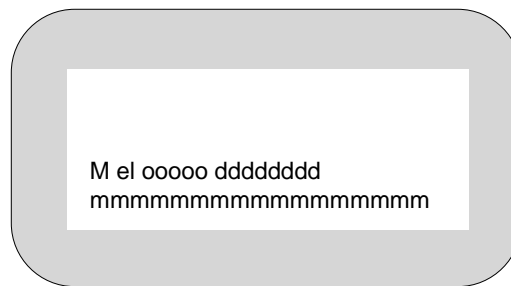


If the operating system has started up without error, the POS application software is, if necessary, booted automatically.

A message is displayed as soon as the POS workstation is ready for operation. For more detailed information, see the description of your application program.

**Output of MS-DOS system error messages**

All system error messages are displayed on the cashier display or on the monitor. The messages are displayed on two lines as shown below:



The individual entries have the following meanings:

<b>M</b>	Reserved
<b>e</b>	MS-DOS error No. 0..C HEX (see appendix for description)
<b>l</b>	Indicates where error occurred
	0 Reserved sector (MS-DOS area)
	1 File allocation table (FAT)
	2 Directory
	3 Data area
<b>00000</b>	"Read" or "write" operation
<b>ddddddd</b>	Block device driver: Drive, e.g. "C: "
	Character device driver: Name, e.g. "COM1 "
<b>mm...mm</b>	Message text: e.g. "Write protect error"

If such an error message appears, acknowledge it by pressing the C key on the POS keyboard. The operating system then repeats the previous message.

**Power-on selftest (POST)**

Phoenix POST is used as standard which checks the standard PC-AT components of the mother board to make sure they are functioning correctly. Phoenix POST has been expanded to include a number of functional tests in order to be able to test POS-specific functions.

The error messages are output on the cashier display, the external cashier display or on the VGA monitor. The cashier display and the monitor have high priority - the messages are always output on the monitor if the VGA board is plugged in. Error messages are only output on the external cashier display if there is no monitor or cashier display connected.

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

**TEST POS TEST TYPE ERROR NUMBER**  
**Error text**

The error messages output during the test are always in English. Below is an example of an error message output on the cashier display:

**TEST POS MC 02**  
**BATTERY EMPTY**  
**ANY KEY TO RETRY**



During the power-on selftest, static errors are localized with a high degree of reliability; sporadic errors are localized only to a limited extent.

Please contact your customer service engineer or the customer service department if POST reports an error. You will find the POST error messages in the appendix.

## BIOS Setup

In Setup, important basic settings are made that are necessary for the correct operation of your POS system. These settings include, for example, the date and time, the assignment of a specific drive name (A: or B:) to the BEETLE card or parameters for the hard disk.

You have several options for calling up Setup:

- If you are using a standard PC keyboard, press **Ctrl, Alt** and **ESC** simultaneously during the runup phase.
- Setup is called up if the **keyswitch** on the POS keyboard is set to position **4** during the runup phase.
- If the configuration is errored, you can decide whether the system should ignore the error or should call up Setup.

The default output medium for the BEETLE POS system is the 4-line, 20-column cashier display. If a VGA monitor is connected, information is output to the monitor.

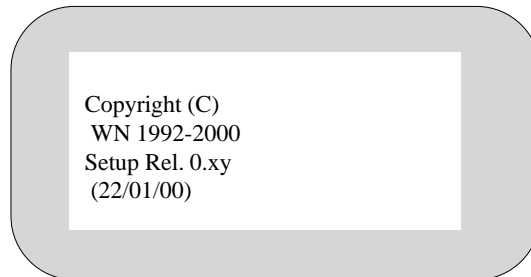


The system messages are not displayed if there is no monitor connected in spite of the fact that a VGA board has been plugged in.

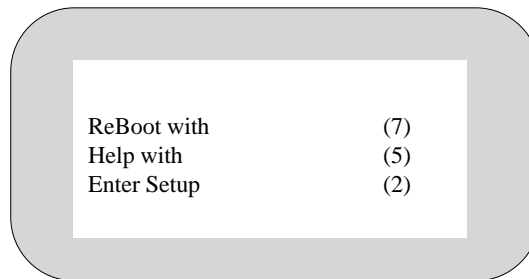
If there is no VGA card, you have to set the display entry to "MONO" or "OPERATOR" (systems with 80486DX2/66 processor or upper versions) so that the outputs can be seen on the connected cashier display.

The entries in the menus below are intended to serve as **examples**. If you are uncertain of any information, consult the configuration label. You will find an illustration of the label on page GB-97.

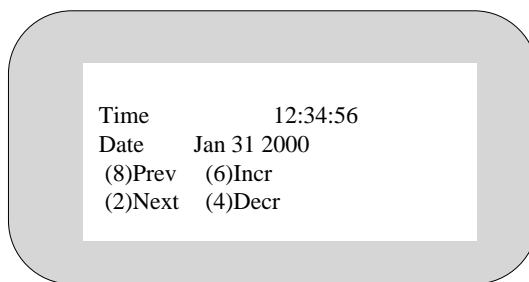
When Setup is called, first the Copyright message is output. For example:



The first menu then appears. Menus are controlled by pressing the numeric keys specified in parentheses.



Pressing the numeric key (2) allows you to set the date and time in a further menu. (7) reboots the system.

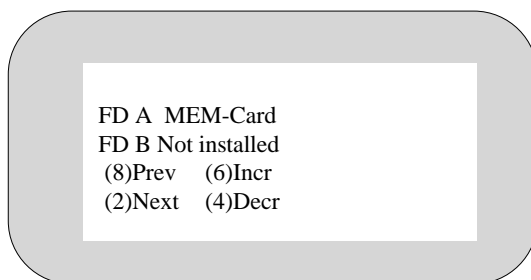




In the examples below, the numeric keys (8), (2), (6), (4), (5) and (7) have the following meanings:

- (8) Prev (previous)      The cursor is moved to a previous field or menu
- (2) Next                    If the cursor is in the first/last field, the preceding/  
subsequent menu is called with these two keys
- (6) Incr (increment)      Increments a value in the field
- (4) Decr (decrement)     Decrements a value in the field
- (5)                            Calls the help function (key assignments)
- (7)                            Reboots the system.

Following the menu for setting the time and date, the menu for the drive settings appears.

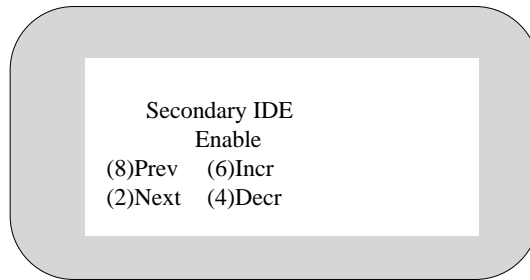


Enter settings for drives A: and B: (BEETLE card or diskette) here.

With the Pentium CPU you have the opportunity to install up to four hard disks. This adaption is carried out with two seperate physical interfaces. Therefore the Setup masks have been adapted with the following allocation:

Pentium	before
PRI MASTR	HD C
PRI Slave	HD D
SEC MASTR	not available
SEC SLAVE	not available

The SECONDary connection is only visible if the following mask in the Setup is set to "Enable".



The terms MASTR/SLAVE are the same as the setting on the IDE disks.



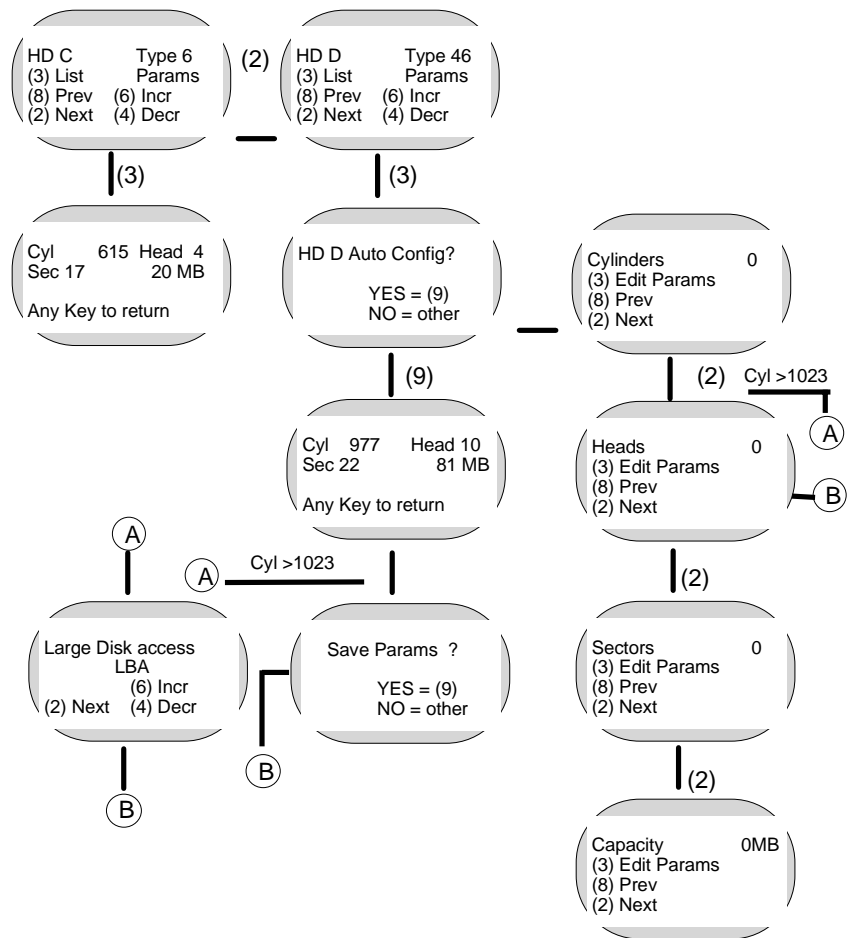
Take care that a bootable disk always must be configured as MASTR and be plugged in the PRImary connector. A single disk configured as SLAVE will not be recognized by the BIOS.

Besides this changing along with the Pentium CPU the item "AUTO" is added for disk configuration. With this configuration the hard disk parameters are read from the BIOS at every bootprocess and written into the CMOS RAM. The message "FDISK n Identified" will appear on the connected display. For that reason the Setup does not have to be called up again when a hard disk has been changed.

The following description only refers to the automatic configuration of an IDE disk during the Setup phase.

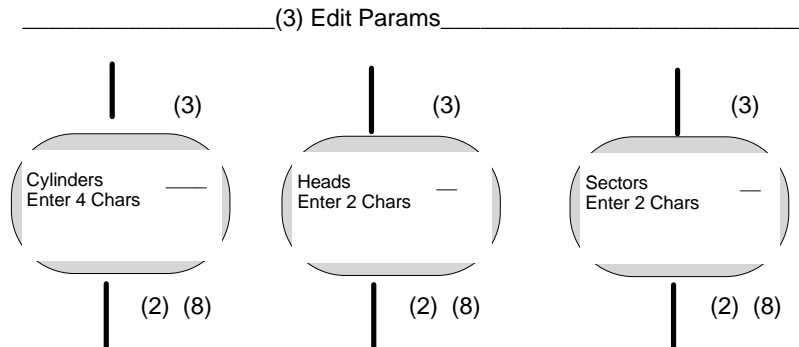
The hard disks can be configured automatically in Setup. The necessary parameters are read by the hard disk and stored in the CMOS RAM.

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





In the case of the 80486DX2 CPU and upper version, the hard disk types are 1-39 and User Type. "Type 46" in the above example is therefore replaced by "User Type".



As shown in the diagram, there are four basic settings in total:

1. Use the automatic configuration facility in Setup, in which the parameters are read from the hard disk automatically and entered accordingly.
2. Alternativ select a disk drive which coincides with a specified type (no. 1 to no. 44 or, in the case of the 80486DX2 CPU, no. 1 to no. 39).
3. Enter a configuration manually using the parameters specified in the documentation for IDE hard disks.
4. (Only possible with Pentium CPU). Setting the item to "AUTO", the BIOS will automatically configure the IDE disk with every bootprocess.



If a ROM disk is installed, only **one** hard disk can be installed. This must be entered as number 46. Number 47 cannot be accessed (80486DX2 and upper version does *not* have a ROM disk).

The following table shows the configuration options for hard disks and a ROM disk:

System	Drive C:>	Drive D:>
Hardware		
Harddisk Master	Auto (46/47)	Manual*
Harddisk Slave	Not possible	Auto (46/47)
ROM disk	Auto (ROMdisk)	Auto (ROM disk)

Only one ROM disk can be installed. The following is a brief explanation of the table:

Auto = Use the automatic installation facility in Setup

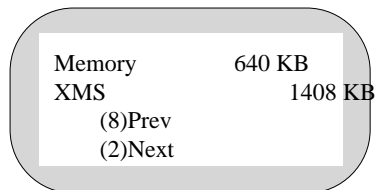
Master = Jumper hard disk as master eingestellt

Slave = Jumper hard disk as client (On board controller disabled)

\* Proceed as follows if you wish to configure the ROM disk as the C drive and the hard disk as the D drive:

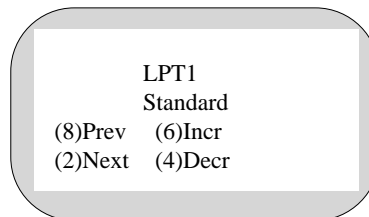
- 1) Select the hard disk type 46 in the mask "HD C",
- 2) Confirm the configuration with the numeric key 9 in the mask "Auto Config?",
- 3) Select the hard disk type 46 in the mask "HD D",
- 4) Select ROMdisk in the mask "HD C",
- 5) Confirm the configuration with the numeric key 9 in the mask "Auto Config?".

A further menu displays, *for example*, the memory configuration shown in the following mask:

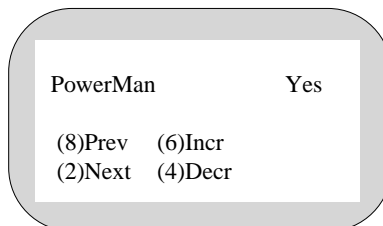


XMS stands for extended memory specification (above a memory capacity of 1 MB).

Beginning with the 80486DX2 system you can use the parallel interface LPT1 in standard mode and in the modes ECP, EEP v1.7 and EEP v1.9. Take your choice in the following menue ( If you are using **printers from WN** you choose **standard mode**):

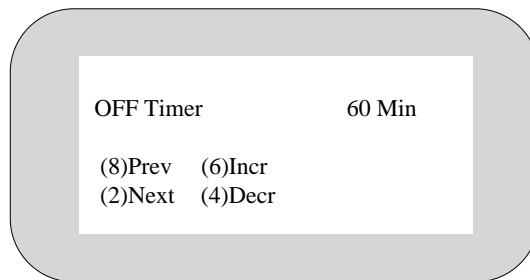


Beginning with the 80486DX2 system various operating mode settings (power management) are possible. When "NO" is set, the CPU is in normal mode (i.e. the system is working with full power draw). When "YES" is set, power management is activated.



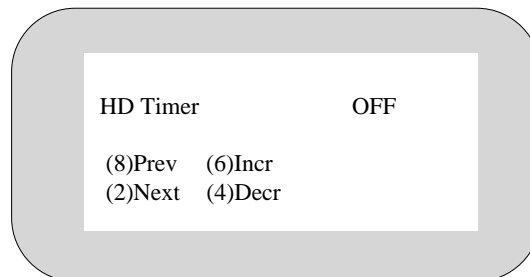
When "OFF Timer" is set, the CPU switches to sleep mode after the specified time has elapsed. If a screen saver is installed, it must be deactivated. The microprocessor is stopped at intervals and then clocked again at full speed. As a result, less power is used.

The background lighting of the cashier display is turned off, and if there is a monitor connected, it is blanked.



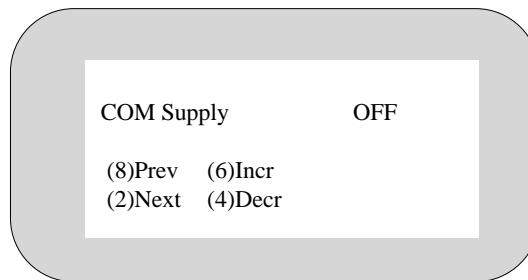
The hard disk timer can be set separately (OFF and 60 minutes).

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



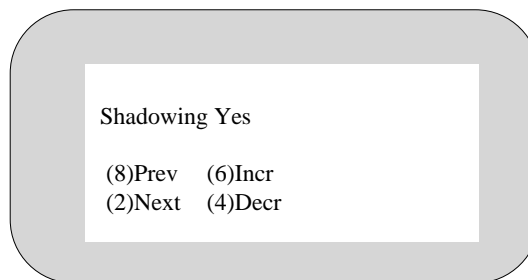
In addition, BIOS Setup lets you specify whether the power supply to the COM2\* to COM4\* serial interfaces is switched off in sleep mode (COM Supply ON) or not (COM Supply OFF).

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



All interrupts are processed in sleep mode; they are not lost.

The *shadowing* function can be used to increase the capacity of the entire system. The BIOS EPROM and the VGA EPROM are copied to the DRAM when this function is activated (in the case of the 80486SLC, BIOS and VGA shadowing; beginning with the 80486DX2, shadowing is always active).



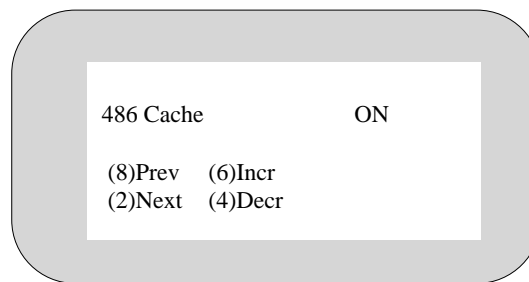


The CPU can thus be accessed more quickly, since it is now accessed with 0 wait states and 16- or 32-bit word length compared to a data word length of 8 bits in the case of the EPROMs.

If the shadowing function is deactivated, an additional 348 KB of memory is made available to the system.

The 80486SLC system has no splitting; in other words, if you do not use shadowing (i.e. if you set NO), the UMA memory (384 KB) is added to the physical memory. If you use shadowing (i.e. if you set YES), no mapping is carried out.

In the subsequent mask, which you only see on an 80486SLC system, it is possible to deactivate the internal cache of the CPU. However, this is not necessary if programs receive the appropriate instructions (e.g. to deactivate the cache during installation).

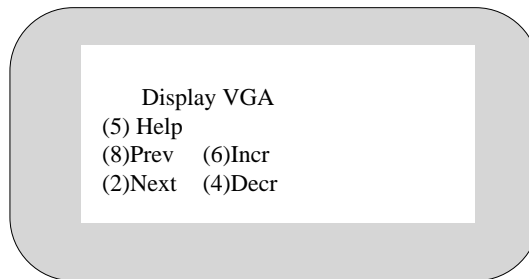


As of the 80486DX2 processor, the cache cannot be deactivated.

In the next mask, you can enter the card used for the display (mono for the cashier display or VGA for the monitor).

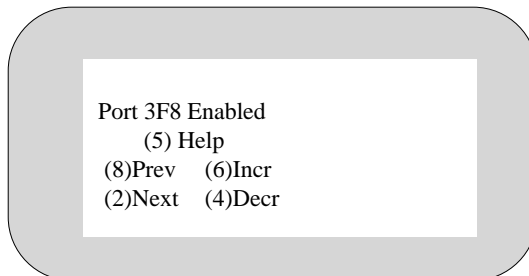


In the absence of a VGA card, the display entry must be set to "Mono" or "Operator" (beginning with processor type 80486DX2/66) so that the outputs appear on the cashier display.

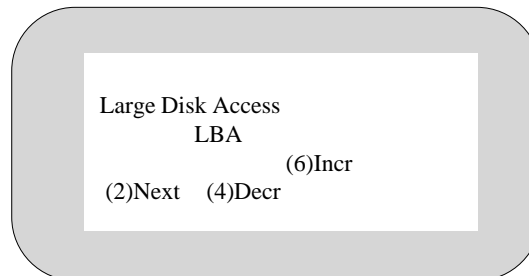


By pressing the numeric key (7) you can terminate Setup by rebooting the system.

In the case of the 80486SLC system, you can use the next menu option to deactivate the COM1 serial interface with its base address 3F8H. This makes sense if you insert an interface card with the I/O address 3F8 into the system. In the case of an 80486DX2 system, up to two interface cards can be installed (addresses 3F8 and 2F8). This automatically deactivates the on-board interfaces.



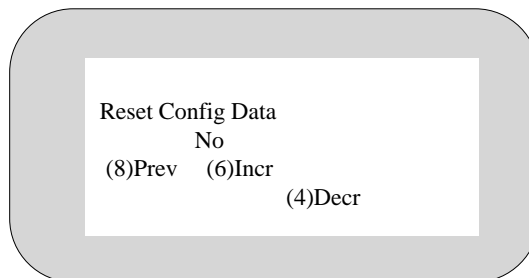
You only see the following mask in the Setup menu of BEETLE systems that are equipped with an 80486DX2/50 processor and upper version and have a hard disk with over 1023 cylinders. As of this size, the hard disk data must be handled by the BIOS and the MS-DOS operating system in a slightly modified form.



Setup offers you the following settings:

- Standard** The MS-DOS operating system can only be started from a partition that is less than or equal to 504 MB in size. The rest can only be used by other operating systems (e.g. Windows NT, OS/2).
- LBA** MS-DOS can be started from a partition up to 7.8 gigabytes (GB) in size.
- Non DOS** Use this setting when you want to install an operating system other than MS-DOS on your BEETLE.

In case of a Pentium CPU with the implemented Plug and Play and PCI configuration features the following mask will finally appear:



If you insert or remove a Plug and Play card into the BEETLE it is advisable to change the setting to "YES". The reset will be done automatically.

---

## Appendix

### Technical data for the BEETLE/60

Footprint:	
Width	280.0 mm
Depth	366.5 mm
Total height	270.0 mm
Weight	17.5 kg
Climatic category	IEC 721-3-3 Class 3K3
Operating temperature	5 - 40° C
Input voltage	110 - 125 VAC 200 - 240 VAC (automatic switchover)
Power consumption	4 / 2 A
Frequency of system voltage	50 /60 Hz

## CPU

<b>Microprocessor</b>	80486SLC	or	80486DX2	or	Pentium
<b>Architecture</b>	AT-compatible board with expansion options for POS specific functional units				
<b>Main memory</b>	2MB DRAM expandable to 16 MB		4 MB		8MB expandable to 64MB
<b>BIOS</b>	64 K		128 kB		128kB
<b>Keyboard interface</b>	AT-compatible				
<b>Loudspeaker</b>	Adjustable volume				
<b>Hard disk connection</b>	IDE interface, optional 3.5" disk				
<b>Floppy Disk connection</b>	Standard interface				
<b>Submodul (optional)</b>	One VGA controller, one LAN controller or one ASYNC connection <sup>(1)</sup> ...				
<b>Expansion-slots</b>	Four slots, (one full-length AT board three half-length AT boards		Three slots half-length AT boards		
<b>Non volatile RAM</b>	32, 128, 512 K, Data retention 5 years				
<b>BEETLE card-connection</b>	Standard interface (PCMCIA/JEIDA), max. 64 MB				

<sup>(1)</sup> The total current consumption of all of the interfaces (without a separate power supply) must not exceed 900 mA at +12 V and 300 mA at +5 V.

“CPU” continued:

Ports:	One serial interface (V.24 / RS232) COM1 without power supply.
	Three serial interfaces (V.24 / RS232) COM2*, COM3* and COM4*. The voltage supply must not exceed 300 mA at +5 V and 900 mA at +12 V.
	Two Mini-DIN jacks for cash drawer and keyboard.
	optional with submodule: one VGA connection or one LAN connection or one ASYNC connection

## Printer

<b>Basic line spacing</b>	4.23 mm				
Blank line feed	Receipt	30 lines/s			
	Journal	30 lines/s			
No. of characters at	15.6	14	11.6	10	cpi
40.0 mm Receipt/Journal	20	18	15	13	
45.0 mm Receipt/Journal	23	20	17	15	
58.0 mm Receipt/Journal	32	28	24	20	
64.0 mm Receipt/Journal	34	31	26	22	
69.0 mm Receipt/Journal	37	34	28	24	
76.2 mm Receipt/Journal	42	38	31	27	
DIN A4 document	124	112	93	80	
Printing	Bidirectional				
Max. printing rate	4 lines/s (printing receipt on 76.2 mm roll width)				
Print head service life	approx. 100 million characters				
Cutter service life	approx. 500 000 cuts				

## Document paper

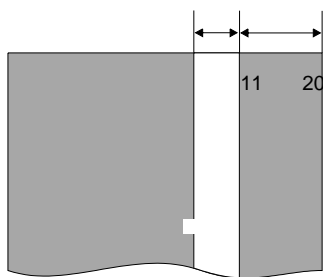
<b>Dimensions, single-ply paper:</b>	
Lenght	max. 300 mm min. 70 mm
Width	max. 218 mm min. 50 mm
Thickness	max. 0.5 mm min. 0.08 mm
Basis weight	60 - 300 g/qm
<b>Dimensions, multi-ply paper:</b>	
Lenght	min. 70 mm
Width	150 mm - 218 mm
Thickness	max. 0.2 mm

**Receipt / journal paper (single-ply)**

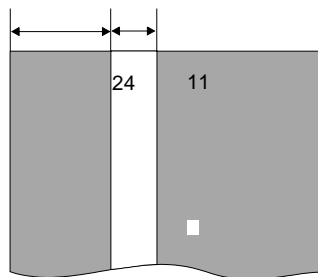
Outside diameter of roll:	Receipt max. 100 mm	Journal max. 80 mm
Core diameter	12 mm (+ 0 mm; -2 mm)	
Roll width	40 mm $\pm$ 1 mm 45 mm $\pm$ 1 mm 58 mm $\pm$ 1 mm* 64 mm $\pm$ 1 mm 69 mm $\pm$ 1 mm 76 mm $\pm$ 1 mm	
Basis weight	60 g/qm $\pm$ 4 %	
Paper thickness	max. 0.1 mm, min. 0.075 mm	
Usable length	approx. 90 m	approx. 60 m Red warning stripe at end of paper, end of paper not glued to core
* WN paper +0 / -1 mm		

**Printable area (back of receipt/journal)**

If the back of the receipt or journal is to be used (for advertising purposes, for example), note that the area marked in the illustrations below (11 mm) cannot be printed on.



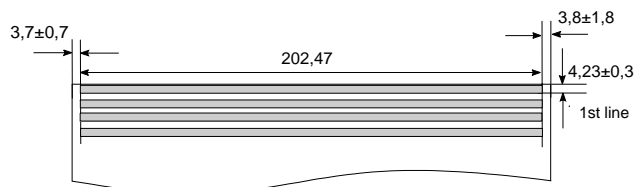
Receipt



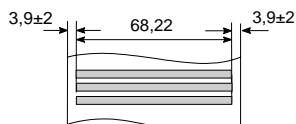
Journal



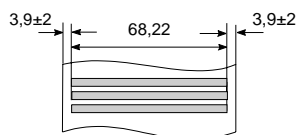
**Printable area (receipt/journal/document)**



Printable area DIN A4 document



Receipt 76 mm width



Journal 76 mm width

The table below shows the minimum margins when receipts and journals are printed. The values apply to the right and left margins with various paper widths.

Paper width (mm)	Min. margin (mm)
40	2.22±1
45	2.33±1
58	1.36±1
64	2.28±1
69	2.38±1
76	2.12±1

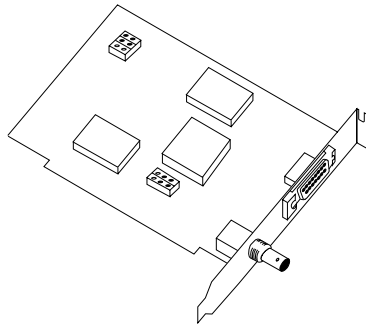
## Network controller

To operate the BEETLE POS system in a network, you must have a network controller that controls communication in the network.



Use only network controllers approved by WN.

The network controller can be plugged into the CPU as a submodule or into a free AT slot in the POS housing as a board.



Network controller board

## BEETLE in-house controller

The BEETLE in-house controller (BIC) is a newly developed plug-in board for the BEETLE POS system. The board ensures that BEETLE systems can be integrated in in-house networks in existing customer installations.

The board is accommodated in a free AT slot in the POS housing.

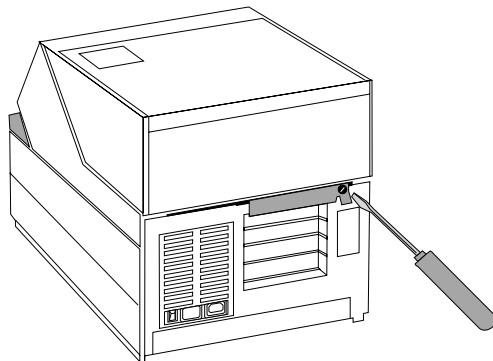
For more information on this expansion board, contact the WN branch office responsible for your area.

## Installing an expansion board

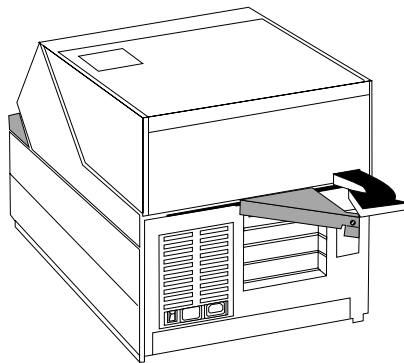
To access the slots, lift up the upper POS housing with the printer and remove the left side section.



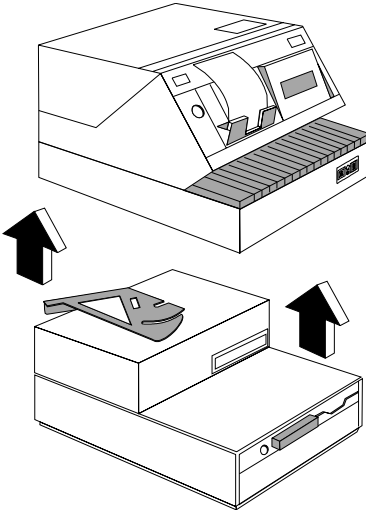
Firstly, make sure that the device is **switched off** and the **power plug is disconnected**.



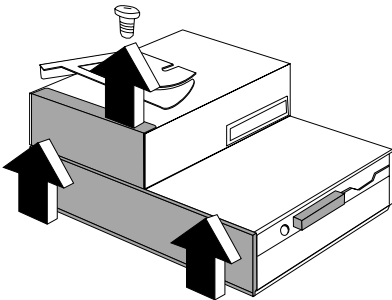
First loosen and remove the fastening screw for the release lever on the back of the POS housing.



Now push the release lever back as far as it will go; the upper POS housing is pushed forward and the plug-in connections to the printer are disconnected.

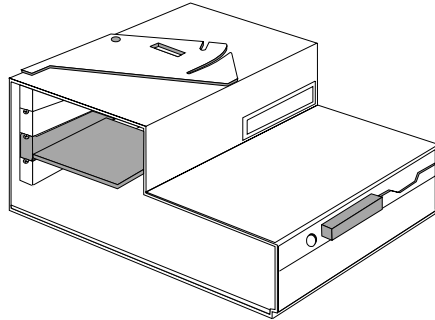


The upper POS housing is now completely separated from the lower housing. Pull the upper housing an inch or two toward you and lift it up and off the lower housing.



Remove the screw from the top of left side panel. The side panel can then be removed by pulling it up and out of the guide. The plug-in locations are situated in the lower rear housing of the terminal.

The top three slots are for half-length expansion boards (with a Pentium board), the bottom slot is only with a 486 CPU for a full-length expansion board.



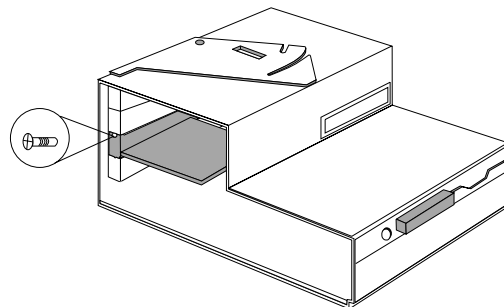
Before you can insert a board, you must remove a metal cover. To do this, remove the fastening rail from the cover by pressing down the metal clip on the rail and pulling it toward you.

Now, simply remove the appropriate cover from the slot.



Make sure that the cover panel does not fall onto the CPU board. There is the risk of a short circuit occurring here as the CPU components are still supplied by the system battery.

First check that the jumpers (if any) are correctly inserted on the board. The correct setting can be found in the board documentation. Then plug the expansion board into the slot provided. Make sure that the board is inserted completely.



Finally, secure the dummy covers with the fastening rail, making sure that the metal clip on the rail is locked into place.

When assembling the BEETLE, pay special attention to the following:

- The side section must be correctly introduced into the guides from above and must be fully locked in place and secured again with the screw.
- Be careful when replacing the upper POS housing on the lower. The release lever must be moved fully into the release position.
- The connection is reestablished by pulling the release lever toward the POS housing, thus drawing the upper POS housing onto the lower housing. The two housing sections are again flush with one another.
- Secure the release lever using the appropriate screw.

## What to do if...

Often when your BEETLE system is not functioning correctly, it is unnecessary to call the Service Department.

- |  |   |
|--|---|
| <p>...If your POS system does not boot correctly after you switch it on or if individual devices do not operate correctly,</p> | <p>———— always begin by checking the plug-in connections - especially to the power supply - to see that they are securely seated on the back of the POS housing and in the grounded power socket.</p> |
| <p>...If the receipt and journal printout is too light,</p>  | <p>———— change the ribbon cassette.</p>   |
| <p>...If the POS terminal does not issue a receipt,</p>  | <p>———— there is probably a paper jam. To find out what to do, see section on "Clearing paper jams".</p>  |
| <p>...If the system's Setup menu is automatically called,</p>  | <p>———— check the position of the key in the central lock on the keyboard.</p>  |
| <p>...If no image is visible on a connected VGA monitor,</p>   | <p>———— adjust the brightness and contrast controls and check that the monitor is switched on.</p>  |
| <p>...If the system cannot access the BEETLE card,</p>   | <p>———— check to see whether the card has been correctly inserted and locked into place and whether the battery needs changing.</p>   |
| <p>...If your POS terminal is d connected to a network and does not boot correctly after it is switched own,</p>               | <p>———— make sure that the server is also switched on.</p>  |
| <p>... If the receipt or journal paper passes under the ribbon when it is threaded in,</p>                                     | <p>———— make sure that the ribbon is taught. If necessary, use the rotary knob on the side to pull the ribbon taught.</p>   |

If these measures do not correct the problem, contact the WN branch office responsible for your area.

## The configuration label

The label is located on the cover plate of the lower POS housing. The picture shows an example of the label which can differ in accordance to the features of your POS system.

Master-HD:	MASTER BD 3. _____ (DOS)					
	86580, __, 3.80/ _____ <input type="checkbox"/> DOS <input type="checkbox"/> SINIX					
ZE-Serial-No.:	_____					
CPU:	<input type="checkbox"/> 386SX	<input type="checkbox"/> 486SLC	<input type="checkbox"/> 486DX/2	<input type="checkbox"/> _____		
COM3/4:	<input type="checkbox"/> IRQ disabled	<input type="checkbox"/> IRQ 10/11	<input type="checkbox"/> IRQ 10 both			
RAM/CMOS:	<input type="checkbox"/> 2MB	<input type="checkbox"/> 4MB	<input type="checkbox"/> _____ MB/	<input type="checkbox"/> 32KB CMOS	<input type="checkbox"/> _____ KB CMOS	
HD	<b>Size</b>	<b>Cylinder</b>	<b>Heads</b>	<b>Sectors</b>		
3,5''	270/ _____ MB	944/ _____	14/ _____	40/ _____		
2,5''	127/ _____	677/ _____	9/ _____	41/ _____		
<input type="checkbox"/> VGA	<input type="checkbox"/> ASYNC: IRQ 12		<input type="checkbox"/> disabled	I/O: 2E8/ _____		
<input type="checkbox"/> BIC	<b>IRQ</b>	<b>I/O</b>	<b>DMA Ch</b>	<b>SCC-Int</b>	<b>Sby</b>	<b>2/4 wire</b> <b>NEN</b>
	15	220	R/W 0/1	M1	yes	2 yes
changed:	_____	_____	_____	_____	_____	_____
LAN:	<input type="checkbox"/> submodule (16K RAM)					
	<input type="checkbox"/> ATC (32K RAM)		<input type="checkbox"/> _____ ( _____ K RAM)			
BOOT-ROM:	<input type="checkbox"/> TCP/IP (16K)		<input type="checkbox"/> _____ ( _____ K)			
	<b>IRQ</b>	<b>I/O</b>	<b>RAM base</b>	<b>ROM base</b>	<b>ROM size</b>	
Default:	5	240	CC000	C8000	0k	
changed:	_____	_____	_____	_____	_____k	



## Error messages

### MS-DOS critical errors

<b>Error Code</b>	<b>Meaning</b>
0	Attempt made to write a write-protected disk
1	Unknown unit
2	Drive not ready
3	Unknown command
4	CRC data error
5	Invalid call structure
6	SEEK error on disks
7	Unknown data medium
8	Sector not found
9	End of paper, printer
A	Write error
B	Read error
C	General error

**POST error messages**

Test type	Test	Message	Error number
Cashier display	1	DATE ERROR	1
		ADDRESS ERROR	2
Customer display	2	TEST POS LCD	not appl.
Memory card	3	CARD IN FALSE POS	1
		BATTERY EMPTY	2
		CHANGE BATTERY	3
		UNKNOWN SIZE	4
		DATA ERROR	5
		CHANGE MC ERROR	6
ROM-Disk	4	BOOTSECTOR ERROR	1
		UNKNOWN SIZE	2
		CHECKSUM ERROR	3
NV-RAM	5	ADDRESS ERROR	1
		DATA ERROR (5555)	2
		DATA ERROR (ABAB)	3
		DATA ERROR (0000)	4
Printer controller	6	UNKNOWN PRINTER	1
		RESET ERROR	2
		UNKNOWN STATUS	3
		CPU ERROR	4
		CPU RAM ERROR	5
		TIMEOUT	6
		LPT ERROR	7
		ASIC ID ERROR	8
		ASIC REGISTER ERROR	9
		ASIC TIME ERROR	10
		ASIC RAM ERROR	11
		Z-RAM ERROR	12
		ROM CHECKSUM ERROR	13
Cashdrawer	7	CASHDRAW CLOSED	not appl.
		CASHDRAW OPEN	not appl.

---

Test type	Test	Message	Error number
MF module	8	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

**Phoenix BIOS POST and start messages**

<b>Message</b>	<b>Possible cause</b>	<b>Remedy</b>
Diskette drive failure	Failure in disk adapter	Check adapter
Diskette drive B: failure	Drive B: defective or missing	Check drive B:
Diskette drive A: failure	Drive A: defective or missing	Check drive A:
Diskette read failure strike 7 to retry boot	Disk not formatted or defective	Replace disk with disk that can be booted and restart
Display adapter failed;	* Failure in primary video adapter	* Check video adapter
Gate A20 failure	Protected mode cannot be enabled	Check CPU
Fixed disk configuration error	Configuration defined not supported	Correct hard disk configuration
HD controller fail	Controller failure	Replace hard disk controller
Fixed disk failure 0 1	Defective hard disk 0 = C: 1 = D:	Reattempt start, if this is not possible replace hard disk
Hard disk read failure - strike 7 to retry boot	Defective hard disk	Reattempt start, if this is not possible replace hard disk
Invalid config info	* Memory size incorrect * Display adapter not configured correctly * Number of disk drives incorrect	Start SETUP

---

<b>Message</b>	<b>Possible cause</b>	<b>Remedy</b>
Keyboard clock line failure Keyboard data line failure	Keyboard or keyboard cable connection defective	Make sure that keyboard and keyboard cable are connected correctly
Keyboard controller failure	Firmware of keyboard controller defective	Check keyboard controller
Keyboard stuck key failure	One or several keys jammed	Attempt to actuate key(s) again
Memory address line failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure in memory chips connected to circuit	Check switch configuration
Memory data line failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure in one of the memory chips or one of the circuits	Replace memory chips
Memory high address line failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure in memory chips connected to circuit	Check switch configuration
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 memory chip

Message	Possible cause	Remedy
Memory odd/even logic failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure in memory chips connected to circuit	Check connection to circuit
Memory parity failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure in one of the parity memory chips	Replace memory chip
Memory write/read failure at <i>hex-value</i> , read <i>hex-value</i> , expecting <i>hex-value</i>	Failure in one of the memory chips	Replace memory chip
No boot device available - strike 7 tom retry boot	Drive A: hard disk or disk is defective	Restart. If not possible, replace defective part
No boot sector on hard disk - strike 7 to reboot	Drive C: not formatted or cannot be booted with system	Format drive
Not a boot diskette - strike 7 to retry boot	Disk in drive A: not formatted or cannot be booted with system	Replace disk with one that can be booted with system and restart system
No timer tick interrupt	Failure in timer chip	Check timer chip in CPU
<i>Hex-value</i> optional ROM bad checksum = hex - value	Periopheral board has defective ROM	Replace board
Shutdown failure	Failure in keyboard controller or log. circuit which connects it	Check keyboard controller

---

<b>Message</b>	<b>Possible cause</b>	<b>Remedy</b>
Time-of-day not set - Please run SETUP program	Clock not set	Start SETUP
Timer chip counter 2 failed	Chip failure	Check timer chip
Unexpected interrupt in protected mode	Non-maskable interrupt (NMI) port cannot be deactivated	Check CPU, in particular log. circuit of interrupt
Unexpected type 02 I/O card parity or memory parity interrupt at xxx:yyy Type (S)hut off NMI, (R)eboot; other keys to continue	Error writing to system memory or while the I/O registers were being used	Replace the memory chip
Internal cache test failed	Error in the 486SLC CPU	Replace the 486SLC CPU

## Additional messages

Decreasing available memory	This message follows a memory error message. The memory chips are defective!
Strike the 7 key to continue	An error occurred during POST; press numeric key 7 to attempt system restart.
Base Memory size = 64K	Input for the size of the main memory for functions.
Extended Memory size = 00000K	Input for the size of the extended memory for functions.

The errors determined by means of the power-on selftest (POST) are displayed on the monitor or on the cashier display. Please contact the customer service department if one of the above errors occurs.



## Glossary

### **Bit**

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

### **Controller**

Serves to control data input and output in a data processing system or between a computer and its peripherals.

### **CPU**

Abbreviation of central processing unit. It includes the main components of a data processing system. The CPU monitors all operations and provides data and programs. It comprises the control unit for input and output, the computer and the main memory, divided into ROM and immediate access storage.

### **Interface**

Designates the transition point between different hardware units and software units or between hardware and software units of computers or their peripherals.

### **JEIDA**

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

### **Operating system**

Refers to all programs that are a component of a computer and are required for operating the system and executing application programs.

### **PCMCIA**

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

**Peripheral**

A device serving as an input/output device or storage for a computer. This includes, for example, document readers, keyboards, printers and disk storage.

**ROM disk**

A ROM disk is a read only memory on which the operating system and the application program, for example, can be stored. The contents of the memory cannot be changed.

**Server**

This is a computer connected to a local network, the functions of which are made available to all of the connected network users, e.g. a print server for printing out the data of all network users via the printer connected to the server.

**VGA**

Video graphics adapter. Interface for connecting color monitors.

## Abbreviations

AT	Advanced Technology
ATA	AT-Attachment
BIOS	Basic Input Output System
COM	Communication port
CPU	Central Processing Unit
cUL	canada Underwriters Laboratories
EPROM	Erasable Programmable Read-Only Memory
FD	Floppy Disk
GS	Geprüfte Sicherheit (tested safety)
HDD	Hard Disk Drive
HFT	High Frequency Table
HSF	Hash File Access Method
IDE	Integrated Drive Electronics
LAN	Local Area Network
LBA	Logical Block Addressing
LED	Light Emitting Diode
RAM	Random Access Memory
RDI	Retail Device Interface
RMH	Retail Message Handler
ROM	Read-Only Memory
RPM	Retail Presentation Manager
RTM	Retail Transaction Manager
UL	Underwriters Laboratory
VGA	Video Graphics Adapter
XMS	Extended Memory Specification

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