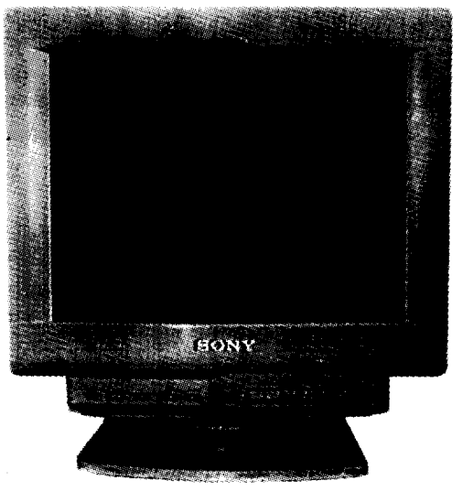
CPD-200ES

SERVICE MANUAL

CPD-200ES

S. Hemisphere Model
Equator Model

Chassis No.SCC-L16B-A



X2F CHASSIS

SPECIFICATIONS

Picture Tube	0.26 mm aperture grill pitch 17 inches measured diagonally 90-degree deflection
Video image area	(15.9" maximum viewing image) Approx. 327 x 241 mm (w/h) (12.9 x 9.5 inches)
Logical resolution	Horizontal: Max. 1280 dots Vertical: Max. 1024 lines
Physical resolution	Horizontal: Max. 1024 dots Vertical: Max. 768 lines
Standard image area	Approx. 312 x 234 mm (w/h) (12.3 x 9.3 inches)
Deflection frequency	Horizontal: 31 to 70 KHz Vertical: 50 to 120 Hz
AC input voltage / current	100 to 120 V, 50-60 Hz, 1.8 A (max.) 220 to 240 V, 50-60 Hz, 1.0 A
Dimensions	406 x 431.5 x 420 mm (w/h/d) (16 x 17 x 16.5 inches)
Mass	Approx. 19.0 kg (41 lb. 13 oz.)

Design and specifications are subject to change without notice.

MICROFILM

TRINITRON® COLOR COMPUTER DISPLAY

SONY®

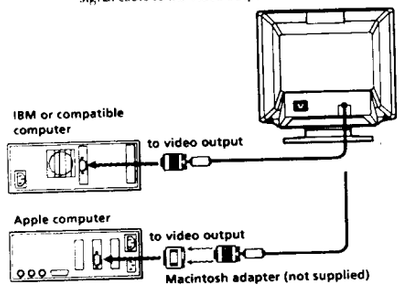
The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

SECTION 1
GENERAL

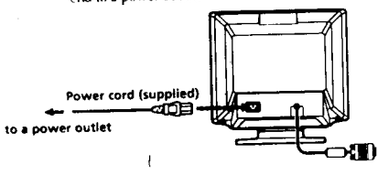
Getting Started

Before using this monitor, please make sure that the following items are included in your package: Multiscan 100ES/200ES monitor (1), power cord (1), warranty card (1), "Windows95 Monitor Information Disk" (1), and this operating instruction manual (1).
This monitor will sync with any IBM or compatible system equipped with VGA or greater graphics capability. Although this monitor will sync to other platforms running at horizontal frequencies between 30 and 70 kHz, including Macintosh and Power Macintosh system, a cable adapter is required. Please consult your dealer for advice on which adapter is suitable for your needs.

Step 1: With the computer switched off, attach the video signal cable to the video output.



Step 2: Attach the power cord to the monitor and the other end to a power outlet.



Step 3: Turn on the monitor and computer.

Step 4: If necessary, adjust the user controls according to your personal preference.

The installation of your Multiscan 100ES/200ES is complete. Enjoy your monitor.

1) VGA is a trademark of IBM Corporation.
2) VESA is a trademark of the non-profit organization, Video Electronics Standard Association.
3) Macintosh is a trademark of Apple Computer Inc.
4) Windows® is a registered trademark of Microsoft Corporation in the United States and other countries.

Using Your Monitor

Preset and User Modes

The Multiscan 100ES/200ES has factory preset modes for the 8 most popular industry standards for true "plug and play" capability. For less common modes, the Multiscan 100ES/200ES's Digital Multiscan Technology will perform all of the complex adjustments necessary to ensure a high quality picture for any timing between 30 and 70 kHz.

CPD-100ES/100EST and CPD-200ES/200EST

No.	Resolution (dots x lines)	Horizontal Frequency	Vertical Frequency	Graphics Mode
1	640 × 480	31.5 kHz	60 Hz	VGA Graphic [1]
2	640 × 480	43.3 kHz	85 Hz	VESA [2]
3	800 × 600	46.9 kHz	75 Hz	VESA [2]
4	800 × 600	53.7 kHz	85 Hz	VESA [2]
5	832 × 624	49.7 kHz	75 Hz	Macintosh 16" Color [3]
6	1024 × 768	60.0 kHz	75 Hz	VESA [2]
7	1024 × 768	68.7 kHz	85 Hz	VESA [2]
8	1280 × 1024	64.0 kHz	60 Hz	VESA [2]

For the customers using the Windows®95
Install the new model information of the Sony computer display from "Windows95 Monitor Information Disk" into your PC. (To install the file, refer to the attached "About the Windows95 Monitor Information Disk/File".)

This monitor complies with "VESA DDC", the standards of Plug&Play. If your PC/graphic board complies with DDC, select "Plug and Play Monitor (VESA DDC)" or this monitor's model name (CPD-100ES/100EST or CPD-200ES/200EST) as "Monitor type" from "Control Panel" on Windows95. Some PC/graphic boards do not comply with DDC. Even if they comply with DDC, they may have some problems on connecting to this monitor. In this case, select this monitor's model name (CPD-100ES/100EST or CPD-200ES/200EST) as "Monitor type" on Windows95.

Recommended horizontal timing conditions
Horizontal sync width should be: >1.0 µsec.
Horizontal blanking width should be: >3.6 µsec. (Multiscan 100ES)/ >3.0 µsec. (Multiscan 200ES).
Vertical sync width should be: < 560 µsec.

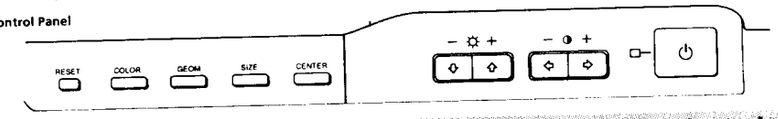
Note
CPD-100ES/100EST and CPD-200ES/200EST does not apply to Macintosh 21" color mode.

Adjustments

When one of the preset-type signals is input, no picture adjustment is necessary.
You can, however, adjust the picture to your preferences by following the procedure described below.
You can adjust all items on the OSD (On Screen Display).

- Before adjusting the items, turn on the unit and feed the video signal from the connected computer/work station.
- Adjustments will be stored automatically.

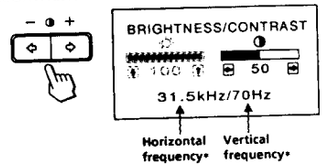
Control Panel



Adjusting the Picture Contrast

The adjustment data becomes the common setting for all input signals.

1 Press the ◑ ⬅/➡ button.
The "BRIGHTNESS/CONTRAST" OSD appears.



2 Press the ◑ ⬅/➡ buttons to adjust picture contrast.
➡ . . . for more contrast
⬅ . . . for less contrast

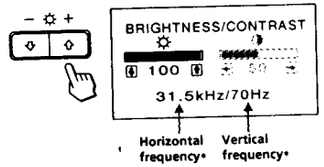
The "BRIGHTNESS/CONTRAST" OSD disappears 3 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

Adjusting the Picture Brightness

The adjustment data becomes the common setting for all input signals.

1 Press the ☼ ⬆/⬇ button.
The "BRIGHTNESS/CONTRAST" OSD appears.



2 Press the ☼ ⬆/⬇ buttons to adjust picture brightness.
⬇ . . . for less brightness
⬆ . . . for more brightness

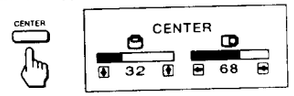
The "BRIGHTNESS/CONTRAST" OSD disappears 3 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

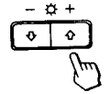
Adjusting the Picture Centering

The adjustment data becomes the individual setting for each input signal received.

1 Press the CENTER button.
The "CENTER" OSD appears.

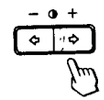


2 **For vertical adjustment**
Press the ☼ ⬆/⬇ buttons.



⬆ . . . to move up
⬇ . . . to move down

For horizontal adjustment
Press the ◑ ⬅/➡ buttons.



⬅ . . . to move left
➡ . . . to move right

To erase the "CENTER" OSD, press the CENTER button again.
The "CENTER" OSD automatically disappears 10 seconds after you release the buttons.

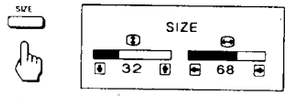
To reset, press the RESET button while the OSD is on.

*The horizontal and vertical frequencies for each input signal received appear on the "BRIGHTNESS/CONTRAST" OSD.

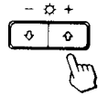
Adjusting the Picture Size

The adjustment data becomes the individual setting for each input signal received.

1 Press the SIZE button.
The "SIZE" OSD appears.

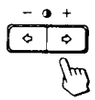


2 **For vertical adjustment**
Press the ☼ ⬆/⬇ buttons.



⬆ . . . to enlarge
⬇ . . . to diminish

For horizontal adjustment
Press the ◑ ⬅/➡ buttons.



⬅ . . . to diminish
➡ . . . to enlarge

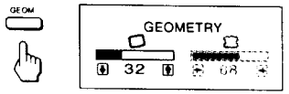
To erase the "SIZE" OSD, press the SIZE button again.
The "SIZE" OSD automatically disappears 10 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

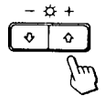
Adjusting the Picture Rotation

The adjustment data becomes the common setting for all input signals.

1 Press the GEOM button.
The "GEOMETRY" OSD appears.



2 Press the ☼ ⬆/⬇ buttons.
⬆ . . . to rotate clockwise
⬇ . . . to rotate counterclockwise



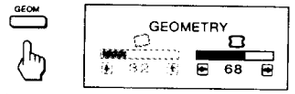
To erase the "GEOMETRY" OSD, press the GEOM button again.
The "GEOMETRY" OSD automatically disappears 10 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

Adjusting the Pincushion

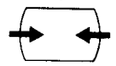
The adjustment data becomes the individual setting for each input signal received.

1 Press the GEOM button.
The "GEOMETRY" OSD appears.

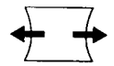


2 Press the ◑ ⬅/➡ buttons.

⬅ . . . to diminish the picture sides



➡ . . . to expand the picture sides



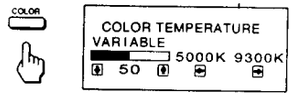
To erase the "GEOMETRY" OSD, press the GEOM button again.
The "GEOMETRY" OSD automatically disappears 10 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

Setting the Color Temperature

The selected color temperature becomes the common setting for all input signals.

1 Press the COLOR button.
The "COLOR TEMPERATURE" OSD appears.

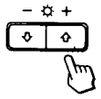


2 Adjust with the ◑ ⬅/➡ and ☼ ⬆/⬇ buttons.

To select 5000K or 9300K
Press the ◑ ⬅/➡ buttons.
The selected color temperature is indicated in yellow.

⬅ . . . to select 5000K
➡ . . . to select 9300K

To obtain the desired color temperature between 5000K and 9300K
Press the ☼ ⬆/⬇ buttons.



⬆ . . . for higher temperature
⬇ . . . for lower temperature

Your most recent adjusted color temperature will be recalled by pressing the ☼ ⬆/⬇ button.

To erase the "COLOR TEMPERATURE" OSD, press the COLOR button again.
The "COLOR TEMPERATURE" OSD automatically disappears 10 seconds after you release the buttons.

To reset, press the RESET button while the OSD is on.

Resetting the Adjustment Data to Factory-preset Levels

To reset an adjustment item

Press the button of the adjustment item you want to reset, and then press the RESET button before the OSD (On Screen Display) disappears.

To reset all adjustment data at once (for the received signal)

Press the RESET button when no OSD is shown.

To reset all adjustment data to factory-preset levels

Press and hold the RESET button for more than 2 seconds.
All adjustment data are reset to factory-preset levels.

Entering New Timings

When using a video mode that is not one of the factory preset modes, some fine tuning may be required to optimize the display to your preferences. Simply adjust the monitor according to the preceding adjustment instructions. The adjustments will be stored automatically and recalled whenever that mode is used.
A total of 8 user-defined modes can be stored in memory. If the 9th mode is entered, it will replace the first.

Power Saving Function

This monitor meets the power saving guidelines set by the International ENERGY STAR Program as well as the more stringent TCO92 803299 (NUTEK) guidelines. It is capable of reduced power consumption when used with a computer equipped with Display Power Management Signaling (DPMS). By sensing the absence of the sync signal coming from the computer, it will reduce the power consumption as follows:

CAUTION: The Power Saving function will automatically put the monitor into Active-off state if the power switch is turned on without any video signal input. Once the horizontal and vertical syncs are sensed, the monitor will automatically return to its Normal operation state.

	State	Power consumption	Required resumption time	⏻ POWER indicator
1	Normal operation	≤ 110 W	—	green on
2	Stand-by (1st step of power saving)	≤ 15 W	approx. 3 sec.	Orange and green flashes alternately
3	Suspend (2nd step of power saving)	≤15 W	approx. 3 sec.	Orange and green flashes alternately
4	Active-off (3rd step of power saving)	≤8 W	approx. 10 sec.	Orange on
5	Power-off	0 W	—	off

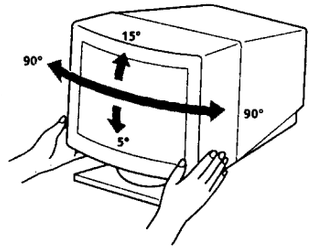
Plug and Play

This monitor complies with DDC™1 and DDC2B, which are the Display Data Channel (DDC) standards of VESA.
When a DDC1 host system is connected, the monitor synchronizes with the V. CLK in accordance with the VESA standards and outputs the EDID (Extended Display Identification Data) to the data line.
When a DDC2B host system is connected, the monitor automatically switches to the DDC2B communication.

DDC™ is a trademark of the Video Electronics Standard Association.

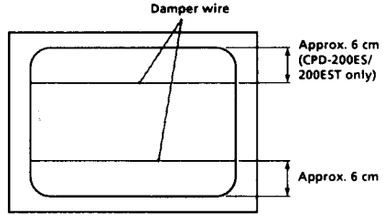
Use of the Tilt-Swivel

With the tilt-swivel, this unit can be adjusted to be viewed at your desired angle within 180° horizontally and 20° vertically. To turn the unit vertically and horizontally, hold it at its bottom with both hands.



Damper Wire

Using a white background, very thin horizontal stripes on the screen are visible as shown on the illustration. These stripes are damper wires. These wires are attached to the aperture grille inside the Trinitron tube and are there to dampen vibrations of the aperture grille in order to prevent them from influencing the picture quality.



Troubleshooting

This section may help you isolate a problem and as a result, eliminate the need to contact technical support, allowing continued productivity.

No picture
- ➡ If the ⏻ POWER indicator is not lit.
  - — Check that the power cord is properly connected.
  - — Check that the ⏻ POWER switch is in the "ON" position.
- ➡ If the ⏻ POWER indicator is flashing in green and orange alternately.
  - — Check that your computer power switch is in the "ON" position.
  - — The monitor will recover when you press any key on the keyboard of the computer.
  - — Check that the video cable is properly connected.
  - — Ensure that no pins are bent or pushed in the HD15 connector of the cable.
  - — Check that the video card is seated completely in a proper bus slot.
  - — Check that the video sync signal is within that specified for the monitor.
  - — If using a Macintosh system, check that a proper HD15 - D15 adapter is provided to work correctly with your Macintosh.
  - — The monitor has a self-diagnose function. After disconnecting the video signal cable from the computer, turn on the ⏻ POWER switch of the monitor. Press and hold the "+" side of the ◑ button for 2 seconds, then color bars will appear. The monitor is operating normally if the red, green, and blue color bars appear. Contact the maker of the computer to which the monitor is connected.
- ➡ If the ⏻ POWER indicator is flashing.
  - — There is a potential monitor failure. Contact your dealer.

If the message of "OUT OF SCAN RANGE" appears on the screen
- ➡ Check that the video sync signal is specified for the monitor.

Picture is scrambled
- ➡ Check your graphics board manual for the proper monitor setting on your Multiscan 100ES/ 200ES.
- ➡ Check this manual and confirm that the graphic mode and the frequency at which you are trying to operate is supported. Even within the proper range some video boards may have a sync pulse that is too narrow for the monitor to sync correctly.

Color is not uniform
- ➡ If the monitor is close to any potential sources of magnetic fields such as a speaker, or you turn the monitor while the ⏻ POWER switch is in the "ON" position, color may not be uniform. Trip the ⏻ POWER switch once to activate the Auto-degauss cycle*.

Picture is flickering
- ➡ If the refresh rate is not appropriate, the picture may flicker. Set the refresh rate of the non-interlace mode as high as possible on the computer. For details on how to set the refresh rate, consult the dealer of your computer or video board.

Screen image is not centered or sized properly
- ➡ Adjust the "CENTER," "SIZE," or "GEOMETRY" on the OSD (pages 5, 6).
- ➡ Some video modes do not fill the screen to the edge of the monitor. There is no single answer to solve the problem. There is a tendency to have this problem on higher refresh timings and Macintosh video timings.

Picture is fuzzy
- ➡ Adjust the "CONTRAST" and "BRIGHTNESS" on the OSD (page 5). We have come across several brands of SVGA boards that have an excessive video output level which creates a fuzzy picture at max contrast.
- ➡ Trip the ⏻ POWER switch once to activate the Auto-degauss cycle*.

Picture bounces or has wavy oscillations
- ➡ Isolate and eliminate any potential sources of electric or magnetic fields. Common causes for this symptom are electric fans, fluorescent lighting, laser printers, and so on.
- ➡ If you have another monitor close to this monitor, increase the distance between them to reduce the interference.
- ➡ Try plugging the monitor into a different AC outlet, preferably on a different circuit.
- ➡ Try the monitor on a completely different computer in a different room.

Picture appears to be ghosting
- ➡ Eliminate the use of video cable extension cables and/or video switch boxes if this symptom occurs. Excessive cable length or weak connections can produce this symptom.

A fine horizontal line (wire) is visible
- ➡ This wire stabilizes the vertically striped Aperture Grille (page 8). This Aperture Grille allows more light to pass through to the screen giving the Trinitron CRT more color and brightness.

Wavy or elliptical (moire) pattern is visible
- ➡ Due to the relationship between resolution, monitor AG pitch and the pitch of some image patterns, certain screen backgrounds, especially gray, sometimes show moire. This can only be eliminated by changing your desktop pattern.

Just after turning the monitor on, a "boon" noise is heard
- ➡ Just after turning the monitor on, a noise may be heard for about 3 seconds.
  This noise is not failure, it is caused by the Auto-degauss cycle*.

* The Auto-degauss function demagnetizes the metal frame of the CRT to obtain a neutral field for uniform color reproduction. If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result.

- If the problem persists, call your authorized Sony dealer from a location near your monitor.
- Note the model name and the serial number of your monitor. Also note the make and name of your computer and video board.