SONY

4-092-824-**07** (1)

# *Trinitron® Color Video Monitor*



**⚠警告** 電気製品は安全のための注意事項を守らないと、
火災や人身事故になることがあります。

この取扱説明書には、事故を防ぐための重要な注意事項と製品の取り扱いかたを示してあります。この取扱説明書をよくお読みのうえ、製品を安全にお使いください。お読みになったあとは、いつでも見られるところに必ず保管してください。

Trinitron

## PVM-9L3
## PVM-9L2
## PVM-14L2
## PVM-20L2

## Owner's Record

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

Model No. _____
Serial No. _____

## WARNING

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

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

In the event of a malfunction or when maintenance is necessary, consult an authorized Sony dealer.

### For the customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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

### For the customers in Canada

This Class A digital apparatus complies with Canadian ICES-003.

### Pour les utilisateurs au Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

### For the customers in Europe

This product with the CE marking complies with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.
Compliance with these directives implies conformity to the following European standards:

- EN60950: Product Safety
- EN55103-1: Electromagnetic Interference (Emission)
- EN55103-2: Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environment(s):
E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors) and E4 (controlled EMC environment, ex. TV studio).

These products are designed for operation in the environments E1 to E4. During EMC stress, the performance (evaluated according to ITU/R 562-3 and ITU/R 500-4) may degrade as shown in Table 1. Without the EMC stress, all performance will recover to full function.

**Table 1**

| | Frequency | Level |
|---|---|---|
| PVM-14L2<br>(14-inch Monitor) | 210 – 340 MHz/<br>625 – 655 MHz | 3.5 |
| PVM-20L2<br>(20-inch Monitor) | 259 – 346 MHz/<br>385 – 457 MHz | 3.5 |

**ATTENTION – When the product is installed in a rack:**

**a) Elevated operating ambient temperature**
If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacture's maximum rated ambient temperature (Tmra: 0°C to 35°C (32°F to 95°F)).

**b) Reduced air flow**
Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

**c) Mechanical loading**
Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

**d) Circuit overloading**
Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring.
Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

**e) Reliable earthing**
Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

**f) Gap keeping**
Upper and lower gap of rack-mounted equipment should be kept 44 mm ($1\ ^3/_4$ inches).

# Table of Contents



GB English

The explanation given in this manual can be applied to the following models unless noted otherwise.
When the explanation differs among models, this is clearly indicated in this manual.
- PVM-9L3 (9-inch monitor)
- PVM-9L2 (9-inch monitor)
- PVM-14L2 (14-inch monitor)
- PVM-20L2 (20-inch monitor)

Unless indicated otherwise, illustrations of the video monitor are of the PVM-14L2.

# Precaution

## On Safety

- Operate the unit only with a power source as specified in the “Specifications” section.
- A nameplate indicating operating voltage, power consumption, etc., is located on the rear panel.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Do not drop or place heavy objects on the power cord. If the power cord is damaged, turn off the power immediately. It is dangerous to use the unit with a damaged power cord.
- Unplug the unit from the wall outlet if it is not to be used for several days or more.
- Disconnect the power cord from the AC outlet by grasping the plug, not by pulling the cord.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.

## On Installation

- Allow adequate air circulation to prevent internal heat build-up.
  Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

## On Cleaning of the CRT Surface

- Clean the CRT with a soft cloth.
  When the CRT is dirtied with oily hands or fingerprints, clean it with a soft cloth moistened with a mild detergent solution.
- Never use abrasive cleansers, alkaline soap, strong solvents such as alcohol, thinner or benzine, since they will damage the surface.
- Do not rub the surface of the CRT with a solid object or hit it.

## On Cleaning

To keep the unit looking brand-new, periodically clean it with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since they will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

## On Repacking

Do not throw away the carton and packing materials. They make an ideal container which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

## On Mounting on a Rack

Leave 1U space empty above and below the monitor to ensure adequate air circulation or install a fan to maintain the monitor’s performance.

If you have any questions about this unit, contact your authorized Sony dealer.

# Features

### Picture

#### Trinitron[1)] picture tube

Trinitron tube provides a picture whose horizontal resolution is more than 600 TV lines at the center of the picture (for the PVM-14L2/PVM-20L2 only).

#### Comb filter

When NTSC video signals are received, a comb filter is activated to enable more accurate Y/C separation. This contributes to less of a decrease in resolution, and less cross color and cross luminance phenomena.

#### Beam current feedback circuit

The built-in beam current feedback circuit assures stable white balance.

#### Two color systems available

The monitor can display both NTSC and PAL signals. The color system of the input signal is automatically detected.

### Input

#### Analog RGB/component input connectors (for the PVM-14L2/PVM-20L2 only)

Analog RGB or component (Y, $P_B$, $P_R$) signals from video equipment can be input through these connectors. Press the RGB/COMPONENT button on the control panel to monitor the signal.

#### Y/C input connector (S-input connector)

A video signal, split into a luminance component (Y) and a chrominance component (C), can be input through this connector, eliminating the interference between the two components, ensuring picture quality.

1)“Trinitron” is a registered trademark of Sony Corporation.

### Expandable input capability
You can easily expand the input capability by installing an optional board (not supplied) in the option slot on the rear panel. Only one board for expanding the input capability can be installed at a time. If you install two boards, they do not function.

### External sync input
Pressing the EXT SYNC button on the control panel once enables the monitor to operate on a sync signal supplied from an external sync generator.

### Automatic termination (only for connectors with a ⩘ mark)
The input connector is terminated at 75 ohms internally when nothing has been connected to the output connector. If a cable is connected to the output connector, the internal terminal is automatically released and the signals input to the input connector are output to the output connector (loop-through).

## Functions

### Auto chroma phase function
The chroma and phase are automatically adjusted.

### Blue only mode
In the blue only mode, the blue component of an input signal is displayed. This facilitates adjustments of the color saturation and phase, and observation of VCR noise.

### Underscan mode
In the underscan mode, the lines usually scanned outside the normal display area are visible so that you can monitor the entire screen area.

**Note**

When the monitor is in the underscan mode, dark RGB scanning lines appear on the top edge of the screen. These are caused by an internal test signal.

### 16:9 mode
You can precisely monitor a signal whose aspect ratio is 16:9, in addition to a 4:3 signal.

### Auto/manual degaussing
The monitor is automatically degaussed when the power is turned on. You can manually degauss the monitor by pressing the DEGAUSS button.
Using the menu, you can preset a time to degauss automatically after the power has been turned on for a while.

### On-screen menus
You can set color temperature, perform a chroma set up, and make other settings using the on-screen menus.

## Options

### EIA 19-inch rack mount bracket available
The monitor can be mounted on an EIA-standard 19-inch rack, using the following mounting brackets or slide rails.
For the PVM-9L3/PVM-9L2: MB-520
For the PVM-14L2: MB-502B (In Europe, use the MB-502C)
For the PVM-20L2: SLR-103A (In Europe, use the SLR-103C)

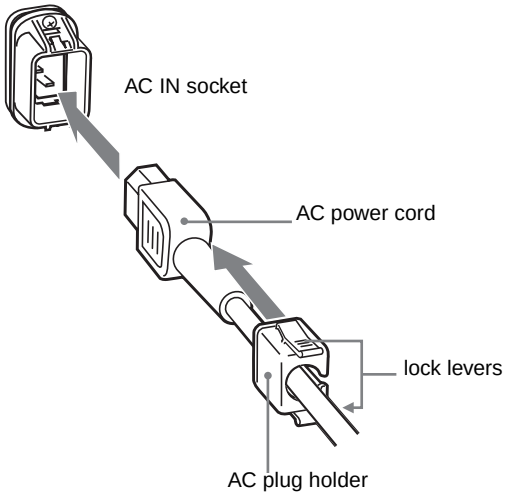
*For details on mounting the monitor on the rack, refer to the user's manual of the mounting bracket or slide rail.*

### Caption Vision (Closed Caption) Decoder available
Installing certain optional parts enables the monitor to decode Closed Caption signals. Using a menu, you can choose whether or not to display captions (subtitles) and can select the style of the caption displayed. For details on these parts, consult your Sony dealer.

# Connections

## How to Connect the AC Power Cord

### To connect the AC power cord
Plug the AC power cord into the AC IN socket. Then, attach the AC plug holder (supplied) to the AC power cord and slide it over the cord until it locks.



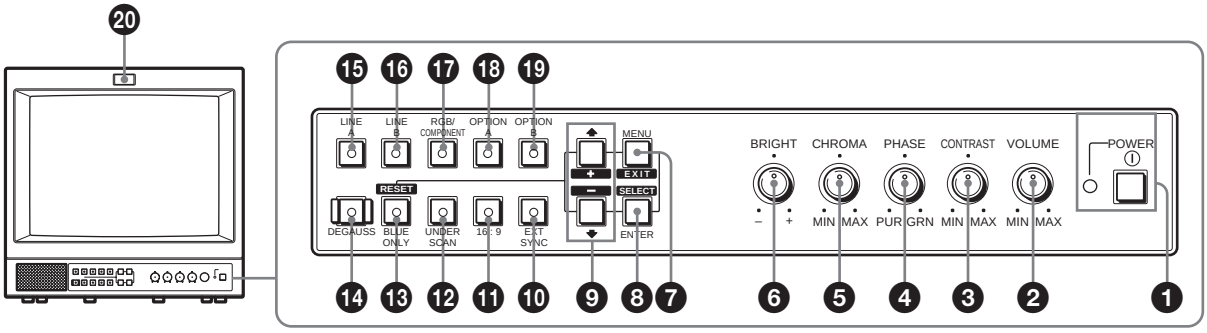

### To remove the AC power cord
Pull out the AC plug holder while pressing the lock levers.

For the PVM-9L3/PVM-9L2, you can use a Sony lithium-ion battery, the BP-L60A/BP-L90A, or a Sony nickel metal hydride battery, the BP-M50/BP-M100.

*For details on installing the battery, see "How to install the battery" on back cover.*

# Location and Function of Parts and Controls

## Control Panel




**❶ POWER ⏻ switch**
Press this switch to turn on the monitor. The lamp will light up. Press this switch again to turn off the monitor.

**❷ VOLUME control**

**❸ CONTRAST control**

**❹ PHASE control**

**Note**

When you use a PAL or component signal, phase cannot be adjusted.

**❺ CHROMA control**

**❻ BRIGHT (brightness) control**

**❼ MENU/EXIT button**
Press this button to show or hide on-screen menus.

**❽ ENTER/SELECT button**
Press this button to confirm an item selected on the menu.

**❾ ↑/+ (move the cursor up/adjust the value) button**
**↓/– (move the cursor down/adjust the value) button**
Press these buttons to move the cursor or adjust an item selected on the menu.

**❿ EXT SYNC (external sync) button and lamp**
Press this button to operate the monitor synchronized with an external sync signal input through the EXT SYNC connector.

**⓫ 16:9 button and lamp**
Press this button to monitor a signal whose aspect ratio is 16:9.

**⓬ UNDERSCAN button and lamp**
Press this button for underscanning.
The display size is reduced by approximately 5% so that the four corners of the picture are visible.

**⓭ BLUE ONLY/RESET button and lamp**
- As the BLUE ONLY button, press this button to eliminate the red and green component of input signals. Only the blue component of an input signal is displayed on the screen. This facilitates adjustments of chroma and phase, and observation of VCR noise. (Phase adjustment is effective only for NTSC signals.)
- As the RESET button, you can reset the menu item setting to the previous one by pressing this button while the new item is being selected and adjusted.

**⓮ DEGAUSS button and lamp**
Press this button only once. The screen will be demagnetized. Wait for 10 minutes or more before using this button again.

**Note**

The DEGAUSS button is disabled when the screen menu is being displayed.
To manually degauss the monitor, first, exit the screen menu by pressing the MENU/EXIT button.

**⓯ LINE A button and lamp**
Press this button to monitor the signal input through the LINE A connectors.

**⓰ LINE B button and lamp**
Press this button to monitor the signal input through the LINE B connectors.

**⓱ RGB/COMPONENT button and lamp (for the PVM-14L2/PVM-20L2 only)**
Press this button to monitor the signal input through the RGB/COMPONENT connectors.

**⓲ OPTION A button and lamp**
This button works when an optional board has been installed in the option slot on the rear panel. Press this button to monitor the video signal input through input 1 of the optional board and the audio signal input through the OPTION AUDIO INPUT 1 jack.

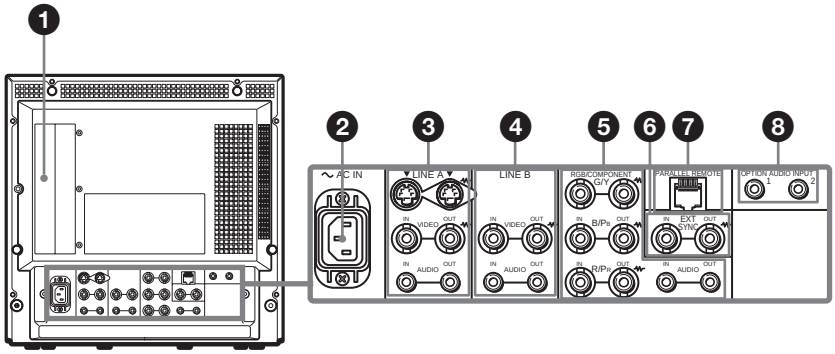
**⓳ OPTION B button and lamp**
This button works when an optional board has been installed in the option slot on the rear panel. Press this button to monitor the video signal input through input 2 of the optional board and the audio signal input through the OPTION AUDIO INPUT 2 jack.
(This button is disabled if BKM-129X or BKM-155DV is used.)

**⓴ Tally lamp**
Lights up when a video camera connected to this monitor is selected. For the tally lamp to function properly, certain cabling is required.

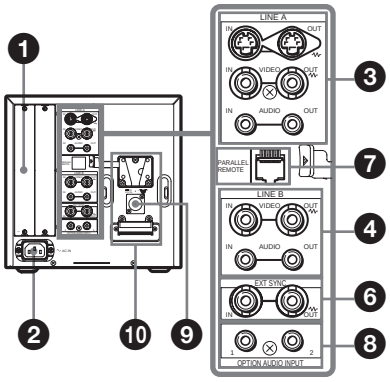
*For details on this cabling, see page 33.*

## Rear Panel

### PVM-14L2/PVM-20L2




### PVM-9L3/PVM-9L2




**❶ Option slot**
You can install one optional board for expanding input capability in this option slot. If you install two boards, they do not function.

*For details on how to install a board, refer to the user's manual supplied with the optional board.*

**❷ AC IN socket**
Connect the supplied AC power cord to this socket and then to a wall outlet.

**❸ LINE A connectors**
Line input connectors for Y/C separate, composite video and audio signals and their loop-through output connectors.
Press the LINE A button on the control panel to monitor the input signal through these connectors.
If you input signals to both Y/C IN and VIDEO IN, the signal input to the Y/C IN is selected.

**Y/C IN/OUT (4-pin mini-DIN)**
These are the input/output connectors for a Y/C separate signal. Connect them to the Y/C separate input/output connectors on equipment such as a VCR, video camera, or another monitor.

**VIDEO IN/OUT (BNC)**
These are the input/output connectors for a composite video signal. Connect them to the composite video input/output connectors on equipment such as a VCR, video camera, or another monitor.

**AUDIO IN/OUT (phono jack)**
These are the input/output jacks for an audio signal. Connect them to the audio input/output jacks on equipment such as a VCR.

**❹ LINE B connectors**
Line input connectors for composite video and audio signals and their loop-through output connectors.
Press the LINE B button on the control panel to monitor the signal input through these connectors.

**VIDEO IN/OUT (BNC)**
These are the input/output connectors for a composite video signal. Connect them to the composite video input/output connectors on equipment such as a VCR, video camera, or another monitor.

**AUDIO IN/OUT (phono jack)**
These are the input/output jacks for an audio signal. Connect them to the audio input/output jacks on equipment such as a VCR.

**❺ RGB/COMPONENT connectors (for the PVM-14L2/PVM-20L2 only)**
Analog RGB signal or component (Y, $P_B$, $P_R$) signal input connectors and their loop-through output connectors.
Press the RGB/COMPONENT button on the control panel to monitor the signal input through these connectors.

**G/Y, B/$P_B$, R/$P_R$ IN/OUT (BNC)**
These are the input/output connectors for an analog RGB and a component (Y, $P_B$, $P_R$) signal. Unless an external sync signal is input, the monitor is synchronized with the sync signal contained in the G/Y signal.

**AUDIO IN/OUT (phono jack)**
When using an analog RGB or a component signal as a video signal, use these jacks for the input/output of an audio signal. Connect them to the audio input/output jacks on equipment such as a VCR.

**❻ EXT SYNC (external sync) connectors**
Press the EXT SYNC button on the control panel to use an external sync signal.

**IN/OUT (BNC)**
These are the input/output connectors for an external sync signal. Input a reference signal generated by a sync generator to the IN connector. Connect the OUT connector to an external sync signal input connector on equipment which you intend to synchronize with this monitor.

**❼ PARALLEL REMOTE terminal (modular connector)**
Forms a parallel switch and controls the monitor externally.

*For details on the pin assignment and factory setting function assigned to each pin, see page 33.*

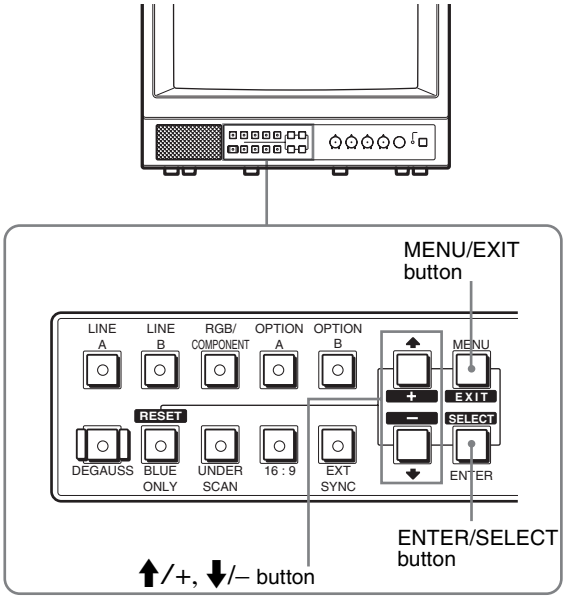
**❽ OPTION AUDIO INPUT 1, 2 input connectors**
If an optional board has been installed in the option slot, input an audio signal into these connectors. You can connect up to 2 systems. To monitor the audio signals input to OPTION AUDIO INPUT 1 or 2, press either the OPTION A or OPTION B button.

**❾ DC 12V IN connector (XLR) (for the PVM-9L3/PVM-9L2 only)**
Plug the DC 12V power supply to this connector to provide power to the monitor.
This product is intended to be supplied by a Listed Power Unit marked “Class 2” and rated 12 V dc, 4.2 A.

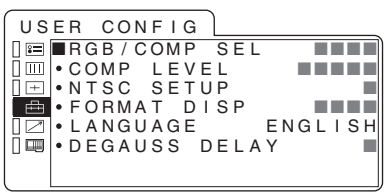
**❿ Battery attachment (for the PVM-9L3/PVM-9L2 only)**
Install the battery here. For the PVM-9L3/PVM-9L2, a Sony lithium-ion battery, the BP-L60A/BP-L90A, or a Sony nickel metal hydride battery, the BP-M50/BP-M100, is applicable.

# Selecting the Menu Language

You can select one of seven languages (English, German, French, Italian, Spanish, Japanese, Chinese) for displaying the menus and other on-screen messages. The factory preset language is ENGLISH (English). The current settings are displayed in place of the ■ marks on the illustrations of the menu screen.

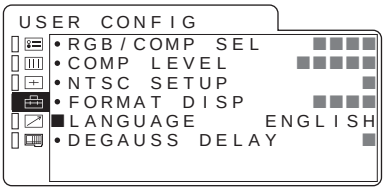



**1** Press the MENU/EXIT button to display the menu screen, and press the ↑/+ or ↓/– button to select (USER CONFIG), then press the ENTER/SELECT button.
The USER CONFIG menu appears.




**2** Press the ↑/+ or ↓/– button to select “LANGUAGE,” then press the ENTER/SELECT button.

The selected item is displayed in yellow.




**3** Press the ↑/+ or ↓/– button to select the desired language, then press the ENTER/SELECT button.
The on-screen language changes to the language you have selected.

### To clear the menu

Press the MENU/EXIT button.
The menu disappears automatically if a button is not pressed within one minute.

# Using the Menu

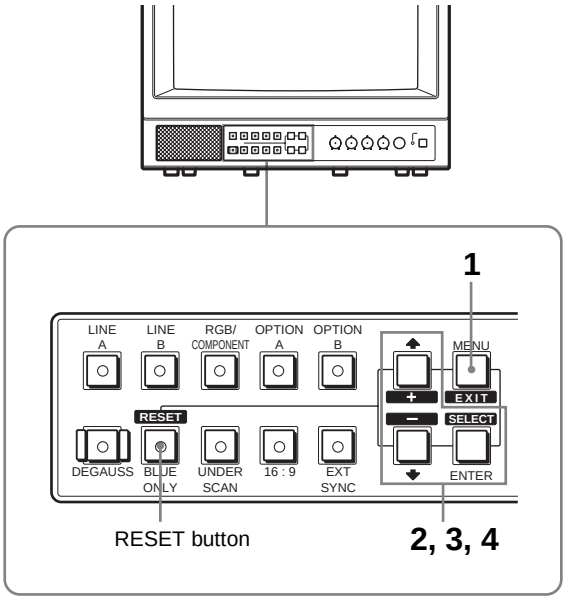
The monitor is equipped with an on-screen menu for making various adjustments and settings such as picture control, input setting, set setting change, etc.
Follow the instructions below to make adjustments or to change settings.

*For details on the menu items, see "Adjustment Using the Menus" on page 28.*

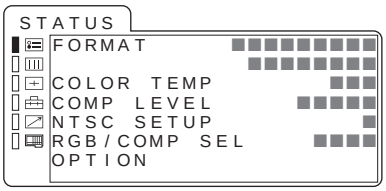
You can also change the menu language displayed in the on-screen menu.

*To change the menu language, see "Selecting the Menu Language" on page 26.*

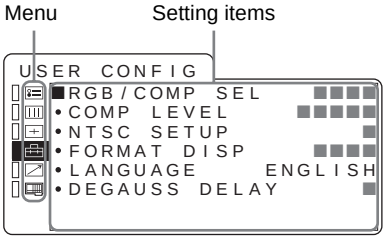
The current settings are displayed in place of the ■ marks on the illustrations of the menu screen.




**1** Press the MENU/EXIT button.
The menu appears.
The menu presently selected is indicated by a yellow button.




**2** Press the ↑/+ or ↓/– button to select a menu, then press the ENTER/SELECT button.
The menu icon presently selected is shown in yellow and the available setting items are displayed.




**3** Use the ↑/+ or ↓/– button to select the desired item, then press the ENTER/SELECT button.
The item to be changed is displayed in yellow.

**Note**

If the menu consists of multiple pages, press the ↑/+ or ↓/– button to go to the desired menu page.

**4** Make the setting or adjustment in an item.

When changing the adjustment level:
To increase the number, press the ↑/+ button.
To decrease the number, press the ↓/– button.
Press the ENTER/SELECT button to confirm the number, then restore the original screen.

When changing the setting:
Press the ↑/+ or ↓/– button to change the setting.
Press the ENTER/SELECT button to confirm the setting.

**Note**

An item displayed in blue cannot be accessed. You can access the item if it is displayed in white.

### To clear the menu

Press the MENU/EXIT button.
The menu disappears automatically if a button is not pressed within one minute.

### About retaining the settings

The settings are automatically stored in the monitor memory.

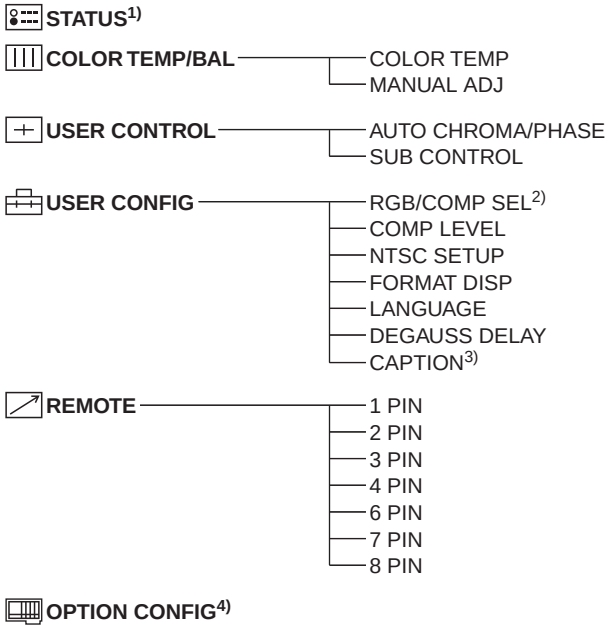
### To reset items being adjusted

Press the RESET button while the new menu item is being selected and adjusted. Any changes to this new item setting is ignored and the item is reset to the previous setting.

# Adjustment Using the Menus

## Items

The screen menu of this monitor consists of the following items.




1) The items on the STATUS menu indicate the current settings.
2) for the PVM-14L2/PVM-20L2 only
3) CAPTION is available only when the Caption Vision (Closed Caption) Decoder has been installed.
4)The items on the OPTION CONFIG menu differ depending on the optional board installed.

## Adjusting and Changing the Settings

### STATUS menu

The STATUS menu is used to display the current status of the monitor.

| Submenu | Setting |
|---|---|
| FORMAT | Display only |
| COLOR TEMP | Display only |
| COMP LEVEL | Display only |
| NTSC SETUP | Display only |
| RGB/COMP SEL | Display only (for the PVM-14L2/ PVM-20L2 only) |
| OPTION | Display only |

### COLOR TEMP/BAL menu

The COLOR TEMP/BAL menu is used for adjusting the picture white balance.
You need to use a measurement instrument to adjust the white balance.

| Submenu | Setting |
|---|---|
| COLOR TEMP | Select the color temperature from among D65, D93 and USER setting. |
| MANUAL ADJ | If you set COLOR TEMP to USER, the item displayed is changed from blue to white, which means you can adjust the color temperature.<br>• **ADJUST GAIN...**: Adjusts the color balance (GAIN).<br>• **ADJUST BIAS...**: Adjusts the color balance (BIAS).<br>• **COPY FROM**: If you select D65 or D93 with the ↑/+ or ↓/– button, the white balance data of the selected color temperature will be copied to USER. |

## USER CONTROL menu

The USER CONTROL menu is used for adjusting the picture.
Items that cannot be adjusted depending on the input signal are displayed in blue.

| Submenu | Setting |
|---|---|
| AUTO CHROMA/ PHASE | Adjusts color intensity (CHROMA) and tones (PHASE).<br>• **AUTO ADJ VALUE**: Chooses the values to be applied to the chroma and phase from auto adjustment or factory settings.<br>ON: auto adjustment values<br>OFF: factory preset values<br>• **START**: Displays the color bar signals (Full/SMPTE/EIA) on the screen. To select one, press ENTER/SELECT button. The auto adjustment function starts. After the adjustment has been done correctly, AUTO ADJ VALUE is automatically set to ON. Press the MENU/ EXIT button to exit the adjustment screen.<br>**Note**<br>If you have selected full color bars, be sure to enter eight color bars. |
| SUB CONTROL | You can finely adjust the adjustment range of the following controls on the control panel; the CONTRAST, PHASE, CHROMA and BRIGHT controls.<br>• **ADJUST...**: adjusts the following items.<br>CONTRAST...: Adjusts the picture contrast.<br>BRIGHT...: Adjusts the picture brightness.<br>CHROMA...: Adjusts the color intensity. The higher the setting, the greater the intensity.<br>The lower the setting, the lower the intensity.<br>PHASE...: Adjusts color tones. The higher the setting, the more greenish the picture becomes.<br>The lower the setting, the more purplish the picture becomes.<br>APERTURE...: Adjusts the picture sharpness. The higher the setting, the sharper the picture. |

## USER CONFIG menu

The USER CONFIG menu is used to select a language for the menus and the on-screen messages or to determine the type of video signal acceptable on the RGB/ COMPONENT connectors (Analog RGB or component).

| Submenu | Setting |
|---|---|
| RGB/COMP SEL (for the PVM-14L2/ PVM-20L2 only) | According to the type of video signal which you intend to input to the RGB/COMPONENT connectors, choose between RGB and COMPONENT. |
| COMP LEVEL | Select the component level from among three modes.<br>SMPTE: 100/0/100/0 signal<br>BETA 7.5: 100/7.5/75/7.5 signal<br>BETA 0: 100/0/75/0 signal |
| NTSC SETUP | Select the NTSC setup level from two modes.<br>The 7.5 setup level is used mainly in North America. The 0 setup level is used mainly in Japan. |
| FORMAT DISP | Determines whether the format of a input signal is displayed on the screen or not.<br>ON: The format is always displayed.<br>OFF: The format is always hidden.<br>AUTO: The format is displayed for about 10 seconds when the input of the signal begins. |
| LANGUAGE | You can select the desired language for the menus or messages from the following language options.<br>日本語: Japanese<br>ENGLISH: English<br>DEUTSCH: German<br>FRANÇAIS: French<br>ITALIANO: Italian<br>ESPAÑOL: Spanish<br>中文: Chinese |
| DEGAUSS DELAY | Sets the delay time for auto degaussing to start working after the power is turned on. The delay time can be set within 0 to 99 seconds. |
| CAPTION (available only when the Caption Vision (Closed Caption) Decoder has been installed.) | Selects the caption display mode from among the following options:<br>OFF, CAPTION 1, CAPTION 2, TEXT 1 and TEXT 2. |

### REMOTE menu

The REMOTE menu is used to assign the functions to the pins of the PARALLEL REMOTE terminal.
Pin 1 to 4 and pin 6 to 8 can be used. The following lists the functions you can assign to the pins.

- – – (No function is assigned.)
- LINE A
- LINE B
- RGB/COMP (for the PVM-14L2/PVM-20L2 only)
- OPTION A
- OPTION B
- TALLY
- UNDERSCAN
- 16:9
- EXT SYNC
- BLUE ONLY
- DEGAUSS

**Note**

If you use the parallel remote function, you need to connect cables.

*For more details, see page 33.*

### OPTION CONFIG menu

The OPTION CONFIG menu is used to set the optional board installed in the option slot on the rear panel. Depending on the board installed, the screen displayed may differ. If no board is installed, the item settings are not displayed. After assigning the input signal, be sure to adjust the monitor's AUTO CHROMA/PHASE.

#### When installing the BKM-150CP optional board:

| Submenu | Setting |
|---|---|
| FORMAT | Sets the signal type.<br>Select SDTI-CP or D1-SDI. |
| AUDIO | Selects an audio channel.<br>**D1-SDI**<br>Select from among CH1+CH2 through CH15+CH16, or CH1 through CH16.<br>**SDTI-CP**<br>Select from among CH1+CH2 through CH7+CH8, or CH1 through CH8.<br>The audio signal input to the OPTION AUDIO INPUT 1/2 jack is ignored. |
| TIME CODE | Selects the time code display.<br>**D1-SDI**<br>Select VITC, RP188 or OFF.<br>**SDTI-CP**<br>Select VITC, CP-TC1, CP-TC2, ES-TC1, ES-TC2 or OFF. |

The following lists the abbreviations in the menu and their full names:

- CP-TC1: SMPTE 331M System Item USER DATE/TIME STAMP
- CP-TC2: SMPTE 331M System Item CREATION DATE/TIME STAMP
- ES-TC1: SMPTE 328M MPEG ES Editing Information TIME CODE1
- ES-TC2: SMPTE 328M MPEG ES Editing Information TIME CODE2
- RP188: SMPTE RP188 Time Code
- VITC: SMPTE 12M VITC, SMPTE 266M D-VITC

#### When installing the BKM-155DV optional board:

| Submenu | Setting |
|---|---|
| AUDIO | Selects an audio channel.<br>Select from among CH1+CH2, CH3+CH4, CH1/3, CH2/4, CH1/3+CH2/4, or CH1 through CH4.<br>OPTION AUDIO INPUT 1/2 jack is ignored. |

#### When installing the BKM-120D or BKM-129X optional board:

The serial number of the board is displayed on the OPTION CONFIG menu.

If the cooling fan in the BKM-150CP or BKM-155DV is stopped, the screen shows the following message in red "BKM-xxxxx FAN ERROR". In this case, you cannot select Option A or Option B.

# Troubleshooting

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

- **The display is colored green or purple.** → Select the correct input by pressing one of the buttons related to input.
- **The signal input through the RGB/COMPONENT input connectors does not appear on the screen (for the PVM-14L2/PVM-20L2 only).** → Set RGB/COMP SEL on the USER CONFIG menu appropriately according to type of input signal.
- **The BKM-150CP or BKM-155DV has been installed. The error message "BKM-xxxxx FAN ERROR" is displayed and you cannot select Option A or Option B.** → Repair the BKM-xxxxx.

# Specifications

## General

### PVM-9L3/PVM-9L2

CRT: HR Trinitron, P22 luminescent material (PVM-9L3)
Trinitron, P22 luminescent material (PVM-9L2)
Power: AC100 to 240 V, 50/60 Hz
Power consumption:
Maximum 58 W, 0.6 to 0.3 A (when the BKM-150CP optional board has been installed) 12 V DC, 4.2 A, 48 W
Standard: 47 W, 0.5 to 0.25 A (Without optional board) 12 V DC, 3.3 A, 38 W
Peak inrush current:
(1) Power ON, current probe method: 70 A (240 V)
(2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 12 A (230 V)
Dimensions (max.):
Approx. 217 × 218 × 373 mm ($8\ ^5/_8 \times 8\ ^5/_8 \times 14\ ^3/_4$ inches) (w/h/d)
Mass: Approx. 8.0 kg (17 lb 10 oz)

### PVM-14L2

CRT: Trinitron, P22 luminescent material
Power: AC100 to 240 V, 50/60 Hz
Power consumption:
Maximum 85 W, 0.9 to 0.4 A (when the BKM-150CP optional board has been installed)
Standard: 75 W, 0.8 to 0.35 A (Without optional board)
Peak inrush current:
(1) Power ON, current probe method: 53 A (240 V)
(2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 35 A (230 V)
Dimensions (max.):
Approx. 346 × 340 × 430 mm ($13\ ^5/_8 \times 13\ ^1/_2 \times 17$ inches) (w/h/d)
Mass: Approx. 18.0 kg (39 lb 11 oz)

### PVM-20L2

CRT: Trinitron, P22 luminescent material
Power: AC100 to 240 V, 50/60 Hz
Power consumption:
Maximum 108 W, 1.1 to 0.5 A (when the BKM-150CP optional board has been installed)
Standard: 98 W, 1.0 to 0.4 A (Without optional board)
Peak inrush current:
(1) Power ON, current probe method: 53 A (240 V)
(2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 35 A (230 V)
Dimensions (max.):
Approx. 453 × 463 × 529 mm ($17\ ^7/_8 \times 18\ ^1/_4 \times 20\ ^7/_8$ inches) (w/h/d)
Mass: Approx. 33.0 kg (72 lb 12 oz)

## Input/output connectors

### Input

LINE A input connectors
Y/C input 4-pin mini-DIN (1)
VIDEO input
BNC type (1) 1 Vp-p +3 dB –6 dB negative synchronization
AUDIO input
Phono jack (1) –5 dBu 47 kΩ or higher
LINE B input connectors
VIDEO input
BNC type (1) 1 Vp-p +3 dB –6 dB negative synchronization
AUDIO input
Phono jack (1) –5 dBu 47 kΩ or higher
RGB/Component input connectors
BNC type (3) (for the PVM-14L2/PVM-20L2 only)
RGB input 0.7 Vp-p +3 dB –6 dB (Sync On Green, 0.3 Vp-p negative sync.)
Component input
0.7 Vp-p +3 dB –6 dB (75% chrominance standard color bar signal)
AUDIO input
Phono jack (1) –5 dBu 47 kΩ or higher
Externally synchronized input connector
BNC type (1) 0.3 to 8 Vp-p ± bipolarity ternary or negative polarity binary
Optional AUDIO input jacks
Phono jack (2) –5 dBu 47 kΩ or higher

Remote input terminal
Parallel remote
Modular connector 8-pin (1)

**Output**

LINE A output connectors
Y/C output 4-pin mini-DIN (1) Loop-through, with 75 Ω automatic terminal function
VIDEO output
BNC type (1) Loop-through, with 75 Ω automatic terminal function
AUDIO output
Phono jack (1) Loop-through
LINE B output connectors
VIDEO output
BNC type (1) Loop-through, with 75 Ω automatic terminal function
AUDIO output
Phono jack (1) Loop-through
RGB/Component output connectors (for the PVM-14L2/PVM-20L2 only)
RGB/Component output
BNC type (3) Loop-through, with 75 Ω automatic terminal function
AUDIO output
Phono jack (1) Loop-through
Externally synchronized output connector
BNC type (1) Loop-through, with 75 Ω automatic terminal function
Built-in speaker output
0.8 W (monaural)

## Video signal

Frequency response
PVM-9L3/PVM-9L2
50 Hz to 6 MHz (0 dB/–3 dB)
PVM-14L2/PVM-20L2
50 Hz to 10 MHz (0 dB/–3 dB)
Aperture compensation[1)]
OFF: 0 dB
ON: 2 dB to 6 dB

## Picture performance

Normal scan 6% overscan of CRT effective screen area (PVM-9L3/PVM-9L2)
7% overscan of CRT effective screen area (PVM-14L2/PVM-20L2)
Underscan 5% underscan of CRT effective screen area
Linearity PVM-9L3/PVM-9L2
H: 4% or less
V: 4% or less
PVM-14L2
H: 4% or less
V: 4% or less
PVM-20L2
H: 5% or less
V: 5% or less
Color temperature
D65, D93, USER (Adjustable color temperature: 5000 K to 10000 K)
Convergence error
PVM-9L3/PVM-9L2
Center: 0.4 mm (1/32 inch) or less
Peripheral: 0.5 mm (1/32 inch) or less
PVM-14L2
Center: 0.4 mm (1/32 inch) or less
Peripheral: 0.5 mm (1/32 inch) or less
PVM-20L2
Center: 0.5 mm (1/32 inch) or less
Peripheral: 0.7 mm (1/32 inch) or less
Raster size stability
H: 1.0%
V: 1.0%
Resolution (at screen center)
450 TV lines (PVM-9L3)
250 TV lines (PVM-9L2)
600 TV lines (PVM-14L2/PVM-20L2)

## Operating conditions

| | |
|---|---|
| Temperature | 0 °C to 35 °C (32 °F to 95 °F) |
| Humidity | 30% to 85% (no condensation) |
| Pressure | 700 hPa to 1060 hPa |

## Storage and transport conditions

| | |
|---|---|
| Temperature | –10 °C to 40 °C (14 °F to 104 °F) |
| Humidity | 0% to 90% |
| Pressure | 700 hPa to 1060 hPa |

## Accessories supplied

AC power cord (1)
AC plug holder (1)
Operating Instructions (1)

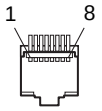
The PVM-9L3/PVM-9L2/PVM-14L2/PVM-20L2 is a Trinitron color video monitor for professional use.

Design and specifications are subject to change without notice.

1) The aperture cannot be compensated for RGB input signals.

## Pin assignment

PARALLEL REMOTE terminal
Modular connector
(8-pin)




| Pin number | Functions |
|---|---|
| 1 | Set input signal LINE A |
| 2 | Set input signal LINE B |
| 3 | Set tally lamp on or off |
| 4 | Select underscan |
| 5 | GND |
| 6 | Set blue only on or off |
| 7 | Select aspect ratio 16:9 |
| 8 | Select external sync |

You can allocate functions using the REMOTE menu.

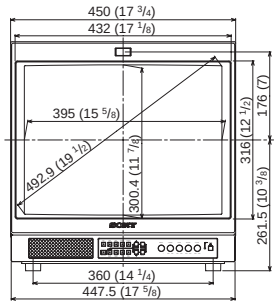
### Wiring required to use the Remote Control

Connect the function you want to use with a Remote Control to the Ground (Pin 5).

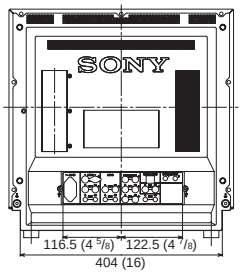
# 寸法図 /Dimensions/Dimensions/Abmessungen/Dimensiones/ Dimensioni/尺寸图

## PVM-20L2

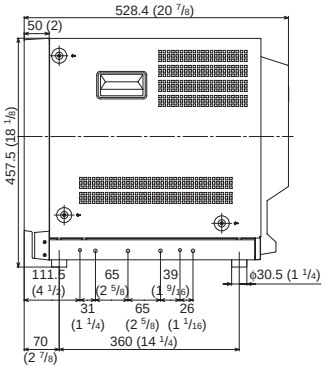
前面
Front
Avant
Vorderseite
Frontal
Anteriore
前面



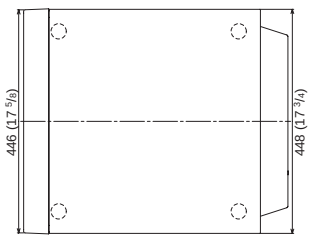

後面
Rear
Arrière
Rückseite
Posterior
Posteriore
后面




側面
Side
Côté
Seitenansicht
Lado
Laterale
側面

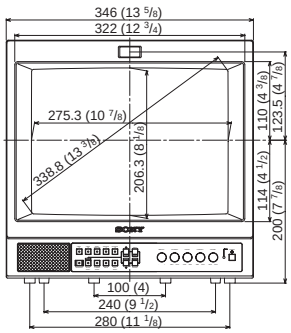



上面
Top
Partie supérieure
Draufsicht
Superior
Superiore
上面

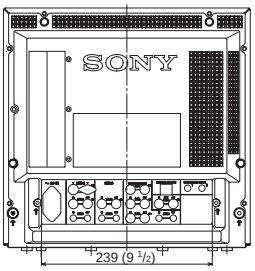



## PVM-14L2

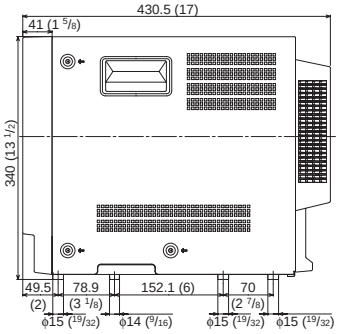
前面
Front
Avant
Vorderseite
Frontal
Anteriore
前面



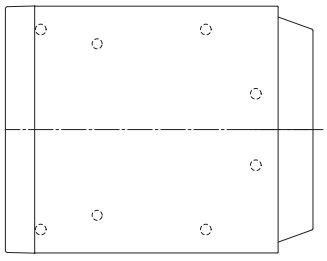

後面
Rear
Arrière
Rückseite
Posterior
Posteriore
后面




側面
Side
Côté
Seitenansicht
Lado
Laterale
側面



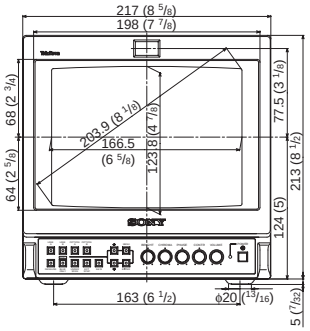

上面
Top
Partie supérieure
Draufsicht
Superior
Superiore
上面



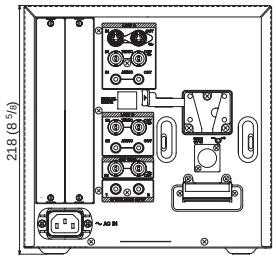
単位：mm（インチ）/ Unit: mm (inches) /
Appareil : mm (pouce) / Einheit: mm (Zoll) /
Unidad: mm (pulgadas) / Unità di misura: mm (pollici) /
单位：mm（英寸）

**PVM-9L3/PVM-9L2**

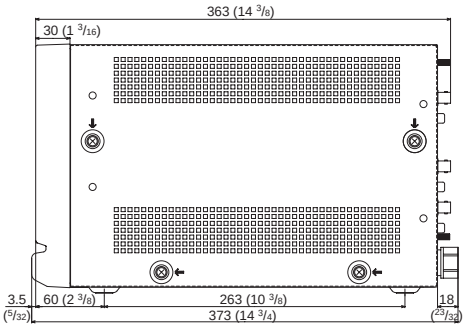
前面
Front
Avant
Vorderseite
Frontal
Anteriore
前面



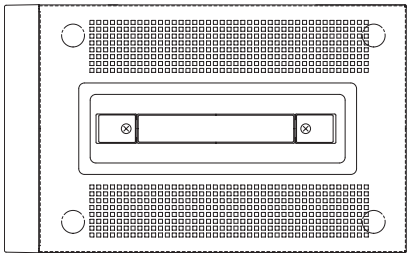

後面
Rear
Arrière
Rückseite
Posterior
Posteriore
后面




側面
Side
Côté
Seitenansicht
Lado
Laterale
側面




上面
Top
Partie
supérieure
Draufsicht
Superior
Superiore
上面

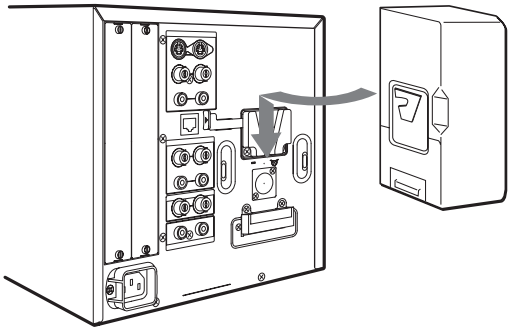


単位：mm（インチ）/ Unit: mm (inches) /
Appareil : mm (pouce) / Einheit: mm (Zoll) /
Unidad: mm (pulgadas) / Unità di misura: mm (pollici) /
単位：mm（英寸）

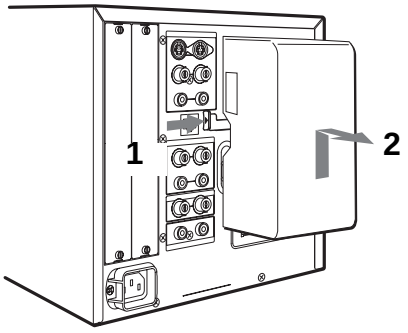
## バッテリーの取り付けかた（PVM-9L3/PVM-9L2 のみ）/ How to install the battery (for the PVM-9L3/PVM-9L2 only) / Comment insérer la batterie (pour le PVM-9L3/PVM-9L2 uniquement) / Anbringen des Akkus (nur für PVM-9L3/PVM-9L2) / Modo de instalación de la batería (sólo para PVM-9L3/PVM-9L2) / Installazione della batteria (solo per PVM-9L3/PVM-9L2) /

如何安装电池（仅限于 PVM-9L3/PVM-9L2）

**取り付けかた** / To install / Insertion / Anbringen / Para introducirla / Per installare / 安装



**取りはずしかた** / To remove / Retrait / Abnehmen / Para extraerla / Per rimuovere / 卸除

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Sony Corporation Printed in Japan

# Section 2
# Set-up Adjustment

## 2-1. Equipment Required

- Oscilloscope
  Tektronix 2465 or equivalent (with bandwidth of 350 MHz)
- NTSC/PAL/SECAM component signal generator
  Tektronix TG2000 +AVG1 (option module) +AWVG2 (option module) or equivalent
- SDI signal generator
  Tektronix TSG-422
- Monoscope signal generator
  ShibaSoku TP22AX or equivalent
- VG (programmable video signal generator)
  VG854 or equivalent
- Frequency counter
  Advantest TR5821AK or equivalent
- Digital VOM
  Advantest TR6845 or equivalent
- Slide induction transformer
- High tension voltmeter
- DC power supply
- Ammeter
- Luminance meter
  Minolta CRT Color Analyzer CA-100 or equivalent. If the Minolta CRT Color Analyzer CA-100 is not available, perform the measurement by visual inspection by comparing the monitor that has already been adjusted earlier with the monitor that you want to adjust.

**Note**

Start the following adjustments 5 minutes after the main power is turned on.

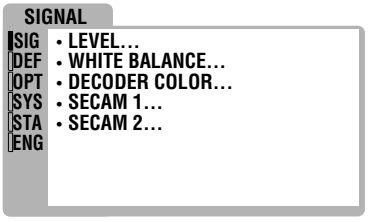
* In this chapter, [ ] indicates the control items in the service mode.
  Example : [60 H-FREQ]

## 2-2. Preparations (1)

### Service Mode

This set is provided with a switch for service on the front panel that can be used to make various adjustments. The operation method of this switch is explained in detail below.

1. Entering the service mode
   Simultaneously press the [ENTER] key and the [DEGAUSS] key shown on the display of the menu.




2. Operating the Service Mode
   Select the desired service item with the [⇧], [⇩] key and press the [ENTER] key to enter the adjustment mode.
   Press the [+] key to increase the adjustment value.
   Press the [−] key to decrease the adjustment value.
   Press the [ENTER] key to save the adjustment value.
   Press the [MENU] key to cancel the entry.
3. Finishing the service mode
   Simultaneously press the [ENTER] key and the [DEGAUSS] key shown on the display of the menu.
4. Easy ON/OFF of the service mode
   If once entering the service mode after having turned on the power, easy ON/OFF is possible by once more pressing the LINE A, LINE B, RGB/COMPONENT, OPTION A or OPTION B switch on the front panel (the LED lights) as long as the power is not turned off or as long as the service mode is not finished.

5. Executing FACTORY LOAD
   If the adjustment data is damaged or lost by some reasons, you can restore the default factory adjustment data by executing FACTORY LOAD as described below.
   Select the following sub menus from the Service Menu in the order of : [SYSTEM] → [FACTORY...] → [LOAD...] to read the default factory data. If the default factory data is damaged or the ROM is replaced without executing FACTORY SAVE as described in the following paragraph, you cannot execute FACTORY LOAD.
6. Executing FACTORY SAVE
   This operation is to write the FACTORY LOAD data into the factory data area in the memory.
   Select the following sub menus from the Service Menu in the order of : [SYSTEM] → [MAINTENANCE ID] and type 111. Then select the following sub menus from the Service Menu in the order of : [ENGINEER] → [FACTORY SAVE] to write the factory data in the memory. FACTORY SAVE is protected from miss operation so that FACTORY SAVE cannot be executed unless MAINTENANCE ID is set.

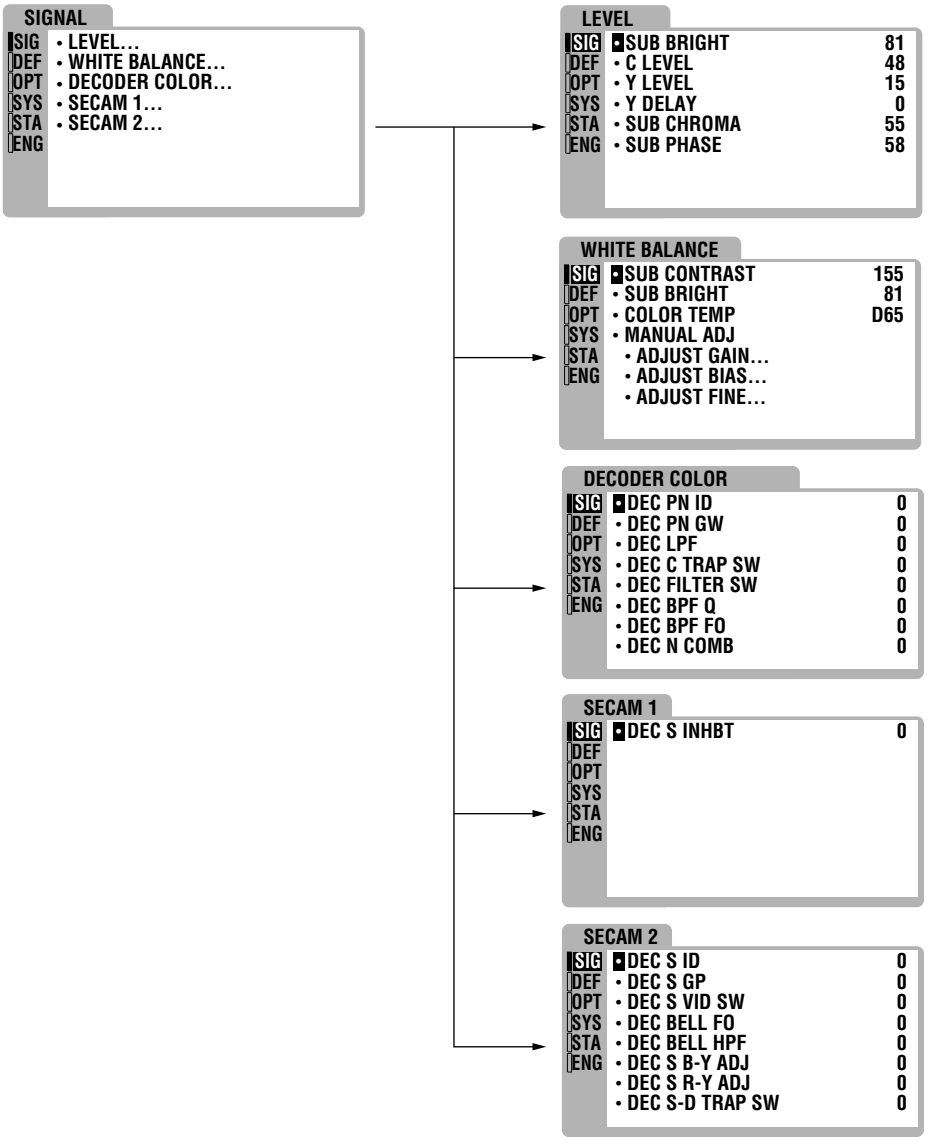
**FACTORY SET**

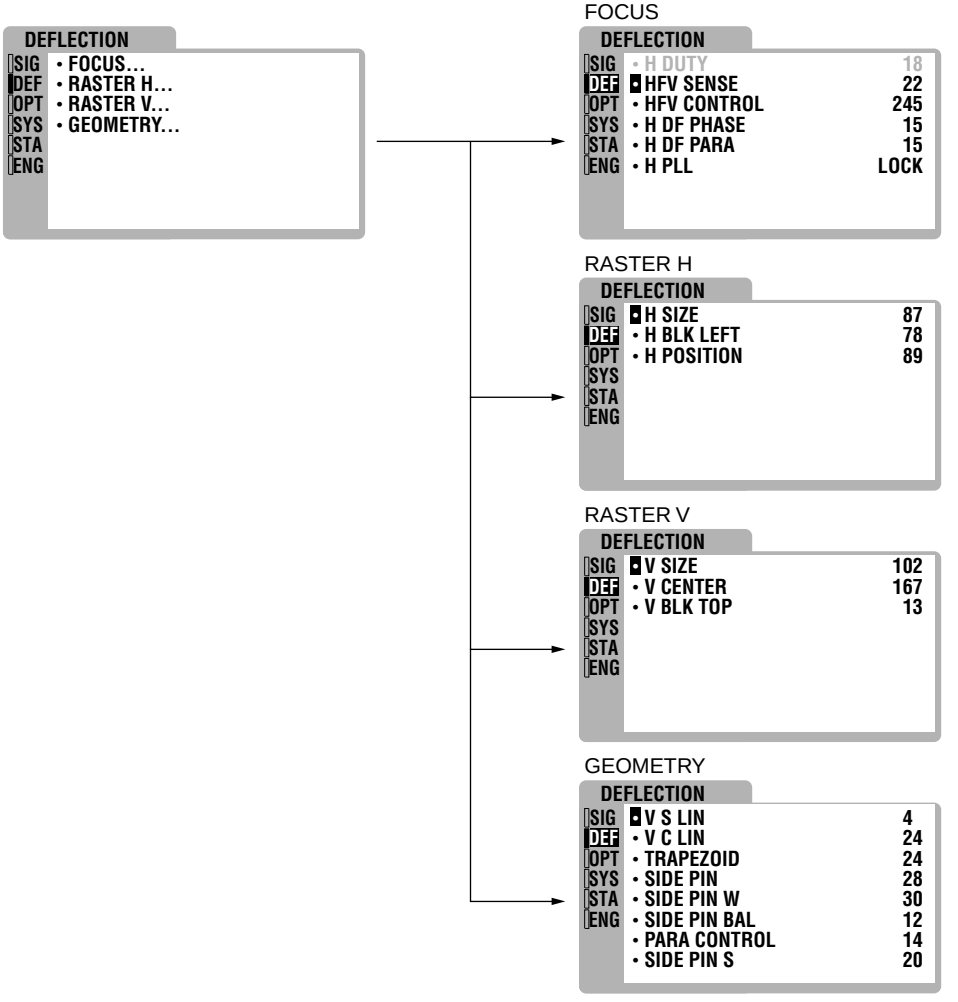
If the following circuit board is replaced or the following NVRAM on the respective board is replaced, perform the following settings.

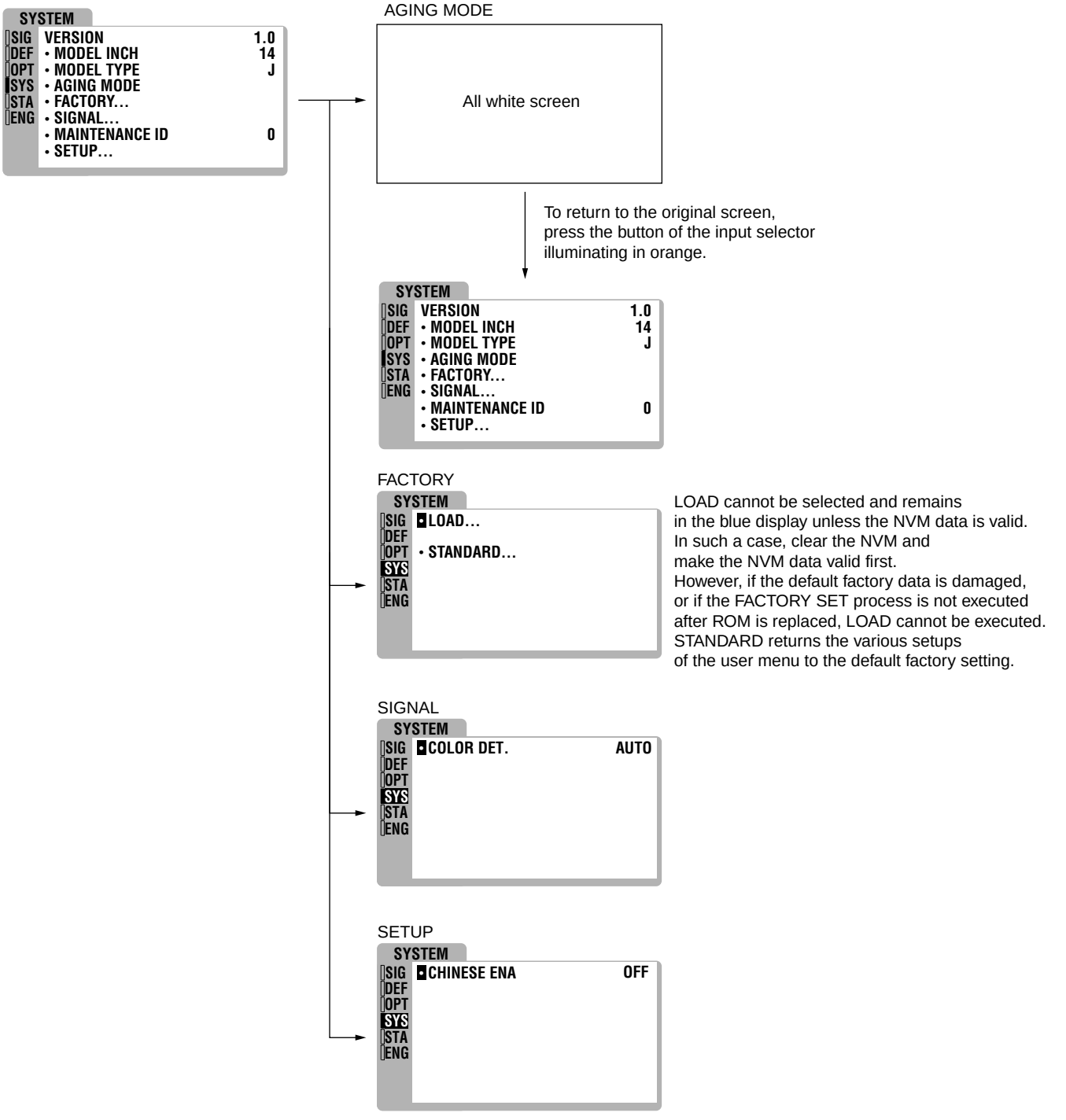
B board : IC450

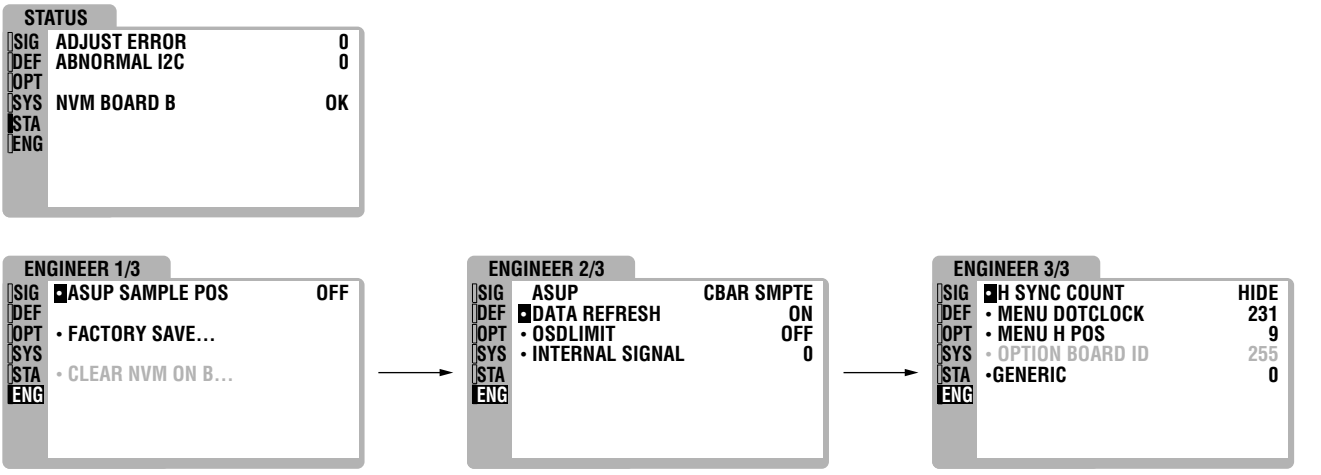
1. Select the following sub menus from the Service Menu in the order of : [SYSTEM] → [MAINTENANCE ID] and type 111.
2. Select the following sub menus from the Service Menu in the order of : [SYSTEM] → [MODEL INCH], [SYSTEM] → [MODEL TYPE] and write the model data of each model in the [MODEL TYPE] referring to table 2-4.
3. If the NVRAM on the B board is replaced, select the following sub menus from the Service Menu : [ENGINEER] → [CLEAR NVM ON B] and write data.
4. If any IC on the B board is replaced, perform all adjustment items of the [SIGNAL] menu and of the [DEFLECTION] menu.
5. Upon completion of adjustment, select the menus [ENGINEER] → [FACTORY SAVE] to save the adjustment data.

## Service Mode screen display

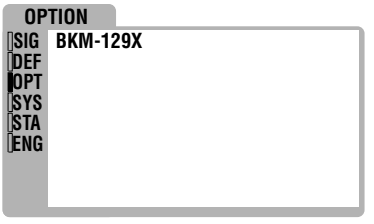



DEFLECTION
SIG
DEF
OPT
SYS
STA
ENG
• FOCUS...
• RASTER H...
• RASTER V...
• GEOMETRY...
FOCUS
DEFLECTION
• H DUTY 18
• HFV SENSE 22
• HFV CONTROL 245
• H DF PHASE 15
• H DF PARA 15
• H PLL LOCK
RASTER H
DEFLECTION
• H SIZE 87
• H BLK LEFT 78
• H POSITION 89
RASTER V
DEFLECTION
• V SIZE 102
• V CENTER 167
• V BLK TOP 13
GEOMETRY
DEFLECTION
• V S LIN 4
• V C LIN 24
• TRAPEZOID 24
• SIDE PIN 28
• SIDE PIN W 30
• SIDE PIN BAL 12
• PARA CONTROL 14
• SIDE PIN S 20

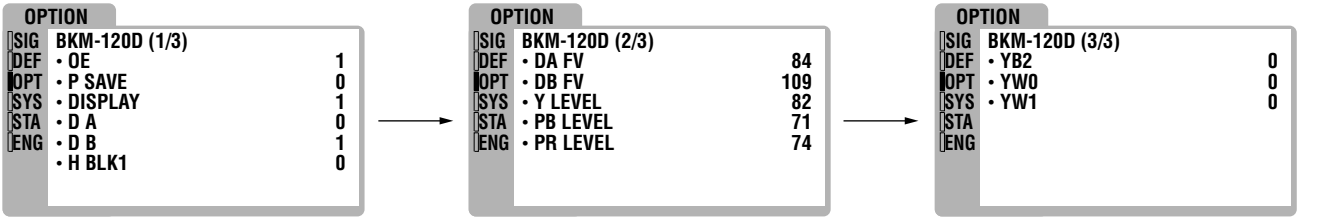

SYSTEM
SIG
DEF
OPT
SYS
STA
ENG
VERSION 1.0
• MODEL INCH 14
• MODEL TYPE J
• AGING MODE
• FACTORY...
• SIGNAL...
• MAINTENANCE ID 0
• SETUP...
AGING MODE
All white screen
To return to the original screen,
press the button of the input selector
illuminating in orange.
SYSTEM
SIG
DEF
OPT
SYS
STA
ENG
VERSION 1.0
• MODEL INCH 14
• MODEL TYPE J
• AGING MODE
• FACTORY...
• SIGNAL...
• MAINTENANCE ID 0
• SETUP...
FACTORY
SYSTEM
SIG
DEF
OPT
SYS
STA
ENG
LOAD...
• STANDARD...
LOAD cannot be selected and remains
in the blue display unless the NVM data is valid.
In such a case, clear the NVM and
make the NVM data valid first.
However, if the default factory data is damaged,
or if the FACTORY SET process is not executed
after ROM is replaced, LOAD cannot be executed.
STANDARD returns the various setups
of the user menu to the default factory setting.
SIGNAL
SYSTEM
SIG
DEF
OPT
SYS
STA
ENG
COLOR DET. AUTO
SETUP
SYSTEM
SIG
DEF
OPT
SYS
STA
ENG
CHINESE ENA OFF




OPTION (BKM-129X)




OPTION (BKM-120D)




OPTION (BKM-150CP)