WINCOR
NIXDORF

BEETLE

BEETLE /50

POS System

User Guide

BEETLE /50

POS System

User Guide

Edition April 2000

Contents

Manufacturer's Certification

CE certificate

CE

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

FCC-Class A Declaration

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

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

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

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

Tested Safety

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

In addition, the POS system has received the cUL symbol, the UL symbol and the CE symbol.

User information

The Wincor Nixdorf GmbH & Co. KG (WN) is not responsible for radio and television malfunctions caused by unauthorized alterations to the devices. Furthermore, cables or devices not authorized by WN must not be connected. The user is responsible for any malfunctions thus caused.

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

Important notes

The BEETLE POS system 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 utility power socket.

■ When setting up the device, ensure that the power socket on the device or the grounded-contact utility power socket is easily accessible.

■ Lay the leads and cables in such a manner that people will not tread or trip on them.

■ 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.

■ As far as possible, always transport the device in its original packaging (protection against jolts and knocks).

■ 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 GmbH & Co. KG must be notified.

■   Always dispose of used parts, such as batteries and ribbons, in an environmentally safe manner.

■   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 is a powerful, economical, compact POS system that requires very little space. The BEETLE/50 POS system is essentially a family comprising various models with the following features:

- Basic model without customer display
- Model with 80486SLC processor and check printing
- Model with 80486 DX2 processor and check printing

A wide range of optional devices is also available such as scanners for reading bar codes, magnetic card readers for check, credit and customer cards, or a monitor.

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

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

The integrated printer is characterized by a high print rate. A 9-dot matrix print head is used for receipt and journal printing. 12-line check printing is also possible.

The BEETLE POS system has an optional 9-position numeric customer display and a 4-line, 20-position alphanumeric operator display. In addition to the currently posted items, the operator display also outputs error messages and operating instructions.

The journal, which is maintained in parallel (on paper and on the operator display), ensures that you will be able to read and check both the currently posted items and earlier items quickly and with a minimum of effort.

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

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

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

POS-specific functions are programmed as a software application with the aid of the RDI (retail device interface) software interface developed by Wincor Nixdorf GmbH & Co. KG.

We wish you a profitable future with your BEETLE.

About this manual

BEETLE is an easy-to-use POS system. Following a brief familiarization period, you will already know how to use all its functions.
This manual is intended to help you work with the POS system and to serve as a reference work. The detailed table of contents and the index help you find the desired information quickly and easily.

The manual is divided into five main sections.

The first section describes

- ■ everything you need to do before switching on the POS terminal and

- ■ how to connect peripherals to the BEETLE.

The second section contains

- ■ a brief overview of the components of your BEETLE POS system. Here, you will also find a detailed description of

recurring actions (changing the journal roll, handling the BEETLE card, etc.).

The third section

■   provides information on the software of the BEETLE POS system.

The fourth section

■   explains the procedure for starting up the system. This section requires technical knowledge.

The Appendix

■   contains important technical data, instructions on how to install an expansion board, instructions on error rectification, a list of error messages, a glossary and a sample of the configuration label.

Notes in the manual are marked by this symbol.

This symbol is used for cautionary notes.

The type and scope of application programs depend on what the customer selects; 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 supply of a number of connectable peripherals. For this reason, a more detailed description of these devices will not be provided here. For more information, see the relevant manuals.

Care of the BEETLE

Clean your BEETLE at regular intervals with a cleaner suitable for sensitive surfaces. Make sure that the power plug is disconnected and that no liquid finds its way into the device. Please follow the instructions on Page 38 for cleaning the printer. You can obtain suitable cleaning agents from WN Plus. Just ask for our catalogue.

Recycling the BEETLE POS system
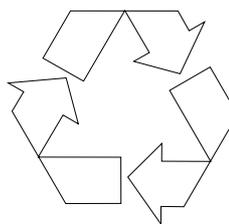
Environmental protection does not begin when it comes time to dispose of the BEETLE; it begins with the manufacturer. This product was designed according to our internal norm "Environmental conscious product design and development". The modular BEETLE POS System is manufactured without the use of CFCs 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

BEETLE - POS terminal and system

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

- connect an external alphanumeric customer display, or supplement the basis model with a customer display,

- connect an external customer display,

- use different types of scanners such as distance, touch or stationary scanners,

- connect scales and scanner scales (please take into account the official certification regulations).

- use POS keyboards with or without a magnetic card reader or connect a PC keyboard,

- use different types of cash drawers,

- connect a monitor and

- integrate the BEETLE in a network after installing a LAN connection.

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

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

Network

Supplementary
customer display

Monitor

External
cashier display

Cash drawers

Scanner

Scales

POS keyboard
or
MF2 keyboard

Standard
peripherals

Server

Before switching on the system

Unpacking and checking the scope supply

Unpack the parts and check to see whether the scope of supply 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, hard disk or 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 WN branch office.

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

Setting up the device

Set up the BEETLE POS system where it will not be exposed to extreme environmental conditions. Do not expose the device to vibrations, dust, moisture, heat and strong magnetic fields. Make sure that the side ventilation slots on the BEETLE POS system are not obstructed to ensure that the device has sufficient ventilation.

Cabling of the BEETLE

Install the devices in the following order:

■   Before connecting any cables, make sure that the power switch on the back of the housing is set to "0".

■   Plug the female connector on one end of the power cable into the power cord receptacle of the BEETLE.

■   Plug the male connector on the other end of the power cable into a grounded-contact utility power socket of the building wiring system.

■   Plug in and secure the data cable.

⚠   Never plug in or unplug data cables during thunderstorms.

Securing the data cable
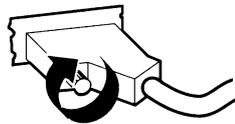
Secure interface connectors with knurled screws manually.
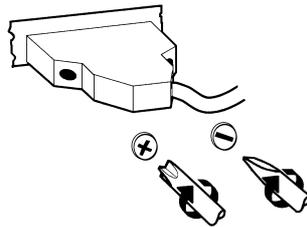
Secure interface connectors with standard screws using a screwdriver.

Connecting to the mains power supply

All devices belonging to the BEETLE POS system that have a
separate power cable must be connected to the same electric
circuit. When the POS system is switched on, it automatically
detects the local mains voltage. This means that there are no
settings to be made in or on the device.

■ Ensure that the power switch on the POS terminal housing is
set to "0".

■ Make sure that all data cables on the system unit and
peripherals are connected correctly.

■ Next, plug all power cables from the peripherals into the
grounded-contact utility power sockets.
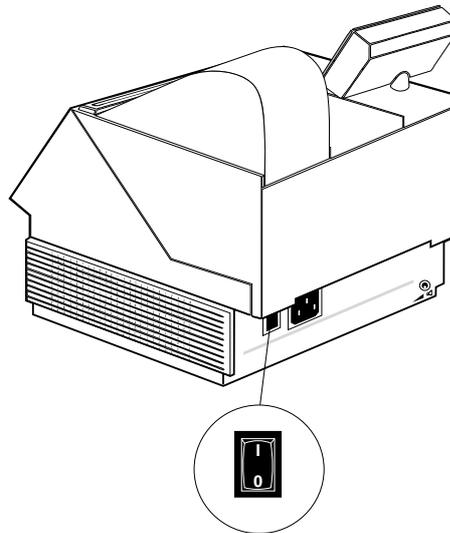
You can now switch
on the BEETLE POS
system by means of
the switch on the
back of the housing.

Disconnecting cables

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

■   Turn off all power and equipment switches.

■   Unplug all data communication cables from the sockets of the data networks.

■   Unplug all power plugs from the grounded-contact utility power sockets.

■   Unplug all cables from the devices.
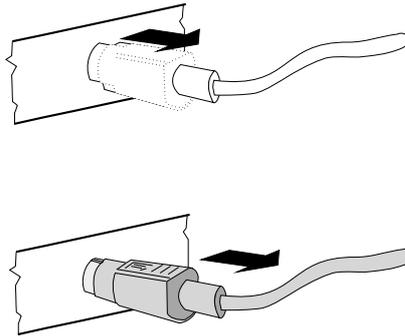
Mini-DIN plugs plug remain inserted until released. Pull the plastic covering from the connecting socket with your thumb. The lock is released. The metal of the plug is visible.

Now remove the cable from the connecting socket.

Basic settings

Ex works, the BEETLE POS system is configured to your order. Your configuration must be subsequently adapted to support supplementary devices such as scanners. For more information, contact your appropriate technician or customer service.

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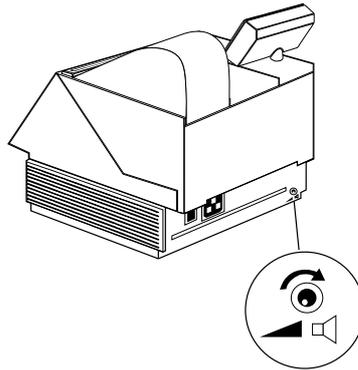
You can set the
volume as desired by
means of the volume
control on the back
of the POS terminal
housing.

Connecting peripherals

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

Keyboard   Cash   Com4   Com3   Com2   Com1   VGA
           drawer   (optional)
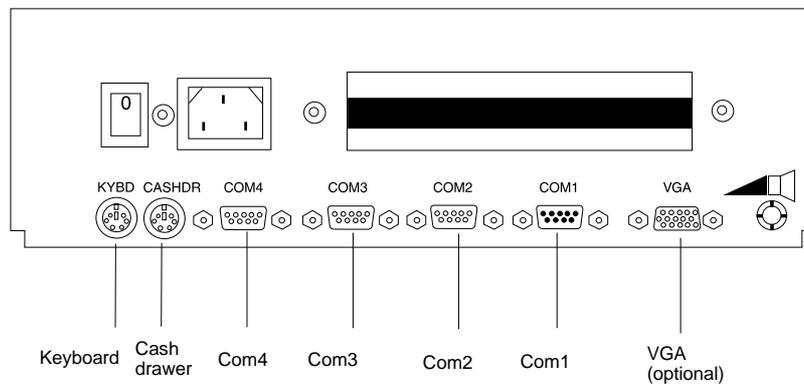
The figure shows the back panel of the BEETLE with, for example, the
locations of the connecting sockets and connecting plugs. If a VGA board
is installed, you can connect a maximum of seven peripherals. If you wish
to connect a monitor, however, you must also have a video board. You
can connect the system to a network via an add-on board.

Before connecting peripherals, switch off all network and device switches, as otherwise a malfunction of the CPU of the POS system may result.

Keyboard

The BEETLE POS system has a 6-pin mini-DIN jack for connecting a keyboard (KYBD). 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 commercially available adapter cable.
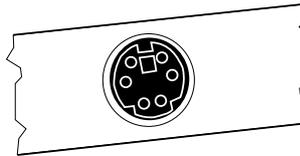
Cash drawer

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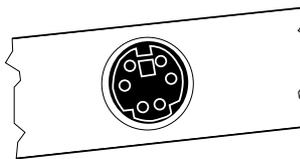
Scanners

Depending on how the system is configured, scanners are connected
either to the COM2, COM3 or COM4 serial interface. The interface
connection on the BEETLE POS system is a 9-pin D-sub connector. Make
sure that the scanner connector is plugged securely into the socket to
prevent possible malfunctioning. Power is supplied via this jack.
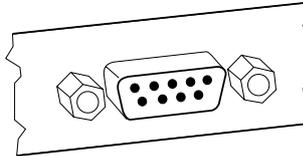
Supplementary customer display

Depending on how the system is configured, a supplementary customer
display is connected either to the COM2, COM3 or COM4 serial interface.
The interface connection on the BEETLE POS system is a 9-pin D-sub
connector. Make sure that the connector for the customer display is
plugged firmly into the socket to prevent possible malfunctioning. Power is
supplied via this jack.
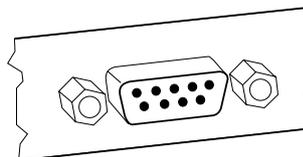
Monitor

If a VGA board is installed, you can connect a monitor with a separate power supply to the BEETLE POS system via the 15-pin D-sub jack (VGA) on the VGA board.
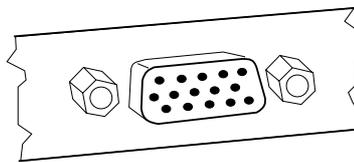
Connecting standard PC peripherals and scales

You can connect additional, standard peripherals via the COM1 serial interface.

Scales with independent power supply can likewise be connected to the COM1 interface.

> If you connect scales not obtained from WN to the BEETLE, you must obtain an WN licence for the driver software.
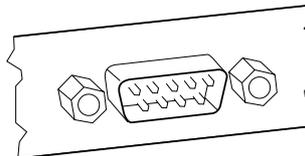
Network

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

Cable cover

The cable cover serves to protect the plug-in connections from
disconnection. It also has a positive optical effect.
The opening in the cable cover allows access to the ON/OFF switch, even
when the cover is fitted.

The procedure for installing the cover is as follows:

1 If you are using connectors which require more room, remove the
 prestamped front panel of the cable cover.
2 Form a slight angle between the cable cover and the terminal. Guide
 the cable cover in an upward direction under the terminal housing.
3 Change the angle at the top so that the two lower retaining lugs on the
 right and left fit in their corresponding openings.
4 Press the upper part of the cable cover towards the terminal until
 the cover snaps audibly into place.

Follow these instructions in reverse order when removing the cable cover.
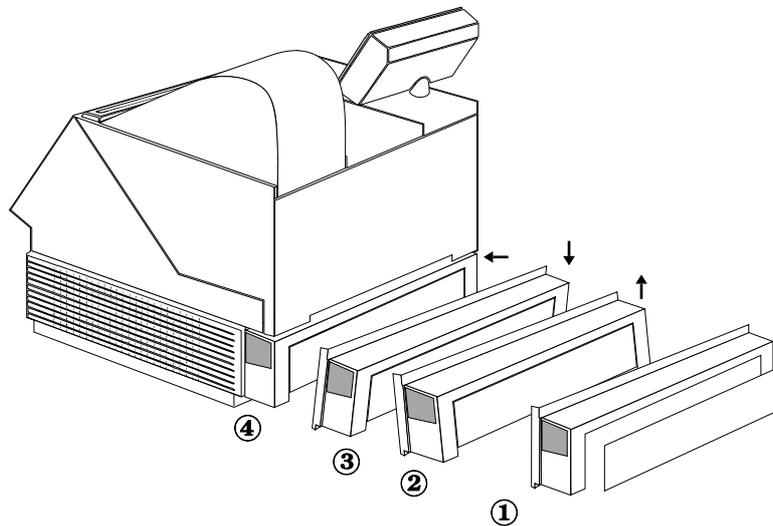
The BEETLE components

Overview

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

Customer display

Journal window

Receipt output

BEETLE housing

Cashier display

Plug connector strip (back panel)

Opening for check printing

Slot for memory card
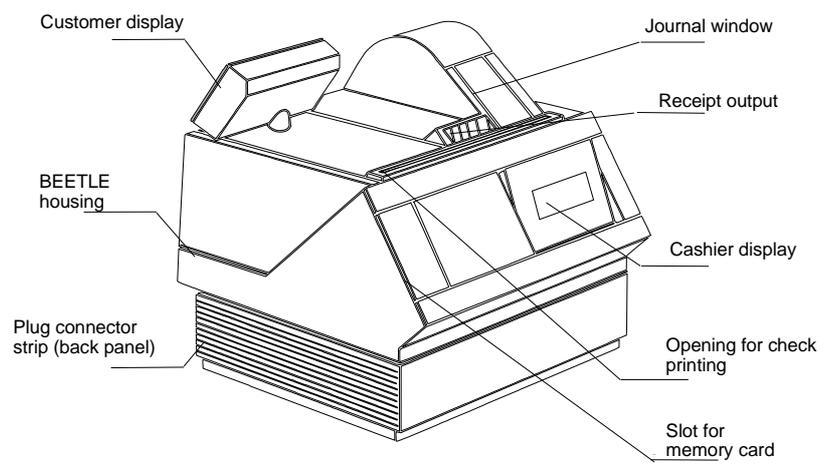
Displays

The POS system has an integral 9-position numeric customer display*
and a 4-line, 20-position alphanumeric cashier display.
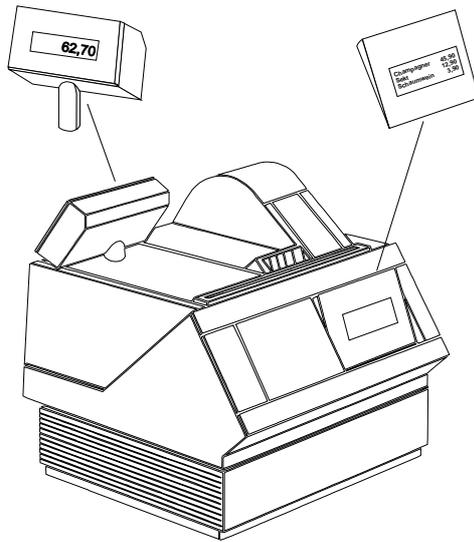
* (not on basic model)

Customer display

The hardware configuration of the BEETLE system includes a 7-segment customer display (not for basic model). This is a 9-position numeric display that also displays a dot, comma, semicolon and 1/2 character. Characters are 10 mm high and 4.8 mm wide. The display colour for all characters is green.

This display allows customers to read both item prices and the final amount. The display can be rotated horizontally 320 degrees and its height can be adjusted, to achieve the optimal setting for the customer.
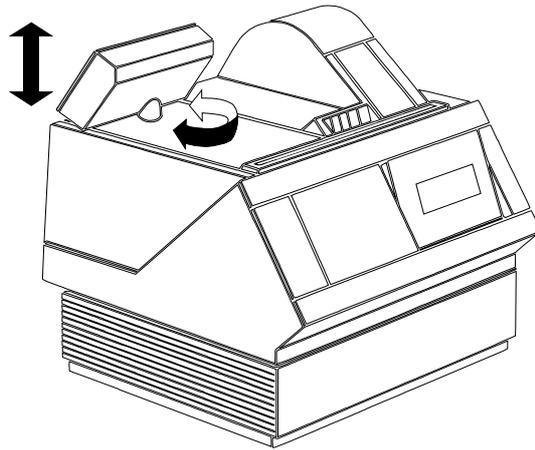
Operator display

The BEETLE /50 has a 4-line, 20-position alphanumeric operator display. The display field is backlit, making it easy to read any information that is displayed. In addition, the operator display can be tilted gradually to prevent glare. Along with the journal, this display also shows operating instructions and error messages.
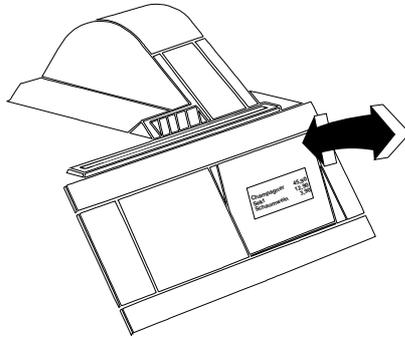
The BEETLE printer

The printer used in the BEETLE is a 9-dot matrix printer with two print stations (receipt and journal). In addition, 12-line check printing is also possible.

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

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

All consumables for the printer, such as receipt and journal paper or ribbon cassettes, can be ordered from WN branch office.

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

Changing receipt and journal paper rolls

The following illustrations are affixed to the paper compartment cover to remind you of how to perform the most important actions:
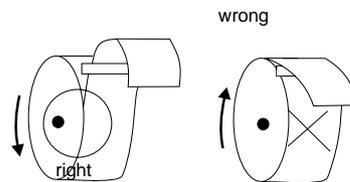
wrong

right

Rotational direction of the receipt and journal paper rolls over the metal clip
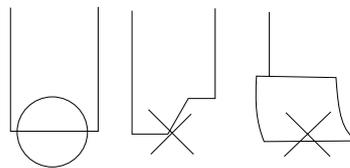
The end of the paper must be evenly cut

right   wrong   wrong
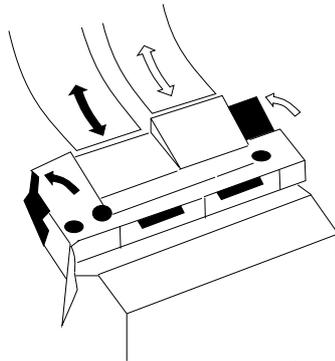
Loading and removing the receipt paper (black arrow) and journal paper (white arrow)
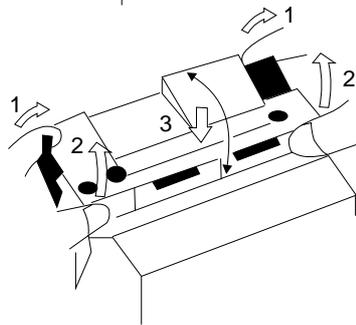
Removing a paper jam. Unlatching (1), opening (2) and closing (3) the printing unit
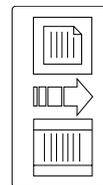
A soft-touch switch on the housing can be used to advance the receipt (top) and journal (bottom) easily.
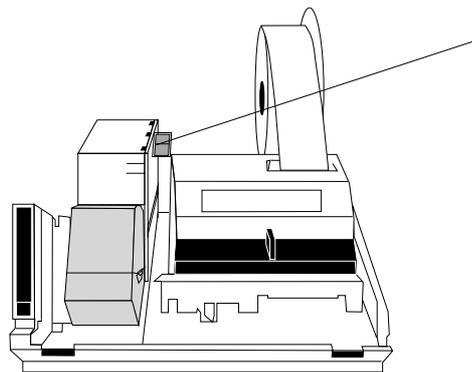
The individual steps are described below.

Changing the receipt roll

A red stripe appears when you have reached the end of the receipt roll. Change the receipt roll as follows:
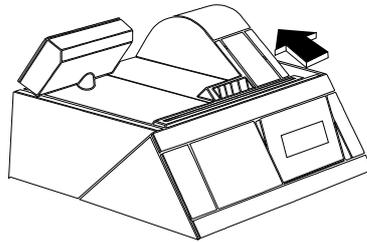
Lift up the paper compartment cover to access the paper roll compartments.
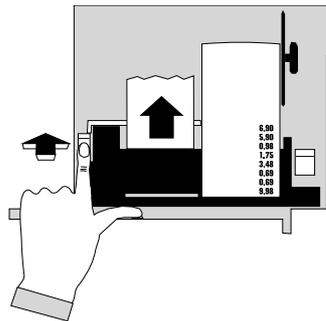
To remove the remaining receipt paper, hold down the left-hand green key of the paper guide and slowly pull the paper from behind, out of the guide.
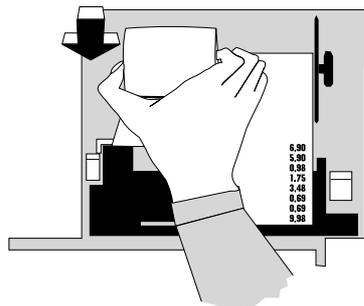
Make sure that the paper on the new receipt roll is evenly cut.

Insert the new receipt roll in the paper compartment, making sure that the roll rotates in the correct direction.
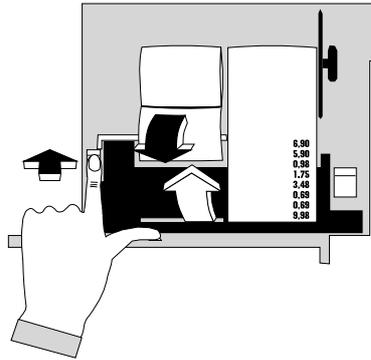
Hold down the left-hand green key and pull the paper over the metal clip.

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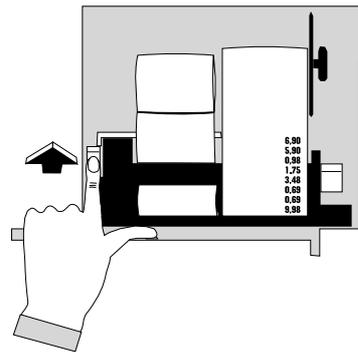
Check whether the paper is straight and then release the left-hand green key. The paper is now secured in the guide.

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

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

Changing the journal roll

You have reached the end of the journal roll when a red stripe appears on the roll or when your POS program issues a message to this effect.
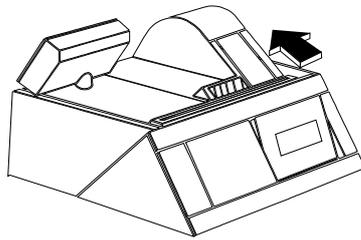
Lift up the paper compartment cover to access the compartments for the paper rolls.

Tear off the journal paper after the last journal entry.
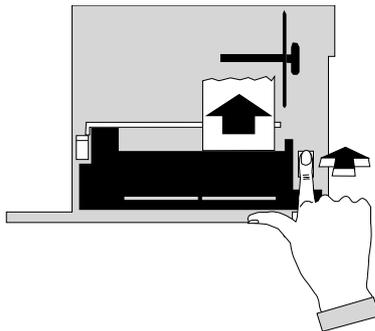
You can now remove the rest of the journal paper. To do this, hold down the right-hand green key and slowly pull the paper from behind, out of the guide.

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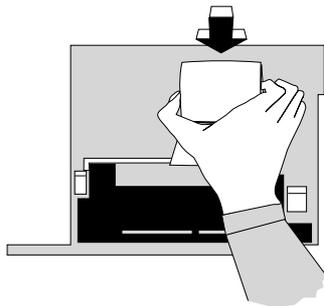
Insert the new journal roll, making sure the tear at the end of the paper is even.

Make sure the paper roll is rotating in the correct direction.
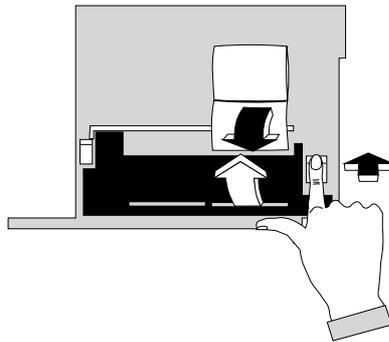
Hold down the right-hand green key while inserting the paper.

Pull the paper through the journal guide.
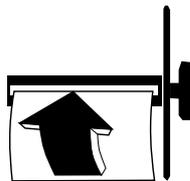
Thread the paper into the slit in the spool.
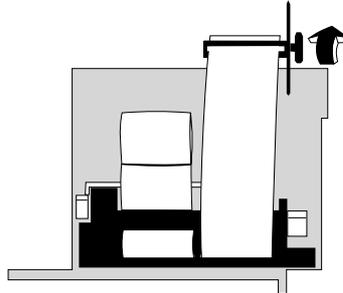
After threading in the paper, wrap several inches of journal paper around the roll by rotating it, to ensure that the paper is securely fastened.

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

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

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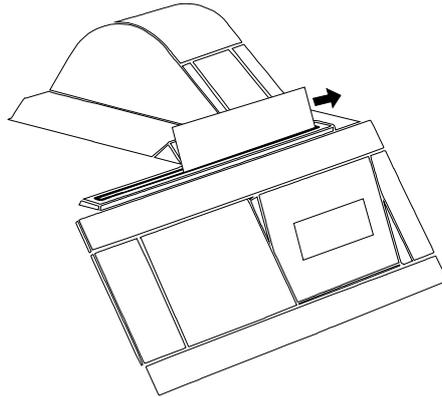
Ensure that the check is smooth. Insert the bottom, right-hand end of the check in the right guide limit. The side on which the check is to be printed must face the cashier. Hold the check straight and slide it into the guide as far as the bottom stop.

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

Changing the ribbon cassette

To change the ribbon cassette, follow these steps:
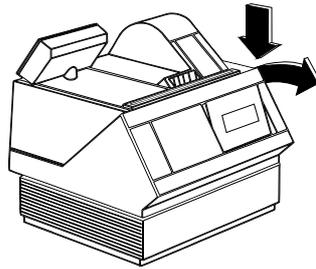
Open the front panel
of the POS housing.
The ribbon cassette
is now accessible.
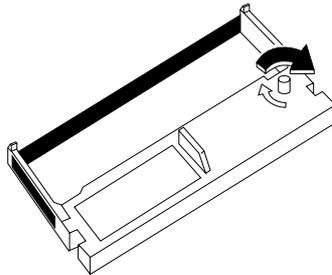
Rotate the wheel on
the right on the
ribbon cassette in the
direction of the
arrow. When you feel
a slight resistance,
the ribbon is
tensioned.

Hold the ribbon cassette by the handle in the middle and pull the cassette
steadily upward out of the holder.
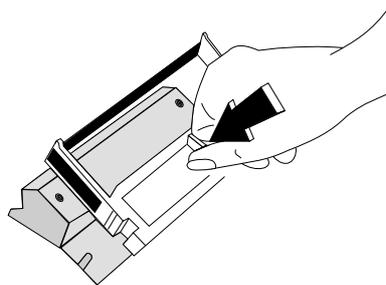
Remove the new
ribbon cassette from
the packaging. Make
sure that the ribbon
is tensioned and
press the new
cassette evenly into
the guide.

Close the front panel until you hear it lock into place. The POS terminal is
again ready for operation.

Clearing paper jams

If you should need, for example, to clear the paper compartment of residual paper, open the receipt and journal guide as follows:
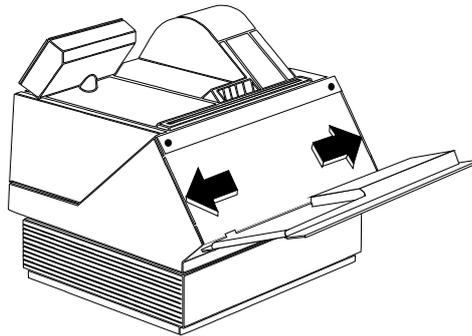
Open the front panel of the POS housing.

To open the upper POS housing, lightly press against the housing cover from the inside and flip it back.
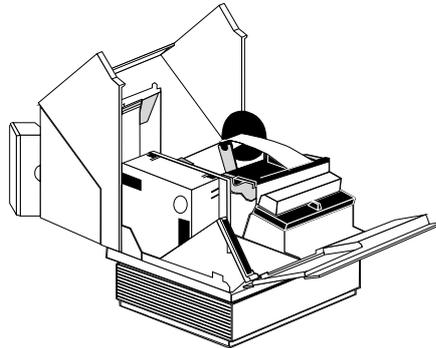
The printing mechanism is now accessible.

Remove journal paper spool.
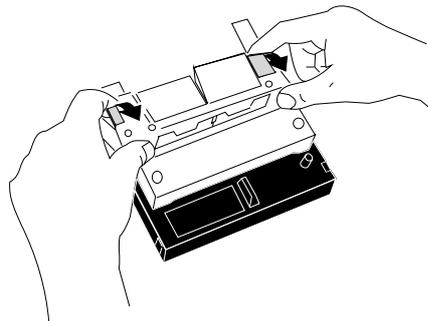
Pull up the left-hand and right-hand keys on either side of the receipt and journal simultaneously and hold them in place.
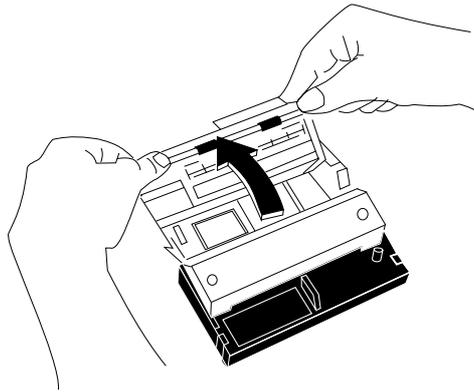
Flip back the receipt and journal guide.

You can now remove any residual paper.

Close the receipt and journal guide until you hear it lock into place.
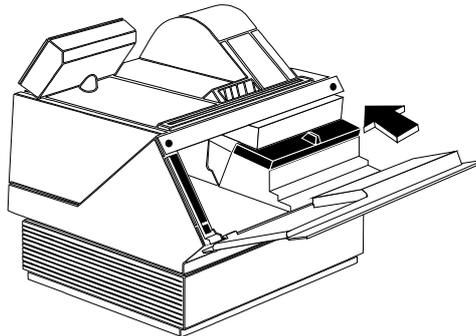
Now reinsert the spool in the guide.

First close the upper POS housing; then close the front panel until you hear it lock into place.

Cleaning the check detection sensor

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

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

■   he system detects a check although no check has been inserted.

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

■   The check is not detected when a check is inserted for printing.

Clean the sensor as described below. If the malfunction is still not corrected, contact your WN branch office.
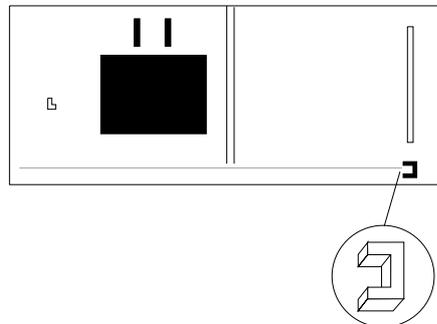
Flip back the receipt and journal guide. The sensor, an U-shaped plastic part is located in front at the right side (see arrow and adjacent magnified view below).

Remove any dirt and dust from the opening using a soft paint brush. The sensor can also be cleaned using compressed air. Spray cans containing compressed air can be obtained from WN branch office.

Following this, close the receipt/journal guide and the front panel of the POS housing again.

Changing the stamp
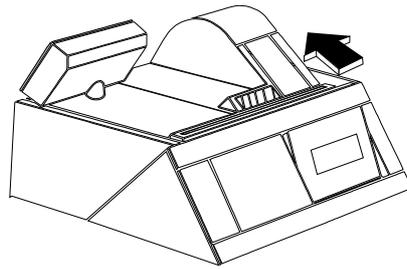
Lift up the paper compartment cover. Next, remove the receipt roll from the chute.

The handle for the stamp is now visible under the metal clip.
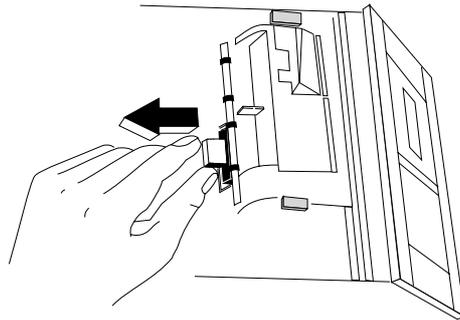
Grasp the handle of the stamp and pull it out slowly and evenly toward the back of the device, being careful to keep the stamp straight.
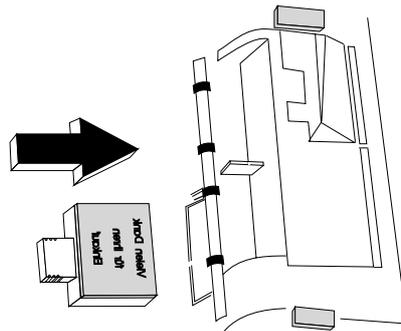
When reinserting the stamp, make sure that the print side is facing upwards.

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

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

Adding stamp ink

If the logo stamp becomes too light, you must add commercially available ink. Follow these steps:
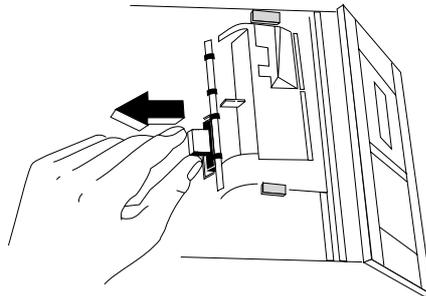
Lift up the paper compartment cover and remove the receipt roll.

Grasp the handle of the stamp and pull it out slowly and evenly toward the back of the device, being careful to keep the stamp straight.
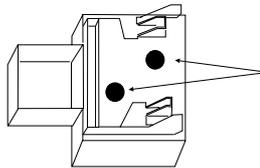
Pour 2 or 3 drops of ink in the ink inlets on the back of the stamp.
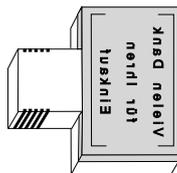
When reinserting the stamp, make sure that the print side is facing upwards.

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

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

Cleaning the printer motor timing disk

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

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

Open the front screen of the POS housing. To open the upper section of the housing, gently press against the housing cover from the inside and fold back.
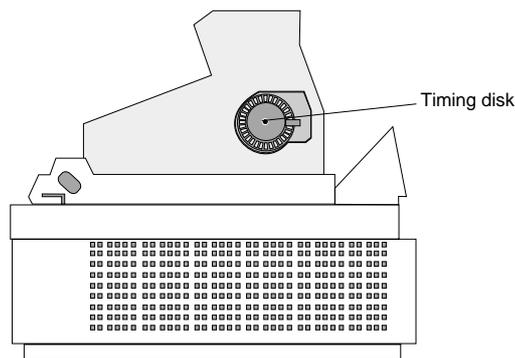
The timing disk is located at the right of the printer unit behind a recess (see illustration).

Use a soft brush to remove dust and dirt from the timing disk openings. Alternatively, the timing disk can be cleaned with compressed air. Compressed-air spray canisters can be obtained from WN branch office.

Then fold down the upper POS housing and close the front screen, making sure it snaps into place.

BEETLE card

The BEETLE card, a memory card which is the size of a credit card, provides the BEETLE POS system with a new storage medium. The card has a number of advantages over other storage media, such as diskettes, 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 number of applications, such as:

- loading programs,

- saving data (e.g. daily sales figures),

- access control ("electronic key").

The Beetle memory card is compatible to the internationally valid standard for BEETLE cards (PCMCIA/JEIDA). This means that you can use cards of the same type made by different manufacturers.

BEETLE allows you to use cards with a storage capacity of up to 64 Mb.
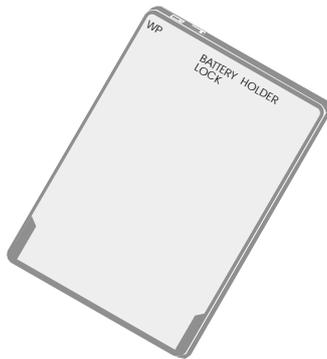
SRAM card

The various card types

You can use the following BEETLE cards as standard cards in the
BEETLE:

SRAM Card	read and write
OTPROM Card	read
Mask ROM Card	read
FLASH EPROM Card	read (with 80486DX2: erase, write, read)

The following briefly describes the characteristics of the useable cards.

SRAM card

This card type can be read and written to by the BEETLE system. 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 these cards are determined by the manufacturer of the 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 electronically written to and erased from these cards. Consequently, they are ideal for data subject to frequent modification. The cards can be written to in memory card drives (with the 80486DX2, also in the BEETLE) only. FLASH EPROM cards do not require batteries for data retention.

> If you have any questions about BEETLE cards, contact your WN branch office.

Plugging in the BEETLE card
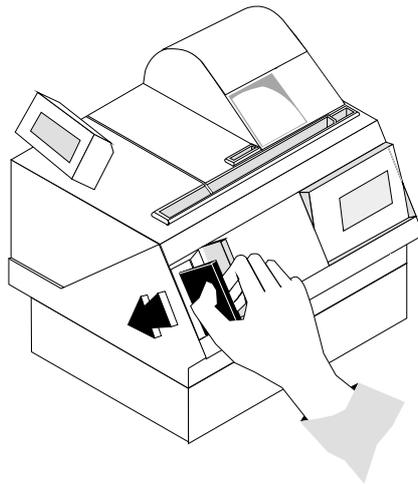
Hold the BEETLE card so that the arrow on the card points to the left. Insert the card, socket end first, into the slot for the BEETLE card. The card is plugged in correctly if the black locking button below the slot has popped out.

Removing the BEETLE card
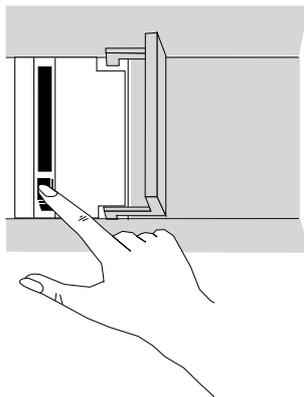
First press the black locking button below the slot. You can now remove the card.

Write protection for BEETLE cards
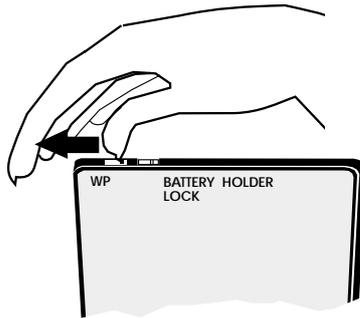
To write protect the BEETLE card, slide the lock shown in the illustration to the WP (write protection) position (with SRAM and flash EPROM cards only).

Changing the battery of a SRAM BEETLE card

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

The illustrations below show you how to change the battery for this type of BEETLE card.
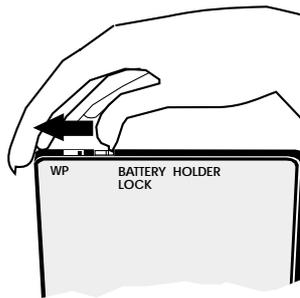
Unlatch the battery cover
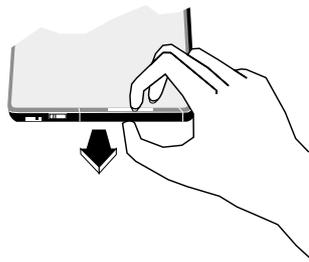
Remove the battery
holder and battery
from the BEETLE
card
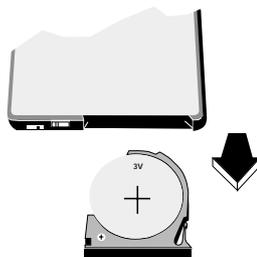
The battery is in the
holder. The battery's
positive terminal is
face up.
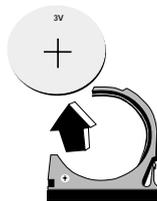
Lift the battery up
and out.

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

Do not touch the positive and minus poles simultaneously, as this
may reduce battery service life.
Dispose of used batteries in an environmentally safe manner.

The CPUs

The CPUs of the BEETLE POS system consist of a specially developed board. In addition to the usual PC modules and interfaces, this board also holds a CMOS memory and an optional VGA controller, LAN controller or ASYNC controller. The sockets for the external peripherals are on the plug connector strip. The illustration shows how the ports are allocated.
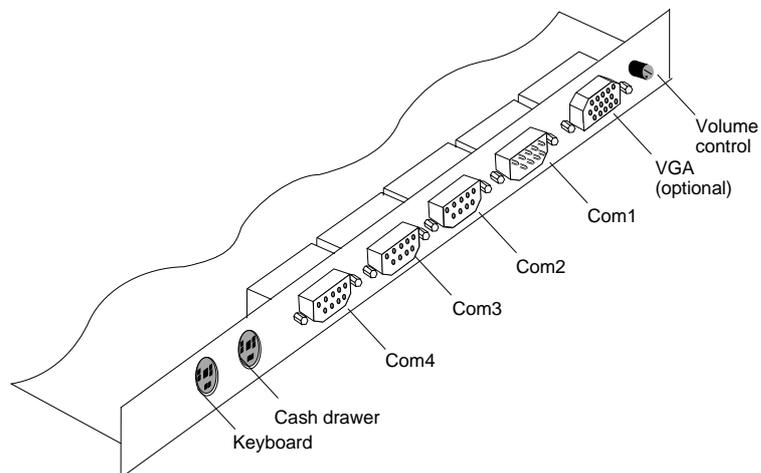
Interfaces

The COM1 interface is provided for connecting standard peripherals that have a power supply of their own.

The COM2, COM3 and COM4 interfaces are provided for connecting special POS peripherals that do not have a power supply of their own. These devices are then supplied with power via the interfaces. For example, a hand-held scanner or an additional customer display could be connected here.

> Connect only devices approved by WN to your BEETLE POS system. If you have any questions, contact your appropriate technician or customer service.

Loudspeaker

The CPU has a loudspeaker, the volume of which can be set by means of the volume control on the back panel of the BEETLE POS system (see Page 15).

CMOS 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 over five years.

Connection options

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

Connecting a hard disk

A hard disk can be connected to the CPU. This disk serves to store the operating system and POS-specific software. It can also be used for the long-term storage of the electronic journal. You can order 2.5" hard disks. These disks have a 16-bit IDE (**i**ntegrated **d**rive **e**lectronics) AT-bus system interface and an integrated controller. For the default settings and technical data of your hard disks, see the configuration label on the unit, which is located behind the front screen on the left-hand side wall.

Free AT slot

The CPU has one free slot. This slot can be used for half-length standard PC boards (170 x 110 mm incl. plug). In the case of networked systems, for example, the slot is used for connecting a LAN controller.

VGA slot

> If a VGA board is installed, you can connect a VGA colour monitor to the BEETLE.

Connecting to a network

> If you wish to operate the BEETLE POS system in a network, you must have a network controller plugged into the free AT slot or a LAN sub-module that can be plugged into the CPU. For instructions on how to install expansion boards, see the Appendix.

Power supply unit and battery

> The power supply unit can be connected to all conventional power outlets. It automatically adjusts itself to the particular voltage. It is cooled by a fan.

> The power supply unit must be removed or changed by authorized qualified personnel only.

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

> The switchover is made by means of an internal POWER management interface.
> In addition, the power supply unit has a charging circuit for the battery. Battery charging time is approx. 8 hours after initial startup.

> The battery is charged only while the system is switched on.

The power cord receptacle and the power switch are located on the back of the BEETLE POS system.
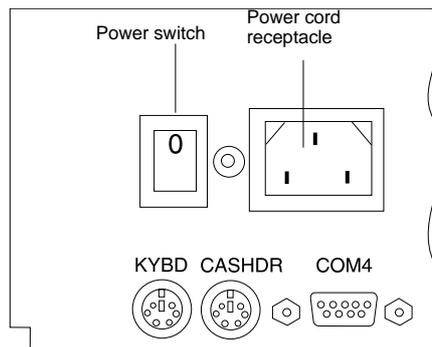
The table below provides an overview of how long the BEETLE is supplied with battery power in the event of a power failure (with the battery fully charged).

Duration of power supply	Power drain	Operation
min. 30 seconds	Full load (max. 85 W)	with supply of external peripherals
min. 1.5 minutes	Medium load (approx. 50 W)	e.g. printer running
min. 10 minutes	Low load (approx. 30 W)	e.g. system alone switched on

Changing the battery

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

▷ Use only batteries approved by WN.

To change the battery, follow these steps:
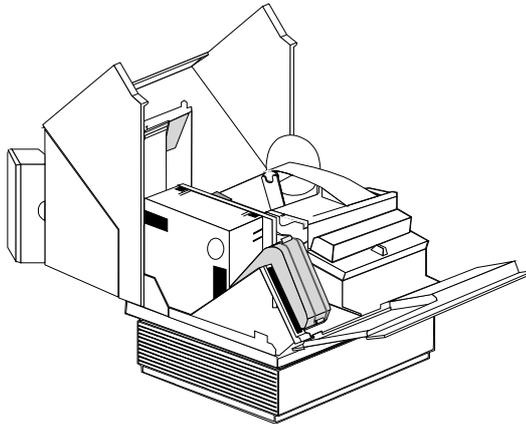
Make sure that the device is switched off and the power plug is disconnected. Next, open the front panel.

Now open the housing cover.

The battery is located on the left side, next to the printer.
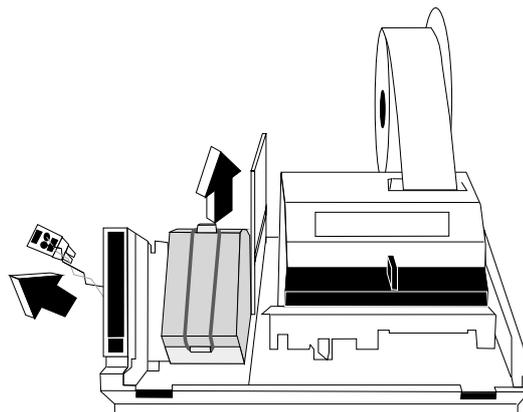
Release the rubber holder on the upper side of the battery and unplug the connection to the system. You can now remove the battery.

To install the battery, follow the steps above in reverse order. When inserting the battery, make sure that the voltage cable is to the left rear.

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

Security in the event of a power failure

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

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

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

Because operation is maintained with the aid of the battery, the application program can be terminated correctly without a loss of data.

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

The termination of these actions is reported via the retail device interface. This causes the battery to be disconnected, which also keeps it from becoming discharged too severely.

Software

Operating system

The BEETLE /50 POS system runs under the MS-DOS operating system 5.0 or Version 6.2 (English version) 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.

More detailed information on the following programs is provided in the BEETLE system manual and a detailed description is given in the respective manuals.

Retail device interface

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

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

Application programs

Application programs are available for the BEETLE /50 POS system that meet retail-specific requirements. For more information, contact the WN branch office responsible for your area.

Retail message handler

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

Retail presentation manager

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

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

Startup behaviour

After installing the BEETLE, switch on the POS system by means of the power switch on the back of the housing.

Firstly, an automatic self-test is run, which tests the systems basic functions.
For example, with the 80486SLC board, the following message appears on the cashier display:

BEETLE-WN xx/xx* Date
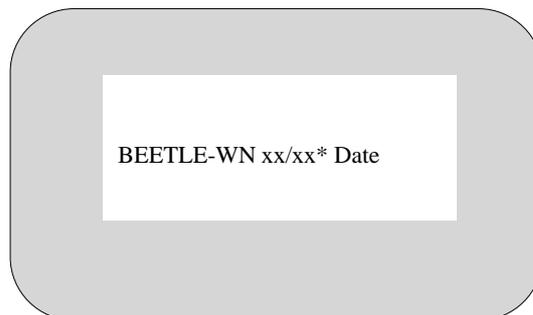
* xx/xx is the position for the version no.

The system then determines which medium the operating system and POS application are to be booted from. Depending on the configuration of your BEETLE POS system, each medium is assigned a logical drive. The following media can be assigned a drive:

■ BEETLE card

■ Network

■ Hard disk

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

If the system is to be booted from the BEETLE card, drive A: is always assigned to the memory card. However, it is also possible to assign drive B: to the BEETLE card if you wish to use the card as a pure storage medium.

If the network card contains boot software, the network is always assigned to the C: drive in the system start phase.

The hard disk can be assigned drive C: or D:.

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

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

■   The storage medium must be system-boot-capable.

The following priorities apply:

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

The POS system always accesses the BEETLE card first, if such a card is plugged into the POS housing.

If the POS system does not find a BEETLE card in drive A:, it auto-matically continues the loading process from drive C:.

If drive A: contains a BEETLE card on which the operating system is not stored, the POS system cannot start. In this case, replace the card with a system-boot-capable BEETLE card or remove the card, so that the start can be made from drive C:.

The operating system then logs on with additional messages on the cashier display (cashier display or monitor), as shown in the illustration below.

C>P:
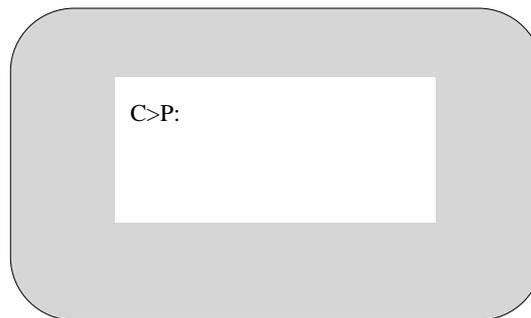
If the operating system has started up without error, the POS application software is automatically booted as necessary.

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

Output of MS-DOS system error messages

All system error messages are output to the operator display. The messages are appropriately adapted to the operator display format, as shown below:

```
M el ooooo dddddddd
mmmmmmmmmmmmmmmmmm
mmm
```

The individual entries have the following meanings:

M   Reserved

e   MS-DOS error No. 0..C HEX,

l   indicating where the error occurred
                  0   Reserved sector (MS-DOS area)
                  1   File allocation table (FAT)
                  2   Directory
                  3   Data area

ooooo   "Read" or "write" operation

dddddddd   Block device driver: (BEETLE card, hard disk, network)
                  Drive, e.g. "C: "
                   Character device driver: (other MS DOS drivers)
                  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 either repeats the previous message or cancels it.

A description of the error is provided in the Appendix.

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 cashier display, the external cashier display or the VGA monitor. The cashier 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 cashier display only if there is no monitor and no cashier display.

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

TEST POS TEST TYPE ERROR NUMBER
Error text

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

```
TEST POS MC 02
BATTERY EMPTY
ANY KEY TO RETRY
```
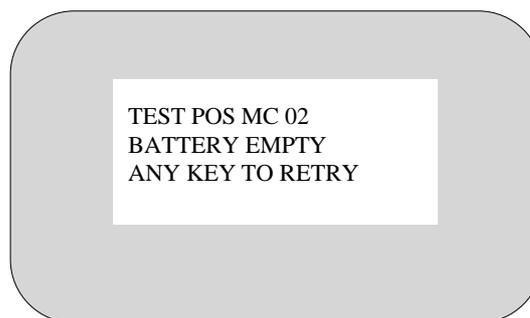
Static errors are accurately localized with the POST, though sporadic errors can be determined only to a limited extent.

If POST signals an error, please contact your appropriate technician or Customer Service.

The POST error messages are listed in the Appendix.

BIOS setup

BIOS setup can be used to restore or reset the configuration parameters of your BEETLE POS terminal system. The features of your POS terminal system are displayed on the configuration label, which is located on or inside your BEETLE.

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.

You have several options for calling up SETUP:

■   If you are using a standard PC keyboard, press **Ctrl**, **Alt** and **ESC** simultaneously during the runup phase.

■   SETUP is called up if the **keyswitch** on the POS keyboard is set to position **4** during the runup phase.

■   If the configuration is incorrect, you can decide whether to ignore the error or call the setup program.

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, the system messages are not displayed even if a VGA card is installed.
For your BEETLE /50 in which a VGA card is not installed, the display entry must be set to "MONO" in order for outputs to appear on the connected cashier display.

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

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

```
Copyright (C)
 WN 2000
Setup Rel. 0.xy
 (22/01/95)
```
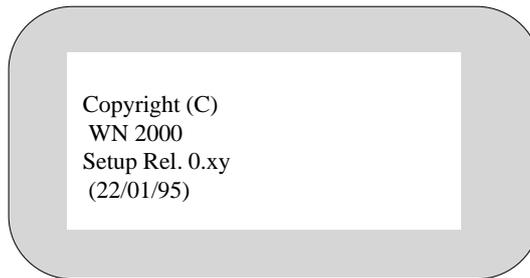
The first menu is then displayed. Menus are controlled by pressing the numeric keys specified in parentheses.

```
ReBoot with              (7)
Help with                (5)
Enter Setup with    (2)
```
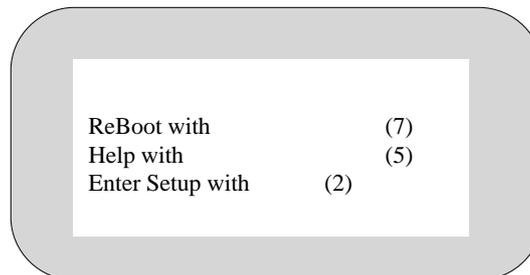
Pressing the number (2) allows you to set the date and time in a further menu. (7) reboots the system.

```
Time            12:34:56
Date      Jan 31 1995
 (8)Prev   (6)Incr
 (2)Next   (4)Decr
```
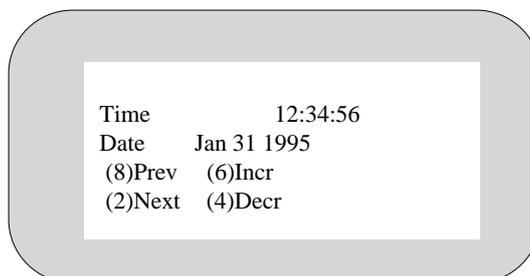
In this and subsequent examples, the numeric keys (8), (2), (6), (4), (5) and (7) have the following meanings:

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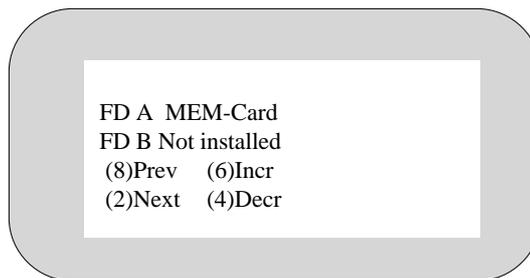
Enter settings for drives A: and B: (BEETLE card) here.

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

The following masks show examples of possible configurations for hard disk D:

```
┌─────────────────────┐         ┌─────────────────────┐
│ HD C          Type 6│         │ HD D         Type 46│
│ (3) List      Params│         │ (3) List      Params│
│ (8) Prev   (6) Incr │         │ (8) Prev   (6) Incr │
│ (2) Next   (4) Decr │  (2)    │ (2) Next   (4) Decr │
└─────────────────────┘         └─────────────────────┘
          (3) │                           (3) │

┌─────────────────────┐         ┌─────────────────────┐        ┌─────────────────────┐
│ Cyl     615 Head  4 │         │ HD D Auto Config?   │        │ Cylinders        0  │
│ Sec 17        20 MB │         │                     │        │ (3) Edit Params     │
│                     │         │        YES = (9)    │        │ (8) Prev            │
│ Any Key to return   │         │        NO = other   │        │ (2) Next            │
└─────────────────────┘         └─────────────────────┘        └─────────────────────┘
                                         (9) │                    (2) │        Cyl >1023

                                ┌─────────────────────┐                         (A)
                                │ Cyl   977    Head 10│
                                │ Sec 22        81 MB │        ┌─────────────────────┐
                                │                     │        │ Heads            0  │
          (A)                   │ Any Key to return   │        │ (3) Edit Params     │
                                └─────────────────────┘        │ (8) Prev            │─(B)
                                         │    Cyl >1023         │ (2) Next            │
┌─────────────────────┐         (A)──────┘                     └─────────────────────┘
│ Large Disk access   │                                                (2) │
│        LBA          │         ┌─────────────────────┐
│          (6) Incr   │         │ Save Params  ?      │        ┌─────────────────────┐
│ (2) Next   (4) Decr │         │                     │        │ Sectors          0  │
└─────────────────────┘         │        YES = (9)    │        │ (3) Edit Params     │
                                │        NO = other   │        │ (8) Prev            │
          (B)                   └─────────────────────┘        │ (2) Next            │
                                         (B)                   └─────────────────────┘
                                                                      (2) │

                                                               ┌─────────────────────┐
                                                               │ Capacity       0MB  │
                                                               │ (3) Edit Params     │
                                                               │ (8) Prev            │
                                                               │ (2) Next            │
                                                               └─────────────────────┘
```

For the 80486DX2 CPU, the hard disk types 1-39 and User Type are available. In the example above, the display string "Type 46" would have to be replaced with "User Type".

_____(3) Edit Params_____

| (3) | (3) | (3) |

Cylinders
Enter 4 Chars

Heads
Enter 2 Chars

Sectors
Enter 2 Chars

(2) (8)　　　　　　　(2) (8)　　　　　　　(2) (8)
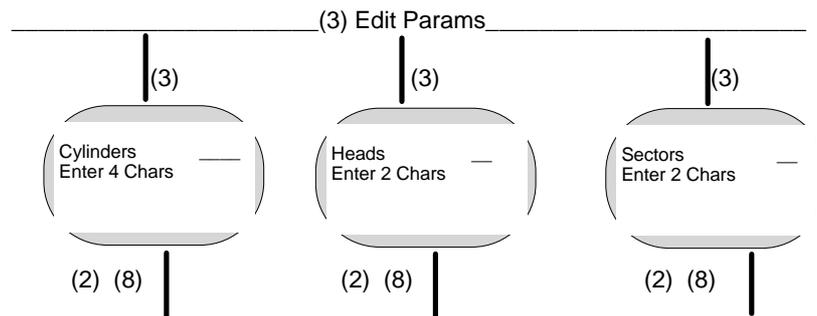
As the diagram shows, you can choose from among three basic settings:

1. You can select a drive that matches one of the specified types (Nos. 1 to 44 or, for the 80486DX2 CPU, Nos. 1 to 39).

2. You can enter a configuration manually using the parameters specified in the documentation for IDE hard disks.

3. You can use the automatic configuration option in SETUP, which automatically reads and enters the parameters from the hard disk.

If a ROMdisk is installed, only **one** hard disk can be installed. This disk must be entered as number 46; number 47 cannot be accessed (80486DX2 does not contain a ROMdisk!).

The table below shows the configuration options for hard disks and ROMisks:

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

You can install only one ROMdisk. The following is a brief explanation of the table:

Auto   =   The automatic installation option available in SETUP is used

Master =   Jumper on hard disk set to master

Slave   =   Jumper on hard disk set to slave (on-board controller disabled)

*If you would like to configure the ROMdisk as drive C:> and the hard disk as drive D:>, proceed as follows:

1)   Enter hard disk type 46 in the "HD C" mask.

2)   Confirm your configuration in the "Auto Config?" mask by pressing 9.

3)   Enter hard disk type 46 in the "HD D" mask.

4)   Select ROMdisk in the "HD C" mask.

5)   Confirm your configuration in the "Auto Config?" mask by pressing 9.

A further menu shows you, for example, the memory configuration shown
in the following mask:

```
Memory                640 KB
XMS                   1408 KB
      (8)Prev
      (2)Next
```
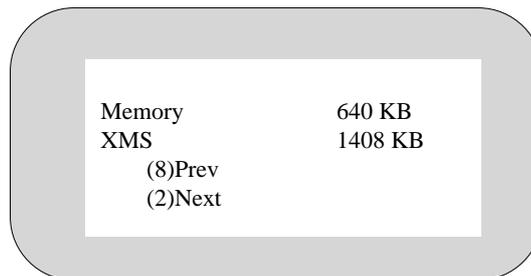
XMS stands for extended memory specification (above a memory capacity
of 1 Mb).

Beginning with the 80486DX2 system it is possible to use the parallel
interface LPT1 in standard mode and in the modes ECP, EPP v1.7 and
EPP v1.9. Take your choice in the mask "LPT1 Mode".

The 80486DX2 system recognizes various operating mode settings
(power management). When "NO" is set, the CPU operates in the
standard mode, i.e. at full power. If "YES" is set, the power management
facility is enabled.

```
PowerMan              Yes

(8)Prev   (6)Incr
(2)Next   (4)Decr
```
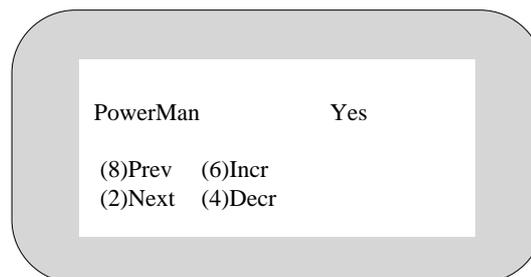
"OFF Timer" switches the CPU to sleep mode (5 - 15 - 60 minutes) after a specified interval of being idle. There must be no screen savers active at this time! In the process, the microprocessor is periodically stopped so that it can then be further clocked at full speed, thus reducing power consumption.

In addition, the backlighting of the cashier display is deactivated and a connected monitor is blanked.

```
OFF Timer              60 Min

(8)Prev    (6)Incr
(2)Next    (4)Decr
```
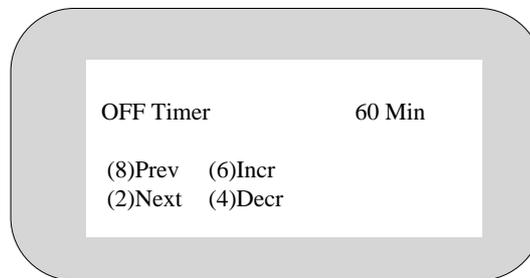
The time interval for deactivating the hard disk can be set separately (OFF and 60 minutes).

If HD Timer is set to "ON", the hard disk is deactivated after 60 minutes in standby mode.

```
HD Timer               OFF

(8)Prev    (6)Incr
(2)Next    (4)Decr
```
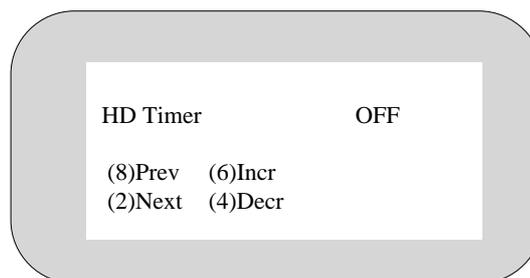
In BIOS setup, you can also define whether the power supply to the serial interfaces COM2∗ to COM4∗ is to be disabled in sleep mode (COM Supply ON).

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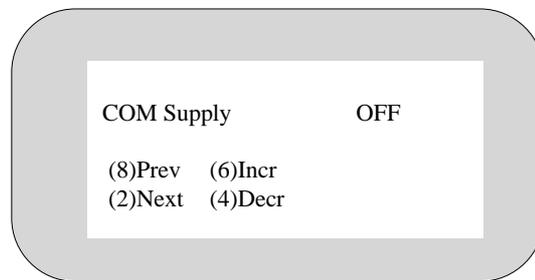
All interrupts are processed in sleep mode; none are lost.

The Shadowing function allows you to improve the overall performance of the system. When this function is enabled, both the BIOS-EPROM and the VGA-EPROM are copied to the DRAM (80286, 20-MHz 80386SX - BIOS shadowing; 80486SLC - BIOS and VGA shadowing, 80486DX2 - shadowing is always activated).

```
Shadowing Yes

(8)Prev   (6)Incr
(2)Next   (4)Decr
```
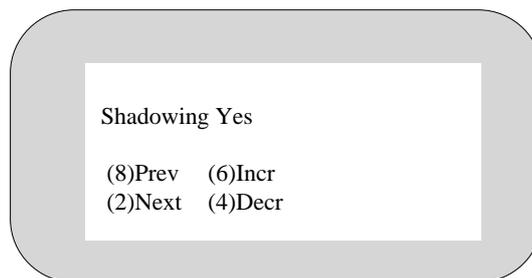
As a result, CPU accesses are accelerated since the CPU now has 0 wait states with a 16-bit or 32-bit data word width, as compared to an 8-bit data word width with the EPROMs.
When the shadow function is disabled, a memory capacity of additional 384 Kbytes is available to the system.
The 80486SLC does not support splitting, i.e. if shadowing is not used (= NO), the UMA (384 Kbytes) is appended to the physical memory.
If shadowing = YES, no mapping is performed.

Using the mask below, which appears only in the case of the 80486SLC system, it is possible to deactivate the CPU's internal cache. However, this is necessary only if programs contain corresponding instructions, e.g. to deactivate the cache during installation.

```
486 Cache                ON

 (8)Prev    (6)Incr
 (2)Next    (4)Decr
```
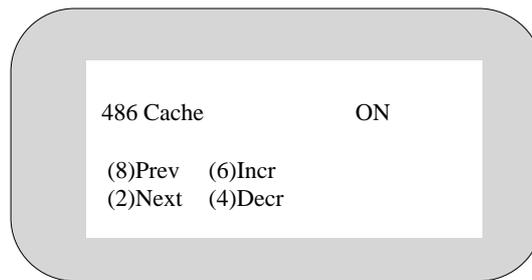
The cache can no longer be disabled in 80486DX2 and subsequent systems.

The next mask can be used to enter video cards (Mono for the cashier display or VGA for the monitor).

```
Display Mono
     (5) Help
 (8)Prev    (6)Incr
 (2)Next    (4)Decr
```
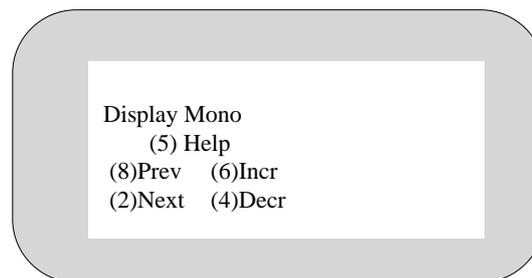
> ⚠️ If no VGA card is installed, the display entry must be set to Mono in order for outputs to appear on the cashier display.

Press (7) to terminate the setting procedure with a system reboot.

```
Port 3F8 Enabled
     (5) Help
 (8)Prev    (6)Incr
 (2)Next    (4)Decr
```
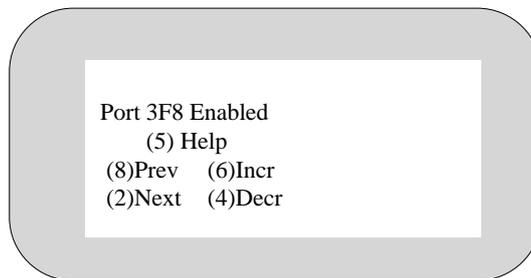
In the case of the 80486SLC system, the last menu allows you to force the disabling of the serial interface COM1 with its base address of 3F8H. This procedure is useful if you install an interface card in the system with the I/O address 3F8. Up to two interface cards can be installed in an 80486DX2 system (addresses 3F8 and 2F8). The on-board interfaces are then deactivated automatically.

You will see the following mask only in the Setup menu of the BEETLE systems which are equipped with a 80486DX2 processor and if the hard disk used has more than 1023 cylinders. Above this size, the data of the hard disk of BIOS and of the operating system MS-DOS must be treated with slight modification.

```
Large Disk Access
       LBA
         (6)Incr
 (2)Next    (4)Decr
```
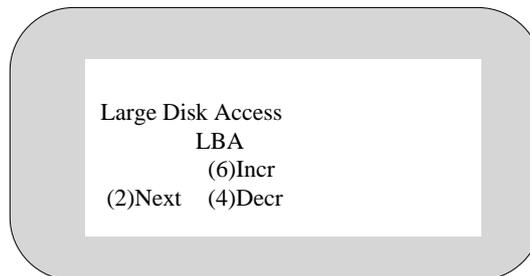
The setup offers the following configurations:

Standard   In this configuration, the operating system MS DOS can be
            started only from a partition smaller than or equal to 504 MB.
            The rest can only be used from another operating system
            (e.g. Windows NT or OS/2).

LBA   In this configuration, MS DOS can be started from a partition
            up to 7.8 gigabytes (GB).

Non DOS   Select this configuration if the operating system SCO Unix is to
            be installed on your BEETLE.

Appendix

Technical data for the BEETLE

Footprint: Width Depth	280.0 mm 231.5 mm
Overall height	294 / 273 mm (with / without customer display)
Weight	9.0 kg
Climatic category	IEC 721-3-3 Class 3K3
Operating temperature	5° - 40° C
Input voltage	100 - 125 / 200 - 240 VAC
Power consumption	2 / 1 A
Frequency of system voltage	45 Hz - 65 Hz

CPU

Microprocessor	80486SLC 25MHz	or 80486DX2
Architecture	AT-compatible board with expansion options for POS-specific functional units	
Main memory	2 MB DRAM expandable on 16 MB	4 MB expandable on 16 MB
BIOS	64 KB PROM	128 KB FLASH PROM
Keyboard interface	AT-compatible	
Loudspeaker	Volume adjustable	
Hard disk connection	IDE interface, 2,5'' optional	
Submodule	an VGA controller or LAN controller or ASYNC connection ([1])	
Expansion slot	half-length AT card format max. card length 170 mm	
Nonvolatile RAM	32, 128, 512 kB retention of data >5 years	
BEETLE card connection	Standard interface (PCMCIA) max. 64 MB	
Cash drawer interface	Mini DIN jack, 6-pole	
Serial interfaces	Standard: COM1 (9-pole D-SUB connector) Live ([1]): COM2([2]), COM3, COM4 (9-pole D SUB jack)	

[1] = The Total power consumption of all power-supplied interfaces must not exceed 900 mA at +12V and 300 mA at +5 V.
[2] If a D-SUB-plug is mounted at COM2, the interface has no independent power supply.

Printer

Basic line spacing	4.3 mm			
Blank line feed	Document: 30 lines/s. Journal: 12 lines/s.			
Number of characters at	15.6cpi	14cpi	12cpi	10cpi
Receipt	32	28	24	20
Journal	32	28	24	20
Check	69	62	52	44
Print	Bidirectional			
max. print rate	2.6 lines per second			
Head service life	Approx. 100 million characters			
Cutter service life	Approx. 300 000 cuts			

Receipt and journal paper (single-ply)

Outside roll diameter	max. 83 mm
Roll width	57.5 +- 0.5 mm
Basis weight	52.3 g/qm - 64 g/qm
Paper thickness	max. 0.09 mm min. 0.06 mm

Check

Dimensions, single-ply paper:
Length   > 78 mm
Width   135 mm - 210 mm
Thickness   0.07 mm - 0.14 mm

Dimensions, multi-ply paper:
Length   > 78 mm
Width   135 mm - 210 mm
Thickness   max. 0.2 mm

Printing area (check)

Print area max 12 lines

16,5

61,8 mm

Receipt length min 78 mm

119,6 mm

10,8

Receipt width 135 - 210 mm
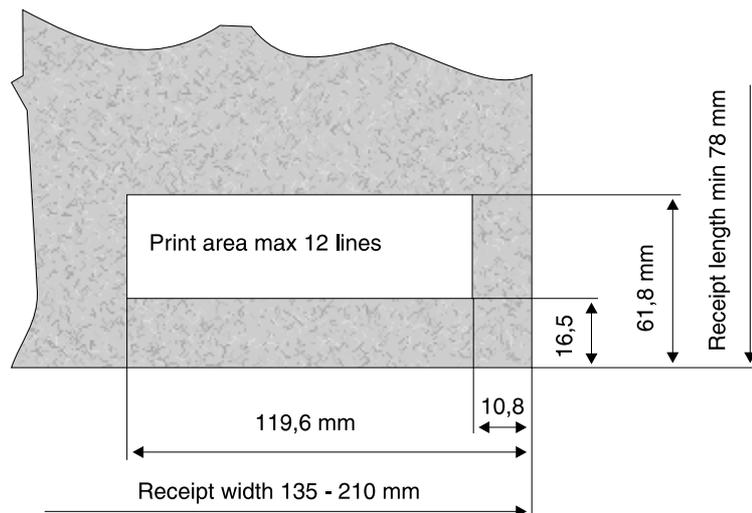
Stamp

Usable surface:
Length   18 mm
Width   36 mm

Thickness of rubber   6 mm

Total length of rubber   25.9 mm

Total width of rubber   43.5 mm

Network controller

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

▷ Use only network controllers approved by WN.

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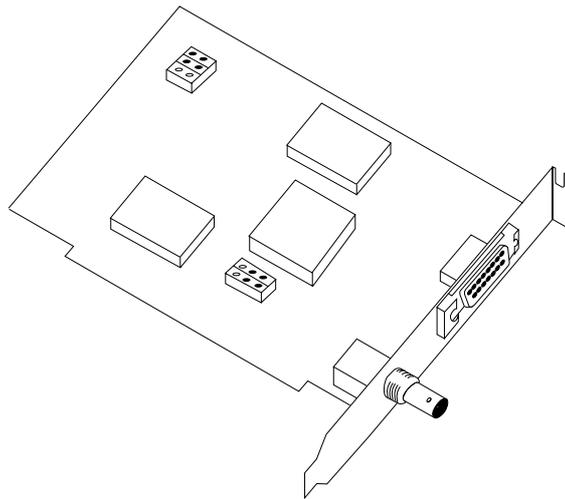
Network board

Installing an expansion board

To install an expansion board (e.g. a LAN board), follow these steps:
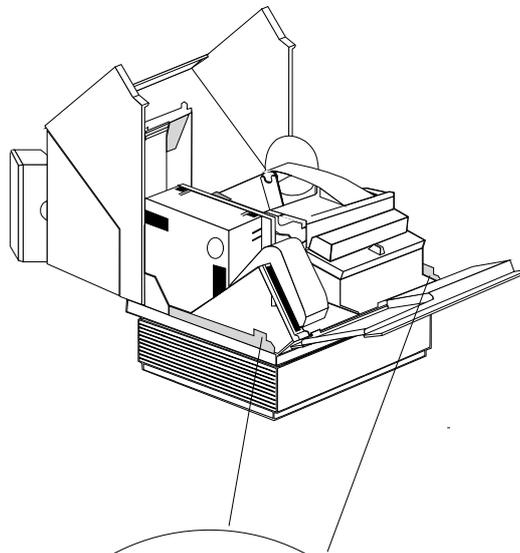
Firstly, make sure
that the power switch
is set to "0" and that
the power plug is
disconnected.
Next, open the front
panel.

Open the housing
cover.
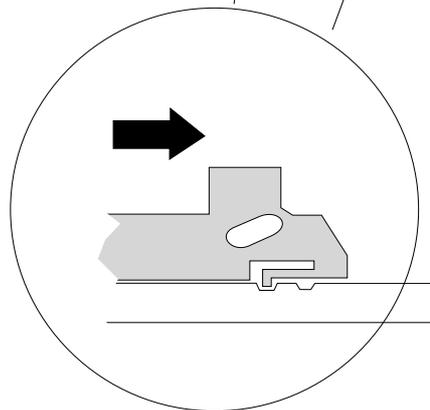
Unlatch the lower
plastic housing by
sliding the two
locking bars on the
right and left sides.
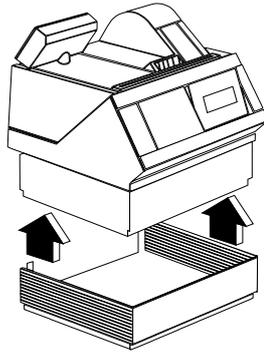
Close the upper housing cover and the front panel. Now you can lift the BEETLE from the lower plastic housing. Next, reopen the front panel and the housing cover.
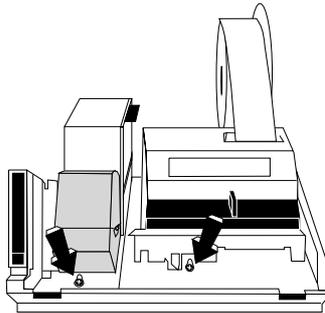
Loosen the two screws and pull the top part of the housing forward until the screw heads are located over the larger openings in the base plate. Close the upper housing cover and the front panel.
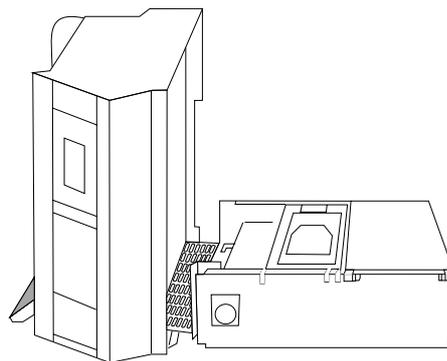
Rotate the customer display so that the back of the display is aligned with the side of the housing. Slightly lift the upper housing section, turn it on its left side and set it down carefully next to the bottom housing section.
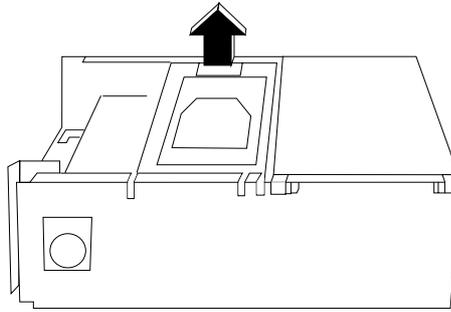
Now you can lift up
the holder.

Remove the securing
screw from the metal
screen on the AT slot
on the rear wall and
remove the screen.

Expansion boards with electrostatically endangered components
(EGB) can be marked with this sticker.

When handling expansion boards, please pay attention to the following:

■   Beforehand, discharge static charge (e.g. by touching an earthed
       object).

■   Equipment and tools used must be free from static charge.

■   Hold the expansion board only at the sides.

■   Do not touch any terminal pins or printed circuit boards on the
       expansion board.
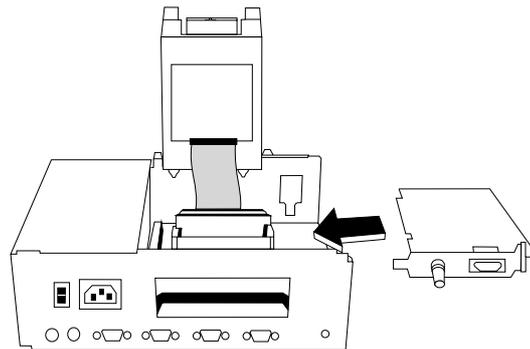
Now plug the expansion board into the slot provided and secure it with the securing screw of the metal cover.

You can now reclose the BEETLE by following the steps above in reverse order. Before placing the upper housing shell in the lower housing shell, check to make sure all cable connections are securely seated and were not loosened when you opened the device.

What to do if...

■   Often, when your BEETLE POS system does not function properly, it is unnecessary to call the Service Department.

■   If your POS system does not boot correctly after you switch it on or if individual devices do not operate correctly,

⇒   always begin by checking the plug-in connections - especially to the power supply - to see that they are securely seated on the back of the POS housing and in the grounded-contact mains power socket.

■   If the logo stamp or receipt and journal printout is too light,

⇒   add a little stamp ink or change the ribbon cassette, as appropriate.

■   If the POS terminal does not issue a receipt,

⇒   there is probably a paper jam. For information on how to clear a paper jam, see Chapter "Removing paper jams".

■   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 VGA monitor that is connected,

⇒   use the brightness and contrast controls.

■   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 in a network and does not boot correctly after it is switched on,

⇒   make sure that the server is also switched on.

■   If a check is detected incorrectly,

⇒   clean the detector sensors as described in the Chapter "Cleaning the check detention sensors".

■   If there are malfunctions with printing,

⇒   read the Chapter on "Cleaning the printer motor timing disk".

If these measures do not correct the problem, contact your appropriate technician or customer service.

Error messages

MS-DOS Critical Errors

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

POST 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
Memory Card	3	CARD IN FALSE POS	1
		BATTERY EMPTY	2
		CHANGE BATTERY	3
		UNKNOWN SIZE	4
		DATA ERROR	5
		CHANGE MC ERROR	6
ROMdisk (not with BEETLE 3/xx)	4	BOOTSECTOR ERROR	1
		UNKNOWN SIZE	2
		CHECKSUM ERROR	3
NV-RAM	5	ADDRESS ERROR	1
		DATA ERROR (5555)	2
		DATA ERROR (ABAB)	3
		DATA ERROR (0000)	4
Printer Controller	6	UNKNOWN PRINTER	1
		RESET ERROR	2
		UNKNOWN STATUS	3
		CPU ERROR	4
		CPU RAM ERROR	5
		TIMEOUT	6
		LPT ERROR	7
		ASIC ID ERROR	8
		ASIC REGISTER ERROR	9
		ASIC TIME ERROR	10
		ASIC RAM ERROR	11
		Z-RAM ERROR	12
		ROM CHECKSUM ERROR	13
Cash drawer	7	CASHDRAW CLOSED	not applicable
		CASHDRAW OPEN	not applicable

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

Phoenix BIOS POST and Start Messages

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	* Wrong setting of colour/ monochrome switch * Primary videoadapter failure	* Reset switch * 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 hard disk	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

Message	Possible cause	Remedy
Keyboard clock line failure Keyboard data line failure	Keyboard or keyboard cable connection defective	Check that keyboard and cable are properly connected
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

Message	Possible cause	Remedy
Memory write/read failure at *hex-value*, read *hex-value*, expecting *hex-value*	Failure of one of memory chips	Replace memory chip
No boot device available - strike 7 to retry boot	Drive A:, hard drive or diskette defective	Reboot. If still not possible, replace faulty component
No boot sector on hard disk - strike 7 to reboot	Drive C: is not formatted or system start not possible	Format drive
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
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
Internal cache test failed	Error in 486SLC-CPU	Replace 486SLC-CPU

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.

The errors detected by the Power On Self Test (POST) are signalled at the monitor or at the cashier display. If any of the above-stated malfunctions occurs, please contact your appropriate technician or Customer Service.

MCBATT status messages

Messages	Meaning
Battery voltage is ok!	Power supply to BEETLE card is guaranteed.
Battery voltage is ok, but the battery should be replaced!	Power supply to BEETLE card is guaranteed. Recommendation: Save data and replace battery.
Battery voltage is too low. There is no guarantee for your data!	Power supply from battery is inadequate. When POS terminal is switched off, data on BEETLE card is lost.
Battery voltage is too low, maybe there is no battery present. There is no guarantee for your data!	Power supply to BEETLE card is inadequate. Battery might not be installed. When POS terminal is switched off, data on BEETLE card is lost.

Glossary

Bit

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

BIOS

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

CD

Compact Disk

CMOS RAM

Complementary Metal Oxide Semiconductor-Random Access Memory

COM

Communication port (serial interface V.24)

Controller

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

CPU

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

EMS

Expanded Memory Specification. Standard for communication between programs for expansion memory administration and applications requiring expansion memory.

FLASH EPROM

Flash erasable programmable read-only memory. A memory chip which is programmable with flash technology.

Interface

Designates the connecting 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.

LAN

Local area network. Data network for internal exchange of data, e.g. within a building.

MASK ROM

Mask read-only memory

Operating system

Refers to all programs that serve as a resident component of a computer that is required for operating the system and executing application programs.

OTPROM

One-time programmable read-only memory

PCMCIA

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

RAM

Random access memory

Retail device interface

Program developed by Siemens Nixdorf AG for programming retail-specific functions.

ROM

Read Only Memory

Server

A server is a unit whose services are available to all users in a local area network (LAN).

SRAM

Static random access memory

VGA

Video graphics adapter. Interface for connecting colour monitors.

The configuration label

The sticker is located behind the front screen on the left-hand side wall.

```
Master-HD:    MASTER BD 3._____ (DOS)
              86580,___,3.80/ _____ ☐ DOS    ☐ SINIX

ZE-Serial-No.: _____

CPU:          ☐386SX      ☐486SLC    ☐486DX/2    ☐ _____
   COM3/4:    ☐IRQ disabled      ☐ IRQ 10/11      ☐IRQ 10 both
   RAM/CMOS:☐ 2MB ☐4MB  ☐____MB/ ☐32KB CMOS ☐___KB CMOS

HD            **Size**        **Cylinder**      **Heads**      **Sectors**
   3,5´´      270/_____MB 944/ _____      14/_____      40/_____
   2,5´´      127/            677/ _____      9/            41/

☐VGA          ☐ASYNC:    IRQ 12  ☐disabled        I/O:2E8/ _____
☐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:          ☐ submodule (16K RAM)
              ☐ ATC (32K RAM)         ☐_____ ( ___K RAM)

BOOT-ROM:     ☐ TCP/IP (16K)          ☐_____ ( ___K)

              **IRQ**   **I/O**   **RAM base**   **ROM base**   **ROM size**
   Default:   5        240      CC000          C8000          0k
   changed:   ____    ____    _____      _____      _____k
   _____  ____    ____    _____      _____      ____
```