FUJITSU

ESPRIMO P2xxx
ESPRIMO P3xxx

Operating Manual

Are there ...

... any technical problems or other questions that you would like help with?

Please contact:

- our Hotline/Help Desk (please refer to the supplied Help Desk list or visit our website: "http://ts.fujitsu.com/support/helpdesk.html")
- your sales partner
- your sales office

Further information can be found in the "Safety" and "Warranty" manuals.

Latest information about our products, useful tips, updates etc. are available on our website: "http://ts.fujitsu.com"

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ESPRIMO P2xxx / ESPRIMO P3xxx

Operating Manual

Contents

Your Esprimo P...

... is available in various configurations that differ in terms of hardware and software. You can incorporate accessible drives (for example a DVD drive) as well as other modules.

This manual tells you how to commission the device and how to use it. This manual applies to all configuration levels. Depending on the configuration level chosen, some of the hardware components described may not be available on your PC. Please observe the notes on your operating system.

Depending on the configuration selected, the operating system is preinstalled on your hard disk (e.g. Windows Vista).

Your device has a number of security features to ensure that no unauthorised persons can access your data. The security functions in the BIOS Setup also allow you to protect your data by means of passwords. In addition, systems with a SmartCard reader offer additional protection.

DeskUpdate allows you under some operating systems to easily and quickly install the latest drivers and operating system extensions with a few mouse clicks.

DeskUpdate is contained on the "Drivers & Utilities " DVD. Further information on this device is provided:

- in the poster "Getting Started"
- in the "Safety" manual
- in the "Warranty" manual
- in the operating manual for the monitor
- in the manual for the mainboard
- in your operating system documentation
- in the information files (e.g. *.PDF, *.HTML, *.DOC, *.CHM, *.TXT, *.HLP)

Some of the manuals listed can be found in electronic form on the "Drivers & Utilities" DVD.

You can access and view the required information using the *Acrobat Reader* program, which is also included on the DVD. You can of course also print out a copy of the manual if you prefer.

Notational conventions

	Pay particular attention to text marked with this symbol. Failure to observe this warning will endanger your life, will damage the device or lead to loss of data. The warranty will be invalidated if you cause defects in the device through failure to take notice of this warning
	indicates important information that is required to use the device properly.
►	indicates an activity that must be performed in the order shown
↳	indicates a result
`This style`	flags data entered using the keyboard in a program dialog or command line, e.g. your password (**`Name123`**) or a command to launch a program (**`start.exe`**)
`This style`	refers to information displayed by a program on the screen, e.g.: `Installation is completed`
This style	is for • terms and texts in a software user interface, e.g.: Click *Save*. • names of programs or files, e.g. *Windows* or *setup.exe*.
"This style"	is for • cross-references to another section, e.g. "Safety information" • cross-references to an external source, e.g. a web address: For more information, go to "http://ts.fujitsu.com" • indicates names of CDs and DVDs as well as names and titles of other materials, e.g.: "CD/DVD Drivers & Utilities" or "Safety" manual
Abc	refers to a key on the keyboard, e.g.: F10
This style	flags concepts and text that are emphasised or highlighted, e.g.: **Do not switch off device**

Important notes

In this chapter you will find information regarding safety which it is essential to take note of when working with your device.

Safety information

Pay attention to the information provided in the "Safety" manual and in the following safety notes.

During installation and when operating the device, please observe the instructions on environmental conditions in Chapter "Technical data" as well as the instructions in Chapter "Getting started", Page 6.

You must only operate the device if the rated voltage used by the device is set to the local mains voltage. Check the rated voltage set for this device (see the '"Getting started", Page 6" chapter).

Replace the lithium battery on the mainboard in accordance with the instructions in the "Replacing the lithium battery", Page 49 chapter.

Caution, components in the system can get very hot.

The ON/OFF switch does not fully disconnect the TV from the mains voltage. To completely disconnect the mains voltage, remove the power plug from the grounded mains outlet.

Transporting the device

Transport all parts separately in their original packaging or in a packaging which protects them from knocks and jolts, to the new site.

Do not unpack them until all transportation manoeuvres are completed.

Cleaning the device

Turn off all power and equipment switches and remove the power plug from the mains supply.

Do not clean any interior parts yourself, leave this job to a service technician.

Do not use any cleaning agents that contain abrasives or may corrode plastic.

Ensure that no liquid enters the system.

The surface can be cleaned with a dry cloth. If particularly dirty, use a cloth that has been moistened in mild domestic detergent and then carefully wrung out.

Use disinfectant wipes to clean the keyboard and the mouse.

Energy saving, disposal and recycling

Further information can be found on the "Drivers & Utilities" DVD.

CE marking

CE marking for devices without wireless component supplied during market launch as of 20.07.07

The shipped version of this device complies with the requirements of EEC directives 2004/108/EC "Electromagnetic compatibility" and 2006/95/EC "Low voltage directive".

CE marking for devices with radio component

This equipment complies with the requirements of Directive 1999/5/EC of the European Parliament and Commission from 9 March, 1999 governing Radio and Telecommunications Equipment and mutual recognition of conformity.

This equipment can be used in the following countries:

Belgium	Bulgaria	Denmark	Germany
Estonia	Finland	France	Greece
UK	Ireland	Iceland	Italy
Latvia	Liechtenstein	Lithuania	Luxemburg
Malta	Netherlands	Norway	Austria
Poland	Portugal	Rumania	Sweden
Switzerland	Slovakia	Slovenia	Spain
Czech Republic	Hungary	Cyprus	

Contact the corresponding government office in the respective country for current information on possible operating restrictions. If your country is not included in the list, then please contact the corresponding supervisory authority as to whether the use of this product is permitted in your country.

FCC Class B Compliance Statement

The following statement applies to the products covered in this manual, unless otherwise specified herein. The statement for other products will appear in the accompanying documentation.

NOTE:

This equipment has been tested and found to comply with the limits for a "Class B" digital device, pursuant to Part 15 of the FCC rules and meets all requirements of the Canadian Interference-Causing Equipment Standard ICES-003 for digital apparatus. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in strict accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Fujitsu Technology Solutions GmbH is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Fujitsu Technology Solutions GmbH. The correction of interferences caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

The use of shielded I/O cables is required when connecting this equipment to any and all optional peripheral or host devices. Failure to do so may violate FCC and ICES rules.

Getting started

Please observe the safety information in the "Important notes", Page 3 chapter.

Unpacking and checking the delivery

It is recommended not to throw away the original packaging material! It may be required for reshipment at some later date.

► Unpack all the individual parts.
► Check the contents of the package for any visible damage caused during transport.
► Check whether the delivery conforms to the details in the packing slip.
↳ Should you discover that the delivery does not correspond to the delivery note, notify your local sales outlet immediately.

Steps for initial setup

Only a few steps are necessary to put your new device into operation for the first time:

- Select a location for device and set up device
- Connecting external devices
- Check the voltage at the mains outlet and connect the device to an electrical outlet
- Switch the device on

You will learn more about the individual steps in the following sections.

External devices

If you have received other external devices in addition to your own device (e.g. a printer), do not connect these until after the initial installation. The following sections describe how to connect these external devices.

Drives and boards

If you have received drives or boards with your device, please do not install them until after first-time setup. How to install drives and boards is described in the "System expansions", Page 30 chapter.

Setting up the device

When installing your device, please read the recommendations and safety notes in the "Safety" manual.

Set up the device only in its correct orientation (vertical position).

We recommend that you place your device on a surface with good anti-slip qualities. In view of the multitude of different finishes and varnishes used on furniture, it is possible that the rubber feet will mark the surface they stand on.

Do not stack several devices on top of each other.

Depending on the location of your device, bothersome vibrations and noises may occur. To prevent this, a distance of at least 3 mm should be maintained from other devices on casing sides without ventilation surfaces. In addition, we recommend placing the device on support feet, as these buffer vibrations.

Make sure that the device is adequately ventilated. In order to avoid overheating, do not cover the ventilation area of the monitor or the device.

Do not expose the device to extreme ambient conditions (see "Technical data", Page 50, "Ambient conditions"). Protect the device against dust, humidity and heat.

Connecting the monitor, mouse and keyboard

The ports for the monitor, mouse, and keyboard are on the front and rear of the device.

Keyboard port, purple (optional)

Monitor port, blue

USB port, black

(USB mouse, USB keyboard)

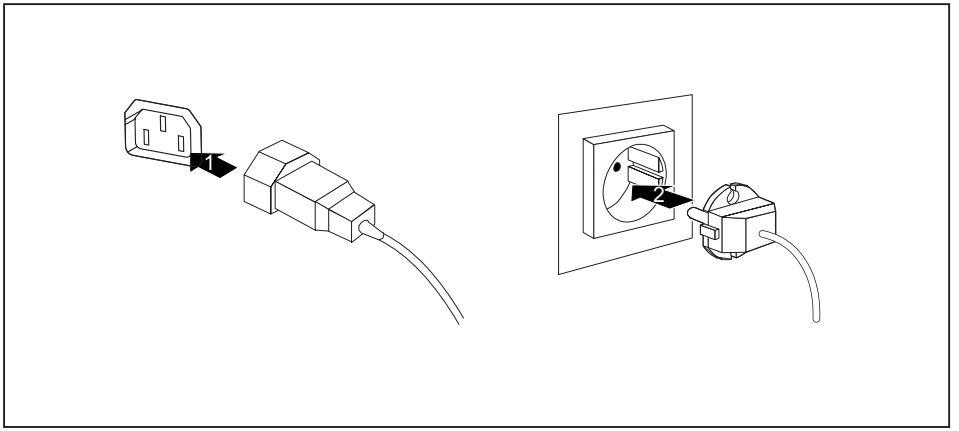
PS/2 mouse port, green (optional)

PS/2 mouse port, green

Connecting the monitor

- ► Follow the instructions contained in the monitor manual to prepare the monitor for operation (e.g. connecting cables).
- ► Connect the data cable of the monitor into the monitor port of your device.

The monitor power cable may only be connected to the device monitor socket if the monitor current consumption is less than 1.5 A for 230 V or 3 A for 115 V. The values for the monitor current consumption can be found in the technical data on the monitor or in the operating manual for the monitor.



- ► Depending on your device configuration level, plug the monitor power cable into either the system unit (1) or a grounded mains outlet (2).

Connecting the mouse

Depending on the equipment level selected, your device will be supplied with a USB mouse or a PS/2 mouse.

Connecting a USB mouse

► Connect the USB mouse to one of the USB ports on the device.

Connecting a PS/2 mouse

If you do not attach a mouse to the PS/2 mouse port, you can disable the mouse controller in the *BIOS Setup* in order to free the IRQ12 for a different application.

► Connect the PS/2 mouse to the PS/2 mouse port of the device.

Connecting the keyboard

Depending on the equipment level selected, your device will be supplied with a USB keyboard or a PS/2 keyboard.

Connecting a USB keyboard

Use the supplied keyboard cable only.

► Plug the rectangular connector of the keyboard cable into the rectangular socket on the underside or on the rear of the keyboard.

► Insert the flat rectangular USB plug of the keyboard cable into one of the device's USB ports.

Connecting a PS/2 keyboard

Use the supplied keyboard cable only.

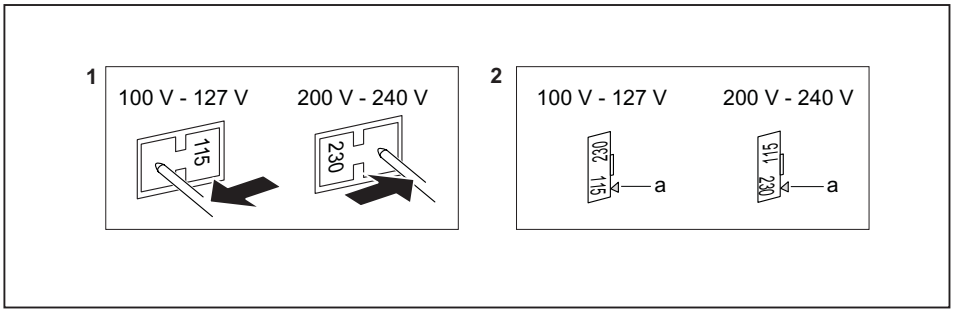
► Plug the rectangular connector of the keyboard cable into the rectangular socket on the underside or on the rear of the keyboard.

► Plug the round plug of the keyboard cable into the keyboard port on the device.

Connecting the device to the mains voltage (device-dependent)

The device is adjusted to the mains voltage depending on the configuration level:

- Devices that only support 230 V cannot be adjusted to the mains voltage.
- On devices with a WAN component, the voltage supply is automatically adjusted to the mains voltage.
- On devices with a voltage selector switch (sliding switch, plug-in element) you will need to manually select the correct voltage rating.



1 = Sliding voltage switchover switch
2 = Plug-in voltage switchover element
a = Notch for inserting the screwdriver

The visible value must correspond to the local mains voltage:

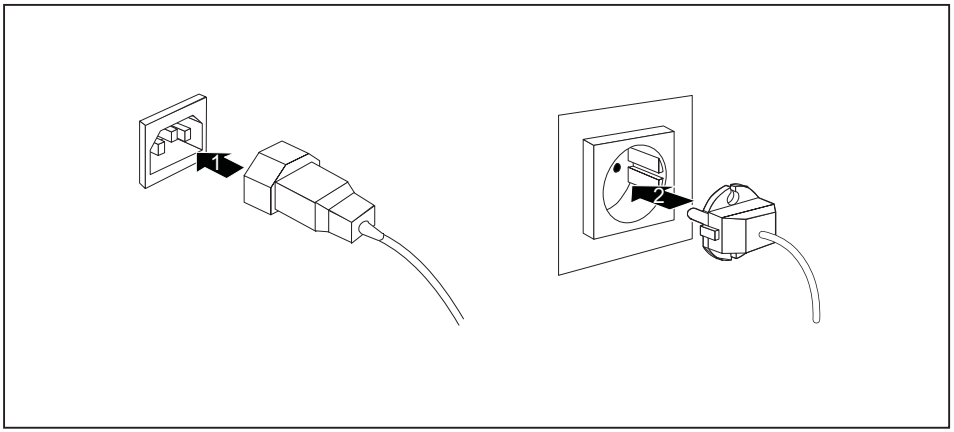
- 115 = 100 V to 127 V
- 230 = 200 V to 240 V

► Check the voltage setting.

► If the incorrect mains voltage is selected, push the slide switch all the way into the other available position (1) with a pointed object.

or

► Insert a screwdriver into the notch and prise out the plug-in element, turn it and refit it the other way round (2).



► Connect the power cable to the device (1).

► Plug the power plug into a grounded mains outlet (2).

Switching on for the first time: installing the software

If the device is integrated into a network, the user and server details as well as the network protocol are required during the software installation.

Contact your network administrator if you have any questions about these settings.

When you switch on the device for the first time, the supplied software is installed and configured. Plan a reasonable amount of time for this, as this process must not be interrupted.

Once the installation has been started the device must not be switched off, unless the installation has been completed.

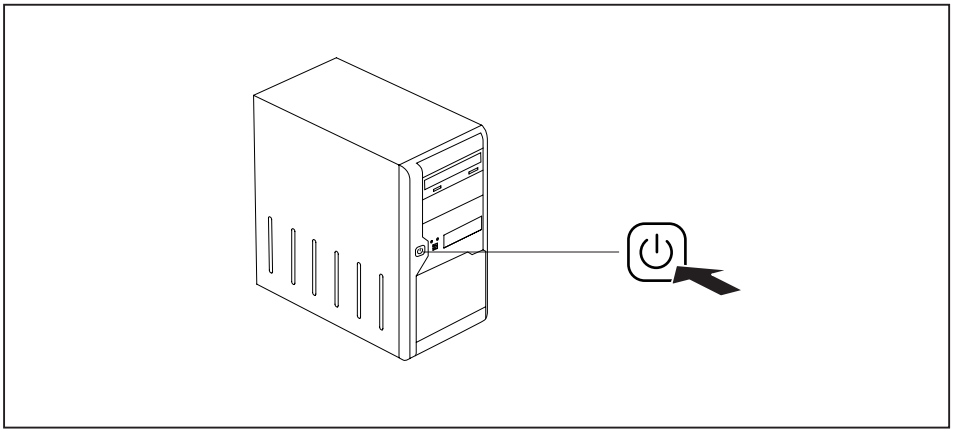
During installation, the device may only be rebooted when you are requested to do so!

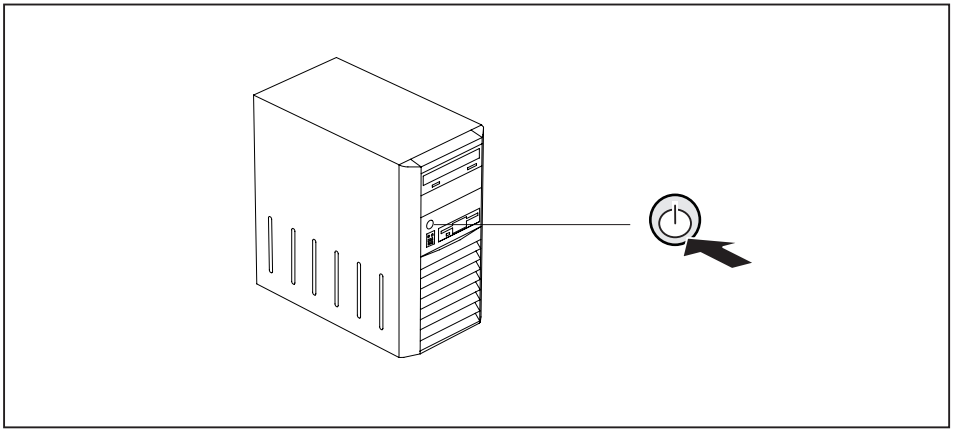
The installation will otherwise not be carried out correctly and the contents of the hard disk must be completely restored.

You may need the licence number for Windows during the installation. The licence number is located on a sticker on your device.

Switching on the monitor and device

► Switch the monitor on (see the operating manual for the monitor).
► Switch the device on. To do this, follow the instructions below.





► Press the ON/OFF switch on the front of the device.
↳ The power-on indicator lights green and the device is started.

Installing the software

- ► During installation, follow the on-screen instructions.
- ► Consult the operating system manual if there is anything unclear about the requested input data.

For further information about the system and its drivers, utilities and updates please refer to the "Drivers & Utilities" DVD or visit our website at "http://ts.fujitsu.com/support/".

Connecting external devices

Read the documentation on the external device before connecting it.

With the exception of USB devices, always remove all power plugs before connecting external devices!

Do not connect or disconnect cables during a thunderstorm.

Always take hold of the actual plug. Never unplug a cable by pulling the cable itself.

Connect and disconnect the cables in the order described below.

Connecting the cables

- ► Turn off all power and equipment switches.
- ► Remove all power plugs from the grounded mains outlets.
- ► Connect all the cables to the device and the external devices. Please make sure that you always observe the safety notes provided in "Important notes", Page 3.
- ► Plug all data communication cables into the appropriate sockets.
- ► Plug all power cables into the grounded mains outlets.

USB devices are hot-pluggable. This means you can connect and disconnect USB cables while your device is switched on.

Additional information can be found in "Connecting external devices to the USB ports", Page 15 and in the documentation for the USB devices.

Disconnecting the cables

- ► Switch off all affected devices.
- ► Remove all power plugs from the grounded mains outlets.
- ► Unplug all data communication cables from the appropriate sockets.
- ► Disconnect all of the cables from the device and from the external devices.

Ports on the device

The ports are located on the front and back of the device. The ports available on your device depend on the configuration level you have selected. The standard ports are marked with the symbols shown below (or similar). Detailed information on the location of the ports is provided in the manual for the mainboard.

Serial interface, turquoise

Microphone port, pink (optional)

Monitor port, blue

Audio input (Line in), light blue

Headphones, orange or light green (optional)

Audio output (Line out), light green

USB - Universal Serial Bus, black

LAN port

PS/2 mouse port, green (optional)

Keyboard port, purple (optional)

Some of the connected devices require special drivers (see the documentation for the connected device).

Connecting external devices to the serial interface

External devices can be connected to the serial interface (e.g. a printer or modem).

► Connect the data cable to the external device.
► Connect the data cable to the corresponding serial interface.
↳ For an exact description of how to connect external devices to the corresponding port, please see the external device documentation.

Port settings

You can change the port settings (e.g. address, interrupt) in the *BIOS Setup*.

Device drivers

The devices connected to the serial interface require drivers. Your operating system already includes many drivers. If the required drive is missing, install it. The latest drivers are usually available on the Internet or will be supplied on a data carrier.

Connecting external devices to the USB ports

You can connect a wide range of external devices to the USB ports (e.g. printer, scanner, modem or keyboard).

USB devices are hot-pluggable. This means you can connect and disconnect USB cables while your device is switched on.

Additional information can be found in the documentation for the USB devices.

► Connect the data cable to the external device.
► Connect the data cable to one of the USB ports on your device.

Device drivers

The external USB devices you connect to the USB ports usually require no driver of their own, as the required software is already included in the operating system. However, if the external USB device requires its own software, please install it from the data carrier provided with the USB device.

To ensure USB 2.0, the length of the cable used between the front USB port of your device and the external USB device must not exceed 3 m.

Operation

Switch the device on

- ► If necessary, switch the monitor on (see the operating manual for the monitor).
- ► Switch on the device using the main power switch located on the rear of the device (if present).
- ► Press the ON/OFF switch on the front of the device.
- ↳ The power-on indicator lights green and the device is started.

Switching off the device

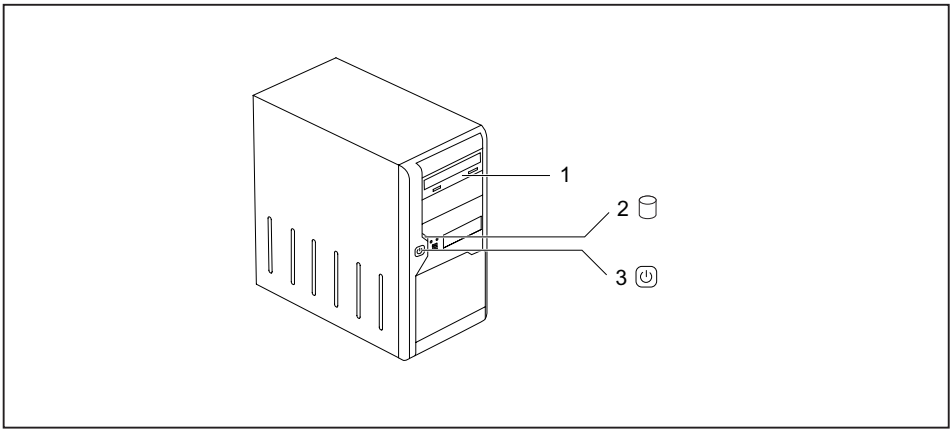
- ► Shut down the operating system in a defined manner. In Windows: via the *Start* menu and the *Turn Off Computer* function.
- ► If the operating system does not automatically switch the device into energy-saving mode or switch it off, press the ON/OFF switch.
- ↳ If the device is in standby, it consumes a minimum of energy.
- ► Switch the device off at the main switch (if present). The device no longer uses any power.

The main switch and the ON/OFF switch do not disconnect the device from the mains voltage. To completely disconnect the mains voltage, remove the power plug from the power socket.

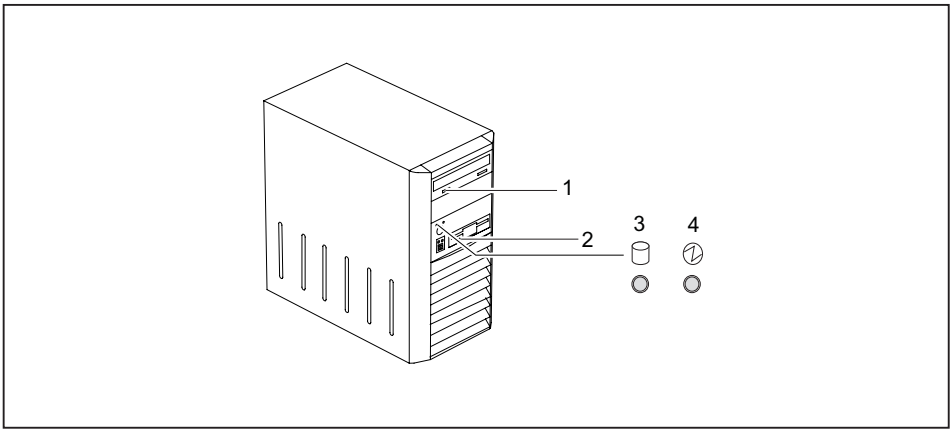
- ► If necessary, switch the monitor off (see the operating manual for the monitor).

Indicators on the device

The indicators are on the front of the casing. Which indicators are available on your device depends on the configuration level you have selected.



1 = Drive indicator, e.g. DVD
2 = Hard disk indicator
3 = Power-on indicator



1 = Drive indicator, e.g. DVD
2 = Floppy disk indicator
3 = Hard disk indicator
4 = Power-on indicator

Hard disk indicator

The indicator lights up when the device's hard disk is accessed.

Power indicator

In energy-saving mode, the device must not be switched off with the main power switch (if present) or disconnected from the mains, as this may result in data loss.

- The indicator is green: the device is on.
- Indicator lights up orange or flashes green (depending on the type of device): Device is in power-saving mode. After being switched on with the On/Off switch, the device switches on or returns to the state it was in before it went into power-saving mode.
- The indicator fails to light: the device is switched off (main switch on 0 or disconnected from the power supply) or is ready for operation. If the device is ready it can be switched on using the ON/OFF switch.

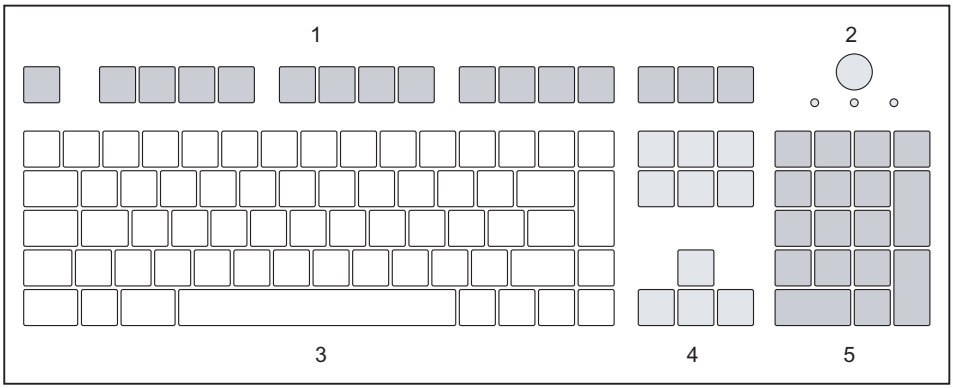
Floppy disk indicator (optional)

The indicator lights up when the device's floppy disk drive is accessed. You may only remove the floppy disk when the indicator is not on.

Drive indicator, e.g. DVD

The indicator lights up when the CD-ROM or DVD drive is accessed. You may only remove the DVD when the indicator is dark.

Keyboard

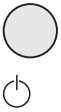


1 = Function keys
2 = On/off switch (optional)
3 = Alphanumeric keypad
4 = Cursor keys
5 = Numeric keypad (calculator keypad)

The illustrated keyboard is an example and may differ from the model you use.

Important keys and keyboard shortcuts

The description of the following keys and keyboard shortcuts applies to Microsoft operating systems. Details of other keys and keyboard shortcuts can be found in the documentation for the relevant application program.



On/off switch (optional)

Depending on the setting in the BIOS Setup, the device can be switched on or off with this switch. Some operating systems allow you to configure additional functions of the ON/OFF switch in the Control Panel.

With some keyboards the ON/OFF switch can only be used with an ACPI (Advanced Configuration and Power Management Interface). Otherwise the key is inoperative. The mainboard must support this function.

Enter key

confirms the highlighted selection. The Enter key is also referred to as the "Return" key.

Start key

calls up the Windows *Start* menu.

Menu key

calls up the menu for the marked item (Windows).

Shift key

enables upper-case letters and the upper key symbols to be displayed.

Alt Gr key

produces a character shown on the bottom right of a key (e.g. the @ sign on the Q key).

Num Lock key

By pressing the Num Lock key you switch between the upper- and lower-case levels of the calculator keypad.

When the Num Lock indicator is lit the numeric keypad and arithmetic keys are active.

When the Num Lock indicator is not lit the cursor control functions on the Numeric keypad are active.

Ctrl key

performs a special operation when pressed in conjunction with another key. The Ctrl key is also referred to as "Control" or the "Control key".

Warm restart

restarts your device. Press simultaneously the keys Ctrl, Alt and Del. Under some operating systems the Task Manager appears first. You must then press all three keys again to reboot.

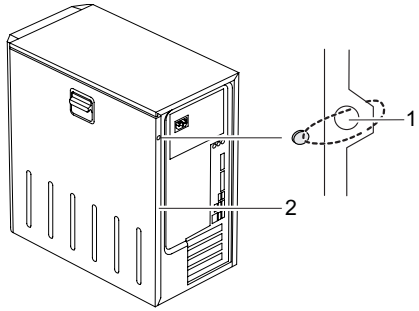
Settings in BIOS Setup

In *BIOS Setup*, you can set the system functions and the hardware configuration of the device. When the PC is delivered, the default entries are valid (see "BIOS Setup" manual or manual for the mainboard). You can customise these settings to your requirements in the *BIOS Setup*.

Property and data protection

Software functions and mechanical locking offer a broad range of functions for protecting your device and your personal data from unauthorised access. You can also combine these functions.

Anti-theft protection and lead-sealing



1 = Holes for padlock

2 = Device for "Kensington Lock"

Anti-theft protection

You can protect your device from theft

- with the holes (1), a padlock and a chain, which you have connected to a fixed object beforehand.
- with the Kensington Lock device (2) and a Kensington MicroSaver. Consult the manual for your Kensington Lock.

Lead-sealing

The casing can be sealed to prevent it being opened by unauthorised persons. To do this, feed the sealing chain through the holes (1) and seal the chain with the lead seal.

BIOS setup security functions

The *Security* menu in *BIOS Setup* offers you various options for protecting your personal data against unauthorized access, e.g.:

- Preventing unauthorised access to *BIOS Setup*
- Preventing unauthorised system access
- Preventing unauthorised access to the settings of boards with their own BIOS
- Preventing the system from booting from the diskette drive
- Issuing virus warnings
- Preventing the unauthorised writing of floppy disks
- Protecting BIOS from overwriting
- Protecting the device from being switched on by an external device

You can also combine these functions.

You will find a detailed description of the *Security* menus and how to assign passwords in the manual for the mainboard or in the "BIOS Setup" manual.

Access authorisation via SmartCard

In systems equipped with a SmartCard reader, access can be restricted to those users who have a corresponding SmartCard.

Access protection with SystemLock

With *SystemLock*, you can protect your system from unauthorised booting. A system can then only be booted when the user inserts a valid SmartCard into the SmartCard reader and enters his/her personal code number (PIN). To use *SystemLock*, you require the following components:

- External or internal SmartCard reader
- *SystemLock* installed (see "BIOS Setup" manual)
- SmartCard

SystemLock controls access to your device. When a SmartCard is initialised, permissions are assigned for system access (system, setup, system+setup, admin). You can configure several SmartCards for one system and initialise them with different permissions. In addition, you can protect access to your hard disk

In this way users can be divided into user groups. Users of a user group use SmartCards with the same permissions.

If you also want to use other security software in addition to *SystemLock* (e.g. *SMARTY*), please read your security software documentation beforehand.

SystemLock rights

You can initialise a SmartCard with one of the following rights:

System	The system starts following entry of the user PIN. You can change the user PIN.
Setup	You can open and change the *BIOS Setup* and change the user PIN.
System+Setup	The system starts following entry of the user PIN. You can open and change the *BIOS Setup* and change the user PIN.
Admin	The system starts following entry of the user PIN. You can change the user PIN and the administrator PIN, unlock locked SmartCards, open and change the *BIOS Setup* and generate additional SmartCards for this system.

For instructions on how to install and use *SystemLock*, and how to initialise SmartCards, see the "BIOS Setup" manual.

Operating the SmartCard reader

► Connect the external SmartCard reader to your system as described in the instructions for the SmartCard reader.

↳ After the device is switched on, you will be prompted to insert your SmartCard.

Troubleshooting and tips

Refer to the safety notes in the "Safety" manual and in the "Getting started", Page 6 chapter when connecting or disconnecting cables.

If a fault occurs, try to correct it as described in the following documentation:

- in this chapter
- in the documentation for the connected devices
- in the help systems of the software used
- in the documentation for your operating system

Help if problems occur

Should you ever have a problem with your computer that you cannot solve yourself, in many cases you can solve it quickly using the *SystemDiagnostics* program pre-installed on your computer.

► To start the *SystemDiagnostics* programme, click on *Startsymbol* - *Program* - *Fujitsu Siemens Computers* - *SystemDiagnostics*

or

► To start the *SystemDiagnostics* programme, click on *Startsymbol* - *Program* - *Fujitsu* - *SystemDiagnostics*.

► If a problem is detected during the test run, the *SystemDiagnostics* program outputs a code (e.g. DIFS code YXXX123456789123).

► Take a note of this DIFS code and the ID number of your device. The ID number can be found on the type rating plate on the back of the casing.

► For further clarification of the problem, contact the Help Desk for your country (see the Help Desk list or visit the Internet at "http://ts.fujitsu.com/support"). For this, please have ready the ID number & serial number of your system and the DIFS code.

Troubleshooting

Power indicator remains off after you have switched on your device

Cause	Remedy
The mains voltage supply is faulty.	► Check whether the power cable is properly plugged into the device and a grounded mains outlet. ► Switch the device on.
Internal power supply overloaded.	► Pull the power plug of the device out of the mains outlet. ► Wait a moment. ► Plug the power plug into a properly grounded mains outlet again. ► Switch the device on.

The device cannot be switched off with the ON/OFF switch.

Cause	Remedy
The device has not been switched on with the ON/OFF switch.	► Press the ON/OFF switch again.
System crash	► Press the ON/OFF switch for at least 4 seconds, until the device switches off. The operating system is not shut-down properly in the process. Error messages are therefore possible the next time the system is booted.

Monitor remains blank

Cause	Remedy
Monitor is switched off.	► Switch your monitor on.
Power saving has been activated (screen is blank)	► Press any key on the keyboard. **or** ► Deactivate the screen saver. If necessary, enter the appropriate password.
Brightness control is set to dark	► Adjust the brightness control. For detailed information, please refer to the operating manual supplied with your monitor.

Cause	Remedy
Power cable not connected	► Switch off the monitor and the device. ► Check that the monitor power cable is properly connected to the monitor and to a grounded mains outlet or to the monitor socket of the device. ► Check that the device power cable is properly plugged into the device and a grounded mains outlet. ► Switch on the monitor and the device.
Monitor cable not connected	► Switch off the monitor and the device. ► Check that the monitor cable is properly connected to the device and monitor. ► Switch on the monitor and the device.
Wrong monitor has been set under Windows 2000	► Restart the device. ► When the message *Windows is starting up* appears, press function key F8. The *Windows 2000 Advanced Options* menu appears. ► Select *Safe Mode* or *Safe Mode with Network*. ► Go to *Start – Settings – Control Panel – Display – Settings* to enter the correct values for the connected monitor as described in the operating manual of the monitor.
Wrong monitor has been set under Window XP	► Restart the device. ► Press F8 while the system is booting. Either the *Windows Advanced Start Options* menu or the menu for selecting the operating system appears. ► If the menu for selecting the operating system appears, press F8. ► Select *Safe Mode* or *Safe Mode with Network*. ► Go to *Start – Settings – Control Panel – Display* and the tabs *Appearance*, *Themes*, *Settings* to set the correct values for the connected monitor as described in the operating manual of the monitor.

Cause	Remedy
Wrong monitor has been set under Windows Vista	► Restart the device. ► Press F8 while the system is booting. Either the *Windows Advanced Start Options* menu or the menu for selecting the operating system appears. ► If the menu for selecting the operating system appears, press F8. ► Select *Safe Mode* or *Safe Mode with Network*. ► Go to *Start symbol – (Settings) – Control Panel – Appearance and Personalization – Personalization* and enter the correct values for the connected monitor as described in the operating manual of the monitor.
The wrong RAM modules have been inserted	► See the technical manual for the mainboard for information on which memory modules can be used.

No mouse pointer displayed on the screen

Cause	Remedy
The mouse is not correctly connected.	► Shut down the operating system properly. ► Switch the device off. ► Check that the mouse cable is properly connected to the system unit. If you use an adapter or extension lead with the mouse cable, check the connections. ► Make sure that only one mouse is connected. ► Switch the device on.

The floppy disk cannot be read or written

Cause	Remedy
The write protection of the floppy disk or the floppy disk drive is activated.	► Check whether the write protection of the floppy disk or the floppy disk drive is activated (refer to the "BIOS Setup" manual and if necessary to the manual for the mainboard).
The floppy disk drive controller is not enabled.	► Check the relevant entries for floppy disk drive in the *Main* menu of the *BIOS Setup*. ► Check that the floppy disk drive controller is enabled (refer also to the manual for the mainboard or in the "BIOS Setup" manual).
The floppy disk drive is not connected.	► Check that the cables of the floppy disk drive are properly connected.

Time and/or date is not correct

Cause	Remedy
Time and date are incorrect.	► Set the correct time and date within the operating system you are using. **or** ► Set the correct time and/or date in the *BIOS Setup*.
The on-board backup battery in the device is flat.	► If the time and date are repeatedly wrong when you switch on your device, replace the lithium battery (see "Replacing the lithium battery", Page 49).

Error messages on the screen

Error messages and their explanations are provided:

- in the technical manual for the mainboard
- in the documentation for the programs used

Installing new software

When installing programs or drivers, important files may be overwritten and modified. To be able to access the original data in the event of any problems following installation, you should backup your hard disk prior to installation.

Restoring hard disk contents

Should you need to restore your hard disk, the instructions are provided on the case of the "Recovery DVD" (delivered with your system).

Tips

Topic	Tip
Out of system resources	► Close unnecessary applications. **or** ► Run the applications in a different order.
Other manuals	Further manuals are provided as PDF files on the "Drivers & Utilities" DVD.

System expansions

As the device has to be shut down in order to install/uninstall system hardware components, it is a good idea to print out the relevant sections of this chapter.

It may be necessary to update the BIOS when carrying out a system expansion or hardware upgrade. Additional information is contained in the "BIOS Setup" manual or possibly in the technical manual for the mainboard.

When installing components that become very hot, make sure that the maximum permissible temperature is not exceeded.

The device must be switched off when installing/removing the system expansions and may not be in energy-saving mode.

Remove the power plug before opening the device.

This chapter describes all the activities required to modify your device hardware (e.g. installing boards or drives).

Read the supplied documentation before installing new drives and/or boards.

Refer to the manual for the mainboard before making any extensions to the mainboard.

Information about boards

Take care with the locking mechanisms (catches and centring pins) when you are replacing boards or components on boards

To prevent damage to the board or the components and conductors on it, please take care when you insert or remove boards. Make sure expansion boards are inserted straightly.

Never use sharp objects (screwdrivers) for leverage.

Boards with electrostatic sensitive devices (ESD) are identifiable by the label shown.

When handling boards fitted with ESDs, you must always observe the following points:

- You must always discharge static build up (e.g. by touching a grounded object) before working.
- The equipment and tools you use must be free of static charges.
- Only touch or hold the boards by the edge or at the areas marked green (Touch Points).
- Never touch pins or conductors on boards fitted with ESDs.

Opening the casing

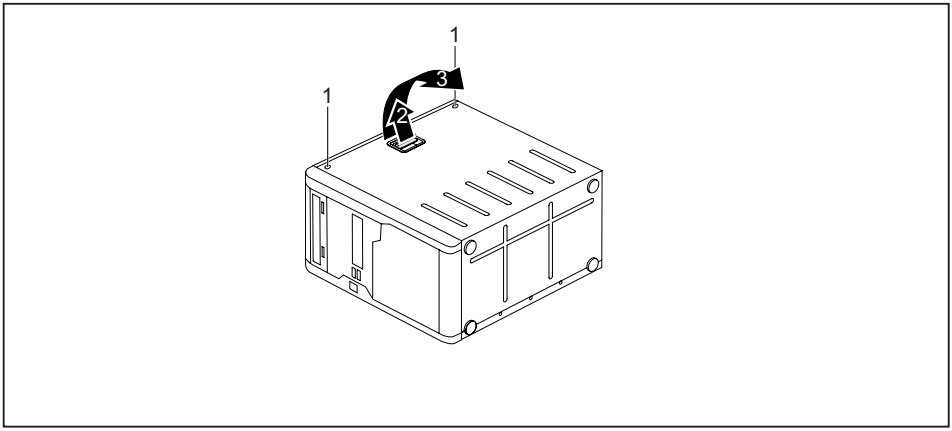
Note that some components on the mainboard may be very hot if the device was in use shortly before the casing was removed.

These components can be marked with the following symbol.

► Switch the device off. The device must not be in power-saving mode.

Please observe the safety information in "Important notes", Page 3.
Disconnect the mains plug from the mains outlet.
Only insert the power plug after you have closed the casing.

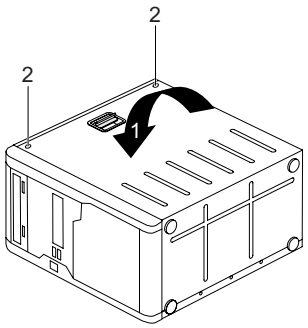
► Remove any connected wires which are in the way.
► Lay the device on its side in the manner shown below.



► For devices with screwed on side part: Remove the casing screws (1).
► Pull the locking device (2) and swivel the side part in the direction of the arrow (3).

Closing the casing

► Insert the side part in the guide rail on the lower part of the casing.
► Insert the side part in the guide rail on the lower part of the casing.

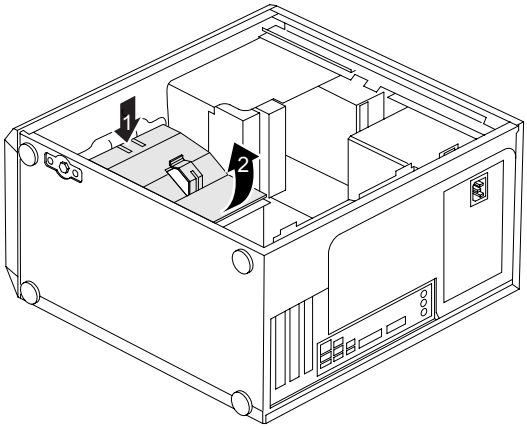


► Swivel the side part in the direction of the arrow (1) until it engages.
► For devices with screwed on side part: Tighten the casing screws (2).
► Reconnect the cables that you disconnected previously.

Removing and installing the ventilation duct.

Removing the ventilation duct

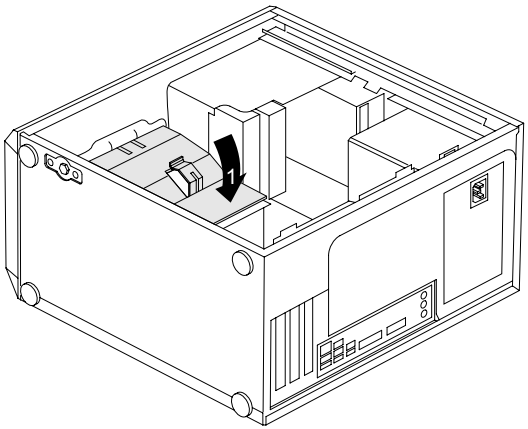
When removing the ventilation duct, be careful not to damage the processor cooler(s) on the mainboard.



- ► Open the casing (see "Opening the casing", Page 31).
- ► Unhook the cables from the holder on the ventilation duct.
- ► Remove any plugged-in cables that are in the way.
- ► Unlock the ventilation duct by pressing the locking hooks in the direction of the arrow (1).
- ► Keep pressing the locking hook and pull the ventilation duct out of the casing in the direction of the arrow (2).

Installing the ventilation duct

When fitting the ventilation duct, be careful not to damage the processor cooler(s) on the mainboard.



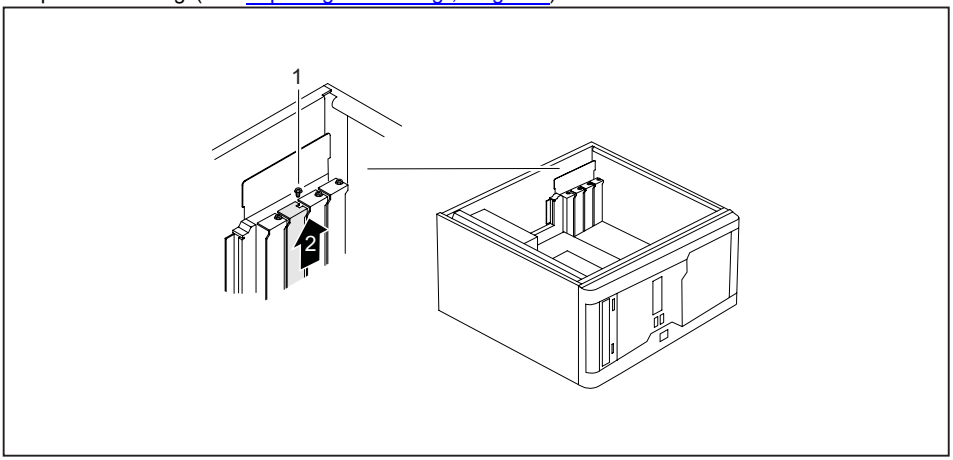
- ► Insert the latches on the underside of the ventilation duct into the corresponding slots in the casing.
- ► Press the ventilation duct into the casing in the direction of the arrow (1) until you feel the locking hook engage.
- ► Reconnect the cables that you disconnected previously.
- ► Hook the cables into the holder on the ventilation duct.
- ► Close the casing (see "Closing the casing", Page 32).

Installing and removing a board

The number, position and arrangement of the board slots on the mainboard can be found in the manual for the mainboard. Boards may already be installed on shipment.

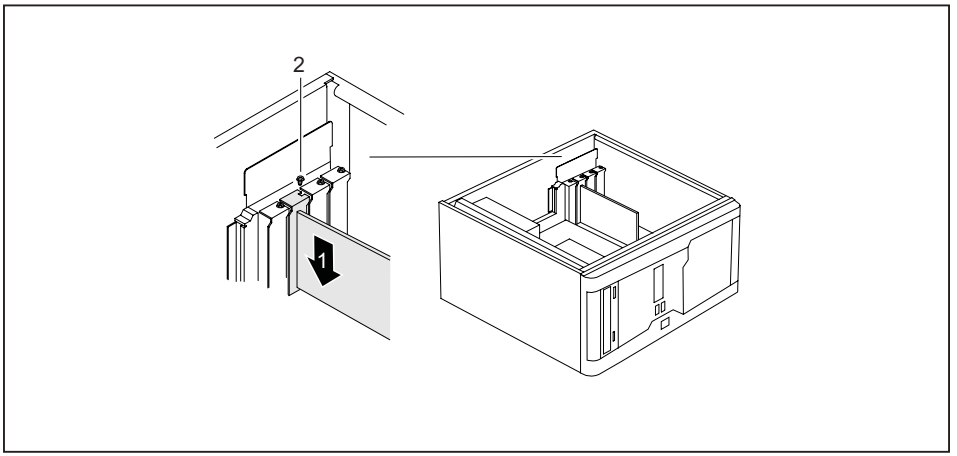
Installing a board

► Open the casing (see "Opening the casing", Page 31).



► Remove the screw on the slot cover (1).
► Pull the slot cover out of the slot in the direction of the arrow (2).

Do not throw away the slot cover. For cooling, protection against fire and in order to comply with EMC regulations, you must refit the slot cover if you remove the board.



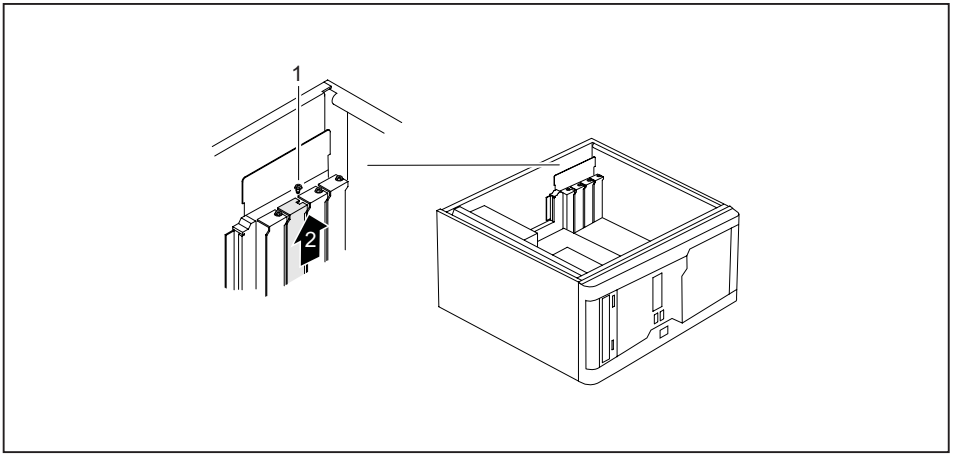
- ► Push the board into the slot (1).
- ► Screw the screw back onto the slot cover (2).
- ► If necessary, connect the cables to the board.
- ► Close the casing (see "Closing the casing", Page 32).

If you have installed or removed a board, please check the relevant PCI slot settings in the *BIOS Setup*. If necessary, change the settings. Further information is provided in the PCI board documentation.

Information about the installation of low profile boards can be found in the "Low-profile boards", Page 38 chapter.

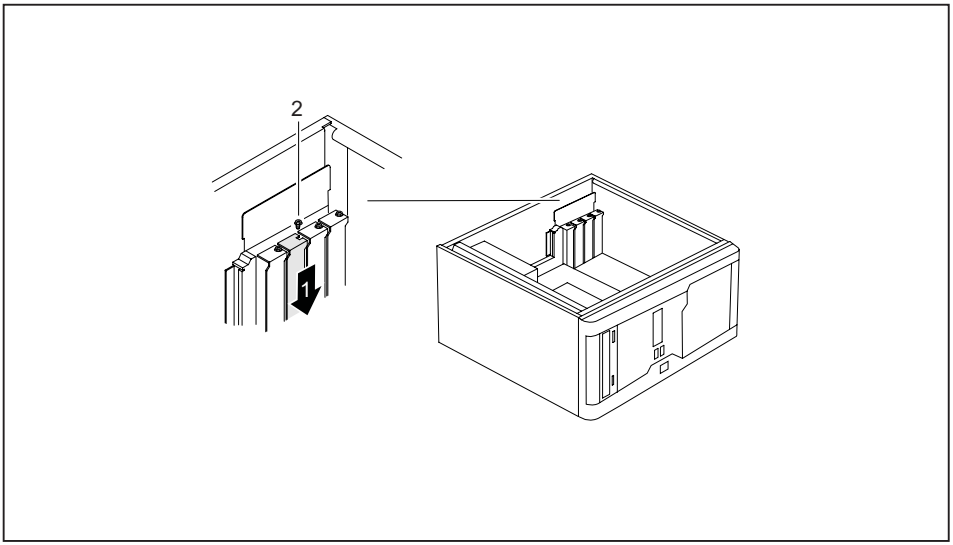
Removing boards

- ► Open the casing (see "Opening the casing", Page 31).
- ► Disconnect the cables connected to the board.



- ► Remove the screw on the board (1).
- ► Pull the board out of the slot in the direction of the arrow (2).
- ► Place the board into appropriate packaging.

For cooling, protection against fire, and in order to comply with EMC (electromagnetic compatibility) regulations, you must refit the slot cover.



- ► Push the slot cover into the slot (1).

► Fasten the slot cover into place with the screw (2).
► Close the casing (see "Closing the casing", Page 32).

If you have installed or removed a PCI board, please check the relevant PCI slot settings in the *BIOS Setup*. If necessary, change the settings. Further information is provided in the PCI board documentation.

Low-profile boards

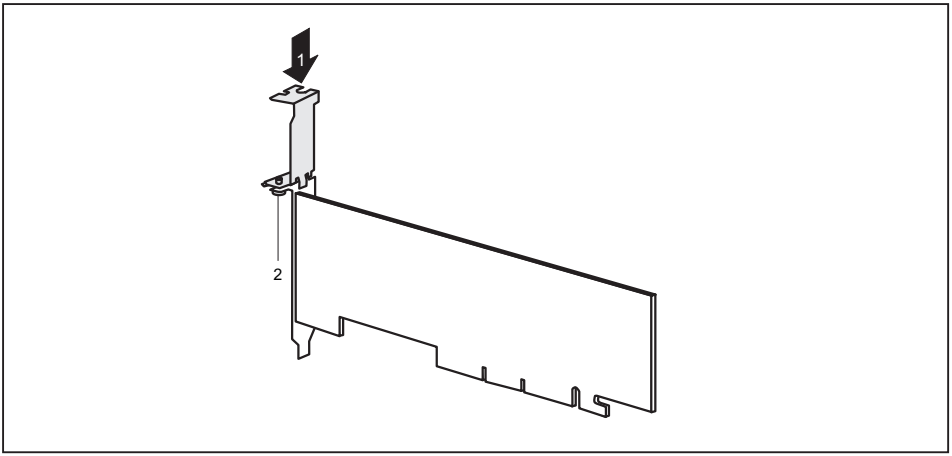
You will need to fit a corresponding slot adapter first before you can install a low-profile board in a normal board slot.

Two-piece slot covers are fitted to the slots intended for low-profile boards. The two pieces are joined together by a screw.

Do not throw away the slot cover. For cooling, protection against fire and in order to comply with EMC regulations, you must refit the slot cover if you remove the board.

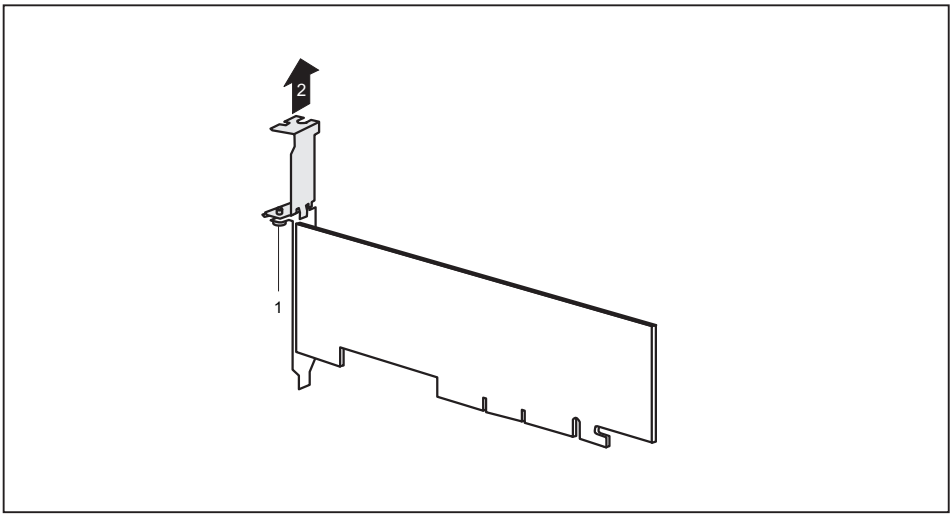
► Remove the required slot cover (see "Installing and removing a board", Page 35).

Fitting a slot adapter



► Fit the slot adapter to the slot cover of the low-profile board (1) and screw tight (2).
↳ Now you can install the low-profile board in a suitable slot like a normal board (see "Installing and removing a board", Page 35).

Removing a slot adapter



► Unscrew the screw (1) and remove the slot adapter (2).

Installing and removing drives

The PC casing can accommodate a total of four drives:

- three accessible drives (two 5¼-inch drives and one 3½-inch drive)
- two non-accessible hard disk drives(two 3½-inch drives with half installation height)

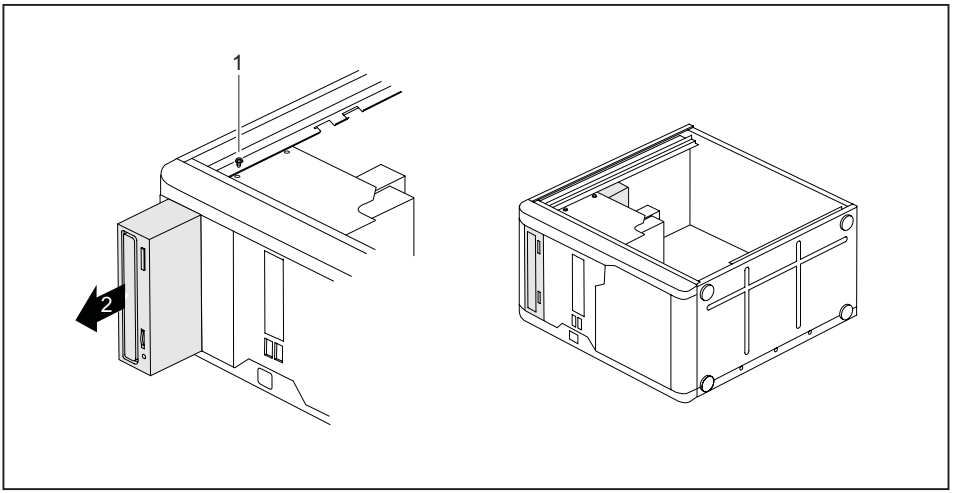
"Accessible drives" are e.g. DVD or CD ROM drives, into which a data carrier can be inserted from outside.

Removing and installing accessible drives

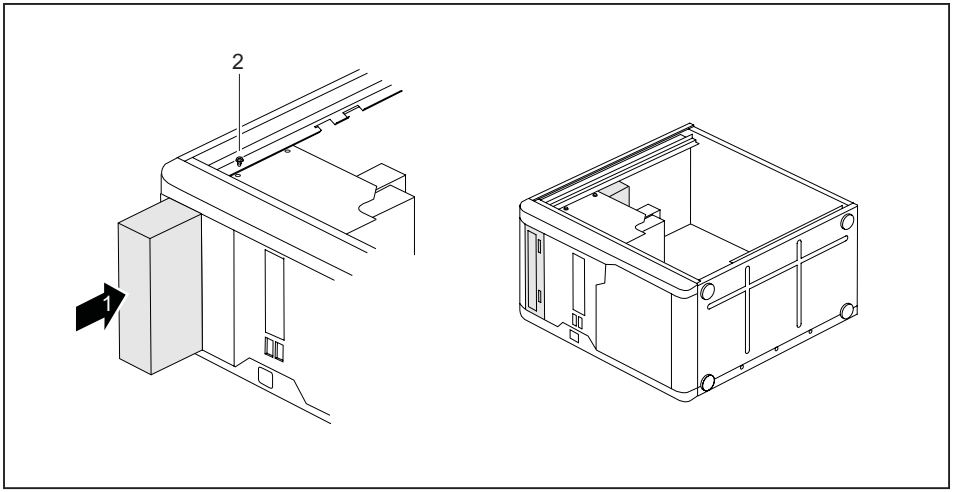
The number of screws used to attach the drives varies according to the type of drive fitted and may not necessarily match the depiction below.

Removing an accessible 5¼ inch drive (e.g. DVD drive)

► Open the casing (see "Opening the casing", Page 31).
► Disconnect all cables connected to the drive (data cable, power supply cable).



► Loosen the screws (1).
► Working from behind, slide the drive a short distance out of the bay in the direction of the arrow (2).
↳ The drive now protrudes slightly out of the casing.
► Pull the drive out of the casing (2).
► If necessary, make the required settings on the remaining hard disk drive.



- ► If you are not installing a new drive, slide the empty slide-in module as far as it will go into the casing (1).
- ► Secure the empty slide-in module with the screws (2).
- ► Close the casing (see "Closing the casing", Page 32).

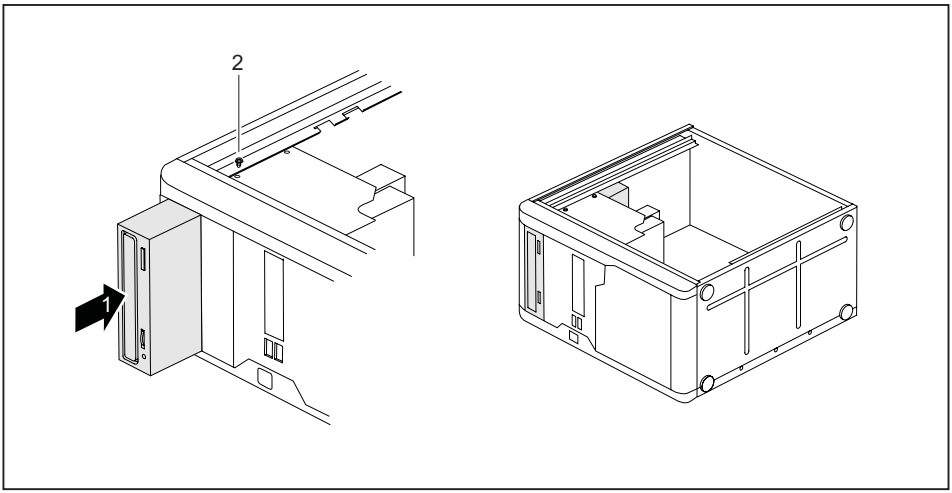
It may be necessary to modify the entry for the remaining drives in the *BIOS Setup*.

Installing an accessible 5¼ inch drive (e.g. DVD drive)

- ► Open the casing (see "Opening the casing", Page 31).
- ► If a slide-in module is fitted, remove this first. To do this, proceed in the same way as when removing a drive (see "Removing an accessible 5¼ inch drive (e.g. DVD drive)", Page 40).

Do not dispose of the empty slide-in module. For cooling, protection against fire, and in order to comply with EMC regulations, you must refit the empty slide-in module if you remove the drive again later.

- ► Take the new drive out of its packaging.
- ► Make the desired settings on the new drive (if necessary, to the settings of drives already installed as well (Master/Slave)).

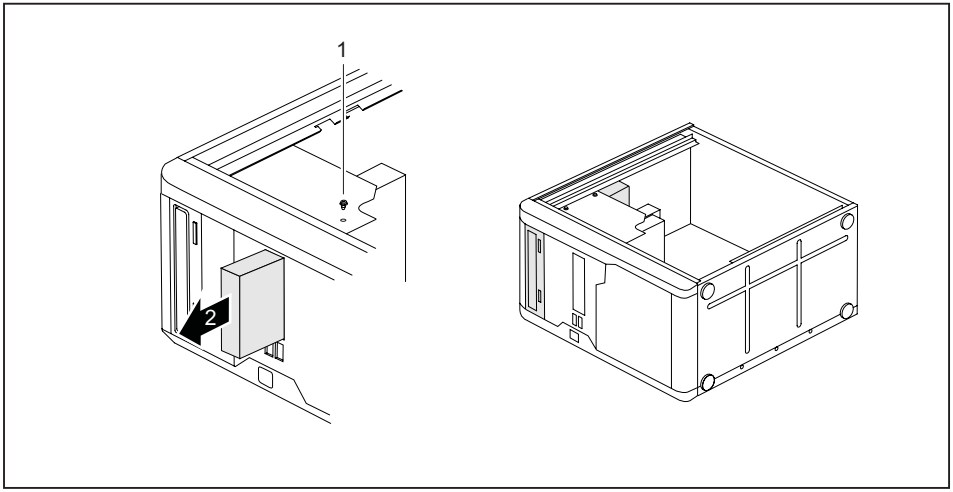


- ► Slide the drive into the casing as far as it will go (1).
- ► Fasten the drive in place with the screws (2).
- ► Plug the data and the power supply connectors into the drive. Make sure the polarity is correct.
- ► Close the casing (see "Closing the casing", Page 32).

It may be necessary to modify the entry for the drive in the *BIOS Setup*.

Installing and removing an accessible 3 1/2 inch drive (e.g. diskette drive)

- ► Open the casing (see "Opening the casing", Page 31).
- ► Disconnect all cables connected to the drive (data cable, power supply cable).



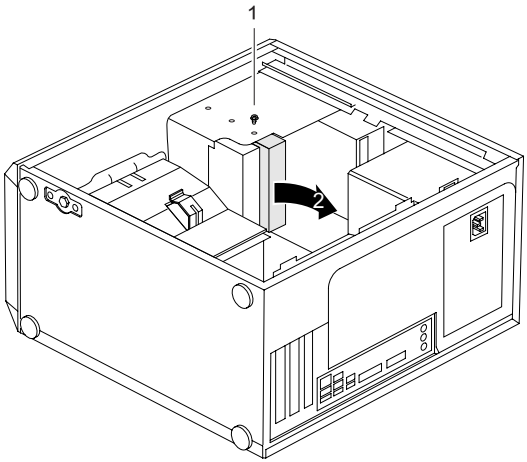
- ► Remove the screws (1).
- ► Working from behind, slide the floppy disk drive out of the bay in the direction of the arrow (2).
- ► Slide the new floppy disk drive into the case in the opposite direction to the arrow (2).
- ► Fasten the floppy disk drive into place with the screw (1).
- ► Fit the data and power supply connectors to the floppy disk drive. Make sure the polarity is correct.
- ► Close the casing (see "Closing the casing", Page 32).

It may be necessary to modify the entry for the drive in the *BIOS Setup*.

Installing and removing the hard disk drive

Removing a hard disk drive

► Open the casing (see "Opening the casing", Page 31).
► Disconnect all cables connected to the drive and fan (data cable, power supply cable).

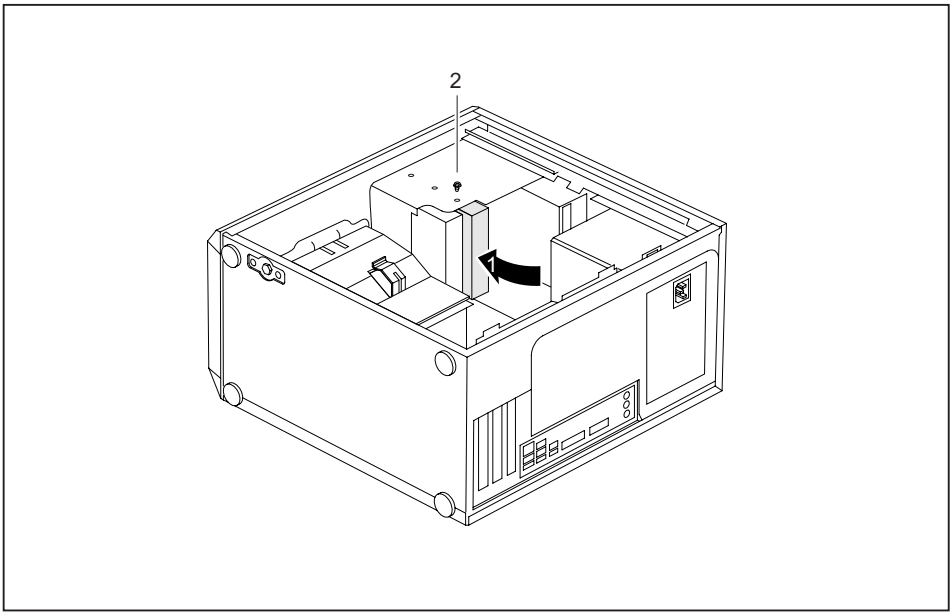


► Loosen the screws (1).
► Pull the drive backwards a short way out of the bay in the direction of the arrow (2).
↳ The drive now protrudes slightly out of the bay.
► Pull the drive completely out of its bay. Make sure that you are not touching other components.
► If necessary, make the required settings on the remaining hard disk drive.
► Close the casing (see "Closing the casing", Page 32).

It may be necessary to modify the entry for the remaining drives in the *BIOS Setup*.

Installing a hard disk drive

► Open the casing (see "Opening the casing", Page 31).
► Take the new hard disk drive out of its packaging.

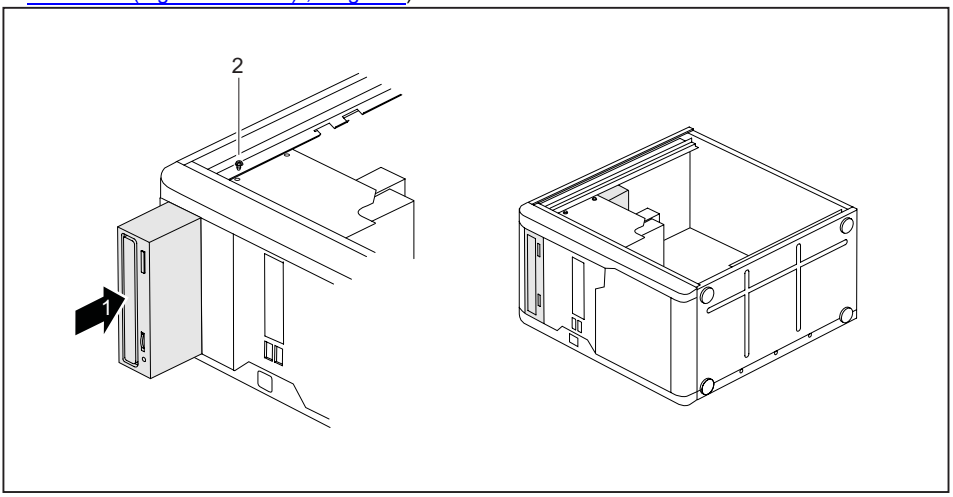


► Slide the hard disk drive into the casing as far as it will go (1).
► Fasten the drive in place with the screws (2).
► Connect the cables (data cable, power supply) to the drive and to the fan.
► Close the casing (see "Closing the casing", Page 32).

Installing an additional hard disk drive

You can install an additional hard disk drive in place of the accessible CD/DVD drive.

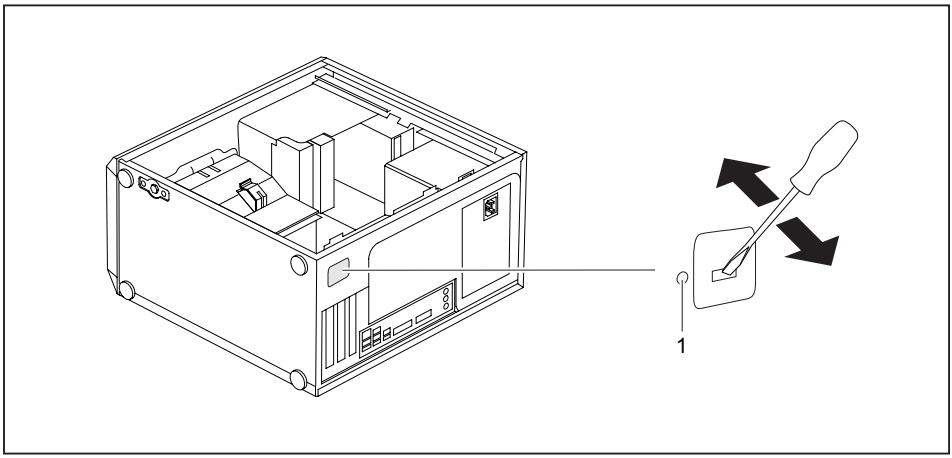
► Remove the accessible CD/DVD drive (see "Removing an accessible 5 1/4 inch drive (e.g. DVD drive)", Page 40).



► Slide the additional hard disk drive into the drive carrier (1).
► Connect the cables to the additional hard disk drive.
► Fasten the additional hard disk drive with the screws (2).
► Connect the cables (data cable, power supply) to the drive.
► Close the casing (see "Closing the casing", Page 32).

Installing USB ports on the rear panel

Depending on your ESPRIMO model, an installation slot for USB interfaces is provided on the back of the casing. As a result, no board slot is occupied.



- ► Insert a screwdriver into the opening and break out the pre-stamped installation opening by moving it backwards and forwards.
- ► Slide the USB ports into the slot and secure them with the screw (1).
- ► Connect the USB cable to the mainboard – refer to the mainboard manual for details.

Mainboard expansions

Details on how to upgrade the main memory or the processor of your device can be found in the manual for the mainboard.

Upgrading main memory

- ► Open the casing (see "Opening the casing", Page 31).
- ► Upgrade the memory according to the description in the manual for the mainboard.
- ► Close the casing (see "Closing the casing", Page 32).

Processor, replacing

- ► Open the casing (see "Opening the casing", Page 31).
- ► Remove the ventilation duct (see "Removing the ventilation duct", Page 33).
- ► Upgrade the processor according to the description in the manual for the main board.
- ► Install the ventilation duct (see "Installing the ventilation duct", Page 34).
- ► Close the casing (see "Closing the casing", Page 32).

Replacing the lithium battery

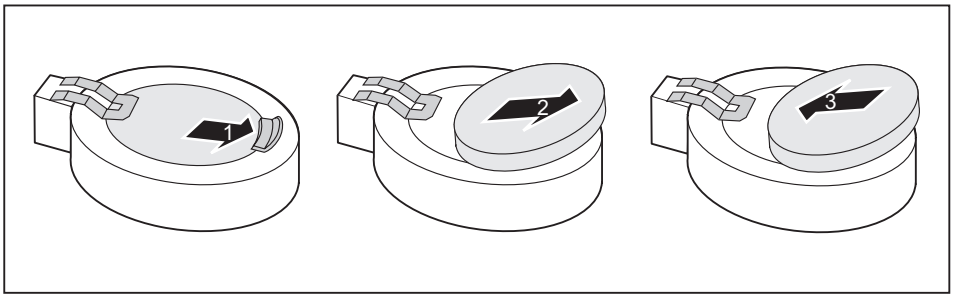
Incorrect replacement of the lithium battery may lead to a risk of explosion!

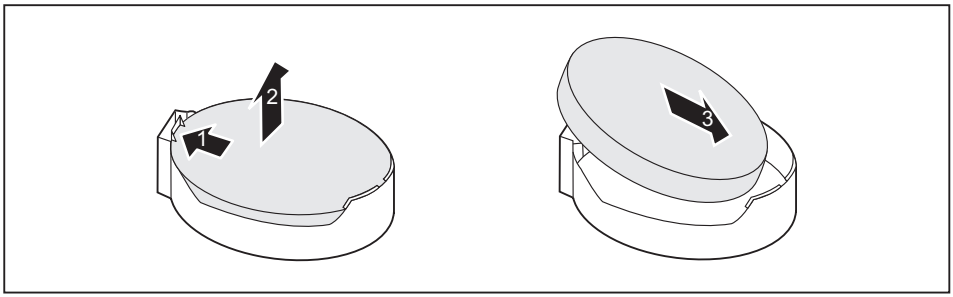
The lithium battery may be replaced only with an identical battery or with a type recommended by the manufacturer.

Do not dispose of lithium batteries with household waste. They must be disposed of in accordance with local regulations concerning special waste.

Make sure that you observe the correct polarity when replacing the lithium battery. The plus pole must be face up!

The lithium battery holder exists in different designs that function in the same way.





► Press the catch in the direction of the arrow (1).

↳ The battery jumps out of the holder slightly.

► Remove the battery (2).

► Push the new lithium battery of the identical type into the holder (3) and press it down until it engages.

Technical data

Electrical data	
Regulations complied with:	IEC 60950-1, EN 60950-1, UL 60950CSA 22.2 No.60950-1
Protection class:	I
Rated voltage range (selectable / non-selectable depending on the device type)	
Rated voltage range (optionally selectable)	100 V – 127 V / 200 V – 240 V
Rated voltage range (non-selectable)	200 V - 240 V
Rated frequency	
Rated frequency (selectable)	50 Hz – 60 Hz
Rated frequency (non-selectable)	50 Hz
Rated current	
Maximum rated current (optionally selectable)	100 V – 127 V / 6.0 A 200 V – 240 V / 3.0 A
Maximum rated current (non-selectable)	200 V – 240 V / 3.0 A
Dimensions	
Width/depth/height:	203 mm/387 mm/390 mm
Weight	
in basic configuration:	approx. 11 kg
Environmental conditions	
Environment class (3K2) Environment class (2K2)	DIN IEC 721 part 3-3 DIN IEC 721 part 3-2
Temperature	
Operating (3K2)	15 °C .... 35 °C
Transportation (2K2)	–25 °C .... 60 °C
Condensation during operation is not permitted	

The data sheets of these devices contains further technical data. You will find the data sheets on the internet at "http://ts.fujitsu.com/support/".

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