C779 / 172E

Bildschirm / Moniteur / Monitor / Skärm / Beeldscherm

BETRIEBSANLEITUNG
OPERATING MANUAL

FUJITSU COMPUTERS
SIEMENS

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A26361-K823-Z100-1-5E19

| | Deutsch |
| | English |

C779 / 172E
Farbbildschirm
Color monitor
Moniteur couleur
Monitor de color
Monitor a colori
Färgskärm
Kleurenbeeldscherm

	Français
	Español
	Italiano
	Svenska
	Nederlands
	TCO'99

Betriebsanleitung
Operating Manual

Ausgabe Februar 2001
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Contents

Note:

The information contained in this document is subject to change without notice.

Introduction

Your new C779 / 172E monitor supplies you with a high-quality colour image with high resolution and ergonomic refresh rates. It possesses a whole range of useful features and functions, e. g.:

* 17" (40 cm) high-resolution CRT (0.27 mm dot pitch in the matrix)
* automatic scanning of all horizontal frequencies from 30 to 72 kHz and all refresh rates (vertical frequencies) from 50 to 160 Hz
* digital screen controller with microprocessor for storing 16 different display modes
* freely adjustable colour alignment for matching the screen colours to the colours of various input and output devices
* convenient operation via integrated OSD (On-Screen-Display) menu
* VESA-DDC compatibility
* power management for reducing power consumption by up to 95% when the computer system is not in use
* compliance with the latest ergonomic standards (ISO 9241-3)
* compliance with the recommendations in accordance with TCO '99

This Operating Manual contains important information you require to start up and run your monitor.

The monitor interacts closely with the graphics card (screen controller) of your computer. The monitor processes the data supplied to it by the screen controller. The screen controller/the associated driver software is responsible for setting the modes (resolution and refresh rate).

Target group

You don't need to be an "expert" to perform the operations described here. Do, however, read the chapter "Important notes" in the Operating Manual of the computer and in this Operating Manual.

In the event of any problems occurring, please contact your sales outlet or our Help Desk.

Further information

Details of how you set the resolution and refresh rate are provided in the documentation on your screen controller/the associated driver software.

Notational conventions

The meanings of the symbols and fonts used in this manual are as follows:

⚠ Pay particular attention to text marked with this symbol. Failure to observe this warning endangers your life, destroys the device, or may lead to loss of data.

i Supplementary information, remarks, and tips follow this symbol.

► Text which follows this symbol describes activities that must be performed in the order shown.

"Quotation marks" indicate names of chapters or terms.

Important notes

⚠ In this chapter you will find information regarding safety which is essential to take note of with your monitor.

Safety

This device complies with the relevant safety regulations for data processing equipment, including electronic office machines for use in an office environment. If you have any questions, contact your sales outlet or our Help Desk.

- If the device is brought into the installation site from a cold environment, condensation can form. Before operating the device, wait until it is absolutely dry and has reached approximately the same temperature as the installation site.

- During installation and before operating the device, observe the instructions on environmental conditions in the chapter "Technical data".

- To ensure adequate ventilation the monitor may only be operated with the monitor foot installed.

- The colour monitor must not be exposed to strong magnetic fields (e. g. caused by magnetic paper clip holders or loudspeakers). Strong magnetic fields could result in a permanent blotchy image.

- The monitor is automatically degaussed when switched on. This results in a magnetic field around the metal edge of the picture tube, which may damage the data on data carriers nearby. Therefore, never keep magnetic data carriers near the monitor.

- The device automatically sets itself to the correct voltage within the range from 100 V to 240 V. Ensure that the local mains voltage lies within these limits.

- The device must be installed in such a way that the user has good access to the appliance socket.

- The ON/OFF switch does not disconnect the device from the mains voltage. To disconnect the electricity supply completely, remove the power plug from the socket.

- Lay all cables so that nobody can stand on them or trip over them. When attaching the device, observe the relevant notes in the chapter "Connecting the monitor".

- No data transmission cable should be connected or disconnected during a thunderstorm.

- Please ensure that no objects (e. g. necklaces, paperclips etc.) or liquids can get into the interior of the device (this may cause an electrical shock or short circuit).

- In emergencies (e. g. damaged casing, elements or cables, penetration of liquids or foreign matter), switch off the unit, disconnect the power plug and contact your sales outlet or our Help Desk.

- Only qualified technicians should repair the device. Unauthorised opening and incorrect repair may greatly endanger the user (electric shock, fire risk).

- Tampering with the device, in particular adjusting the high voltage or installing a different type of CRT tube, may result in a large amount of X-ray radiation being emitted. Devices modified in this way no longer comply with their licence and may not be used.

- You may set only those resolutions and refresh rates specified in the "Technical data" chapter. Otherwise you may damage your monitor. If you are in any doubt, contact your sales outlet or our Help Desk.

- Keep this Operating Manual together with your device. If you pass on the device to third parties, you should include this manual.

Cleaning

- Always pull out the power plug before you clean the monitor.
- 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 will run into the system.
- Ensure that the ventilation areas of the monitor are free.
- When cleaning the surface of the screen, always use a soft, slightly damp cloth in order to avoid scratching the glass.

Wipe the monitor housing with a dry cloth. If the monitor is particularly dirty, use a cloth which has been moistened in mild domestic detergent and then carefully wrung out.

Transport

- When transporting the monitor ensure that it is not exposed to strong magnetic fields.
- Transport the monitor with care and only in its original packaging or another corresponding packaging fit to protect it against knocks and jolts.
- Above all, never drop the monitor. If the CRT is damaged, there is a risk of implosion!

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 Regulations. 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 Siemens Computers GmbH is not responsible for any radio or television interference caused by unauthorised modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Fujitsu Siemens Computers GmbH The correction of interference caused by such unauthorised 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 rules.

Important note on power cable

To guarantee safe operation, use the cable supplied. Use the following guidelines if it is necessary to replace the original cable set.

- The female/male receptacles of the cord set must meet CEE-22 requirements.
- The cable has to be HAR-certified or VDE-certified. The mark HAR or VDE will appear on the outer sheath or on the insulation of one of the inner conductors.
- For devices which are mounted on a desk or table, type SVT or SJT cable sets may be used. For devices which sit on the floor, only SJT type cable sets may be used.
- The cable set must be selected according to the current rating for your device.

Power cable for devices distributed in the US and Canada

In the United States and Canada the cord set must also be UL-listed and CSA-labelled. The voltage rating should be min. 250 volts a.c.

Please consult the following table for the selection criteria for power cables used in the United States and Canada.

Cable type	Size of conductors in cable	Maximum current rating of the device
SJT	18 AWG 16 AWG 14 AWG	10 Amps 12 Amps 12 Amps
SVT	18 AWG 17 AWG	10 Amps 12 Amps

For the United Kingdom

Should the plug on the flexible cord not be of the type for your socket outlets, do not use an adapter but remove the plug from the cord and discard. Carefully prepare the end of the supply cord and fit a suitable plug.

WARNING

THIS APPLIANCE MUST BE EARTHED

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Green and Yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

- The wire which is coloured Green and Yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol or coloured Green or Green and Yellow.
- The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black.
- The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Red.

Energy Star Guidelines

The Fujitsu Siemens Computers colour monitor C779 / 172E is designed to conserve electricity by dropping to less than 15 W when it goes into suspend mode and to less than 5 W when it goes into OFF mode. With this new power management the C779 / 172E qualifies for the U.S. Environmental Protection Agency's (EPA) Energy Star Computers award.

The EPA estimates that computer equipment uses 5% percent of all business electricity and it is growing rapidly. If all desktop computers and peripherals enter a low-power mode when not in use, the overall savings in electricity could amount to $ 2 thousand million annually. These savings could also prevent the emission of 20 million tons of carbon dioxide into the atmosphere - the equivalent of 5 million automobiles.

As an Energy Star Partner, Fujitsu Siemens Computers GmbH has determined that this product meets the Energy Star guidelines for energy efficiency.

CE certificate

The shipped version of this device complies with the requirements of the EEC directives 89/336/EEC "Electromagnetic compatibility" and 73/23/EEC "Low voltage directive".

X-ray radiation

This device complies with the German X-ray regulations (Röntgenverordnung - RöV). The local dosage emitted is less than 1 µSv/h (micro-Sievert per hour) at a distance of 0.1m.

Notes on power management

If your computer has a VESA DPMS (Video Electronics Standard Association, Display Power Management Signaling) power management function (energy-saving mode), your monitor will fully support this function. The monitor has a four-stage power management system.

Stage	ON	Standby mode	Suspend mode	OFF mode
Power indicator	green	green	amber	amber flashing (1 sec.)
Function	Monitor operating normally	Monitor is dark	Monitor is dark	Monitor is dark
Power consumption	normal < 75 W	reduced to < 60 W	reduced to < 15 W	reduced to < 5 W

If your computer detects inactivity (no input) it sends an appropriate signal to the monitor to reduce the power consumption. The power indicator of the monitor flashes to indicate the status change. If there is still no input, power consumption is further reduced (OFF mode).

Once an input is made at the computer the screen contents are redrawn and full power is restored.

The length of the individual stages is determined by the power management system of the computer. For detailed information on how energy-saving mode operates refer to the Operating Manual or Technical Manual of your computer.

> **i** The service life of your monitor will be extended if the OFF mode is switched to after 30 minutes at the earliest (setting in screen saver or in your computer's BIOS setup).
>
> When the monitor is switched to OFF mode by the power management system a power consumption of up to 5 W is maintained to feed the circuit for redrawing the screen contents.
>
> To cut off power consumption totally, press the ON/OFF switch on the front of the monitor.

Connecting the monitor

Information on the computer connections is contained in the operating manual for your computer.

> ⚠ Please note the "Safety" information provided in the chapter "Important notes" in the Operating Manual of the PC.
>
> Do not cover the ventilation openings of the monitor.
>
> If you are assembling monitors beside each other, there must be a minimum distance of 30 cm between monitors of the same constructional type, to avoid image distortion. With different monitors, the distance must be increased, if necessary.

► Be sure that the monitor and the computer are switched off.

> ⚠ The computer power plug must be pulled!

Monitor C779
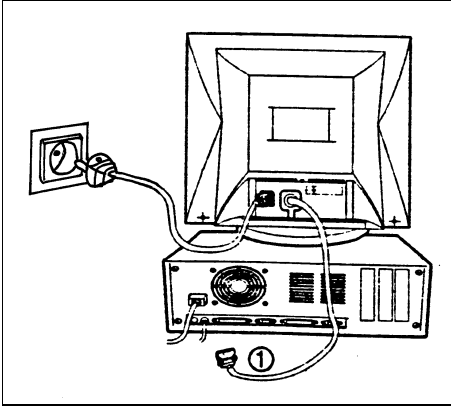
► Connect the 15-pin connector of the data cable to the (active) monitor port on the computer (1) and secure the plug-in connection by tightening the safety screws.

► Plug the power cable supplied into the power connector of the monitor.

► Plug the power connector of the monitor into a properly grounded mains outlet.

► Plug the power connector of the computer into a properly grounded mains outlet.

► Switch the monitor on with the ON/OFF switch ⏻ .

Monitor 172E
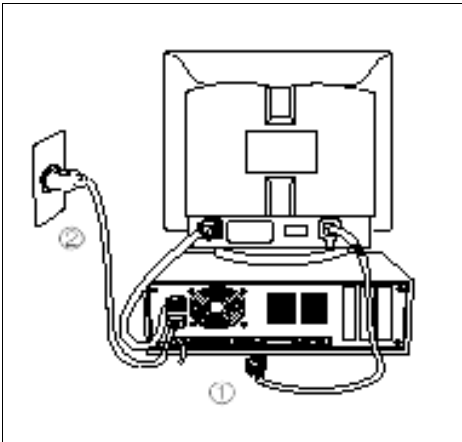
► Connect the 15-pin connector of the data cable to the (active) monitor port on the computer (1) and secure the plug-in connection by tightening the safety screws.

► Plug the power cable supplied into the power connector of the monitor.

► Plug the power cable into the monitor connector at the rear of the computer.

► Plug the power connector of the computer into a properly grounded mains outlet (2).

► Switch the monitor on with the ON/OFF switch ⏻ .

Operation of the monitor
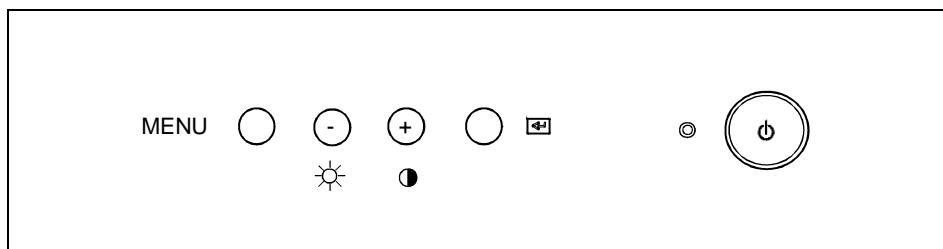
MENU ⭘ ⊖ ⊕ ⭘ ⏎ ◎ (⏻)
☼ ◗

⏻   The ON/OFF switch switches the monitor on or off.

The power indicator located left side of the ON/OFF switch lights up green when the monitor is switched on.

Buttons for the OSD menu

With the buttons on the control panel, call up and use the integrated OSD (On-Screen Display) menu.

MENU   The MENU button activates the OSD main menu and selects the marked icon.

- / **+**   1) With the OSD menu hidden you can adjust the brightness directly using the **-** button and the contrast with the **+** button.

2) With the main menu open, mark the symbol for the function you want to adjust with the **-** or **+** button.

3) With the submenu open, adjust the selected function with the **-** or **+** button.

⏎   The button closes the OSD main menu or returns you from a submenu to the main menu.

Activating the OSD menu

►   Press the Menu button.

Exiting the OSD menu

►   When in the main menu, press the ⏎ button.

►   When in a submenu, press the ⏎ button twice.

OSD menu functions

OSD menu	MENU button	Minus button (-)	Plus button (+)	⏎ button
1. No OSD	Opens window No 2	Opens window No 3	Opens window No 3	No function
2. Main menu	Depending on the symbol marked: With RECALL or DEGAUSS the function is carried out directly. With COLOR TEMP or ZOOM the symbol begins to flash and you can make additional adjustments. With all other functions a submenu is displayed.	Marks the desired icon		Back to No. 1
3. BRIGHTNESS	Back to No. 2	Reduces the brightness	Increases the brightness	Back to No. 1
4. CONTRAST	Back to No. 2	Reduces the contrast	Increases the contrast	Back to No. 1
5. POSITION	Adjusting the horizontal or vertical position	Shifts the picture down or to the left	Shifts the picture up or to the right.	Back to No. 2
6. SIZE	Adjusting the horizontal or vertical size	Reduces the picture	Increases the picture	Back to No. 2

OSD menu	MENU button	Minus button (-)	Plus button (+)	↵ button
7. GEOMETRY	Pressing once: Selects the marked function. The symbol begins to flash (adjustment mode).	Adjusts the selected function		Back to No. 2
	Pressing twice: Ends the adjustment mode.	Selects the desired function		Back to No. 2
	The geometry controls enable you to adjust the curves or angles at the corners of your screen.			
	PINCUSHION	Increases or reduces the curve of the sides either toward inward or outward.		
	PARALLELO-GRAM	Increases or reduces the slope of the sides to the left or right.		
	TRAPEZOID	Increases or reduces the lower screen so that it is exactly as large as the upper screen.		
	PINBALANCE	Changes the geometry of the screen to the left or right.		
	ROTATION	Turns the entire screen clockwise or anti-clockwise.		
8. MOIRE CONTROL	Pressing once: Selects the marked function. The symbol begins to flash (adjustment mode). Pressing twice: Ends the adjustment mode.	Adjusts the selected function		Back to No. 2
9. LANGUAGE	Sets the marked language and returns to No. 2	Selects the appropriate language		Back to No. 2
10. OSD POSITION	Moves the OSD menu horizontally or vertically.	Moves the OSD menu to the left or downward	Moves the OSD menu to the right or upward	Back to No. 2

OSD menu	MENU button	Minus button (-)	Plus button (+)	⏎ button
11. COLOR TEMP	Pressing once: Selects the marked function. The symbol begins to flash (adjustment mode). When the colour mode symbol flashes, press the button to reach the colour adjustment No. 12.	Selects the desired colour mode		Back to No. 1
	Pressing twice: Ends the adjustment mode.	Selects the desired function		Back to No. 1
12. COLOR ADJUST MODE	Pressing once: Selects the marked function. The symbol begins to flash (adjustment mode).	Adjusts the selected function		Back to No. 11
	Pressing twice: Ends the adjustment mode.	Selects the desired function		Back to No. 11
13. ZOOM	Pressing once: Selects the marked function. The symbol begins to flash (adjustment mode).	Reduces the horizontal and vertical picture size	Increases the horizontal and vertical picture size	Back to No. 1
	Pressing twice: Ends the adjustment mode.	Selects the desired function		Back to No. 1
RECALL	Activates the factory settings within all menus. If you want to return to the factory settings, press the RECALL button.			
DEGAUSS	Degausses the monitor. During degaussing a muffled noise is produced, the colours may change and the picture may wobble. These effects are normal. There is no malfunction. Caution! Please wait approximately 20 minutes before executing the function again. Do not press the button for a longer time in order not to reduce the service life of the Degauss circuit.			

Technical data

Dimensions and weight

CRT:	40 cm (17"), 90° deflection (FST)
CRT surface:	Coated
Dot pitch:	0.27 mm (matrix), 0.28 mm (Phosphor tripel)
Maximal resolution:	1280 x 1024 pixels
Preset display area:	300 mm x 230 mm
Dimensions (W x H x D):	418 mm x 417 mm x 424 mm (device)
	530 mm x 467 mm x 518 mm (packaging)
Weight:	15.4 kg

Electrical data

Video:	RGB analogue, positive, 0.7 V_{pp}, 75 Ohm
Synchronisation:	H/V separate, TTL, positive/negative
	H/V composite, TTL, positive/negative
Horizontal frequency:	30 kHz .... 72 kHz (multi-scanning)
Refresh rate:	50 Hz .... 160 Hz
Maximum pixel rate:	110 MHz
Power supply:	switches automatically
	110 V- 240 V, 50 Hz - 60 Hz ±3%
Power consumption:	< 75 W (ON, Normal mode)
(see power management):	< 60 W (Standby mode)
	< 15 W (Suspend mode)
	< 5 W (OFF mode)
Input connector:	15-pin D-SUB connector

Environmental conditions

Environment class 3K2, IEC 721

Rated range of operation:	15 °C .... 35 °C
Humidity:	20 % .... 85 %
Limit range of operation:	5 °C .... 40 °C
Humidity:	20 % .... 85 %

Condensation must be avoided.

VESA-DDC-compatible VGA interface

Your monitor is equipped with a VESA-DDC-compatible VGA interface. VESA-DDC (Video Electronics Standard Association, Display Data Channel) is used as the communications interface between the monitor and the computer. If your computer is equipped with a VESA-DDC-compatible VGA interface, it can automatically read the data for ensuring optimum operation from your monitor and select the appropriate settings.

i | If the monitor C779 / 172E is not yet displayed in the list of monitors, you can select one of the following monitors instead:

Fujitsu Siemens MCM 171E, C776, 174V, 173V, C777, C775
Siemens MCM 171V, MCM 1755, MCM 1754; MCM 1503
Fujitsu C771

Preset operating modes

i | The picture position and size have been set to optimum values at the factory for the operating modes listed above. Depending on the screen controller used, it may be necessary to adjust the display position and size. In this case, you can change and save the settings (see "Operation of the monitor").

Horizontal frequency	Refresh rate	Screen resolution
31.5 kHz ±0.5 kHz	70 Hz ±2 Hz	720 x 400
31.5 kHz ±0.5 kHz	60 Hz ±2 Hz	640 x 480
43.3 kHz ±0.5 kHz	85 Hz ±2 Hz	640 x 480
53.7 kHz ±0.5 kHz	85 Hz ±2 Hz	800 x 600
60.0 kHz ±0.5 kHz	75 Hz ±2 Hz	1024 x 768
68.7 kHz ±0.5 kHz	85 Hz ±2 Hz	1024 x 768

For ergonomic reasons we recommend a refresh rate of at least 75 Hz and a maximum resolution of 1024 x 768 pixels.

Pin assignment D-SUB (15-pin)
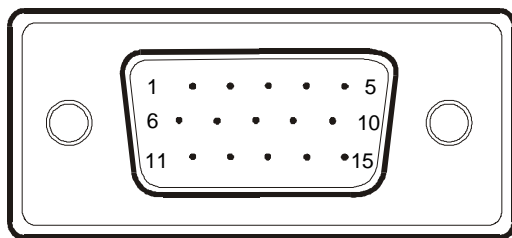
Pin	Meaning
1	Red video input
2	Green video input
3	Blue video input
4	Ground
5	Ground
6	Red video ground
7	Green video ground
8	Blue video ground

Pin	Meaning
9	not assigned
10	Ground
11	Ground
12	Serial DDC data line (SDA)
13	H. sync
14	V. sync
15	Serial DDC clock line (SCL)

Error handling

Should an error occur, first check the following points. If the distortion is still not eliminated, the monitor should, if possible, be checked on another computer.

If you are unable to solve the problem, please inform our Help Desk.

Error messages

OUT OF RANGE
HF :   30-95kHz
VF :   40-160Hz
48.5kHz   60Hz
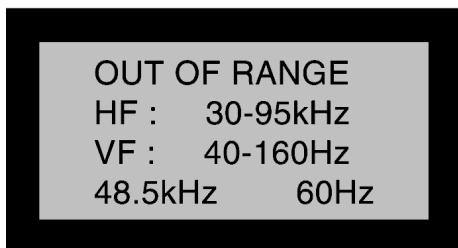
The mode selected on the computer (resolution and refresh rate) is not supported by the monitor.

► Check the mode selected on the computer and select values for the resolution and refresh rate which the monitor supports (for example from the table in the section "Preset operating modes").

NO SIGNAL DETECTED.

CHECK SIGNAL CABLE

The data cable is either not connected or not correctly connected to the computer.

Check whether the data cable for the monitor is correctly attached to the monitor and the monitor port on the computer.

The screen is blank

► Check whether the monitor and the computer are switched on.

► Check whether the power cable on the monitor is connected correctly.

► Check whether the mains socket is live.

► Check whether the data cable for the monitor is correctly attached to the monitor and the monitor port on the computer.

► Check whether the monitor connection of the computer used is active.

► Press any key on the computer keyboard – the computer may be in energy saving mode.

► Change the brightness and/or the contrast; the monitor may be adjusted to the maximum dark setting.

The picture is scrolling or unstable

► Check whether the data cable for the monitor is correctly attached to the monitor and the monitor port on the computer.

► Check the mode selected on the computer and select values for the resolution and refresh rate which the monitor supports (for example from the table in the section "Preset operating modes").

The picture is fuzzy

► Change the brightness and/or the contrast.

► Degauss the monitor (see "Operation of the monitor").

⚠ Please wait approximately 20 minutes before executing the function again. Do not press the button for a longer time in order not to reduce the service life of the Degauss circuit.

The picture jumps or wave patterns appear

► Remove electrical devices located near the monitor that can cause interference .
Unshielded loudspeakers can cause picture distortion and must be removed.

The edges of the screen display are distorted

► Set the picture geometry properly (see "Operation of the monitor").

The screen display is too small, too large or not centred

► Adjust the picture size and position (see "Operation of the monitor").