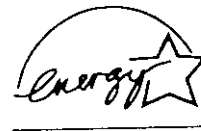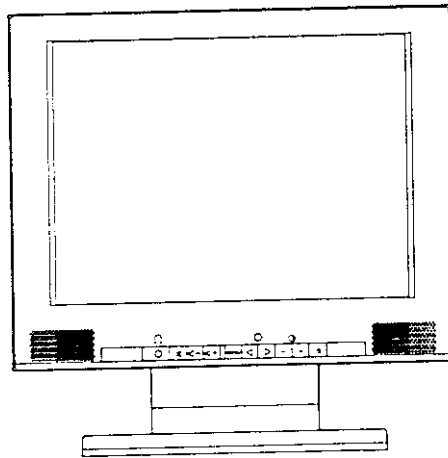**COSMOS**

8. Attachment

- User Manual

Operating Instructions

15.0" TFT LCD MONITOR

MODEL TX-D5L31NMF

Please read these instructions thoroughly before operating the display monitor.

English	Chapter I	ENGLISH
Français	Chapitre II	FRANÇAIS
Deutsch	Kapitel III	DEUTSCH
Italiano	Capitolo IV	ITALIANO
Español	Capítulo V	ESPAÑOL

ENGLISH

IMPORTANT NOTICE CONCERNING POWER CORD SELECTION

The power cord for this unit has been packed separately and has been selected according to the country of destination and must be used to prevent electric shock. Use the following guidelines if it is necessary to replace the original cord set.

The female receptacle of the cord set must meet CEE-22 requirements and will look like Figure 1:

For the United States and Canada

In the United States and Canada the male plug is a NEMA 5-15 style (Figure 2) and is UL listed and CSA labelled. For units which are mounted on a desk or table, type SVT or SJT cord sets may be used. For units which sit on the floor, only SJT type cord sets may be used. The cord set must be selected according to the current rating for your unit. Please consult Table A for the selection criteria for power cords used in the United States and Canada. (The cord set is marked with its Cord Type.)

For European Countries:

In Europe you must use a cord set which is appropriate for the receptacles in your country. The cord set is HAR-Certified, and the mark ◄HAR► will appear on the outer sheath, or on the insulation of one of the inner conductors.

If you have any questions concerning the proper power cord to use, please consult with the dealer from whom you purchased your unit.

Table A

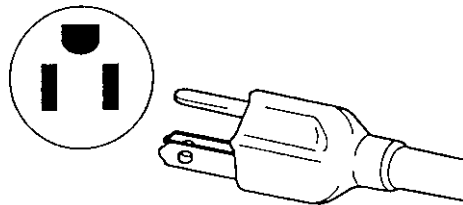| Cord Type	Size of Conductors In Cord	Maximum Current Rating of Unit
SJT	18AWG 16AWG 14AWG	10Amps 12Amps 12Amps
SVT	18AWG 17AWG	10Amps 12Amps

Figure 1

Figure 2

━━━━ Precautions: ━━━━━━━━━━━━━

● AC PLUG CORD (FOR U.K.)

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET
THEN THE PLUG SHOULD BE CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG
IS INSERTED INTO AN APPROPRIATE SOCKET.

If a new plug is to be fitted, please observe the wiring code as shown below.
If in any doubt, please consult a qualified electrician.

WARNING: THIS APPLIANCE MUST BE EARTHED.

IMPORTANT: The wires in this mains lead are coloured in accordance with the fol-
lowing code:

Green-and-Yellow: Earth
    Blue: Neutral
    Brown: Live

If the coloured wires of the mains lead of this appliance do 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 termi-
nal in the plug which is marked by 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 in the plug
which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug
which is marked with the letter L or coloured RED.

●This monitor cannot be used in the interlaced mode.
●When the Apple Power Macintosh™ is used, use the "On The Fly"
mode.
When using in the other mode (13"/16"/19"), the horizontal and vertical
synchronization signals should be input separately. This monitor
cannot be used in the "Composite" or "Synch on Green" modes.
Please refer to the operation manuals of your computer and video
cards for further details.

As an ENERGY STAR® Partner, Display Monitor Division, AVC Company, Matsushita Electric Industrial Co., Ltd. has determined that this product meets to the ENERGY STAR® guidelines for energy efficiency.

CE Conformity

C E   This device complies with the requirements of the EEC directive 89/336/EEC as amended by 92/31/EEC and 93/68/EEC Art.5 with regard to "Electromagnetic compatibility" , and 73/23/EEC as amended by 93/68/EEC Art. 13 with regard to " Safety".

Required item	Relative to Standard Value	Relative to those Exceeding Standard Value	Remarks
EM I	#1		#4
ESD	#2	#3	
RADIATED RF	#1	#3	
TRANSIENT F/B	#1	#3	
LINE HARMONICS	#1		

#1 : Satisfies standards with no problems in performance and reliability.
#2 : Effects may appear temporarily on the screen but there will be no problem in reliability.
#3 : There is fear of the product breaking down.
#4 : If a signal cable other than that specified is used, it may be the cause of electromagnetic wave interruption of peripheral devices.
    To assure continued CE compliance the user must use the provided 1.5 m shielded video signal cable with bonded ferrite cores at both ends of the cable.
Handle correctly in accordance with the instruction manual.
EMI : Electromagnetic Interference   ESD : Electrostatic Discharge
RF : Radio Frequency   F/B : Fast Burst

(1) Unauthorized modification of any part or the entire unit is prohibited.
(2) The contents of this manual may be modified without notice in the future.
(3) The contents of this manual may be changed for improvements but if there is any error or omission please contact your sales representative.
(4) Please be aware in advance that in spite of the contents described in item (3), our company is not responsible and will not assume any losses for bills for financial loss resulting from damage caused by use of this equipment.
(5) We will make exchanges for incorrect collating or missing pages in this manual. Please contact your sales representative.

● IBM and VGA are registered trademarks of the International Business Machines Corporation (U. S. A).
● Macintosh is a of the Apple Computer, Inc. (U. S. A).
● Power Macintosh is a registered trademark of Apple Computer, Inc. (U.S.A.)
● Windows is a registered trademark of the Microsoft Corporation (U. S. A).
● VESA is a registered trademark of the Video Electronics Standard Association.
● DPMS and DDC are trademarks of the Video Electronics Standard Association.

Federal Communications Commission Requirements

This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of the FCC Rules. 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 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 the equipment and 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.

FCC Warning:
To assure continued FCC compliance, the user must use grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores.
Also, any unauthorized changes or modifications to this monitor would void the users authority to operate this device.

Customer's Record

■ The serial number (SERIAL No.) is important for quality control. Check the serial number (SERIAL No.) on the main unit of the product and the guarantee certificate. Read this manual carefully and use the monitor correctly.
It is convenient if the serial number of the unit is indicated in the provided space.

Model number: TX-D5L31NMF

Serial number:

Table of Contents

The product names are registered trademarks of their respective companies.

Features

High-quality liquid crystal panel
· The 15-inch (0.297mm pixel pitch) panel and anti-glare hard coating enables low reflection, anti-static, high-resolution and high-contrast characteristics and equivalent of 16.19 million colors display (full-color) is also possible.
· Bass-reflex type stereo speakers are used for bass reproduction.

Plug-and-Play Compatible
· This unit conforms to the VESA® (Video Electronics Standards Association) DDC™ (Display Data Channel) specified by Windows® 95.
· Conforms to USB (Universal Serial Bus) ver. 1.0. Up to four USB-compatible devices can easily be connected.

Digital Multi-scan
· This unit has a horizontal frequency of 30k to 61kHz, vertical frequency 50 to 77Hz with automatic following and a maximum resolution of 1024 (H) × 768 (V) (75Hz refresh rate).
· This unit is compatible with both IBM® PC or compatible units and Apple Macintosh™(13"/16" /19" modes[*1], and the PowerMacintosh™ "On the Fly" mode).
· Use of a pixel conversion method enables clear characters and graphic display in the full-screen[*2] display.
  [*1]: Only when the horizontal and vertical synchronization signals are input separately.
  [*2]: In the modes from 640 × 400 to 832 × 624. However, the full-screen display may not be possible depending on the timing or the type of computer that is used.

An automatic size adjustment function is provided.
· The input signal is determined automatically and the adjustments for the "H. POSITION" , "H. SIZE"[*3], "V. FINETUNE"[*4], " V. POSITION", "V. SIZE"[*3] and "V. FINETUNE"[*4] are performed automatically[*5].
  [*3]: In the 640 × 400 to 832 × 624 modes. [*4]: Only in the 1024 × 768 mode.
  [*5]: Manual adjustment is required when the 1024 × 768 mode is used or depending on the timing or the computer that is used.

Environmentally Friendly
· The LCD monitor power consumption can be reduced by using this unit in combination of a computer that conforms to the VESA® DPMS™ (Display Power Management Signaling) standard.
· This product conforms to the international ENERGY STAR® program standards.
· This unit conforms to the Sweden MPR II (low-frequency electro-magnetic field standard) which is one of the most restrictive international standards.
· Sweden's TCO'92 (emissions, power saving, safety) has been obtained.
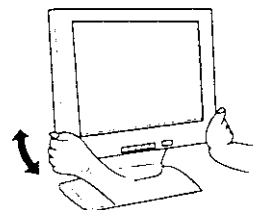· Desk space can be used effectively due to the 20.0cm depth.

Dimensions

When adjusting the angle, hold the bottom corners of the monitor with both hands and turn it slowly. Do not press on the upper part of the LCD as this may cause the unit to fall down.
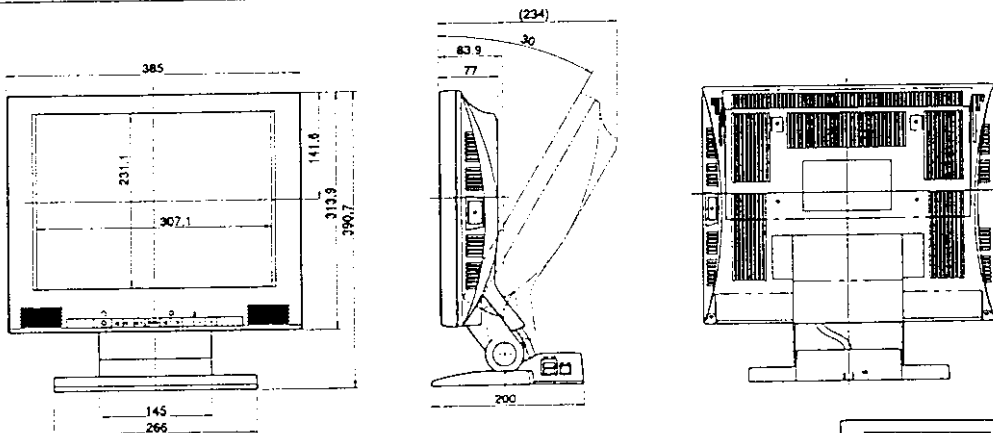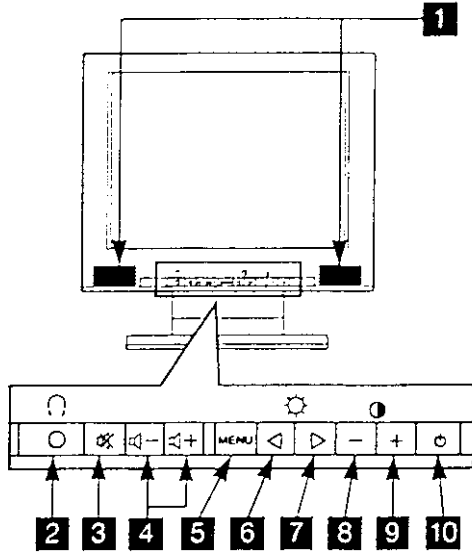

Dimension unit : mm

385mm (W) × 390.7mm (H) × 200mm (H)
Angle adjustment range: 0~30° vertically

Names and Functions

Front Operation Parts

1 Speaker

2 Headphone terminal
Commercially available audio stereo head-
phones or speakers can be connected here.

3 Mute key
Turns the built-in speaker and headphone
terminal sound ON and OFF. Press once to turn
the sound OFF and again to turn the sound back
ON.

4 Volume key
Adjusts the sound volume for the built-in
speakers and the headphone terminals. The
- key lowers the volume; the + key raises the
volume.

5 **6** **7** **8** **9** Menu Operation keys
These keys are used for the on-screen display
(OSD) operations and screen adjustment.

10 Pilot LED
If the power is turned on, the green color lights
and changes to a yellow color when the power
management function operates.

Rear view and Side view
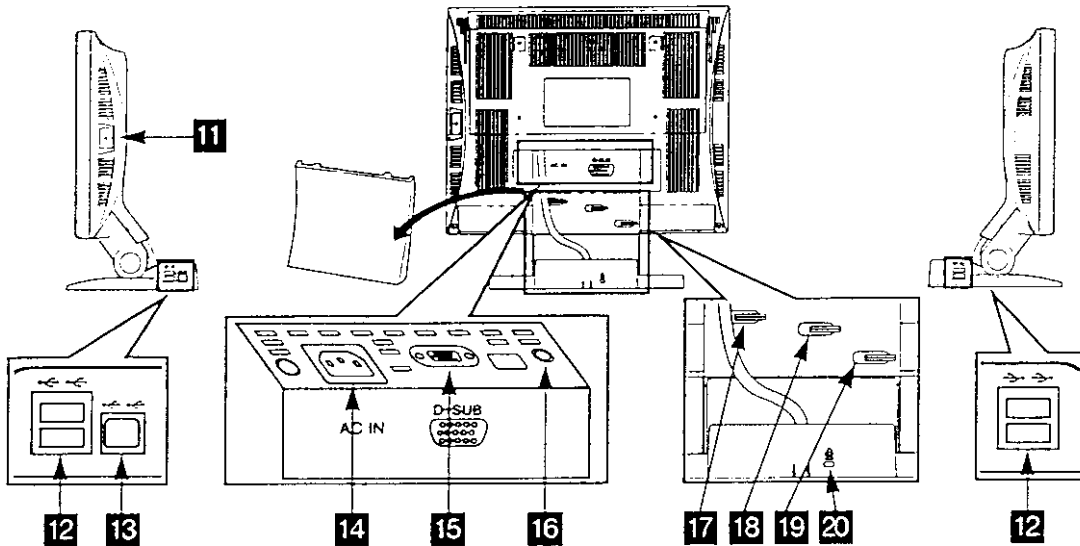
11 Power Switch
This switch sets the power on and off.

12 USB-DOWN
Used to connect cables from USB-
compatible devices.

13 USB-UP
Used to connect the accessory USB cable.

14 AC inlet
Connect the power cord.

15 15 pin Mini D-sub Connector
Connect the signal cable from the computer
to this connector.

16 AUDIO IN
Connect the audio cable from the computer.

17 Hook A
Hold the AC cord to this hook.

18 Hook B
Hold the signal cable to this hook.

19 Hook C
Hold the audio cable to this hook.

20 Security port
Used to connect a commercially available
security cable.

I-3

Connections

Always turns off the power supply of the computer and the monitor before performing the connection procedures.

The connection method differs depending on the type of computer the monitor is connected to.
Refer to the following page to connect the monitor.
When other types of computers are used, refer to their operation manual for the correct connection procedures.

Connection Preparation
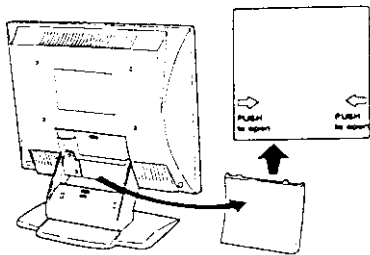
Cable storage compartment cover
Connect the signal cable and electrical cord and then store the cable section that is not used in this compartment.

Refer to the following figure in advance and remove the cover of the cable storage compartment.
(Remove the cover while pressing the parts indicated by the ⇨ and ⇦ arrow marks in the figure.)

Signal cable Connection

Connection method will differ in accordance with the computer in use. Connect one end of the supplied signal cable to the mini D-Sub 15-pin connector on the rear of the unit, and then connect the other end to the computer's video connector. Refer to the following if connection is to be made to any other computer, refer to the instruction manual of the machine in question.
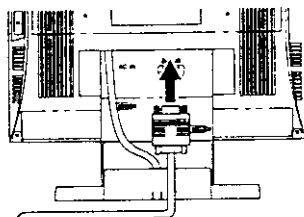
Tighten the screws securing the plug tightly to prevent it from becoming disconnected.

Connect the standard connector to the video input connector on the rear side of the monitor.
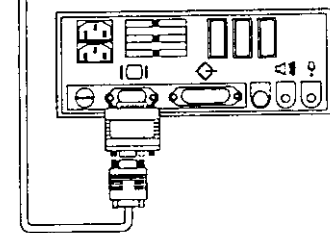Place the signal cable to the hook on the rear side of the monitor.
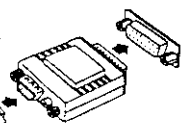
■ To an IBM PC or Compatible
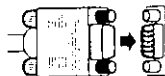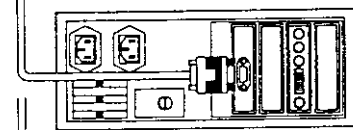
Connect the standard connector to the video output connector of the computer.

Tighten the screws securing the plug tightly to prevent it from becoming disconnected.

■ To a Macintosh

Use the accessory signal cable and the adaptor for the Macintosh. Connect the cable as shown in the figure. When another video card is used, read the operation manual for that card.

Macintosh adaptor

Connect the Macintosh adaptor to the computer video output connector.
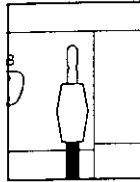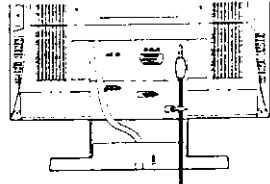
Connect the signal connector to the Macintosh adaptor.

Tighten the screws on the connector or adaptor securely.

Using the Multi-media Functions

Your personal computer must have a voice input/output function.
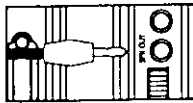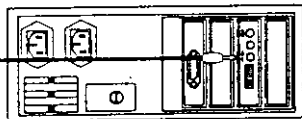Always use the accessory cable provided.

Using the Speakers

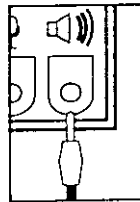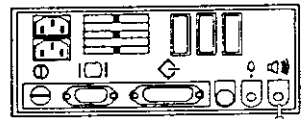Prepare the speaker cable (accessory) and connect as shown in the illustration below.

Connect the cable to the AUDIO IN terminal on the back panel of the main unit.

■ To an IBM PC or Compatible

Connect the speaker cable to the AUDIO OUT terminal of the computer.

■ To a Macintosh

Connect the speaker cable to the SPEAKER terminalof the computer.

* The shape of the terminal of your computer may differ from that shown here. In such case, read the instruction manual for your computer and connect as indicated.
* Lower the volume if howling occurs.

Using Headphones

Prepare the headphones (commercially available) and connect as shown in the illustration below.
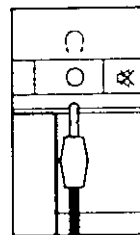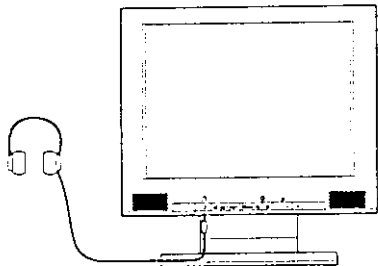
Connect the cable from the head-phones.

Caution:
- If a filter or touch panel is attached to the screen, blocking the speakers, the sound quality and volume will be affected.
- Volume will vary depending on the headphones and microphone being used, so set the volume as appropriate.
- Interference may occur if the micro-cable and speaker cable are positioned close to the display monitor. If noise occurs in the speakers or headphones, move the cables away from the monitor.

Connecting USB Divices

Always use the USB cable that was enclosed with the unit.

■ USB Cable
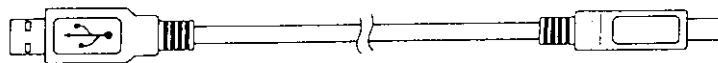
A Series Connector   B Series Connector

■ Typical Connections

Computer

Connect the accessory USB cable.

Right side panel   Rear panel   Left side panel

Connect the accessory USB cable.

Connect the cable from the USB peripheral device.

Mouse   Keyboard   Printer
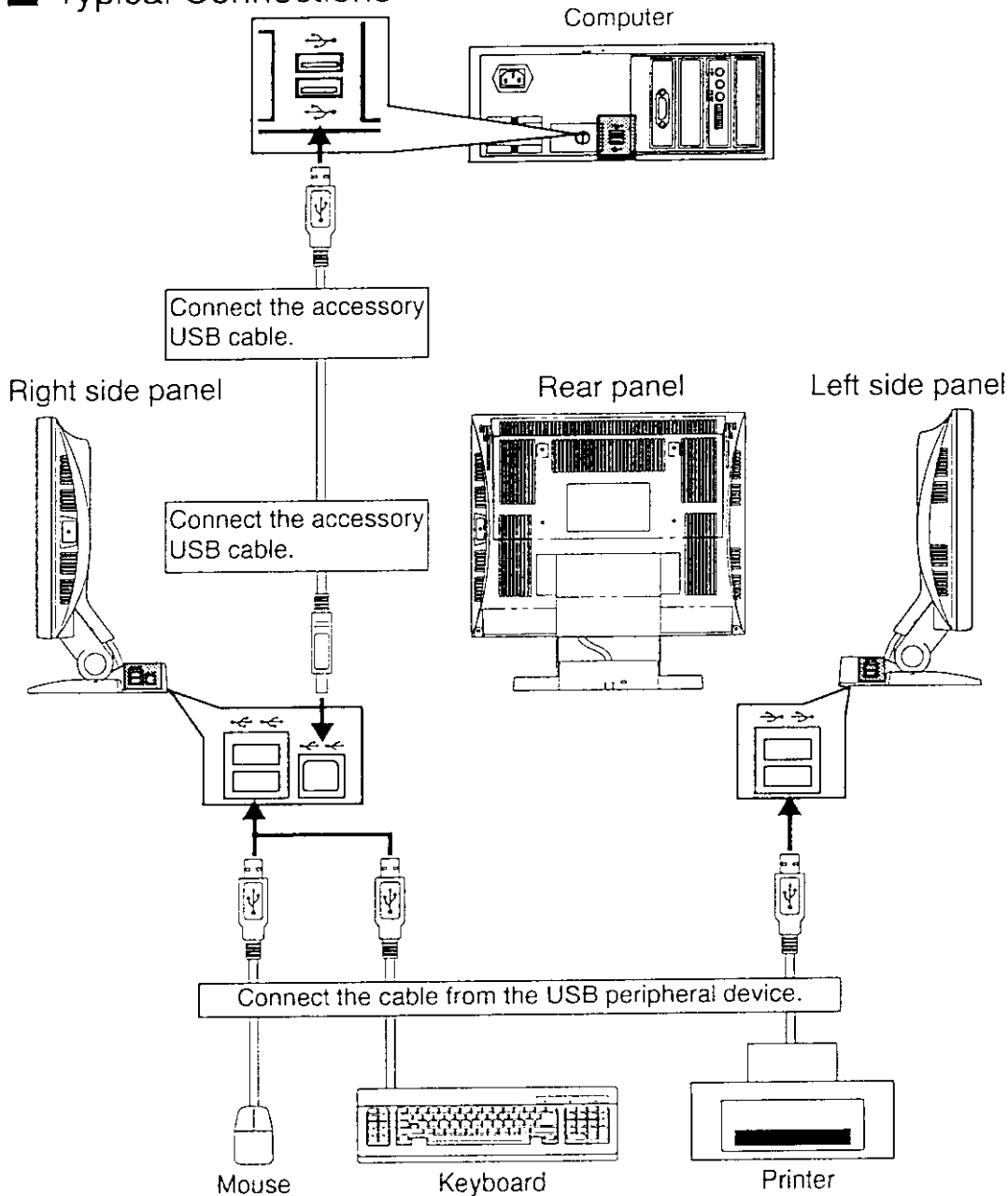
AC Power Cord

Always use the power supply cord that was enclosed with the unit.

If the enclosed power supply cord is not used, use a power cord that conforms to the following regional standards.

U.S.A.	UL	Switzerland	SEV
Canada	CSA	Britain	BASEC/BS
Germany	VDE		

In other regions, for safety please use an AC plug cord that complies with each country's safety regulations.

Power Cord Connection

Always use the accessory power cord and be sure to connect the ground line.

1 Use the accessory AC power cord.

2 Connect the AC plug (female pins) to the main unit.

3 Connect the AC plug (male pins) to the electrical outlet.
Caution: Always connect the ground wire.

4 Attach the cable compartment cover.
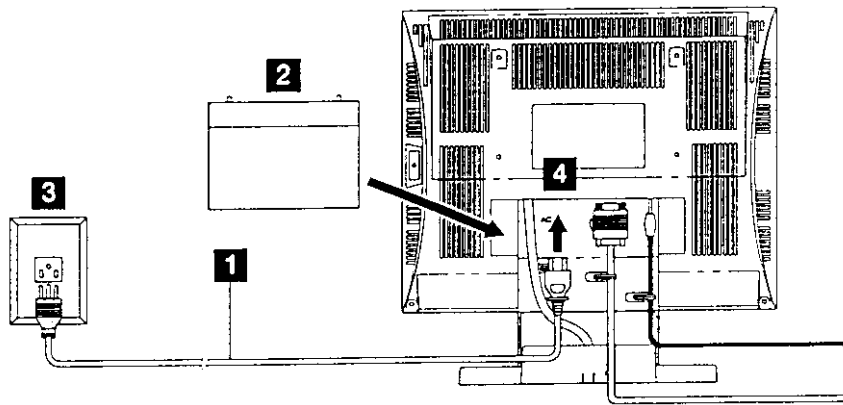
Turn on the Power

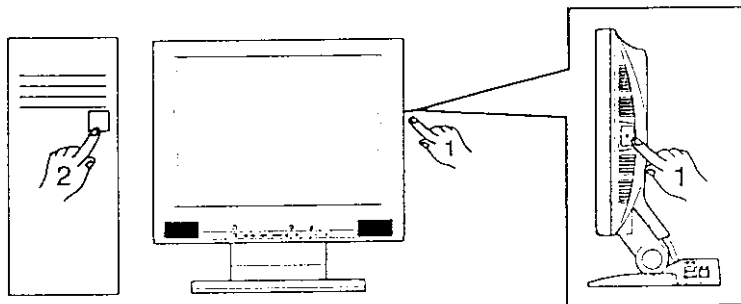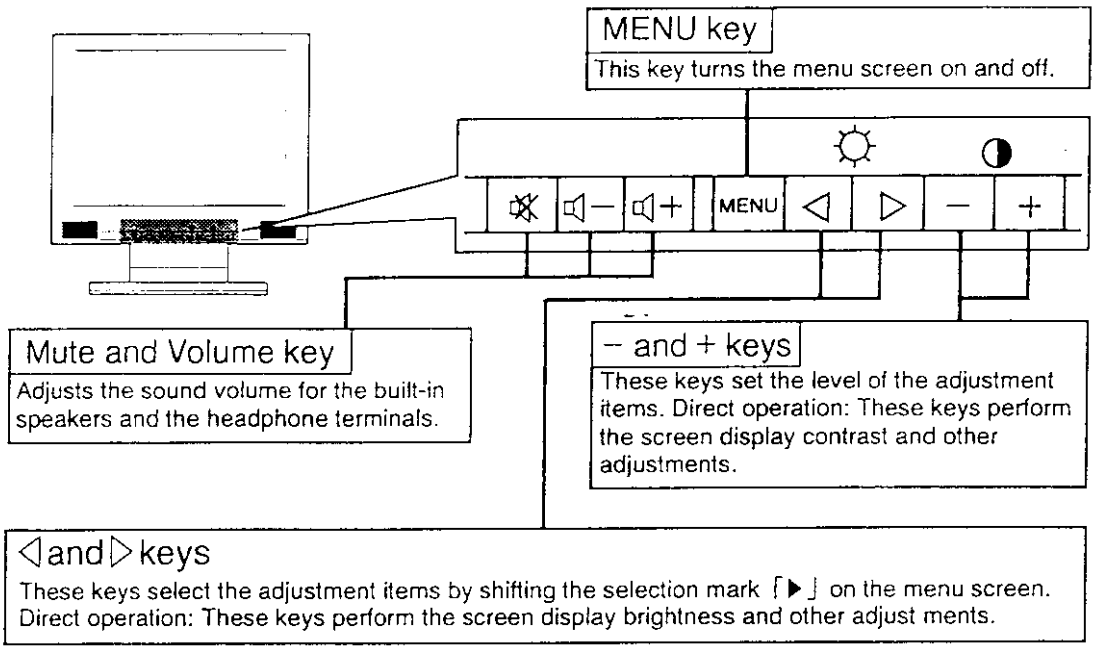Figure 2   Figure 1

Place the monitor where it will be used.
Use a power source that supplies AC 100V-240V at 50 Hz/60 Hz. Turn on the power switch of the display panel (Figure 1: Press the switch continuously until the pilot LED lights.) and then turn on the computer power switch (Figure 2).
** Refer to the section Operation Procedures on page I-8. Use the desired setting.
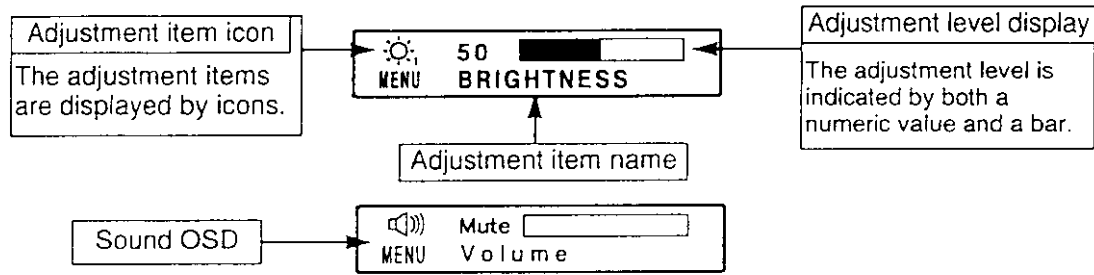
On-Screen Display (OSD)

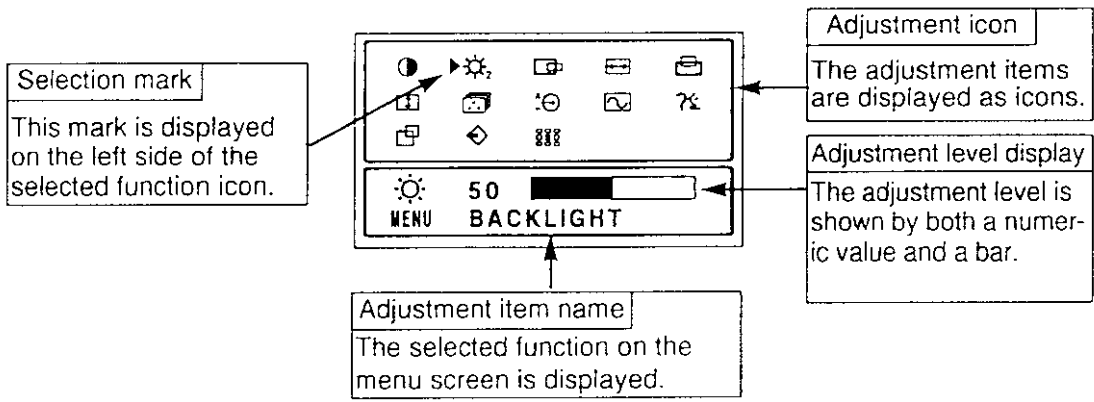**The meaning of the items displayed in the on-screen display are described below.**

MENU key
This key turns the menu screen on and off.

Mute and Volume key
Adjusts the sound volume for the built-in speakers and the headphone terminals.

− and + keys
These keys set the level of the adjustment items. Direct operation: These keys perform the screen display contrast and other adjustments.

◁ and ▷ keys
These keys select the adjustment items by shifting the selection mark 「▶」 on the menu screen.
Direct operation: These keys perform the screen display brightness and other adjust ments.

Direct Screen
There are three adjustments, contrast and brightness and mute and volume on the direct screen.

Adjustment item icon
The adjustment items are displayed by icons.

☼₁ 50 **BRIGHTNESS**
MENU

Adjustment level display
The adjustment level is indicated by both a numeric value and a bar.

Adjustment item name

Sound OSD

◁))) Mute [＿＿＿＿＿＿＿]
MENU Volume

Menu Screen (When the resolution is set from 640x400 to 832x624.)
The menu screen displays icons for the adjustment items of this unit. However, brightness level 1 cannot be adjusted on the menu screen.

Adjustment icon
The adjustment items are displayed as icons.

Selection mark
This mark is displayed on the left side of the selected function icon.

Adjustment level display
The adjustment level is shown by both a numer- ic value and a bar.

☼: 50 **BACKLIGHT**
MENU

Adjustment item name
The selected function on the menu screen is displayed.

I-8

Operation Procedure

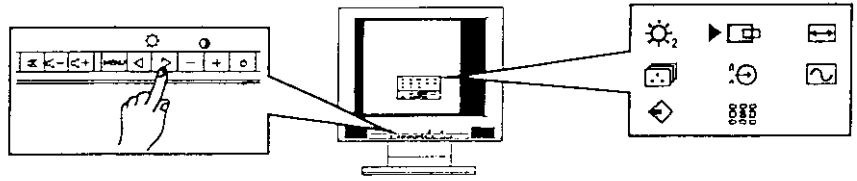**Refer to the figures below to perform adjustments in the on-screen display.**

Horizontal size adjustment

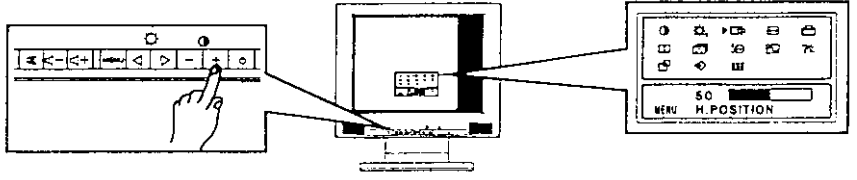(Operation examples when the resolution is set from 640 × 400 to 832 × 624.)

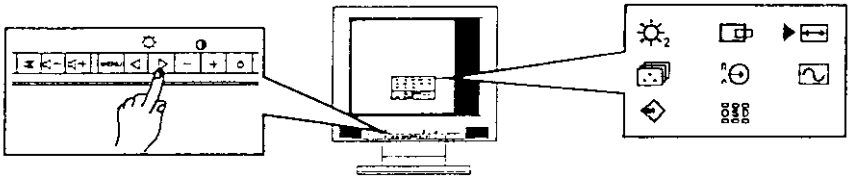1. Press the MENU key to display the main menu.
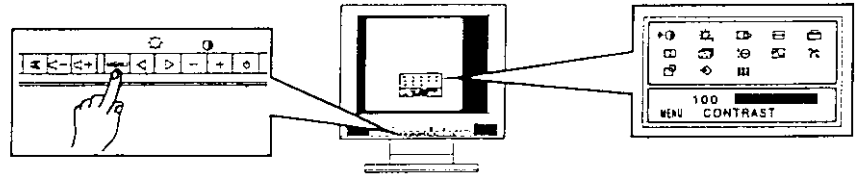
2. Press the menu operation keys (◁ and ▷) to shift the "▶" mark on the menu screen to the horizontal size (□) adjustment.

3. Press the "-" or "+" key to align the left side edge of the display pattern to the left side of the panel.

4. Press the menu operation keys (◁ and ▷) to shift the "▶" mark on the menu screen to the horizontal size (↔) adjustment.

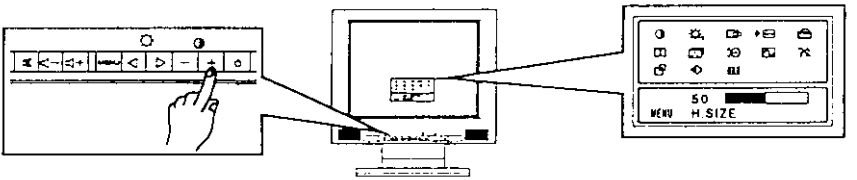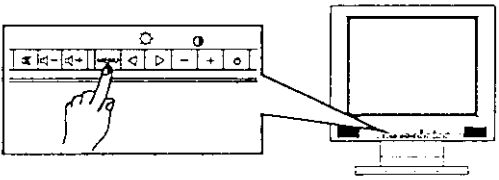5. Press the "-" or "+" key to align the right side edge of the display pattern to the right side of the panel.

6. Press the MENU key to register the settings and erase the menu screen.

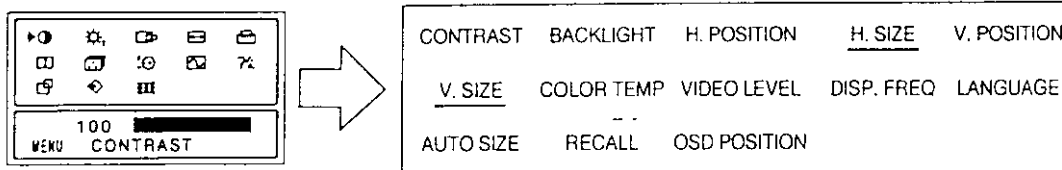Refer to the pages after I-10 when the resolution is set to 1024 × 768.

Adjustments

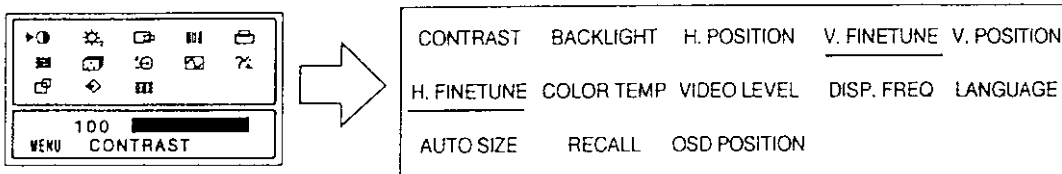## Menu Screen   The menu screen changes to two different screens according to the screen resolution.

The menu screen is displayed by the MENU key.The adjustment items of this unit are displayed as icons.
Each icon indicates an adjustment item shown in the figure.

When the resolution is 640 × 400 to 832 × 624.

CONTRAST	BACKLIGHT	H. POSITION	H. SIZE	V. POSITION
V. SIZE	COLOR TEMP	VIDEO LEVEL	DISP. FREQ	LANGUAGE
AUTO SIZE	RECALL	OSD POSITION		

When the resolution is 1024 × 768.

CONTRAST	BACKLIGHT	H. POSITION	V. FINETUNE	V. POSITION
H. FINETUNE	COLOR TEMP	VIDEO LEVEL	DISP. FREQ	LANGUAGE
AUTO SIZE	RECALL	OSD POSITION		

Adjustment Item Screen

◐ CONTRAST

Adjust the screen contrast. (Standard level = 100)
Press the MENU key to register the setting value.
Direct operation: Even if the menu screen does not appear, the contrast can be adjusted by pressing the "-" or "+" keys.

☼₁ BRIGHTNESS (black level)

Adjust the brightness (low gradation part: black level). (Standard level = 50)
Direct operation: Even if the menu screen does not appear, the contrast can be adjusted by pressing the "◁" or "▷" keys. Press the MENU key to register the setting value.

☼₂ BACKLIGHT

Adjust the brightness of the backlight.

▭ HORIZONTAL POSITION adjustment

The horizontal position of the image can be adjusted.

↔ HORIZONTAL SIZE adjustment   *Adjustment items when the resolution is set from 640 × 400 to 832 × 624.

The horizontal amplitude of the image can be adjusted.
After aligning the left edge of the image by the horizontal position adjustment, change to the horizontal size adjustment and perform the adjustment by the "-" or "+" key.

‖‖ Vertical Fine Adjustment (V. FINETUNE)   *Adjustment items when the resolution is 1024 × 768.

When the 1024x768 screen resolution is used, vertical stripes may be observed depending on the desktop patterns or applications. If this occurs, perform the following adjustments
Display a screen which has vertical stripes and align the right side of the screen by the horizontal position adjustment, then change to the vertical stripe adjustment (V. FINETUNE) and perform the adjustment using the "+" or "-" key.

Adjustment Item Screen

⊡ VERTICAL POSITION adjustment

The vertical position of the image can be adjusted.

⊞ VERTICAL SIZE adjustment ·Adjustment items when the resolution is 640 × 400 to 832 × 624.

The vertical size of the image can be adjusted.
After aligning the top edge of the image by the vertical position adjustment, change to the vertical size adjustment and perform the adjustment by the "-" or "+" key.

Note) If the vertical position adjustment or the vertical size adjustment exceeds the limit (red display level), change one adjustment (Example: When the vertical adjustment exceeds the limit, use the size adjustment.) one time beyond the limit and select the item again to enable the adjustment operation. The optimal adjustment can be obtained by repeating these procedures. (However, the optimal adjustment cannot be performed in all operation modes.)

▦ Horizontal Fine Adjustment (H. FINETUNE) ·Adjustment items when the resolution is 1024 × 768.

When the 1024 × 768 screen resolution is used, characters may flicker or horizontal stripes may appear depending on the desktop patterns or applications. If this occurs, perform the following adjustments.
Display a screen which has horizontal stripes and align the bottom of the screen by the vertical position adjustment, then change to the horizontal stripe adjustment (H. FINETUNE) and perform the adjustment using the "+" or "-" key.

Note) There are more than two optimal points. One dot on the right or left may disappear depending on the optimal point. If this occurs, shift to the other optimal point and perform the horizontal position adjustment and the V. FINETUNE adjustment again.

⊡ COLOR TEMPERATURE

The white in the image can be selected from the three conditions, 1 (Normal color:), 2 (6550K) and 3 (User color: ADJ).
Use the "-" or "+" key to select the user's preferred color from 1 (Normal color: K), 2 (6550K) and 3 (User color: ADJ).

USER COLOR Adjustment

The white in the video image can be adjusted to the user's preferred color.
Select USER COLOR: [<3>ADJ] with the "-" or "+" keys on the COLOR TEMPERATURE screen.
Select (ADJ) with the "+" key. Use the "◁" or "▷" keys to select R (red), G (green) or B (blue).
Use the "-" and "+" keys to adjust the color as desired.
Note: Make a note of the setting values before performing the adjustment because the recall operation cannot be performed for the user color adjustment. The initial value is set to normal color.

⊕ VIDEO LEVEL

The video input signal level can be matched to the computer that is used.
Use the "-" and "+" keys to select the 0.7V or 1V setting.

⊡ DISPLAY FREQUENCY (Input frequency display)

This displays the screen mode input on the LCD monitor.
The horizontal and vertical synchronization frequency are displayed.
The values for horizontal and vertical synchronization frequency of the video signal that is currently input for the computer are displayed.
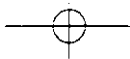fH: There is an error of approximately 1kHz max. for 30kHz and 4kHz max. for 61kHz.
However, the error is 0kHz for the mode that was set at the factory when the monitor was shipped.

?✿ LANGUAGE

Select one of the languages (German, French, English, Italian or Spanish) for the on-screen display.

DEU:	German	FRA:	French	ENG:	English
ITA:	Italian	ESP:	Spanish		

Adjustment Item Screen

⊞ AUTO SIZE

The following adjustment items are automatically performed for the signal input from the computer.
The horizontal position adjustment, horizontal size adjustment, vertical position adjustment,
vertical size adjustment and vertical fine adjustment (V. FINETUNE) .
Effective adjustment can be performed if this function is used.

- **Always operate the unit after the computer has started.**
- **Perform the adjustment after the Windows screen or other similar screen is displayed in the entire screen.**
- **Do not use this function when the VGA350 mode and DOS prompt mode are used because the function will not operate correctly. Perform the adjustment manually.**

◆◇ RECALL

The initial settings (the settings when the display panel was shipped from the factory)
can be returned for each selection item.
The recall operation for the items to be reset is performed as follows.
The horizontal position adjustment, horizontal size adjustment, vertical position adjustment,
vertical size adjustment, horizontal fine adjustment (H. FINETUNE), vertical fine adjustment
(V. FINETUNE).
Press the "+" [YES] key to set an item and then press the MENU key.
Note:The recall screen display stops if there is no operation within approximately 30 seconds.

MONITOR SELF-TEST (NO SIGNAL)

This function displays if the main unit is operating correctly.
Figure A or B is displayed if any of the five menu operation keys (MENU, ◁, ▷, -, +) are
pressed.
1) Figure A is displayed when the input synchronization signal exceeds the specified range.
   • The frequency is displayed in red when fH or fV exceed the specified range.
2) Figure B is displayed when the power save mode is set. (This figure is only displayed in
   the off state.)
3) Figure B is displayed when there is no input signal.
   For example, this occurs when the computer is not connected or the computer power is off.
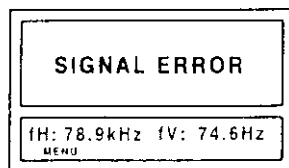
Figure A	Figure B
SIGNAL ERROR fH: 78.9kHz fV: 74.6Hz MENU	NO SIGNAL MENU ■ ■ ■ ■

⊞ OSD Position

It is possible to adjust the position that the on-screen panel is to be displayed.
The panel will rotate in a counter-clockwise direction every time the ②⌇ key is pressed.

Volume

This adjustment is performed directly from the fron panel operation key.

◁⁻ key is pressed, the volume is lowered.

◁⁺ key is pressed, the volume is raised.

⊠ key is pressed, the volume is muted.

Power Management System

This monitor conforms to the VESA DPMS standard.
This function can suppress power consumption by the display unit.
The computer and video board being used must also conform to the VESA DPMS standard.
Note: Regarding operation, please consult the Operation Manuals for the hardware being used.

Modes change in response to input signals as indicated in the table below.

APM state	Screen status	LED color	Power consumption	Return time	Input signals		
					Video	Horizontal	Vertical
ON STATE	Active	Green	Normal	–	ON	ON	ON
STAND-BY	Black out	Yellow	< 15Watts	< 3sec.	OFF	OFF	ON
SUSPEND	Black out	Yellow	< 15Watts	< 3sec.	OFF	ON	OFF
OFF STATE	Black out	Yellow	< 8Watts	< 20sec.	OFF	OFF	OFF

APM : Advanced Power Management

Caution

How to release the system from the power management function.

1) Read the Operation Manuals for the hardware you are using.
2) Press one of the MENU, ◁, ▷, –, + keys on the front panel.

The No Signal screen appears, and the monitor side power management function is released (only in OFF STATE).
ιApproximately 20 seconds is required to return to ON from the OFF state.

Display Modes Memory

• Up to 16 modes can be newly registered as user's preset modes.
• If the new adjustment data differ from any of the following 4, they can be registered as new data.

Horizontal frequency	Horizontal sync. polarity	Vertical ???	Vertical sync. polarity

• The data that can be registered are those in the following table.

Horizontal frequency	Horizontal synchronization polarity	Horizontal size	Horizontal position
Vertical ???	Vertical synchronization polarity	Vertical size	Vertical position
Video signal level	V. FINETUNE	H. FINETUNE	

• How to register adjustment data

| |
|---|
| 1) Input the computer signal to be registered to the display unit. |
| 2) Select the item to be adjusted from the OSD screen and then adjust it. |
| 3) When the ⬚ key is pressed, the adjusted value is registered. |
| If a front panel key is not operated for about 20 seconds, the adjustment is registered. |

• There are 16 modes that can be preset by the user; if all 16 modes have already been registered, when the one that has been registered the oldest is deleted a new mode can be registered.
• If the timing of the new registration differs little in frequency from the previously registered timing and in addition the signal polarity is the same, they will be judged to be the same and the new timing cannot be registered.

Precaution

Always observe the following precautions and use this unit safely.

1) Installation location

- Avoid direct sunlight and heat sources such as heaters.
  Heat adversely affects the cabinet and the parts. Keep the power cord away from heat sources; failing to do so could cause fire or electrical shock.
- Do not place the display panel on an unstable location such as on a shaky table.
- Install in a well ventilated location.
  To prevent the temperature from rising inside the set, there are ventilation holes in the cabinet. Make sure that they are not obstructed. Install the unit at least 10cm from walls, and do not install it in a book cabinet or lying on its side, which could block the ventilation holes. Failure to observe this precaution could cause fire or equipment breakdown.
- Do not install in a location with a great deal of moisture or dust. Avoid wet locations such as a kitchen drainboard, bathroom or washing machine; also avoid locations with a great deal of steam, water vapor or dust. Failure to observe this precaution could cause fire, electrical shock or equipment breakdown.
- Do not apply force to the liquid crystal panel by touching or scratching it with hard objects.
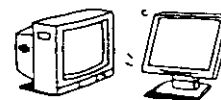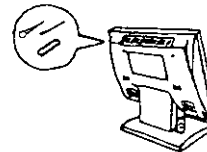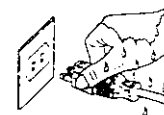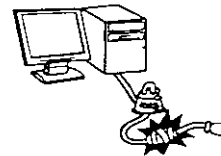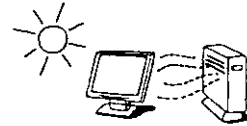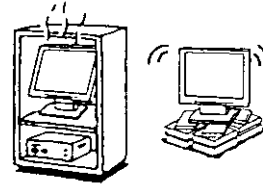
2) Precautions in use

- Handle the power cord carefully.
  Do not place any heavy objects on top of the power cord, add legs to it, tie knots in it or pull on the cord when unplugging it. If the power cord is damaged (for example if the wires are exposed or broken) there is danger of causing fire or electrical shock.
  Never remove or insert the plug when your hands are wet. This may cause an electric shock. Do not hold the power cord to remove the plug. Always hold the plug when removing it.
- Do not place anything on top of the main unit.
  Do not place any foreign object such as a container containing water or another liquid, or a solvent or cloth soaked in a solvent, or a metal object such as a paper clip, on the unit. If the object is knocked over the liquid can spill and enter the interior of the unit, causing fire, electrical shock or equipment breakdown.
- Handle the cabinet carefully.
  If a volatile solvent or adhesive comes into contact with the cabinet, the surface can be damaged or the paint might come off. If a rubber or vinyl object is in contact with the cabinet for a long time, the surface can be stained.
- Avoid magnetism.
  Use the unit at a distance from any object such as a speaker that uses a magnet or an object such as a motor or transformer that generates a strong magnetic field. The magnetism can distort the color or cause tearing of the image in the screen.
- Avoid disrupting reception.
  Use of this unit near a television or other display unit can result in both interfering with the other's reception, tearing of the images and noise. Keep them as far apart as possible.
- When moving this unit, be careful not to apply shock to it. Always unplug the power cord from the outlet and disconnect all other external cables and cords. Be especially careful with the LCD monitor.

3) Care of this unit

- Clean this unit with a soft, dry cloth.
  If it becomes very dirty, wipe it with a cloth that has been soaked in neutral detergent diluted with water and then wrung out thoroughly, then dry with a dry cloth.
  Use of a chemically treated cloth or gloss-producing cleaner can damage the surface or cause the paint to come off.
  Do not rub the surface of the LCD monitor with a hard object or strike it with anything. Doing so can scratch it.
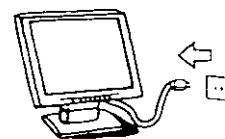
If Trouble Occurs

If problems continue even after the inspections described below are performed, always remove the power plug and contact our dealer.

Please observe the following points to ensure safety.

| Symptom	Check	Remedy	Reference Page
The pilot LED does not light. There is no image.	Power cord/plug Power switch Signal cable Computer (The power saving function might have operated. If this occurred, the pilot LED will be light yellow.)	Plug the power cord into the outlet correctly. Press the power switch. Connect the signal cable correctly. Release the power saving function. (Operate the mouse or keyboard. For additional details please read the operation manual of the hardware that is used.)	I-7 I-4 I-13
	Contrast, brightness and backlight adjustment	Adjust the contrast, brightness and backlight correctly.	I-10
The pilot LED does not go off.	Power switch	Press the power switch one more time.	I-7
The image is too large or too small. It is displaced from the correct position. Part of the screen is missing. The color of part of the screen is changed.	Is not the mode registered? Is the mode guaranteed?	Use an on-screen function to perform the desired settings. Read the computer operation manual and change the display mode to obtain the specified mode.	I-9 I-18
There are vertical or horizontal stripes in the screen. There is an after-image in the screen.	Perform the V. FINTUNE (Vertical stripe), H. FINE-TUNE (Horizontal stripe) adjustments (In the 1024 × 768 mode.) Liquid Crystal panel	When the 1024 × 768 mode is set, perform the adjustment so the stripe patterns are not conspicuous. Change the desktop pattern in modes other than 1024 × 768. If the same screen is displayed on the LCD display panel for a long period of time, a phenomenon called "burn-in" may occur where slight traces of the burned-in screen pattern can still be observed when other screen patterns are displayed. Do not operate the display for approximately one day and do not turn the power on.	I-10 ~ 11
Characters cannot be seen clearly even after an adjustment is performed.	H. FINETUNE (Horizontal stripe) adjustments Does the video clock frequency of the image signal exceed the standard level (80MHz)? Is the video level correctly adjusted? Is the brightness or contrast adjustment turned all the way down?	Perform the necessary adjustments until the characters displayed on the screen do not flicker. Lower the vertical frequency of the image signal to set the video clock frequency to a level below the standard level (80MHz). Check the video signal level from the computer and adjust it in the correct direction. Adjust the brightness, backlight and contrast. (Refer to the computer operation manual of the computer that is used for further details.)	I-11 I-10
The image is too dark. The image scrolls continuously.	SELF-TEST function Signal cable	Press the MENU key to check the SELF-TEST screen. Is either one of the numeric values for fH or fV displayed in red? The input signal frequency exceeds the range of the security range of this unit. Read the operation manual of the computer and change the display mode.	I-12 I-11 I-18

If Trouble Occurs

Symptom	Check	Remedy	Reference Page
The display color is abnormal. The screen size and position do not change. The front panel keys fail to operate.	Signal cable Is the input synchronization signal within the operating range? Are two or more keys being operated at the same time?	Connect the signal cable correctly. Check the video output mode from the computer and select a mode within the LCD monitor operating range. (For details, read the operation manual of the hardware you are using.) Operate only one key at a time.	I-4 I-18
The sound is not correct.	AUDIO cable Computer sound level	Connect the AUDIO cable correctly. Is the sound level from the computer restricted? Please refer to the operation manual for the hardware you are using for the details.	I-5
The headphones do not operate.	Headphone jack	Connect the headphone jack correctly.	I-5

Specifications

Specifications are subject to change without notice for the purpose of improvement.

LCD	Size	15 inch (15.0 inches/38.1cm viewable)
	Type	Color TFT active matrix liquid crystal
	Pixel pitch	0.297 mm
	Surface treatment	Anti-glare, anti-static (Anti-glare hard coat)
	Angle of visibility	Vertical: + 40° /-60°, Horizontal: ±60°
Input signal	Video signal	RGB analog
	Signal level	0.7Vp-p, 1.0Vp-p
	Synchronization	H/V separate (TTL level)
	Operation range	Horizontal frequency: 30.0kHz to 61.0kHz
		Vertical frequency: 50.0Hz to 77.0Hz
Connectors	Signal	15 pin mini D-Sub connector (female pins)
	Headphone terminals	3.5mm diameter stereo mini jack
	Audio input terminal	3.5mm diameter stereo mini jack
	USB terminals	Upstream × 1
		Downstream × 4
	Power supply	EIAJ 2P DC power jack
	Operation Keys	Power ON/OFF, MENU, ◁, ▷, —, +key, volume key, mute key
Controls	On-Screen Display	CONTRAST, BRIGHTNESS, BACKLIGHT, HORIZONTAL POSITION, HORIZONTAL SIZE, V. FINETUNE, VERTICAL POSITION, VERTICAL SIZE, H. FINETUNE, COLOR TEMP. (Normal color/6550K/User color), User color, VIDEO LEVEL (0.7V/1.0V), DISPLAY FREQUENCY, LANGUAGE, AUTO SIZE, RECALL, OSD POSITION
Maximum pixel clock		80 MHz (max.)
Maximum resolution		1024 dots(H) × 768 lines (V) / 75Hz
Display area		304 × 228 mm (1024 x 768)
Operating conditions		Temperature: 0 to 35°C (32 to 95°F) Humidity: 5 to 90% (No condensation)
Power supply using the AC adaptor		AC 100V-240V 50/60Hz
Power consumption		45 W typ / < 8 W (during power saving operation) / Power off <5W
Dimensions width × height × depth		385 × 390.7 × 200 mm
Weight (main unit only)		5.5 kg
Screen angle adjustment		0-30° (Up)

Security Port

A security port can be installed to prevent theft of the LCD monitor and main unit.

A wire cable manufactured by Kensington can be connected to the security port on the rear panel of the main unit.
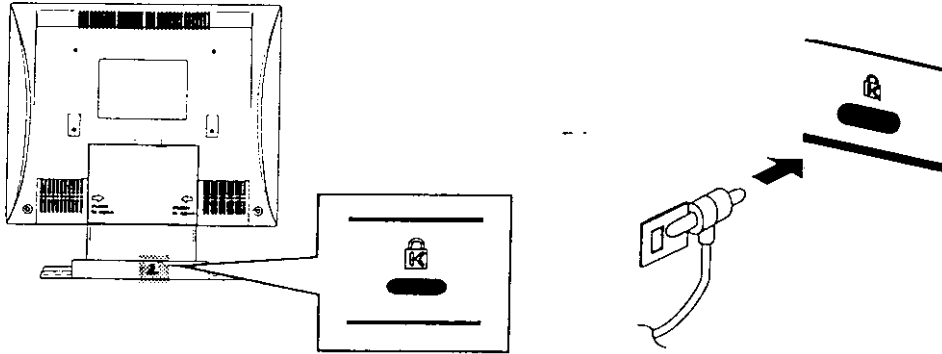
For details, please refer to the Kensington instruction manual.

< Inquiries>
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2855 Campus Drive
San Mateo, CA USA 94403
800-535-4242, x3348
Intrl: 415-572-2700, x3348
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Preset Mode — The timing in the following table has been preset.

Mode	Resolution	Horizontal frequency	Vertical frequency	Synchronization signal polarity	
				Horizontal	Vertical
VGA 480 at 60 Hz	640 × 480	31.47 kHz	59.93 Hz	−	−
VGA 400 at 70 Hz	640 × 400	31.47 kHz	70.08 Hz	−	+
640 × 480 at 72 Hz	640 × 480	37.87 kHz	72.80 Hz	−	−
640 × 480 at 67 Hz	640 × 480	35.00 kHz	66.66 Hz	−	−
640 × 480 at 75 Hz	640 × 480	37.50 kHz	75.00 Hz	−	−
800 × 600 at 56 Hz	800 × 600	35.15 kHz	56.25 Hz	+	+
800 × 600 at 60 Hz	800 × 600	37.87 kHz	60.31 Hz	+	+
800 × 600 at 75 Hz	800 × 600	46.87 kHz	75.00 Hz	+	+
800 × 600 at 72 Hz	800 × 600	48.07 kHz	72.18 Hz	+	+
832 × 624 at 75 Hz	832 × 624	49.72 kHz	74.55 Hz	−	−
1024 × 768 at 60 Hz	1024 × 768	48.36 kHz	60.00 Hz	−	−
1024 × 768 at 70 Hz	1024 × 768	56.47 kHz	70.06 Hz	−	−
1024 × 768 at 72 Hz	1024 × 768	57.87 kHz	71.79 Hz	−	−
1024 × 768 at 75 Hz	1024 × 768	60.02 kHz	75.02 Hz	+	+
1024 × 768 at 75 Hz	1024 × 768	60.24 kHz	74.92 Hz	−	−

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