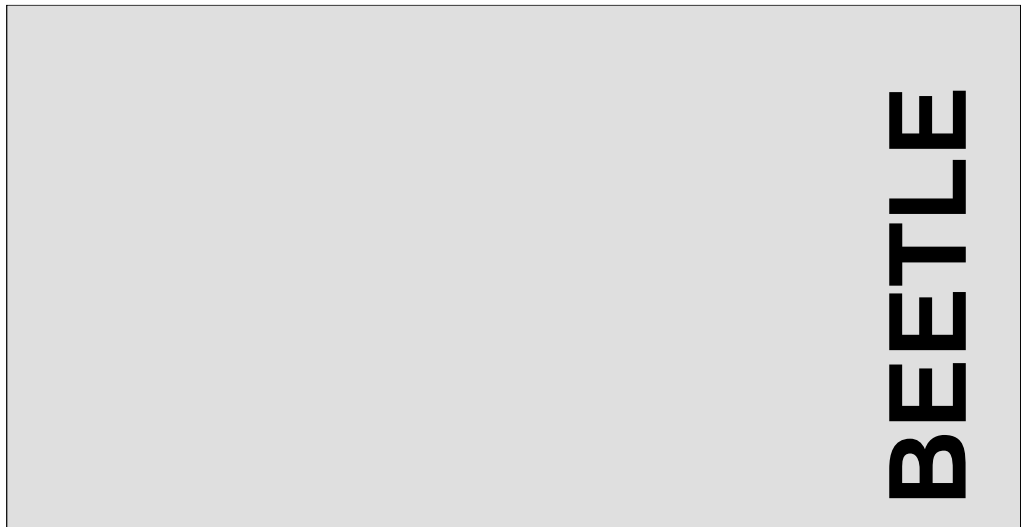


**WINCOR  
NIXDORF**



# BEETLE /XL

Modular POS System

User Guide



# BEETLE /XL

User Guide

Edition June 2000

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## Manufacturer's Certification

### General Authorization



This device complies with the requirements of the EEC directives 89/336/EEC "Electromagnetic Compatibility" and 73/23/EEC "Low Voltage Directive". Therefore, you will find the CE mark on the device or packaging.

### FCC-Class A Declaration

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

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

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

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



## Important notes

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### Tested Safety



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



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

### Important notes

The modular POS system BEETLE /XL 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 grounded-contact power socket.
- When setting up the device, ensure that the power socket on the device and the grounded-contact utility power socket are easily accessible.
- To disconnect the device from the supply voltage completely, switch off the device and disconnect the power plug.
- Ensure that no foreign objects (e.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.

## Important notes

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- The BEETLE /XL has two batteries.  
These batteries must be replaced by authorized personnel only.  
Incorrect replacement may lead to the *danger of explosion*.
- Always dispose of used parts in an *environmentally safe manner*.
- There is a *lithium battery* on the system assembly. This battery must be replaced by authorized personnel only. Incorrect replacement may lead to the *danger of explosion*.
- The lithium battery must be disposed of in accordance with local regulations for special waste!
- In emergencies (e.g. damaged housing or 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) must be notified.
- Do not switch on the device while the cover is open.



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.

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## Introduction

The BEETLE /XL is the powerful basic component of your modular POS system. The BEETLE /XL conforms to the PC/AT industry standard, so you can add expansions to suit your requirements.

A variety of optional devices are also available, such as scanners for reading bar codes, swipecard readers for check, credit and customer cards, a monitor, and various keyboards, cash drawers and scales. You can also select a printer from the wide range of compatible POS printers.

With the exception of the mass storage media, you connect all peripherals to the modular POS system externally. This provides you with an extraordinary amount of flexibility when you put together your POS system.

You can also configure and run the BEETLE /XL using only the external cashier display; a monitor is not a necessity.

The flexibility of the storage concept of the BEETLE /XL makes it perfect for the modular system. You can use the BEETLE card, the floppy drive and, of course, the hard disk as storage media. And strong processors (80486DX2 or Pentium class) make sure that work with BEETLE /XL is done quickly.

It is, of course, also possible to install a network card and connect the BEETLE /XL to a network.

In the event of a power failure the optionally available batteries allow programs to be terminated normally and data to be saved.

## **About this manual**

This manual describes the BEETLE /XL modular POS system.

It is intended to help you work with the POS system and to serve as a reference work. The detailed table of contents will help you to find the information you require quickly and easily.

The first chapter describes:

- everything you should do before you switch the POS terminal on
- how to connect peripherals to the BEETLE /XL.

The second chapter contains:

- an overview of the components of your BEETLE POS system. You will also find a detailed description of how to go about frequent activities, such as how to use the BEETLE card and floppy disks.

The third chapter provides:

- a brief overview of the software of the BEETLE /XL system.

The fourth chapter explains:

- how to get the system up and running. This chapter assumes some technical knowledge.

The appendix contains:

- tables with the most important technical data, a list of the possible error messages, a glossary and a list of abbreviations.

## About this manual

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This symbol appears before important notes in the manual.



This symbol appears before cautionary notes.

The type and scope of the application programs depend on the selection made by each customer, so, except for an explanation of the Setup program and a brief description of the most important Wincor Nixdorf programs, this manual does not contain any details on software.

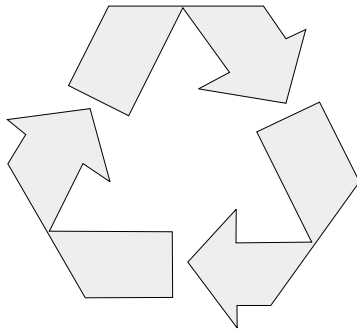
The peripheral devices that can be connected are shipped with their own manuals. These devices are therefore not described in any detail here. Please refer to the relevant manuals.

## Cleaning the BEETLE /XL

Clean your BEETLE /XL at regular intervals using the computer cleaning set for plastic surfaces that is available from Wincor Nixdorf. You will find the order number in the Wincor Nixdorf catalog, or you can simply ask at your Wincor Nixdorf branch.

When cleaning, make sure that the power plug is disconnected and that no liquid finds its way into your BEETLE /XL.

## Recycling the BEETLE /XL



Environmental protection does not begin when the time comes 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 XL 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 dispoisible materials under the following fax number:

**Fax: +49 (0) 5251 8-26709**

We look forward to your message.

## Recycling

---

## Warranty

Wincor Nixdorf guarantees a limited warranty engagement for 12 months beginning with the date of delivery. This warranty engagement covers all those damages which occur despite a normal use of the product.

Damages because of

- improper or insufficient maintenance,
- improper use of the product or unauthorized modifications of the product,
- inadequate location or surroundings

will not be covered by the warranty.

All parts of the product which are subject to wear and tear are not included in the warranty engagement.

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## The individual POS system

### Overview

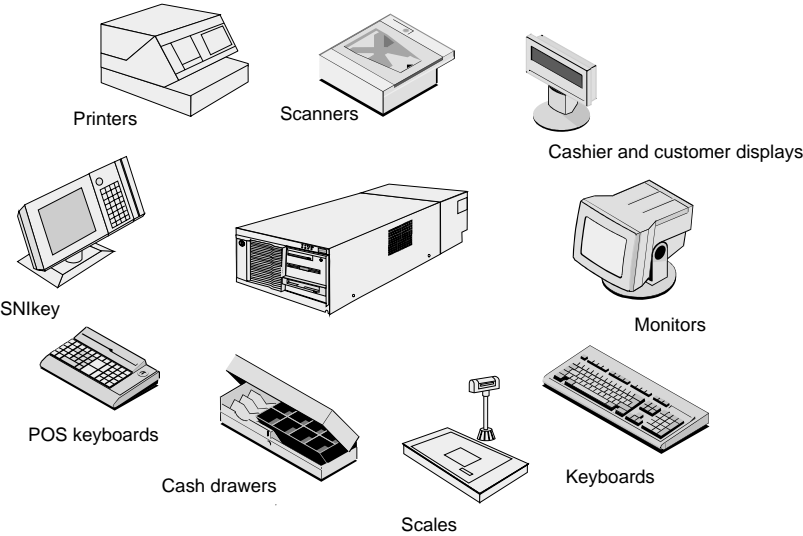
You can connect a large number of peripherals to your modular BEETLE /XL POS system and thus expand it in a variety of different ways. You can:

- connect a two- or four-line alphanumeric customer display and a four-line cashier display
- use different kinds of scanners, such as distance scanners, hand-held scanners or stationary scanners
- use scales and scanner scales (observe the relevant official standards)
- connect various printers
- use POS keyboards with or without swipecard readers
- use cash drawers (various types)
- connect a monitor and various keyboards
- install a LAN card and integrate the BEETLE /XL into a network
- connect SNIkey
- upgrade the BEETLE /XL (it has room for several AT expansion cards)

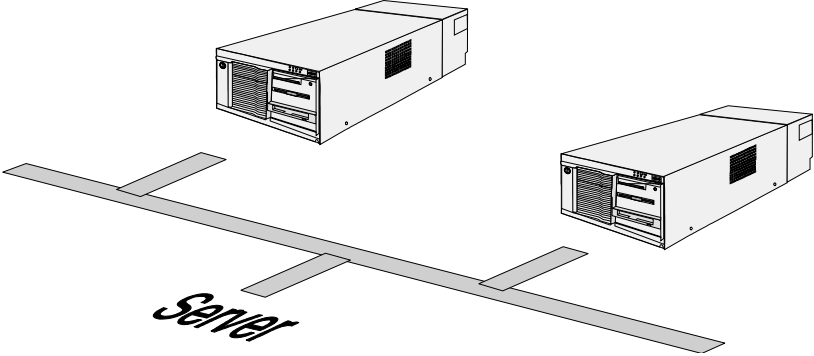


The illustrations below show you how you can expand your modular POS system - from connecting SNIkey to integrating it into a network.

**BEETLE /XL peripherals**



**BEETLE /XL in a network**



## Before switching on the system

### Unpacking and checking that everything is there

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

The carton contains the basic unit, which may be equipped with a network card, floppy drive, hard disk and VGA card, 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 Wincor Nixdorf sales outlet immediately.



We advise you to keep the original packaging in case you transport the device in future (this protects it against impact and shock).

### Setting up the device

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

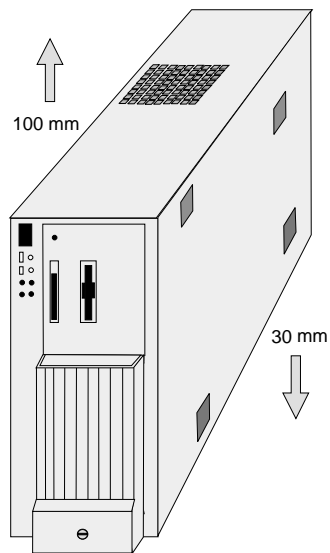
To ensure that the BEETLE /XL has sufficient ventilation, make sure that the side ventilation slots are kept clear:

- Leave at least 100 mm clear to the right of the device.
- Leave at least 30 mm clear to the left of the device.

The BEETLE /XL is specified for a horizontal mounting. If you install the system vertically, observe the following:

- Stand the device with the ventilator side facing upward.
- To ensure proper ventilation, keep the following minimum spaces clear above and below the device:

Below: 60 mm  
Above: 100 mm



- A closed area made of nonflammable material (e.g. concrete or metal) must be located under the vertically mounted BEETLE /XL.

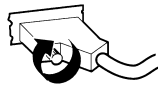
### Cabling the BEETLE /XL

To install the devices, proceed as follows (in this order):

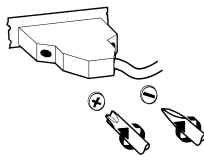
- Make sure that the power switch on the front of the housing is set to “off” (i.e. visibly protruding). To do this, you may have to open the slide cover first (see the illustration on page GB - 15).

- If necessary, remove the cable cover.
- Plug the power cable into the power socket on the BEETLE /XL.
- Plug the power cable into a mains socket.
- Plug in and secure the data cables.

### Securing the data cables



Secure interface connectors with knurled screws using your fingers.



Secure interface connectors with standard screws using a screwdriver.

After you have done this, cover the cables by mounting the cable cover (see next page).

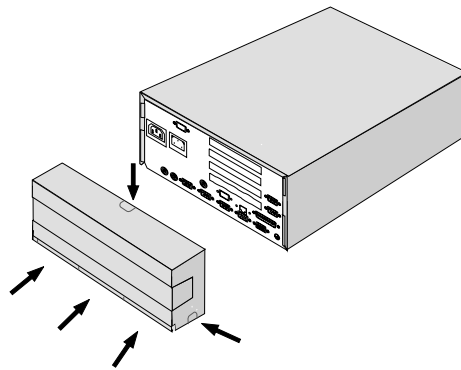


Under no circumstances connect data or power cables when the system is switched on.

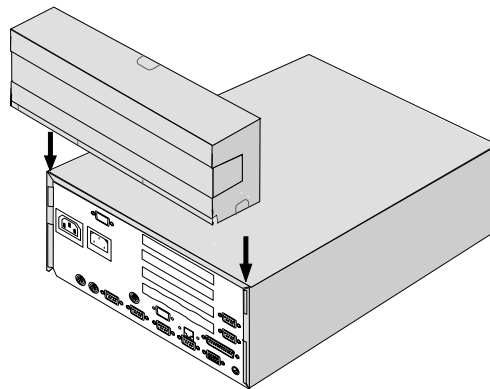
**Monting the cable cover**

Your BEETLE /XL is shipped with a cable cover. Before you can mount this on the back of the device, you should remove the connector covers where necessary, depending on how you want to connect the cables.

You do not need a tool for this; these plastic parts can be removed by hand.



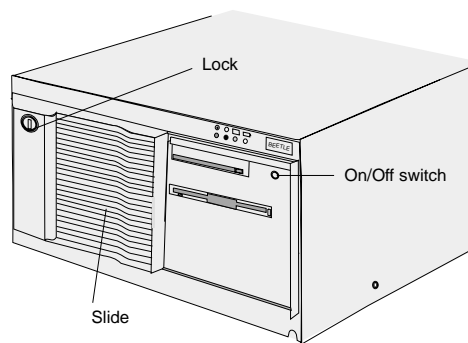
To mount the cable cover, lower it into the guides indicated by arrows in the illustration. Be careful not to let the cable cover get jammed when you do this.



### Connecting to the mains power supply

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

- Ensure that the power switch on the POS system housing is 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 utility power sockets.



You can now use the power switch on the front of the BEETLE to switch it on. You may have to unlock the slide cover and slide it to the left before you can do this.

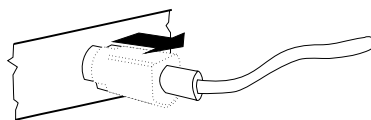


The power supply unit can be connected to all conventional power supply networks. It adapts automatically to the voltage supplied. A fan keeps it cool. The power-supply unit has a maximum output of 180W.

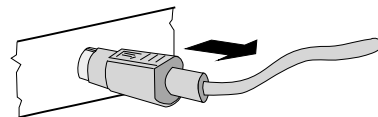
**Disconnecting cables**

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

- 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 cables from the grounded-contact utility power sockets.
- Unplug all cables from the devices.



Use your thumb to pull the plastic cover away from the socket of the Mini DIN connector. This releases the lock, and the metal of the Mini DIN connector becomes visible.



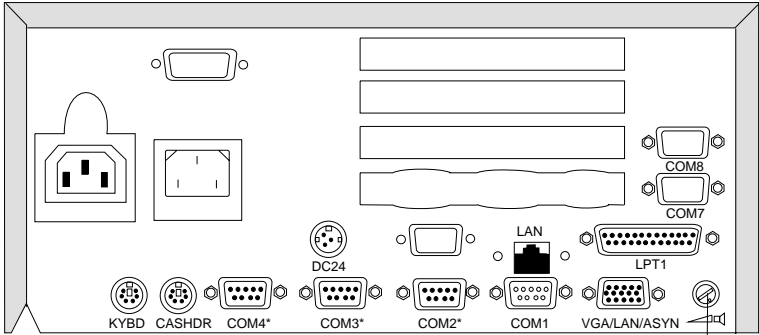
Remove the cable from the socket.

**Basic settings**

Ex works, the BEETLE /XL is configured to your order. Your configuration must be adapted subsequently to support additional devices such as scanners. For more information please contact your WN branch.

**Adjusting the loudspeaker**

You can set the volume to suit your requirements by means of the volume control on the back of the POS system housing.



Controller

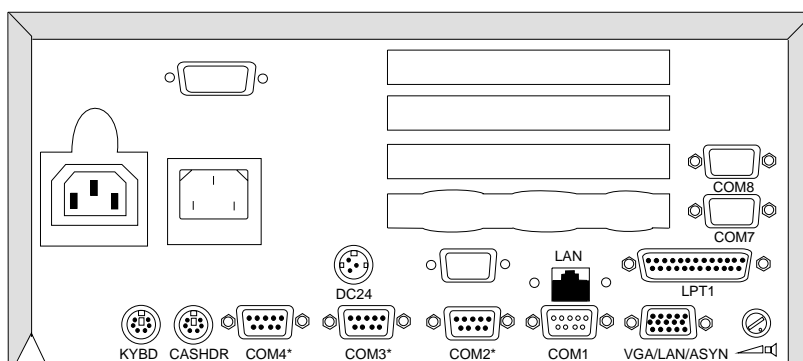


## Connecting peripherals

The peripherals mentioned here are available as options; they are not part of the basic configuration. A separate manual is provided for each component that can be connected. For more detailed information, please consult the relevant documentation.

The illustration below shows the rear panel of the BEETLE /XL with the locations of the connecting sockets and connecting plugs. To connect a monitor, you need a video card. However, you can also run the BEETLE using only an external cashier display connected to the COM3\* port.

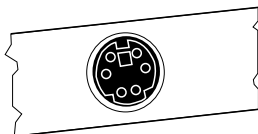
To connect your system to a network, you require another expansion card.



Rear panel of the BEETLE /XL

**Keyboard (KYBD)**

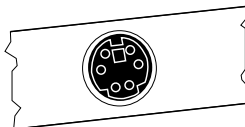
The BEETLE /XL has a 6-pin mini-DIN jack for connecting a keyboard. Make sure that the connector is plugged firmly into the socket to prevent malfunctioning. Power is supplied to the keyboard via this socket. If you wish to connect a standard PC keyboard, you must use a special adapter cable. This is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



When using cables with connector locking mechanisms, take hold of the connector housing when disconnecting them. Extension cables are available for keyboards.

**Cash drawer (CASHDRW)**

The BEETLE /XL 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.



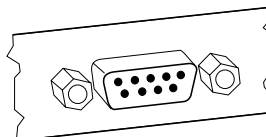
When using cables with connector locking mechanisms, take hold of the connector housing when disconnecting them.

**Scanners and scales (COM1 - 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: COM3\*).

Scales with their own power-supply units must be connected to COM1. COM1 is a 9-pin D-sub connector, whereas COM2\* to COM4\* are 9-pin D-sub sockets.

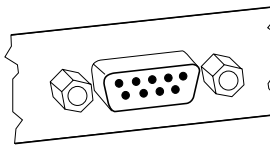
Make sure that the scanner connector is plugged securely into the socket to prevent possible malfunctioning. Power is supplied via this socket.



If you connect scales to the BEETLE /XL that do not come from Wincor Nixdorf (WN), you have to obtain a **WN license** for the driver software.

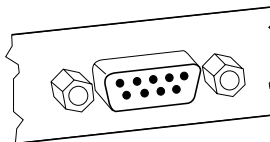
**Customer display (COM2\* or COM4\*)**

Depending on the system configuration, the customer display is connected to the COM2\* or COM4\* serial interface of the BEETLE /XL. These are 9-pin D-sub sockets. Make sure that the connector for the customer display is plugged firmly into the socket to prevent possible malfunctioning. Power is supplied via this socket.

**Cashier display (COM3\*)**

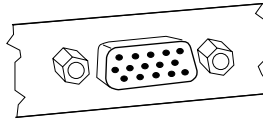
Connect the cashier display to the COM3\* serial interface. This is a 9-pin D-sub socket.

Make sure that the connector for the customer display is plugged firmly into the socket to prevent possible malfunctioning. Power is supplied via this socket.

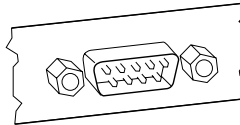


**Monitor**

If a VGA card is installed, you can connect a monitor to the BEETLE /XL via the 15-pin D-sub socket of the VGA card. Power is supplied to the monitor via the rubber socket on the back of the BEETLE /XL.

**Connecting standard PC peripherals (COM1)**

You can connect standard peripherals to the BEETLE /XL via the COM1 serial interface.



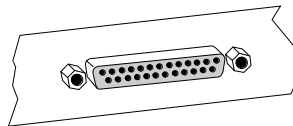
Make sure that all additional devices have been tested for RFI suppression pursuant to the legal requirements of your country.

**Network**

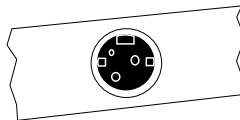
If a network card is installed, the system can be connected to a network (LAN) from the rear panel. If a LAN card is not installed, there is a dummy cover at this point on the rear panel (see also configuration variations).

**Printer (LPT1 / 24V, 4A)**

You can connect a printer to the standard parallel interface LPT1.



In addition, suitable POS printers can be supplied with power via a low-voltage socket (24V, max. 4A). A connecting cable with a HOSIDEN connector is required for this. Do not connect a HOSIDEN plug when the system is turned on!



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

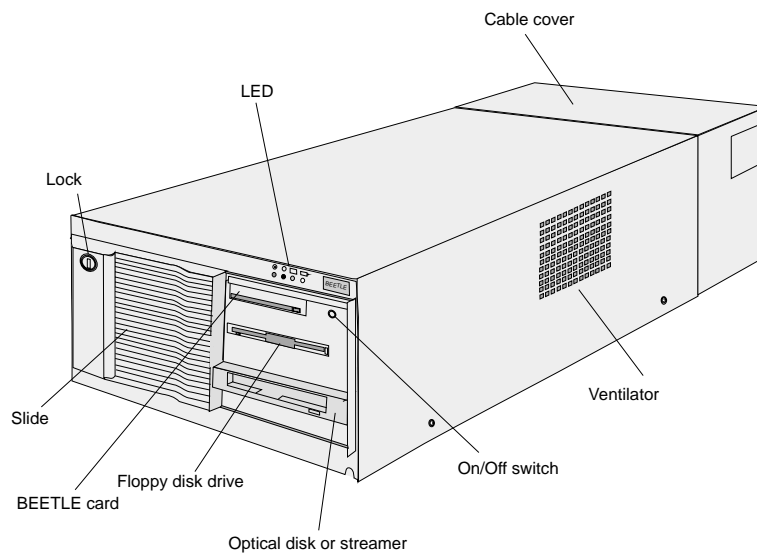


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## The BEETLE /XL components

### Overview

The illustration below shows what the BEETLE /XL looks like from the outside:

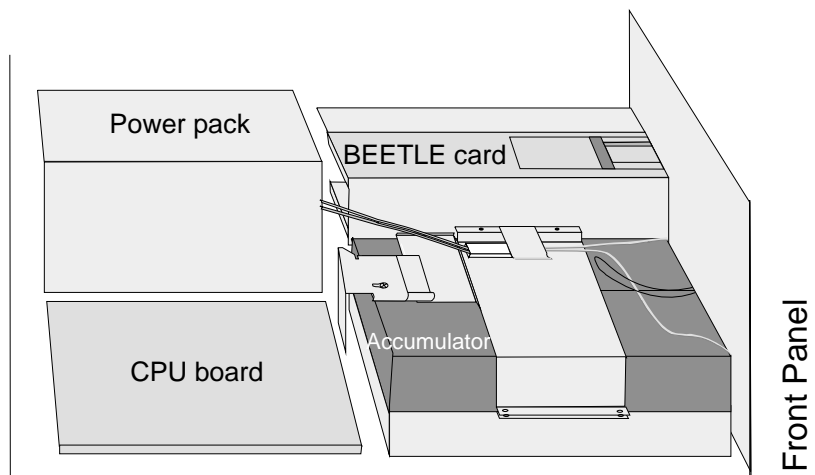




The BEETLE /XL components

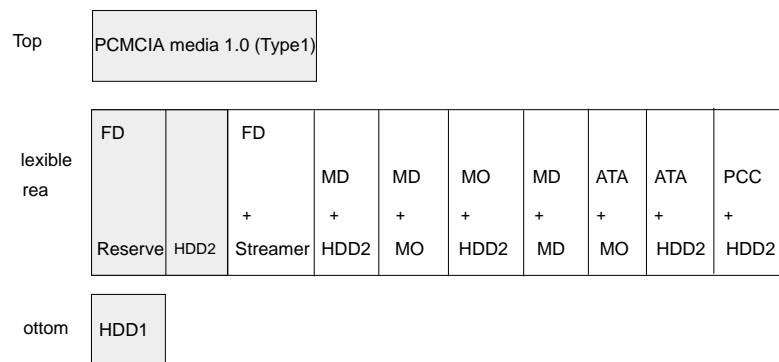
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The following illustration shows what the BEETLE /XL looks like inside:



### Storage concept

The BEETLE /XL has a flexible storage system that allows you to combine different storage media in a variety of ways. By using a combination of different storage media, you achieve a high degree of security against failure and manipulation. The following diagram gives you an overview of the options available:



The gray shading indicates the standard configurations with which the BEETLE /XL is shipped. All other configurations are optional.

Technical details	Interface
PCMCIA media 1.0 (Type I) (BEETLE card)	PCMCIA
FD (floppy disk drive) - 3.5" floppy disk drive	
Streamer	*
MO (magneto-optical disk)	*
MD (mini-disk)	*
ATA hard disk PCMCIA 2.1 Type III	**
PCC PCMCIA I/O card 2.0 Type II	**
HDD (hard disk drive)	enhanced IDE

\* You also require an SCSI controller.

\*\* You also require a PCMCIA controller.



If you have any questions about mass storage media, please contact your Wincor Nixdorf branch.

## The BEETLE card

The BEETLE card, a credit card-sized memory card, provides the BEETLE /XL with a storage medium offering a number of benefits:

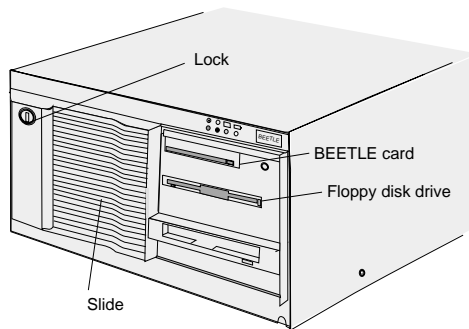
- high storage capacity
- small size, thus less space required
- mechanical robustness
- high data security (not magnetically sensitive)
- relative insensitivity to moisture and heat
- rapid data access (no moving parts)

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

- loading programs
- backing up data (e.g. daily sales figures)
- access control (as an “electronic key”)

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

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



The lockable slide cover can be used to prevent those unauthorized to do so from accessing the memory-card drive.

### The card types

The following standard cards can be used as BEETLE cards:

- SRAM cards                      readable and writable
- OTPROM cards                  readable
- MASK ROM cards                readable
- FLASH EPROM cards            readable, writable and deletable

Brief descriptions of the different types of cards follow.

#### SRAM cards

This card type can be read and written to the system any number of times. You can write-protect the SRAM card to prevent the stored data from being inadvertently overwritten.

An integrated battery ensures that data is retained. 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 cards**

The data content of these cards is created during the manufacture of their memory chips and cannot be modified subsequently.

**OTPROM cards**

Data can be written to these cards once and then no longer modified. The cards can only be written in special memory-card drives.

**FLASH EPROM cards**

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

**Inserting the BEETLE card**

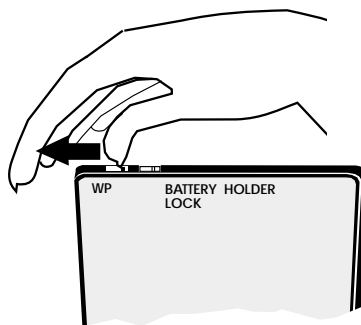
Hold the BEETLE card with the arrow side up and the arrow pointing in the direction of the slot. Then insert the card, connector end first, into the slot for the BEETLE card. The black ejection button next to the slot pops out when the card is inserted correctly.

### 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 BEETLE cards



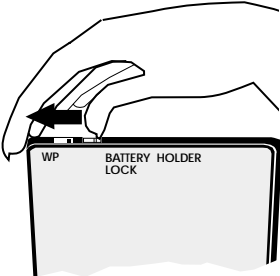
To write-protect the BEETLE card, slide the lock shown in the illustration to the WP (write protection) position. This applies only to SRAM and FLASH EPROM cards.

**Changing the battery when using SRAM BEETLE cards**

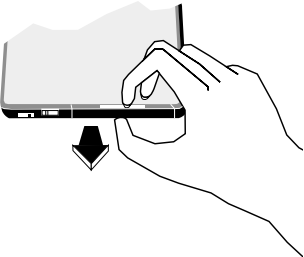
The illustrations below show you how to change the battery for this type of BEETLE card.



It is only possible to change the battery without losing the data stored in the case of memory cards made by certain manufacturers. For more information, contact your WN branch.

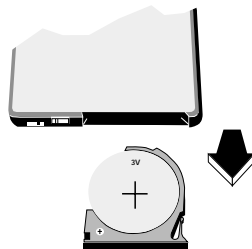


Unlatch the battery lock.

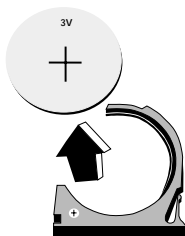


Remove the battery holder and battery from the BEETLE card.





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



Lift the battery up and out. Hold the sides of the battery, and avoid touching its plus and minus terminals at the same time.

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



Please dispose of used batteries in an environment-friendly manner.

## The floppy drive

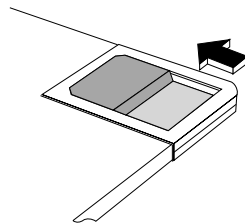
### General

The BEETLE /XL can, if desired, be supplied with a 3.5" floppy drive. The LED indicator always lights up when the system accesses the drive.

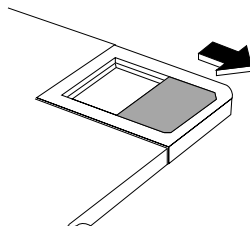
Floppy disks can be used for a variety of purposes, such as:

- loading programs
- backing up data (e.g. daily sales figures),
- access control (such as an "electronic key").

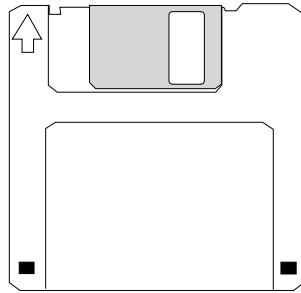
You can write-protect a diskette to protect your data from being inadvertently overwritten.



Data can be written to the diskette.



Data cannot be written to the diskette.

**Inserting a diskette**

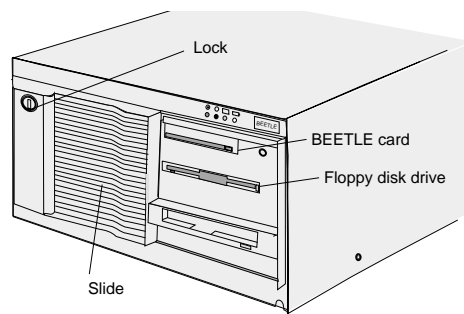
Hold the diskette so that the arrow symbol is facing up and pointing away from you. Then insert the diskette into the drive slot. The gray ejection button pops out when the diskette is correctly inserted.

**Removing a diskette**

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



Never remove the diskette when the drive is being accessed, i.e. when the LED indicator for the drive is illuminated. This can damage the drive and diskette.



You can use the lockable slide cover to prevent those not authorized to do so from accessing the floppy drive.

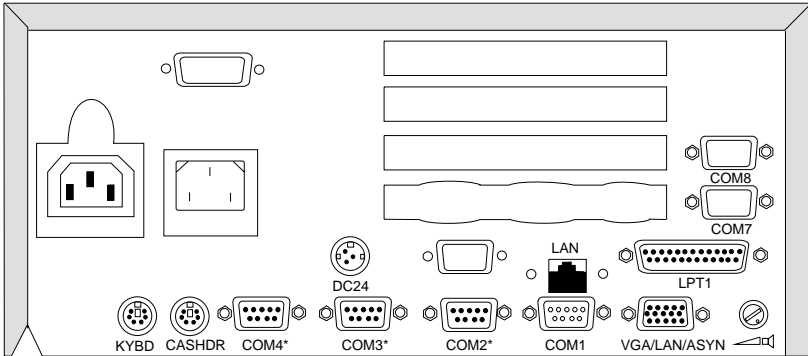
## The CPU

### General

The modular BEETLE /XL POS system is supplied with an 80486DX2 CPU or with a Pentium class CPU.

The CPU consists of a specially developed board containing, in addition to the typical PC modules and interfaces, components such as a nonvolatile memory (NV-RAM) and, optionally, a VGA controller for connecting a monitor.

The board's connecting plate has the sockets for the external peripherals. The illustration below shows the connector assignments for the CPU.



**Interfaces**

The COM1 interface of the BEETLE /XL is for connecting standard peripherals that have a separate power supply. The COM2\*, COM3\* and COM4\* interfaces are used to connect special POS peripherals that do not have a separate power supply, such as a scanner or a display. The BEETLE /XL also has a parallel interface and a DC24/4A power supply interface for connecting POS printers, and two mini-DIN sockets for connecting a keyboard and a cash drawer.



We advise you to connect to the BEETLE /XL only devices that are approved by WN. If you are in any doubt, contact your WN branch.

**Loudspeaker**

A loudspeaker is connected to the CPU. You can adjust its volume by means of the control on the rear panel of the modular POS system (see page GB - 17).

**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.

### Dyamic RAM

This memory is required by the operating system and the application while they are running. It is available in the following form:

#### 80486DX2 CPU

4 = 1*4 MB (Default)	32 = 2*16 MB or 1*32 MB
8 = 2*4 MB or 1*8 MB	36 = 1*32 MB + 1*4 MB
12 = 1*4 MB + 1*8 MB	40 = 1*32 MB + 1*8 MB
16 = 2*8 MB or 1*16 MB	48 = 1*32 MB + 1+16 MB
20 = 1*16 MB + 1*4 MB	64 = 2*32 MB
24 = 1*16 MB + 1*8 MB	

#### Pentium CPU

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

### Connection options

The CPU is designed in such a way that expansions are possible at any time, as desired.

### Connecting hard disks

Up to two (80486 CPU) or four (Pentium CPU) hard disks can be connected to the CPU. These store the operating system and POS-specific software. They can also be used for the long-term storage of the electronic journal. 3.5" hard disks are used for this. These disks have a 16-bit IDE (Integrated Drive Electronic) AT bus system interface and an integrated controller. Hard disks with a capacity greater than 504 MB have an enhanced IDE interface. The default settings and technical data for the hard disks are specified on the configuration label.



You will find an illustration of the configuration label, which is affixed to the underside of the POS system, on page GB - 78.

**Free AT slots**

The 80486DX2- system has four free AT-compatible slots. These are for full-length expansion cards (2) and half-length expansion cards (2). The BEETLE /XL with a Pentium class CPU offers space for a PCI expansion card, a slot for a PCI or full length ISA card and two slots for half length ISA cards.

**Additional slot on the CPU**

The CPU has an additional slot, into which one of the available controllers (VGA, LAN, VGA/LAN or ASYNC) can be inserted.

**Possible expansions****Mini-disk (MD)**

A mini-disk can be compared to a diskette, except that its capacity is up to 100 times larger. It is therefore particularly suitable for transporting large quantities of data.



For more information, contact your WN branch.

**PCMCIA**

If you insert a PCMCIA controller into one of the slots on the rear panel, depending on the type of controller, you can use Type I EXT, Type II EXT, Type III and FLASH memory cards, I/O magnetic cards and ATA removable disks.



For more information, contact your WN branch.

**Streamer drive**

You can also install a streamer drive in the BEETLE /XL. Streamers are particularly suitable for backing up large quantities of data. A streamer is a cartridge containing a magnetic tape, comparable to a video cassette.



For more information, contact your WN branch.

**Magneto-optical drive (MO)**

The magneto-optical drive (MO) is the latest storage medium to have become available. It has a number of advantages over other storage technologies:

- Extreme temperatures and strong magnetic fields do not affect the MO.
- There are no problems (such as headcrash) with the read head.
- Unlike the streamer drive, it makes it possible to access specific data.
- The standardization of the data format for both 5.25- and 3.5-inch media ensures trouble-free data interchange.
- At a constant 25° Celsius, the data can be stored for 30 to 50 years.
- Magneto-optical storage media can be transported without difficulty.



For more information, contact your WN branch.



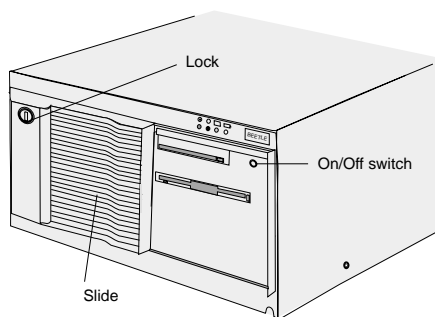
## Power pack

The power pack can be connected to all conventional power supply networks. It adapts automatically to the voltage. A fan keeps it cool. The power pack's maximum output is 180 W.



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

The power cord receptacle (rubber connector) and the power output socket (rubber socket) for the monitor are located on the back of the BEETLE /XL. The power switch is on the front.



You can use the lockable slide cover to prevent those unauthorized to do so from switching the system on.

## Accumulator batteries

The accumulator batteries bridge power failures, thus allowing controlled termination of the POS program by means of the appropriate software (see the section entitled "Security against power failure" on page GB - 47).



Battery-charging time after initial startup is approximately 8 hours. The accumulator batteries are only charged while the system is switched on.

The following table provides an overview of the length of time for which battery power is supplied to the BEETLE /XL in the event of a power failure (when the accumulator batteries are fully charged).

Duration of power supply	Power output	Operation
2 minutes	Full load (max. 180 W)	With external peripherals (e.g. 24V printer)
10 minutes	Medium load (approx. 85 W)	E.g. printer running
25 minutes	Low load (approx. 50 W)	E.g. device switched on



A peripheral device connected to the power output socket of the POS system is not supplied with power in the event of a power failure.

### Changing the accumulator batteries

Accumulator batteries have a limited service life. To protect yourself against data loss, we recommend that you change the accumulator batteries every four years at the latest.



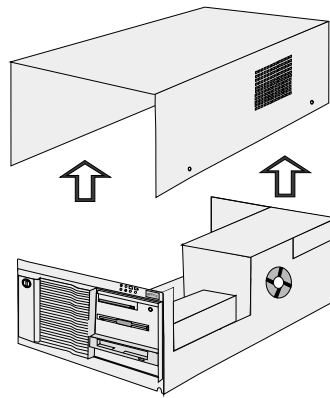
The accumulator batteries can only be changed by authorized trained personnel. If it is not done properly, there is a risk of explosion. Use only accumulator batteries approved by WN.

You must always replace **both** accumulator batteries ! To change the accumulator batteries, proceed as follows:



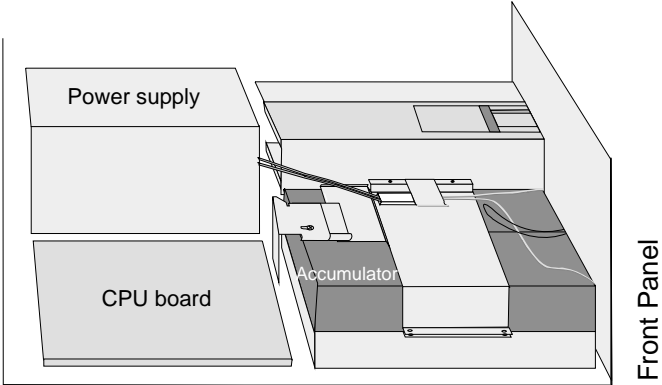
Make sure the device is switched off and the power plug is disconnected.

To access the accumulator batteries, you have to remove the box housing. Unscrew the four screws at the sides of the BEETLE /XL, and lift the upper part of the housing off as shown in the illustration.

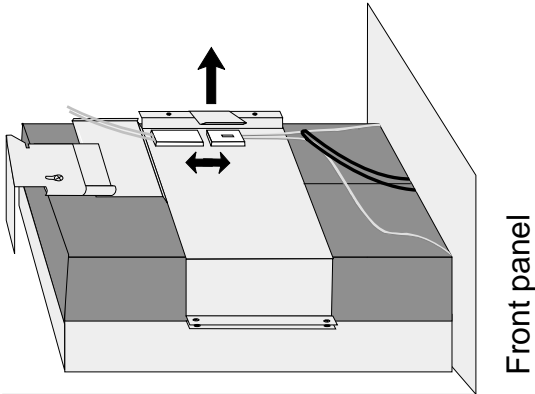


Remove the full-length expansion cards in order to be able to access the accumulator batteries.

The accumulator batteries are in the front-left part of the POS system housing.



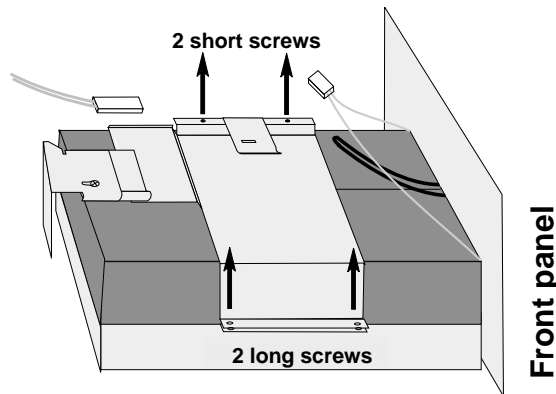
Use your thumb to lift the holding clip for the connection, and pull the connection out from under it. Disconnect the cable between the power supply and the accumulator batteries (see the illustration below). This breaks the connection between them.



Now remove the four screws of the metal cover indicated in the illustration.



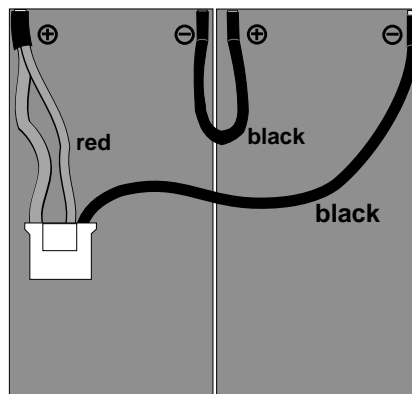
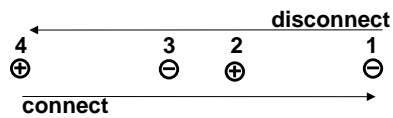
Use a magnetic screwdriver to do this so that the screws do not fall into the housing.



Remove the cover, and take out the two accumulator batteries.  
 For changing the cables to the new accumulator batteries you must keep a strict order to avoid short-circuit ! Place the old and the new batteries in same position next to each other.

**Disconnect the cables** of the old accumulator batteries in the order shown in the illustration (1, 2, 3, 4).

**Connect the cables** to the new batterie in reverse order (4, 3, 2, 1).



To insert new accumulator batteries, do as above but in reverse order.  
Note the following:

- When you connect the batterie connector to the power supply connector sparking may occur. This is not harmful.
- The nut on the connection must fit into the opening in the holding clip.
- Do not forget to push the cables to the left of the accumulator batteries under the clip again.
- Place the upper part of the housing on the lower part again, and secure the four screws.



Please dispose of the accumulator batteries in an environment-friendly manner.

### Security against power failure

The modular BEETLE /XL POS system offers you an additional important feature.

After a power failure, the system remains fully functional for a short period of time. The power required for continued operation is supplied by the accumulator batteries.

Because the system is kept running by the accumulator batteries, the application program can be terminated normally without data loss.

The power failure is reported to the application program via the Retail Device Interface (see the chapter entitled "Software"). The application then ensures that the program is terminated normally, by closing open files and writing important information to nonvolatile memory, for example.

The duration and end of battery operation are controlled by the RDI software. The system is then shut down. This prevents any unnecessary discharging of the accumulator batteries.



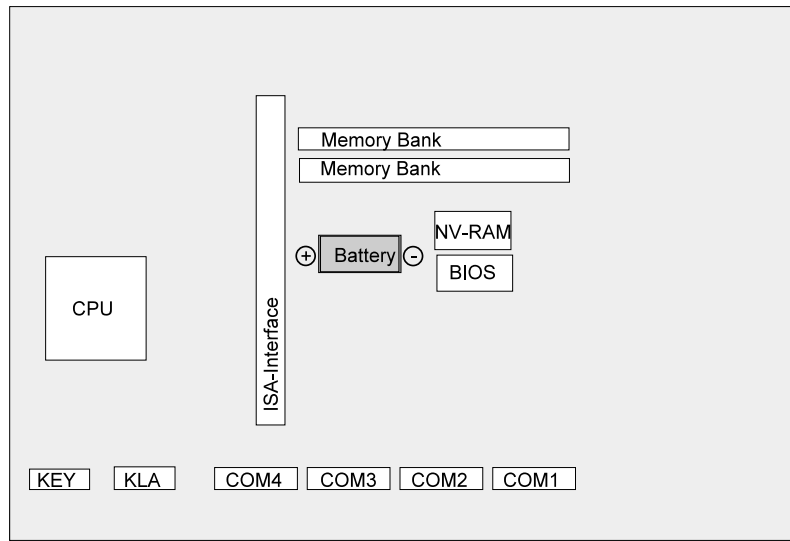
A peripheral device such as a monitor connected to the power output socket (110/220 VAC) of the POS system is not supplied with power in the event of a power failure.

## Changing the lithium battery of the BEETLE /XL

The BEETLE /XL is equipped with a lithium battery that ensures that the date, time and setup parameters are retained. The battery needs to be changed about every five years.

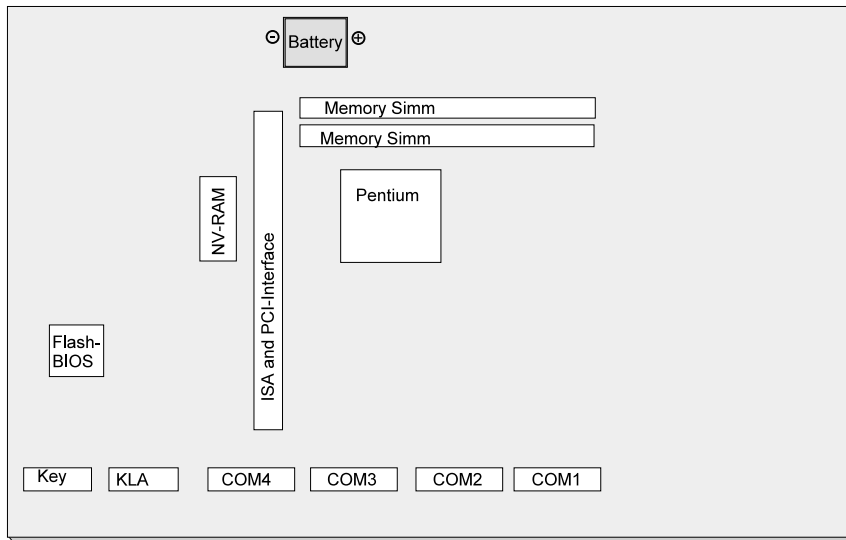


The lithium battery must be changed by authorized, trained personnel only. If it is not done properly, there is a risk of explosion.



Location of the battery (80486DX2 CPU)

The battery is located in a socket on the CPU. To access the battery, proceed as described in the section entitled "Changing the accumulator batteries" until you have removed the housing.



Location of the battery (Pentium CPU)

Remove the clip holding the battery, and then remove the battery itself.



The lithium battery can only be replaced with an identical battery or a battery type recommended by the manufacturer. The lithium battery must be disposed of in accordance with local provisions for the disposal of special waste.

When inserting the new battery, make sure its plus and minus terminals are at the correct ends of the socket. The correct positioning is indicated clearly on the socket.



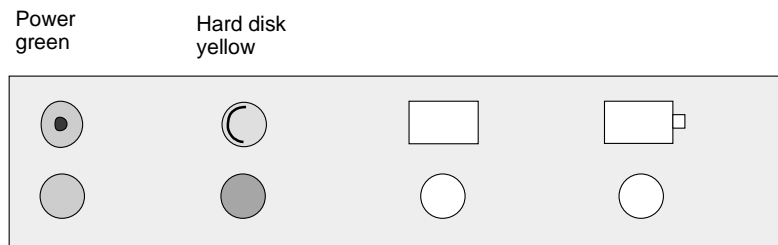
After you have changed the battery, you must reset the Setup parameters (see the chapter entitled "BIOS Setup").



## LED indicators

In the upper part of the front of the BEETLE /XL there are four LED (light emitting diode) indicators. Two of these are provided for future enhancements.

The green LED indicator tells you whether the POS system is switched on; the yellow LED indicator tells you that the hard disk is being accessed.



## Configuration variations

### Plug-in cards for the CPU

You can insert various controllers into the CPU. Below you will find a brief description of the controllers available.

#### ASYNC controller

This RS232 interface card provides you with an additional power-supplied serial interface for connecting various peripherals.



When connecting an ASYNC controller, note that the total power consumption of all power-supplied serial interfaces must not exceed 900 mA.

#### VGA controller

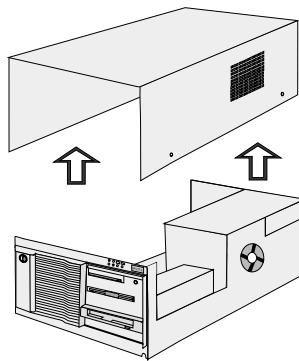
The VGA controller allows a monitor to be connected.

#### LAN controller; VGA/LAN controller

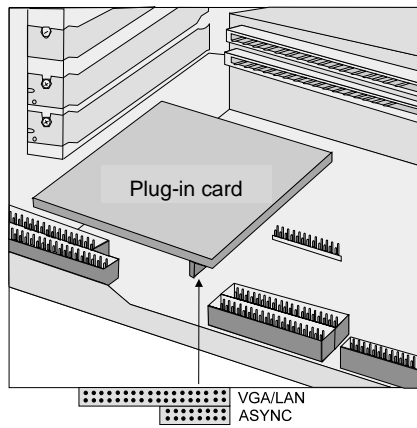
The LAN controller allows you to integrate the BEETLE /XL into a network, the combined VGA/LAN controller allows you to connect a monitor *and* to integrate your BEETLE /XL into a network at the same time.

**Inserting plug-in cards**

Make sure that the **system is switched off** and the **power connector is disconnected**. Remove the four screws on the housing, and then lift the housing off. Be careful not to let the housing get caught as you do this.



Use a wrench to remove the screws from the panel where you are going to insert the card. To find out where to insert the card, refer to the illustration. Then attach the card using the screws you removed from the panel.



## AT plug-in cards

In the BEETLE /XL, you can use any of the common AT-compatible plug-in cards recommended by WN.

### BEETLE in-house controller

The BEETLE in-house controller (BIC) is a plug-in card for BEETLE POS systems. It allows BEETLE systems in existing installations to be integrated into in-house networks.

The card is plugged into a free AT slot in the POS system housing.

If you want to know more about this expansion card, contact your WN branch.

### PCMCIA controller

Using an appropriate PCMCIA controller, you can use various storage media, such as FLASH and I/O magnetic 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 WN branch.

### SNIkey controller

The SNIkey is a new input/output device used with BEETLE POS systems.

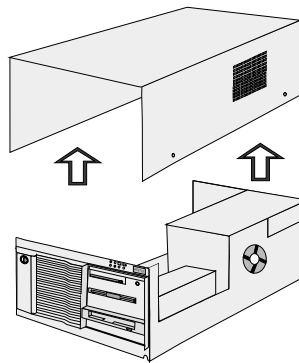
Once you have installed an SNIkey controller, you can connect an SNIkey to the BEETLE /XL. You insert the controller in the second free slot from the bottom of the BEETLE /XL.

If you want to know more about the SNIkey, contact one of our branches.

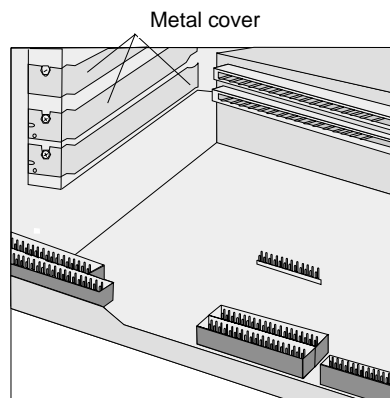
**Inserting an AT plug-in card**

Make sure that the system is switched off and that the power cable is disconnected.

To access the slots, you have to remove the four screws on the POS system's housing and then lift the housing off.



To insert a card, you have to remove the metal cover from a free slot by removing the screw.



Check first whether the card's jumpers (if there are any) are correctly set. To find out the correct settings, please refer to the card's documentation. Then insert the expansion card into the slot provided.

In the 80486 system the two slots from above are for the full length ISA cards, the third and the fourth slot are provided for half length ISA cards.

In a Pentium class CPU the upper slot is reserved for a PCI card, the second slot is provided for a PCI card *or* a full length ISA card, and the third and fourth slot from above can be used for half length ISA cards.



Ensure that the card is firmly inserted.

Secure the card by means of the screw you removed from the panel.

Finally, replace the housing, screw it in using the four screws you previously removed, reconnect the power cable, and switch the system on.



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## Software

This chapter gives you a quick overview of the operating system and the range of programs provided by Wincor Nixdorf for the efficient operation of your BEETLE /XL. You will find detailed information in the documentation of the various programs.

### Operating system

The BEETLE /XL POS system runs under the MS-DOS operating system (English version), which has been enhanced especially for the POS applications.

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

### Retail Device Interface

The Retail Device Interface (RDI) is a standardized C programming interface for the BEETLE family.

It provides the application programmer with a simple means of programming retail applications and devices.



## **Application programs**

Application programs are available for the BEETLE /XL POS system that meet specific retail requirements. For more information, contact your Wincor Nixdorf branch.

## **Retail Presentation Manager**

The Retail Presentation Manager (RPM) is a standardized tool (MS-DOS and UNIX) for input and output description. The RPM brings about a considerable reduction in the effort required to develop POS applications.

## **Retail Transaction Manager**

The Retail Transaction Manager (RTM) forms the connecting link between the POS applications and the operating system. The RTM permits shared data to be accessed, for the purpose of looking up prices, for example, and transaction files to be maintained.

## **High Frequency Table**

Price Look Ups (PLU) are executed by means of the High Frequency Table (HFT). The HFT provides function libraries with standardized interfaces for this purpose.

## **Hash File Access Method**

Like the HFT, the Hash File Access Method (HSF) is required particularly for price look ups. The extensive article data on mass storage media can be managed with the HSF. For this purpose, the article file receives a specific structure when it is created. In conjunction with the access method for "Hash" files, this ensures particularly short search times.

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## Starting up the system

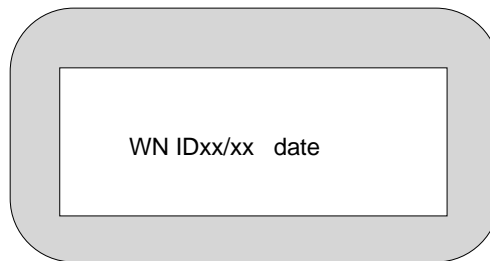
The configuration label shows you what is included with your modular BEETLE /XL POS system. You will find an example of a configuration label in the appendix on page GB - 78. The label is located on the underside of the BEETLE /XL. You require the data specified on the label when entering the Setup parameters (see "BIOS Setup").

### Startup behavior

After installing the BEETLE /XL, switch on the POS system by means of the power switch on the front of the housing.

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

You will see the following message on the four-line cashier display or the monitor, for *example* :



xx/xx is the place holder for the version number

It is then decided which medium the operating system and POS application are to be started from. This means that each medium is assigned a logical drive depending on the configuration of your BEETLE /XL.

The following media can be assigned a drive:

- a diskette
- a BEETLE card
- a network
- a hard disk

A:, B:, C: and D: are used as logical drive names.

If the system is to be started from a BEETLE card or a diskette, the card or diskette must always be assigned drive A:. However, it is also possible to assign the BEETLE card or diskette drive B: if you want to use the BEETLE card or diskette purely as a storage medium. The network is always assigned drive C:. The hard disk can be assigned drive C: or D:. The system can only be started from it when it is configured as drive C:.

The modular BEETLE /XL POS system can be started from two drives. However, please note the following:

- The system can be started from drives A: and C: only.
- The storage medium must be bootable.

The following priorities apply:

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

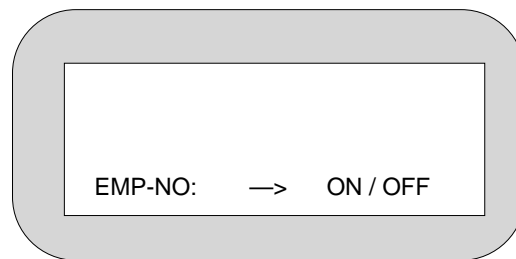
The POS system always attempts to boot from the BEETLE card or diskette first if they are inserted in the appropriate drive.

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



If drive A: contains a BEETLE card or diskette that does not contain an operating system, the POS system cannot start up. If this happens, replace the card or diskette with a bootable one or simply remove it.

The operating system responds with additional messages on the cashier display or monitor, as shown here, for example:

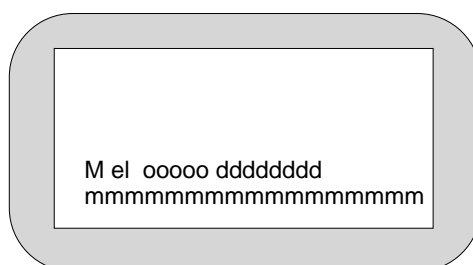


If the operating system has started up without error, the software for the POS application can also be started automatically.

As soon as the POS system is ready for operation, a message to this effect appears. For more information, refer to the description of your application program.

## Output of MS-DOS system error messages

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



The entries have the following meanings:

<b>M</b>	Reserved
<b>e</b>	MS-DOS error no. 0..C HEX
<b>l</b>	Indicate where the 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 keyboard. The operating system then repeats the previous message.

---

## BIOS Setup

BIOS Setup allows you to restore or reset the configuration parameters of your BEETLE POS system. Your POS system's configuration is specified on the configuration label on the underside of the BEETLE /XL. You will find an example of a configuration label on page GB - 78.

Thus, in Setup, you can make important basic settings that are required for your POS system to run properly. These settings include, for example, the date and time, the assignment of a specific drive name (A: or B:) to the BEETLE card or diskette, or parameters for the hard disk.

You have several options for calling Setup:

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

The default output medium for the BEETLE POS system is the 4-line, 20-column cashier display connected to the COM3 interface. If a VGA monitor is connected, the outputs are displayed on the monitor.

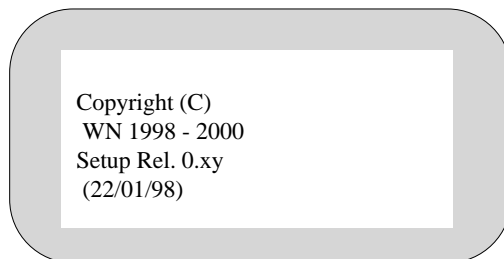


If there is no monitor connected although a VGA card has been installed, the system messages are not displayed. If there is no VGA card, the display entry must be set to "MONO" or "OPERATOR" (Processor 80486DX2/66 and higher) so that the outputs appear on the connected cashier display.

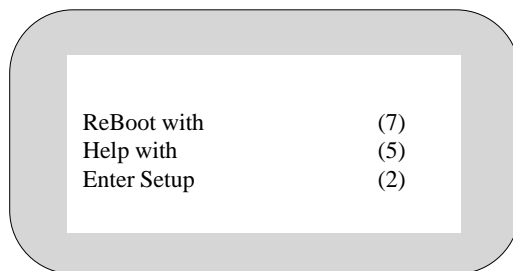
## BIOS Setup

---

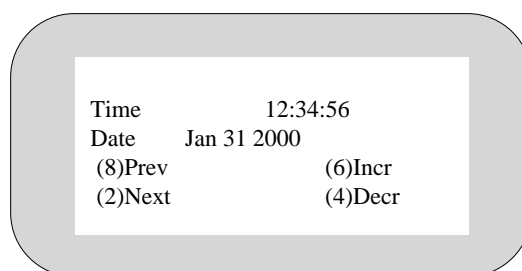
The entries in the menus below are intended to serve as **examples**. If you are uncertain of any information, consult the configuration label. When Setup is called, the copyright message appears initially, as follows, for example:



The first menu then appears. You control the menus by pressing the numeric keys specified in parentheses.



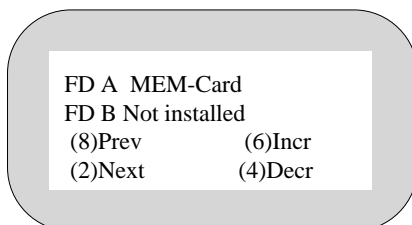
The (2) key allows you to set the date and time in another menu. (7) reboots the system.



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

- |                      |   |
|----------------------|---|
| (8) Prev (Previous)  | Moves the cursor to the previous field or menu. |
| (2) Next             | Moves the cursor to the next field or menu.     |
| (6) Incr (Increment) | Increments a value in the field.                |
| (4) Decr (Decrement) | Decrements a value in the field.                |
| (5)                  | Calls the help function (key assignments)       |
| (7)                  | Reboots the system.                             |

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



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

You can connect up to four hard disks to a CPU with a processor of the Pentium class. You can see the following allocations:

<b>PENTIUM</b>	<b>80486</b>
PRI MASTR	HD C
PRI SLAVE	HD B
SEC MASTR	not existing
SEC SLAVE	not existing

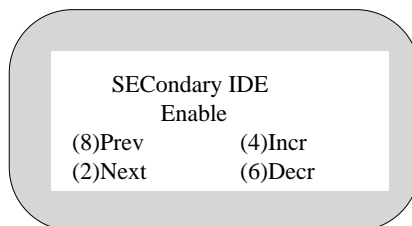
The terms MASTR and SLAVE are identical with the setting on the IDE hard disks.



## BIOS Setup

---

You will see the SECOndary connection only when you set "Enable" in the following mask:



Please note that a *bootable hard disk* always has to be configured as MASTR and must be connected to the PRImary connection. A single, as SLAVE configured hard disk will not be recognized by the BIOS.

Along with the Pentium CPU you have the opportunity to choose "AUTO" for your hard disk configuration. Thus the hard disk will be configured automatically during the booting. So you do not have to run the setup again when the hard disk has been replaced.

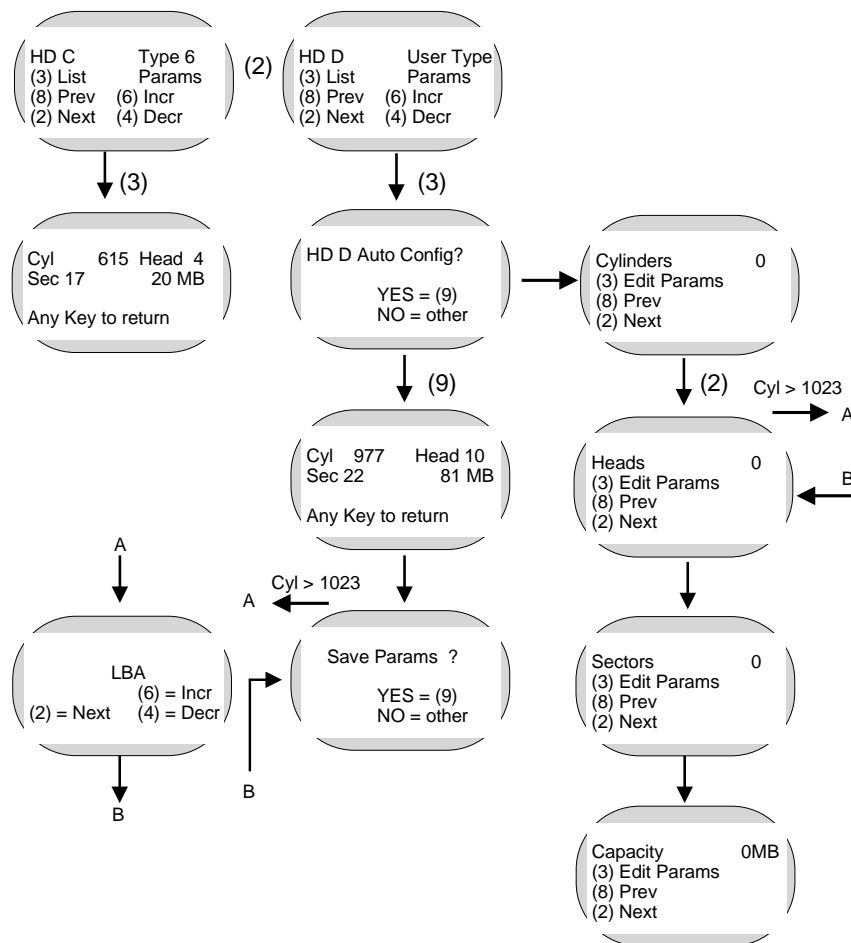
After the automatic configuration you will read the message "FDISK n identified" on a connected display.



The following description only refers to the automatic configuration of a IDE hard disk *during* the setup phase.

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

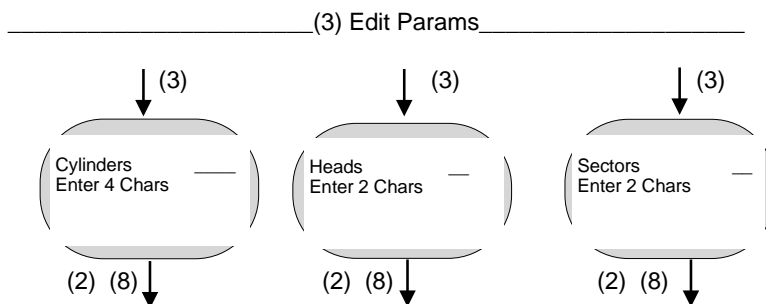
The following masks show the possible configurations for hard disk D:



## BIOS Setup

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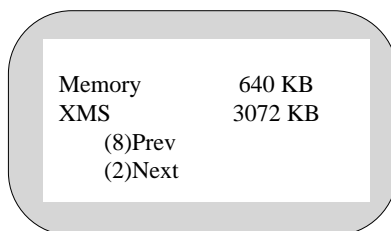
**X** The hard disk types for the BEETLE /XL are 1-39 and "User Type".



In total, you have four basic settings:

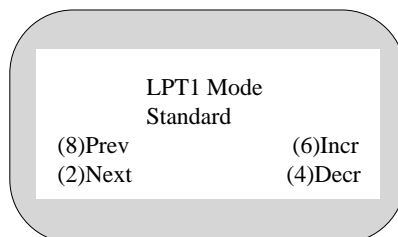
1. Use the automatic configuration facility in Setup, in which the parameters are read from the hard disk and entered automatically.
2. Enter a configuration manually using the parameters specified in the documentation for IDE hard disks.
3. Select a drive that coincides with a specified type (1 to 39).
4. Only with a Pentium CPU: Select "AUTO": The hard disk will be configured automatically during booting (see page 66).

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

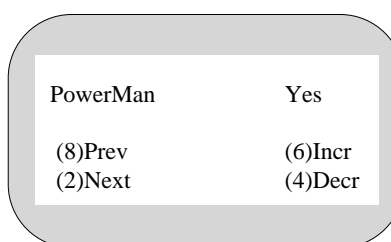


XMS stands for extended memory specification (above a memory capacity of 1 MB).

You can use the parallel interface in standard mode, and in the modes ECP, EEP v1.7 and EEP v1.9. If you are using **printers from WN** you choose the **standard mode**. Take your choice in the following mask:



The BEETLE /XL offers various operating mode settings (power management). 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.

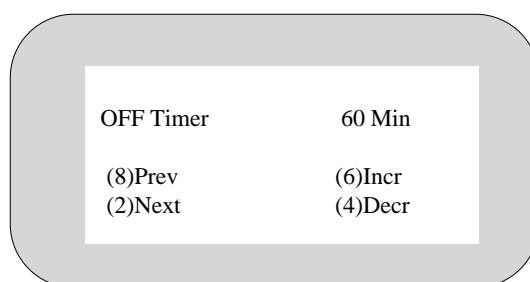


## BIOS Setup

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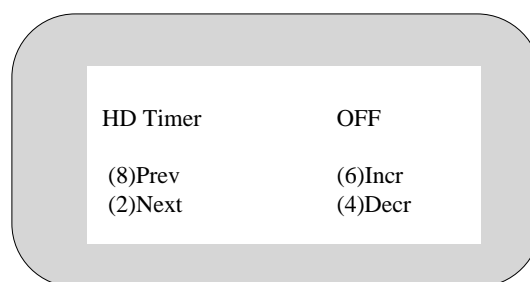
When "OFF Timer" is set, the CPU switches to sleep mode after the specified time (5 - 15 - 60 Min) has elapsed. The microprocessor is stopped at intervals and then clocked again at full speed. As a result, less power is used. A screen saver must not be active!

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



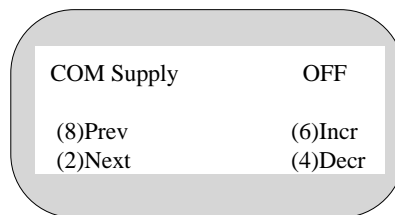
The hard disk timer can be set separately (OFF and 60 Min).

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 on in sleep mode (COM Supply ON) or not (COM Supply OFF).

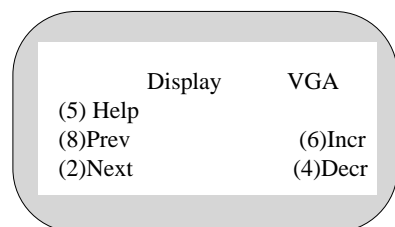
If one of the interrupts IRQ1 (keyboard), IRQ3 (COM2), IRQ4 (COM1) or IRQ8 (RTC) occurs, the CPU switches from sleep mode to normal mode.



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

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" so that the outputs appear on the cashier display.

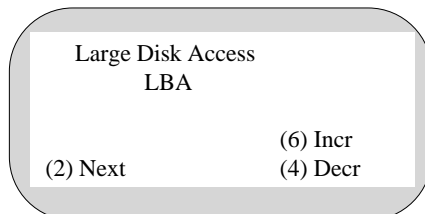


By pressing the numeric key (7) you can terminate Setup by rebooting the system.

## BIOS Setup

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You only see the following mask in the Setup menu of the BEETLE /XL if the hard disk used has more than 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).

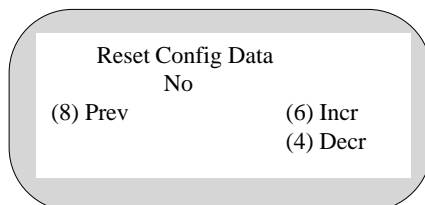
**- LBA**

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 different from MS-DOS, e.g. SINIX-Z.

If your BEETLE /XL works with a Pentium CPU (with the "plug and play"- and PCI features) then you will finally see this mask:



Select "Yes" when a new "plug and play"-capable card has been installed or an old one removed. The reset will be carried out automatically.

---

## Appendix

### Technical data for the BEETLE /XL

<b>Footprint</b>	
Width	280 mm
Depth (without cable cover)	395 mm
<b>Total height</b>	145 mm
<b>Weight</b>	12 kg
<b>Climatic category</b>	IEC 721-3-3 class 3K3
<b>Operating temperature</b>	5 - 40 ° C
<b>Input voltage</b>	100 - 120 V 200 - 240 V
<b>Power consumption</b>	6 / 3 A
<b>Frequency of system voltage</b>	50/60 Hz
<b>Noise</b>	53 dB (A)



Microprocessor	80486DX2 or Pentium class
Architecture	AT-compatible board with expansion options for POS-specific functional units
Main memory	4 MB (Pentium: 8 MB) expandable to 64 MB
Flash BIOS	128 kB
Keyboard	AT-compatible
Loudspeaker	Adjustable volume
Hard disk connection	IDE interface, 3.5" disk
Floppy disk connection	Standard interface
Submodule (optional)	One VGA controller, one LAN controller or one VGA/LAN controller or one ASYNC
Nonvolatile RAM	32 (128, 512 kB), data retention approx. 5 years
BEETLE card connection	Standard interface (PCMCIA), max. 64 MB
Cash drawer interface interface	Mini-DIN socket, 6-pin
Serial interfaces	Standard: COM1 (9-pin D-SUB connector) power supplied <sup>(1)</sup> ; COM2, COM3, COM4 (9-pin D-sub socket)
Parallel interface	LPT1 (25-pin D-ASUB socket, with EPP and ECP in the Pentium system)
Additional printer interface	24 V/4 A, maximum

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

The current consumption of a single interface must not exceed 600 mA +12V and 300 mA in total on +5V.

## ASYNC controller

<b>NS16C552 UART chip</b>	16 byte FIFO
<b>I/O base address area</b>	02E8H - 02EFH
<b>Interrupt</b>	IRQ12
<b>Connection</b>	9-pin D-SUB socket

## VGA controller

<b>CL-GD5420 chip</b>	256 kB video RAM
<b>Resolution</b>	max. 640*480*16
<b>Colors</b>	max. 256
<b>Refresh rate</b>	72 Hz
<b>VGA BIOS ROM</b>	32 KB, 8 bit
<b>Monitor connection</b>	15-pin HD-SUB socket

## LAN controller

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

## VGA/LAN controller

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

## What to do if ...

If your modular BEETLE /XL POS system is not working as you have come to expect, it is often not necessary to call the service department.

- |   |   |
|---|---|
| ... If your POS system does not boot correctly after you switch it on or if individual devices do not work correctly, | —— always begin by checking the plug-in connections - especially to the power supply - to see that they are securely attached at the back of the POS system housing and in the grounded power socket. |
| ... If the system's Setup menu is automatically called,   | —— check the position of the key in the central lock on the keyboard.   |
| ... If no image is visible on a connected VGA monitor,  | —— adjust the brightness and contrast controls and check that the monitor is switched on.   |
| ... If the system cannot access the BEETLE card,  | —— check to see whether the card has been correctly inserted and locked into place and whether the battery needs changing.  |
| ... If your POS terminal is connected to a network and does not boot correctly when switched on,                      | —— make sure that the server is also switched on.   |

If these measures do not correct the problem, contact your Wincor Nixdorf branch.

### The configuration label

The label is located on the underside of the POS system housing.

The picture below is an *example* of a configuration label. The one underside your BEETLE /XL may be different due to the fittings of your system

Master-HD:	MASTER BD 3. _____ (DOS)						
	86580.____,3.80/ _____ <input type="checkbox"/> DOS <input type="checkbox"/> SINIX						
CPU:	<input type="checkbox"/> 386SX <input type="checkbox"/> 486SLC <input type="checkbox"/> 486DX/2 <input type="checkbox"/> _____						
BIOS Ver:	_____						
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	Size (MB)	Cylinder	Heads	Sectors			
<input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> 3,5''	270/170	944/1011/	14/15/	40/22/			
<input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> 2,5''	127/	677/722/	9/10/	41/23/			
<input type="checkbox"/> VGA	<input type="checkbox"/> ASYNC: IRQ 12 <input type="checkbox"/> disabled I/O:2E8/ _____						
<input type="checkbox"/> BIC	IRQ	I/O	DMA Ch	SCC-Int	Sby	2/4 wire	NEN
	15	220	R/W 0/1	M1	yes	2	yes
changed:	_____	_____	_____	_____	_____	_____	_____
LAN:	<input type="checkbox"/> submodule (8K RAM)						
	<input type="checkbox"/> ATC (16K RAM) <input type="checkbox"/> _____ ( _____ K RAM)						
BOOT-ROM:	<input type="checkbox"/> TCP/IP (8K) <input type="checkbox"/> _____ ( _____ K)						
	IRQ	I/O	RAM base	ROM base	ROM size		
Default:	5	240	CC000	C8000	Ok		
changed:	_____	_____	_____	_____	_____k		
_____	_____	_____	_____	_____	_____		

## Power-on self-test (POST)

Phoenix POST, which checks the standard PC AT components of the mother board to verify that they are functioning correctly, is used as standard. 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 the monitor. The cashier display and monitor have high priority, and the messages are always output on the monitor if the VGA card is plugged in. Error messages are only output on the external cashier display if there is no monitor or cashier display connected.

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

**TEST POS TEST TYPE ERRORNUMBER**  
**Error text**

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

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

During the POST, 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. The MS-DOS critical errors and POST error messages are listed below.



You will find more information on MS-DOS system error messages on page GB - 62.

**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**

<b>Test type</b>	<b>Test</b>	<b>Message</b>	<b>Error number</b>
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
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 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 DEFECT	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**

Message	Possible cause	Possible remedy
Diskette drive fail	Disk drive failure	Check the drive
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 unformatted or defective	Replace disk with bootable disk and restart
Display adapter failed;	* Failure in primary video adapter	* Check video adapter
Gate A20 failure	Protected mode cannot be enabled	Replace the CPU
Fixed disk configuration error	Defined configuration 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
Keyboard clock line failure Keyboard data line failure	Keyboard or keyboard cable connection defective	Make sure that keyboard and keyboard cable are connected correctly

Message	Possible cause	Possible remedy
Keyboard controller failure	Firmware of keyboard controller defective	Check keyboard controller
Keyboard stuck key failure	One or more keys jammed	Attempt to activate 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
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 to retry boot	Drive A: hard disk or diskette is defective	Restart. If not possible, replace defective part

Message	Possible cause	Possible remedy
No boot sector on hard disk - strike 7 to reboot	Drive C: unformatted or not bootable	Format drive
Not a boot diskette - strike 7 to retry boot	Diskette in drive A: not bootable	Insert bootable disk 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	Peripheral board has defective ROM	Replace board
Shutdown failure	Failure in keyboard controller or log. circuit which connects it	Check keyboard controller
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 xxxx:yyyy Type (S)hut off NMI, (R)eboot; other keys to continue	Error writing to system memory or using I/O registers	Replace memory chip

## 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.

If one of the above errors occurs, please contact your service engineer or customer service department.

## Glossary

### **Bit**

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

### **Controller**

Controls data input and output in a data processing system or between a computer and its peripherals.

### **CPU**

Abbreviation for **C**entral **P**rocessing **U**nit. 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 working memory (RAM).

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

### **Operating system**

Consists of all the programs required to run the system and application programs.

### **Peripheral**

A peripheral is an input/output device or a storage medium of a computer, such as a document scanner, keyboard, printer or magnetic disk.

### **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 the installation, integration and configuration of new components is made substantially easier.

### **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**

Stands for video graphics array. It is the interface for connecting 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 Board
EPP	Enhanced Parallel Port
EPROM	Erasable Programmable Read Only Memory
GS	Geprüfte Sicherheit (tested safety)
HDD	Hard Disk Drive
HFT	High Frequency Table
HSF	Hash File Access Method
IDE	Integrated Drive Electronic
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



## Abbreviations

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MD	Mini Disk
MO	Magneto Optical
PCMCIA	Personal Computer Memory Card International Association
PCI	Peripheral Component Interconnect
PnP	Plug and Play
RAM	Random Access Memory
RDI	Retail Device Interface
RMH	Retail Message Handler
ROM	Read Only Memory
RPM	Retail Presentation Manager
RTM	Retail Transaction Manager
SCSI	Small Computer Systems Interface
SIMM	Single-In-Line-Memory-Module
SRAM	Static Random Access Memory
UL	Underwriters Laboratories
VGA	Video Graphics Array
XMS	Extended Memory Specification