WINCOR NIXDORF

BEETLE

BEETLE /M

Modular POS System

User Guide

BEETLE /M

User Guide

Edition April 2000

Contents

Manufacturer´s Certification

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

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

Tested Safety

The POS system has been provided with the symbol for “Tested Safety”.

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

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 inteference to radio communications.

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

Le présent appareil numérique ne fait pas de bruits radioélectriques dépassant les limites applicable aus appareils numériques de la “Class A” prescrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.Note on the laser

If your device is equipped with a CD ROM drive, the following condition applies:

The CD ROM drive contains a light-emitting diode (LED), classified according to IEC 825-1:1993:LASER CLASS 1; it must not be opened.

Important notes

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

- If this device is taken from a cold environment into the operating room, moisture condensation may form. The device must be absolutely dry before being put into service; an acclimatization period of at least two hours must therefore be observed.
- This device is equipped with a safety-tested power cable and may be connected only to a prescribed grounded-contact power socket.
- When setting up the device, ensure that the power socket on the device and the grounded-contact power socket are easily accessible.
- To disconnect the device from the supply voltage completely, switch off the device und disconnect the power plug.
- Ensure that no foreign objects (c.g. office clips) find their way into the device, as this may lead to 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.
- Always dispose of used parts, such as batteries, in an environmentally safe manner.
- The lithium battery must be disposed of in accordance with local regulations for special waste.
- In emergencies (e.g. damaged housing or damaged power cable, penetration by liquids or foreign bodies), the device must be switched off immediately, the power plug disconnected and the Customer Service of Wincor Nixdorf (WN) or your dealer must be notified.
- The device may only be repaired by authorized qualified personnel. 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.
- Your BEETLE POS system is the result of modern technical innovation. So please see for according structural and technical surroundings to guarantee a faultless and efficient work of your BEETLE.

  Therefore, you should connect your BEETLE or other IT-devices only to power supply systems with separately guided protective earth conductor (PE). This kind of electricity system is known as TN-S network. Do not use PEN conductors!

  Please also observe the recommendations of the norm DIN VDE 0100, Part 540, Appendix C2 as well as EN50174-2, §5.4.3.

  Thus you can help to avoid possible malfunctions.

Introduction

The BEETLE /M is the compact, powerful and economical basis for your POS system.

The BEETLE /M conforms to the PC/AT industry standard. Powerful Pentium class processors ensure a quick processing of all operations.

You can connect a variety of different peripheral devices to your BEETLE /M and even the choice of the software is not limited to a certain product.

Optional the BEETLE /M can be equipped with a hard disk and a CD ROM drive as further storage mediums.

This provides you with a considerable degree of flexibility when arranging the layout of your POS system.

The BEETLE can also be connected to a network once an appropriate network card has been installed.

In the event of a mains voltage failure, the version with battery and corresponding software enable you to save the data by means of a controlled program shutdown.

Whatever configuration you need: Wincor Nixdorf (WN) offers the right solution. So, whenever you want to expand your BEETLE /M, please contact your WN branch office or your dealer.

About this manual

This manual describes the modular POS system BEETLE /M with a Pentium type processor.

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

The first section describes

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

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, for example, how to use the disks.

The third selection provides

- a brief overview of the software implemented in the modular system BEETLE /M.

The fourth section explains

- the procedure for system starting and setup. This section requires technical knowledge.

The Appendix

- contains the most important technical data, a list of possible error messages, the installation of plug-in cards, a glossary and a list of abbreviations.

✘ Notes in the manual are marked by this symbol.

➢ This symbol is used for warnings.

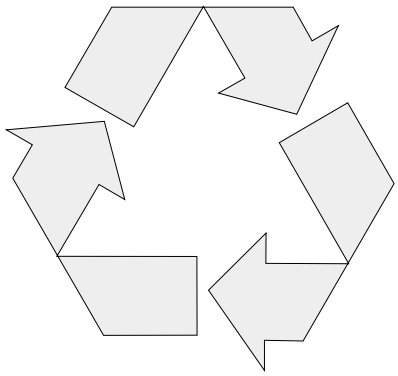
The type and scope of application programs depend on the customer's own selection; therefore, with the exception of the Setup program and a brief description of the most important WN programs, software will not be discussed further in this manual.

Separate manuals are included in the scope of the 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 /M

Clean your BEETLE/M at regular intervals with a suitable plastic-surface cleaner which can be ordered from Wincor Nixdorf. Make sure that the power plug is disconnected and that no liquid finds its way into the device.

Recycling the BEETLE /M



Environmental protection does not begin when it comes time to dispose of the BEETLE; it begins with the manufacturer. This product was designed according to our internal norm “Environmental conscious product design and development”.

The modular BEETLE /M POS System is manufactured without the use of CFCs und CCHS and is produced mainly from reusable components and materials.

The processed plastics can, for the most part, be recycled. Even the precious metals can be recovered, thus saving energy und costly raw materials.

Please do not stick labels onto plastic case parts. This would help us to re-use components and material.

You can protect our environment by only switching on your equipment when it is actually needed. If possible, even avoid the stand-by-mode as this wastes energy, too. Also switch your equipment off when you take a longer break or finish your work.

At this time, there are still some parts that are not reusable. Wincor Nixdorf guarantees the environmentally safe disposal of these parts in a Recycling Center, which is certified pursuant to 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!

Please contact your competent branch or the Recycling Center Paderborn (for european countries) for information on how to return

and re-use devices and disposible materials under the following fax number:

Fax: +49 (0) 5251 8-26709

We look forward to your fax.

Spare Parts

All spare parts that can be ordered with their Order-Numbers are registered on a label inside the cover of the BEETLE /M.

BEETLE /M - the individual POS System

Overview

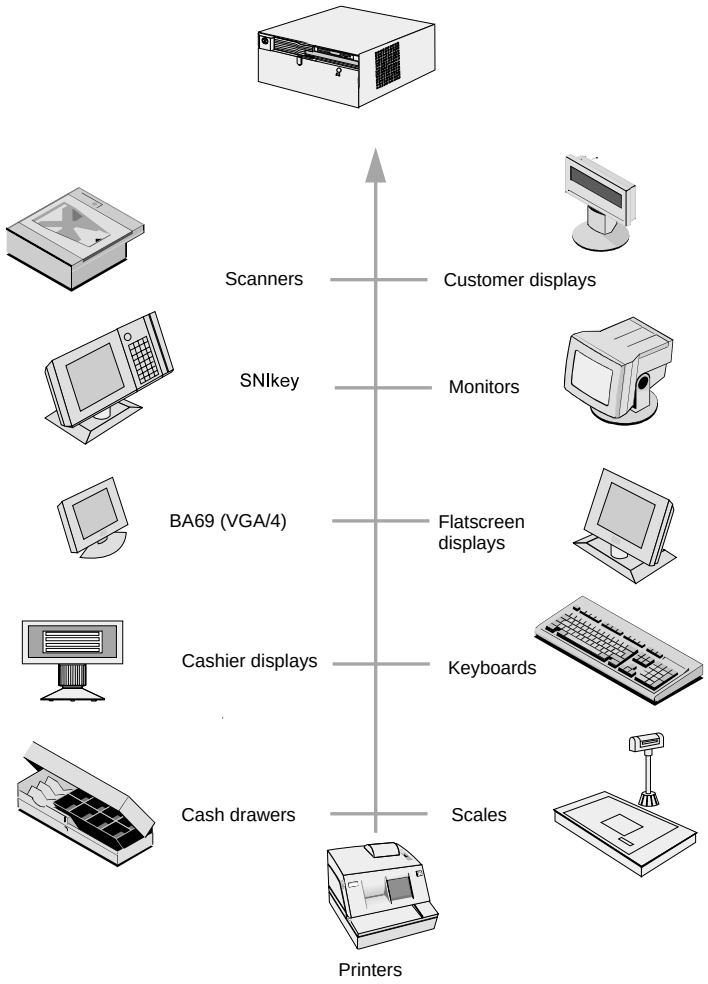
You can connect a variety of peripherals to your modular POS system BEETLE /M and thus implement a wide range of expansion stages. You can

- connect a two or four-line alphanumeric customer display and a four line cashier display. Alternatively you can connect Flat screens, such as BA69 (VGA/4), BA70 (b/w) or BA71 and BA72 (color),
- use various types of scanners such as distance, touch or stationary scanners,
- use scales and scanner scales (please take into account the official certification regulations),
- connect various printers,
- use different types of cash drawers,
- install the POS workplace SNIkey and different screen displays,
- integrate the BEETLE /M in a network after installing a LAN board and
- upgrade the BEETLE /M, since it can accommodate one PCI- and alternatively another PCI card or a ISA card.

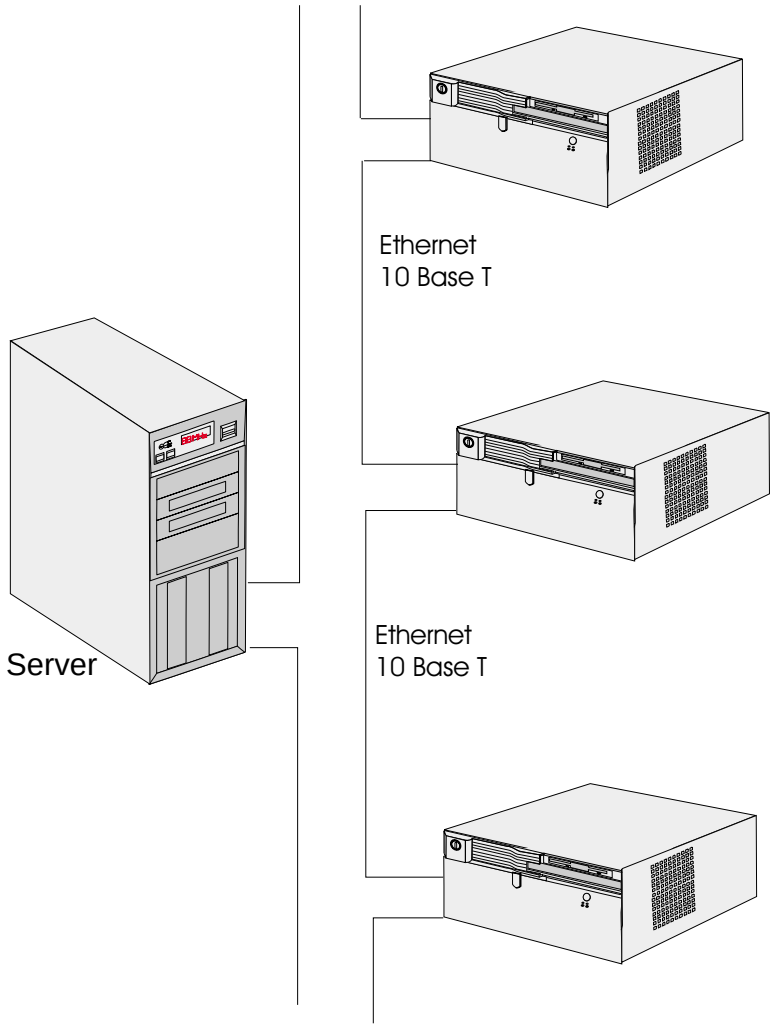
This means that the BEETLE /M can meet your requirements at all times, without having to exchange the complete system for a new one, thus saving you time and money.

The illustration below shows you how your modular POS system can grow - from a scanner to integration in a network.

BEETLE /M Peripherals



BEETLE /M in a network



Before switching on the System

Unpacking and checking the System

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, promptly inform your Wincor Nixdorf sales outlet.

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

Setting up the device

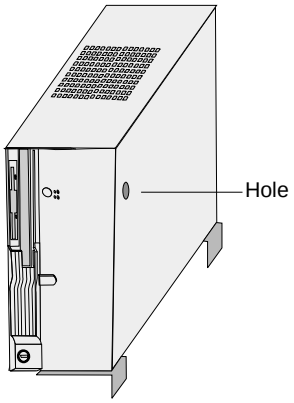
Set up the BEETLE /M POS system where it will not be exposed to extreme environmental conditions. Protect the device from vibrations, dust, moisture, heat and strong magnetic fields.

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

Vertically Installation

The BEETLE/ M is specified for a horizontal mounting. Observe the following if the system still is to be mounted vertically:

- You will find a drill at the bottom side, so that you can suspend the BEETLE /M with a screw. To do so, mount two additional angles at the requested wall so that the BEETLE can rest upon evenly.



- A closed area made of non flammable material (e.g. concrete or metal) must be located under the vertically mounted BEETLE /M.
- Mount the device in such a way that the ventilator faces upwards. That is the side with the lesser number of ventilation slots.
- Make sure that the angles do not cover the ventilation slots.
- The following minimum clearances (also in horizontal position) must be provided in free convection to ensure sufficient ventilation:

  horizontal placement: left side: 60 mm, right side: 100 mm
  vertical placement: upwards: 100 mm, downwards: 60 mm

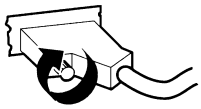
Cabling of the BEETLE /M

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

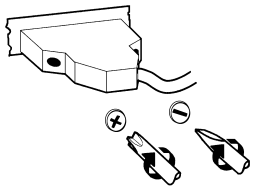
- Make sure that the power switch on the front of the housing is set to OFF, i.e. that it visibly protrudes. You may have to open the slide in order to do this (see figure on page GB - 17).
- The cable cover must be removed, if present.
- Plug one end of the power cable into the power cord receptacle on the BEETLE /M.
- Plug the other end of the power cable into a grounded-contact power socket.
- Plug in and secure the data cable.

✘ Always make sure that the system is switched off when you do cabling works.

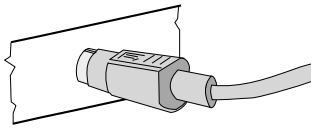
Securing the data cable



Secure interface connectors with knurled screws manually.



The interface connectors screws made of metal can be secured with a screwdriver. Screws made of plastic must be secured manually only.



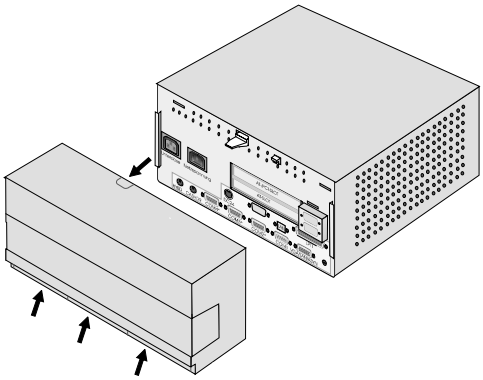
Mini-DIN plugs lock in when you insert them. Check the lock by slightly pulling the cable. Maybe you will have to lock the plug by slightly pushing the cable.

Replace the cable cover after the cables have been mounted (see next page).

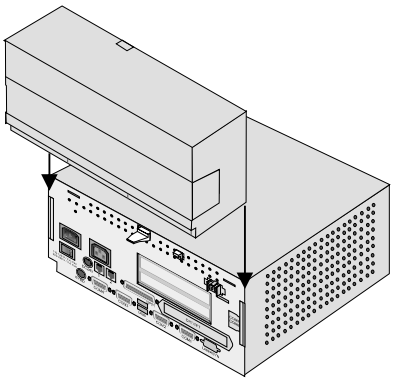
Mounting the cable cover

The scope of supply of your BEETLE /M includes a cable cover. Before mounting the device, you should first remove the cable openings where necessary. This depends on the cables which you wish to lay.

Tools are not required as the plastic parts can be removed by hand.



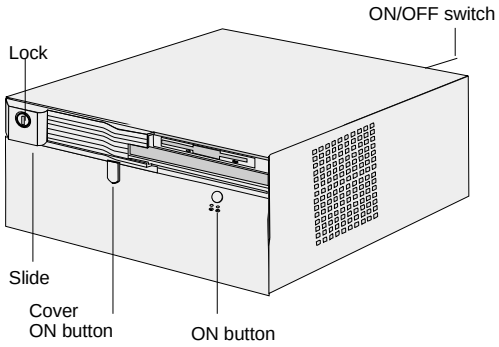
In order to mount the cable cover, insert it in the guides marked with arrows in the figure below. In doing so, ensure that the cable cover does not fit askew.



Connecting to the mains power supply

All devices belonging to the modular BEETLE /M 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 BEETLE and the peripherals into the grounded-contact power sockets.



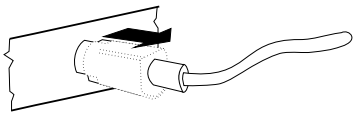
You can now switch on the BEETLE /M by means of the switch on the front of the housing. You may have to unlock the slide and move it to the left.

✘ The power pack can be connected to all standard power supply networks. The unit adjusts automatically to the respective voltage. A fan provides the required ventilation. The maximum output of the power pack is 135 W.

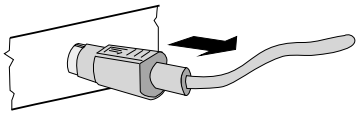
Disconnecting cables

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.
- Remove the cable cover.
- Unplug all data communication cables from the sockets of the data networks.
- Unplug all power plugs from the grounded-contact power sockets.
- Unplug all cables from the devices.



With MINI-DIN plugs, the plug remains inserted until released.



Pull the plastic covering from the connecting socket with your thumb. The lock is released. The metal of the plug is visible.

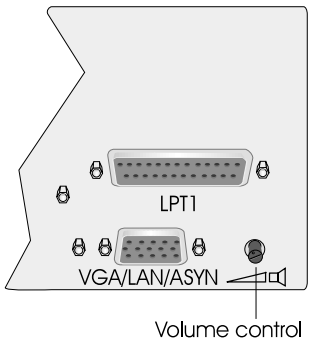
Now remove the cable from the connecting socket.

Basic settings

Ex works, the BEETLE /M is configured to your order. Your configuration must be subsequently adapted to support supplementary devices such as scanners. For more information, 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.



Light emitting diode (LED)

The right LED (yellow) below the ON/OFF switch lights up while the hard disk is beeing accessed. The left LED (green) lights when the BEETLE/ M is switched on.

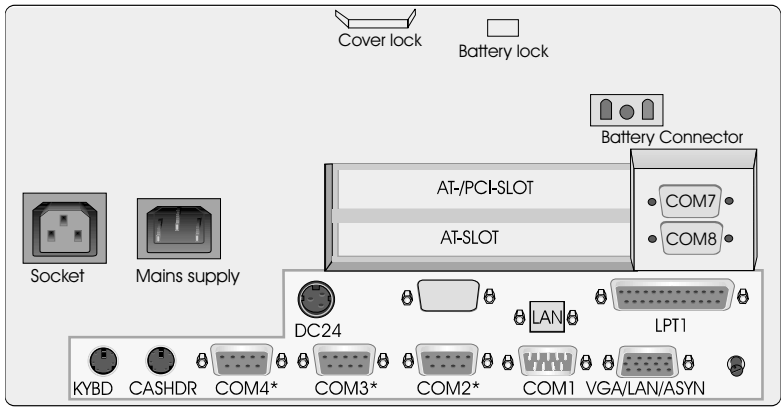
Connecting peripherals

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

The figure shows the back panel of the BEETLE/ M with the locations of the connecting sockets and connecting plugs. 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 interfaces COM7 and COM8 are optional.

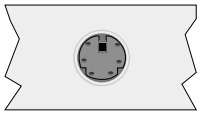
CRT and TFT interfaces are used alternatively.



Rear panel of the BEETLE/ M

Keyboard (KYBD)

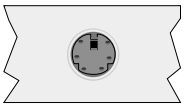
The BEETLE /M has a 6-pin mini-DIN jack for connecting a keyboard. Make sure that the connector is plugged firmly into the socket to prevent malfunctioning. Power is supplied to the keyboard via this socket. If you wish to connect a standard PC keyboard with DIN connector, you must use a special adapter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



✘ When removing cables with locks, please grip the cable at the connector housing.

Cash drawer (CASHDRW)

The BEETLE /M 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.

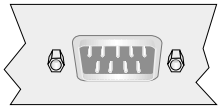


✘ When removing cables with locks, please grip the cable at the connector housing.

Scanners and scales (COM1 - COM4*)

Depending on how the system is configured, scanners and scales without an independent power supply are connected to the COM2*, COM3* or COM4* serial interface (standard setting COM3). Connect scales with their own power supply to the COM1 interface. COM1 is designed as a 9-pin D-sub plug, whereas COM2* - COM4* are 9-pin D-sub jacks.
Make sure that the scanner connector is plugged securely into the socket to prevent possible malfunctioning.

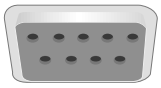
✘ If scales which are not supplied by Wincor Nixdorf are connected to the BEETLE /M, you must obtain an WN licence for the driver software.



If COM2 is equipped with a connector, the interface does not carry a current.

Customer display (COM2* or COM4*)

With the BEETLE /M, and depending on how the system is configured, the customer display is connected to either the COM2* or COM4* serial interface. The interface connection is a 9-pin D-sub jack. Make sure that the connector for the customer display is screwed firmly to the socket to prevent possible malfunctioning. Power is supplied via this jack.

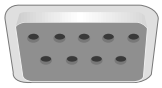


If COM2 is equipped with a connector, this interface does not carry a current.

Cashier display (COM3*)

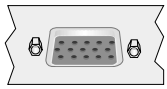
Connect the cashier display to the serial interface COM3*. This port is a 9-pin D-sub jack.

Make sure that the connector for the cashier display is screwed firmly to the socket to prevent possible malfunctioning. Power is supplied via this jack.



Monitor

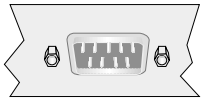
If a VGA board is installed, you can connect a monitor to the BEETLE /M via the 15-pin D-sub jack on the VGA board. Power is supplied to the monitor via the rubber connector on the BEETLE /M, located on the back of the housing.



Connecting standard PC peripherals (COM1)

You can connect supplementary standard peripherals to the BEETLE /M 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.

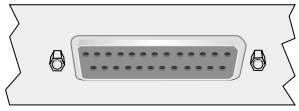


Network

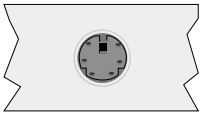
If a network board is installed, the system can be connected to a network (LAN) from the POS terminal back panel. If a LAN board is not installed, this location on the back panel is closed by a dummy cover (see also Configuration variants).

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

The standard parallel interface LPT1 is intended for connecting a printer.



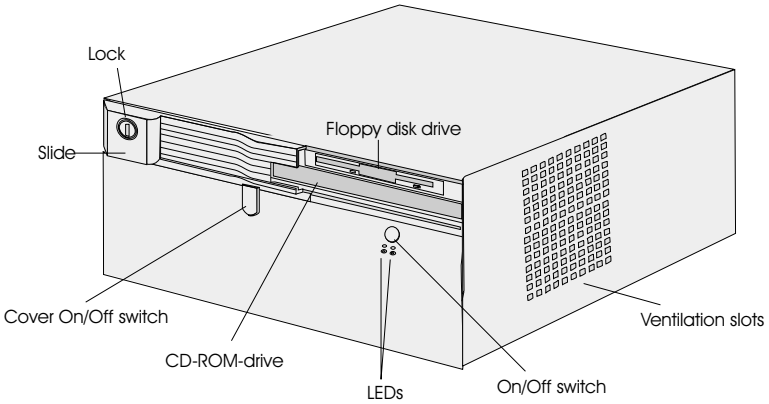
Appropriate POS printers can also be connected via the low-voltage jack 24V, max. 2A. A connecting cable with a HOSIDEN plug is required for this. Connect only cable to the 24V connector which are marked with DP-1 or DP-2 !



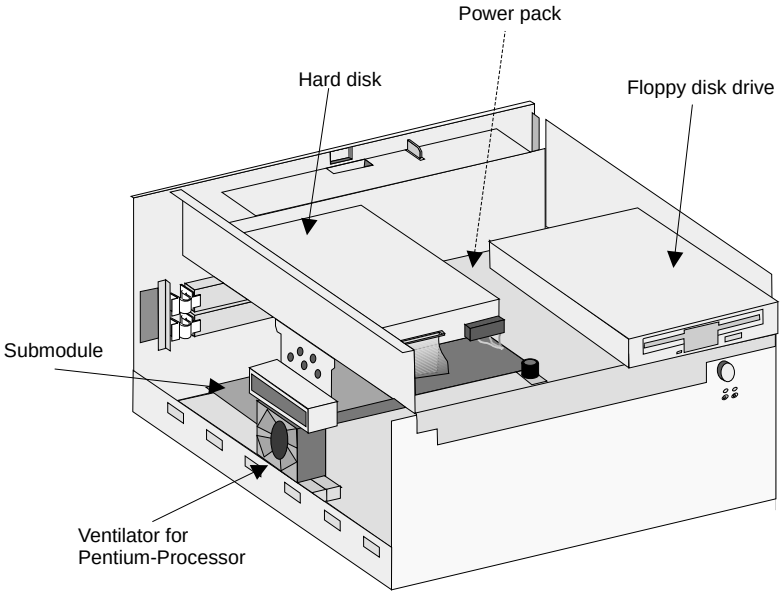
BEETLE /M - the components

Overview

The following figure shows the outside of the BEETLE /M.



The figure below shows the inside of the BEETLE /M.



The BEETLE card

The BEETLE card, which is a credit-card-sized memory card, optionally 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 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	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

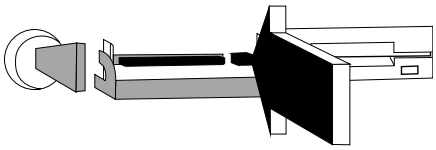
Data can be written to and erased from these cards electronically. Consequently, they are ideal for data subject to frequent modification. The cards can be written to in special memory card drives only. FLASH EPROM cards do not require batteries for data retention.

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

Inserting the BEETLE Card

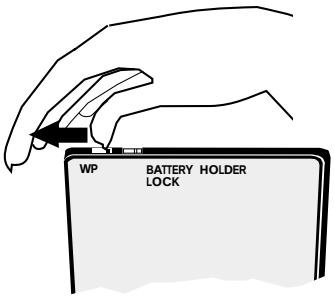
Insert the card, connector-end first, in the slot for the BEETLE card. The card has been correctly inserted if the black ejection button next to the slot has popped out.

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



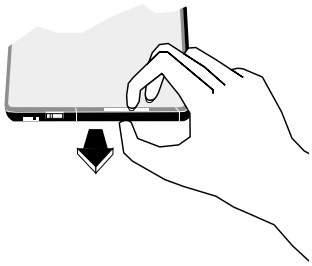
To write protect the SRAM-type BEETLE card, slide the lock shown in the illustration to the WP (write protection) position.

Changing the battery for SRAM cards

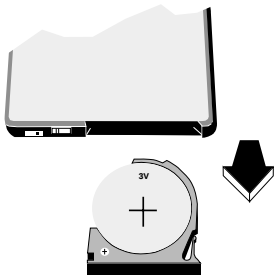
The illustrations below show you how to change the battery for this type of BEETLE card.

➢ 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 SNI branch office responsible for your area.

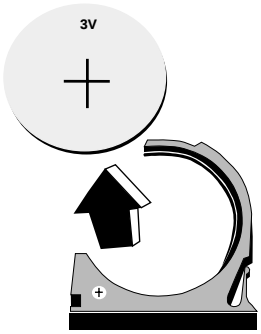
Unlatch the battery lock



Remove the battery holder and battery from the BEETLE 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.

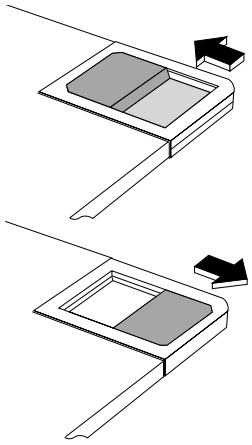
Floppy disk drive

General

The BEETLE /M is equipped with a floppy disk drive for 3.5" disks. The LED lights up whenever the system accesses the drive.
The disks can be used for a variety of applications, such as:

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

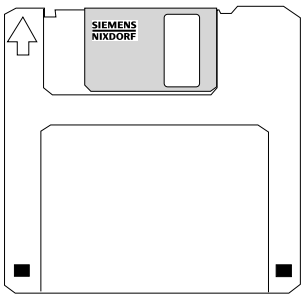
The disk can be write protected to protect your data from accidentally being overwritten. The slide is located at the bottom left of the diskette.



Writing to the disk is possible.

Writing to the disk is not possible.

Inserting a disk

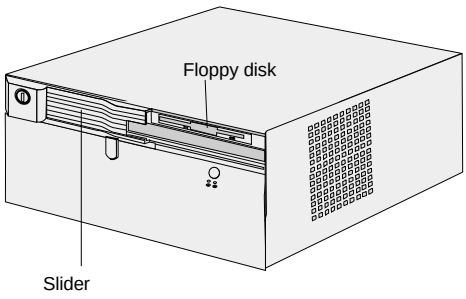


Hold the disk so that the arrow symbol is at the top and points away from you. Now insert the disk in the drive slot provided. The disk has been correctly inserted if the gray ejection button has popped out.

Removing a disk

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

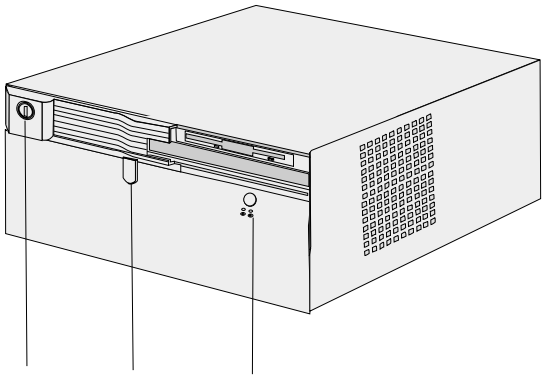
Never remove the disk while the drive is being accessed, i.e. when the LED indicator for the drive is illuminated. Otherwise, you could damage the drive and the disk.



The lockable slider can be used to prevent unauthorized access to the disk drive.

CD ROM drive

The BEETLE /M can be equipped with a CD ROM drive, if you wish so. The lockable slider prevents unauthorized access to the disk drive. Open the drive by pressing the ejection button in the middle of the loading box. You lock it by sliding in the loading box.



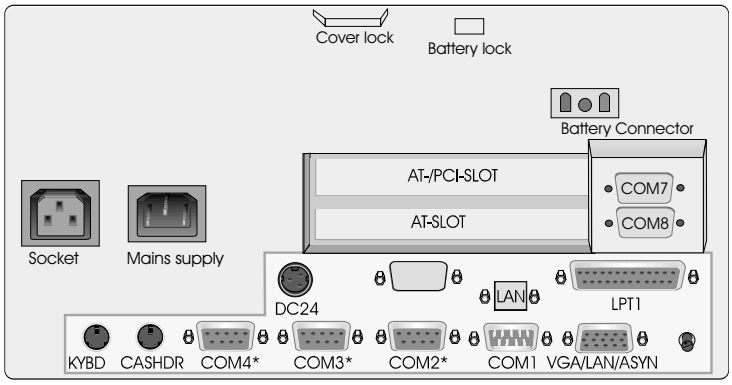
CPU

General

The modular POS system BEETLE /M is supplied with a CPU of the Pentium-class.

The CPU comprises a specially developed PC board. In addition to the PC-specific modules and interfaces, this board accommodates a non-volatile memory (NV-RAM) and an optional VGA controller for connecting a monitor.

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



Interfaces

The COM1 interface of the BEETLE /M is designed for connecting standard peripherals that have a separate power supply. The COM2*, COM3* and COM4* are provided for connecting special POS peripherals that do not have a separate power supply, for example a scanner or a display. The BEETLE /M is also equipped with a parallel interface and a DC24 /2A power supply interface for connecting POS printers as well as two mini DIN jacks for connecting the keyboard and cash drawer.

➢ Connect only devices approved by Wincor Nixdorf to your BEETLE /M. If you have any questions, contact the WN branch office responsible for your area.

Loudspeaker

A loudspeaker is connected to the CPU. The volume of the loudspeaker can be set using the rotary knob on the rear panel of the modular POS system. The loudspeaker is located behind the left-hand side of the rear panel.

Nonvolatile RAM (NV-RAM)

This memory chip 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 five years.

The NV-RAM is standard only in systems with the operating system MS-DOS.

Dynamic RAM

The operating system and the application require this memory while they are running. The following types are available:

Pentium class CPU (with PS2 SIMM)

8 = 2*4 MB (Default)	16 = 2*8 MB
32 = 2*16 MB	64 = 2*32 MB

Connection options

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

Connecting a hard disk

One hard disk can be connected to the CPU. It is used 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 can be used for this purpose. 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 configuration label.

Free slots

The system is fitted with two ISA or one ISA and one PCI slots for two half-lenght AT-expansion cards.

Additional slot on the CPU

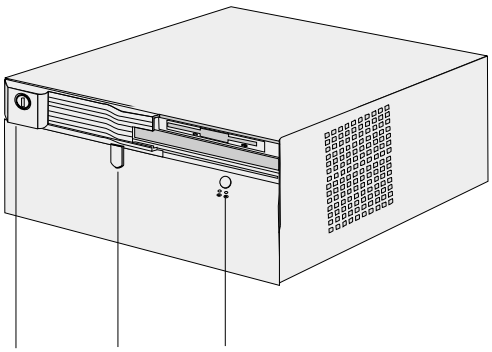
The CPU is equipped with an additional slot which can be used to connect one of the available controllers (SVGA, LAN, SVGA/LAN, ASYNC), if required.

Power pack

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 135 W.

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

The power cord receptacle and the power output socket for the monitor are located on the back of the BEETLE /M. The power switch is located on the front of the device.



The power switch can be protected from access using the lockable slide.

Battery

The battery bridges any power failures and allows a controlled shutdown of the POS programm by means of the appropriate software (see “Security in the event of power failure”).

Battery charging time is approx. 8 hours after initial startup. The battery is charged only while the system is switched on.

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

Duration of power supply	Power output	Operation
0, 5 minutes	Full load (max. 90 W)	with supply of external peripherals (e.g. 24V printer)
1, 5 minutes	Medium load (approx. 70 W)	e. g. printer running
10 minutes	Low load (30 W)	e. g. device switched on

Peripherals connected to the power output socket of the POS terminal are not powered during a power failure.

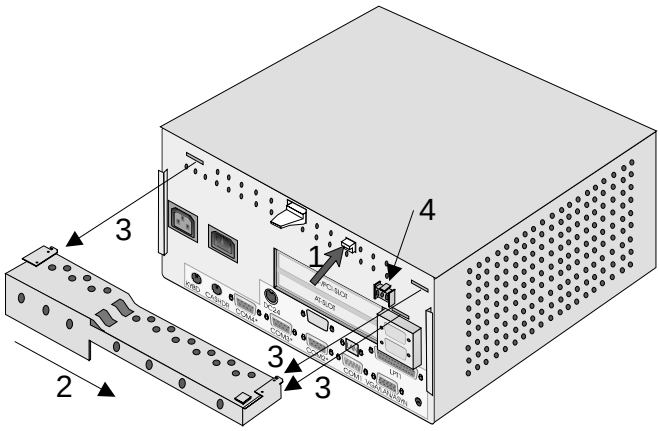
Changing the battery

All batteries have a limited service life. In order to prevent any loss of data, we recommend that you charge the battery at least every five years.

Make sure that the device is switched off and the power plug is disconnected.

Remove the cable cover at the backside of the housing by pulling the cable cover upwards out of the guide. Then press the white button (1). While holding down the button, push the battery plate to the right side (2) and pull it backwards (3).

Then loosen the connector (4).

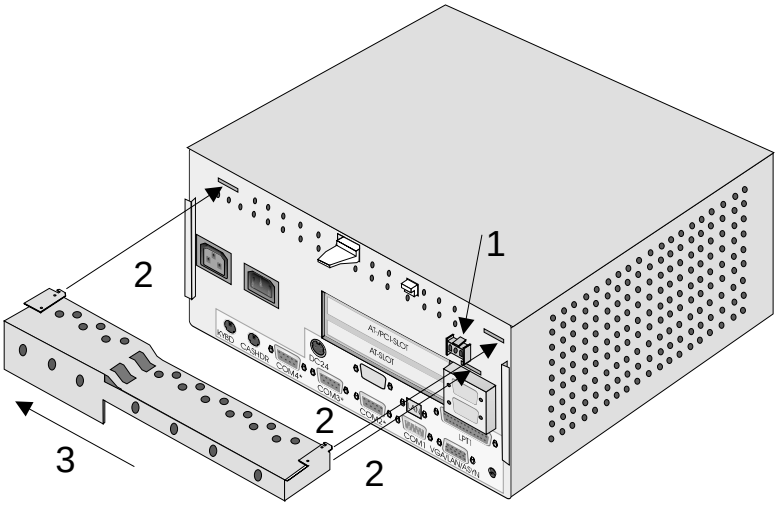


Use only batteries approved by Wincor Nixdorf. Always dispose of batteries in an environmentally safe manner.

Change the battery which is placed in the punched tin.

Connect the plug to the jack (1) and reinstall the battery plate with the new battery at the backside of the BEETLE /M.

Insert the battery plate into the slots (2) and move it to the left (3) until the lock snaps in.



Security against power failure

If the battery is used, the BEETLE /M system has another important feature.

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.

Because operation is maintained with the aid of the battery, the application program can be terminated correctly.

The power failure is reported to the application program by means of the retail device interface (see chapter Software). The application program then terminates the program correctly by, for example, closing open files and writing important information to the non-volatile memory.

The termination of these actions is reported by means of the retail device interface. This causes the system to be disconnected, which also prevents the battery from being discharged unnecessarily.

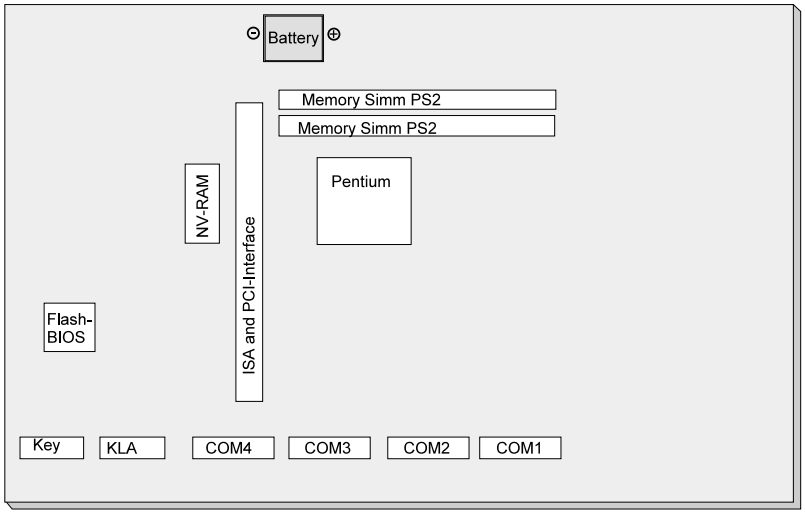
Peripherals connected to the power output jack of the POS system are not powered during a power failure.

Changing the BEETLE /M battery

The BEETLE /M is equipped on the CPU board with a lithium battery to ensure the retention of data, the time and the setup parameters. The battery should be changed approximately every five years.

When inserting the new battery, make sure the polarity is correct. This is visibly marked on the socket. Incorrect replacement may lead to the danger of explosion.

The battery is located in a socket in the CPU. To gain access to the battery, proceed as described in the chapter entitled “Installing the submodules” until you lift up the carrier.



Pentium-class - board

The lithium battery must be replaced only by identical batteries or types recommended by the manufacturer. The lithium battery must be disposed of in accordance with local regulations for special waste.

The setup parameters must be reset each time the battery is changed (see chapter Setup).

The lithium battery must be replaced by the end user only by identical batteries or types recommended by Wincor Nixdorf GmbH.

You can return the used batteries to your Wincor Nixdorf sales outlet.

Batteries containing harmful substances are marked accordingly. The chemical denotations are as follows: CD = Cadmium; Pb = Lead, Li = Lithium.

This symbol on a battery tells you that batteries containing harmful substances must not be disposed of as household waste. Within the European Union you are legally bound to return these batteries to a Wincor Nixdorf sales outlet!

The setup parameters must be reset each time the battery is changed (see chapter Setup).

Configuration variants

Submodules for the CPU

Various controllers can be plugged in on the CPU. The following is a brief description of the available options:

ASYNC controller

This RS232 interface card can be used as an additional, live serial interface for connecting various peripherals.

When connecting an ASYNC controller, ensure that the total current consumption of all of the live serial interfaces does not exceed 900 mA.

SVGA controller

The SVGA controller can be used to connect a monitor.

LAN controller, SVGA/LAN controller

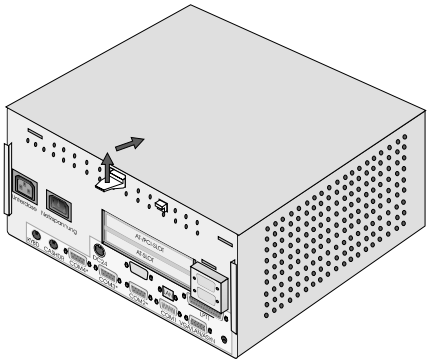
This controller can be used to incorporate the BEETLE /M in an Ethernet network (10 Base T), the combined SVGA/LAN controller allows you to connect a monitor and to integrate your BEETLE /M into a network at the same time.

Installing the submodules

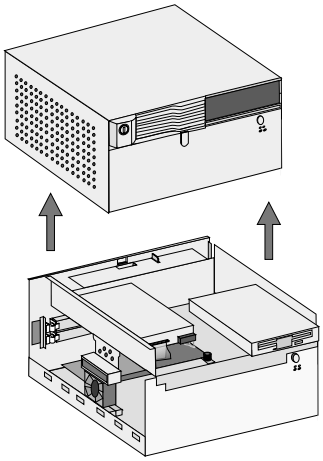
First ensure that the device is switched off and that the power connector is disconnected.

Remove the battery plate (see page 43).

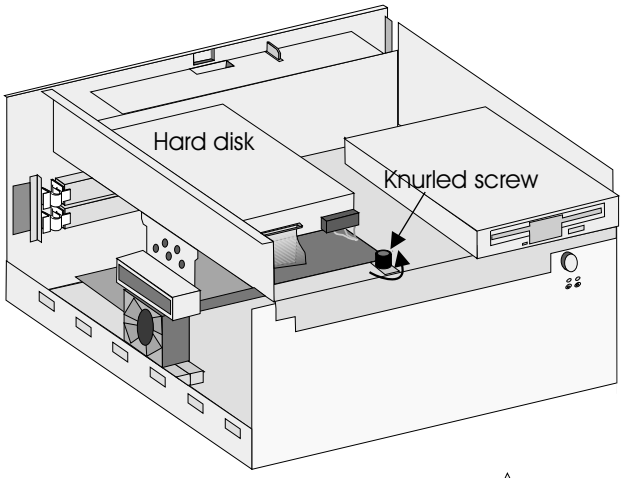
Lift up the latch (see arrows) and push the housing with the latch forward.

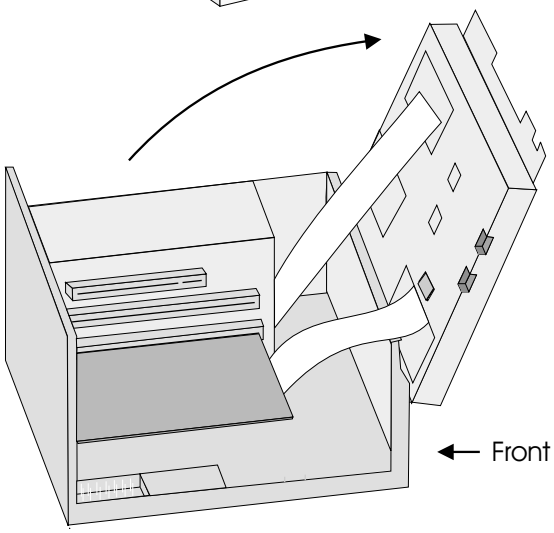


Then you can pull up the housing.

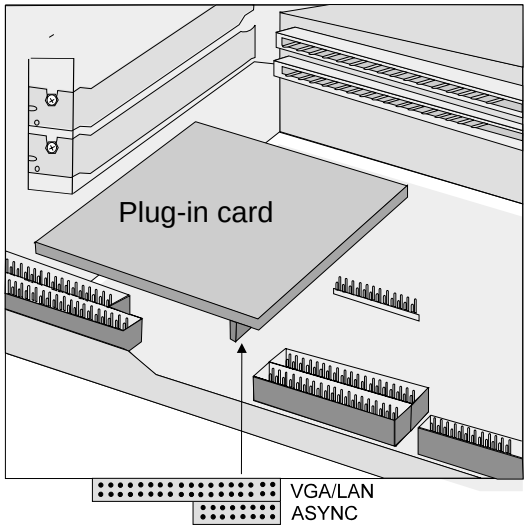


Lift up the carrier of the harddisk and the floppy disk drive by loosening the knurled screw (see drawing) manually or with a screwdriver. Then pull the carrier forward to the stop and lift it up to the front side.





Remove the respective metal cover at the backside of your BEETLE /M by removing the screws with a socket wrench. Then bring the socket through the recess of the housing and plug in the card (see drawing). Attach the socket using the screws that you removed before.



AT plug-in cards

All standard ISA and PCI cards can be used in the BEETLE /M.

BEETLE inhouse controller

The BEETLE Inhouse Controller (BIC) is a ISA card for BEETLE POS systems. The board ensures that BEETLE systems can be integrated in existing installations in inhouse networks.

The card is installed in a free AT slot in the POS housing.

If you would like further details on this expansion card, please contact your dealer or your local WN branch.

PCMCIA controller

Using an appropriate PCMCIA controller, you can use various storage media, such as FLASH memory card and I/O cards, magnetic cards of Type 1 EXT, Type II EXT and Type III, and ATA removable disks.

If you want to know more about PCMCIA controllers, contact your dealer or your WN branch.

SNIkey controller

The SNIkey is a confortable input/output device for BEETLE POS systems.

Once you have installed an SNIkey controller, you can connect an SNIkey to the BEETLE /M.

If you want to know more about the SNIkey, contact your dealer or your WN branch.

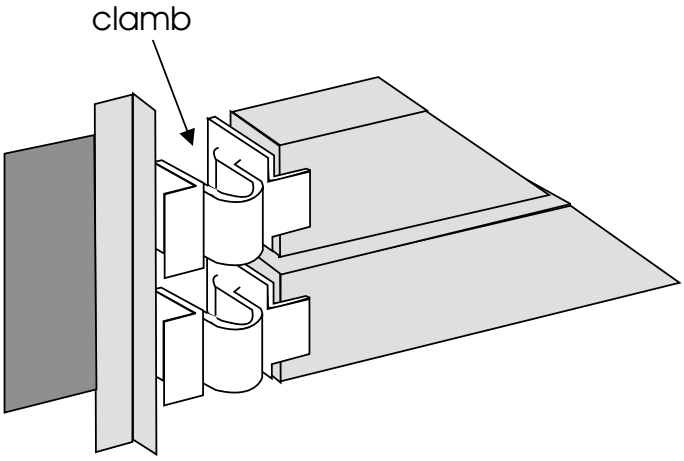
Installing an expansion card

First ensure that the device is switched off and that the power connector is disconnected.

Please proceed as described in the section “Installing an expansion card”.

After having pulled forward the carrier of the hard disk and floppy disk there is an easy access to the AT slots. Now remove the metal cover at the housing by squeezing out one of the clambs (see picture).

✘ You always should use the upper slot first. This slot is - depending on the configuration - reserved for a PCI-Card.



First check whether the jumpers (if present) of the card are set correctly to avoid internal system conflicts. The correct setting for the jumpers can be found in the documentation for the plug-in card. Then slide the expansion card into the slot provided. Ensure that the card establishes contact with the terminal strip.

Secure the card by tightening it with the clamb that you have removed before (the pin of the clamb has to be put into the boring of the card).

Following this, mount the POS housing again. The mains connector can now be reconnected and the device switched on.

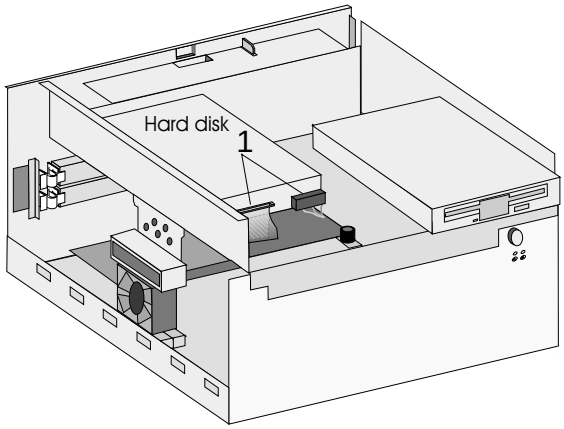
➢ Expansion cards with electrostatically sensitive devices (ESD) can be marked with this sticker.

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

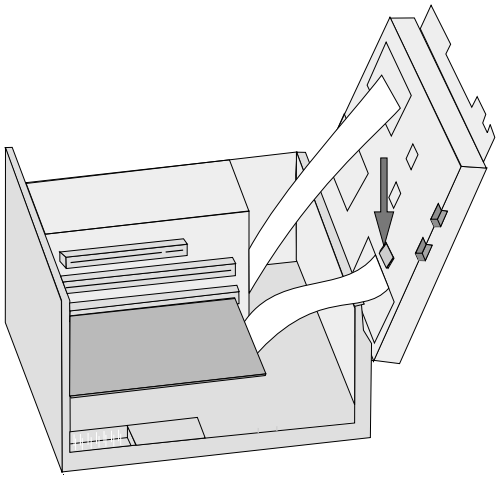
- You must always discharge yourself (e. g. by touching a grounded object) before working with boards containing ESDs.
- The equipment and tools you use must be free of static charges.
- Pull out the power plug before inserting or pulling out boards containing ESDs.
- Always hold boards with ESDs by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

Change of the harddisk

To change the hard disk open your BEETLE /M as described in the chapter “Installing the submodules”. Pull out the connectors (1) as shown in the picture below.



Now push the button (see picture below) and take off the hard disk.



Then flap the carrier back so that you can install the new hard disk. Just put it on the guide rail and push it back until it snaps in. Plug in the connectors again.

Software

This chapter provides a brief overview of the operating system and a series of programs developed by Wincor Nixdorf GmbH to enable your BEETLE /M to operate efficiently. More detailed information can be found in the individual documents for these programs.

Operating system

The BEETLE /M 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.

Retail device interface

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

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 /M that meet retail-specific requirements. For more information, contact the Wincor Nixdorf branch office responsible for your area.

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.

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.

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.

Starting up the system

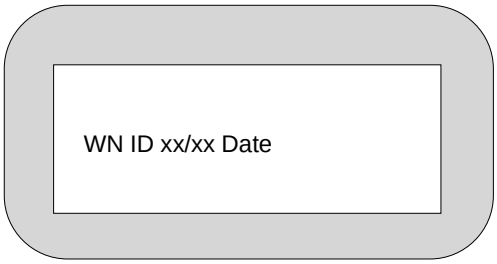
The configuration label shows you the equipment included in your modular BEETLE /M POS system. A sample is contained in the Appendix. The label is located on the underside of the BEETLE /M. The data specified there are required for entering the setup parameters (see Setup).

Start and runup behaviour

After installing the BEETLE /M, switch on the POS system using the power switch on the front panel.

The system first performs an automatic self-test to test its basic functions.

For example, you may see the following message (irrespective of processor type) on the four-line cashier display or on the monitor:



xx/xx is the place holder of the BIOS 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 /M.

The following media can be assigned a drive:

- Disk
- BEETLE card
- Network
- Hard disk

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

If the system is to be booted from disk (BEETLE card), this medium must always be assigned drive A:. It is also possible, however, to assign B: to the disk if you wish to use the card as a pure storage medium. The network is always assigned to the C: drive during the runup procedure. The hard disk can be assigned to the C: or D: drive. The system can only be started from the hard disk if the disk has been configured as the C: drive.

The modular BEETLE /M 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:

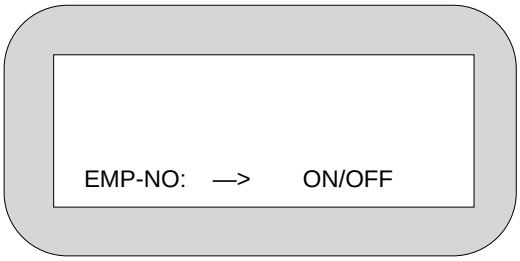
Floppy disk (A:) BEETLE card	High priority
Network (C:)	Medium priority
Hard disk (C:)	Low priority

The POS system always attempts to boot from a disk first if they are inserted in the respective drive.

If the POS system does not find a disk or a BEETLE card in drive A:, it automatically continues the loading process from drive C:.

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

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



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

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

BIOS setup

BIOS setup can be used to restore or reset the configuration parameters of your BEETLE POS system. The features of your POS system are displayed on the configuration sticker, which is located on or inside your BEETLE. A sample sticker is shown on the last page of this chapter.

SETUP contains important basic settings which are necessary to enable your POS system to operate correctly. These settings include, for example, the date and time, the assignment of a specific logical drive name (A: or B:) to the BEETLE card or the floppy disk as well as parameters for the hard disk.

In case of a faulty configuration you should always run the setup program to make sure that the POS system works correctly.

You have two 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.

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.

➢ If no monitor is connected, although an SVGA card is installed, then the system messages are not visible.

The menu entries below are intended to serve as **examples**. If in doubt, refer to the configuration sticker.

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

```
Copyright (C)
 WN 2000
Setup Rel. 0.xy
 (22/01/98)
```

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

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

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

```
Time          12:34:56
Date          Jan 12 1998
                (6)Incr
 (2)Next   (4)Decr
```

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

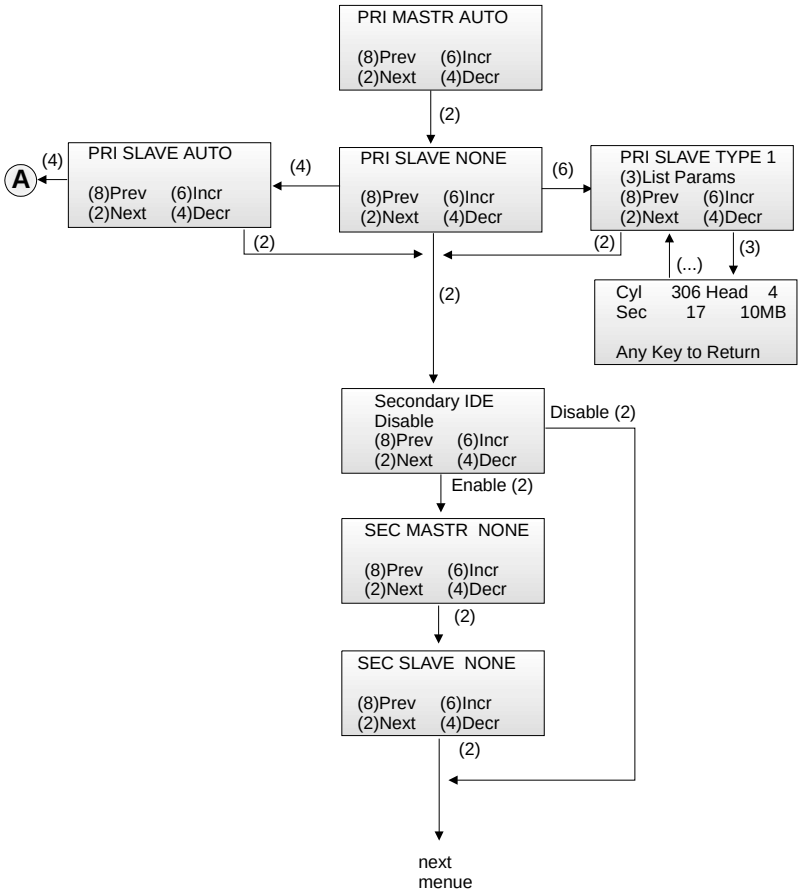
(8) Prev (Previous)	The cursor is positioned in a previous field or menu
(2) Next	The cursor is positioned in the next field or jumps to the next menu
(6) Incr (Increment)	Increments a value in the field
(4) Decr (Decrement)	Decrements a value in the field
(5)	Calls the help function (key assignment)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

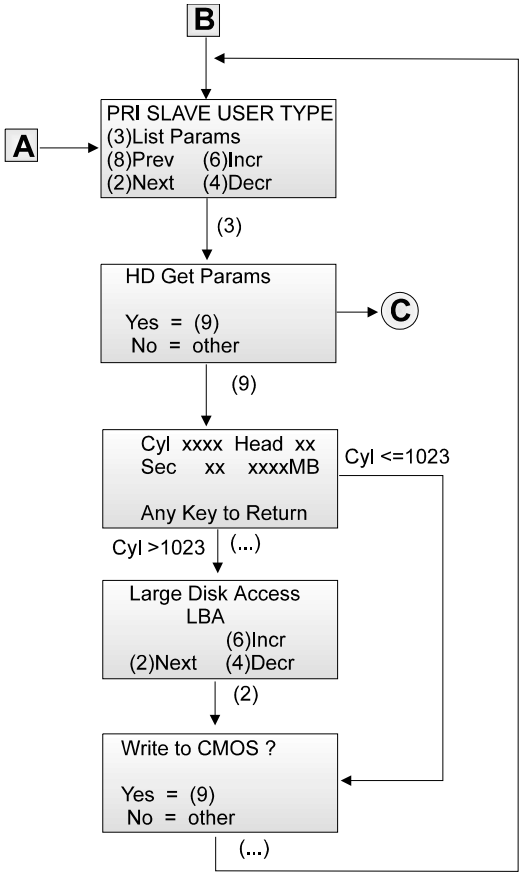
Following the menu for setting the time and date, the menu for the drive parameters appears.

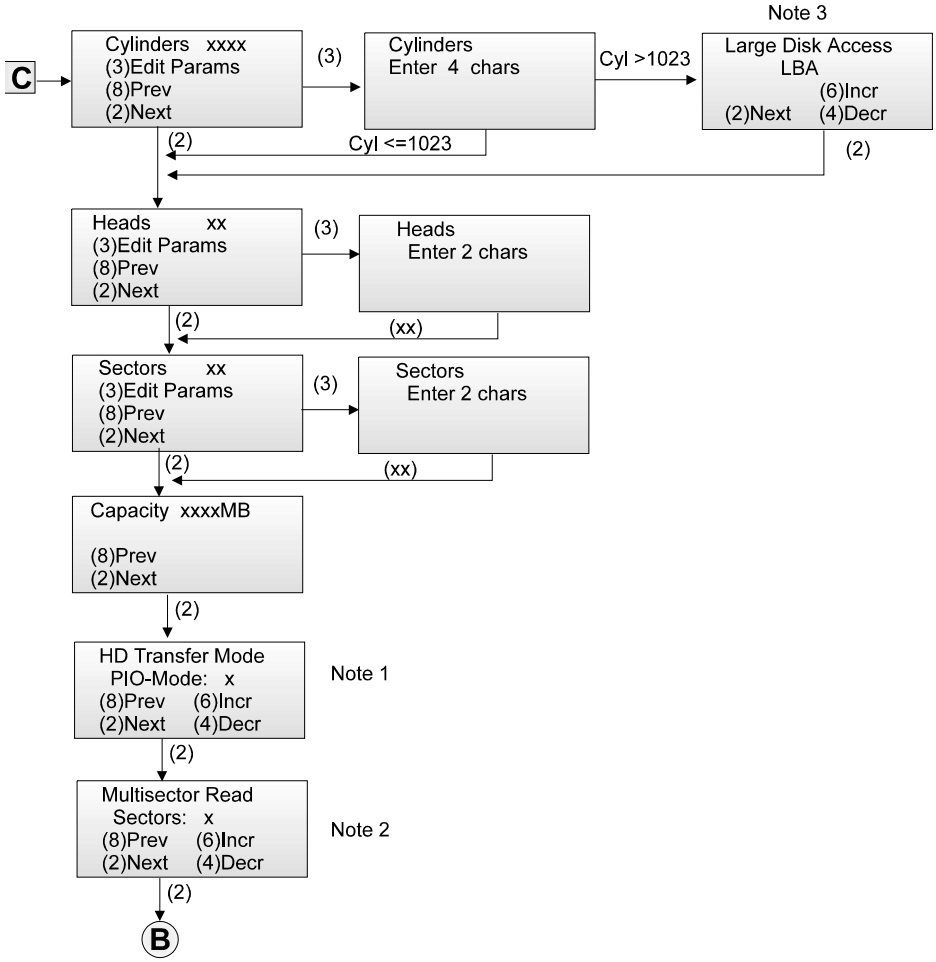
```
FD A  MEM-Card
FD B Not Installed
 (8)Prev   (6)Incr
 (2)Next   (4)Decr
```

Enter settings for drives A: and B: here.

The hard disks can be configurated automatically in SETUP. The necessary parameters are read from the hard disk and stored in the CMOS RAM. Your POS system offers two interfaces to connect hard disks and other IDE drives (e.g. CD ROM drive), a PRIMARY port and a SECONDARY port.
You can connect two drives to each port, a MASTER- and a SLAVE drive. To use the SECONDARY interface, the Secondary IDE must be set to “Enable”.
The following masks show an example of possible configurations for a hard disk that is connected to a PRIMARY SLAVE port.




B
A
PRI SLAVE USER TYPE
(3)List Params
(8)Prev (6)Incr
(2)Next (4)Decr
(3)
HD Get Params
Yes = (9)
No = other
C
(9)
Cyl xxxx Head xx
Sec xx xxxxMB
Any Key to Return
Cyl <=1023
Cyl >1023
(...)
Large Disk Access
LBA
(6)Incr
(2)Next (4)Decr
(2)
Write to CMOS ?
Yes = (9)
No = other
(...)


C
Cylinders xxxx
(3)Edit Params
(8)Prev
(2)Next
(3)
Cylinders
Enter 4 chars
Cyl >1023
Note 3
Large Disk Access
LBA
(6)Incr
(2)Next (4)Decr
(2)
Cyl <=1023
(2)
Heads xx
(3)Edit Params
(8)Prev
(2)Next
(3)
Heads
Enter 2 chars
(2)
(xx)
Sectors xx
(3)Edit Params
(8)Prev
(2)Next
(3)
Sectors
Enter 2 chars
(2)
(xx)
Capacity xxxxMB
(8)Prev
(2)Next
(2)
HD Transfer Mode
PIO-Mode: x
(8)Prev (6)Incr
(2)Next (4)Decr
Note 1
(2)
Multisector Read
Sectors: x
(8)Prev (6)Incr
(2)Next (4)Decr
Note 2
(2)
B

Notes

Note 1

The PIO mode in the mask “HD Transfer Mode”indicates the chosen data transfer mode for the hard disk. You can set a value between “0" and ”4". After the automatic readin of the parameters (“HD Get Params ? = Yes”) you should not change this value . Should any problems occur, you can only ***decrement*** the PIO mode, which will lead to a slower transfer of data.

Note 2

The number of sectors in the mask “Multisector Read” indicates how many sectors per reading job can maximally be read from the hard disk. You can set this number to 1, 2, 4, 8 or 16 sectors. After the automatic readin of the parameters (“HD Get Params ? = Yes”) you should not change this value. Should any problems occur, you can only ***decrement*** the number of sectors, which will lead to a slower transfer of data.

Note 3

You can choose between the following settings:

- Standard
The operating system MS DOS can only be started from a partition that is smaller than or equal to 504 MB. The rest can only be used by other operating systems like e.g. Windows NT or OS/2.

- LBA
With this setting MS DOS can service hard disks up to a capacity of 7,8 Gigabytes (GB).

- Non DOS
Choose this setting if you wish to install the operating system other than MS-DOS on your BEETLE.

Please mind the following procedure for handling the hard disk:

Generally you should configurate your hard disk with the setting “AUTO” (automatical configuration). The BIOS then detects the optimal parameter settings for your system and these parameters are set. Whenever starting the system you can read from the monitor the type of installed hard disk in abbreviated form (Only when “AUTO” is set).

Alternatively you can configurate the hard disk with the setting “USER TYPE”. With the subfunction “HD Get Params ?” the system tries to read in the parameters of the hard disk. If this was not succesful you will have to set all parameters step by step manually, according to the specification of the hard disk.

Beyond this you can configurate the hard disk with the hard disk types 1 to 39.

If you have connected more than two hard disks you can enable the Secondary interface by setting “Enable” . You can choose this in the following mask:

```
    Secondary IDE
    Enable
(8)Prev   (6)Incr
(2)Next   (4)Decr
```

A further menu shows you, for example, the memory configuration:

```
Memory          640 KB
XMS            7168 KB
    (8)Prev
    (2)Next
```

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

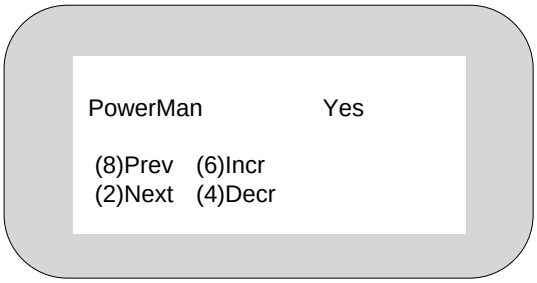
It is possible to use the parallel interface LPT1 in standard mode and in the modes ECP (Enhanced Capability Port) and EPP (Enhanced Parallel Port). The transfer modes EP and EPP allow a higher data transfer rate (up to 2MB/s and up to 2,4 MB/s). Please make sure that the peripheral devices do support these modes.

The choice can be done in the following mask:

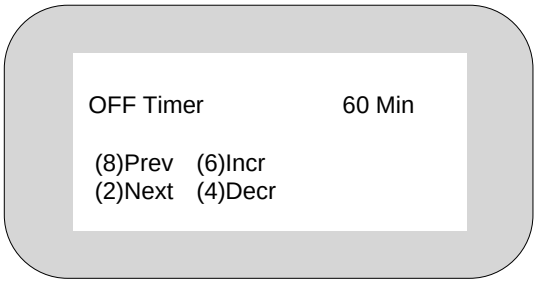
```
        LPT1 Mode
    Standard
(8)Prev   (6)Incr
(2)Next   (4)Decr
```

➢ If you are using printers from WN, please choose the standard mode.

With power management you can save energy when your system is off time. When “No” is set, the CPU operates with maximum speed, i.e. at full power. If “Yes” is set, the power management facility is enabled.



“OFF Timer” switches the CPU to sleep mode (5 - 15 - 60 minutes) after a specified interval of being idle. In this case the backlighting of the cashier display is deactivated and a connected monitor is blanked. Make sure that no screen saver is active!



The time interval for deactivating the hard disk can be set separately (OFF and 60 minutes).

If HD Timer is set to “60 min”, the hard disk is deactivated after reaching this time (Standby mode).

```
HD Timer                    Off

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

In BIOS setup, you can also define whether the opportunity for turn off the serial interfaces in the sleep mode COM2* to COM4* is selected (COM Supply On) or not (COMSupply Off) .

With “COM Supply On” the CPU switches from sleep mode to standard mode when one of the following interrupts is actuated: IRQ1 (keyboard), IRQ3 (COM2), IRQ4 (COM1), or IRQ8 (RTC).

```
COM Supply                  Off

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

➢ In sleep mode all interrupts are processed ; none are lost.

The next mask can be used to enter displays (OPERATOR for the cashier display or VGA for the monitor).

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

At the end of SETUP you will see the following mask:

```
     Reset Config Data
            No
(8)Prev          (6)Incr
                 (4)Decr
```

In this menu you can define whether the configuration data of your POS system will be initialized when the system is started:

Yes With the start of the system the old configuration data will be reset. The plug&play function will detect the current configuration data. The installed components are initialized by these data. Components not able for plug&play have to be registered manually.

No The installed components and drives will be initialized with the existing configuration data. There will be no updating with the start of the BEETLE.

With the plug&play functionality the installed components are detected and initialized automatically, if these components support plug&play. Set “Yes” when you use a plug&play card or when an old card is being removed. The reset is done automatically.

For ending SETUP press the numeric key **7**. Your POS system will be rebooted.

Appendix

Technical data for the BEETLE /M

Footprint	
Width	280 mm
Depth (including cable cover)	350 mm
Total height	137 mm
Weight	approx. 7 kg
Climatic category	IEC 721-3-3 Class 3K3
Transport	IEC 721-3-2 Klasse 2K2 -25°C to +60° C
Storage	IEC 721-3-1 Klasse 1K2 +5°C to +40° C
Operating temperature	5° – 40° C
Input voltage	100 - 120 VAC 200 - 240 VAC
Power consumption	3A/5A
Frequency of system voltage	50 / 60 Hz
Noise generation	47 dB (A)

CPU

Microprocessor	Pentium class
Architecture	AT-compatible board with expansion options for POS-specific functional units
Main memory	Pentium: 8 MB expandable to 64 MB
BIOS	Phönix 128 KB
Keyboard connection	AT-compatible
Loudspeaker	Adjustable volume
Hard disk connection	E-IDE interface
Floppy disk connection	Standard interface
CD ROM connection	E-IDE interface
Submodule	An SVGA or LAN controller or SVGA/LAN controller (optional)or an ASYNC connection
Nonvolatile (NV RAM)	32 KB, 128 KB, 512 KB data retention 5 years
Cash drawer interface	MINI DIN jack, 6-pole
Serial interfaces	Standard: COM 1 (9-pole D-SUB connector) Live (1): COM2 (2), COM3, COM4 (9-pole D-SUB jack, 12 V (+5%, -10%) or 5 V (+/- 5%)) (max. 600 mA)
Parallel interfaces	LPT1 (25-pole D-ASUB jack) interface
Additional printer interface	24 V/max. 2 A, power supplied
BEETLE card-connection	Standard interface (PCMCIA/JEIDA), max. 64 MB

(1) = The total current consumption of all of the live serial interfaces must not exceed 900 mA (maximum 600 mA at 12 V per COM* interface; maximum 300 mA at 5 V total).

(2) = If a D-SUB connector is mounted at COM2, the interface does not have a separate power supply.

ASYNC controller

I/O base address range	02E8H - 02EFH
Interrupt	IRQ12
Connection	9-pole D-SUB jack

SVGA controller

Chip	Cirrus L-GD5429
Resolution	maximum 1024*768*256 colours
Colours displayed	maximum 16 millions
Refresh rate	87 Hz
VGA BIOS ROM	32 KB, 8 bit
Monitor connection	15-pole HDD-SUB jack
DRAM	512 K

LAN controller (Ethernet)

DP8 RAM	8KB, default CC00h - CDFFh (only in shared memory mode)
I/O address range	32 Byte, default 240h - 25Fh
Interrupt	IRQ5
BOOT PROM	16 KB, default C8000h - CBFFFh
Connection	8-pole telephone jack RJ45 10BaseT (max. 100 m cable length) (only inhouse)

SVGA/LAN controller

With the exception that the RAM of the LAN controler offers 16 KB, all the parameters are the same as for the VGA and the LAN controller separately.

What to do if...

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

The Operating Display remains dark after switching on the system

This may be caused by:

Power Fail

- Switch off the system and check power cable connections to system and to the grounded protective-contact socket.
- Switch on again with the main switch.

Internal Power Supply Surcharge

- Switch off the system and disconnect the power plug of the system from the grounded protective-contact socket.
- Connect the system to the socket again.
- Switch on again with the main switch.

Screen remains black

Screen is switched off

- Switch on the screen

Screen is blanked

- Press any key of the keyboard
- Switch off the screen saver by entering the correct password.

Brightness set dark

- Adjust brightness by the brightness controll. For details consult the manual provided with the monitor.

Power cable or Monitor cable not connected

- Switch off the monitor of your system
- Check power cable connections to system and to the grounded protective-contact socket.
- Check monitor cable to the system and to the monitor (if socket present)
- Switch on both the monitor and the system

Incorrect Time and Date

- You can set time and date with the BIOS-Setup or with your operating system. Refer to the manuals delivered with your system and for your operating system.

✘ If date and time remain being wrong after resetting your system you should change the lithium battery. Please refer to the section «Changing the battery» in this manual.

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

The configuration label

Here is an *example* of the label which can differ in accordance to the features of your POS system. Normally the label is located on the bottom of the POS housing.

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

Power On Self Test (POST)

As standard the Phoenix POST is used, which monitors the functioning of the standard PC AT components of the master board. The Phoenix POST has been expanded by some function tests so that POS-specific functions can also be tested.

The error messages are displayed on the external user display or the VGA monitor. The user display and the monitor have high priority; with the VGA card inserted the messages are always displayed on the monitor. Error messages are displayed on the external user display only if there is no monitor.

Display of the error messages on the user display has the following format:

TEST POS TEST TYPE ERROR NUMBER
Error text

In the test, the error messages are displayed in english language. The following is an example of the display of an error message at the user display:

TEST POS NV-RAM 01
ADDRESS ERROR
ANY KEY TO CONTINUE

Static errors are accurately localized with the POST, though sporadic errors can be determined only to a limited extent.

If POST signals an error, please contact your appropriate technician or Customer Service. Below is a list of MS-DOS critical errors and the POST error messages.

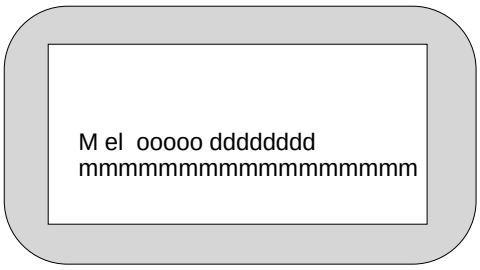
There is more information on MS-DOS system error messages on Page GB - 86.

MS-DOS Critical Errors

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

Output of MS-DOS system error messages

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



The individual entries have the following meanings:

M	Reserved
e	MS-DOS error No. 0..C HEX
l	Indicates where error occurred 0 Reserved sector (MS-DOS area) 1 File Allocation Table (FAT) 2 Directory 3 Data area
ooooo	“Read” or “write” operation
ddddddd	Block device driver: Drive, e.g. “C: ” Character device driver: Name, e.g. “COM1 ”
mmm...mmm	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.

POST extended error messages

Test type	Test	Message	Error no.
Cashier display	1	DATE ERROR	1
		ADDRESS ERROR	2
Customer display	2	TEST POS LCD	not applicable
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
Cash drawer	7	CASHDRAW CLOSED	not applicable
		CASHDRAW OPEN	not applicable

Phoenix BIOS POST and Start Messages

Message	Possible Cause	Remedy
Diskette drive fail	Diskette adapter failure	Check adapter
Diskette drive B: failure	Drive B: defective or not installed	Check drive B:
Diskette drive A: failure	Drive A: defective or not installed	Check drive A:
Diskette read failure strike 7 to retry boot	Disk not formatted or defective	Replace diskette and reboot
Display adapter failed;	* Primary videoadapter failure	* Check videoadapter
Gate A20 failure	Protected mode cannot be activated	Check CPU
Fixed disk configuration error	The specified configuration is not supported	Correct the hard drive configuration
HD controller fail	Controller failure	Replace hard disk controller
Fixed disk failure 0 1	Defective hard disk 0 = C: 1 = D:	Try to reboot. If not possible, replace hard disk
Hard disk read failure - strike 7 to retry boot	Defective harddisk	Try to reboot. If not possible, replace hard disk
Invalid config info	* Memory size not correct * Display adapter not correctly configured * Incorrect number of diskette drives	Start SETUP
Keyboard clock line failure Keyboard data line failure	Keyboard or keyboard cable connection defective	Check that keyboard and cable are properly connected

Message	**Possible cause**	**Remedy**
Keyboard controller failure	Failure of firmware of the keyboard controller	Check keyboard controller
Keyboard stuck key failure	One or several keys stuck	Try again to press the keys
Memory address line failure at *hex-value,* read *hex-value,* expecting *hex-value*	Failure of memory chips connected to circuit	Check circuit arrangement
Memory data line failure at *hex-value*, read *hex-value*, expecting *hex-value*	Failure of one of memory chips or one of circuits	Replace memory chips
Memory high address line failure at *hex-value*, read *hex-value*, expecting *hex-value*<	Failure of memory chips connected to circuit	Check circuit arrangement
Memory double word logic failure at *hex-value*, read *hex-value*, expecting *hex-value*	Memory chip circuit failure	Replace memory chip
Memory odd/even logic failure at *hex-value*, read *hex-value*, expecting *hex-value*	Failure of memory chips connected to circuit	Check circuit
Memory parity failure at *hex-value*, read *hex-value*, expecting *hex-value*	Failure of one of parity memory chips	Replace memory chip
Memory write/read failure at *hex-value*, read *hex-value*, expecting *hex-value*	Failure of one of memory chips	Replace memory chip
No boot sector on hard disk - strike 7 to reboot	Drive C: is not formatted or system start not possible	Format drive

Message	**Possible cause**	**Remedy**
Not a boot diskette - strike 7 to retry boot	Diskette in drive A: not formatted or start not possible	Replace diskette and reboot
No timer tick interrupt	Timer chip failure	Check timer chip on CPU
Hex-value optional ROM bad checksum = hex - value	Peripheral card has defective ROM	Replace card
Shutdown failure	Failure of keyboard controller or connecting logic circuit	Check keyboard controller
Time-of-day not set - Please run SETUP program	Clock not set	Start SETUP
No boot device available - strike 7 to retry boot	Drive A:, hard drive or diskette defective	Reboot. If still not possible, replace faulty component
Timer chip counter 2 failed	Chip failure	Check timer chip
Unexpected interrupt in protected mode	Non-maskable interrupt (NMI) cannot be switched off	Check CPU, especially the logic circuit of interrupt
Unexpected type 02 I/O card parity or memory parity interrupt at xxxx:yyyy Type (S)hut off NMI, (R)eboot; other keys to continue	Error in writing to system memory or in use of I/O registers	Replace memory chip

Additional messages

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

If any of the above-stated malfunctions occurs, please contact your appropriate technician or Customer Service.

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 the connected 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.

Plug and PLay (PnP)

PnP means the automatic recognition of hardware components by the system. Thus in installation, integration and configuration of new components is made substantially easier.

Peripherals

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

Server

This is a computer connected to a local network and whose services are available to all of the network subscribers, e.g. a print server for printing the data from all of the network subscribers on the printer connected to the server.

VGA

Stands for Video Graphics Array and is the interface for connecting colour monitors.

Abbreviations

AT	Advanced Technology
ATA	AT-Attachment
BIOS	Basic Input Output System
COM	Communication Port
CPU	Central Processing Unit
cUL	canada Underwriters Laboratories
ECP	Extended Capability Port
EPP	Enhanced Parallel Port
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 Electronic
ISA	Industrial Standard Architecture
ISO	International Standardization Organization
JEIDA	Japan Electronic Industry Development Association
LAN	Local Area Network
LBA	Logical Block Addressing

LED	Light Emitting Diode
LPT	Line Printer
MD	Mini Disk
MO	Magneto Optical
PCI	Peripheral Component Interconnect
PCMCIA	Personal Computer Memory Card International Association
PnP	Plug and Play
POS	Point of Sale/Point of Service
RAM	Random Access Memory
RDI	Retail Device Interface
RMH	Retail Message Handler
ROM	Read Only Memory
SCSI	Small Computer Systems Interface
SIMM	Single-In-Line-Memory-Modul
SRAM	Static Random Access Memory
UL	Underwriters Laboratories
SVGA	Super Video Graphics Array
XMS	Extended Memory Specification