

Trinitron® Color Computer Display

Operating Instructions _____ **US**

Mode d'emploi _____ **FR**

Manual de instrucciones _____ **ES**

使用说明书 _____ **CS**

CPD-420GS

Owner's Record

The model and serial numbers are located at the rear of the unit. Record these numbers in the spaces provided below. Refer to them whenever you call upon your dealer regarding this product.

Model No. _____ Serial No. _____

WARNING

To reduce fire or shock hazard, do not expose the unit to rain or moisture.

Dangerously high voltages are present inside the unit. Do not open the cabinet. Refer servicing to qualified personnel only.

FCC Notice

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. 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.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

INFORMATION

This product complies with Swedish National Council for Metrology (MPR) standards issued in December 1990 (MPR II) for very low frequency (VLF) and extremely low frequency (ELF).

INFORMATION

Ce produit est conforme aux normes du Swedish National Council for Metrology de décembre 1990 (MPR II) en ce qui concerne les fréquences très basses (VLF) et extrêmement basses (ELF).

Hinweis

Dieses Gerät erfüllt bezüglich tieffrequenter (very low frequency) und tiefstfrequenter (extremely low frequency) Strahlung die Vorschriften des „Swedish National Council for Metrology (MPR)“ vom Dezember 1990 (MPR II).

INFORMACIÓN

Este producto cumple las normas del Consejo Nacional Sueco para Metrología (MPR) emitidas en diciembre de 1990 (MPR II) para frecuencias muy bajas (VLF) y frecuencias extremadamente bajas (ELF).

IMPORTADOR (Para Mexico únicamente/For Mexico only)

Sony Electronicos de Mexico, S.A. de C.V.

Henry Ford No. 29

Fraccionamiento San Nicolas, Tlalnepantla

Estado de Mexico, CP54030

Tel: 321-1000

R.F.C. SEM-941001-BJA

IMPORTANTE

Para prevenir cualquier mal funcionamiento y evitar daños, por favor, lea detalladamente este manual de instrucciones antes de conectar y operar este equipo.

Hinweise

- Aus ergonomischen Gründen wird empfohlen, die Grundfarbe Blau nicht auf dunklem Untergrund zu verwenden (schlechte Erkennbarkeit, Augenbelastung bei zu geringem Zeichenkontrast).
- Aus ergonomischen Gründen (flimmern) sollten nur Darstellungen bei Vertikalfrequenzen ab 70 Hz (ohne Zeilensprung) verwendet werden.
- Die Konvergenz des Bildes kann sich auf Grund des Magnetfeldes am Ort der Aufstellung aus der korrekten Grundeinstellung verändern. Zur Korrektur empfiehlt es sich deshalb, die Regler an der Frontseite für Konvergenz so einzustellen, daß die getrennt sichtbaren Farblinien für Rot, Grün und Blau bei z.B. der Darstellung eines Buchstabens zur Deckung (Konvergenz) gelangen. Siehe hierzu auch die Erklärungen zu Konvergenz.

NOTICE

This notice is applicable for USA/Canada only. If shipped to USA/Canada, install only a UL LISTED/CSA LABELLED power supply cord meeting the following specifications:

SPECIFICATIONS

Plug Type	Nema-Plug 5-15p
Cord	Type SVT or SJT, minimum 3 x 18 AWG
Length	Maximum 15 feet
Rating	Minimum 7 A, 125 V

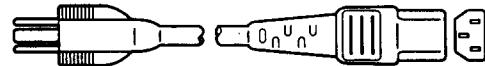
NOTICE

Cette notice s'applique aux Etats-Unis et au Canada uniquement.

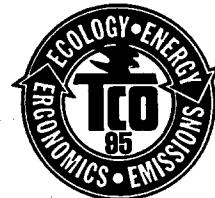
Si cet appareil est exporté aux Etats-Unis ou au Canada, utiliser le cordon d'alimentation portant la mention UL LISTED/CSA LABELLED et remplissant les conditions suivantes:

SPECIFICATIONS

Type fiche	Fiche Nema 5-15 broches
Cordon	Type SVT ou SJT, minimum 3 x 18 AWG
Longueur	Maximum 15 pieds
Tension	Minimum 7 A, 125 V



As an ENERGY STAR Partner, Sony Corporation has determined that this product meets the ENERGY STAR guidelines for energy efficiency.



This monitor complies with the TCO'95 guidelines.

Declaration of Conformity

Trade Name: Sony
Model No.: CPD-420GS
Responsible Party: Sony Electronics Inc.
Address: 1 Sony Drive, Park Ridge, NJ. 07656 USA
Telephone No.: 201-930-6970

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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- Trinitron® is a registered trademark of Sony Corporation.
- Macintosh is a trademark licensed to Apple Computer, Inc., registered in the U.S.A. and other countries.
- Windows® and MS-DOS are registered trademarks of Microsoft Corporation in the United States and other countries.
- IBM PC/AT and VGA are registered trademarks of IBM Corporation of the U.S.A.
- VESA and DDC are trademarks of the Video Electronics Standard Association.
- ENERGY STAR is a U.S. registered mark.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies.
- Furthermore, "™" and "®" are not mentioned in each case in this manual.

US

Precautions

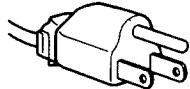
Warning on power connections

- Use the supplied power cord. If you use a different power cord, be sure that it is compatible with your local power supply.

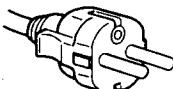
For the customers in the US

If you do not use the appropriate cord, this monitor will not conform to mandatory FCC Standards.

Example of plug types



for 100 to 120 V AC



for 200 to 240 V AC

- Before disconnecting the power cord, wait at least 30 seconds after turning off the power to allow the static electricity on the screen's surface to discharge.
- After the power is turned on, the screen is demagnetized (degaussed) for about 3 seconds. This generates a strong magnetic field around the screen, which may affect data stored on magnetic tapes and disks placed near the monitor. Be sure to keep magnetic recording equipment, tapes and disks away from the monitor.

The equipment should be installed near an easily accessible outlet.

Installation

Do not install the monitor in the following places:

- on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes
- near heat sources such as radiators or air ducts, or in a place subject to direct sunlight
- in a place subject to severe temperature changes
- in a place subject to mechanical vibration or shock
- on an unstable surface
- near equipment which generates magnetism, such as a transformer or high voltage power lines
- near or on an electrically charged metal surface

Maintenance

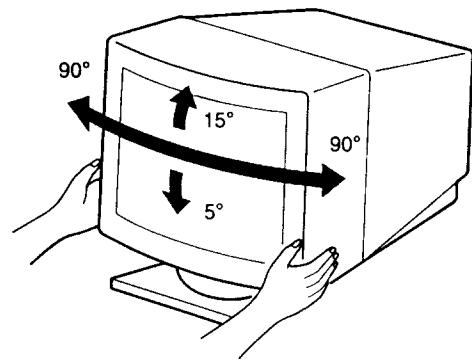
- Clean the screen with a soft cloth. If you use a glass cleaning liquid, do not use any type of cleaner containing an anti-static solution or similar additive as this may scratch the screen's coating.
- Do not rub, touch, or tap the surface of the screen with sharp or abrasive items such as a ball point pen or screwdriver. This type of contact may result in a scratched picture tube.
- Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent, such as alcohol or benzene.

Transportation

When you transport this monitor for repair or shipment, use the original carton and packing materials.

Use of the tilt-swivel

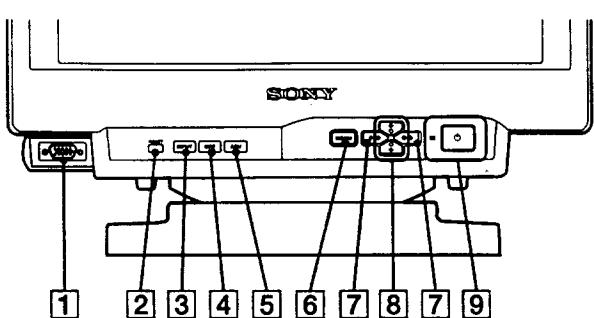
This monitor can be adjusted within the angles shown below. To turn the monitor vertically or horizontally, hold it at the bottom with both hands.



Identifying parts and controls

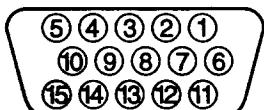
See the pages in parentheses for further details.

Front



1 Front Video Input connector (HD15) (page 6)

Pull open this connector to connect a laptop or second computer. This connector inputs RGB video signals and sync signals from your computer.



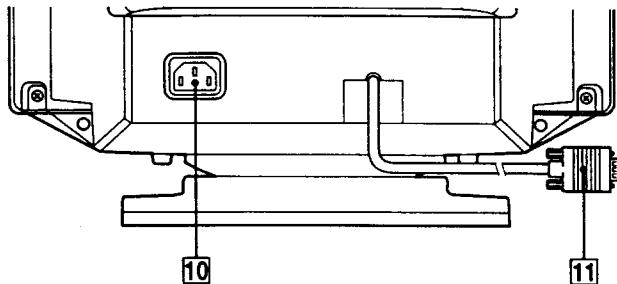
Pin No.	Signal
1	Red
2	Green (Composite Sync on Green)
3	Blue
4	ID (Ground)
5	Ground
6	Red Ground
7	Green Ground
8	Blue Ground
9	Not used
10	Ground
11	ID (Ground)
12	Bi-Directional Data (SDA)*
13	H. Sync
14	V. Sync
15	Data Clock (SCL)*

* DDC (Display Data Channel) is a standard of VESA.

2 RESET (reset) button (page 9)

This button resets the adjustments to the factory settings.

Rear



3 INPUT (input) button (page 8)

This button selects the Front or Rear Video Input signal. The input signal and corresponding on-screen messages change each time you press this button.

4 GPE (graphic picture enhancement) button (page 8)

This button selects the Graphic Picture Enhancement (GPE) Mode.

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5 ASC (auto sizing and centering) button (page 8)

This button automatically adjusts the size and centering of the picture.

6 MENU button (page 9)

This button displays the MENU OSD.

7 (contrast) (↔) buttons (page 10)

These buttons adjust the contrast and function as the (↔) buttons when adjusting other items.

8 (brightness) (↔) buttons (page 10)

These buttons adjust the picture brightness and function as the (↔) buttons when adjusting other items.

9 (power) switch and Indicator (page 7)

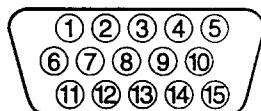
This button turns the monitor on or off. The indicator lights up in green when the monitor is turned on, and either flashes in green and orange, or lights up in orange when the monitor is in power saving mode.

10 AC IN connector (page 6)

This connector provides AC power to the monitor.

11 Rear Video Input connector (HD15) (page 6)

This connector inputs RGB video signals and sync signals from your computer.



Refer to 1 for pin assignment.

Setup

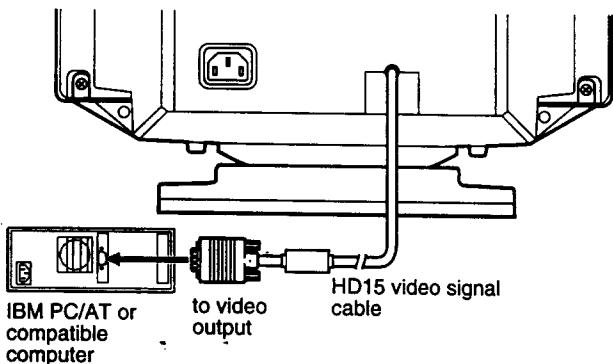
Before using your monitor, check that the following accessories are included in your carton:

- Power cord (1)
- HD15 video signal cable (1)
- Macintosh adapter (1)
- Windows Monitor Information Disk (1)
- Warranty card (1)
- Notes on cleaning the screen's surface (1)
- This instruction manual (1)

Step 1: Connect your monitor to your computer

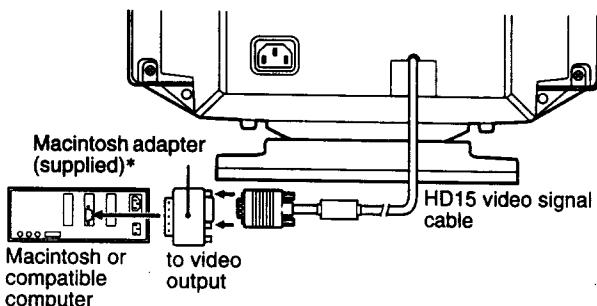
Turn off the monitor and computer before connecting.

■ Connecting to an IBM PC/AT or compatible computer



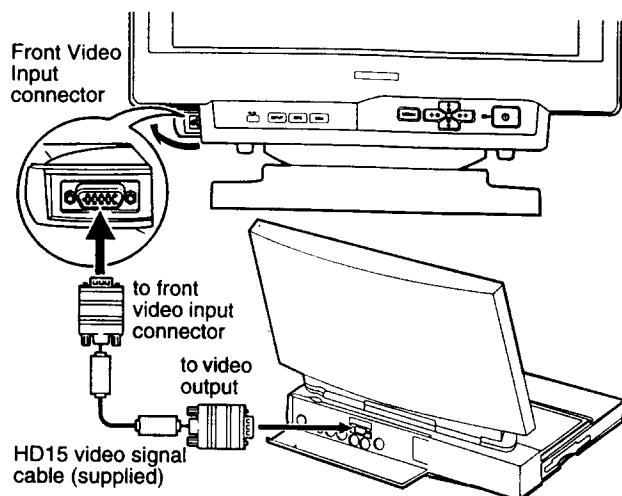
■ Connecting to a Macintosh or compatible computer

Use the supplied Macintosh adapter.



* Connect the supplied Macintosh adapter to the computer before connecting the cable. This adapter is compatible with Macintosh LC, Performa, Quadra and Power Macintosh, G3 series computers. Macintosh II series and some older versions of PowerBook models may need an adapter with micro switches (not supplied).

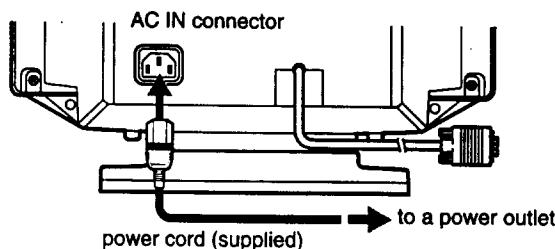
■ Connecting to a laptop or second computer



Open the Front Video Input connector on the left side of the front panel to connect a laptop or a second computer using the supplied HD15 video signal cable. Use the supplied Macintosh adapter to connect a Macintosh laptop or second computer.

Step 2: Connect the power cord

With the monitor and computer switched off, first connect the power cord to the monitor, then connect it to a power outlet.



Step 3: Turn on the monitor and computer

First turn on the monitor, then turn on the computer.



The installation of your monitor is complete.

If necessary, use the monitor's controls to adjust the picture.

If no picture appears on your screen

- Check that the monitor is correctly connected to the computer.
- If NO INPUT SIGNAL appears on the screen, try changing the input signal (page 8), and confirm that your computer's graphic video board is completely seated in the correct bus slot.
- If you are replacing an old monitor with this model and OUT OF SCAN RANGE appears on the screen, re-connect the old monitor. Then adjust the computer's graphic video board so that the horizontal frequency is between 30–96 kHz, and the vertical frequency is between 48–120 Hz.
- If you are using a laptop computer, make sure it is set up to output a signal to an external monitor.

For more information about the on-screen messages, see "Trouble symptoms and remedies" on page 14.

For customers using Windows 95/98

To maximize the potential of your monitor, install the new model information file from the supplied Windows Monitor Information Disk onto your PC. (Refer to the "Readme" file for further instruction.) This monitor complies with the "VESA DDC" Plug & Play standard. If your PC/Graphic video board complies with DDC, select "Plug & Play Monitor (VESA DDC)" or this monitor's model name as the monitor type in the "Control Panel" of Windows 95/98. If your PC/Graphic video board has difficulty communicating with this monitor, load the Windows Monitor Information Disk and select this monitor's model name as the monitor type.

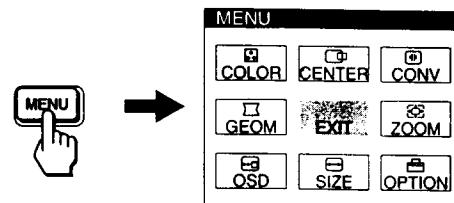
For customers using Windows NT4.0

Monitor setup in Windows NT4.0 is different from Windows 95/98 and does not involve the selection of monitor type. (Refer to the Windows NT4.0 instruction manual for further details on adjusting the resolution, refresh rate, and number of colors.)

Selecting the on-screen menu language (OPTION)

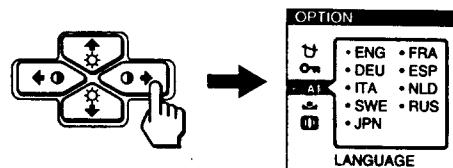
English, French, German, Spanish, Italian, Dutch, Swedish, Russian and Japanese versions of the on-screen menus are available. The default setting is English.

1 Press the MENU button



2 Press the $\odot \downarrow/\uparrow$ and $\odot \leftarrow/\rightarrow$ buttons to select "OPTION", and press the MENU button again.

3 Press the \downarrow/\uparrow buttons to select "A (LANGUAGE)", then press the \leftarrow/\rightarrow buttons to select the desired language.



- ENG: English
- FRA: French
- DEU: German
- ESP: Spanish
- ITA: Italian
- NLD: Dutch
- SWE: Swedish
- RUS: Russian
- JPN: Japanese

US

To close the menu

Press the MENU button once to return to the main menu, and twice to return to normal viewing. If no buttons are pressed, the menu closes automatically after about 10 seconds.

To reset to English

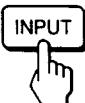
Press the RESET button while "A (LANGUAGE)" is highlighted in the OPTION menu.

Selecting the input signal

You can connect two computers to this monitor using the Front and Rear Video Input connectors. Switch between the two computers using the INPUT button.

Press the INPUT button.

The input signal and corresponding on-screen messages (FRONT INPUT/REAR INPUT) change each time you press this button.



Automatically sizing and centering the picture

You can easily adjust the picture to fill the screen by pressing the ASC (auto sizing and centering) button.

Press the ASC button.

The picture automatically fills the screen.



Note

- This function is intended for use with a computer running Windows or similar graphic user interface software that provides a full-screen picture. It may not work properly if the background color is dark or if the input picture does not fill the screen to the edges (such as an MS-DOS prompt).

Selecting the Graphic Picture Enhancement (GPE) Mode

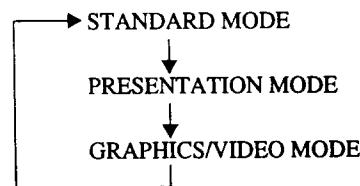
The Graphic Picture Enhancement (GPE) button allows you to automatically change the characteristics of the picture on the screen to match the way you use your monitor. Simply press the GPE button to scroll between the three modes.

1 Turn on the monitor and computer.

2 Press the GPE button to set the mode.



Each time you press the GPE button, the mode changes and appears on the screen as follows.



The STANDARD MODE is ideal for spreadsheets, word processing, and other text oriented applications.

The PRESENTATION MODE is useful for presentation programs that require vivid colors.

The GRAPHICS/VIDEO MODE gives movies and games enhanced visual appeal by increasing the sharpness and brightness.

The selected mode indication appears on the screen for about three seconds.

If the screen appears too white, adjust the color temperature as explained in "Adjusting the color of the picture (COLOR)" on page 11.

Note

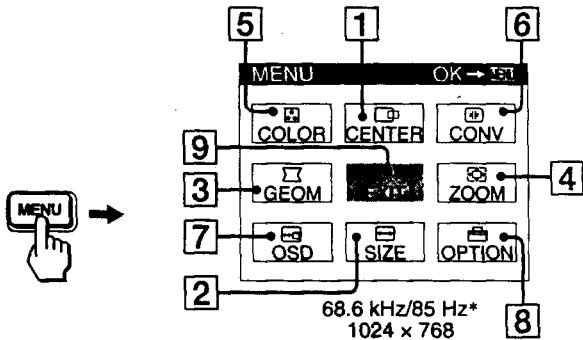
- The PRESENTATION MODE and GRAPHICS/VIDEO MODE may produce ghost images when displaying text oriented applications. These modes change the brightness of the picture dynamically according to changes in moving pictures. If ghost images appear, set the GPE to STANDARD MODE.

Customizing Your Monitor

You can make numerous adjustments to your monitor using the on-screen menus.

Navigating the menu

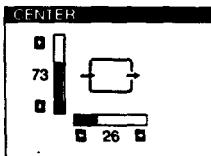
Press the MENU button to display the main MENU on your screen.



Use the (brightness) \downarrow/\uparrow or (contrast) \leftarrow/\rightarrow buttons to select the desired function.

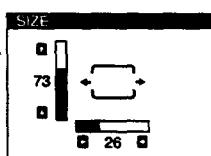
1 CENTER (page 10)

Select the CENTER menu to adjust the picture's centering.



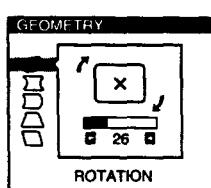
2 SIZE (page 10)

Select the SIZE menu to adjust the picture's horizontal and vertical size.



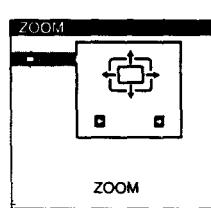
3 GEOM (page 10)

Select the GEOM menu to adjust the picture's rotation and shape.



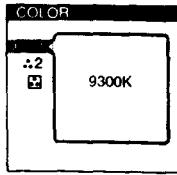
4 ZOOM (page 10)

Select the ZOOM menu to enlarge or reduce the picture.



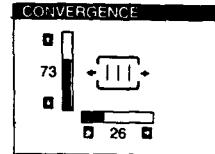
5 COLOR (page 11)

Select the COLOR menu to adjust the picture's color temperature. You can use this to match the monitor's colors to a printed picture's colors.



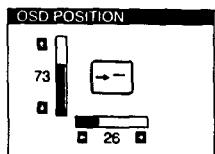
6 CONV (page 11)

Select the CONV menu to adjust the picture's quality. You can adjust the vertical and horizontal convergence.



7 OSD (page 11)

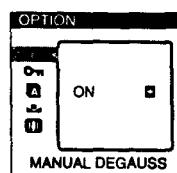
Select the OSD menu to move the on-screen menu position.



8 OPTION (page 11)

Select the OPTION menu to adjust the monitor's options. The options include:

- degaussing the monitor
- locking the controls
- changing the OSD language
- restoring the color image (Image Restoration)
- adjusting the moire



US

9 EXIT

Select EXIT to close the menu.

* The horizontal and vertical frequencies of the current input signal are displayed below the main MENU. When receiving a VESA input signal, the resolution is also displayed.

■ Resetting the adjustments

Press the RESET button while the adjustment item is displayed on the screen. See page 12 for more information on resetting the adjustments.



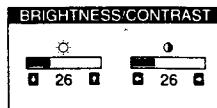
Adjusting the brightness and contrast

Brightness and contrast settings are made using a separate BRIGHTNESS/CONTRAST menu.

These settings are stored in memory for all input signals.

- 1 Press any of the  (brightness) \downarrow/\uparrow or  (contrast) \leftarrow/\rightarrow buttons.

The BRIGHTNESS/CONTRAST menu appears on the screen.



- 2 Press the  \downarrow/\uparrow buttons to adjust the brightness, and the  \leftarrow/\rightarrow buttons to adjust the contrast.

The OSD automatically disappears after about 3 seconds.

Adjusting the centering of the picture (CENTER)

This setting is stored in memory for the current input signal.

- 1 Press the MENU button.

The main MENU appears on the screen.

- 2 Press the  \downarrow/\uparrow buttons to highlight  CENTER and press the MENU button again.

The CENTER menu appears on the screen.

- 3 Press the  \downarrow/\uparrow buttons to adjust the vertical centering, and the  \leftarrow/\rightarrow buttons to adjust the horizontal centering.

The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

Adjusting the size of the picture (SIZE)

This setting is stored in memory for the current input signal.

- 1 Press the MENU button.

The main MENU appears on the screen.

- 2 Press the  \downarrow/\uparrow buttons to highlight  SIZE and press the MENU button again.

The SIZE menu appears on the screen.

- 3 Press the  \downarrow/\uparrow buttons to adjust the vertical size, and the  \leftarrow/\rightarrow buttons to adjust the horizontal size.

The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

Adjusting the shape of the picture (GEOM)

The GEOMETRY settings allow you to adjust the rotation and shape of the picture.

The rotation setting is stored in memory for all input signals. All other settings are stored in memory for the current input signal.

- 1 Press the MENU button.

The main MENU appears on the screen.

- 2 Press the  \leftarrow/\rightarrow buttons to highlight  GEOM and press the MENU button again.

The GEOMETRY menu appears on the screen.

- 3 First press the  \downarrow/\uparrow buttons to select the desired adjustment item. Then press the  \leftarrow/\rightarrow buttons to adjust the setting.

The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

Select	To
<input type="checkbox"/> ROTATION	rotate the picture
<input checked="" type="checkbox"/> PINCUSHION	expand or contract the picture sides
<input type="checkbox"/> PIN BALANCE	shift the picture sides to the left or right
<input type="checkbox"/> KEYSTONE	adjust the picture width at the top of the screen
<input type="checkbox"/> KEY BALANCE	shift the picture to the left or right at the top of the screen

Enlarging or reducing the picture (ZOOM)

This setting is stored in memory for the current input signal.

- 1 Press the MENU button.

The main MENU appears on the screen.

- 2 Press the  \leftarrow/\rightarrow buttons to highlight  ZOOM and press the MENU button again.

The ZOOM menu appears on the screen.

- 3 Press the right  button to enlarge the picture or the left  button to reduce the picture.

The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

Note

- Adjustment stops when either the horizontal or vertical size reaches its maximum or minimum value.

Adjusting the color of the picture (COLOR)

The COLOR settings allow you to adjust the picture's color temperature by changing the color level of the white color field. Colors appear reddish if the temperature is low, and bluish if the temperature is high. This adjustment is useful for matching the monitor's colors to a printed picture's colors.

This setting is stored in memory for all input signals.

1 Press the MENU button.

The main MENU appears on the screen.

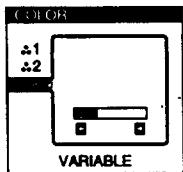
2 Press the $\odot \downarrow/\uparrow$ and $\odot \leftarrow/\rightarrow$ buttons to highlight COLOR and press the MENU button again.

The COLOR menu appears on the screen.

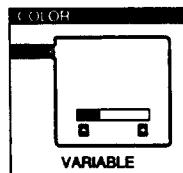
3 Press the $\odot \downarrow/\uparrow$ buttons to select a color temperature.

The preset color temperatures are $\odot 1$ (9300K) and $\odot 2$ (5000K). Since the default setting is 9300K, the whites change from a bluish hue to a reddish hue as the temperature is lowered to 5000K.

You can also fine tune the color temperature by selecting  in step 2 above, and using the $\odot \leftarrow/\rightarrow$ buttons to adjust the color temperature manually.



If you are using the Presentation or Graphic/Video mode, the following COLOR OSD appears when " COLOR" is selected.



This OSD allows you to adjust the color temperature between 11,000K to 9,300K.

Press the $\odot \leftarrow/\rightarrow$ buttons to adjust the color temperature.

The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

Adjusting the quality of the picture (CONV)

The CONV settings allow you to adjust the quality of the picture by eliminating red or blue shadows around letters, characters and lines.

Both settings are stored in memory for all input signals.

1 Press the MENU button.

The main MENU appears on the screen.

2 Press the $\odot \downarrow/\uparrow$ and $\odot \leftarrow/\rightarrow$ buttons to highlight CONV and press the MENU button again.

The CONVERGENCE menu appears on the screen.

3 Press the $\odot \leftarrow/\rightarrow$ buttons to adjust the horizontal convergence, or the $\odot \downarrow/\uparrow$ buttons to adjust the vertical convergence.

The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

Adjusting the OSD position (OSD)

This setting is stored in memory for the current input signal.

US

1 Press the MENU button.

The main MENU appears on the screen.

2 Press the $\odot \downarrow/\uparrow$ and $\odot \leftarrow/\rightarrow$ buttons to highlight OSD and press the MENU button again.

The OSD POSITION menu appears on the screen.

3 Press the $\odot \downarrow/\uparrow$ buttons to adjust the vertical position or the $\odot \leftarrow/\rightarrow$ buttons to adjust the horizontal position.

The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

Additional settings (OPTION)

You can manually degauss (demagnetize) the screen, lock the controls, change the OSD language, restore the color image, and cancel the moire.

1 Press the MENU button.

The main MENU appears on the screen.

2 Press the $\odot \downarrow/\uparrow$ and $\odot \leftarrow/\rightarrow$ buttons to highlight OPTION and press the MENU button again.

The OPTION menu appears on the screen.

3 Press the $\odot \downarrow/\uparrow$ buttons to highlight the desired adjustment item.

Adjust the selected item according to the following instructions.

The OSD automatically disappears after about 30 seconds. To close the OSD, press the MENU button again.

Degaussing the monitor

The monitor is automatically degaussed (demagnetized) when the power is turned on.

To manually degauss the monitor, first press the $\odot \downarrow/\uparrow$ buttons to highlight  (MANUAL DEGAUSS). Then press only the right $\odot \rightarrow$ button

The monitor is degaussed for about three seconds. If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result.

Locking the controls

To protect adjustment data by locking the controls, first press the $\odot \downarrow/\uparrow$ buttons to highlight  (CONTROL LOCK). Then press the right $\odot \rightarrow$ button to turn the lock ON.

Only the  (power) switch, EXIT and  (CONTROL LOCK) of the  OPTION menu will operate. If any other items are selected, the  mark appears on the screen.

To cancel the control lock

Repeat the procedure above and set  (CONTROL LOCK) to OFF.

Changing the OSD language

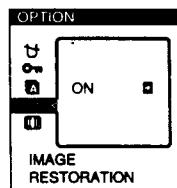
This setting allows you to change the language of the OSD (see page 7).

Restoring the Color Image

The color of most display monitors tend to gradually lose brilliance after several years of service. The Image Restoration feature allows you to restore the color to the original factory preset levels.

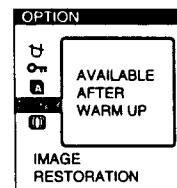
To restore the Image, first press the $\odot \downarrow/\uparrow$ buttons to select  (IMAGE RESTORATION). Then press the right $\odot \rightarrow$ button.

A white rectangle appears in the center of the screen while the image is being restored (about two seconds).



Note

- Before using this feature, the monitor must be in normal operation mode (Green power indicator) for at least 30 minutes. If the monitor goes into power saving mode, you must return the monitor to normal operation mode and wait for 30 minutes for the monitor to be ready. You may need to adjust your computer's power saving settings to help keep the monitor in normal operation mode for the full 30 minutes. If the monitor is not ready, the following message will appear.



- The monitor may gradually lose its ability to perform this function due to the natural aging of the picture tube.

Cancelling the moire

To turn the moire cancellation function on or off, first press the $\odot \downarrow/\uparrow$ buttons to highlight  (CANCEL MOIRE). Then press the $\odot \leftrightarrow$ buttons to turn the moire cancellation ON or OFF.

Adjusting the amount of the moire cancellation

Before you can adjust this setting, the Cancel Moire setting must be turned ON.

To adjust the amount of moire cancellation, first press the $\odot \downarrow/\uparrow$ buttons to highlight  (MOIRE ADJUST). Then press the $\odot \leftrightarrow$ buttons to adjust the amount of moire cancellation until the moire effect is at a minimum.

* Moire is a type of natural interference which produces soft, wavy lines on your screen. It may appear due to interference between the pattern on the picture on the screen and the phosphor pitch pattern of the monitor.

Example of moire



Resetting the adjustments

This monitor has the following four reset methods. Use the RESET button to reset the adjustments.



Resetting a single adjustment item

Navigate through the on-screen menus to select the adjustment item you want to reset, and press the RESET button. You can do this while you are adjusting an item.

Resetting all of the adjustment data for the current input signal

Press the RESET button when no menu is displayed on the screen. Note that the following items are not reset by this method:

- on-screen menu language (page 7)
- on-screen menu position (page 11)
- control lock (page 12)

Resetting all of the adjustment data for all input signals

Press and hold the reset button for more than two seconds when no menu is displayed on the screen. This resets everything to the factory preset mode.

Resetting all of the adjustment data to the factory presets

Press and hold the reset button for more than five seconds. This resets everything to the factory presets including the input selection.

Note

- The RESET button does not function when  (CONTROL LOCK) is set to ON.

Technical Features

Preset and user modes

When the monitor receives an input signal, it automatically matches the signal to one of the 26 factory preset modes stored in the monitor's memory to provide a high quality picture at the center of the screen. (See the Appendix for a list of the factory preset modes.) For input signals that do not match one of the factory preset modes, the digital Multiscan technology of this monitor ensures that a clear picture appears on the screen for any timing in the monitor's frequency range (horizontal: 30–96 kHz, vertical: 48–120 Hz). If the picture is adjusted, the adjustment data is stored as a user mode and automatically recalled whenever the same input signal is received.

Note for Windows users

For Windows users, check your graphic video board manual or the utility program which comes with your graphic video board and select the highest available refresh rate to maximize monitor performance.

Power saving function

This monitor meets the power-saving guidelines set by VESA, ENERGY STAR, and NUTEK. If the monitor is connected to a computer or graphic video board that is DPMS (Display Power Management Signaling) compliant, the monitor will automatically reduce power consumption in three stages as shown below.

Power mode	Power consumption	⊕ (power) Indicator
normal operation	≤ 140 W	green
1 standby	≤ 15 W	green and orange alternate
2 suspend	≤ 15 W	green and orange alternate
3 active off*	≤ 8 W	orange

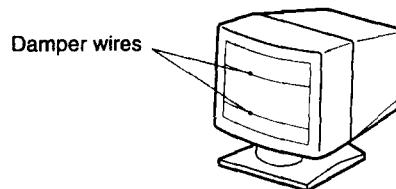
Troubleshooting

This section may help you find the cause of a problem so you can solve the problem yourself.

If thin lines appear on your screen (damper wires)

The lines you may be seeing on your screen are normal for the Trinitron monitor and are not a malfunction. These are shadows from the damper wires that stabilize the aperture grille, and are most noticeable when the screen's background is light (usually white).

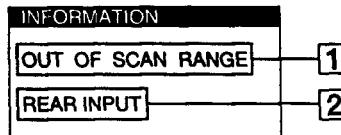
The aperture grille is the essential element that makes a Trinitron picture tube unique by allowing more light to reach the screen, resulting in a brighter, more detailed picture.



US

On-screen messages

If there is something wrong with the input signal, one of the following messages will appear on the screen. To solve the problem, see "Trouble symptoms and remedies" on page 14.



1 The Input signal condition

OUT OF SCAN RANGE

Indicates that the input signal is not supported by the monitor's specifications.

NO INPUT SIGNAL

Indicates that no signal is input, or that no signal is input from the selected connector (Front or Rear).

2 The connector indicator

This message indicates which connector (Front or Rear) is receiving the wrong signal.

Trouble symptoms and remedies

If the problem is caused by the connected computer or other equipment, please refer to the connected equipment's instruction manual. Use the self-diagnosis function (page 16) if the following do not resolve the problem.

Symptom	Check these items
No picture	<p>If the  (power) indicator is not lit</p> <ul style="list-style-type: none"> Check that the power cord is properly connected. Check that the  (power) switch is in the "on" position. <p>If the NO INPUT SIGNAL message appears on the screen, or if the  (power) indicator is either orange or alternating between green and orange</p> <ul style="list-style-type: none"> Check that the video signal cable is properly connected and all plugs are firmly seated in their sockets. Check that the input select setting is correct (page 8). Check that the HD15 video input cable's pins are not bent or pushed in. <p>■Problems caused by the connected computer or other equipment</p> <ul style="list-style-type: none"> The computer is in power saving mode. Try pressing any key on the computer keyboard. Check that the computer's power is "on." Check that the graphic video board is completely seated in the proper bus slot.
If the OUT OF SCAN RANGE message appears on the screen	<p>■Problems caused by the connected computer or other equipment</p> <ul style="list-style-type: none"> Check that the video frequency range is within that specified for the monitor. If you replaced an old monitor with this monitor, reconnect the old monitor and adjust the frequency range to the following: <p>Horizontal: 30–96 kHz Vertical: 48–120 Hz</p>
If no message is displayed and the  (power) indicator is green or flashing orange	<ul style="list-style-type: none"> Use the Self-diagnosis function (page 16).
If using Windows 95/98	<ul style="list-style-type: none"> If you replaced an old monitor with this monitor, reconnect the old monitor and do the following: Install the Windows Monitor Information Disk (page 7) and select "CPD-420GS" from among the Sony monitors in the Windows 95/98 monitor selection screen.
If using a Macintosh system	<ul style="list-style-type: none"> Check that the Macintosh adapter and the video signal cable are properly connected (page 6).
Picture flickers, bounces, oscillates, or is scrambled	<ul style="list-style-type: none"> Isolate and eliminate any potential sources of electric or magnetic fields such as other monitors, laser printers, electric fans, fluorescent lighting and televisions. Move the monitor away from power lines or place a magnetic shield near the monitor. Try plugging the monitor into a different AC outlet, preferably on a different circuit. Try turning the monitor 90° to the left or right.
	<p>■Problems caused by the connected computer or other equipment</p> <ul style="list-style-type: none"> Check your graphic video board manual for the proper monitor setting. Confirm that the graphics mode (VESA, Macintosh 21" Color, etc.) and the frequency of the input signal are supported by this monitor (Appendix). Even if the frequency is within the proper range, some graphic video boards may have a sync pulse that is too narrow for the monitor to sync correctly. Adjust the computer's refresh rate (vertical frequency) to obtain the best possible picture.
Picture is fuzzy	<ul style="list-style-type: none"> Adjust the brightness and contrast (page 10). Degauss the monitor* (page 12). If CANCEL MOIRE is ON, the picture may become fuzzy. Decrease the moire cancellation effect (page 12) or set CANCEL MOIRE to OFF.
Picture is ghosting	<ul style="list-style-type: none"> Eliminate the use of video cable extensions and/or video switch boxes. Check that all plugs are firmly seated in their sockets.
Picture is not centered or sized properly	<ul style="list-style-type: none"> Press the ASC button (page 8). Adjust the size (page 10) or centering (page 10). Note that some video modes do not fill the screen to the edges.

Symptom	Check these items
Edges of the image are curved	<ul style="list-style-type: none"> Adjust the geometry (page 10).
Wavy or elliptical pattern (moire) is visible	<ul style="list-style-type: none"> Cancel the moire (page 12). <p>■Problems caused by the connected computer or other equipment</p> <ul style="list-style-type: none"> Change your desktop pattern.
Color is not uniform	<ul style="list-style-type: none"> Degauss the monitor* (page 12). If you place equipment that generates a magnetic field, such as a speaker, near the monitor, or if you change the direction the monitor faces, color may lose uniformity.
White does not look white	<ul style="list-style-type: none"> Adjust the color temperature (page 11).
Letters and lines show red or blue shadows at the edges	<ul style="list-style-type: none"> Adjust the convergence (page 11).
Monitor buttons do not operate	<ul style="list-style-type: none"> If the control lock is set to ON, set it to OFF (page 12).
Image Restoration does not function	<ul style="list-style-type: none"> Image restoration does not work unless the monitor has been in normal operation (Green power indicator) for at least 30 minutes. See page 12 for detailed information about Image Restoration. In order to keep the monitor "on", you may need to check the PC's power saving setting. The monitor may gradually lose its ability to perform this function due to the natural aging of the picture tube.
A hum is heard right after the power is turned on	<ul style="list-style-type: none"> This is the normal sound of the auto-degauss cycle. When the power is turned on, the monitor is automatically degaussed for three seconds.

* If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result. A humming noise may be heard, but this is not a malfunction.

US

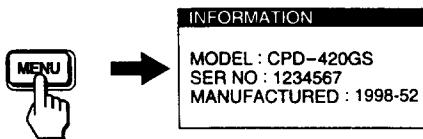
Displaying this monitor's name, serial number, and date of manufacture.

While the monitor is receiving a video signal, press and hold the MENU button for more than three seconds to display this monitor's information box.

If the problem persists, call your authorized Sony dealer and give the following information:

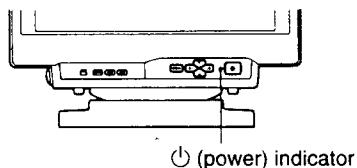
- Model name: CPD-420GS
- Serial number: (see back of monitor)
- Name and specifications of your computer and graphic video board.

Example



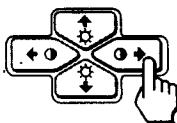
Self-diagnosis function

This monitor is equipped with a self-diagnosis function. If there is a problem with your monitor or computer(s), the screen will go blank and the  (power) indicator will either light up green or flash orange. If the  (power) indicator is lit in orange, the computer is in power saving mode. Try pressing any key on the keyboard.



If the (power) indicator is green

- 1 Remove any plugs from the Front and Rear Video Input connectors, or turn off the connected computer(s).
- 2 Press the  (power) button twice to turn the monitor off and on.
- 3 Press and hold the right  button for two seconds before the monitor enters power saving mode.



If all four color bars appear (white, red, green, blue), the monitor is working properly. Reconnect the video input cables and check the condition of your computer(s).

If the color bars do not appear, there is a potential monitor failure. Inform your authorized Sony dealer of the monitor's condition.

If the (power) indicator is flashing orange

Press the  (power) button twice to turn the monitor off and on.

If the  (power) indicator lights up green, the monitor is working properly.

If the  (power) indicator is still flashing, there is a potential monitor failure. Count the number of seconds between orange flashes of the  (power) indicator and inform your authorized Sony dealer of the monitor's condition. Be sure to note the model name and serial number of your monitor. Also note the manufacturer and model name of your computer and graphic video board.

Specifications

CPD-420GS

CRT	0.25 – 0.27 mm aperture grille pitch 19 inches measured diagonally 90-degree deflection Trinitron
Viewable image size	Approx. 365 x 274 mm (w/h) (14 3/8 x 10 7/8 inches)
Resolution	Horizontal: Max. 1600 dots Vertical: Max. 1200 lines
Standard image area	Approx. 352 x 264 mm (w/h) (13 7/8 x 10 1/2 inches)
Deflection frequency*	Horizontal: 30 to 96 kHz Vertical: 48 to 120 Hz
AC input voltage/current	100 to 240 V, 50–60 Hz, 1.7–1.2 A
Power consumption	Max. 140 W
Dimensions	Approx. 444 x 467 x 455 mm (w/h/d) (17 1/2 x 18 1/2 x 18 inches)
Mass	Approx. 26 kg (57 lb 5 oz)
Plug and Play	DDC/DDC2B, GTF (Front/Rear input) DDC2Bi (Rear input only)
Supplied accessories	See page 6

* Recommended horizontal and vertical timing condition
Horizontal sync width duty should be more than 4.8% of total horizontal time or 0.8 μ s, whichever is larger.
Horizontal blanking width should be more than 2.5 μ sec.
Vertical blanking width should be more than 450 μ sec.

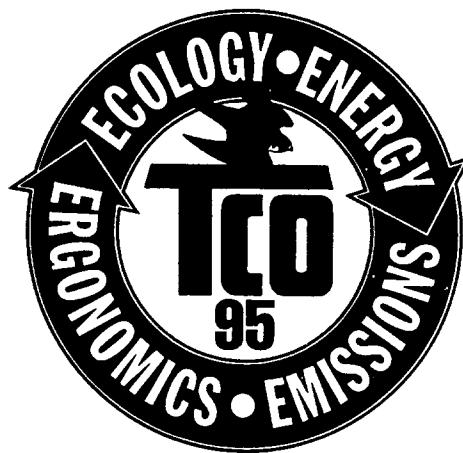
Design and specifications are subject to change without notice.

Appendix

Preset mode timing table

No.	Resolution (dots x lines)	Horizontal Frequency	Vertical Frequency	Graphics Mode
1	640 x 350	31.5 kHz	70 Hz	MCGA
2	640 x 480	31.5 kHz	60 Hz	VGA-G
3	640 x 480	37.5 kHz	75 Hz	EVGA
4	640 x 480	43.3 kHz	85 Hz	VESA
5	720 x 400	31.5 kHz	70 Hz	VGA-Text
6	720 x 400	37.9 kHz	85 Hz	VESA
7	800 x 600	37.9 kHz	60 Hz	SVGA
8	800 x 600	46.9 kHz	75 Hz	ESVGA
9	800 x 600	53.7 kHz	85 Hz	VESA
10	832 x 624	49.7 kHz	75 Hz	Macintosh 16" Color
11	1024 x 768	48.4 kHz	60 Hz	VESA
12	1024 x 768	56.5 kHz	70 Hz	VESA
13	1024 x 768	60.0 kHz	75 Hz	EUVGA
14	1024 x 768	60.2 kHz	75 Hz	Macintosh 19" Color
15	1024 x 768	68.7 kHz	85 Hz	VESA
16	1152 x 864	67.5 kHz	75 Hz	VESA
17	1152 x 870	68.7 kHz	75 Hz	Macintosh 21" Color
18	1280 x 960	60.0 kHz	60 Hz	VESA
19	1280 x 960	85.9 kHz	85 Hz	VESA
20	1280 x 1024	64.0 kHz	60 Hz	VESA
21	1280 x 1024	80.0 kHz	75 Hz	VESA
22	1280 x 1024	91.1 kHz	85 Hz	VESA
23	1600 x 1200	75.0 kHz	60 Hz	VESA
24	1600 x 1200	81.3 kHz	65 Hz	VESA
25	1600 x 1200	87.5 kHz	70 Hz	VESA
26	1600 x 1200	93.8 kHz	75 Hz	VESA

TCO'95 Eco-document



■ Congratulations!

You have just purchased a TCO'95 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also, to the further development of environmentally adapted electronics products.

■ Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during the manufacturing. Since it has not been possible for the majority of electronics equipment to be recycled in a satisfactory way, most of these potentially damaging substances sooner or later enter Nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Since all methods of conventional electricity generation have a negative effect on the environment (acidic and climate-influencing emissions, radioactive waste, etc.), it is vital to conserve energy. Electronics equipment in offices consume an enormous amount of energy since they are often left running continuously.

■ What does labelling involve?

This product meets the requirements for the TCO'95 scheme which provides for international and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Naturskyddsforeningen (The Swedish Society for Nature Conservation) and NUTEK (The National Board for Industrial and Technical Development in Sweden). The requirements cover a wide range of issues: environment, ergonomics, usability, emission of electrical and magnetic fields, energy consumption and electrical and fire safety.

(continued)

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The environmental demands concern restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental plan which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

On this page, you will find a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development Unit

S-114 94 Stockholm

Sweden

Fax: +46 8 782 92 07

Email (Internet): development@tco.se

Current information regarding TCO'95 approved and labelled products may also be obtained via the Internet, using the address:

<http://www.tco-info.com/>

TCO'95 is a co-operative project between TCO (The Swedish Confederation of Professional Employees), Naturskyddsforeningen (The Swedish Society for Nature Conservation) and NUTEK (The National Board for Industrial and Technical Development in Sweden).

■ Environmental Requirements

Brominated flame retardants

Brominated flame retardants are present in printed circuit boards, cables, wires, casings and housings. In turn, they delay the spread of fire. Up to thirty percent of the plastic in a computer casing can consist of flame retardant substances. These are related to another group of environmental toxins, PCBs, which are suspected to give rise to similar harm, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative* processes.

Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

TCO'95 demand requires that plastic components weighing more than 25 grams must not contain organically bound chlorine and bromine.

Lead**

Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning.

TCO'95 requirement permits the inclusion of lead since no replacement has yet been developed.

Cadmium**

Cadmium is present in rechargeable batteries and in the colourgenerating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses.

TCO'95 requirement states that batteries may not contain more than 25 ppm (parts per million) of cadmium. The colourgenerating layers of display screens must not contain any cadmium.

Mercury**

Mercury is sometimes found in batteries, relays and switches. Mercury damages the nervous system and is toxic in high doses. TCO'95 requirement states that batteries may not contain more than 25 ppm (parts per million) of mercury. It also demands that no mercury is present in any of the electrical or electronics components concerned with the display unit.

CFCs (freons)

CFCs (freons) are sometimes used for washing printed circuit boards and in the manufacturing of expanded foam for packaging. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on Earth of ultraviolet light with consequent increased risks of skin cancer (malignant melanoma).

The relevant TCO'95 requirement: Neither CFCs nor HCFCs may be used during the manufacturing of the product or its packaging.

* Bio-accumulative is defined as substances which accumulate within living organisms

** Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.