

# TECHNICAL MANUAL (Ver.1.1A)

**PLASMA DISPLAY : PDP-501MX/PDP-V501X**

**TABLE-TOP STAND: PDK-5001**

**SPEAKER SYSTEM: PDP-S02-LR**

This manual provides precautions and information for installation, preparation, and handling of the plasma display and its dedicated mounting hardware.

Before installation and preparation work, choose a safe and appropriate site after thorough consideration of construction, materials used, strength, and surroundings. If the adequate safeguards are not in place, immediately halt the installation process and discontinue marketing activities.

## CAUTION



Exclamation marks placed within triangles are intended to alert users to the presence of important safety information. Be sure to read instructions indicated by this symbol.

## PRECAUTIONS

- We accept no responsibility for losses resulting from the use of parts other than those supplied by us.
- We guarantee the performance of our products only when they are assembled and adjusted as described in this manual.
- The specifications and external designs shown in this manual are subject to change without notice.

## About Mounting/Installation

- The product is sold under the assumption that installation will be performed by experienced, qualified experts. Refer all mounting and installation work to qualified personnel, or consult the nearest PIONEER dealer for assistance.
- We accept no responsibility for accident or loss resulting from failure to select an appropriate installation site, or for those occurring during assembly, installation, mounting, or operation of this product, or resulting from modifications made to the product, or from natural calamities.

# Pioneer

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### CAUTION

- To prevent injury and material damage, thoroughly read this manual and all labels found on equipment before attempting to mount, install, move, or adjust the product.
- Do not install the unit outside or in open air. Doing so will lead to water seepage into the system, resulting in fire or electric shock.
- Be especially careful when working around parts of the system that have sharp edges.
- When performing installation work from a height, take suitable precautions to guard against falling. Set up a barrier around the work site to prevent accidentally-dropped objects from injuring persons standing or walking below.
- Keep all foreign objects out of the unit. Do not tamper with the unit, or fire or electric shock may result.
- Observe the following operating environmental limitations:
  - Temperature: 0 to 40°C
  - Humidity: 20 to 80%
- Install the unit only in properly ventilated areas.

## Features

---

### Features and Functions of the PDP-501MX Plasma Display

- **High-definition XGA wide panel**

The Display uses a high-definition XGA wide panel, which provides 1280 x 768 resolution with more than 980,000 pixels. This resolution is more than 2.5 times higher than that of conventional panels, and enables multimedia information to be reproduced more vividly and accurately than ever before.

- **Clear, high-quality image**

Provides 8-bit RGB in 256 gradations/16.77 million colors. A new exclusive technology developed by Pioneer eliminates the pseudo-contour anomaly, that is typically observed in plasma displays.

- **Unrivalled brightness**

A brightness of 350 cd/m<sup>2</sup> (white peak, for panel unit), which is the highest so far for XGA panels, has been achieved by maximizing light-emitting efficiency.

- **Flat, lightweight design**

The Pioneer plasma display monitor is also unrivalled in compactness: the 50-inch screen is only 98 mm in depth, and weighs only 43.0 kg. It can therefore be mounted at locations where conventional displays are difficult to install.

- **Supports a variety of signals from computers**

Full specification PC are supported in video modes from VGA (640 x 480 resolution) to XGA (1024 x 762 resolution). The SXGA (1280 x 1024 resolution) mode also accommodates PC signals, although a summary replay approach is employed in this mode. The use of a dedicated video card also allowed access to a display of 1280 x 768 resolution, as well. This monitor also supports HDTV broadcasts\*.

Note:

\* To display HDTV images on this monitor, an HDTV decoder, additionally.

- **Optimized for industrial/public-address use**

- An RS-232C interface is provided for control from the exterior
- The combination terminal enables a single PC to control multiple monitor systems
- The integrator mode enables more precise adjustments than ever before
- A color temperature (white balance) switching function is provided for retakes, and a key-lock feature prevents accidental or unauthorized use of the monitor
- Multiple input and output terminals (four inputs and eight outputs) are provided



# Specifications

## 2.1 Specifications (U.S. Model and Taiwanese Model)

**Light-emitting panel:** ..... 50-inch plasma display panel  
**Aspect ratio:** ..... 16:9  
**PEL:** ..... 1280 x 768 (XGA supported)  
**PEL pitch:** ..... 0.858 (H-RGB trio) x 0.808 (V) mm  
**Gradation:** ..... 256/16.77 million full colours  
**Intensity:** ..... 350 cd/m<sup>2</sup> (white peak, separate panel)  
**Viewing angle:** ..... Horizontal: more than 160 degrees  
Vertical: more than 160 degrees

### Input/output

#### INPUT 1

Connector type: see NOTE 1 and NOTE 2  
RCA jack  
(composite video signal, 1 Vp-p/75Ω input)  
BNC terminal  
(composite video signal, 1 Vp-p/75Ω input)  
Mini-Din, 4-pin/S terminal  
(S2 video signal, Y: 1Vp-p; C: 0.286 Vp-p/75Ω input)  
Output (BNC, under 75Ω output): Yes (see NOTE 3 and NOTE 4)

#### INPUT 2

Connector type:  
RCA jack x 3  
(Y: 1 Vp-p; color difference: 0.7 Vp-p/ 75Ω input)

#### INPUT 3

Connector type:  
BNC terminal x 5  
(GRB: video section 0.7 Vp-p; sync section 0.3 Vp-p/75Ω input) (HD/CS; VD: TTL level/ 75Ω and 2.2 kΩ inputs switchable)

#### INPUT 4

Connector type:  
Mini D-sub, 15-pin (GBR: video section 0.7 Vp-p; sync section 0.3 Vp-p/75Ω input) (HD/CS; VD: TTL level/2.2 kΩ input)  
Output (Mini D-sub, 15-pin; 75Ω output: Yes (see NOTE 4)

\* Microsoft Plug & Play (VESA DDC 1/2B) supported

#### Control Terminal

RS-232C (for control using a PC)  
Connector type: D-sub, 9-pin  
Baud rate: 1200, 2400, 4800, 9600, 19200 bps  
(NOTE 5)

#### Combination In/Out Terminal

For simultaneous control of multiple units  
Connector type: Mini-Din, 6-pin (NOTE 6)

**Power requirements:** .... AC 120 V, 60 Hz (U.S. Model)  
AC 110 V, 60 Hz (Taiwanese Model)

**In-rush:** ..... less than 25A

**Power factor:** ..... more than 0.95

**Consumption:** ..... 555 W (NOTE 7) (3 W in standby)

**External dimensions (WxHxD):** ... 1218 x 714 x 98 mm  
(47-31/32(W) x 28-1/8(H) x 3-7/8(D) inch)

**Weight:** ..... 43.0 kg  
(94 lbs. 130z.)

**Operating temperature:** ..... 0 to 40°C (NOTE 8)  
(32 to 104°F)

**Operating humidity:** ..... 20 to 80%

**Operating atmospheric pressure:** ..... 0.9 to 1.1 atm

### Storage limitations

Temperature: ..... -10 to +45°C  
(14to 113°F)

Humidity: ..... 20 to 80%

Atmospheric pressure: ..... 0.6 to 1.5 atm

Stacking: ..... Fewer than three tiers

### Standard Accessories

Power cord ..... x 1  
AC adapter plug (3p to 2p)  
..... x 1 (Taiwanese Model only)  
RCA/BNC conversion adaptor  
..... x 1 (Taiwanese Model only)  
Remote control unit ..... x 1  
AA battery ..... x 2  
Wipe cloth ..... x 1  
Speed clamp ..... x 2  
Bead band ..... x 2  
Operation manual ..... x 1  
Warranty card ..... x 1

NOTE 1 To prevent malfunctions and breakdowns, avoid connecting the RCA jack and BNC terminal simultaneously, since they are electrically connected to each other inside the body.

NOTE 2 If the RCA jack or the BNC terminal is connected at the same time as the S terminal, signals received at the S terminal receive priority.

NOTE 3 Signals received at the RCA jack or BNC terminal are sent from this terminal. Signals received at the S terminal are not.

NOTE 4 No signal is sent in power-off or standby status.

NOTE 5 Defaults to 4800 bps. This setting can be changed from the remote or from a PC.

NOTE 6 Connection cables are optional and are not supplied as standard equipment. Use commercially-available Mini-Din 6-pin cables (straight).

NOTE 7 Allow for 600 VA of consumption per unit.

NOTE 8 The correct operating environmental temperature may vary, depending on the installation site. (Refer to Section 3: Installation.)

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Specifications and external designs are subject to change without notice.

### Signals supported by INPUT 1

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Remarks
60	15.7	Composite	NTSC
		S video signal	

### Signals supported by INPUT 2

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Remarks
60	15.7	Component	
	31.5	Component	

### Signals supported by INPUT 3/4 (video) —1 of 2

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Remarks
60	15.7	RGB (Note 9)	SDTV 480i
		Component	
	31.5	RGB	SDTV 480p
		Component	
	33.8	RGB	HDTV 1080i
		Component	
	45.0	RGB	HDTV 720p
		Component	

### Signals supported by INPUT 3/4 (PC signals) —2 of 2

Model Name	Dot x line	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
PC/AT compatibles	640 x 400	70.1	31.5
	640 x 480	59.9	31.5
		72.8	37.9
		75	37.5
	800 x 600	56.3	35.2
		60.3	37.9
		72.2	48.1
		75	46.9
	1024 x 768	60	48.4
		70.1	56.5
75		60	
87(Note 11)		35.5(Note 10)	
1280 x 1024	60	64(Note 10)	
Macintosh	640 x 480	66.7	35
	832 x 624	74.6	49.7
	1024 x 768	74.9	60.2
	1152 x 870	75.1	68.7(Note 10)
NEC PC-9800	640 x 400	56.4	24.8
		70.1	31.5
	640 x 480	59.9	31.5
		75	37.5
	800 x 600	60.3	37.9
		75	46.9
	1024 x 768	70.1	56.5
		75	60
1280 x 1024	60	64(Note 10)	

NOTE 9 Can be reproduced depending on settings in integrator mode, but primary quality images are not available.

NOTE 10 Simplified reproduction.

NOTE 11 Interlaced signal (frame frequency of 43.5 Hz)

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Macintosh® is a registered trademark of Apple Computer, Inc.

# Specifications

## 2.1 Specifications (EURO Model)

**Light-emitting panel:** ..... 50-inch plasma display panel  
**Aspect ratio:** ..... 16:9  
**PEL:** ..... 1280 x 768 (XGA supported)  
**PEL pitch:** ..... 0.858 (H)(RGB trio) x 0.808 (V) mm  
**Gradation:** ..... 256/16.77 million full colours  
**Intensity:** ..... 350 cd/m<sup>2</sup> (white peak, separate panel)  
**Viewing angle:** ..... Horizontal 160 degrees or more  
Vertical: 160 degrees or more

### Inputs/outputs

#### INPUT 1

Connector type: NOTE 1 and NOTE 2  
RCA jack  
(composite video signal, 1 Vp-p/75Ω input)  
BNC terminal  
(composite video signal, 1 Vp-p/75Ω input)  
Mini-Din, 4-pin/S terminal  
(S2 video signal, Y: 1Vp-p; C:0.286 Vp-p/75Ω input)  
Output (BNC, 75Ω output): Yes (see NOTE 3 and NOTE 4)

#### INPUT 2

Connector type  
RCA jack x 3  
(Y: 1 Vp-p; color difference: 0.7 Vp-p/ 75Ω input)

#### INPUT 3

Connector type:  
BNC terminal x 5 (GBR:video section 0.7 Vp-p; sync section 0.3 Vp-p/75Ω input) (HD/CS; VD: TTL level/ 75Ω and 2.2 kΩ inputs, switchable)

#### INPUT 4

Connector type:  
Mini D-sub, 15-pin (GBR: video section 0.7 Vp-p; sync section 0.3 Vp-p/75Ω input) (HD/CS; VD: TTL level/2.2 kΩ input)  
Output (Mini D-sub, 15-pin; 75Ω input: Yes (NOTE 4)

\* Microsoft Plug & Play (VESA DDC 1/2B) supported

#### Control Terminal

RS-232C (for control using a PC)  
Connector type: D-sub, 9-pin  
Baud rate: 1200, 2400, 4800, 9600, 19200 bps (NOTE 5)

#### Combination Input/Output Terminal

Used for simultaneous control of multiple units  
Connector type: Mini-Din, 6-pin (NOTE 6)

**Power requirements:** ..... AC 100-240 V, 50/60 Hz

**Electric current:** ..... 5.6 to 2.3 A (NOTE 7)

**In-rush:** ..... less than 25 A

**Power factor:** ..... more than 0.95

**External dimensions (WxHxD):** ... 1218 x 714 x 98 mm  
(47-31/32(W) x 28-1/8(H) x 3-7/8(D) inch)

**Weight:** ..... 43.0 kg  
(94 lbs. 130z.)

**Operating temperature:** ..... 0 to 40°C (NOTE 8)  
(32 to 104°F)

**Operating humidity:** ..... 20 to 80%

**Operating atmospheric pressure:** ..... 0.9 to 1.1 atm

### Storage limitations

Temperature: ..... -10 to +45°C  
(14 to 113°F)

Humidity: ..... 20 to 80%

Atmospheric pressure: ..... 0.6 to 1.5 atm

Stacking: ..... Fewer than three tiers

### Standard accessories

Power cord ..... x 1  
RCA/BNC conversion adaptor ..... x 3  
Remote control unit ..... x 1  
AA battery ..... x 2  
Wipe cloth ..... x 1  
Speed clamp ..... x 2  
Bead band ..... x 2  
Operation manual ..... x 1  
Warranty card ..... x 1



NOTE 1 To prevent malfunctions and breakdowns, avoid connecting the RCA jack and BNC terminal simultaneously, since they are electrically connected to each other inside the body.

NOTE 2 If the RCA jack or the BNC terminal is connected at the same time as the S terminal, signals received at the S terminal receive priority.

NOTE 3 Signals received at the RCA jack or BNC terminal are sent from this terminal. Signals received at the S terminal are not.

NOTE 4 No signal is sent in power-off or standby status.

NOTE 5 Defaults to 4800 bps. This setting can be changed from the remote or from a PC.

NOTE 6 Connection cables are optional and are not supplied as standard equipment. Use commercially available Mini-Din 6-pin cables (straight).

NOTE 7 Allow for 600 VA of consumption per unit.

NOTE 8 The correct operating environmental temperature may vary, depending on the installation site. (Refer to Section 3: Installation.)

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Specifications and external designs are subject to change without notice.

### Signals supported by INPUT 1

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Remarks
50	15.6	Composite	PAL, SECAM
		S video signal	
60	15.7	Composite	NTSC
		S video signal	4.43 NTSC

### Signals supported by INPUT 2

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Remarks
50	15.6	Component	
	31.3	Component	
60	15.7	Component	
	31.5	Component	

### Signals supported by INPUT 3/4 (video) —1 of 2

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Remarks
50	15.6	RGB (Note 9)	
		Component	
	31.3	RGB	
60	15.7	Component	
		RGB	
	31.5	Component	
		RGB	
	33.8	Component	
		RGB	
45.0	Component		
	RGB		

### Signals supported by INPUT 3/4 (PC signals)—2 of 2

Model Name	Dot x line	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
PC/AT compatibles	640 x 400	70.1	31.5
	640 x 480	59.9	31.5
		72.8	37.9
		75	37.5
	800 x 600	56.3	35.2
		60.3	37.9
		72.2	48.1
		75	46.9
	1024 x 768	60	48.4
		70.1	56.5
75		60	
87(Note 11)		35.5(Note 10)	
1280 x 1024	60	64(Note 10)	
Macintosh	640 x 480	66.7	35
	832 x 624	74.6	49.7
	1024 x 768	74.9	60.2
	1152 x 870	75.1	68.7(Note 10)
NEC PC-9800	640 x 400	56.4	24.8
		70.1	31.5
	640 x 480	59.9	31.5
		75	37.5
	800 x 600	60.3	37.9
		75	46.9
	1024 x 768	70.1	56.5
		75	60
1280 x 1024	60	64(Note 10)	

NOTE 9 Can be reproduced depending on settings in integrator mode, but primary quality images are not available.

NOTE 10 Simplified reproduction.

NOTE 11 Interlaced signal (frame frequency of 43.5 Hz)

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# External Dimensions

## 2.2 External Dimensions

Weight: 43.0 kg

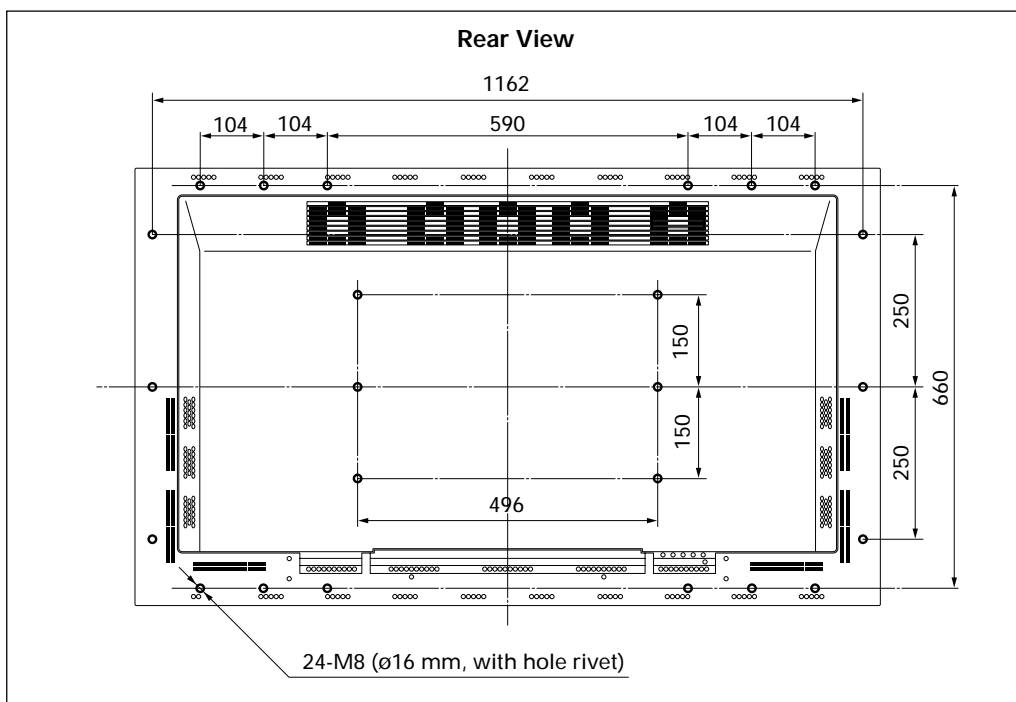
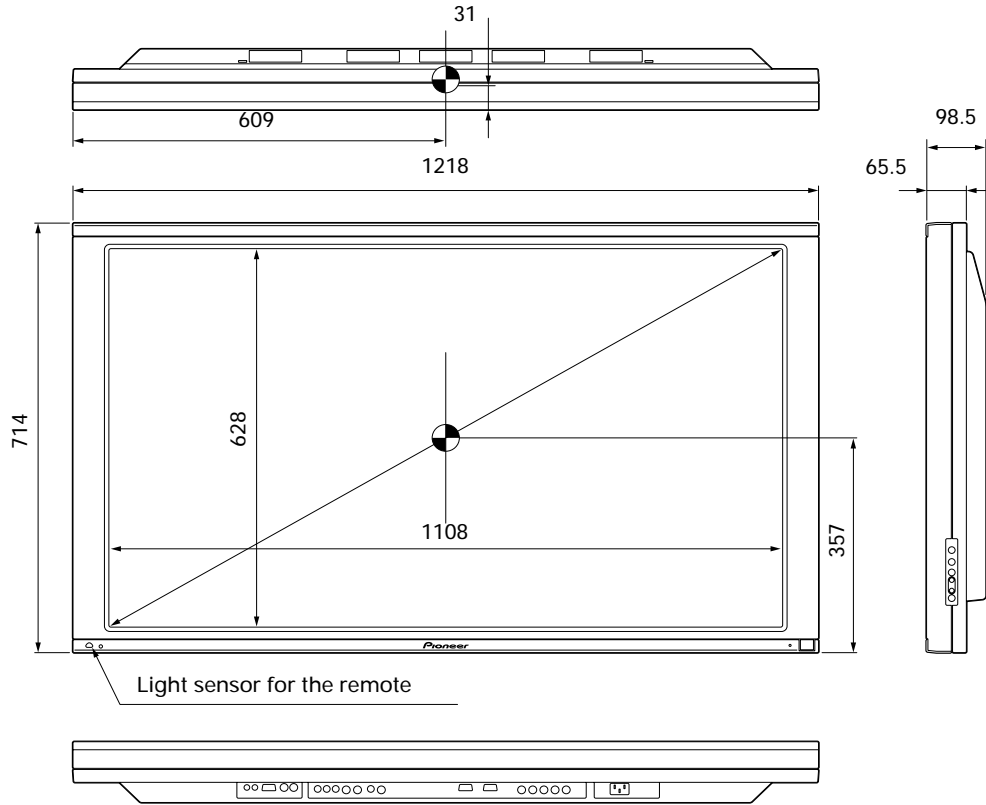
Material: Front: Resin; Rear: Resin

Treatment: Front: Laser-satin gray paint; Rear: Laser-satin gray paint

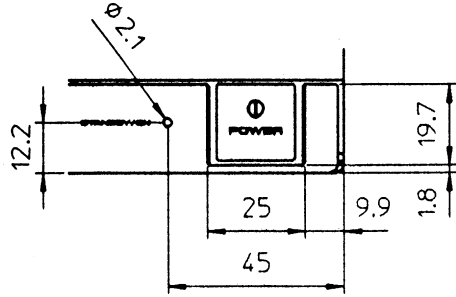
For packaging information, refer to 3.3.2 Unpacking

: Center of gravity

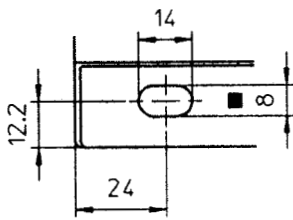
(Unit: mm)



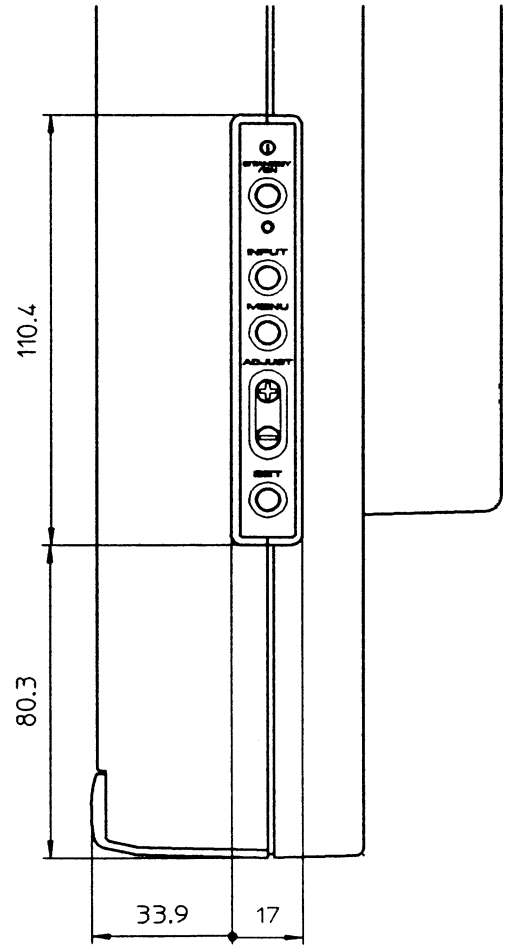
< Main Switch >



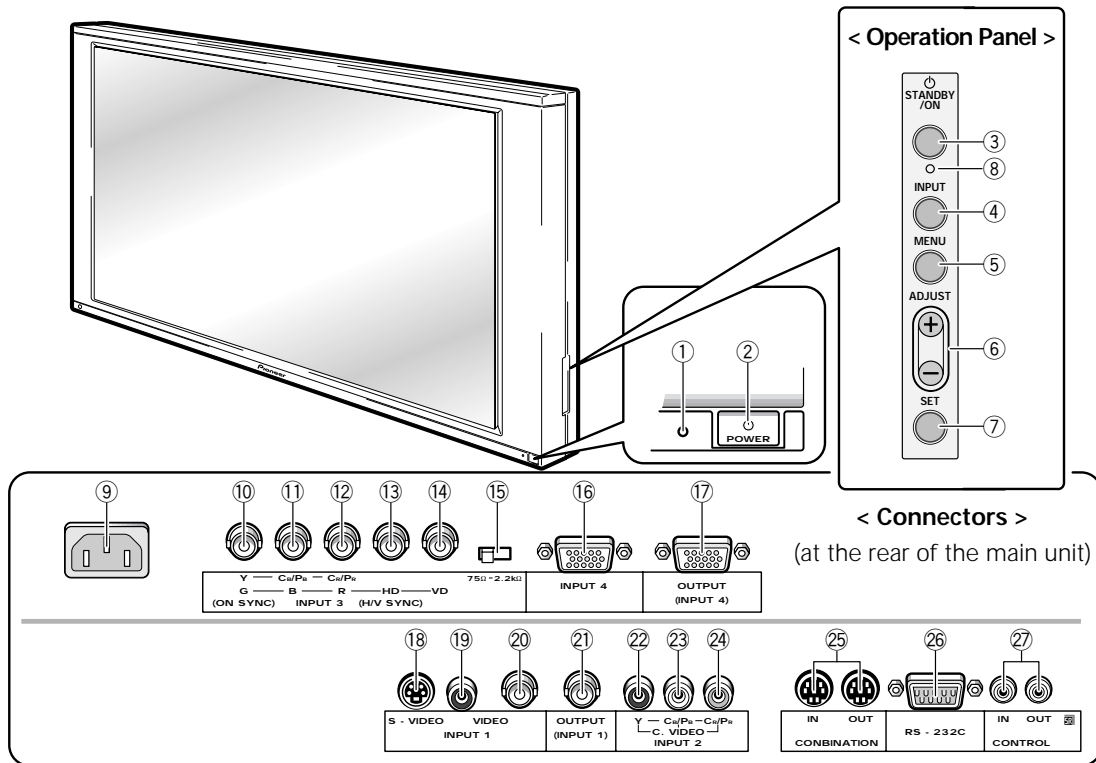
< Light Sensor for the Remote >



< Main Unit Operation Panel >



## 2.3 Controls and Connectors



### < Main Power Switch Section >

- ① **STANDBY/ON indicator**  
Red indicates standby status, green indicates powering on.
- ② **POWER switch**  
Turns main power on or off.

### < Control Panel >

- ③ **Power switch**  
Toggles unit on or off (standby).
- ④ **INPUT switch**  
Used to select inputs
- ⑤ **MENU switch**  
Switches the menu screen on or off.
- ⑥ **ADJUST buttons**  
Used to move the cursor on the menu screen or to increment/decrement adjustment values
- ⑦ **SET button**  
Used to select an adjustment item in the menu screen or to change settings
- ⑧ **KEY LOCK/UNLOCK button (hidden)**  
Renders the operation panel and remote operative or inoperative.

### < Connectors >

- ⑨ **AC INLET**
- INPUT 3 Inputs**  
These RGB inputs are composed of five BNC terminals, ⑩ to ⑭. They also support the component video signal (settings required in the menu screen).
- ⑩ **Green Input: 75Ω**  
Receives signals of G, G with sync, and Y.
- ⑪ **Blue Input: 75Ω**  
Receives signals of B, CB, and PB.
- ⑫ **Red Input: 75Ω**  
Receives signals of R, CR, and PR.
- ⑬ **Horizontal and Composite Sync Signal Input: 75Ω/2.2kΩ**  
Receives signals of HD, and H/V Sync.
- ⑭ **Vertical Sync Signal Input: 75Ω/2.2 kΩ**  
Receives a VD signal.
- ⑮ **Sync Signal Input Impedance switch**  
Used to switch input impedance for items ⑬ and ⑭ between 75Ω and 2.2 kΩ.

### INPUT 4 Input

#### ⑩ INPUT 4 input terminal

Mini D-Sub 15-pin terminal for connection of RGB signals

This terminal also supports component signals (settings required in the menu screen).

This terminal supports Microsoft Plug & Play (VESA DDC 1/2B).

(VESA is a registered trademark of the Video Electronics Standards Association.)

### INPUT 4 Output

#### ⑪ INPUT 4 output terminal

Signals fed to the INPUT 4 input terminal ⑩ are sent from this output terminal. No signal is sent when power is switched off, or in standby status.

NOTE: When the unit is connected in a series using this output terminal, up to five units can be connected including the unit to which signals are first input. If you use separate sync or composite sync signal, over 4.8 Vp-p sync level is necessary between the video source and the first unit, under the condition of 2.2 k $\Omega$  input impedance.

### INPUT 1 Inputs

#### ⑫ S2 Video Input terminal (S terminal)

#### ⑬ Video Input terminal (RCA jack)

#### ⑭ Video Input terminal (BNC terminal)

To prevent malfunctions and breakdowns, avoid connecting the RCA jack and BNC terminal simultaneously, since they are electrically connected to each other inside the body.

### INPUT 1 Output

#### ⑮ Video Output terminal

Signals fed to the INPUT 1 Video Input ⑬ or ⑭ are sent from this output terminal. This terminal does not carry signals received at the S-input terminal ⑫. No signal is available at this output terminal when power is switched off, or in standby status.

NOTE: When the unit is connected in a series using this output terminal, up to five units can be connected including the unit to which signals are first input.

### INPUT 2 Input

Component video input terminals composed of three RCA jacks ⑳ to ㉒.

#### ⑳ Y Input: 75 $\Omega$

#### ㉑ CB and PB Input: 75 $\Omega$

#### ㉒ CR and PR Input: 75 $\Omega$

### Control

#### ㉓ Combination Input and Output terminals

Used for simultaneous control of multiple units (Refer to 5.6 Combination Connections)

NOTE: No ABL linkage function is provided. These terminals are incompatible with multi-projections such as the RM-V4800V.

#### ㉔ Control connector (conforming to RS-232C)

Used to make adjustments or settings externally

#### ㉕ SR IN/OUT terminals

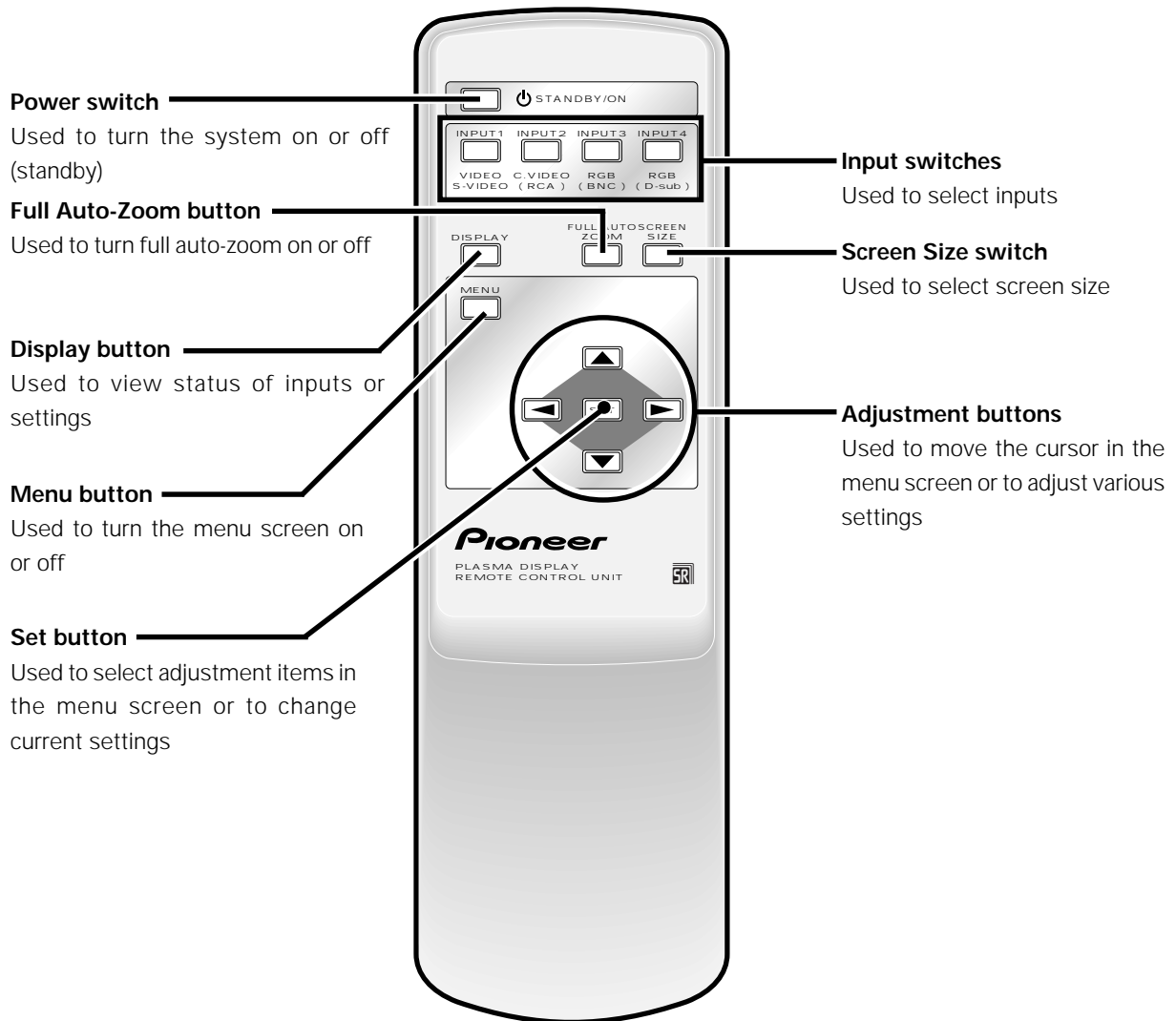
For SR connection (refer to the operation manual) to AV units from Pioneer

NOTE: This product does not support RU-V107 wired remote control units.

## Remote Control Unit

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### 2.4 Remote Control Unit





# Installation Site Requirements

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## 3.1 Installation Site Requirements

If the site requires modifications or special preparations for installation of the plasma display or its mounting hardware, obtain permission in advance from the building owner or building authorities. To ensure installation safety, it is also important to determine the strength of the installation site with the help of the original building contractor.

### Safety Precautions

#### 1) Structure of the installation site

Make sure you thoroughly understand the structure of the installation site before determining the most suitable installation method. Buildings vary in structure and materials, and the appropriate mounting hardware will differ accordingly. When drilling into walls, always remain aware of internal electrical wiring and pipes.

#### 2) Weight capacity of the installation site

Select a location with a weight capacity sufficient to support the total weight of the display and mounting hardware.

#### 3) Horizontal and flat surfaces

Select a flat and surface place for instruction and attach mounting hardware parallel to the plane of installation. Install the unit so that the load is evenly applied to the ceiling or wall, as well as on mounting components such as hang bolts.

#### 4) Sufficient work space

Select a location with sufficient space for installation work. The installation work should be conducted by more than two persons.

#### 5) Nearby equipment

Air conditioning ducts or lamps located near the installation site may be subject to dust, extreme temperatures, humidity, and condensation during installation. Take suitable measures to protect them.

#### 6) Safe locations

Do not install the unit where it may be easily reached or leaned against. Avoid locations subject to high vibration or severe impacts.

#### 7) Lighting conditions

- Consider existing lighting and sunlight angles when creating the installation layout. Extremely bright lighting can reduce the visibility and quality of the display image.
- In extremely bright surroundings, adjusting screen intensity may not result in perceptibly brighter images. Keep in mind that extreme intensity settings can reduce system service life.

#### 8) Installation partially outdoors

The unit is designed for indoor use and is not suited for open-air use. Installation at locations even just partially exposed to the elements may lead to malfunctions or breakdown caused by any of the following:

- Water and dust
- Change in temperature and humidity
- Salt-bearing wind

Direct sunlight upon the display degrades image quality. In installing the display, avoid sites exposed to direct sunlight.



### 9) Temperature and humidity conditions

- The installation site should meet the following conditions:
  - Operating temperatures: 0 to 40 °C (largely depending on installation conditions)
  - Operating humidity: 20 to 80%
  - Storage temperature: -10 to +45 °C
  - Storage humidity: 20 to 90%
  - Operating atmospheric pressure: 0.9 to 1.1 atm
  - Storage atmospheric pressure: 0.6 to 1.5 atm
- We recommend against installing electronic products such as this unit in locations subject to high humidity. If the unit is to be installed in a location subject to relatively high humidity, observe the following:
  - Never install the unit in locations that fail to meet the conditions specified above
  - Make sure the unit is grounded
  - Prevent condensation
  - Do not allow water or liquids to enter the unit

### 10) Beware of condensation

One of the chief problem sources during winter is condensation. Rapid temperature fluctuations can deposit airborne water vapor inside the unit or on the screen, degrading performance. If condensation occurs, turn the unit off and leave it off for one hour or so. It is also good practice to increase room temperature gradually.

### 11) Power requirements

- This unit functions properly when powered at  $\pm 10\%$  of its rated voltage. High impedance characteristics of lines at the installation site may distort the voltage output wave form, effectively reducing voltage. If any of the following occurs, inspect the main wiring.
  - Significant voltage drop between the switchboard and the plasma display
  - Significant changes in voltage when switching unit power on or off
- When calculating heat quantity, allow for 600 VA of consumption per unit
- The in-rush current upon powering up will be approximately 25 A

### 12) Effective remote-control distance

This display emits weak infrared radiation. If other products controlled with infrared remote controls are placed nearby, remote control function may be affected. In such cases, move them away from the display.

Depending on installation conditions, the range of the unit's own remote control may be reduced by infrared emitted by the screen.

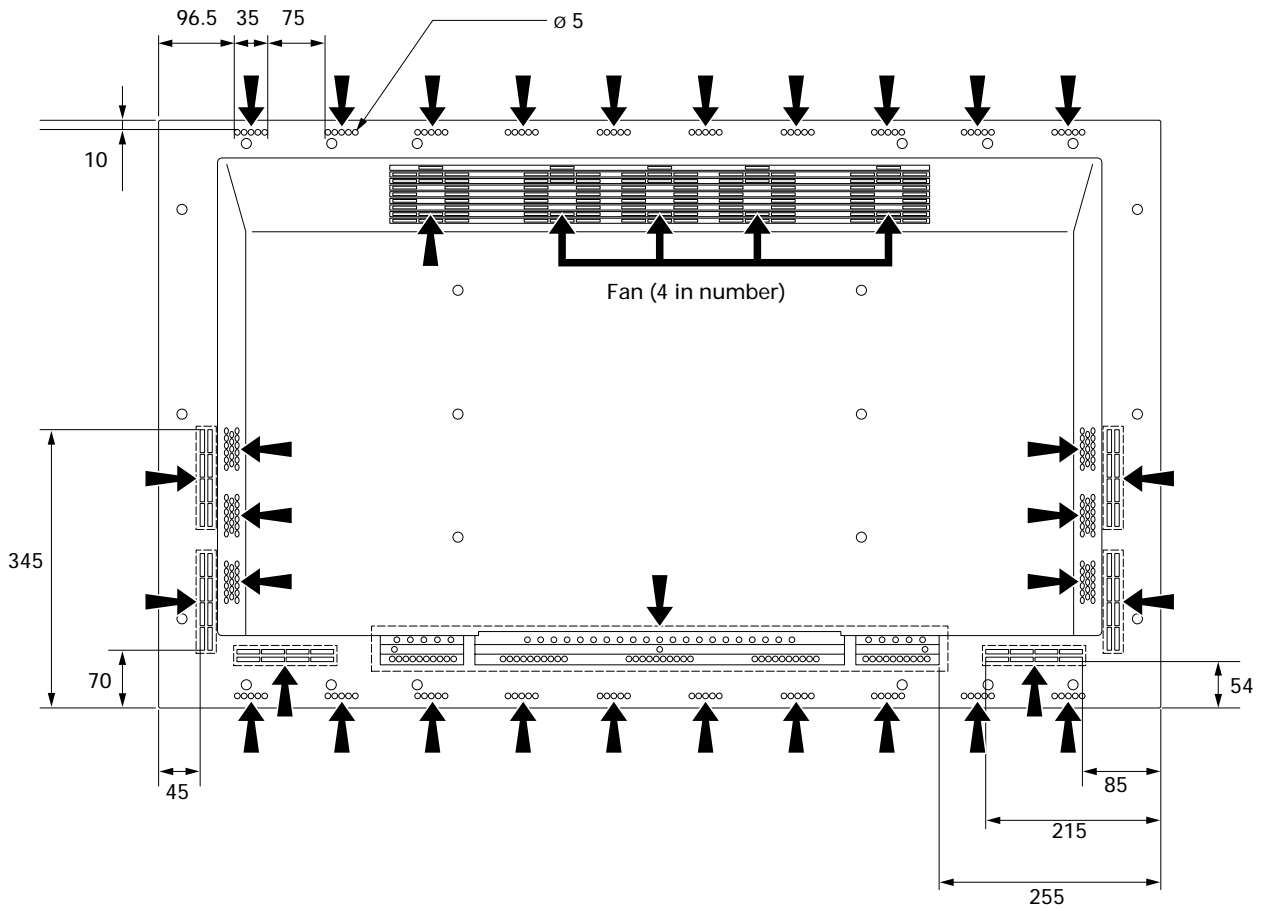
The screen's infrared intensity will vary, depending on the image displayed.

# Installation Conditions

## 3.2 Installation Conditions

### 3.2.1 Heat dissipation

This unit has openings for effective ventilation at locations marked by arrows in the illustration below. **To allow proper dissipation of heat from the unit, avoid blocking or covering any of these openings.**



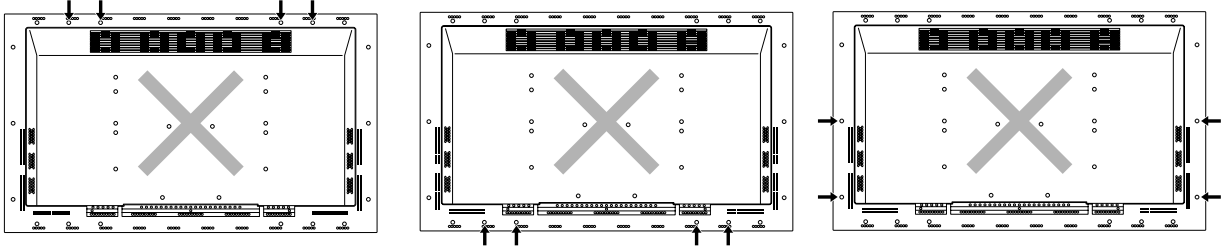
Air flow through the openings: All four fans exhaust hot air from the unit. All openings not assisted by fans serve as air inlets. If the unit is hung from or embedded into a wall, special operating temperature limits and other limitations may apply. Refer to 3.4 Special Installation.



# Installation Conditions

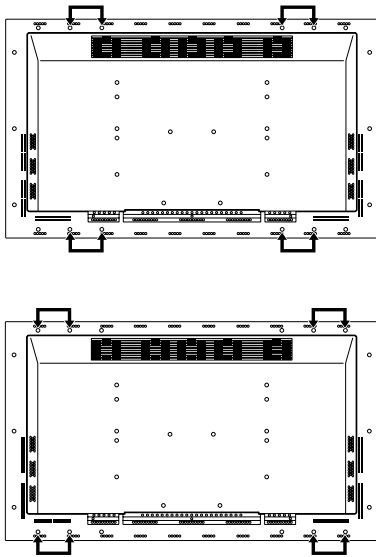
This unit is designed to be mounted using four bolt holes. For additional safety, we recommend securing it at six to eight points on opposite sides of the horizontal and vertical center lines, as shown in the illustration below. Do not secure the unit at four points arranged in a single row, as shown below.

## Methods for securing — Unfavorable examples

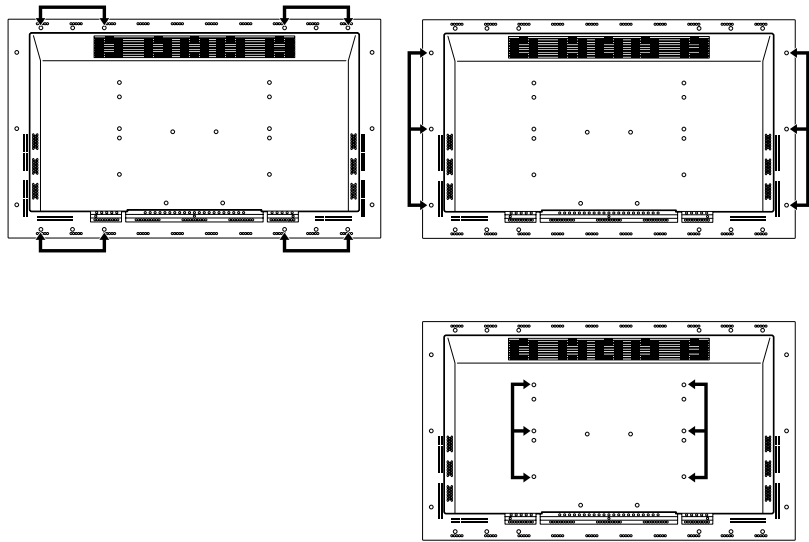


## Methods for securing — Favorable examples

### A. Secured at eight points



### B. Secured at six points

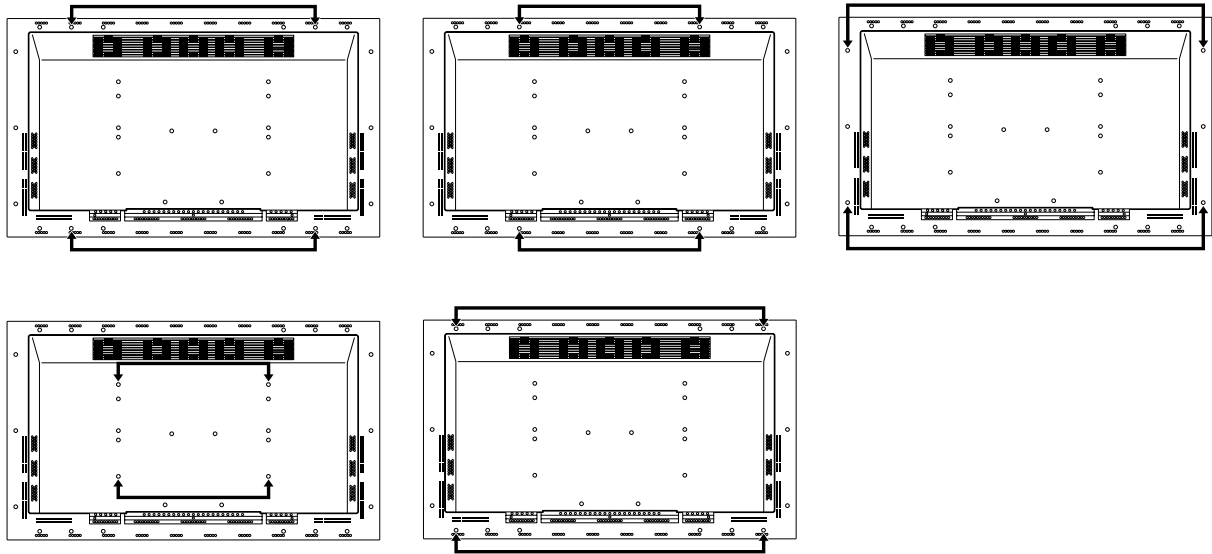


### C. Secured at four points

(with mounting hardware attached to the sides)



D. Secured at four points (with mounting hardware attached horizontally)

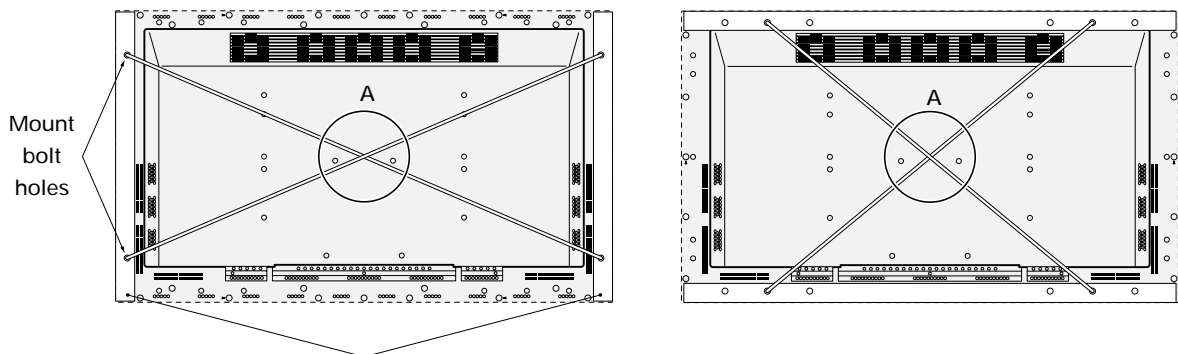


(Take proper precautions to prevent pinching the power cord or signal cables)

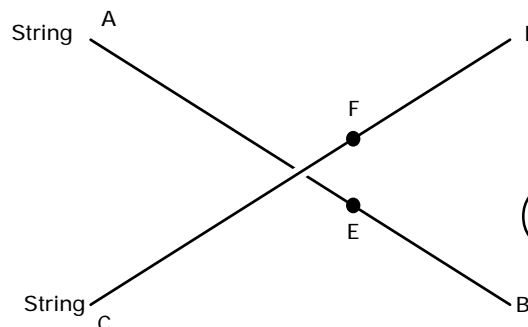
### 3.2.4 Mounting surface warping

The display section incorporates glass. Before mounting the product, perform the following to confirm that the display is free of warps exceeding 1 mm.

- ① Referring to the illustration below, diagonally extend string of maximum 0.1-mm diameter through the bolt mount openings. Strings thus arranged should be completely free of slack.
- ② Measure the clearance (L) between the strings at their point of intersection. Distortion is expressed by:  $\text{Distortion} = L \times 2$ .
- ③ If L is found to be 0, pass the strings through the other bolt mount openings and repeat the measurements. Any value of L greater than 0 indicates the presence of distortion. If the measured values in both cases is 0, the distortion is negligible.



Plasma Display Mount Surface (Mount Brackets)



D Point E is the center point of string segment A-B.  
 Point F is the center point of string segment C-D.  
 Clearance between points E and F = L  
 ( points E and F shown displaced for illustrative purposes )

Magnified view of section A

# Installation Procedures

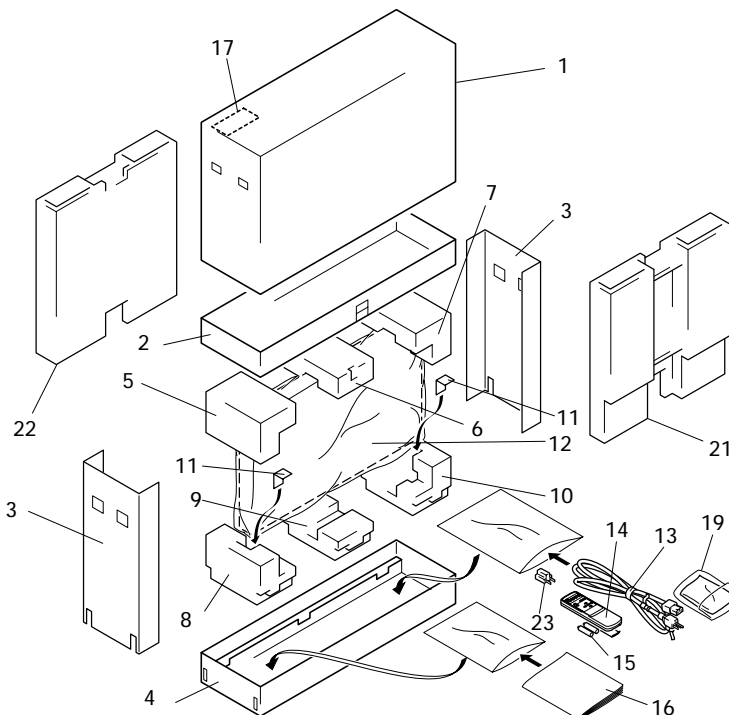
## 3.3 Installation Procedures

### 3.3.1 Transportation precautions

- ① Any transportation of the unopened unit in its packaging should be done by more than two persons. To avoid breakage, do not lift the package by the packing bands.
- ② When transporting or storing the unit, always position it vertically - never horizontally. Horizontal transportation or storage invalidates the product warranty.
- ③ In transportation or storage, never stack more than three units. This warning is also indicated on the upper face of the carton.
- ④ For transportation or storage, observe the warnings and instructions found on the upper surface of the carton.
- ⑤ The front of the display is glass-bearing. Always take precautions to prevent sharp objects from striking this side.

### 3.3.2 Unpacking

1) Package specifications: 1382 (W) x 888 (H) x 454 (D), 58.0 kg



Ref.No.	Terms:
1	Upper face of the carton
2	Carton cover
3	Side carton
4	Lower face of the carton
5	Upper pad L
6	Upper pad C
7	Upper pad R
8	Under pad L
9	Under pad C
10	Under pad R
11	Carton spacer
12	Miller mat
13	Power cord
14	Remote control (CU-PDP002)
15	2 manganese AA batteries, R6P
16	Operating manual
17	Warranty card
18	Binder assembly
19	Wiping cloth
20	Adapter plug (EURO Model, Taiwanese only)
21	Front carton
22	Rear carton
23	AC conversion plug (Taiwanese only)

### 2) Unpacking procedures

- ① Remove the packing bands.
- ② Slowly lift and remove the upper carton [" top portion of the packaging" ].
- ③ Lift and remove the reinforcement packaging. (Upper protective pad C is held in place by adhesive tape)
- ④ Remove the L and R upper cartons.
- ⑤ Remove the side, front, and rear cartons.  
(At this stage, the product is supported by packing materials)
- ⑥ Remove the operating manual and accessories, which are secured to the lower carton by adhesive tape.
- ⑦ Remove the unit. (This should be performed by more than two persons)

### 3) Transportation of the unpacked unit

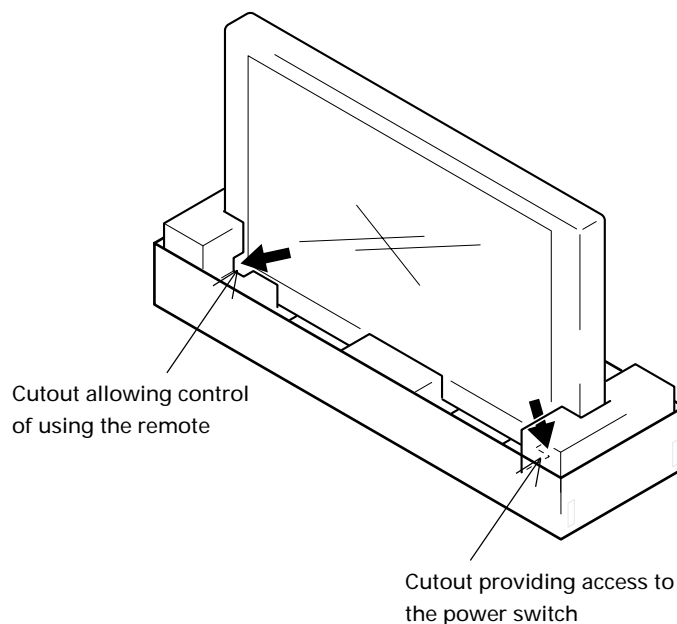
If it needs to be moved, the unit should be lifted by more than two persons.

- Avoid moving the unit by dragging it on the floor.
- Move the unit slowly, taking care to prevent scraping or striking the delicate front protective panel.
- Remove the protective film only after all work and preparations for the installation site, including clean-up following unpacking, are complete.

### 3.3.3 Temporary installation using packing materials

The lower carton and pads may be used as a temporary stand for the unit.

Connections to and from the unit can be made after the side, rear, and front cartons are removed. At this point, the power switch and remote control may also be operated, but this installation should be regarded as temporary. Always secure the unit to the mounting hardware after pre-installation wiring and adjustments are complete. Never attempt to move the unit while supported only by cartons.



### 3.3.4 Re-packing

If the unit needs to be re-packed, observe the following guidelines:

- Pack by performing the steps described in 3.3.2 Unpacking in reverse order. The mirror mat must be positioned so that the shiny film surface faces outward and its soft surface faces inward (toward the unit).
- Restore all accessories to their original locations. Secure with adhesive tape to prevent damage during transportation.
- Check that no carton spacer is dislodged. Rearrange dislodged carton spacers so they are securely positioned between the unit and the lower pads, and secure with adhesive tape. This guards against instability during packaging or transportation.

## Installation Procedures

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### 3.3.5. Wiring

#### 1) Connecting the power cable

- Refer to the section on **Power Cord Connection** on page 26 of the operating manual.
- For power source specifications, refer to 3.1 Installation Conditions, paragraph 11.

#### 2) Connecting signal cables

##### (1) Connection to PCs

- Refer to the section with this heading in the operating manual, on pages 21 to 22.

##### (2) Connection to video units

- Refer to the section with this heading in the operating manual, on pages 23 to 25.

##### (3) Important Notes

- Use coaxial cables. As a rough guide, use 3C-2V cables for lengths up to 15 meters and 5C-2V cables for lengths up to 30 meters. Use thicker cables for computer signals, since these signals are more likely to degrade: 5C-2V cables, for example, for 15-meter lengths. Generally, thicker cables will produce more reliable connections. You can also improve signal quality by minimizing cable length.
- Video cables plugged into video inputs and outputs close to dimmers, neon signs, air-conditioning units, or cables for wired broadcasts may occasionally deliver slightly corrupted images.

#### 3) Processing wires

- Be especially careful in selecting wiring lengths for permanent layouts. For temporary installations for occasional events, this isn't quite so important.
- Arrange and secure cables so they will not be subject to direct load or physical force. For temporary installations, securing cables with string should be perfectly adequate. For permanent installations, secure by more reliable means.



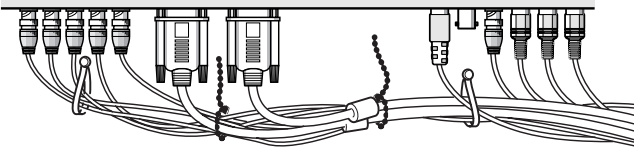
4) Arranging and securing cables with speed clamps and bead bands

**1** Fasten cables using the supplied speed clamps.

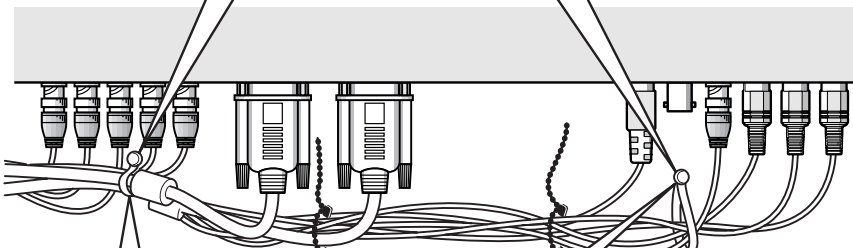
**!** Remember that speed clamps are not easily removed, once fastened.

**2** Secure cables with the supplied bead bands.

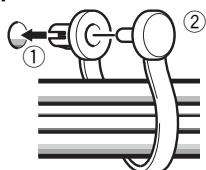
• Cables may also be drawn around to the right, viewed from this side.



\* Display viewed from the rear.

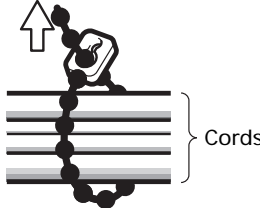


**1** Secure cables with speed clamps.

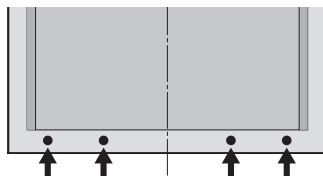


Insert part ① into an opening in the rear cover, then insert part ②, as shown.

**2** Bundle cables using bead bands.

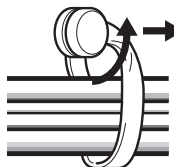


**Fastening points for speed clamps**



Bundled cables can be drawn to the left or right. Depending on specific requirements, you may use the four openings indicated by solid circles (●).

**How to unlock the speed clamp**



Use a pair of pliers to twist the clamp by at least a quarter-turn and pull outward. Remember that this procedure entails risk of damaging the clamp.

## Special Installation (Mounting to fitting)

### 3.4 Special Installation

The unit can be hung from or embedded in a wall, but such special installations impose additional limitations on operating temperatures and other operational factors. Examine installation methods and the ambient conditions for your installation site while referring to paragraphs 3.1 to 3.3 in this manual.

Measurements discussed in this manual assume the following conditions:

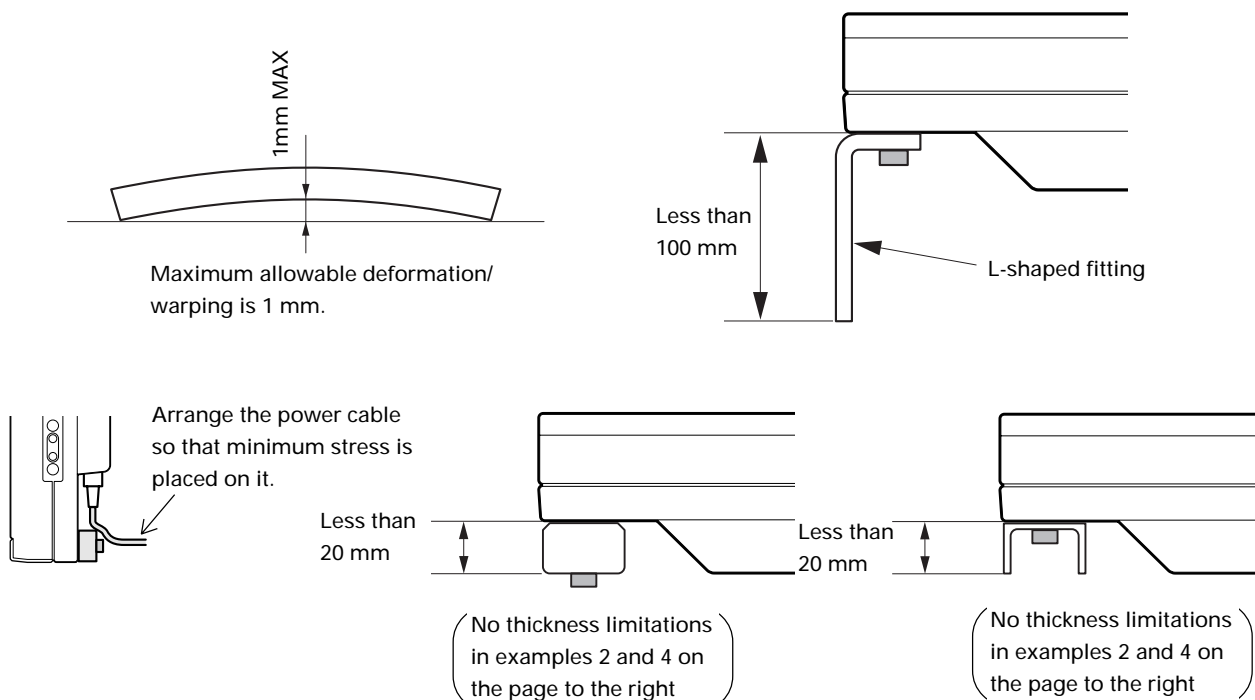
- A 100% white input is supplied.
- Sufficient aging has been completed.

Make all measurements under identical conditions. The aging period required for correct measurement will be two and a half hours, depending on the space available at the installation site.

#### 3.4.1 Mounting to fittings

Observe the following guidelines when mounting the unit to fittings. Notes ② to ⑦ apply to all cases of mounting-to-fitting.

- ① During mounting to fitting, keep the space around the unit free of all objects and obstructions.
- ② Any unit deformation/warping occurring as a result of installation should be less than 1 mm.
- ③ Never block or cover openings, aside from those shown as blocked on the page to the right.
- ④ The fittings should have a thickness of less than 20 mm. (This limit does not apply to fittings in examples 2 and 4 in the page to the right.)
- ⑤ L-shaped fittings should have a thickness of less than 100 mm.
- ⑥ The strength of the fittings must be adequate to bear the weight of the display.
- ⑦ Take precautions to avoid sharply bending the power cable.



#### \* Operating Temperature Restrictions

- Ambient temperature: 0 to 40 °C

#### \* Operating Temperature Restrictions for Upside-Down Installations

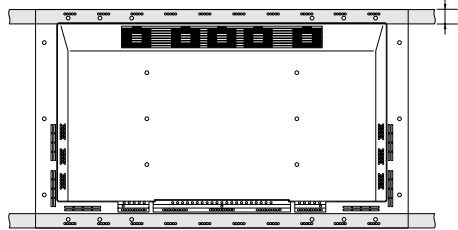
- Ambient temperature: 0 to 35 °C

This method of installation should be avoided in cases illustrated by examples 1 and 4 above.

## Special Installation (Mounting to fitting)

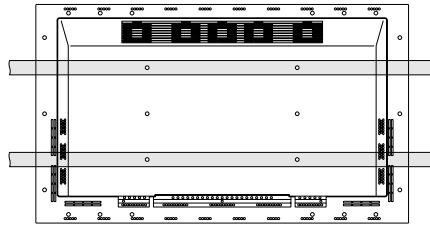
### Examples of Mounting to Fittings

Example 1)

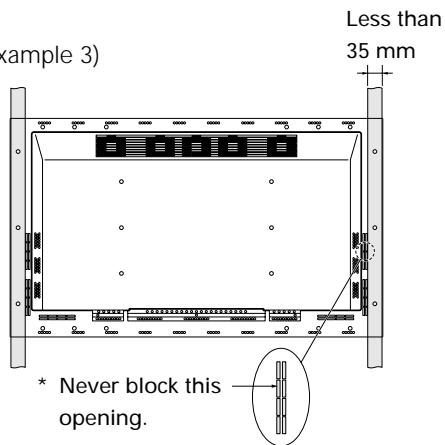


Less than  
35 mm

Example 2)



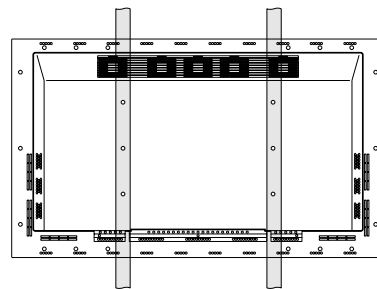
Example 3)



Less than  
35 mm

\* Never block this  
opening.

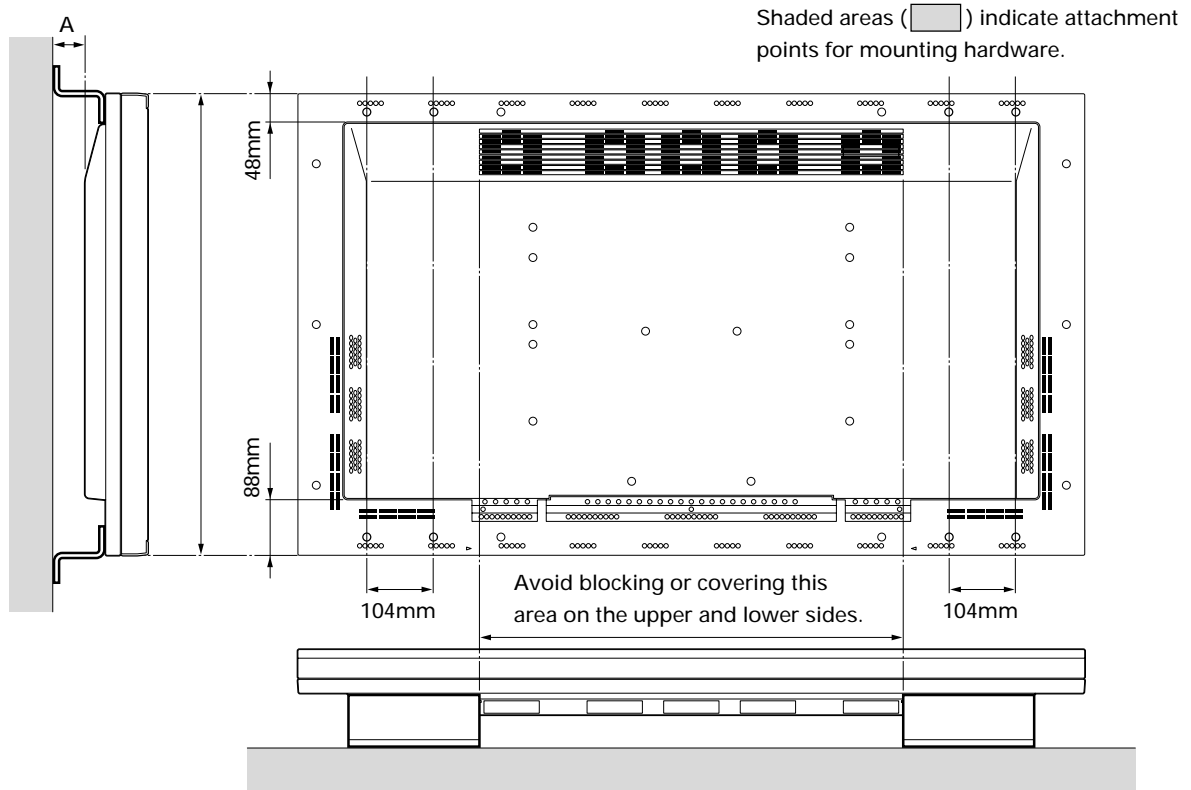
Example 4)



## Special Installation (Hanging from wall)

### 3.4.2 Hanging on the wall

Carefully read the following before attempting to mount the unit on a wall, and observe the various limitations specified below. Be sure to mount the unit so that twisting, bending or any other deformation of the unit does not exceed 1 mm.



\* Operating Temperature Restrictions

- Ambient temperature, regardless of clearance A: 0 to 40 °C (or 0 to 35 °C when the PDP-S02-LR speaker system is installed)


\* Operating Temperature Restrictions for Upside-down Installations

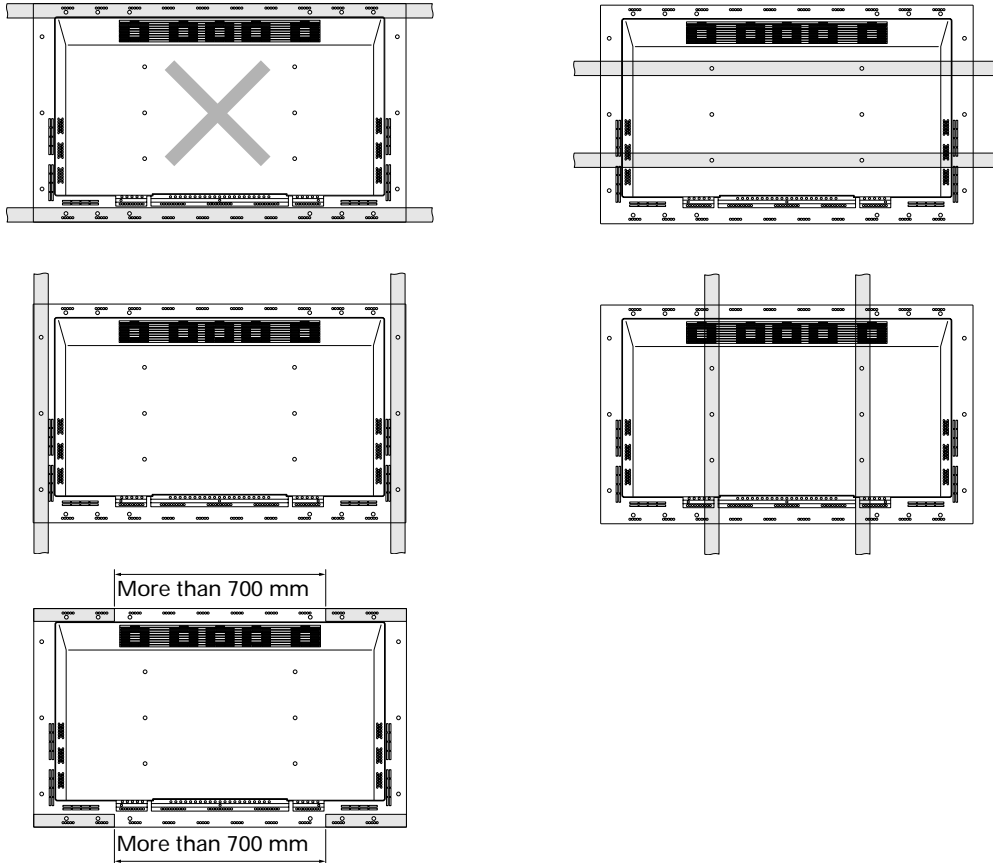
- Ambient temperature, regardless of clearance A: 0 to 30 °C

NOTE: Different temperature restrictions apply to the PDK-5006. Refer to 4.5 Tilttable Plasma Display Mount Hardware. In wall-mounting installation, allow adequate space (a clearance of 300 mm or more) above and below the monitor set, as well as on the right and left.

## Special Installation (Hanging from wall)

Methods for Securing: Basic methods for securing are shown below.

Avoid blocking or covering areas, aside from those indicated by (  ). The method indicated with cross-hatching should be avoided. Before attaching the unit to fittings, double-check that the thickness and height of the fittings and the number of fixing bolts is correct. (Also refer to 3.4.1 Mounting to Fittings.)



### NOTE 1

Heated air is exhausted from the interior of the unit by fans. Before installation, consider the heat resistance of the wall or other surfaces behind the unit. Exhaust temperatures can be 30°C (C higher than the outside temperature).

### NOTE 2

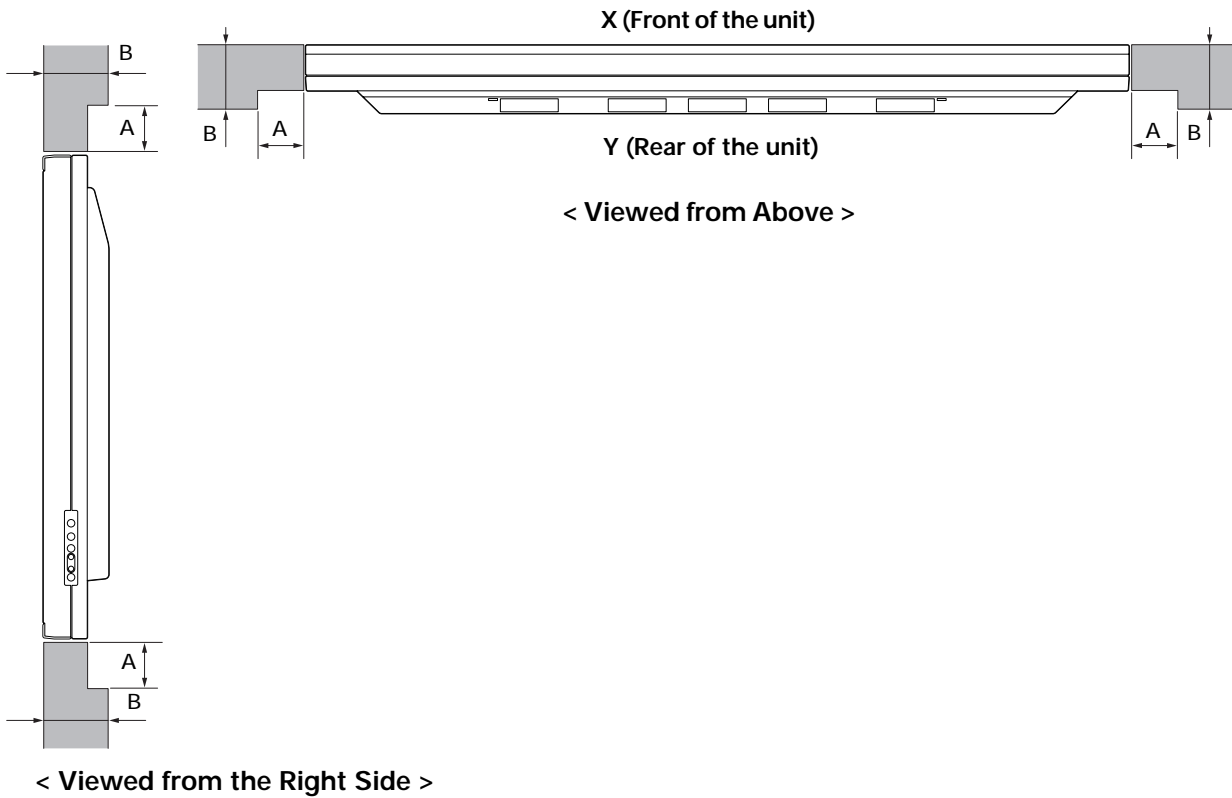
For wall-mounting, bundle the cables so they don't obstruct ventilation.

## Special Installation (Embedding in the wall)

### 3.4.3 Embedding in the wall

Carefully read the following before trying to embed the unit in a wall, and make sure you observe all the limitations specified below. Be sure to mounting the unit so that twisting, bending, or any other deformation of the unit does not exceed 1 mm.

(1) Embedding in walls with space provided behind the unit.



\* Operating Temperature Restrictions


	Temperatures in space X and Y
A: No restrictions; B: 0 to 170 mm	0 to 40 °C
A: No restrictions; B: 170 to 370 mm	0 to 35 °C

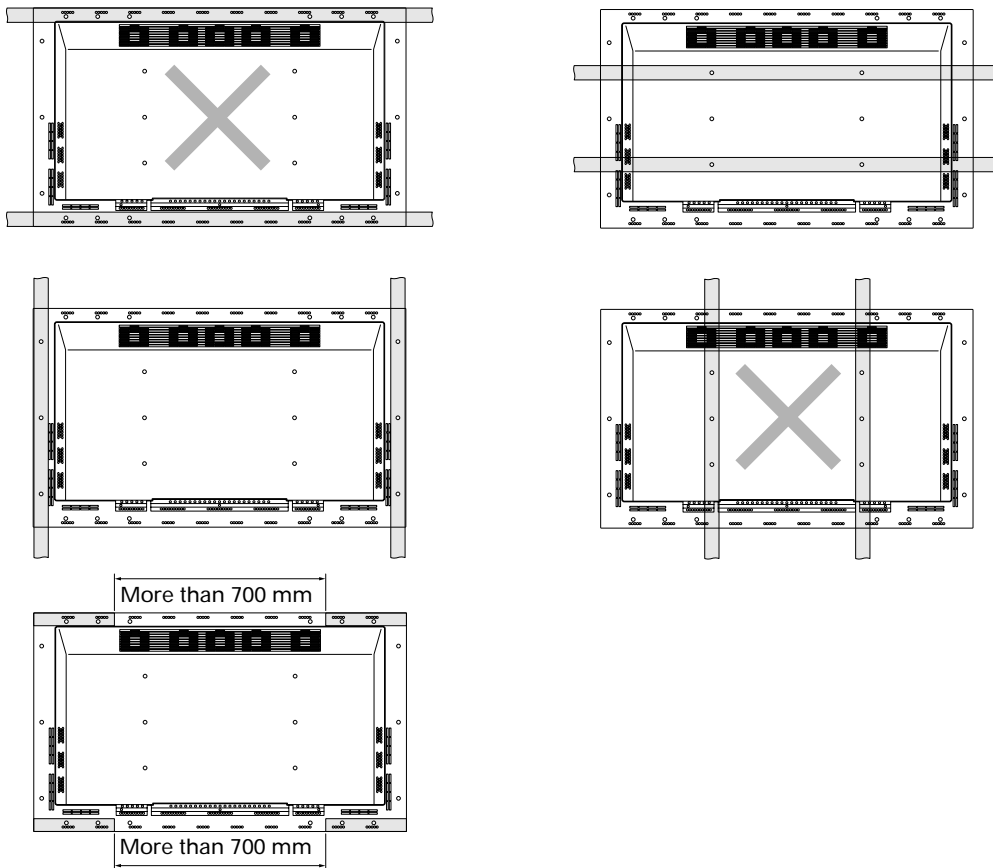
\* Operating Temperature Restrictions for Upside-down Installations

\* Upside-down mounting is unavailable when embedding/installing this device in a wall.

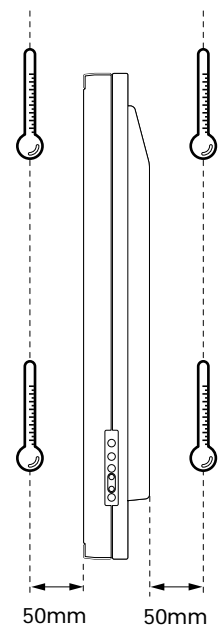
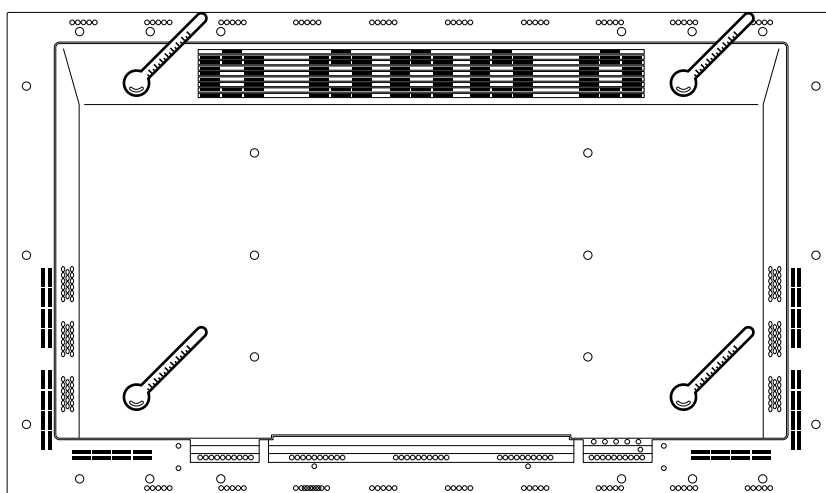
## Special Installation (Embedding in the wall)

Methods for Securing: Basic methods for securing are shown below.

Avoid blocking or covering areas, aside from those indicated by (  ). The method indicated with cross-hatching should be avoided. Before attaching the unit to fittings, double-check that the thickness and height of the fittings and the number of fixing bolts is correct. (Also refer to 3.4.1 Mounting to Fittings)



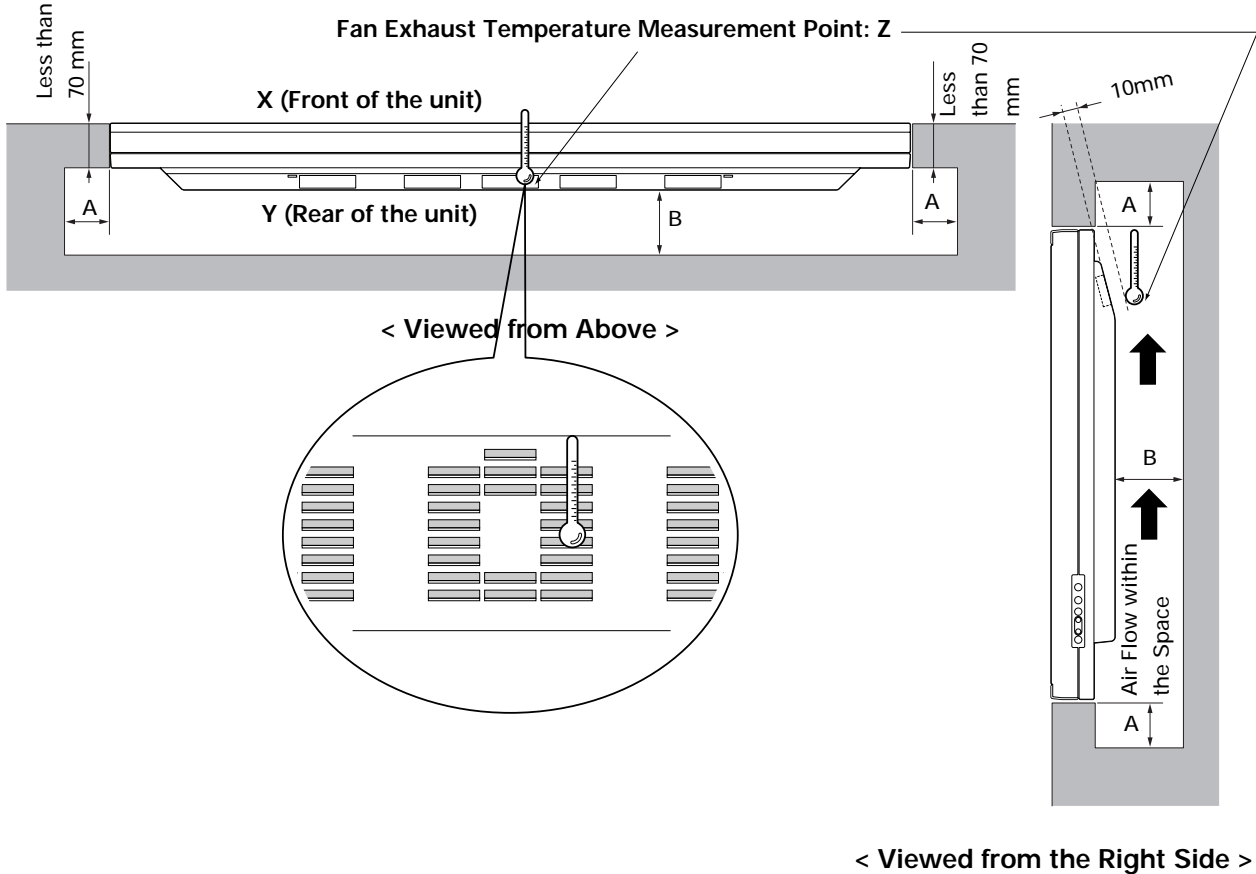
### Temperature Measurement Points (Informative)



- Make measurements at a distance 5 cm from the unit, without directly subjecting the thermometer to fan exhaust.
- For spaces where temperature fluctuations are likely, gather additional measurement points for an adequate data set.

## Special Installation (Embedding in the wall)

(2) Embedding in walls with no space provided behind the unit



We do not recommend installation in narrow enclosed areas.

• If the unit must be installed in a narrow area, the following conditions must be met:

$$A \geq \text{mm}$$

$$B \leq \text{mm}$$

• **Ensure proper ventilation in space Y indicated in the illustration with an air conditioner or fan, to prevent heated air from stagnating.** Observe the temperature restrictions specified below. If heated air stagnates inside the area, temperatures at points may rise high enough to produce breakdowns or fire. Confirm that the inner walls are capable of resisting heat and fire (their composition should be fireproof), allowing for worst-case instances. Air should flow in the direction indicated by the arrow (from points without fans to points with fans).

\* Operating Temperature Restrictions


	Temperatures in space X and Y	Fan exhaust temperature at Z: Upper limit
A: No restriction; B: 100 to 300 mm	0 to 30° C	54° C
A: No restriction; B: more than 300 mm	0 to 35° C	-57° C

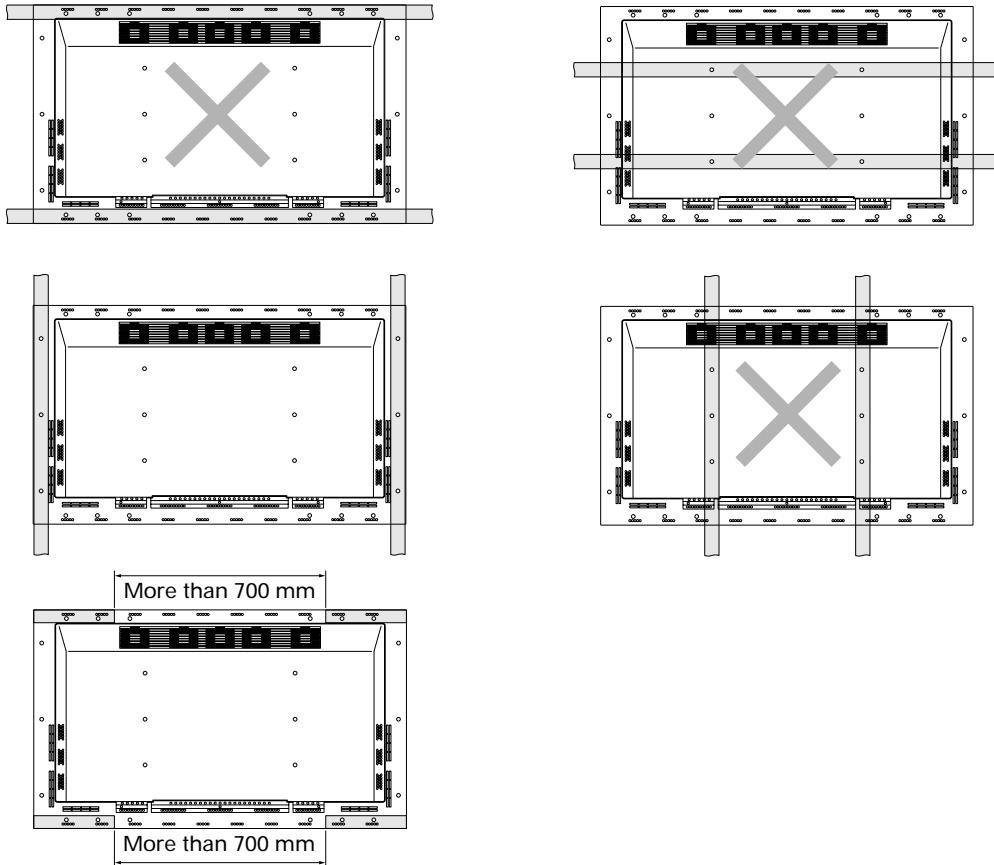
\* Operating Temperature Restrictions for Upside-Down Installations

\* Upside-down mounting is unavailable when the unit is embedded/installed into a wall.



## Special Installation (Embedding in the wall)

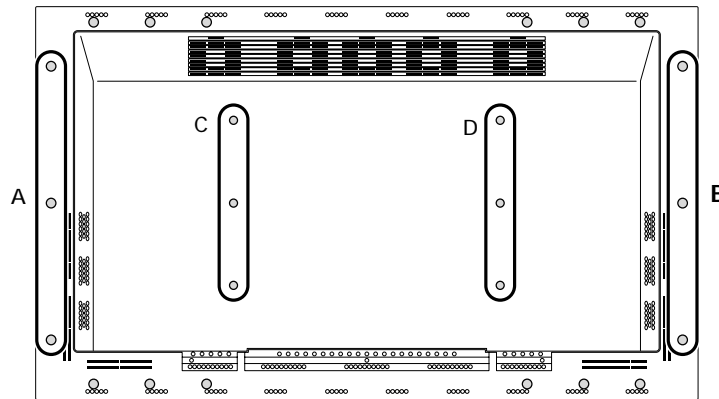
Methods for securing: Basic methods for securing the device are shown below. Avoid blocking or covering areas, aside from those indicated by . The method indicated with cross-hatching should be avoided. Before attaching the unit to fittings, double-check that the thickness and height of the fittings and the number of fixing bolts is correct. (Also refer to 3.4.1 Mounting to Fittings)



## Special Installation (Ceiling-suspension (with wires))

### 3.4.4 Ceiling-suspension (with wires)

When suspending from ceilings, attach the unit either at rows A and B or at rows C and D to keep it free of deforming forces. In addition, the unit must be fastened at more than four points, with these points distributed symmetrically on opposite sides of the vertical and horizontal center lines.

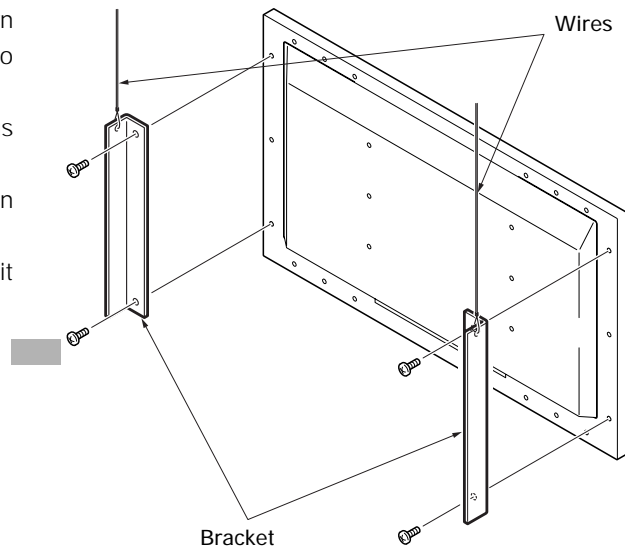


When suspending from a ceiling, use the brackets shown at right to prevent concentrating loads on the upper two fixing points.

For additional safety, secure the wires to separate fittings or parts of the ceiling.

Use mount screws composed of material stronger than soft steel, and use hexagonal bolts.

Use wires adequate for the combined weight of the unit (43.0 kg) and the weight of the support brackets.




\* Operating Temperature Restrictions

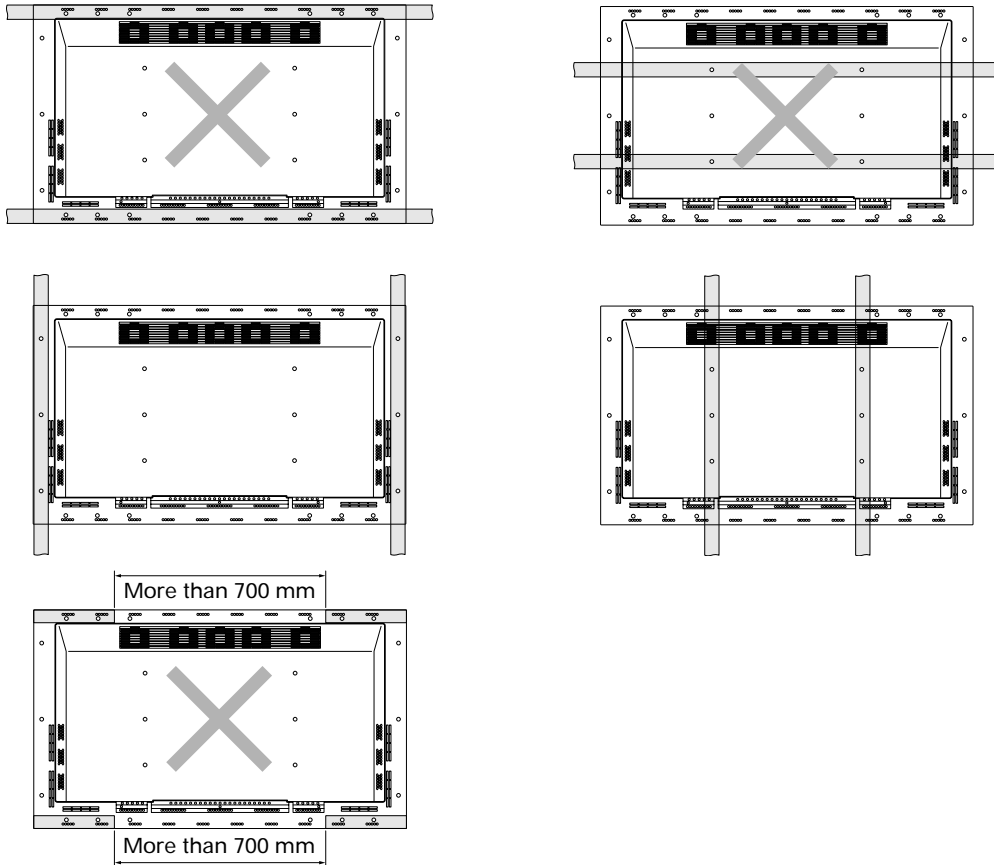
- Same as in 3.4.2 Hanging on the wall.

\* Operating Temperature Restrictions for Upside-down Installations

- Same as in 3.4.2 Hanging on the wall.

## Special Installation (Ceiling-suspension (with wires))

Methods for securing: Basic methods for securing the device are shown below. Avoid blocking or covering areas, aside from those indicated by . The method indicated with cross-hatching should be avoided. Before attaching the unit to fittings, double-check that the thickness and height of the fittings and the number of fixing bolts is correct. (Also refer to 3.4.1 Mounting to Fittings)



## Standard mounting equipment features and characteristics

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### 4.1 Standard mounting equipment features and characteristics

In addition to reliability and the vivid display resulting from its large screen area, brightness, and image quality, the plasma display (PDP-501MX/PDP-V501X) is thin and lightweight, enabling mounting at locations not possible for traditional displays.

We considered various mount patterns and operating conditions during the design of the plasma display (PDP-501MX/PDP-V501X). A wide range of standard mounting equipment is available for easy mounting.

- **Table-top Stand: PDK-5001**

This on-board support designed for the plasma display enables vertical use of the display.

- **Plasma Display Ceiling-suspension Hardware (one-side type):PDK-5002**

A simple rod-type mounting components, permitting display panning over a range of (45 degrees and up to 25-degree downward tilting from horizontal. Mount depth is less than 170 mm (in vertical position, without optional speaker). This hardware enables installation of the unit in a wide range of locations.

- **Tiltable wall-suspended hardware: PDK-5006**

Permits tilting of the display downward from horizontal by up to 25 degrees. Mount depth is less than 125 mm (in vertical position, without optional speaker). This hardware permits a wide range of viewing angles.

- **Speaker system: PDP-S02-LR**

This vertical twin-speaker system, with a newly developed elliptical unit 4.5 cm wide on top and bottom with a 2.5-cm dome cone tweeter in between, provides improved sound-field localization. Despite its compact 7.4-cm cabinet, the speaker system is capable of offering powerful dynamic sound reproduction. (Note that when the speaker is mounted to the main unit itself, the operation panel of the main unit is inaccessible.)

### 4.2 Handling the Standard Mounting Equipment

#### 4.2.1 Handling precautions

This section of the manual discusses ways to mount, install, and handle the mounting equipment exclusively designed for our plasma displays. Mounting should be performed by qualified experts. Refer all installation and mounting work to qualified persons, or request assistance from a Pioneer dealer.

#### 4.2.2 Precautions for installation contractors

##### 1) Before starting installation

Read the specifications provided in 3.1 Installation Conditions.

##### 2) During installation

Carefully read the discussion provided in this section of the manual. The installation work should be performed by more than two people.

##### 3) After installation

After installing the mounting equipment, check for adequate strength and properly tightened screws. Repeat this inspection after mounting the display.

##### 4) Delivering to the customer

###### (1) Explaining operating precautions

We ask the mounting contractor to explain the following precautions to the customer after mounting and installation work is complete. Even if the particulars of an installation happen to be letter-perfect, your work may be perceived as inadequate unless you are patient and thorough in providing these precautions.

● **The following are highly dangerous and must be avoided at all times:**

- **Any sudden application of force, including pushing or pulling**
- **Splashing water on the unit**
- **Placing any object on the unit**
- **Touching mount screws and other mounting components**

● **For worry-free use of the unit:**

- If any problem arises, the user should immediately ask the installation contractor to conduct inspections and repairs.
- To guard against accidents, ask the user not to make any tilt or height adjustments. Such work should be referred to the installation contractor.

###### (2) Mounting contractor contact form

We ask the mounting and installation contractor to complete the contractor contact form supplied with the unit and to give it to the end-user after post-installation inspections are complete and the above precautions have been explained.

###### (3) Periodic inspection

Over time, various internal parts or components of the suspension/mounting hardware may render the installation unreliable, possibly leading to the display breaking free of its mounting. Please recommend periodic inspections.

## Table-top Stand: PDK-5001

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### 4.3 Table-top Stand: PDK-5001

#### 4.3.1 Specifications

<b>External dimensions</b> ....	700 (W) x 400 (D) x 469 (H) mm
<b>Weight</b> .....	4.0 kg (mounting hardware only) 47 kg (mounting hardware + plasma display)
<b>Finish</b> .....	Paint
<b>Package dimensions</b> ....	726 (W) x 425 (D) x 100 (H) mm
<b>Package weight</b> .....	6.6 kg

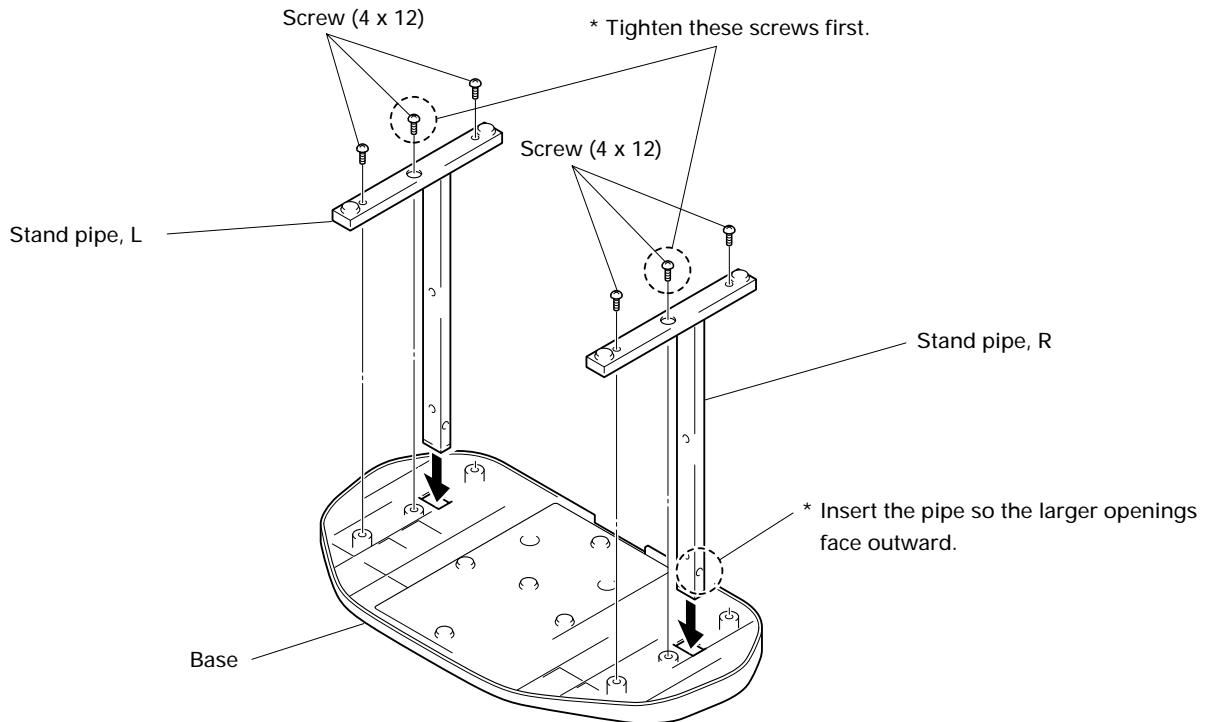
#### Accessories

Base .....	x 1
Stand pipe, L .....	x 1
Stand pipe, R .....	x 1
Vertical pipe .....	x 1
Screw (4 x 12) .....	x 6
Bolt (M6 x 40) .....	x 2
Cap .....	x 2
Hexagonal wrench .....	x 1
Flat washer .....	x 4
Mount bolt (M8 x 300) .....	x 4
Turning-over protective bolt .....	x 2
Operating instructions .....	x 1

### 4.3.2 Assembling the stand

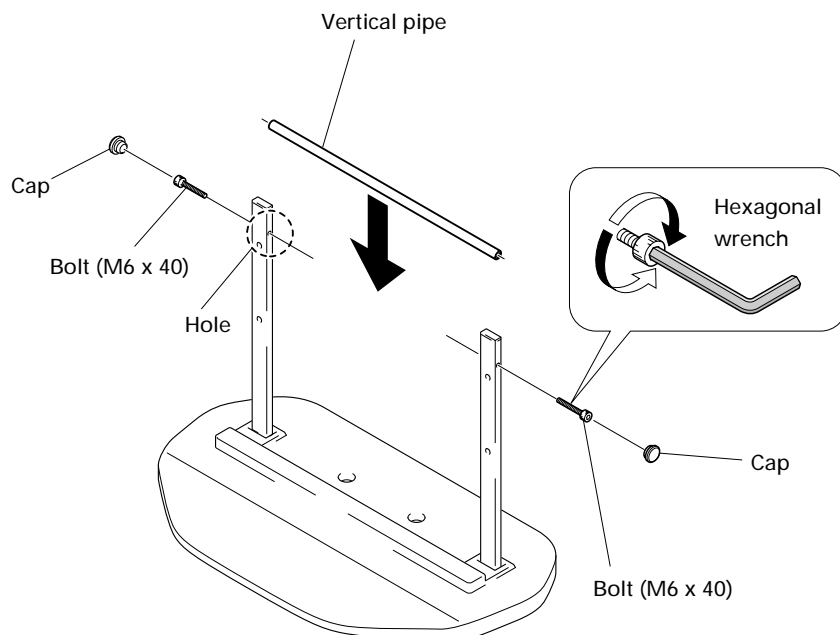
#### ■ Assembling Procedure 1

1. Place the base upside-down.
2. Insert the left and right stand pipes into the base. (CAUTION !: Insert pipes so they face in the proper direction.)
3. Fasten the pipes to the base with the supplied screws. (Tighten the central screws first.)



#### ■ Assembly procedure 2

1. Align the vertical pipe with openings in the left and right stand pipes.
2. Tighten bolts with the supplied hexagonal wrench to secure the vertical pipe.
3. Insert caps into openings in the left and right stand pipes.



## Table-top Stand: PDK-5001

### 4.3.3 Mounting to the main unit

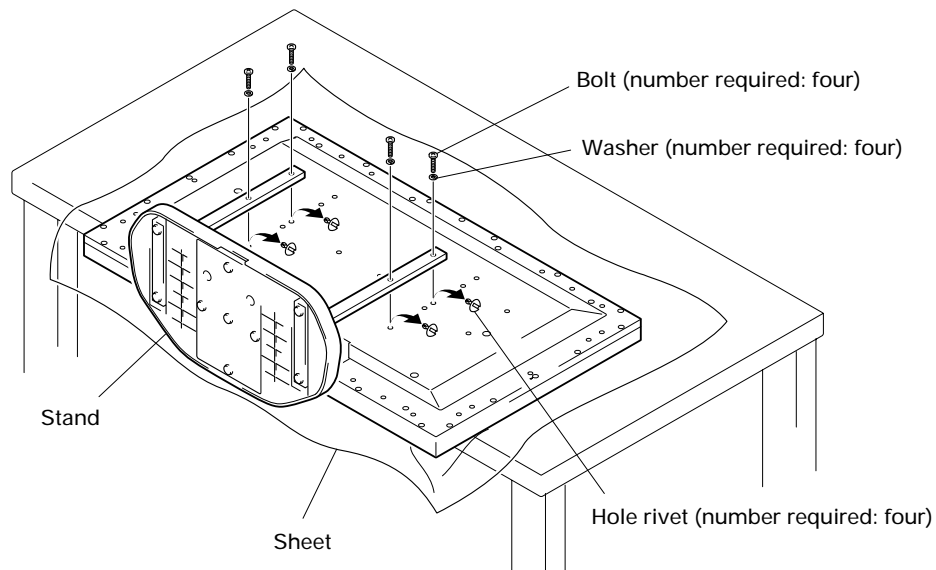
#### ■ Mounting procedures

Step 1 Place the display face down, remove hole rivets, and align the assembled stand to the display mount openings.  
Step 2 Secure the stand by tightening washers and bolts with the supplied hexagonal wrench.



#### CAUTIONS

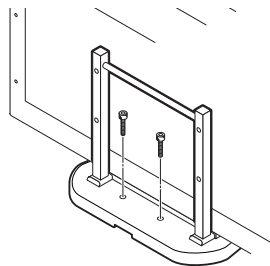
1. Lay a soft sheet beneath the display to protect it against scratches.
2. The mount work should be conducted on a flat surface, such as a table.
3. Do not over-tighten bolts.
4. Align screw holes in the stand to the mount nuts found on the display as precisely as possible.
5. The displays weight (more than 43kg) and thinness makes it unstable. Enlist at least two other persons when mounting the display.



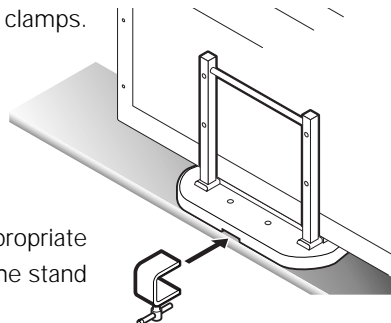
**Step 3 After mounting the stand to the display, fasten the assembly to the floor to prevent it from turning over.**

#### Fastening to the floor

- Fasten the assembly to the floor using appropriate commercially-available screws.



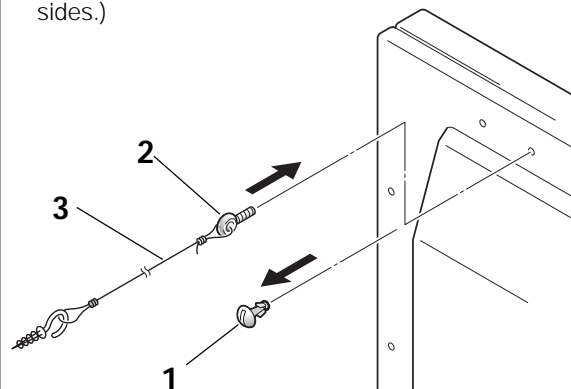
- Fasten the assembly to the floor using appropriate commercially-available clamps.



Insert spacers of appropriate thickness beneath the stand base.

#### An Alternative method

1. Remove hole rivets from the rear of the display.
2. Mount the supplied turning-over protective bolts.
3. Using strings, mount the display/stand assembly to the wall or to a column.  
(Repeat the procedure for both the left and right sides.)

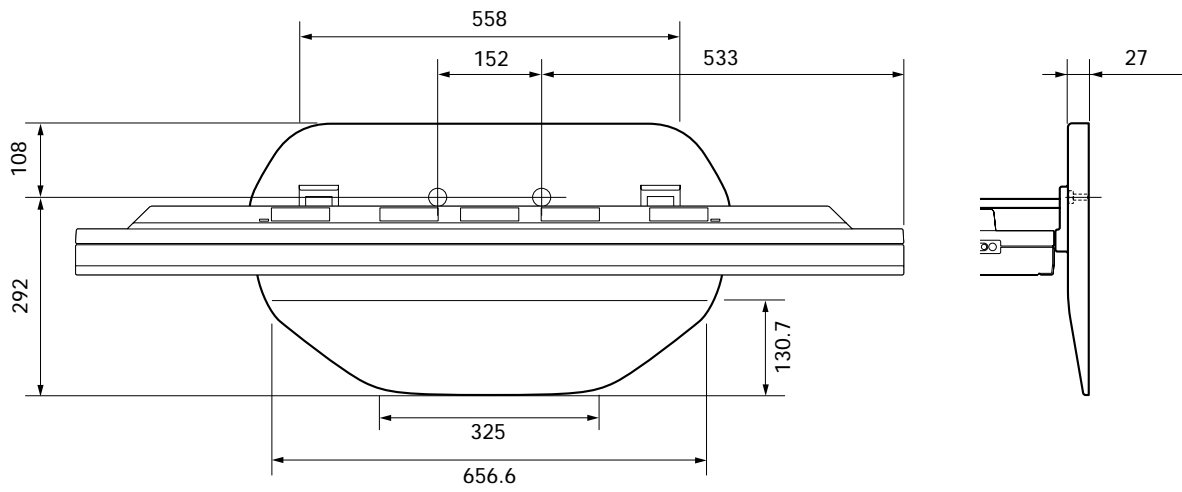


Use appropriate commercially-available strings and hooks.



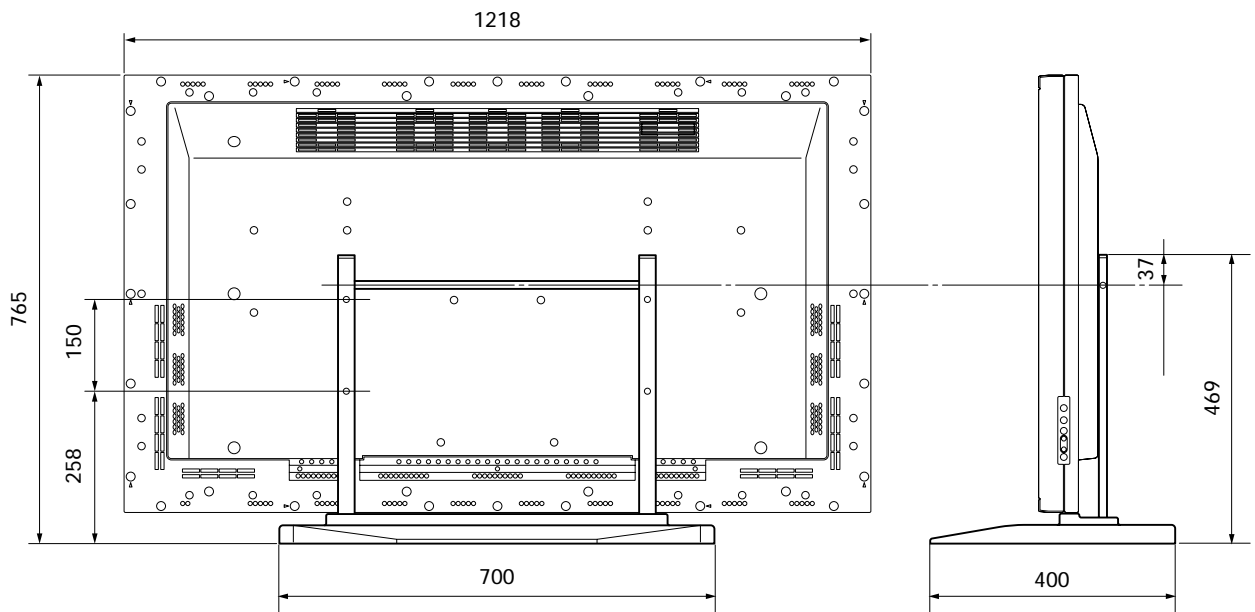
■ Mount locations for securing-to-floor screws

\* Secure the assembly to the floor using M6 screws at least 20 mm long.



■ Dimensional drawings (with display PDP-501MX/PDP-V501X)

Unit: mm



## **4.4 Plasma Display Ceiling Suspension Hardware (one-side type):PDK-5002**

### **4.4.1 Specifications**

<b>External dimensions</b> .....	1218 (W) x 300 (D) x 1162 (H) mm (with plasma display in horizontal position)
<b>Weight</b> .....	14.6 kg (mounting hardware only) 57.6 kg (mounting hardware + plasma display)
<b>Adjustable range of angles</b> .....	Horizontal to 25 degrees below horizontal, 45 degrees left/right
<b>Material</b> .....	Steel pipe for general material (STK-MR)
<b>Finish</b> .....	Semi-matte black paint
<b>Package dimensions</b> .....	1270 (W) x 725 (D) x 230 (H) mm
<b>Package weight</b> .....	24.0 kg

### **Accessories**

Monitor mount bolt .....	x 6
Flange nut .....	x 6
Hexagonal socket head bolt (M5 x 16) .....	x 1
Hexagonal socket head bolt (M6 x 10) .....	x 1
Hexagonal socket head bolt (M6 x 30) .....	x 1
Hexagonal socket head bolt (M8 x 75) .....	x 2
Hexagonal socket head bolt (M10 x 85) .....	x 2
Flat washer, ø8 .....	x 2
Flat washer, ø10 .....	x 2
Spring washer, ø8 .....	x 2
Spring washer, ø10 .....	x 2
Hole cover .....	x 1
Spacer .....	x 1
Pattern .....	x 1
Operating instructions .....	x 1
Mount contractor contact form .....	x 1

The appropriate types of screws and other display/mounting components will depend on the strength and composition of the ceiling. Prepare them separately.

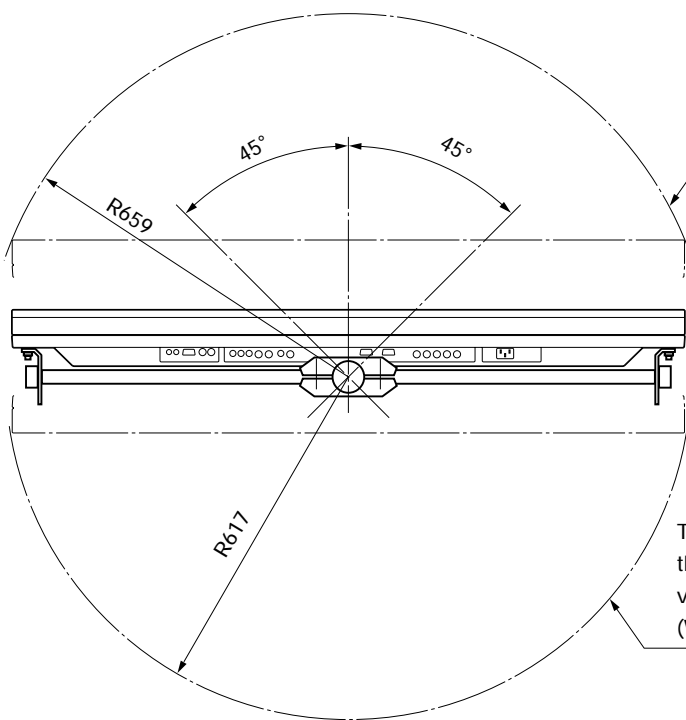
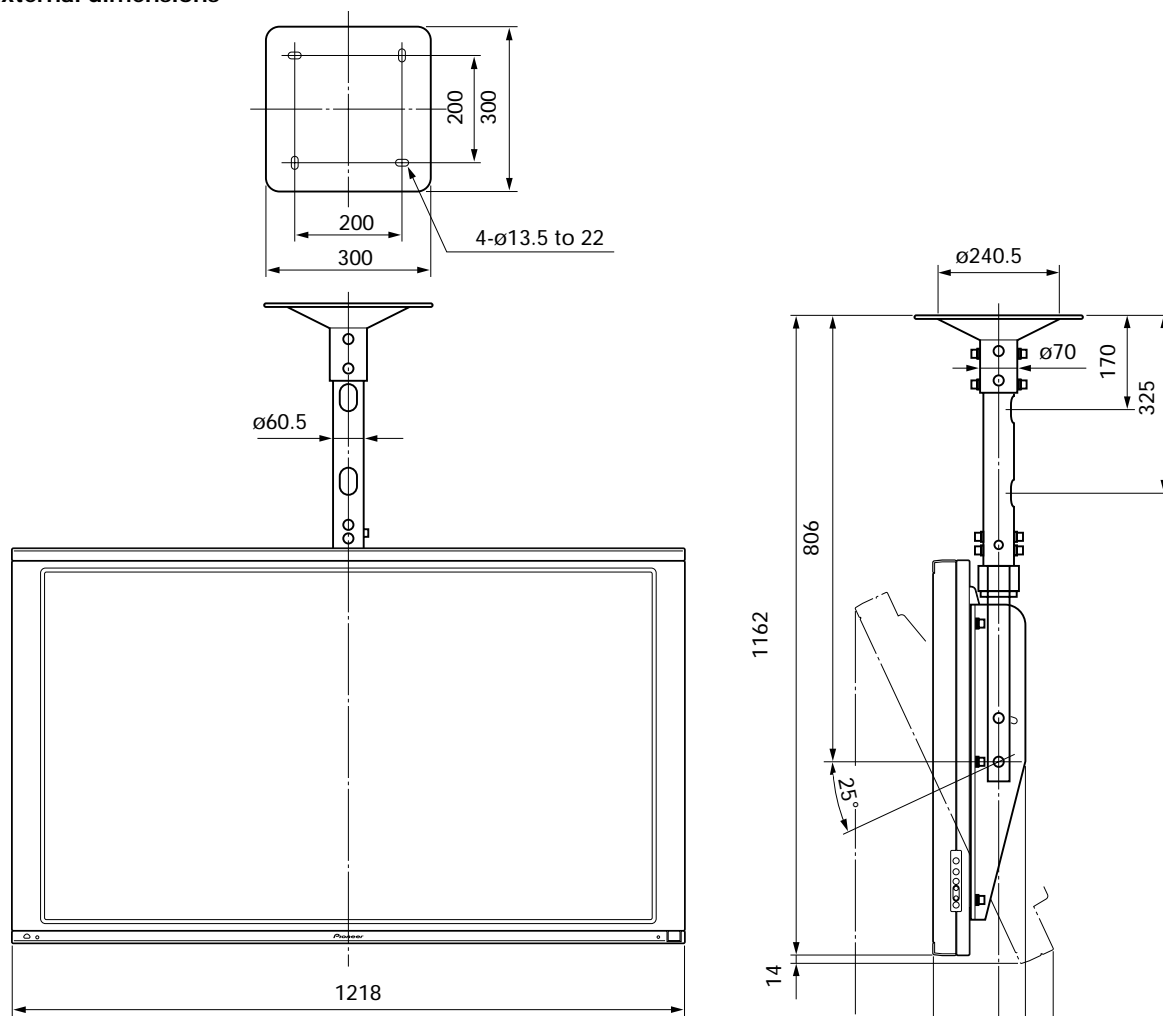
\* Operating Temperature Restrictions

- Ambient temperature: 0 to 40°C

\* Operating Temperature Restrictions for Upside-down Installations

- Ambient temperature: 0 to 35°C
- Others factors: Maintain sufficient clearance between the display and the wall (at least 300 mm)

External dimensions



This circle shows the path that the outermost part of the plasma display follows when it is rotated about a vertical axis after having been tilted sideways by 25° (Without optional speaker)

Maximum sideways tilt: 45°

This circle shows the path that the outermost part of the plasma display follows when it is rotated about a vertical axis after having been tilted sideways by 25° (Without optional speaker)

#### 4.4.2 Assembling and installing the mounting hardware, and mounting the plasma display

##### 1) Preparations

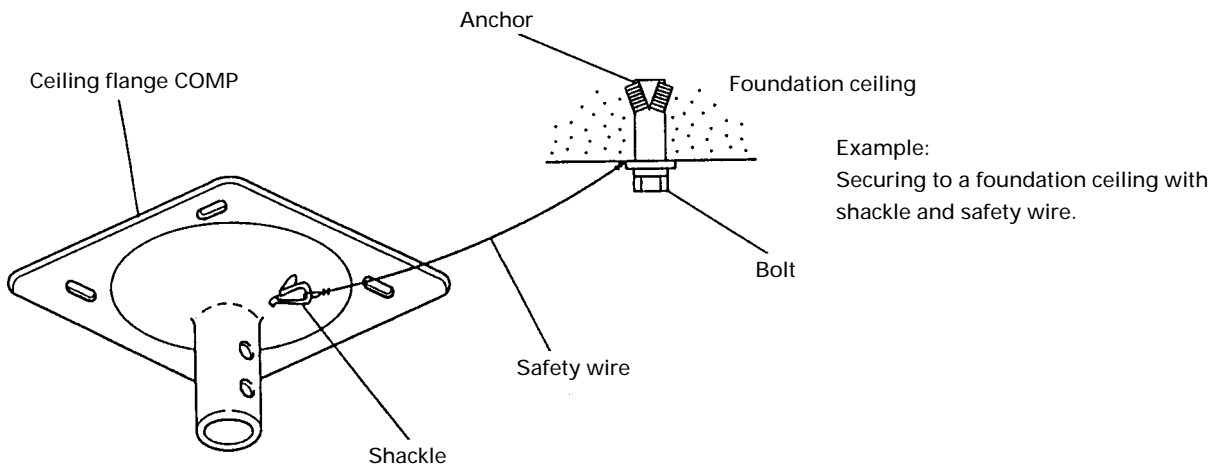
You will need the following tools. Make sure you have them at hand before beginning work.

- Wrench or spanner (subtense 12 mm)
- Hexagonal wrench (subtense 4 mm, for M5 bolts)
- Hexagonal wrench (subtense 5 mm, for M6 bolts)
- Hexagonal wrench (subtense 6 mm, for M8 bolts)
- Hexagonal wrench (subtense 8 mm, for M10 bolts)

You'll also need tools for ceiling work.

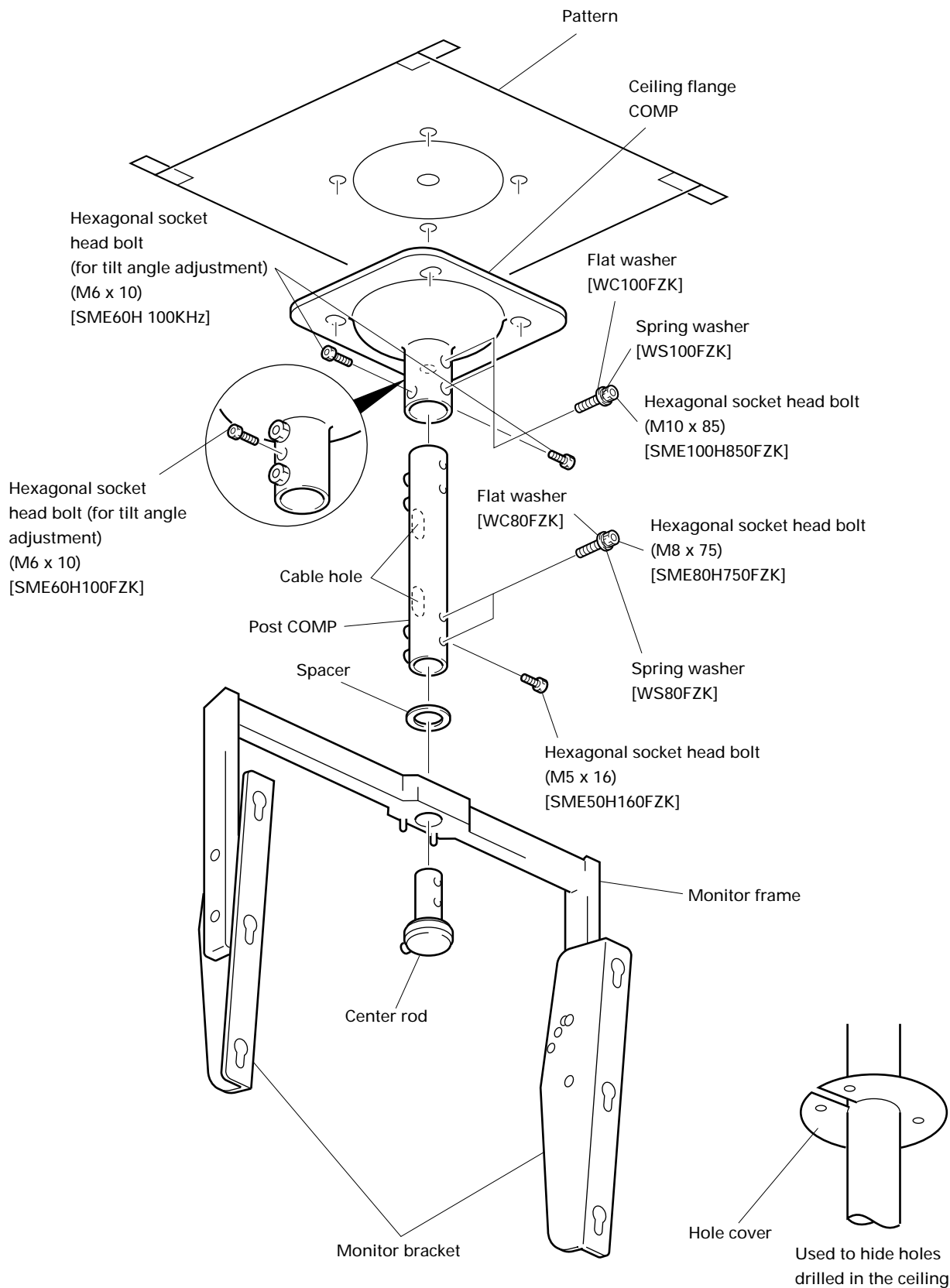
##### 2) Assembling and installing the mounting hardware

- ① Confirm that the monitor brackets (left and right) are firmly mounted to the monitor frame and insert the center rod through monitor frame and the spacer into the post COMP. Secure the post COMP and the center rod with two hexagonal socket head bolts (M8 x 75).
- ② Tighten the vibration-preventing hexagonal socket head bolt (M5 x 16).
- ③ Select the installation site, then apply the supplied pattern to the ceiling, drill the suitable holes, and mount the ceiling flange COMP. The appropriate types of screws and other display/mounting components will depend on the strength and composition of the particular ceiling.
- ④ Insert the post COMP into the ceiling flange COMP and secure the two with two hexagonal socket head bolts (M10 x 85).
- ⑤ Tighten the vibration-preventing hexagonal socket head bolt (M6 x 10).
  - Firmly tighten all bolts.
  - After mounting the mounting hardware, but before mounting the plasma display, confirm the strength of the mount portion of the ceiling.
  - For additional safety, use the holes in the ceiling flange COMP, as shown. (Use parts strong enough to support the weight of the display)



NOTE: Safety wires serve as important backups in keeping the unit securely mounted.

**THIS ITEM IS NOT AVAILABLE. PLEASE CONTACT PIONEER FOR INFORMATION**



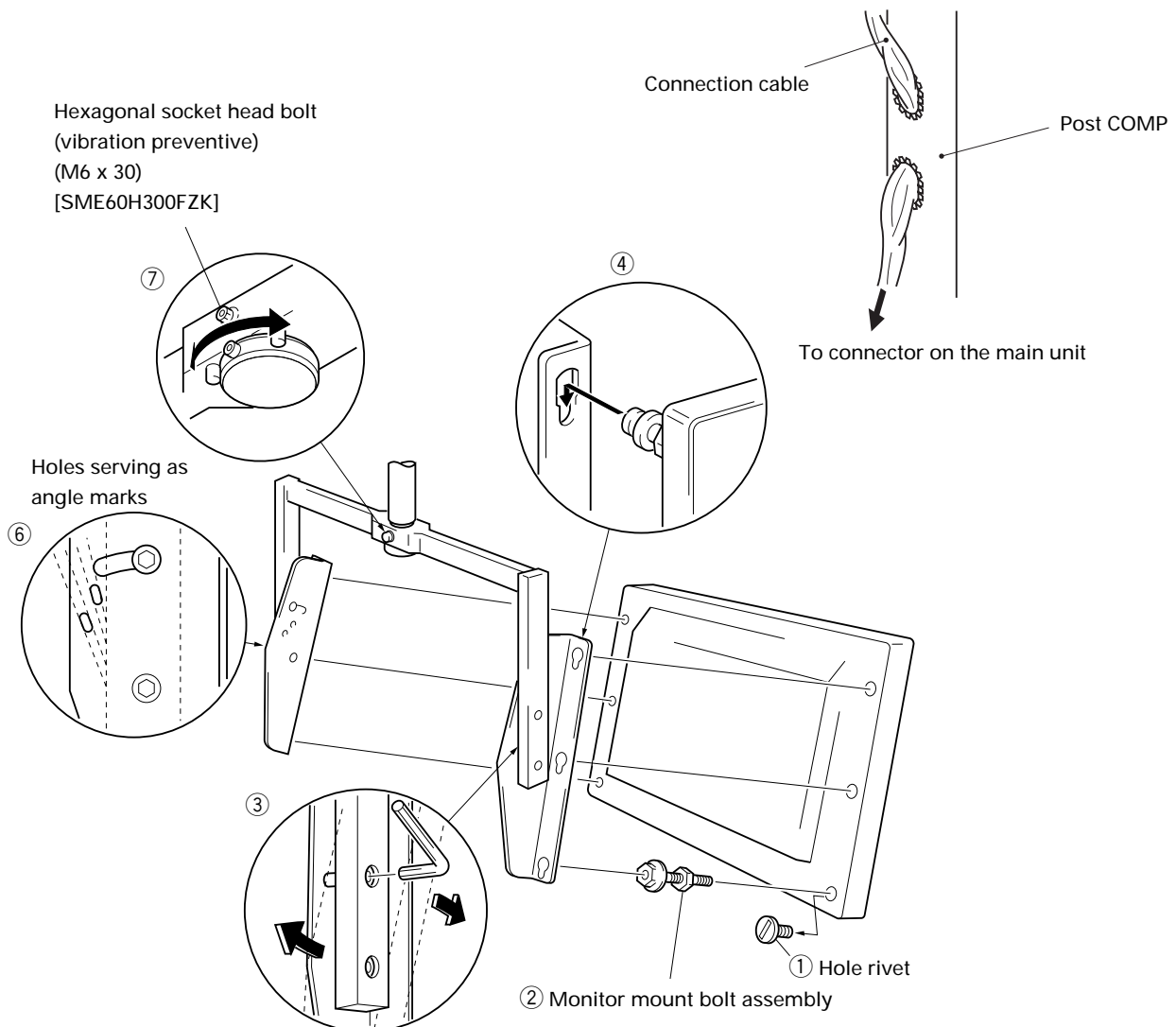
NOTE 1: Tighten all the mount screws at the specified points.

NOTE 2: The mounting screws must be strong enough to support the weight of the mounting hardware.

## THIS ITEM IS NOT AVAILABLE. PLEASE CONTACT PIONEER FOR INFORMATION

### 3) Mounting the plasma display

- ① Remove the hole rivets (quantity: six) from the rear of the plasma display.
- ② Mount the supplied monitor mount bolt assembly (three per side) to the mount openings at the rear of the display.
- ③ Loosen the upper mount screws securing the left and right monitor bracket and tilt the brackets to full extension. (Do NOT loosen the lower screws.)
- ④ Lift the plasma display and insert the monitor mount bolt assemblies into the monitor brackets.
- ⑤ To avoid twisting and deforming the plasma display, always tighten the nut for the monitor mount bolt assembly (three per side) after loosening the upper mount screws of the monitor brackets.
- ⑥ Adjust the tilt of the plasma display (tiltable 25 degrees for horizontal).  
Determine the desired angle, then retighten the upper mount screws for both the left and right monitor brackets. Holes in the monitor brackets serve as angle marks (in 5-degree increments).
- ⑦ Adjust the left and right rotational angle of the plasma display (panning over a range of 45 degrees on each side).  
Hold the monitor frame and rotate the display to the desired angle, then secure the display assembly by tightening the vibration-preventing hexagonal socket head bolts (M6 x 30).
- ⑧ Connect cables to the display by running them through cable openings in the post COMP. If the cables are too thick to pass through cable openings in the post COMP, connect them to the display directly or replace with thinner cables.



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## **4.5 Tiltable Plasma Display Wall-Mount Hardware: PDK-5006**

### **4.5.1 Specifications**

**External dimensions** ..... 1218 (W) x 98.5 (D) x 714 (H) mm

**Weight** ..... 30.8 kg (mounting hardware only)

73.5 kg (mounting hardware + plasma display)

**Material** ..... Resin on front plate on rear

**Finish** ..... Laser-satin gray paint on front semi-matte black paint on rear

### **Accessories**

Vertical frame (left and right) ..... x 2

Horizontal frame ..... x 2

Hexagonal socket head flange bolt ..... x 8

Monitor mount bolt (with washer) ..... x 8

Washer ..... x 4

Hexagonal wrench ..... x 1

**\* Operating Temperature Restrictions**

- Ambient temperature: 0 to 40°C

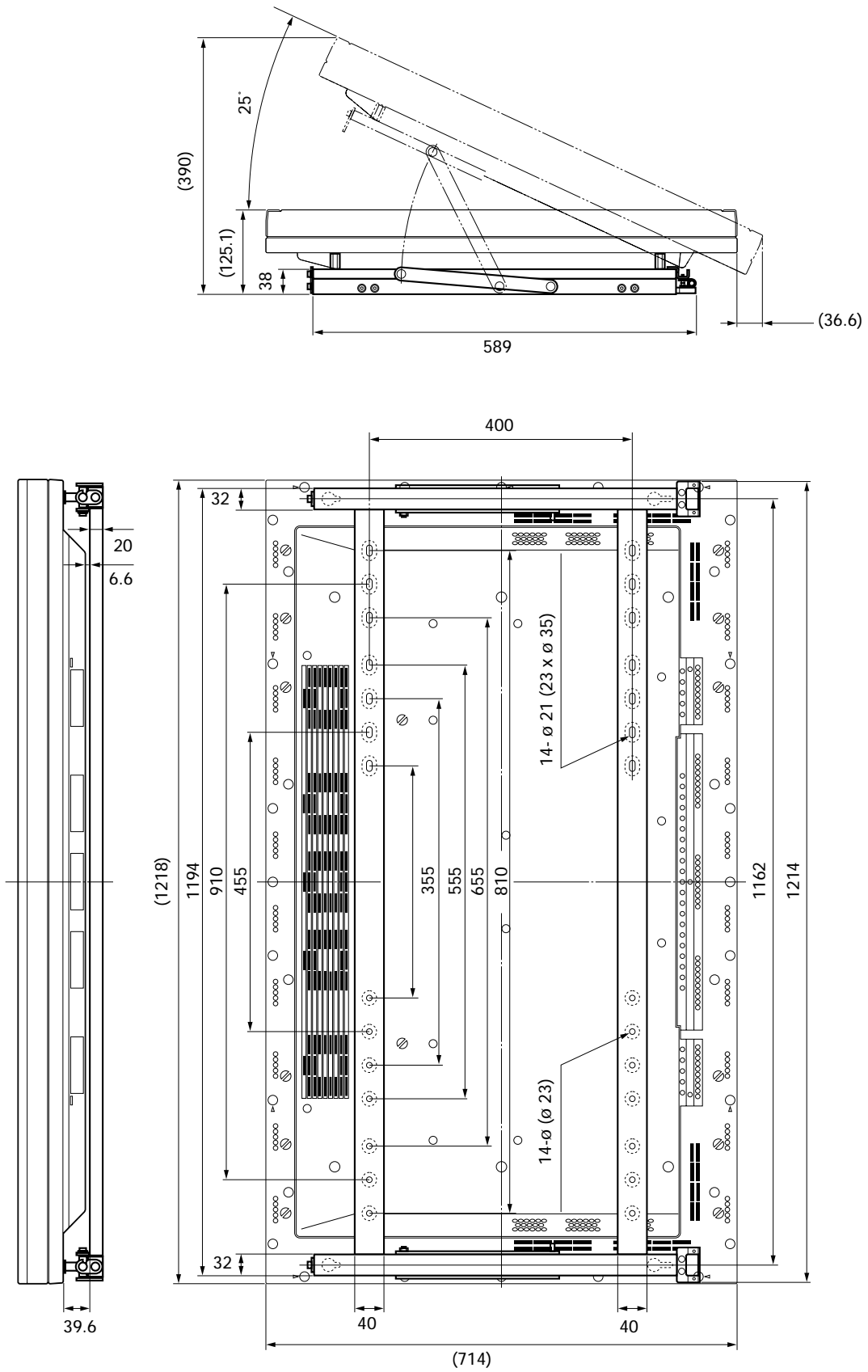
**\* Operating Temperature Restrictions for Upside-down Installations**

- Upside-down installation is unavailable with the PDK-5006.

**In wall-mounting installation, allow adequate space (a clearance of 300 mm or more) above and below the monitor set, as well as on the right and left.**



THIS ITEM IS NOT AVAILABLE. PLEASE CONTACT PIONEER FOR INFORMATION



THIS ITEM IS NOT AVAILABLE. PLEASE CONTACT PIONEER FOR INFORMATION

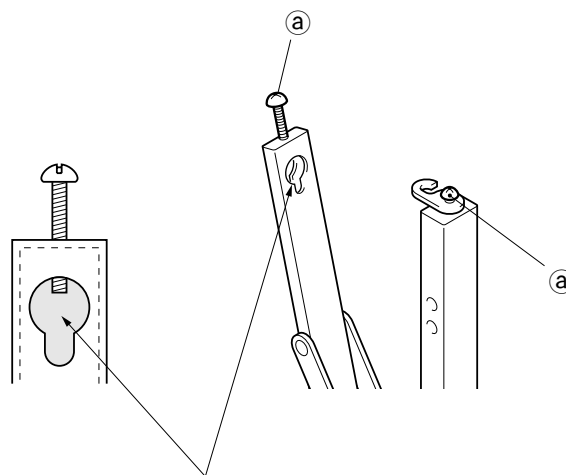
### 4.5.2 Assembling the mounting hardware and mounting the plasma display

#### 1) Precautions

- Make sure you distinguish correctly between vertical frames for left and right. Both should be mounted so their hexagonal sockets face outward.
- The horizontal frames should be mounted so their smaller openings face the wall. (A total of eight openings are provided in the horizontal frames for wall-mounting. (A total of fourteen openings are provided in the PDK-5006 itself.)

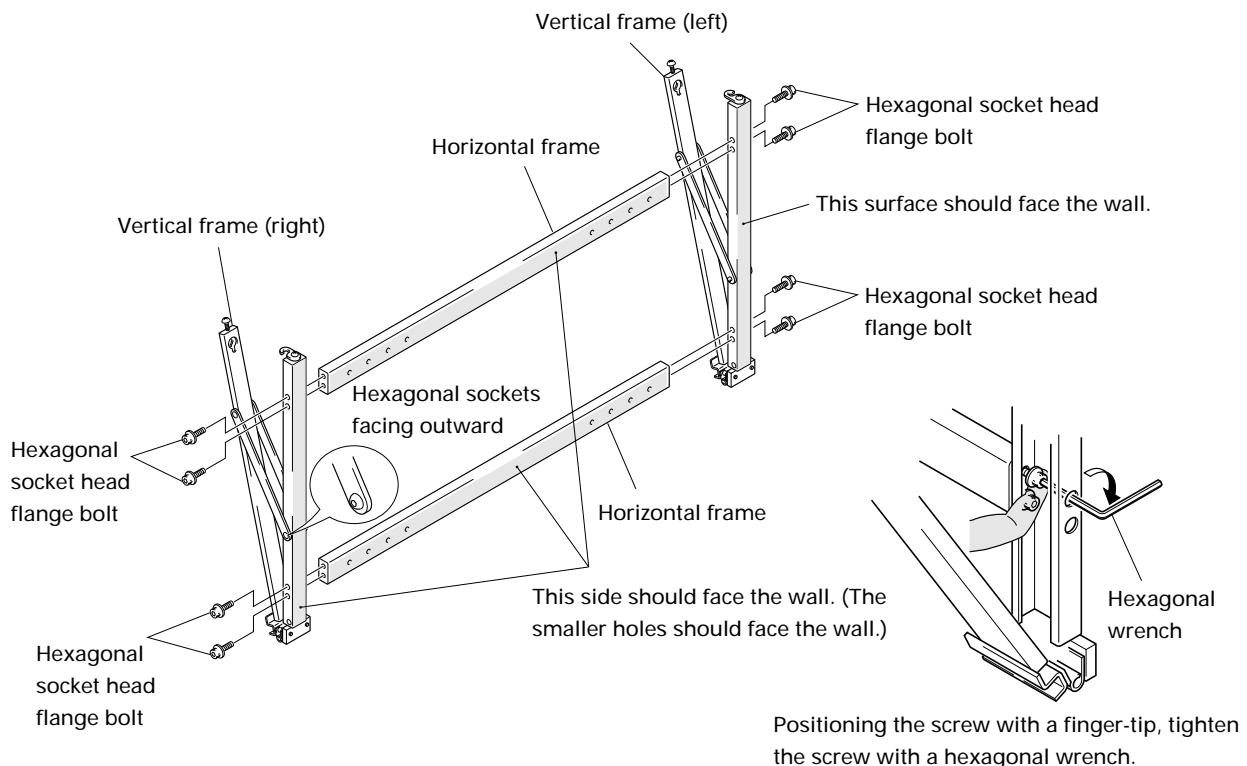
#### 2) Assembly procedure

- ① Loosen screw ③ and separate one end of the hook from the screw.
- ② Hold the upper part of the vertical frame and open to an approximate width of 10 cm.



Loosen the screw until you can no longer see its end through this opening.

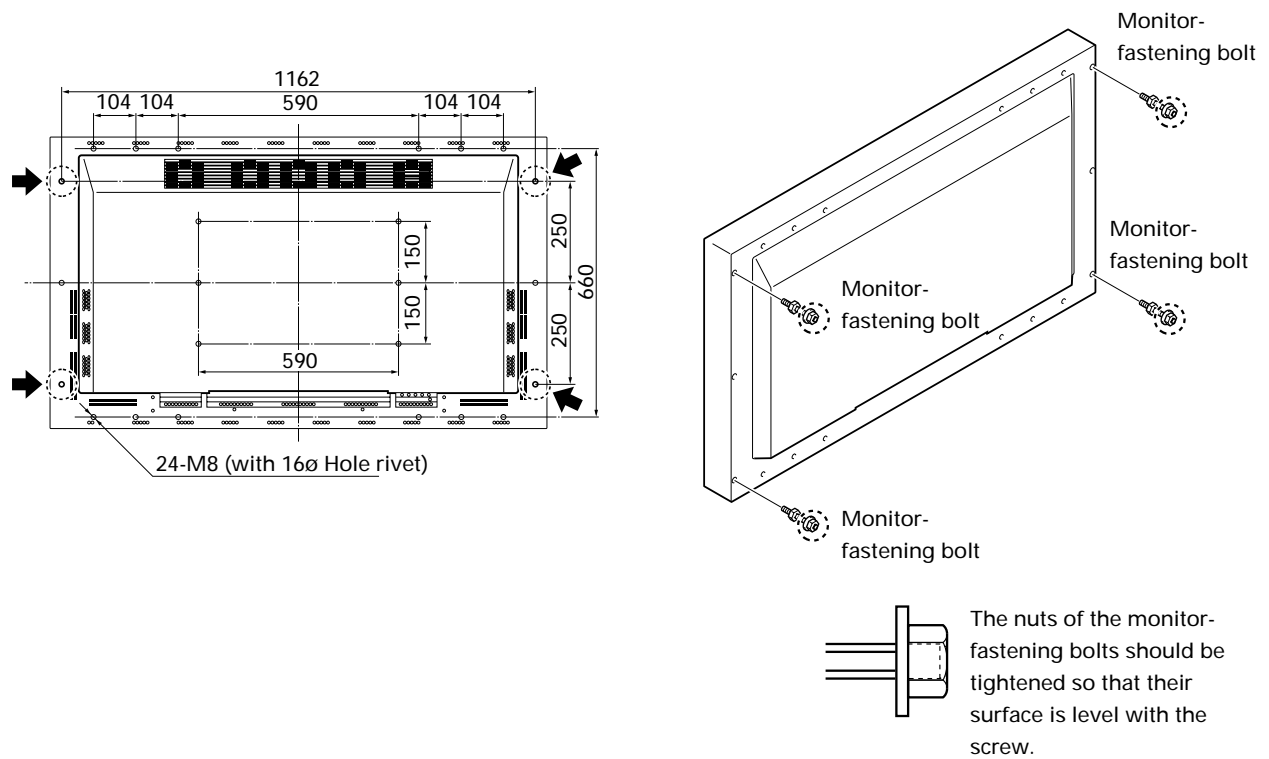
- ③ Mount the horizontal frame to the vertical frames.



**THIS ITEM IS NOT AVAILABLE. PLEASE CONTACT PIONEER FOR INFORMATION**

**3) Mounting monitor-fastening bolts to the plasma display**

- ① Mount the monitor-fastening bolts to the four rear corners of the plasma display.

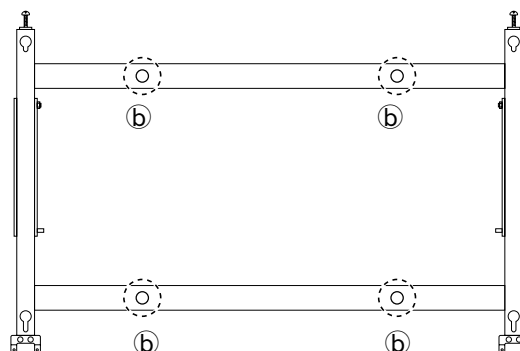


- ② Mounting the assembled mounting hardware to the wall

1. Firmly fasten the mounting hardware to the wall at a minimum of four points (b), using appropriate screws or bolts. Make sure that the screws and bolts are appropriate for the wall's strength and composition.

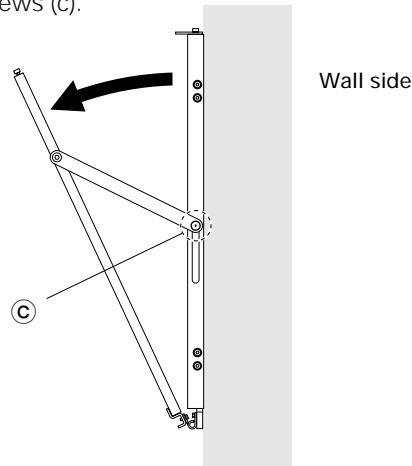
**CAUTION**

Before mounting to the wall, check that the fittings have adequate strength.



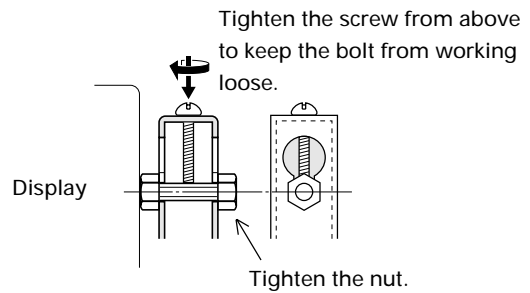
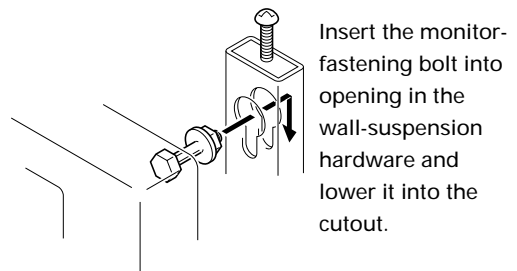
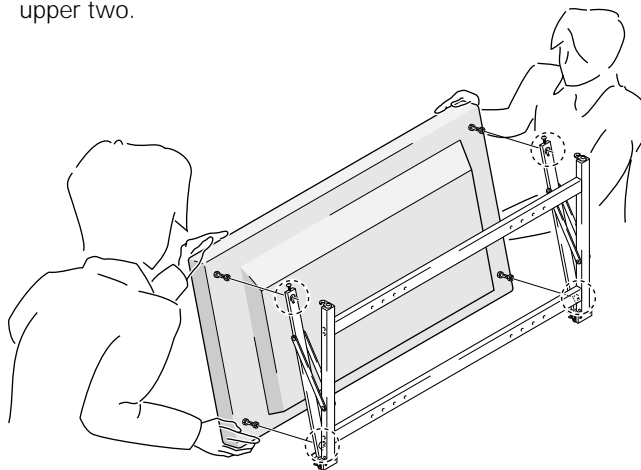
**THIS ITEM IS NOT AVAILABLE. PLEASE CONTACT PIONEER FOR INFORMATION**

2. After mounting the mounting hardware to the wall with the screws, fully extend the left and right vertical frames as shown and tighten the left and right screws (c).



**③ Mounting the plasma display**

1. Two persons should firmly hold the left and right sides of the plasma display, as shown. Insert four monitor-fastening bolts into appropriate openings in the wall-suspension hardware. Insert the two lower bolts before the upper two.



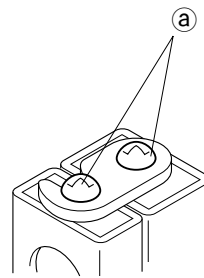
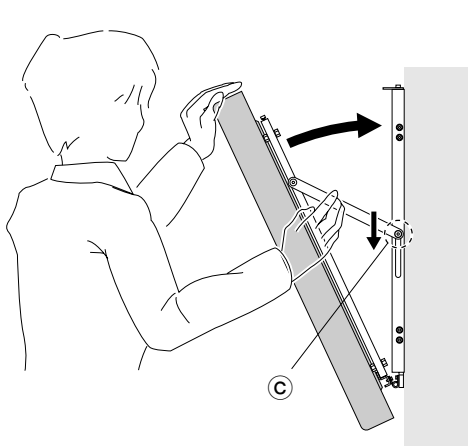
2. After performing the above step, adjust the installation angle, as discussed on the next page.

**THIS ITEM IS NOT AVAILABLE. PLEASE CONTACT PIONEER FOR INFORMATION**

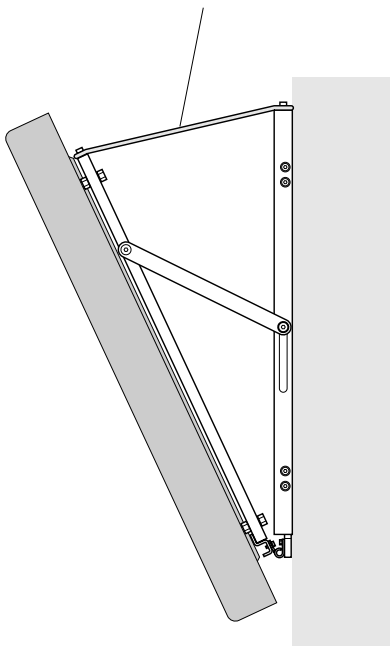
**4) Adjusting the angle**

This mounting hardware can be tilted 25 degrees, without set increments. This work should be done by two people.

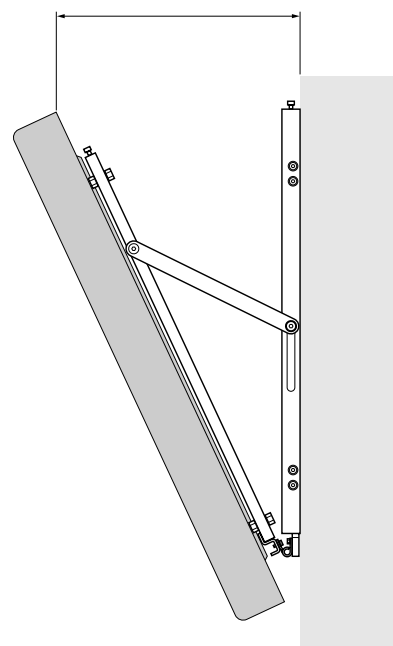
- ① Loosen screw © on the left and right vertical frames.
- ② While sliding the arm down, push the display to the desired angle.
- ③ Once the desired angle is reached, tighten screw © on the left and right frames.



When mounting the display flush or parallel to the wall, secure the movable and fixed portions of the mount frame by tightening the screws a, as shown. This prevents accidental tilting of the display. You must also tighten the left and right © screws.



After mounting the unit at an angle, an additional reinforcement measure can be taken by attaching an appropriate wire flat bar using screws (a).



Measuring the opening distance x enables approximate angle values to be determined.

X	Angle
181mm	5°
236mm	10°
290mm	15°
341mm	20°

# Speaker System: PDP-S02-LR

## 4.6 Speaker System: PDP-S02-LR

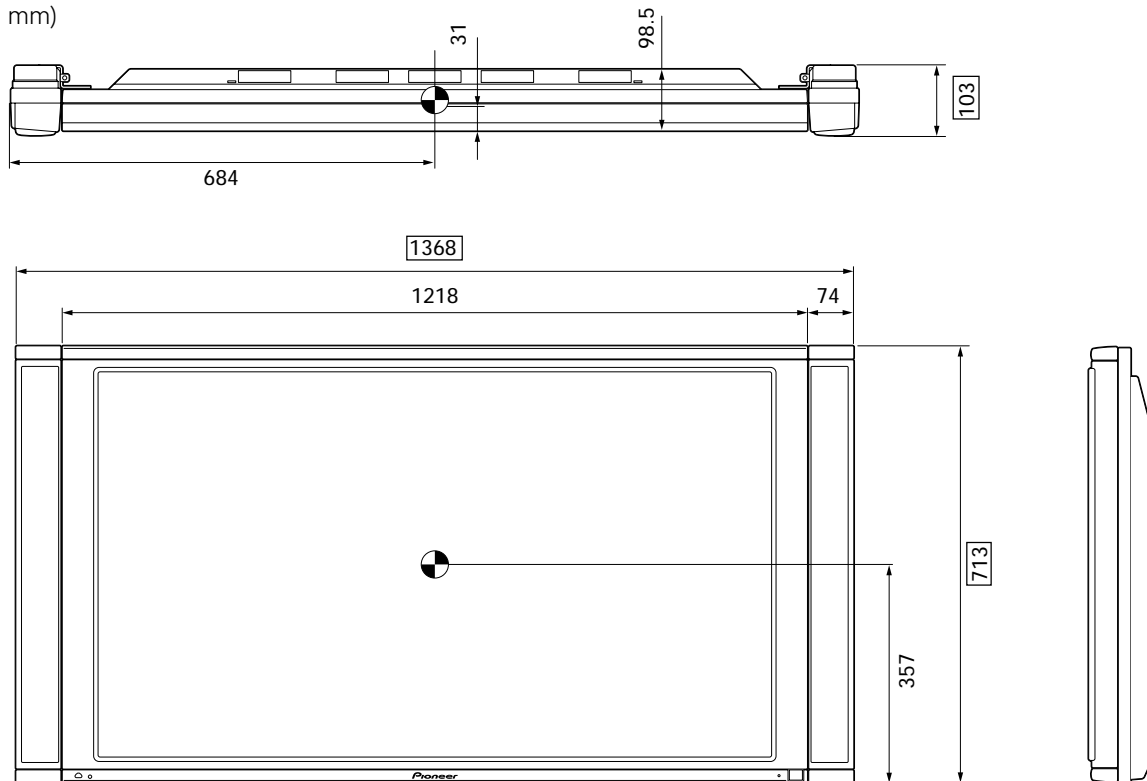
### 4.6.1 Specifications

External dimensions .....	74 (W) x 103 (D) x 714 (H) mm
	1368 (W) x 103 (D) x 714 (H) (with plasma display PDP-501MX/PDP-V501X mounted)
Weight .....	2.9 kg
	48.8 kg (with plasma display PDP-501MX/PDP-V501X mounted)
Cabinet .....	Stagger-connection closed type, magnetically-shielded design (EIAJ)
Speaker (three-way)	
Low (Woofer) .....	Ecliptic cone
Mid (Mid-range) .....	Ecliptic cone
High (Tweeter) .....	2.5-cm dome
Nominal impedance .....	8 ohms
Playback frequency .....	50 to 60,000 Hz
Output sound pressure .....	82 dB/W (1m)
Permissible input	
Maximum output (EIAJ) .....	12 W
Rated input (EIAJ) .....	4W
Crossover frequency .....	4 kHz
Accessories (for one set of speakers) .....	Speaker cord x2, Flat head screw x4, Hexagonal socket head screw x4, Hexagonal wrench x1, Washer M8 (ø25) x 4, Washer (ø15) x4, Mount components x4, Warranty card x1, Operating Instructions x1

External dimensions (with plasma display PDP-501MX/PDP-V501X mounted)

☉ Center of gravity

(Unit: mm)

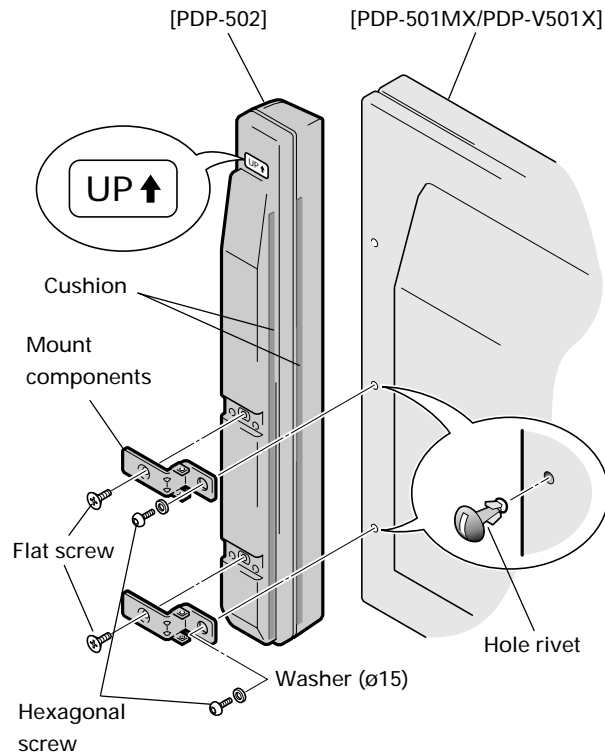


### 4.6.2 Mounting to the main unit

Two mounting methods are available. Proceed as follows.

#### 1 Mounting to the sides of the display

- The figure illustrates how to mount the speaker to the right side of the display.

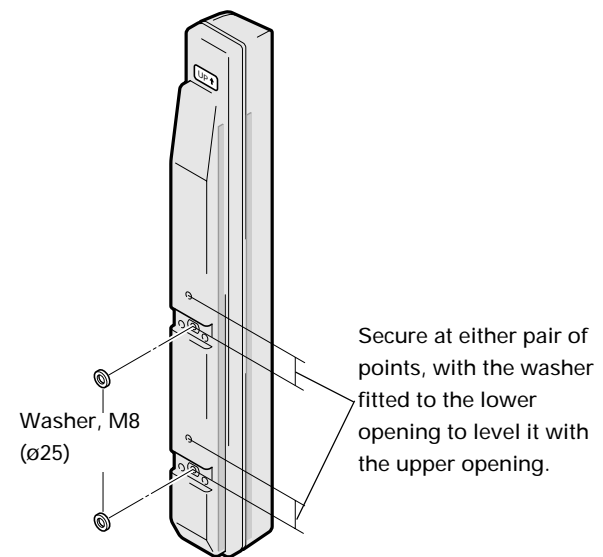


- Remove the lower two hole rivets from the rear of the display. (The hole rivet can be removed using a coin or other device.)
- Mount the supplied mounting components to the speakers. (Take care to keep the protective cushioning from peeling off.)
- Find the left and right speakers (check for "Left" and "Right" marks) and mount the speakers to the display, with the cushioning facing the display and the "UP" mark up, by first tightening the lower, then the upper mounting components. (At this point, the mounting components are only tightened temporarily.)
- Securely tighten the flat screws to mount the mounting components firmly to the display, while positioning mounting components to ensure even clearance between the speaker and the display.

- The use of screws other than those supplied may prevent secure installation or correct operation. Use only the supplied mount screws.
- If you must move the display after the speakers have been mounted, grasp the lower part of the display instead of the speakers.

#### 2 Mounting using commercially-available mounting components

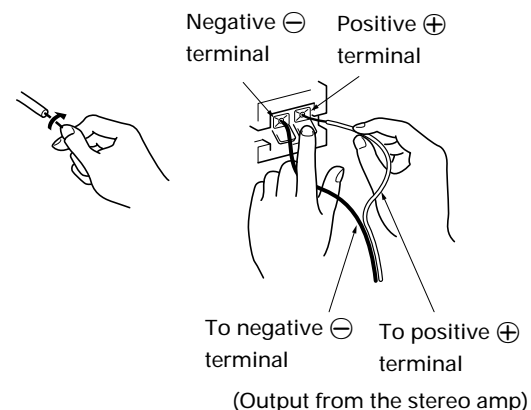
- This speaker system comes with M8 washers (ø25) for mounting the system using commercially-available mounting components.
- Use either the center set of two mount openings or the lower set, which is designed for use with commercially-available mounting components. The two mount openings for either set are not level; the supplied washer provides the necessary compensation.



#### Connection to a stereo amplifier

- Switch off power to the stereo amp.
- Use the supplied speaker cable to connect the speaker input to the amp output. The red input terminal (the terminal at the right in the illustration) is positive (+). The black terminal (at the left in the illustration) is negative (-).

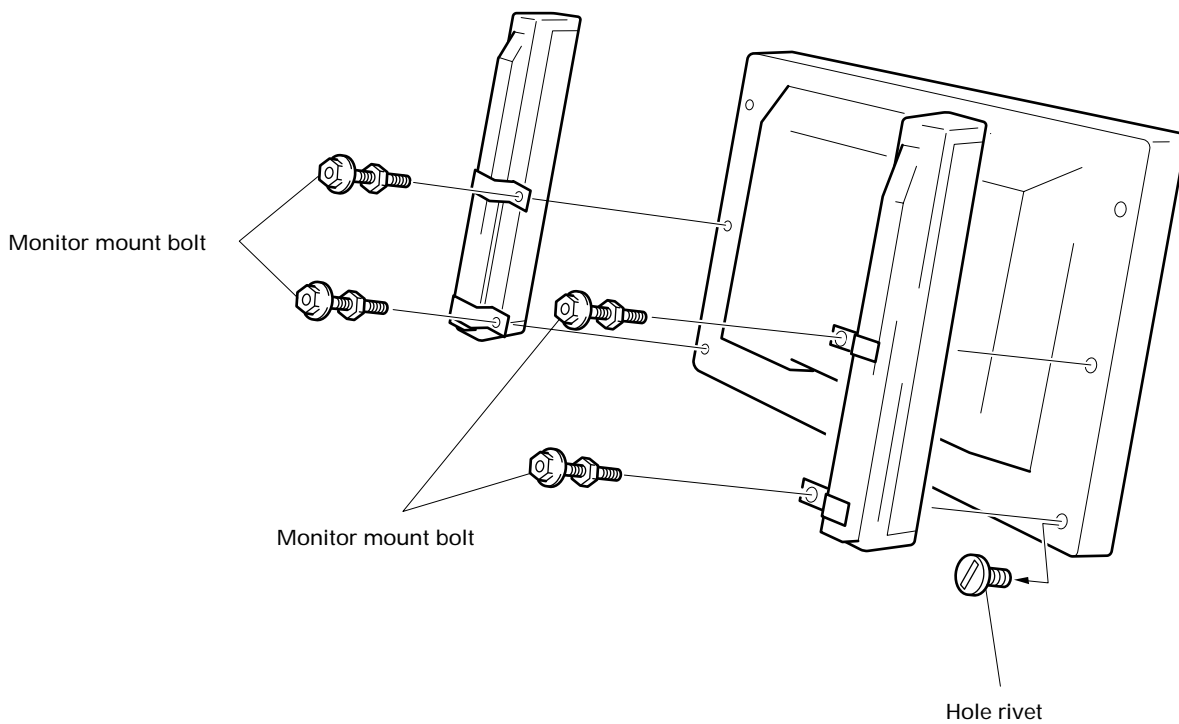
- Pare the insulation from the ends of the cable and twist the bare wires.
- Press the level and insert the ends of the twisted wires into the proper openings. Release the lever.



## Speaker System: PDP-S02-LR

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### 4.6.3 Mounting with the plasma display ceiling-suspension hardware (PDK-5002)



**Figure 2**

When mounting the plasma display with the optional speakers to the ceiling-suspension hardware, first attach the speakers to the display with monitor mount bolts, as shown in **Figure 2**. Next, referring to **Figure 3**, use the upper left and right monitor mount bolts, which are not used for mounting the speaker system, to fasten the ceiling-suspension hardware to the display using the washers (25 mm in outside diameter) supplied with the optional speaker.

Follow the normal mounting procedure to attach the mounting hardware to the display.

Mounting the optional speakers to the display makes it difficult to access the monitor mount bolts. Take care while performing mounting work.



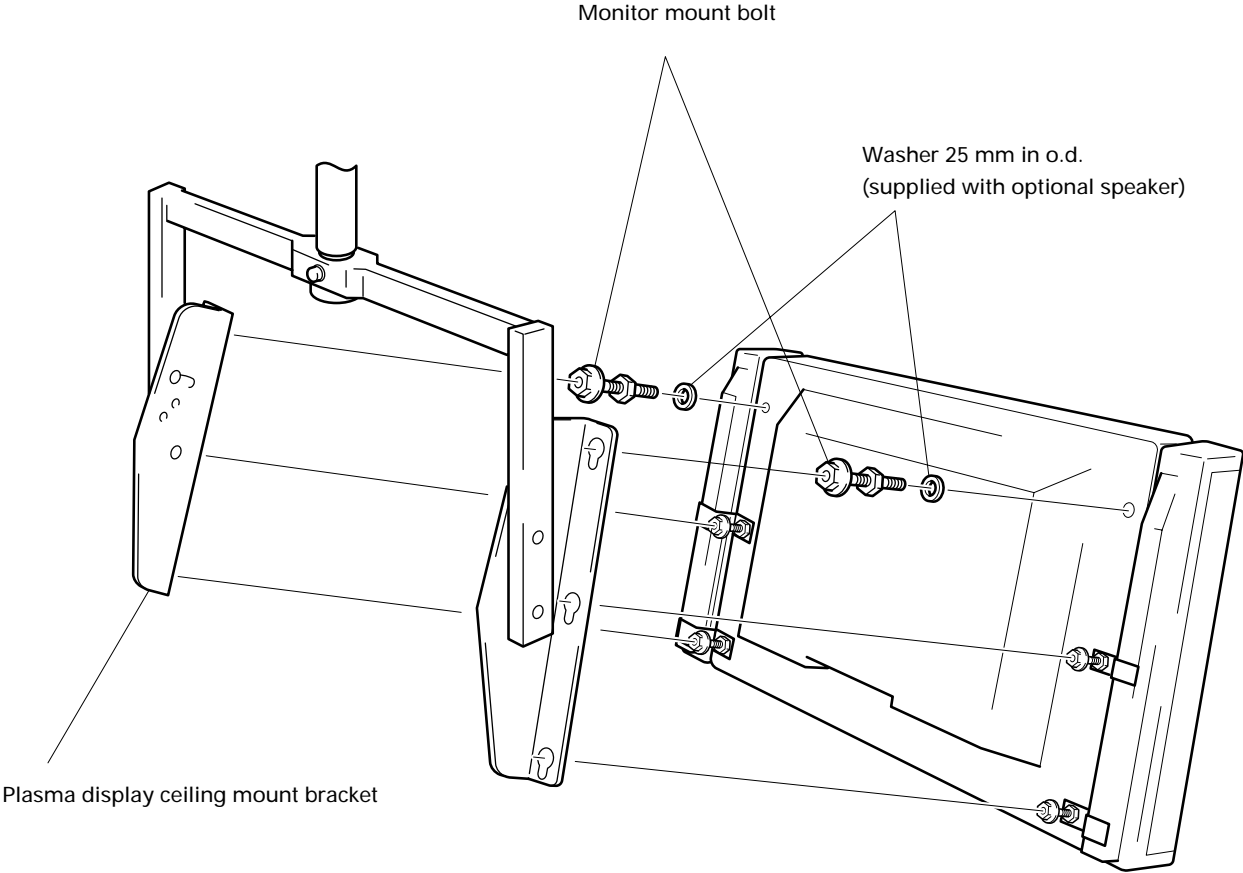
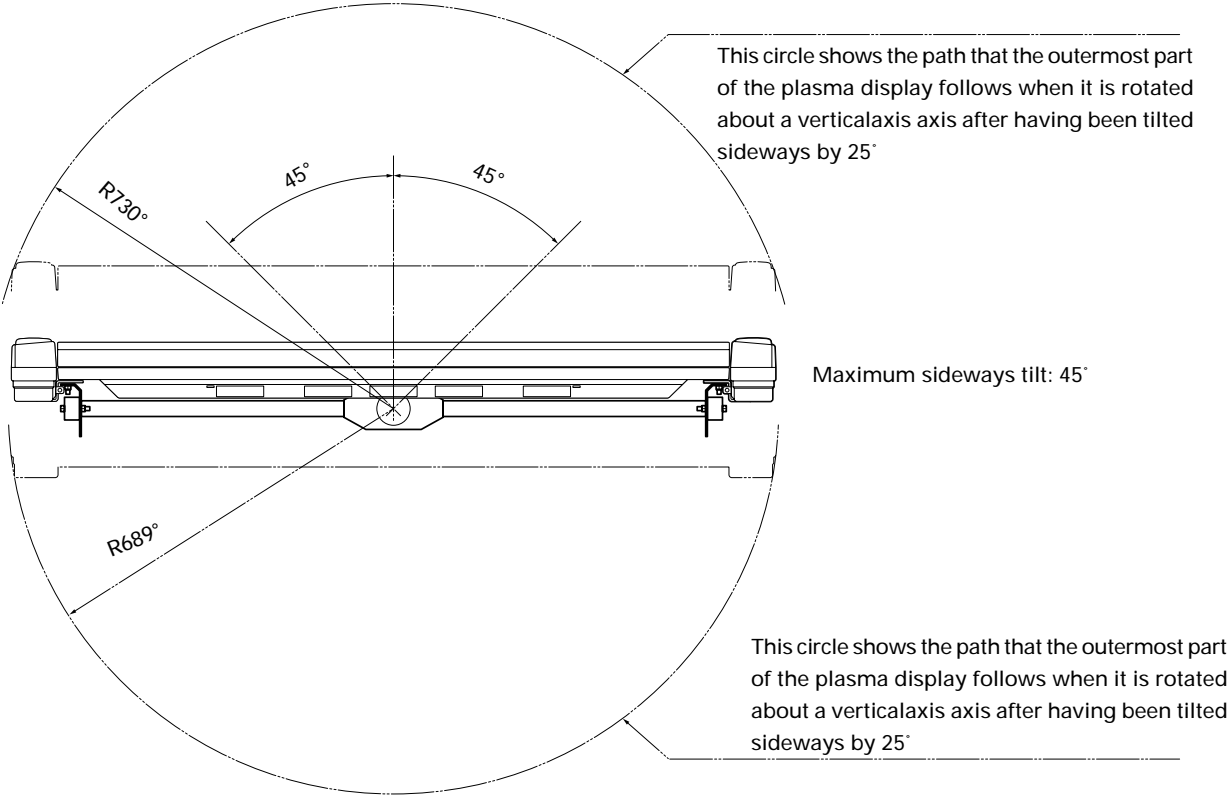
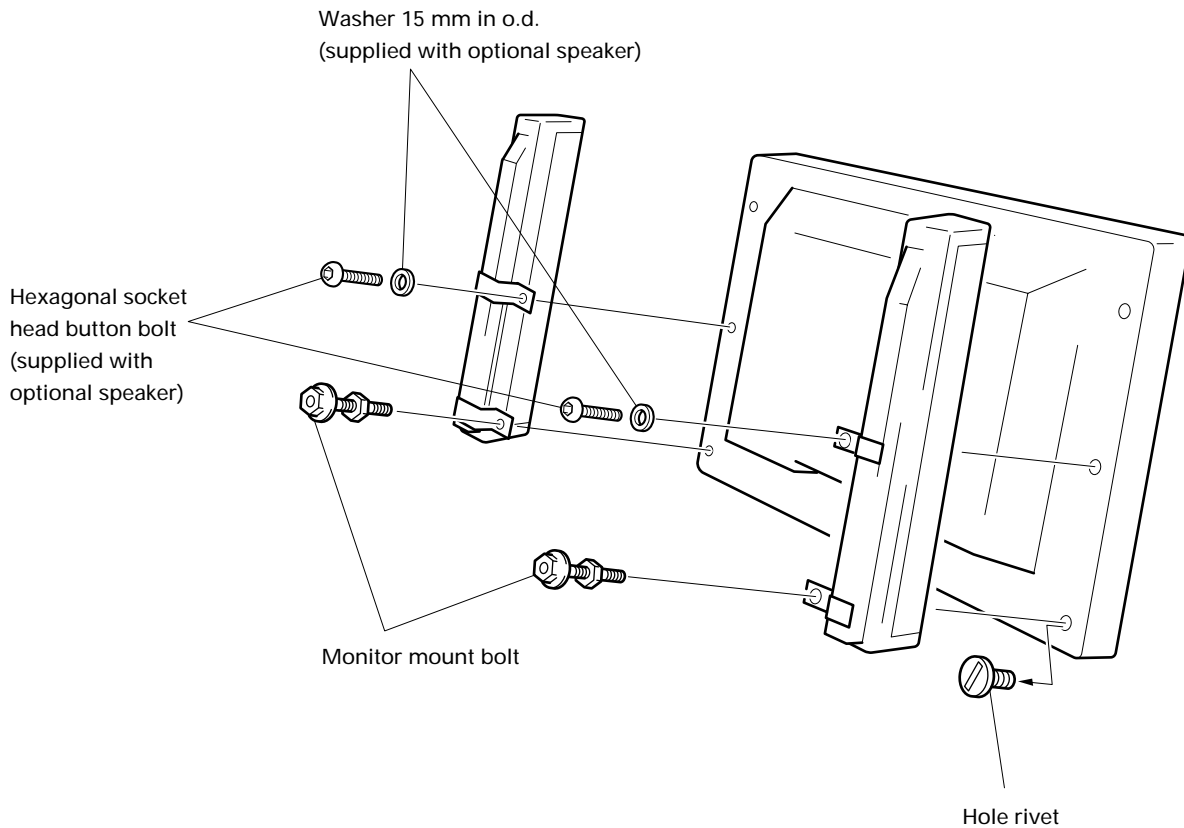


Figure 3



## Speaker System: PDP-S02-LR

### 4.6.4 Mounting with PDK-5006 (wall-mounting hardware)



**Figure 4**

When mounting the plasma display with the optional speakers to the ceiling-suspension hardware, first fasten the speakers to the display with monitor mount bolts and the hexagonal socket head button bolts and washers (outer diameter:15 mm) that are supplied with the optional speaker, as shown in **Figure 4**. Next, referring to **Figure 5**, use the upper left and right monitor mount bolts, which are not used to mount the speaker system, to attach the wall mount hardware to the display using the washers (outer diameter:25 mm) supplied with the optional speakers.

Then follow normal mounting procedures to secure the mounting hardware to the display.

Mounting the optional speakers to the display makes it difficult to access the monitor mount bolts. Take care while performing mounting work.

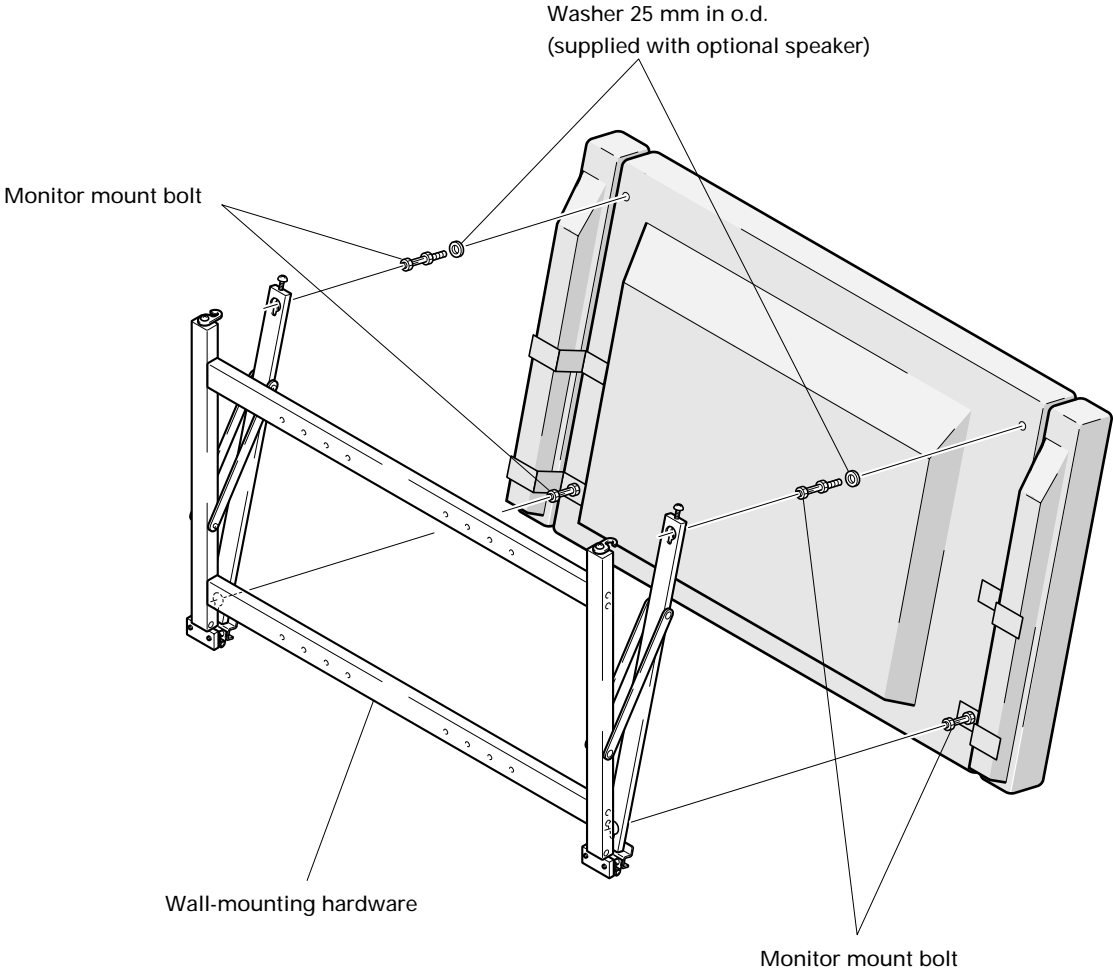


Figure 5

## Before Beginning Adjustments

### 5.1 Before Beginning Adjustments

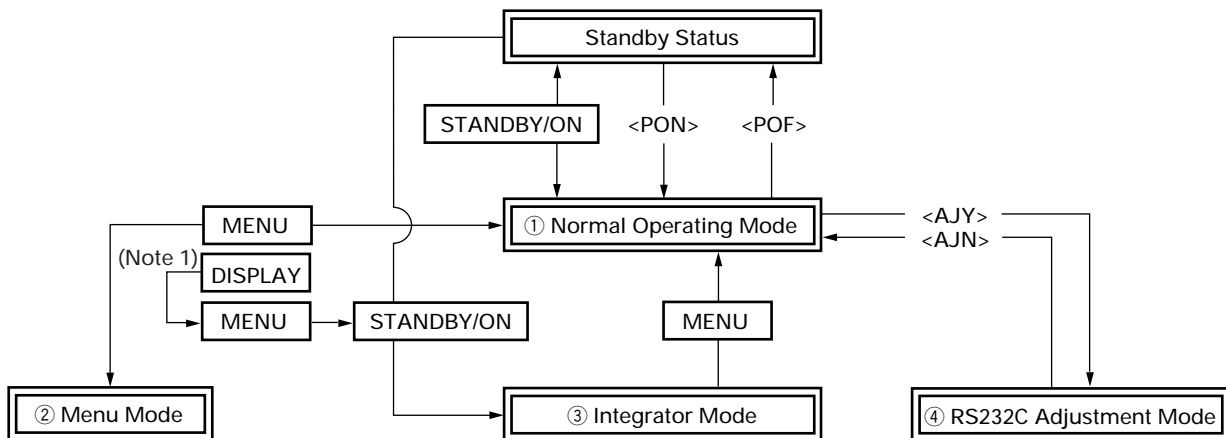
You can make adjustments to the unit in the following ways:

- With the operating panel of the main unit
- With the remote control unit
- With a PC (through RS-232C control)


Make sure you've thoroughly read and understood the following before making any adjustments.

#### 5.1.1 Operating mode

The unit has the following four major operating modes:



 indicates operating mode and status.

 indicates button operations on the remote or on the main unit's operating panel.

< > indicates RS-232C command operations.

Note 1: Refer to "5.4.1 About Integrator Mode."

#### 1) Normal Operating Mode

Intended for video playback, this mode enables the following basic operations:

- Switching to STANDBY status (POWER OFF)
- Input switching
- Screen-size switching
- Full auto-zoom On/Off
- Key Lock/Unlock switching (this must be done using a button found only on the main unit.)
- Switching to Menu or RS-232C adjustment mode

Additionally, Normal operating mode also enables some of the RS-232C controls (as discussed in "5.6.2 RS-232C Commands").

#### 2) Menu Mode

Use this mode to set picture quality, image position, and other characteristics.

Refer to "5.3 Menu Mode" for further details.

The mode allows you to change adjustment data within certain limits, based on values adjusted in Integrator or RS-232C adjustment modes (discussed later).

For more information, refer to "5.3 Menu Mode."

### 3) Integrator Mode

This mode provides adjustment functions for the integrator.

White balance adjustment and various other setting items are available in addition to those in Menu mode.

Refer to "5.4 Integrator Mode" for further details.

### 4) RS-232C Adjustment Mode

This mode enables various adjustments and settings using a PC.

Some adjustment items are available only in this mode.

Refer to "5.5 RS-232C Adjustment Mode" for further details.

Combination use of remote, Unit operation panel, and PC.

### 5.1.2 Combination in use of remote, unit operating panel, and PC

- The remote, and the operating panel of the main unit may be used together.

Example: You can enter Menu mode through the operating panel of the main unit, then make adjustments using the remote.

- Depending on which has transmitted the more recent command, either the remote or the operating panel(of the main unit), or RS-232C may originate the command currently in effect.

Example:	Operation	Action
	Press the MENU button on the remote (or on the operating panel of the main unit)	→ Enters Menu mode. At this time, the only available RS-232C commands are: <ul style="list-style-type: none"><li>• &lt;AJY&gt;</li><li>• &lt;POF&gt;</li></ul>
	Now, issue an <AJY> command from a PC.	→ Menu mode is disabled and RS-232C adjustment mode is activated. At this time, only the following options are available from the remote(or the operating panel of the main unit): <ul style="list-style-type: none"><li>• Power switch</li><li>• MENU button</li><li>• KEY LOCK/UNLOCK button</li></ul>

NOTE: The remote does not have a KEY LOCK/UNLOCK button.

## Before Beginning Adjustments

### 5.1.3 List of supported input signals

#### 1) Input (Video) Signals Supported (For U.S. and Taiwanese Models)

##### INPUT 1

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Screen Size					FULL AUTO ZOOM	Remarks
			4:3 NORMAL	FULL	ZOOM	CINEMA WIDE	NATURAL WIDE		
60	15.7	Composite	○	○	○	○	○	○	NTSC
		S-Video Signal	○	○	○	○	○	○	

##### INPUT 2

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Screen Size					FULL AUTO ZOOM	Remarks
			4:3 NORMAL	FULL	ZOOM	CINEMA WIDE	NATURAL WIDE		
60	15.7	Component	○	○	○	○	○	○	
	31.5	Component	○	○	○	○	○		

##### INPUTS 3 and 4

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Screen Size					FULL AUTO ZOOM	Remarks
			4:3 NORMAL	FULL	ZOOM	CINEMA WIDE	NATURAL WIDE		
60	15.7	RGB	▲	▲	▲	▲	▲		SDTV 480i
		Component	○	○	○	○	○	○	
	31.5	RGB	○	○	○	○	○		SDTV 480p
		Component	○	○	○	○	○		
	33.8	RGB		○					HDTV 1080i
		Component		○					
45.0	RGB		○					HDTV 720p	
	Component		○						

○: Supported signals and screen sizes

▲: Can be reproduced depending on settings in Integrator mode, but primary picture quality is not available.

## Before Beginning Adjustments

### 1) Input (Video) Signals Supported (For Euro Model)

#### INPUT 1

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Screen Size					FULL AUTO ZOOM	Remarks
			4:3 NORMAL	FULL	ZOOM	CINEMA WIDE	NATURAL WIDE		
50	15.6	Composite	○	○	○	○	○	○	PAL, SECAM
		S-Video Signal	○	○	○	○	○		
60	15.7	Composite	○	○	○	○	○	○	NTSC, 4.43 NTSC
		S-Video Signal	○	○	○	○	○		

#### INPUT 2

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Screen Size					FULL AUTO ZOOM	Remarks
			4:3 NORMAL	FULL	ZOOM	CINEMA WIDE	NATURAL WIDE		
50	15.6	Component	○	○	○	○	○	○	
	31.3	Component	○	○	○	○	○		
60	15.7	Component	○	○	○	○	○	○	
	31.5	Component	○	○	○	○	○		

#### INPUTs 3 and 4

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Signal Format	Screen Size					FULL AUTO ZOOM	Remarks
			4:3 NORMAL	FULL	ZOOM	CINEMA WIDE	NATURAL WIDE		
50	15.6	RGB	▲	▲	▲	▲	▲	○	
		Component	○	○	○	○	○		
	31.3	RGB	○	○	○	○	○		
		Component	○	○	○	○	○		
60	15.7	RGB	▲	▲	▲	▲	▲		
		Component	○	○	○	○	○		
	31.5	RGB	○	○	○	○	○		
		Component	○	○	○	○	○		
	33.8	RGB		○				○	
		Component		○					
	45.0	RGB		○					
		Component		○					

○: Supported signals and screen sizes

▲: Can be reproduced depending on settings in Integrator mode, but primary picture quality is not available.

## Before Beginning Adjustments

### 2) Input (PC) Signals Supported

#### INPUTs 3 and 4

Model	Dot x Line	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)	Screen Size and Display area (dot x line)			
				ORIGINAL	4: 3 NORMAL	FULL	ZOOM
PC/AT compatible	640 x 400	70.1	31.5	640 <sup>⊙</sup> x 400	1000 <sup>○</sup> x 624	1276 <sup>○</sup> x 768	
		59.9	31.5	640 <sup>⊙</sup> x 480	1024 <sup>○</sup> x 768	1276 <sup>○</sup> x 768	
			72.8	37.9	640 <sup>⊙</sup> x 480		
	800 x 600	75	37.5	640 <sup>⊙</sup> x 480			
		56.3	35.2	800 <sup>⊙</sup> x 600	960 <sup>○</sup> x 720	1280 <sup>○</sup> x 720	
			60.3	37.9	800 <sup>⊙</sup> x 600	960 <sup>○</sup> x 720	1280 <sup>○</sup> x 720
		72.2	48.1	800 <sup>⊙</sup> x 600	960 <sup>○</sup> x 720	1280 <sup>○</sup> x 720	
	75		46.9	800 <sup>⊙</sup> x 600	960 <sup>○</sup> x 720	1280 <sup>○</sup> x 720	
	1024 x 768	60	48.4	1024 <sup>⊙</sup> x 768		1280 <sup>○</sup> x 768	
		70.1	56.5	1024 <sup>⊙</sup> x 768		1280 <sup>○</sup> x 768	
		75	60	1024 <sup>⊙</sup> x 768		1280 <sup>○</sup> x 768	
		87(Note 1)	35.5	1024 <sup>△</sup> x 768		1280 <sup>△</sup> x 768	
	1280 x 1024	60	64		960 <sup>△</sup> x 768	1276 <sup>△</sup> x 768	1276 <sup>⊙</sup> x 768
	Macintosh	640 x 480	66.7	35	640 <sup>⊙</sup> x 480	1024 <sup>○</sup> x 768	1276 <sup>○</sup> x 768
832 x 624		74.6	49.7	832 <sup>⊙</sup> x 624	1000 <sup>○</sup> x 748	1280 <sup>○</sup> x 748	
1024 x 768		74.9	60.2	1024 <sup>⊙</sup> x 768		1280 <sup>○</sup> x 768	
1152 x 870		75.1	68.7		1024 <sup>△</sup> x 768	1280 <sup>△</sup> x 768	
NEC PC-9800	640 x 400	56.4	24.8	640 <sup>⊙</sup> x 400	1000 <sup>○</sup> x 624	1276 <sup>○</sup> x 768	
		70.1	31.5	640 <sup>⊙</sup> x 400	1000 <sup>○</sup> x 624	1276 <sup>○</sup> x 768	
	640 x 480	59.9	31.5	640 <sup>⊙</sup> x 480	1024 <sup>○</sup> x 768	1276 <sup>○</sup> x 768	
		75	37.5	640 <sup>⊙</sup> x 480			
	800 x 600	60.3	37.9	800 <sup>⊙</sup> x 600	960 <sup>○</sup> x 720	1280 <sup>○</sup> x 720	
		75	46.9	800 <sup>⊙</sup> x 600	960 <sup>○</sup> x 720	1280 <sup>○</sup> x 720	
	1024 x 768	70.1	56.5	1024 <sup>⊙</sup> x 768		1280 <sup>○</sup> x 768	
		75	60	1024 <sup>⊙</sup> x 768		1280 <sup>○</sup> x 768	
	1280 x 1024	60	64		960 <sup>△</sup> x 768	1276 <sup>△</sup> x 768	1276 <sup>⊙</sup> x 768

⊙: Supported

○: Video can be reproduced, but details are unclear.

△: Simplified reproduction; details are not reproduced.

NOTE 1: Interlaced signal (frame frequency of 43.5 Hz)

PC-9800® is a registered trademark of NEC Corporation.

Macintosh® is a registered trademark of Apple Computer Inc.

NEC is a trademark of NEC Corporation.



## 3) About Screen Size

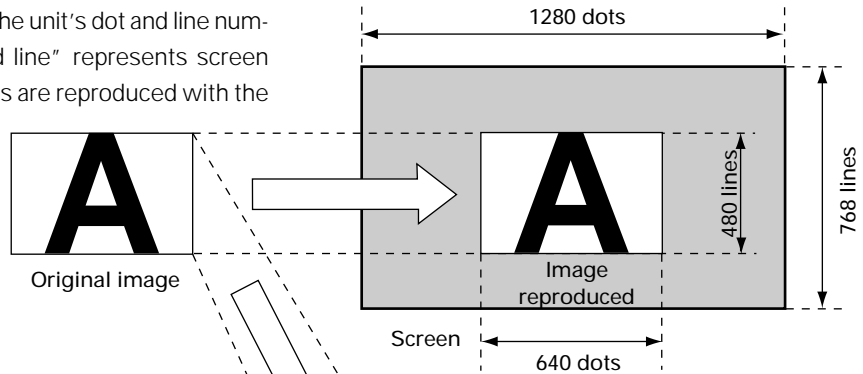
① Screen size when video signals are received: Refer to the operating manual.

② Screen size when PC signals are received:

- ORIGINAL

Images are reproduced with the input signal's dot and line numbers corresponding to the unit's dot and line numbers at a 1-to-1 ratio. "dot and line" represents screen size or display area. Input signals are reproduced with the highest possible fidelity.

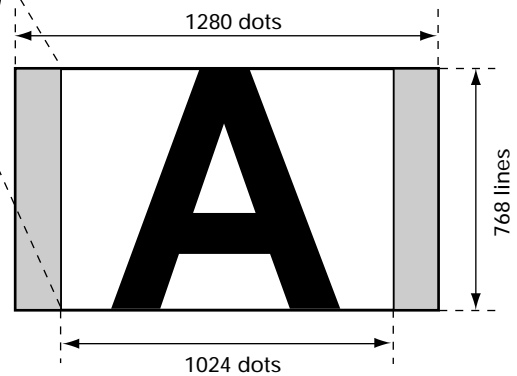
Screen Example:  
When inputting a  
640 x 480 signal →



- 4:3 NORMAL

Enables reproduction of input signals in full width, preserving the original aspect (vertical-to-horizontal ratio).

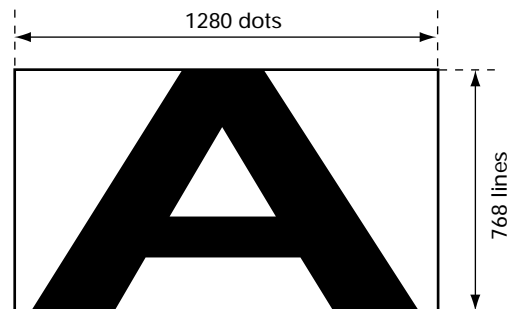
Screen Example: When inputting a 640 x 480 signal →



- FULL

Enables reproduction of input signals in full width on a 16-to-9 ratio screen.

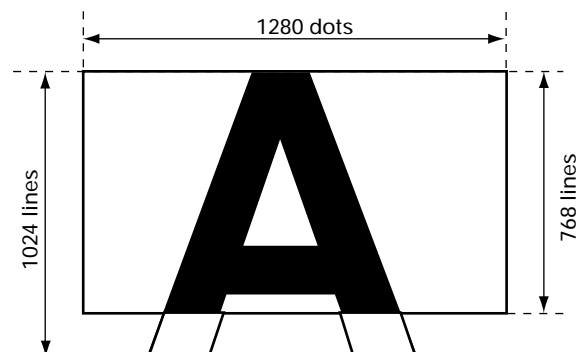
Screen Example: When inputting a 640 x 480 signal →



- ZOOM

Enabled only for 1280 x 1024 signals. Reproduction is made with the input signal's dot and line numbers corresponding to those of the unit at a 1-to-1 ratio, but the top or the bottom of the image will not be visible, as shown. (Vertical scrolling is available with "V.POSI." in Menu mode.)

NOTE: The figures are for illustrative purposes only.



## Before Beginning Adjustments

### 5.1.4 List of adjustable and settable items

#### 1) Menu Mode

	Variable Range	One-Step Increment	INPUT 1	INPUT 2	INPUT 3		INPUT 4			
			VIDEO	VIDEO	VIDEO		PC	VIDEO		PC
			COMPOSITE /S-VIDEO	COMPO-NENT	COMPO-NENT	RGB	RGB	COMPO-NENT	RGB	RGB
CONTRAST	±32 STEP	x 3	○	○	○	○	○	○	○	○
BRIGHT	±32 STEP	x 3	○	○	○	○	○	○	○	○
COLOUR	±32 STEP	x 2	○	○	○			○		
TINT	±32 STEP	x 2	○	○	○			○		
SHARP	±32 STEP	x 3	○	○	○			○		
C. TEMP	±2 STEP		○	○	○			○		
R LEVEL	±32 STEP	x 1(+) x 2(-)				○	○		○	○
G LEVEL	±32 STEP	x 1(+) x 2(-)				○	○		○	○
B LEVEL	±32 STEP	x 1(+) x 2(-)				○	○		○	○
H. POSITION	±64 STEP	Note 2		○	○	○	○	○	○	○
V. POSITION	±4 STEP	Note 2	Note 1	○ Note 1	○ Note 1	○ Note 1	○	○ Note 1	○ Note 1	○
CLK FREQ.	±32 STEP	x 2		○	○	○	○	○	○	○
CLK PHASE	±8 STEP	x 1					○			○
3D Y/C MODE Note 6	STILL/MOTION		○ Note 3							
ABL	ON/OFF						○			○
MP MODE	ON/OFF						○			○
AUTO POWER OFF	OFF/ON						○			
INPUT SETTING	PC/VIDEO					△ Note 4		△ Note 4		
SIGNAL	RGB/COMP1/COMP2			△ Note 5		○		○		
COLOR SYS Note 7	AUTO/NTSC/PAL/ SECAM/4.43NTSC		○							
CLAMP	MODE 1/MODE 2					○			○	

Note 1: V.POSITION can't be adjusted when screen size is set to ZOOM or CINEMA WIDE. But V.SCROLL remains available (refer to "5.2.1 ② Screen-Size Switching").

Note 2: The one-step increment may vary, depending on input signal and screen size. The range of adjustable values is also bounded (a limiter is inserted).

Note 3: Can't be set for S-video signal input.

Note 4: May be set only when inputting a signal of 60-Hz vertical frequency and 31.5-kHz horizontal frequency. (With all other input signals, setting occurs automatically.)

Note 5: RGB can't be selected.

Note 6: For U.S. and Taiwanese models.

Note 7: For EURO models.

2) Integrator Mode

Adjustment	Variable Range Median Value in Parentheses	INPUT 1	INPUT 2	INPUT 3			INPUT 4		
		VIDEO	VIDEO	VIDEO		PC	VIDEO		PC
		COMPOSITE /S-Video	COMPO- NENT	COMPO- NENT	RGB	RGB	COMPO- NENT	RGB	RGB
CONTRAST	0 to (128) to 255	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BRIGHT	0 to (128) to 255	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
COLOUR	0 to (64) to 127	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>		
TINT	0 to (64) to 127	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>		
SHARP	0 to (128) to 255	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>		
DETAIL	0 to (128) to 255	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>		
H. POSITION	0 to (128) to 255 Note 1		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
V. POSITION	0 to (128) to 255 Note 1		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CLK FREQ.	64 to (128) to 192		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CLK PHASE	0 to (8) to 16					<input type="radio"/>			<input type="radio"/>
R HIGH	0 to (128) to 255	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G HIGH	0 to (128) to 255	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B HIGH	0 to (128) to 255	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R LOW	0 to (128) to 255	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G LOW	0 to (128) to 255	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B LOW	0 to (128) to 255	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SIDE MASK R	0 to (128) to 255				<input type="radio"/>				
SIDE MASK G	0 to (128) to 255				<input type="radio"/>				
SIDE MASK B	0 to (128) to 255				<input type="radio"/>				
COLOUR MODE	1/2				<input type="radio"/>				
BAUD RATE	1200 to 19200 Note 2				<input type="radio"/>				
MIRROR MODE	OFF/XY				<input type="radio"/>				
STD-RGB	OFF/ON					<input type="radio"/>			

Note 1: The one-step increment may vary, depending on input signal and screen size. The range of adjustment values is also bounded (a limiter is inserted).

Note 2: Switchable in five steps.

\* For RS-232C adjustment mode, refer to "5.3.3 List of RS-232C Commands."

## Before Beginning Adjustments

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### 5.1.5 Last memory

The last memory timing used by the unit is given in the table below. Remember, no last memory function is executed if you perform the following without meeting these timing requirements:

- Switch off main power
- Unplug the power cord from the outlet; and
- Switch off the outlet breaker.

Item	Memory Timing
Operation in Normal operating mode <ul style="list-style-type: none"> <li>• Power switch On/Off</li> <li>• Input function</li> <li>• Screen size</li> <li>• Full auto-zoom On/Off</li> <li>• Key Lock/Unlock</li> </ul>	<ul style="list-style-type: none"> <li>• About four seconds after the end of operation</li> <li>• When entering the STANDBY status through remote operation, through the operating panel of the main unit, or by issuing an RS-232C command</li> <li>• When switched to Menu mode as a result of a MENU button action</li> <li>• When switched to RS-232C adjustment mode by an &lt;AJY&gt; command</li> </ul> NOTE: Among the RS-232C commands available in Normal operating mode, some are not stored in last memory when used in this mode. See "5.5.1 About the RS-232C Adjustment Mode."
Adjustments and settings in Menu mode	<ul style="list-style-type: none"> <li>• Approximately four seconds after the end of operation</li> <li>• When entering the STANDBY status through remote operation, through the operating panel of the main unit, or by issuing an RS-232C command</li> <li>• When returning to the previous screen with the SET button</li> <li>• When exiting Menu mode with the MENU button (restoring the unit to Normal operating mode)</li> <li>• When exiting Menu mode with the KEY LOCK/UNLOCK button (switching unit to Normal operating mode and entering the KEY LOCK status)</li> <li>• When switching to RS-232C adjustment mode with an &lt;AJY&gt; command</li> <li>• When switching over to another input signal mode (i.e., to another signal frequency).</li> <li>• When automatically exiting Menu mode after persistence of no-signal status for approximately eight minutes (restoring the unit to Normal operating mode)</li> </ul>
Adjustments and settings in Integrator mode	<ul style="list-style-type: none"> <li>• Approximately four seconds after the end of operation</li> <li>• When entering the STANDBY status through remote operation, through the operating panel of the main unit, or by issuing an RS-232C command</li> <li>• When returning to the previous screen with the SET button</li> <li>• When exiting Integrator mode with the MENU button (restoring the unit to Normal operating mode)</li> <li>• When exiting Integrator mode with the KEY LOCK/UNLOCK button (switching the unit to Normal operating mode and entering the KEY LOCK status)</li> <li>• When switching to RS-232C adjustment mode with an &lt;AJY&gt; command</li> <li>• When switching over to another input signal mode (i.e., to another signal frequency).</li> <li>• When automatically exiting Integrator mode after persistence of no-signal status for approximately three minutes (restoring unit to Normal operating mode)</li> </ul>
Adjustments and settings in RS-232C adjustment mode	<ul style="list-style-type: none"> <li>• Approximately four seconds after the end of operation</li> <li>• When entering the STANDBY status through remote operation, through the operating panel of the main unit, or by issuing an RS-232C command</li> <li>• When changing adjustment or setting items using PC commands</li> <li>• When exiting RS-232C adjustment mode with an &lt;AJY&gt; command (restoring the unit to Normal operating mode)</li> <li>• When exiting RS-232C adjustment mode with the KEY LOCK/UNLOCK button (switching to Normal operating mode and invoking KEY LOCK status)</li> <li>• When switching to Menu mode with the MENU button.</li> </ul>

NOTE: If you start or stop the entire system by switching a breaker on or off, allow enough time for the last memory function to perform by satisfying the timing requirements given above. Note that this practice causes count errors on the hour meter.

### 5.1.6 Aging

After switching on power to the unit, input signals to perform aging until the unit stabilizes. Use signals that are unlikely to cause the displayed images to be "burned" onto the screen: signals such as a 100% white signal or animations from LDs are recommended. This should take about thirty minutes. This ensures precision adjustments.

NOTE: Display of still images over extended periods can lead to the above-mentioned "burning."

## Normal Operating Mode

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### 5.2 Normal Operating Mode

#### 5.2.1 About normal operating mode

Normal operating mode enables the following:

① Input switching

- Pressing one of INPUT buttons, 1-4 → Input switches over to the selected input.
- Pressing the INPUT button on the operating panel of the main unit → This switches the input to the next input.

② Screen-size switching

- Repeatedly pressing the SCREEN SIZE button on the remote changes screen size in the following sequence:

At INPUT 1 or 2, or when reproducing video signals via INPUT 3 or 4

→ FULL → ZOOM → CINEMA WIDE → NATURAL WIDE → 4:3 NORMAL →

When reproducing PC signals via INPUT 3 or 4

→ ORIGINAL → 4:3 NORMAL → FULL → ZOOM →

NOTE: • During video playback, switching screen size to ZOOM or CINEMA WIDE permits scrolling the screen up and down with the ▲ and ▼ buttons (V-SCROLL function). The V-scroll function provides the following variable ranges:

±25 steps on ZOOM

±15 steps on CINEMA WIDE

See "5.1.3 List of supported input signals."

- Displays with "(TYPE)" appended, such as FULL (TYPE), will sometimes appear, indicating a simplified reproduction.

• Check for possible copyright infringement before using the screen-size switching feature of this unit in restaurants, hotels, or other public venues, or for commercial purposes.

③ Display call

- Press the DISPLAY button on the remote.
  - The current input function, the incoming signal's horizontal and vertical frequencies, current screen size, and other characteristics are displayed on the screen.

NOTE: The horizontal and vertical frequencies shown are intended to be representative and may differ from actual signal frequencies.

④ Full auto zoom

This function automatically sets the most appropriate screen size for the picture being played back.

- Press the FULL AUTO ZOOM button on the remote.
  - Pressing the button toggles the Full Auto Zoom function on or off.

Action • For 4:3 image playback → Switches to NATURAL WIDE.  
• For vista-ratio image playback → Switches to CINEMA WIDE.  
• For cine-scope ratio or 16:9 image playback → Switches to ZOOM.

NOTE: • This function is available only when INPUT 1 is in use or when a standard speed (horizontal frequency of 15.75 kHz, vertical frequency of 60 Hz) component video signal is received through INPUT 2, 3, or 4.

- For 4:3 image playback, dark scenes such as a night background may sometimes cause the screen to switch to CINEMA WIDE or ZOOM. To guard against this, switch FULL AUTO ZOOM off.
- Parts of the uppermost or lowermost edge of the image may be clipped, or black bands displayed, depending on the LDs or video tapes in use.
- When an S1 video signal is detected, the screen size automatically switches to FULL, whether or not FULL AUTO ZOOM is switched On or Off.
- When an S2 video signal is detected, the screen size automatically switches to ZOOM, whether or not FULL AUTO ZOOM is switched On or Off.

⑤ Some RS-232C commands are also available. Refer to "5.5 RS-232C Adjustment Mode."

### 5.3 Menu Mode

#### 5.3.1 About menu mode

1) How to enter/exit Menu mode

- To enter Menu mode and to display the menu screen (refer to “5.3.2. Operation Example in Menu Mode”), press the MENU button on the remote or on the operating panel of the main unit in normal operating mode. To return to Normal operating mode, press the MENU button.

2) Remember the following:

(1) You can't change the input while in Menu mode. Select the input for the adjustment or setting you intend to perform before entering Menu mode.

(2) Menu mode is cancelled automatically and Normal operating mode restored in the following cases:

- When switching over to another input signal mode (i.e., to another signal frequency)
- When no control is operated for a period of approximately eight minutes
- When the KEY LOCK/UNLOCK button on the operating panel of the main unit is pressed

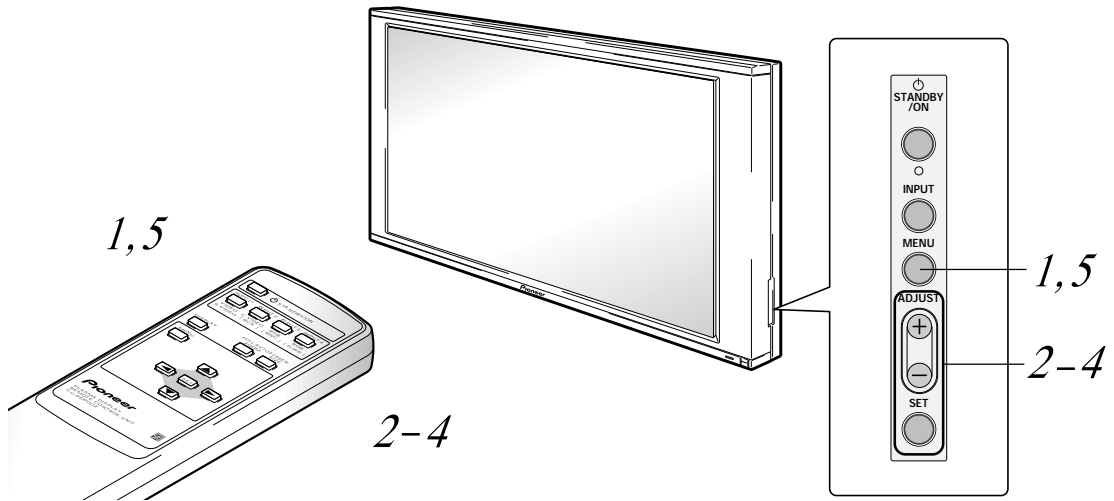
(3) For adjustments in Menu mode, refer to the operation manual.

(4) When making adjustments, we recommend using video signals that you actually intend to use.

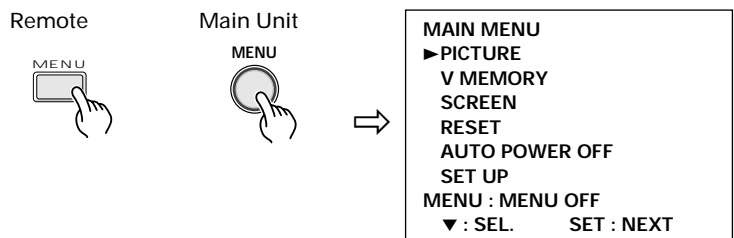
# Menu Mode

## 5.3.2 Example of menu mode operation

Adjusting contrast is discussed below as an example of one basic operation in Menu mode.

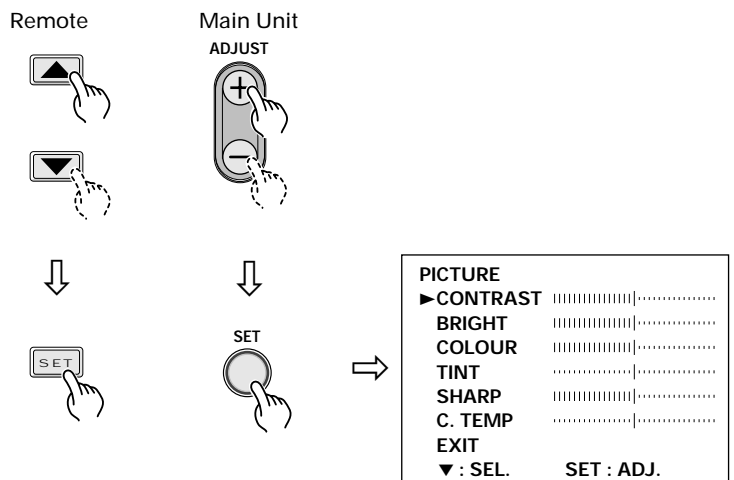


### Step 1 Switch the display to the menu screen (activating Menu mode)



The currently selected item is highlighted in heliotrope.

### Step 2 Select PICTURE.

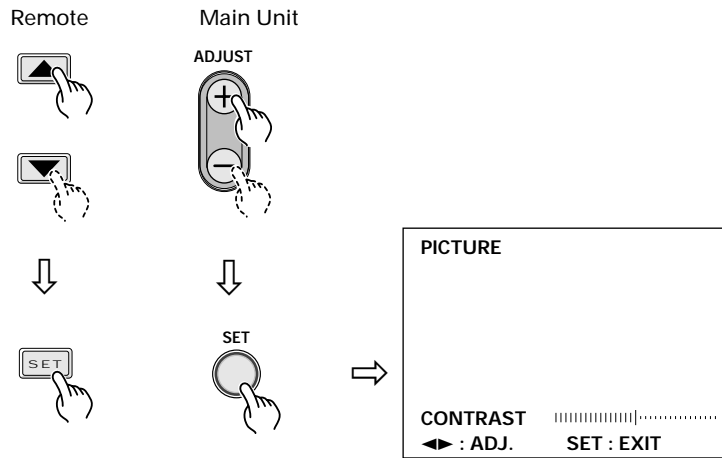


The currently selected item is highlighted in heliotrope.



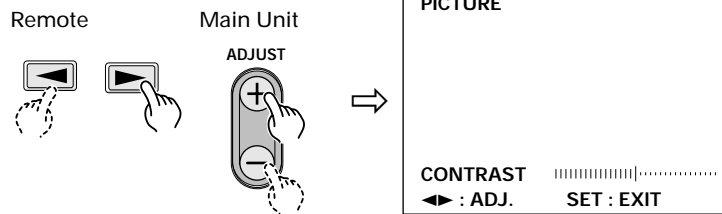
**Step 3**

**Select CONTRAST.**



**Step 4**

**Make adjustments.**



Press the SET button to return to the screen in step 2.  
To make other adjustments, repeat steps 2-4.

**Step 5**

**Complete the procedure.**



## Menu Mode

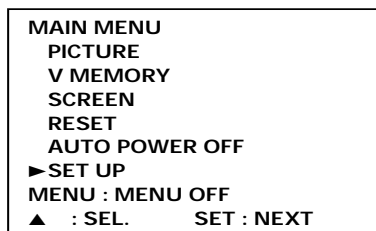
### 5.3.3 Settings in menu mode

#### 1) Setting the Three-Dimensional Y/C Separator (For U.S. model and Taiwanese model)

A three-dimensional Y/C separator is built into the INPUT 1 video-input circuitry. To correct blurred images, as found in sports images or other videos recording swift motions, set 3D Y/C MODE to MOTION.

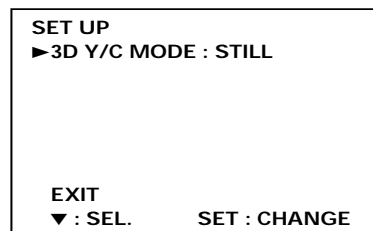
① Select SET UP.

Screen ①



② Move the cursor to 3D Y/C MODE and press the SET button to change the setting. The SET button toggles 3D Y/C MODE between STILL and MOTION.

Screen ②



- Conditions that allow adjustments: Composite signal received via INPUT 1
- Factory preset: STILL

#### 2) ABL ON/OFF

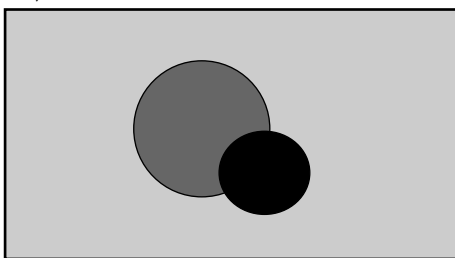
Setting ABL to ON during playback of PC signals increases screen brightness.

Setting ABL to ON increases screen brightness, but image intensity varies with changes in input signal.

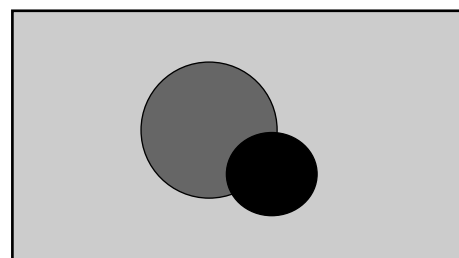
If change in intensity is unsatisfactory, set ABL to OFF.

Differences between ABL ON and OFF (illustration)

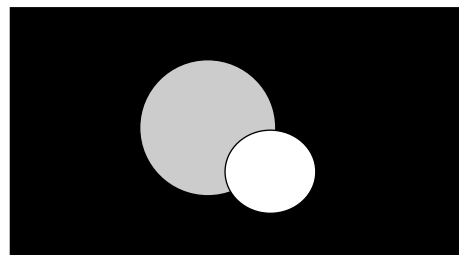
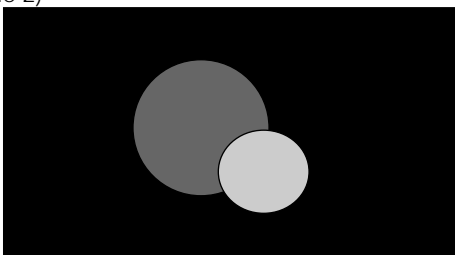
ABL set to OFF  
(Example 1)



ABL set to ON



(Example 2)



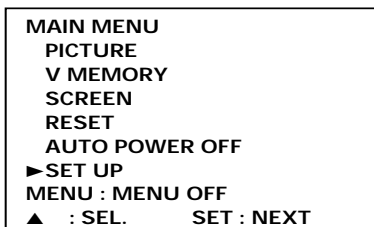
The intensity levels of input signals are reproduced as is.

For images with relatively high overall brightness, no significant change occurs (example 1). But for dimmer images, peak intensity images are brighter when reproduced (example 2).

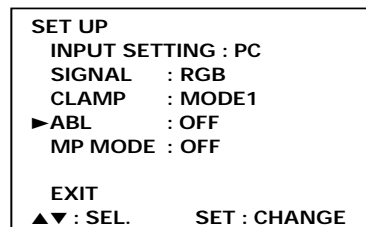
① Select SET UP.

② Move the cursor to ABL and use the SET button to change the current setting. Pressing the SET button toggles ABL between ON and OFF.

Screen ①



Screen ②



- Conditions that allow adjustments: PC signals incoming
- Factory preset: ON

### 3) MP Mode On/Off

This accommodates video signal processing when reproducing PC signals. We advise setting MP MODE OFF for still images and ON for motion pictures.

<About MP Mode>

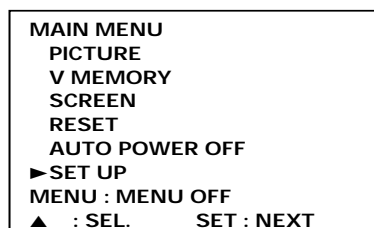
For noninterlaced signals (such as those from PCs) and for animation found in game software, striped shadows may sometimes appear in the moving portion of the image. This phenomenon, known as pseudo-contour, results from the plasma display's tone wedge characteristic. You can set MP mode ON to reduce pseudo-contour, but the tone wedge may become slightly blurred, depending on the signal.

NOTE:MP mode has no effect on 1024 x 768, 87-Hz signals (interlaced), whether MP is ON or OFF.

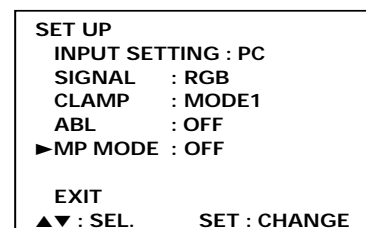
① Select SET UP.

② Move the cursor to MP MODE and set the mode with the SET button. Pressing the SET button toggles mode ON or OFF.

Screen ①



Screen ②



- Conditions that allow adjustments: PC signals supplied
- Factory preset: ON

## Menu Mode

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### 4) Auto Power-Off

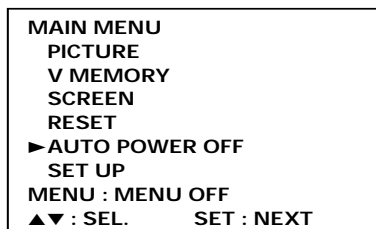
This feature automatically switches power to standby when no video signal is detected for at least eight minutes. Setting AUTO POWER OFF to ON activates this function.

① Select AUTO POWER OFF.

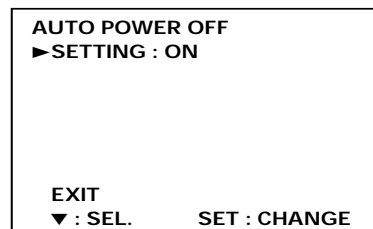
② Move the cursor to SETTING and change the setting using the SET button.

Pressing the SET button toggles AUTO POWER OFF ON or OFF.

Screen ①



Screen ②



- Changing the current AUTO POWER OFF setting in step ② enables the new setting for all inputs.
- Factory preset: OFF

NOTE: To switch on power to the unit again, press the power switch on the remote or the operating panel of the main unit. (No function is provided for automatic power-on on detection of a video signal.)

## 5) Setting Up Peripheral Equipment

A unit function automatically identifies signals from a PC and signals from DVD players or other AV units. But depending on the signal, this function may not always work. In such cases, you must set the input settings manually. This setting needs to be made separately for INPUT 3 and INPUT 4.

Examples: • When connecting AV units → INPUT SETTING: VIDEO

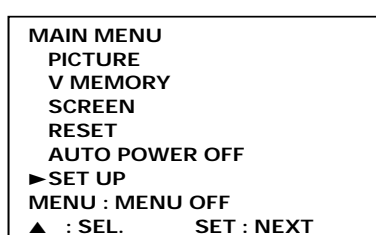
- When connecting PCs → [INPUT SETTING: PC

① Select SET UP.

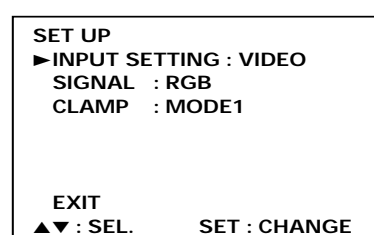
② Move the cursor to INPUT SETTING and change the setting using the SET button.

Pressing the SET button toggles the setting between VIDEO and PC.

Screen ①



Screen ②



- Conditions that allow adjustments: When signals for INPUT 3 or 4 are not automatically identified.
- Factory preset: INPUT 3 to PC  
INPUT 4 to PC

NOTE: • INPUT 2 is dedicated to component video signals and set to VIDEO. It does not support PC signals.

- 31.5 kHz x 60 Hx or 15.7 kHz x 60 Hz signals in INPUT 3/4 mode. (The unit does not automatically configure itself).

## Menu Mode

---

### 6) Setting the Input Signal Format

INPUTS 3 and 4 support RGB and two component video signal types. INPUT 2 supports two component video signal types. Thus, you must make the appropriate settings for the particular component.

This setting needs to be made separately for INPUTs 2, 3, and 4, as described below.

- Example:
- To reproduce RGB signals → SIGNAL: RGB
  - To reproduce HDIV signals → SIGNAL: COMPONENT 1 (Note 1)
  - To reproduce DVD players → SIGNAL: COMPONENT 2 (Note 1)

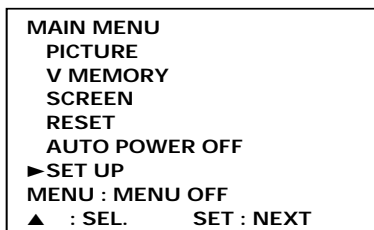
Note 1: Or try selecting COMPONENT 1 or 2 to determine which provides the best possible natural picture color.

① Select SET UP.

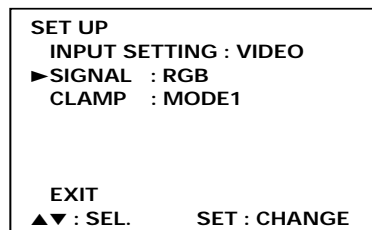
② Move the cursor to SIGNAL and change the setting using with the SET button.

Pressing the SET button moves settings through the sequence RGB, COMPONENT 1, and COMPONENT 2.

Screen ①



Screen ②



- Conditions that allow adjustments: When reproducing video signals (other than PC signals) via INPUT 2, 3, or 4. (For PC signals, input setting is set to RGB.)
- Factory preset: INPUT 2 to COMPONENT 2  
INPUT 3 to RGB  
INPUT 4 to RGB

### 7) Setting the Clamp Position

Plugging in RGB (G ON SYNC) signals and a sync signal simultaneously may produce inappropriate intensity reproduction, with an over-bright screen or images with a greenish cast. If this occurs, set CLAMP to MODE 2. For most situations, leave CLAMP to MODE 1.

Clamp pulse (a timing pulse necessary for intensity reproduction) is generated in two ways, "a" and "b," as shown in Figure 1.

Figure 1 Generation of a clamp pulse

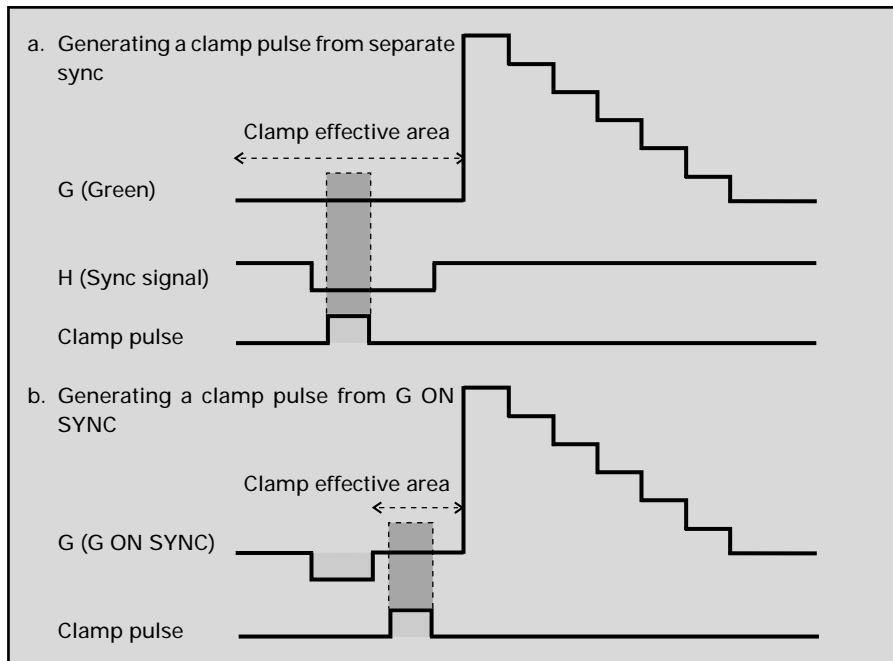
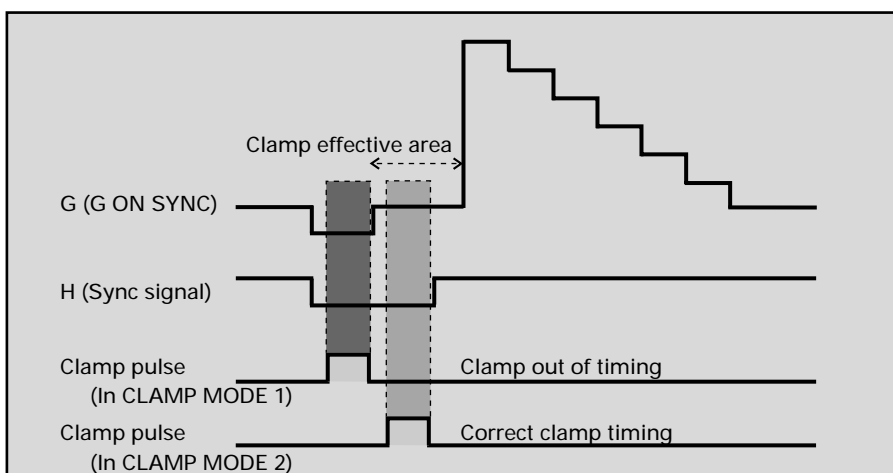


Figure 2 When a sync signal is supplied simultaneously with G ON SYNC



Sync signals are monitored in CLAMP MODE 1, and the unit is automatically switched to generate a clamp pulse by method "a" shown in Figure 1 in the presence of sync signal, and by method "b" in the absence of a sync signal. But when a sync signal is fed simultaneously with G ON SYNC, the unit perceives a sync signal and generates a clamp pulse as shown in "a" in Figure 1. The generated clamp pulse is mistimed, making correct reproduction of intensity impossible. In this case, unplug the sync signal or set CLAMP to MODE 2.

In CLAMP MODE 2, the clamp pulse is generated by method "b" in Figure 1, whether or not a sync signal is present, ensuring correct reproduction of intensity.

NOTE: The figures above are for illustrative purposes only.

## Menu Mode

---

① Select SET UP.

② Move the cursor to CLAMP 5.3.4 Menu Layers and use the SET button to change the setting. Pressing the SET button toggles clamp mode between MODE 1 and MODE 2.

Screen ①

```
MAIN MENU
PICTURE
V MEMORY
SCREEN
RESET
AUTO POWER OFF
▶SET UP
MENU : MENU OFF
▲ : SEL.      SET : NEXT
```

Screen ②

```
SET UP
INPUT SETTING : PC
SIGNAL      : RGB
▶CLAMP      : MODE1
ABL         : OFF
MP MODE     : OFF

EXIT
▲▼ : SEL.   SET : CHANGE
```

- Conditions that allow adjustments: PC signals received via INPUT 3 or 4  
VIDEO/RGB signal received via INPUT 3 or 4
- Factory preset: INPUT 3 to MODE 1  
INPUT 4 to MODE 1

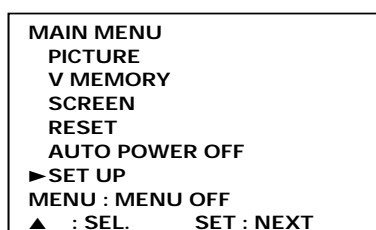


## 8) Setting the Colour System (For EURO models)

Normally the colour system is used in its AUTO mode. However, if no proper image or no colour is delivered, change the mode, as follows.

① Select SET UP.

Screen ①

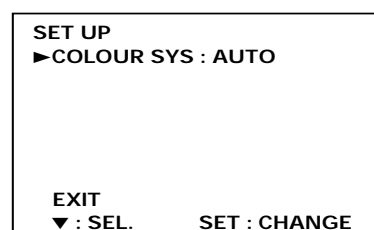


② Move the cursor to COLOUR SYS, and press the SET button to change the setting.

Repeatedly pressing the SET button offers the following options in sequence:

AUTO → NTSC → PAL → SECAM → 4.43 NTSC

Screen ②

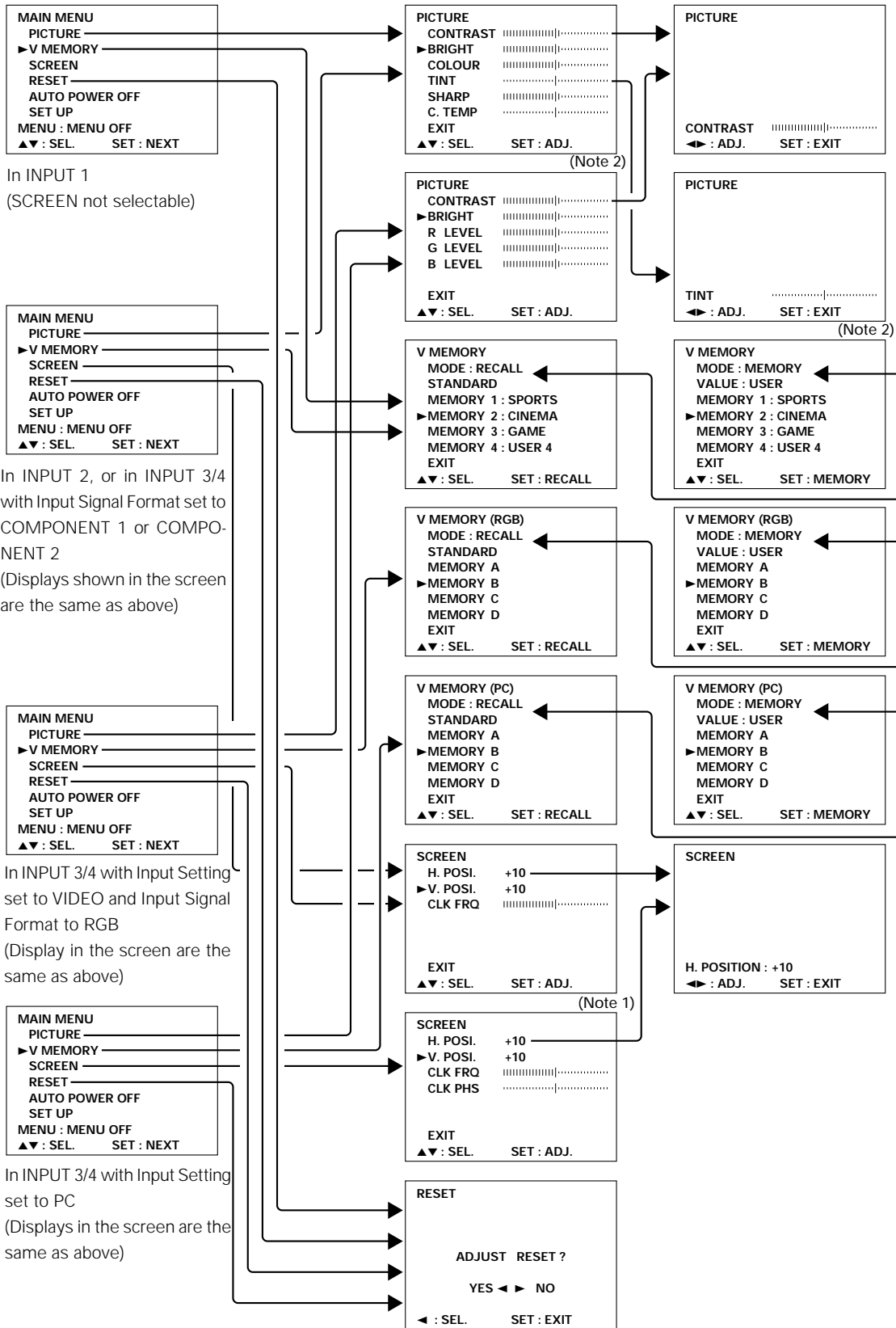


- Set-able condition: Composite signals incoming via INPUT 1
- Factory preset: AUTO

# Menu Mode

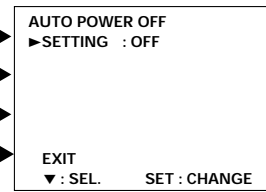
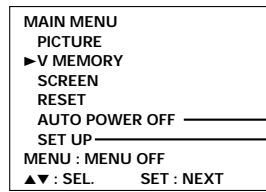
## 5.3.4 Menu layers

### 1) Adjustments at Menu Layers — 1 of 2 (each screen shows an example: details differ depending on selections at layers)

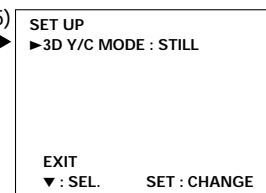


2) Adjustments at Menu Layers — 2 of 2 (each screen shows an example: details differ depending on selections at layers)

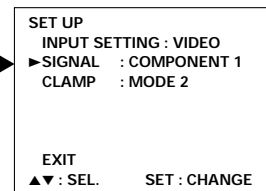
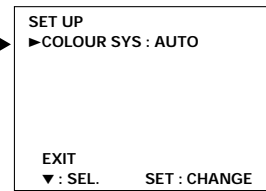
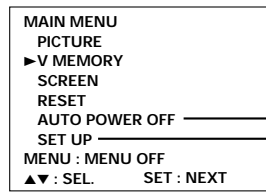
In INPUT 1  
(SCREEN not selectable)



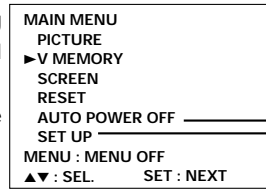
Note 5)



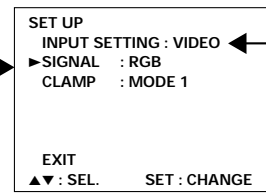
In INPUT 2, or in INPUT 3/4  
with Input Signal Format set  
to COMPO-NENT 1 or  
COMPONENT 2  
(Displays shown in the screen  
are the same as above)



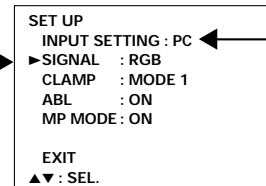
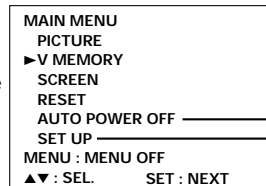
In INPUT 3/4 with Input Setting  
set to VIDEO and Input Signal  
Format to RGB  
(Display in the screen are the  
same as above)



Note 1), Note 2)



In INPUT 3/4 with  
Input Setting set to PC  
(Displays in the screen are the  
same as above)



Note 4)

Note 3)

Note 1: In INPUT 2, INPUT SETTING is fixed to VIDEO.

Note 2: CLAMP is fixed to MODE 2 when the input signal format ("SIGNAL") is set to COMPONENT 1 or 2.

Note 3: The input signal format ("SIGNAL") is fixed to RGB when INPUT SETTING is at PC.

Note 4: INPUT SETTING is automatically switched over depending on incoming signals.

Note 5: For U.S. models as well as for TAIWAN models.

Note 6: For EURO models.



### 5.4 Integrator Mode

#### 5.4.1 About the integrator mode

##### 1) Enabling Integrator Mode

- You must first release the Integrator Mode Protect, which is engaged at the time of shipment. The Protect should be released only once to enable initial adjustments to be made in the integrator mode immediately following delivery of the unit.

<How to release Protect> In Standby, switch on power to the unit by pressing these three buttons on the remote, in the following order:

DISPLAY button → MENU button → POWER button

(This procedure should be complete within three seconds.)

This releases the Integrator Mode Protect and invokes Integrator mode.

The Integrator Mode Protect release is stored in last memory. You do not need to repeat the procedure thereafter to enter the Integrator mode.

##### 2) Entering the Integrator Mode

- Once the Integrator Mode Protect is released, place the unit in Integrator mode by doing the following:

<Procedure> In standby, switch on power to the unit using the remote or the operating panel of the main unit, as follows:

MENU button → POWER button

(This procedure should be complete within three seconds.)

##### 3) When Entering the Integrator Mode

- The picture quality and clock adjustments (refer to the operating manual) made in MENU mode, except for CLK PHS adjustment, are all set to standard positions (median values).

##### 4) Data Adjusted in Integrator Mode

- Parameters for PICTURE, WHITE BALANCE, and SCREEN (refer to "5.4.3," paragraphs 1) to 3) are stored in memory by input function and signal. Up to four signal modes may be stored when inputting PC signals. When adjusting five modes of input signals, the oldest adjustment data is erased from memory.

##### 5) To Exit Integrator Mode

- Press the MENU button on the remote or on the operating panel of the main unit to restore the unit to Normal operating mode. It is also important to plug in signals previously.

##### 6) Notes

(1) The input can't be switched while in the Integrator mode. Make sure you have switched to the appropriate input before entering the Integrator mode. It is also important to plug in signals previously.

(2) The Integrator mode is automatically disabled:

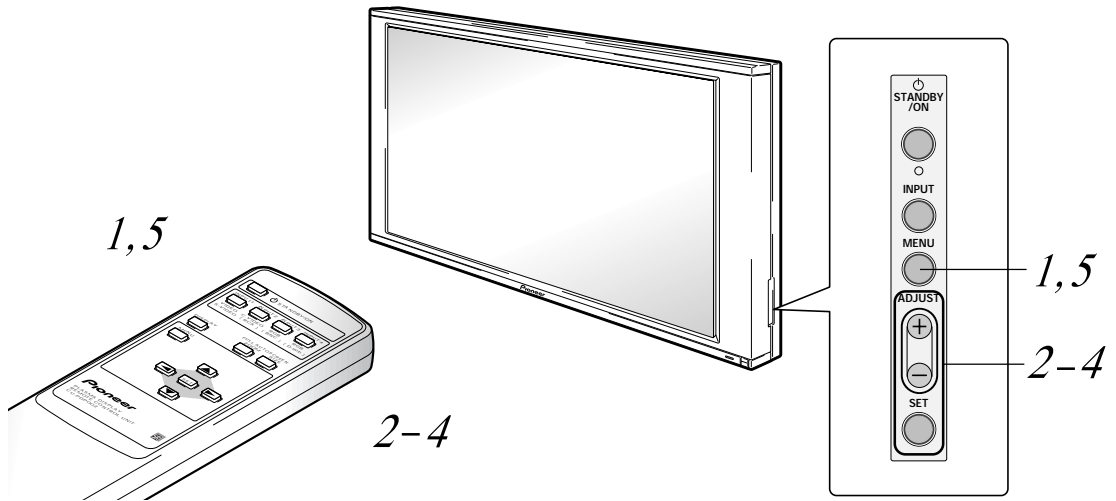
- When switching over to another input signal mode (i.e., to another signal frequency).
- When no operation occurs for a period of approximately three minutes
- When you press the KEY LOCK/UNLOCK button on the operating panel of the main unit

(3) For adjustments and settings, feed the video signals you actually use in the production run.

## Integrator Mode

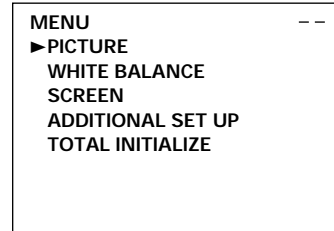
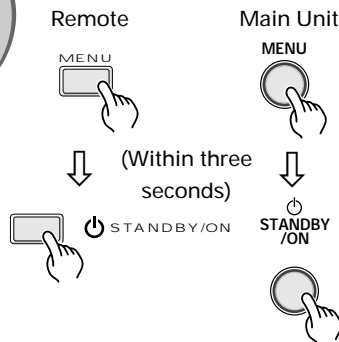
### 5.4.2 Example of integrator mode operation

Illustrative adjustments of CONTRAST in the Integrator mode are discussed below.



#### Step 1 Put the unit into Standby and do the following.

1

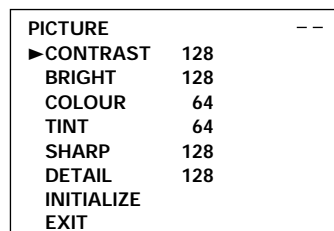
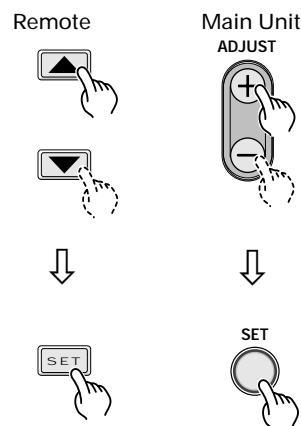


The currently selected item is highlighted in heliotrope.

**NOTE:** Different procedures are required if the Integrator Mode Protect is not yet released. Refer to "5.4.1 About Integrator Mode."

#### Step 2 Select the item to adjust.

2

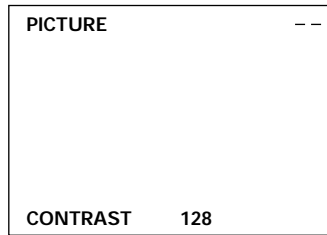
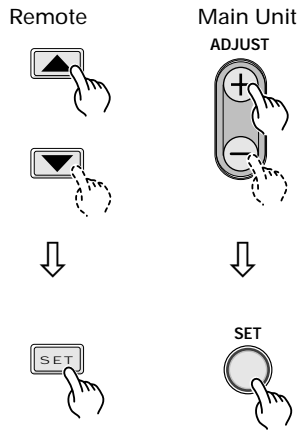


The currently selected item is highlighted in heliotrope.

Step

3

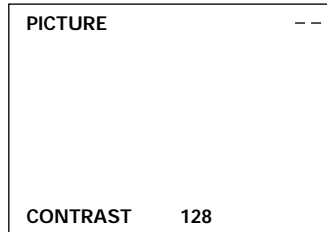
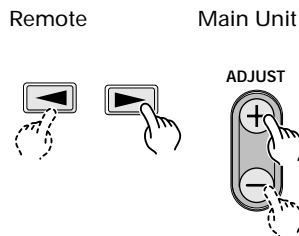
Select CONTRAST.



Step

4

Make adjustments.

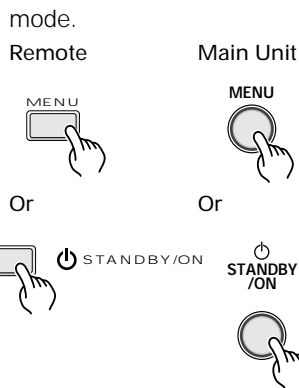


Press the SET button to return to the screen in step 2.  
To continue to make other adjustments, repeat steps 2 to 4.

Step

5

To complete your adjustments, exit Integrator mode.



⇒ Entering Normal operating mode.

⇒ Entering STANDBY.

Although it is possible to exit Integrator mode in other ways, such as by switching off the main power, to ensure that your adjustments are saved to memory, we advise following the procedures shown at left.

## Integrator Mode

### 5.4.3 Adjustments and settings in the Integrator mode

For detailed information on button operations, refer to "5.4.2 Example of Integrator mode operation."

#### 1) Adjusting the PICTURE parameters

PICTURE parameters here include CONTRAST, BRIGHT, COLOUR, TINT, SHARP, and DETAIL. They differ slightly from the picture quality items adjustable in Menu mode.

NOTE: TINT adjustment is unavailable for PAL/SECAM signal inputs.

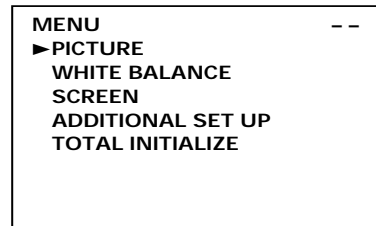
- ① Before entering the Integrator mode, switch the unit to the specific input (one of INPUTs 1-4) in which adjustments will be made. (Refer to "5.4.1 About Integrator Mode.")

The ID number of the set of items will be indicated in the upper right corner of the screen, where "--" is displayed in the illustration.

Select PICTURE.



Screen ①



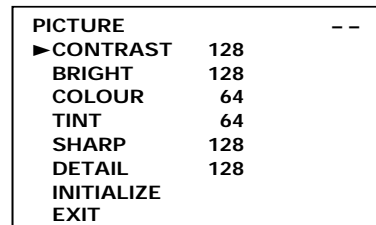
- ② Select the desired adjustment item.

Selecting INITIALIZE in screen ② resets all PICTURE parameters to their default values. (Refer to "5.4.3," paragraph 9.)

Select EXIT in screen ② to return to screen ①.



Screen ②



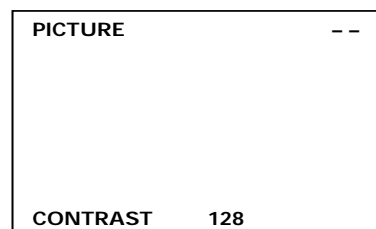
- ③ Make the necessary adjustments.

NOTE: COLOUR, TINT, SHARP, and DETAIL can't be adjusted if INPUT 3/4 is set to RGB.

Make adjustments using the "◀" and "▶" buttons on the remote or the "-" and "+" buttons on the operating panel of the main unit.



Screen ③



Values set and adjusted here, except for DETAIL, serve as median values when adjustments are made in Menu mode.

Press the SET button to return to screen ②.

<Adjustable Range> 0 to 255 for CONTRAST, BRIGHT, SHARP, and DETAIL  
0 to 127 for COLOUR and TINT

\* About DETAIL

Smaller ←

DETAIL Value

→ Larger

Screen noise reduced

Details of fine images (of the lawn, for example) become distinct.



## 2) Adjusting the WHITE BALANCE Parameters

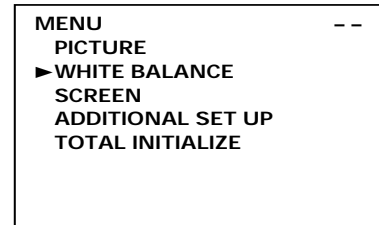
WHITE BALANCE parameters include R HIGH, G HIGH, B HIGH, R LOW, G LOW, and B LOW.

- ① Before entering the Integrator mode, switch the unit to the specific input (INPUTs 1-4) in which you intend to make adjustments. (Refer to "5.4 .1About Integrator Mode.")

The ID number of the set of items will be indicated in the upper right corner of the screen, where "--" is displayed in the illustration.

Select WHITE BALANCE.

Screen ①

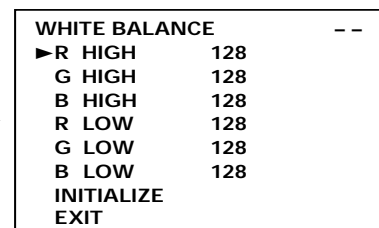


- ② Select the desired adjustment item.

Selecting INITIALIZE on screen ② resets all WHITE BALANCE parameters to their default values. (Refer to "5.4.3," paragraph 9.)

Select EXIT in screen ② to return to screen ①.

Screen ②

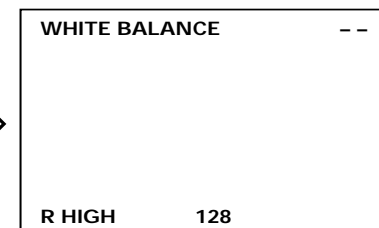


- ③ Make the necessary adjustments.

Adjustments can be made using the "◀" and "▶" buttons on the remote or the "-" and "+" buttons on the operating panel of the main unit.

Press the SET button to return to screen ②.

Screen ③



<Adjustable Range> 0 to 255 for every item

## Integrator Mode

### 3) Adjusting the SCREEN Parameters

SCREEN parameters include H.POSI., V.POSI., CLK FRQ, and CLK PHS.

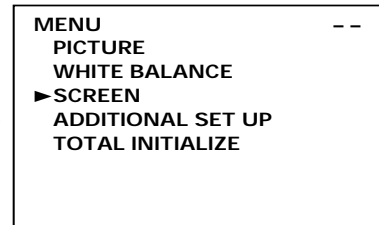
- ① Before entering the Integrator mode, switch the unit to the specific input (one of INPUTs 2-4) in which you intend to make adjustments. (Refer to "5.4.1 About Integrator Mode.")

The ID number of the set of items will be indicated in the upper right corner of the screen, where "--" is displayed in the illustration.

Select SCREEN.



Screen ①



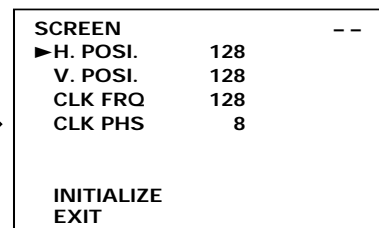
- ② Select the desired adjustment item.

Selecting INITIALIZE on screen ② resets all SCREEN parameters to their default values. (Refer to "5.4.3," paragraph 9.)

Select EXIT in screen ② to return to screen ①.



Screen ②



- ③ Make the necessary adjustments.

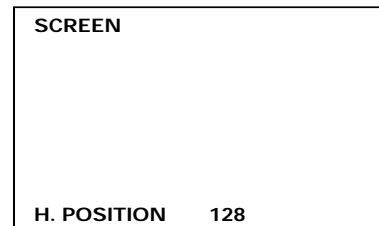
NOTE: CLK PHS can only be adjusted when INPUT 3/4 is set to PC.

NOTE: V.POSI. can't be adjusted when the screen size is set to ZOOM or CINEMA WIDE.

(V.POSI is also adjustable in ZOOM mode if a 1280 x1024 signal is input from a PC at 60 Hz.)



Screen ③



Adjustments can be made using the "◀" and "▶" buttons on the remote(or the "▼" and "▲" buttons for V.POSI.), or the "-" and "+" buttons on the operating panel of the main unit.

Values set and adjusted for H.POSI., V.POSI., and CLK FRQ serve as median values when adjustments are made in Menu mode.

CLK PHS has the same data as the CLK PHS accessible in Menu mode.

Press the SET button to return to screen ②.

<Adjustable Range> 0 to 255 for H.POSI. and V.POSI.  
64 to 192 (median: 128) for CLK FRQ  
0 to 16 for CLK PHS

<Adjusting Order> For the sake of efficiency, make adjustments in the following order:  
V.POSI. → H.POSI. → CLK FRQ → H.POSI. → CLK PHS

## 4) Setting the Colour Mode

In addition to normal color mode (COLOUR MODE 1), this unit also provides a COLOUR MODE 2, with PICTURE and WHITE BALANCE parameters preset for maximum performance in picture reshooting in TV studios. Use the mode appropriate for the situation.

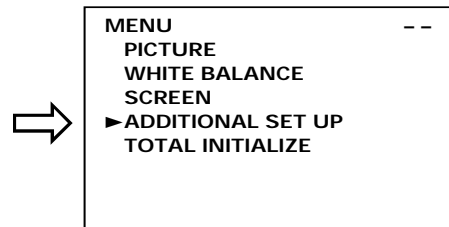
This unit is factory preset to COLOUR MODE 1.

- ① Enter Integrator mode (refer to "5.4.1 About Integrator Mode").

The ID number of the set of adjustment items will be indicated in the upper right corner of the screen where "--" is displayed in the illustration.

Select ADDITIONAL SET UP.

Screen ①

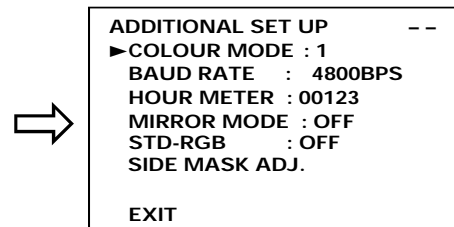


- ② Move the cursor to COLOUR MODE and select the desired color mode with the SET button.

Pressing the SET button toggles the color mode between 1 and 2.

COLOUR MODE affects every input (INPUTs 1-4) without exception. All inputs are immediately switched to the same color mode when a selection is made in step ③.

Screen ②



Select EXIT in screen ② to return to screen ①.

NOTE: The current COLOUR MODE can be identified by the ID display color.

Cyan: COLOUR MODE 1

White: COLOUR MODE 2

## Integrator Mode

---

### 5) Setting the Baud Rate

When controlling or adjusting the unit from a PC, the RS-232C port can be set to one of five baud rates: 1200, 2400, 4800, 9600 and 19200 bps. The factory-preset value is 4800 bps.

- ① Enter Integrator mode (refer to "5.4.1 About Integrator Mode").

The ID number of the set of adjustment items will be indicated in the upper right corner of the screen, where "--" is displayed in the illustration.

Select ADDITIONAL SET UP.

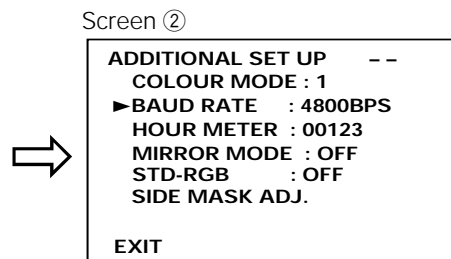
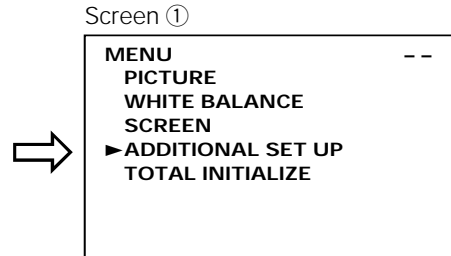
- ② Move the cursor to BAUD RATE and select the desired value with the SET button.

You can cycle through the available values by repeatedly pressing the SET button: 1200BPS → 2400BPS → 4800BPS → 9600BPS → 19200BPS →

BAUD RATE applies to each input (INPUTs 1-4) without exception. All inputs are immediately switched to the baud rate set in step ②.

Select EXIT in screen ② to return to screen ①.

Set the unit baud rate to match that of the PC in use. With long RS-232C cables, we recommend using lower baud rates.

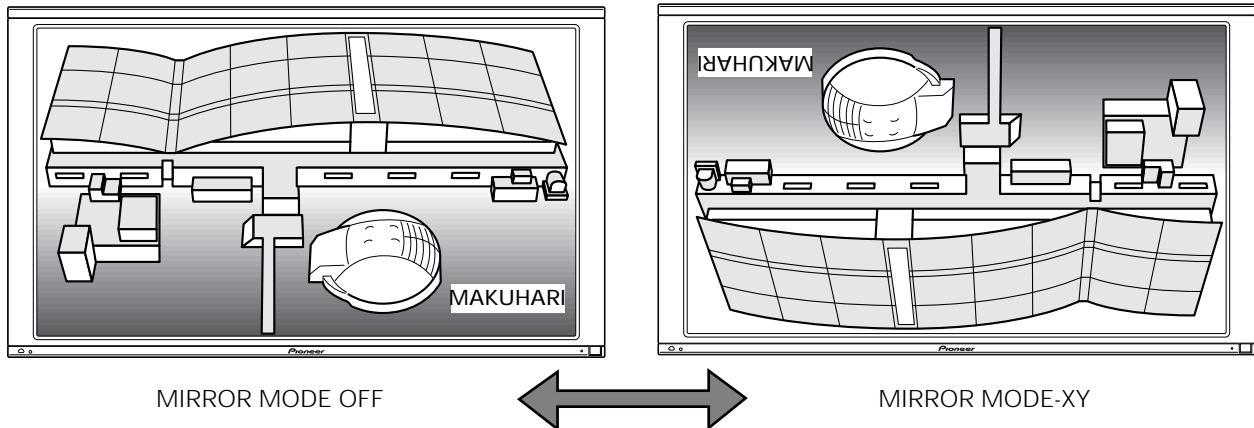


## 6) Mirror Mode

This mode enables you to reproduce incoming images upside down and the left side of the original appearing on the right and the right side on the left.

(Activated, this mode is, like the colour mode, effective on whichever input function (INPUTs 1-4) is selected.)

This mode is intended for smart cable arrangement, making it possible to draw bundled cables upwards (towards the ceiling) when this display is mounted upside down using the ceiling hanging hardware PDK-5002.



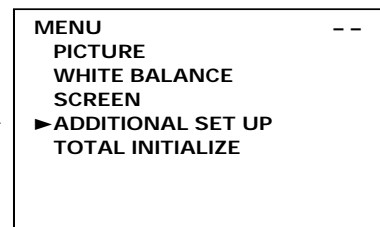
- NOTES:
- This function is not available when standard rate RGB signals (15.6 kHz x 50 Hz, 15.7 kHz x 60 Hz) are reproducing (no images would show up).
  - In using the PDK-5002 mount kit, observe the operating temperature and other limitations specified under the heading, 4.4. Plasma display ceiling hanging hardware.

- ① Enter the Integrator mode (refer to "5.4.1 About the Integrator Mode").

The ID number of the set of adjustment items will be indicated in the upper right corner of the screen, where "--" is displayed in the illustration.

Select ADDITIONAL SET UP.

Screen ①

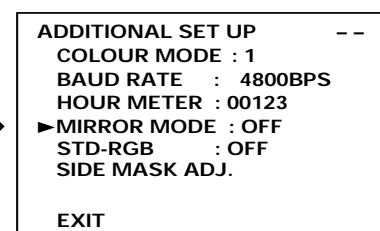


- ② Move the cursor to MIRROR MODE and set the mode to XY or OFF with the SET button.

Pressing the SET button toggles Mirror mode between OFF and XY.

MIRROR MODE applies to each input (INPUTs 1-4) without exception. All inputs are immediately switched to XY or OFF set in step ②.

Screen ②



Select EXIT in screen ② to return to screen ①.

# Integrator Mode

## 7) Setting STD-RGB

The STD-RGB needs to be set to ON when letting the display show standard rate (15.6 kHz x 50 Hz or 15.7 kHz x 60 Hz) RGB signals coming from external RGB processors or similar units.

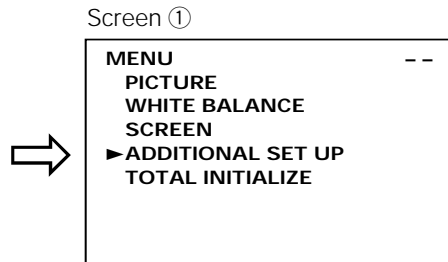
(With STD-RGB set to OFF, no standard rate RGB signals show up on the display screen.)

The primary image quality is not, however, ensured when the STD-RGB is set to ON because this setting simplifies the video signal processing.

- ① Enter the Integrator mode (refer to "5.4.1 About the Integrator Mode").

The ID number of the set of adjustment items will be indicated in the upper right corner of the screen, where "--" is displayed in the illustration.

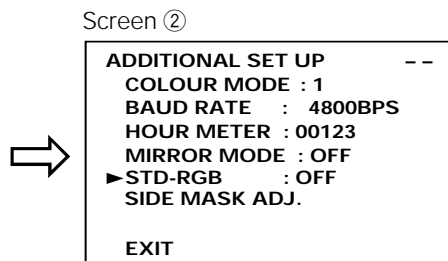
Select ADDITIONAL SET UP.



- ② Move the cursor to STD-RGB and change the setting with the SET button.

Pressing the SET button toggles STD-RGB between ON and OFF.

STD-RGB applies to INPUTs 3 and 4 simultaneously. Changing the setting in step ② switches both inputs immediately to ON or OFF.



Select EXIT in screen ② to return to screen ①.

Note: The mirror mode (see 5-3-4, paragraph 6) is not available when a RGB signal is replayed at standard speeds (15.7 kHz x 60 Hz or 15.6 kHz x 50 Hz); in this case no images are displayed on the screen in Mirror mode.

## 8) Adjusting the Side Mask

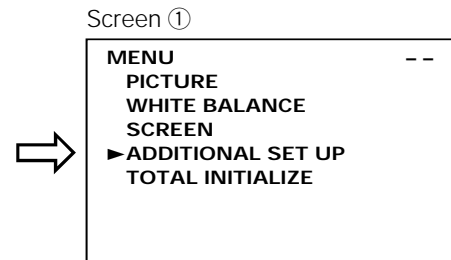
The side mask adjusts the brightness of no-image areas appearing on the fringe of the screen when the screen size is set to 4:3 NORMAL or to ORIGINAL, for example. The brightness of each colour of RGB can be adjusted separately. (Adjusting the side mask momentarily causes the screen size to be switched over.) In adjusting the side mask, think of how video signals develop with time and also of a balance in the brightness between the adjacent display sets.

NOTE: SIDA MARK adjustment is unavailable for (4.5kHz x 60Hz or 33.75kHz x 60Hz) signal inputs.

- Enter the Integrator mode (refer to "5.4.1 About Integrator Mode").

The ID number of the set of adjustment items will be indicated in the upper right corner of the screen, where "--" is displayed in the illustration.

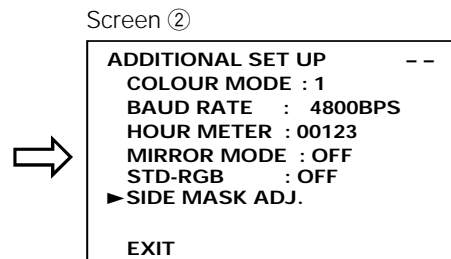
Select ADDITIONAL SET UP.



- Select SIDE MASK ADJ.

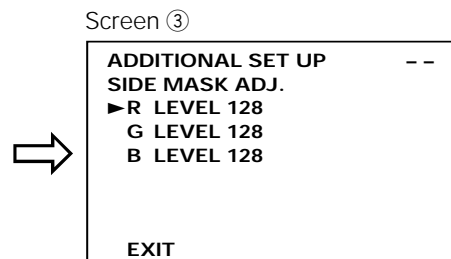
The screen size switches to ORIGINAL or 4:3 NORMAL.

Select EXIT in screen ② to return to screen ①.



- Select the desired option.

Select EXIT in screen ③ to return to screen ②.

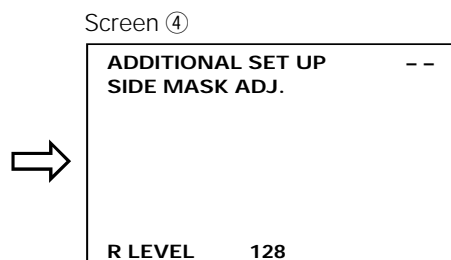


- Make the necessary adjustments.

Adjustments can be made using the "◀" and "▶" buttons on the remote or the "-" and "+" buttons on the operating panel of the main unit.

Each item may be set to a value from 0 through 255.

Press the SET button to return to screen ②.



SIDE MASK ADJ. applies to each input (INPUTs 1-4) without exception. All inputs after the SIDE MASK adjustments are made in step ③ are automatically switched to the set value.

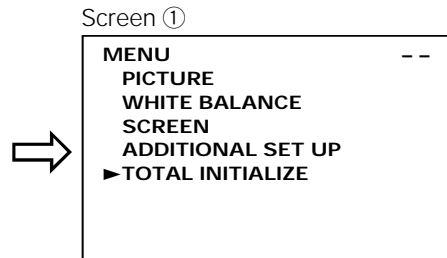
# Integrator Mode

## 9) Initializing Adjustments (TOTAL INITIALIZE)

You can restore adjustments made in the Integrator mode to their factory-preset values. PICTURE, WHITE BALANCE, and SCREEN parameters (refer to "5.4.3", paragraphs 1), 2), and 3)) can be restored simultaneously to their initial settings.

- ① Before entering the Integrator mode, switch the unit to the input (INPUTs 1-4) with parameters you want to restore to their initial settings. (Refer to "5.4.1 About Integrator Mode.")

For initialization, input signals that would be used in an actual production run. Make sure that the current color mode is set to the mode in which you want to restore parameters to factory presets (refer to "5.4.3," paragraph 4)).

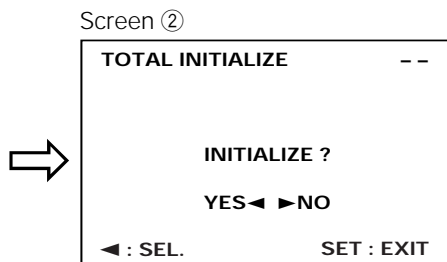


The ID number of the set of items will be indicated in the upper right corner of the screen, where "--" is displayed in the illustration.

Select TOTAL INITIALIZE.

- ② Move the cursor to YES using the "◀" button on the remote or the "-" button on the operating panel of the main unit and press the SET button. This restores the following parameters to their factory-preset values and returns the unit to screen ①:

- PICTURE parameters (refer to "5.4.3," paragraph 1).)
- WHITE BALANCE parameters (refer to "5.4.3," paragraph 2).)
- SCREEN parameters (refer to "5.4.3," paragraph 3).)



Move the cursor to NO and press the SET button to return to screen ①.

\* The following items may not be initialized:

ADDITIONAL SET UP items in Integrator mode

- COLOUR MODE
- BAUD RATE
- HOUR METER
- MIRROR MODE
- STD-RGB
- SIDE MASK ADJ.

SET UP items in Menu mode

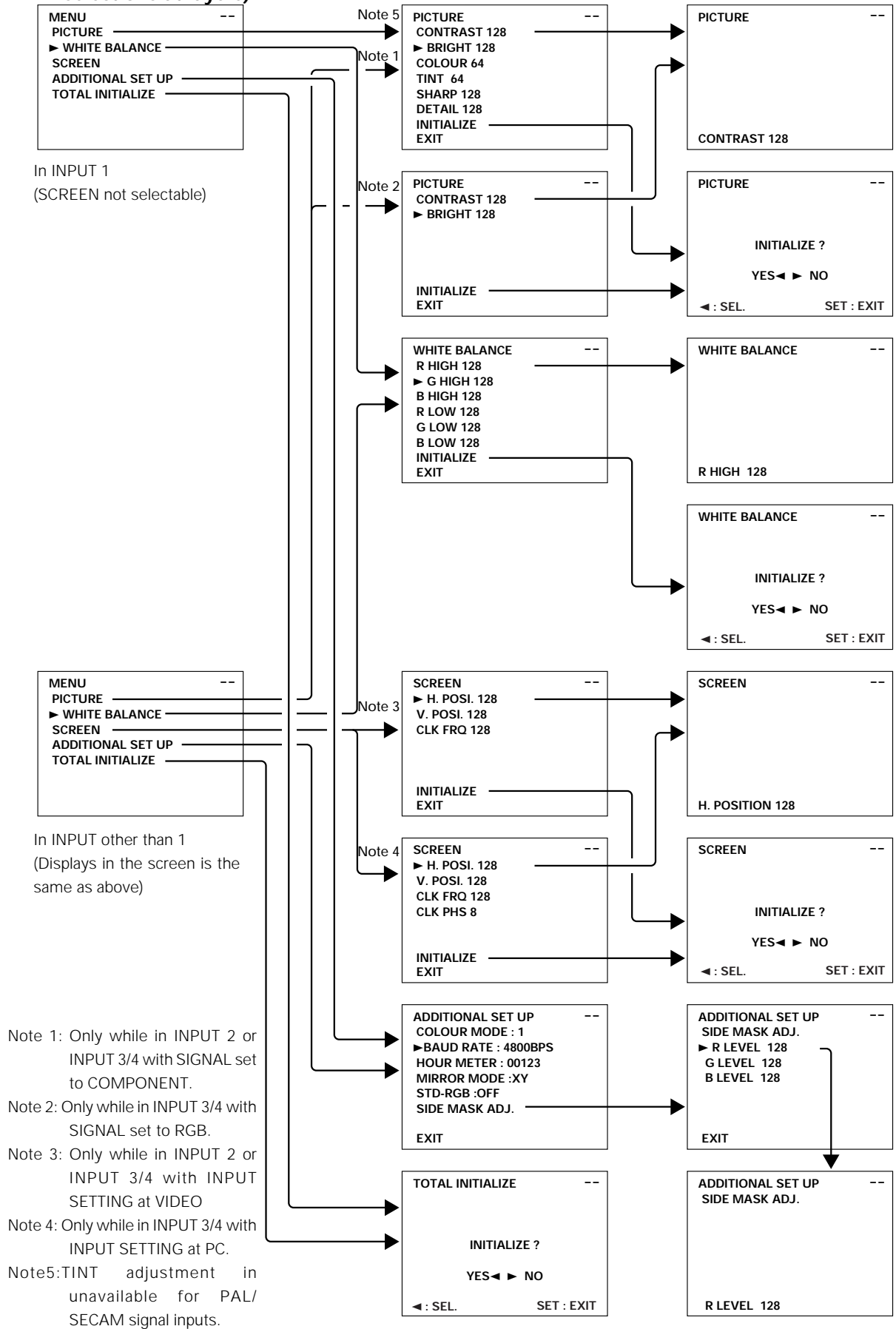
- INPUT SETTING
- SIGNAL
- CLAMP
- ABL
- MP MODE
- 3D Y/C MODE (for U.S. and Taiwanese models)
- COLOUR SYS (for EURO models)

AUTO POWER OFF in Menu mode

V MEMORY in Menu mode



5.4.4 Integrator mode menu layers (each screen shows an example: details differ depending on selections at layers)



# Integrator Mode

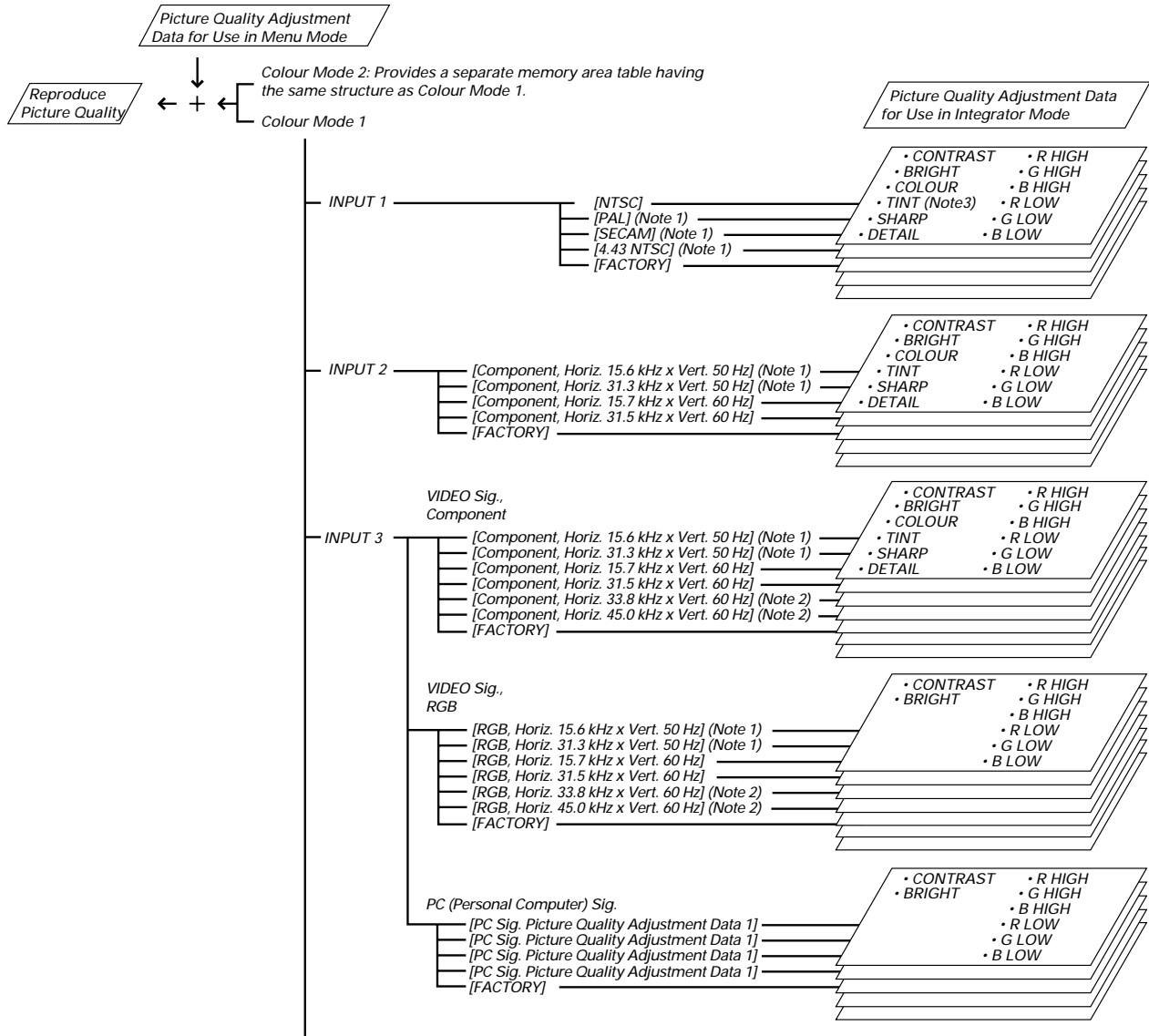
## 5.4.5 PICTURE and WHITE BALANCE parameter memory area table

The FACTORY area is a read-only memory.

Note 1: EURO models only.

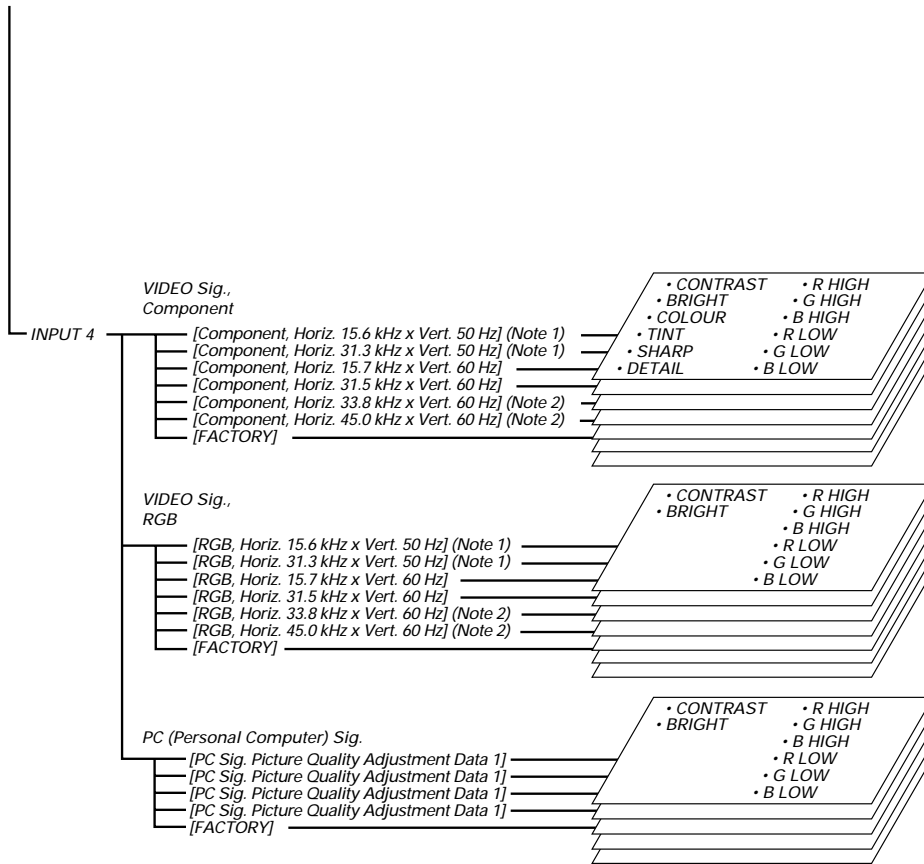
Note 2: U.S models and TAIWAN models only.

Note 3: TINT not adjustable while in PAL or SECAM positions.



CONTINUED ON THE NEXT PAGE

CONTINUED FROM THE PREVIOUS PAGE



# Integrator Mode

## 5.4.6 SCREEN parameter memory area table

The memory area for SCREEN parameters has the following structure, and has no FACTORY area.

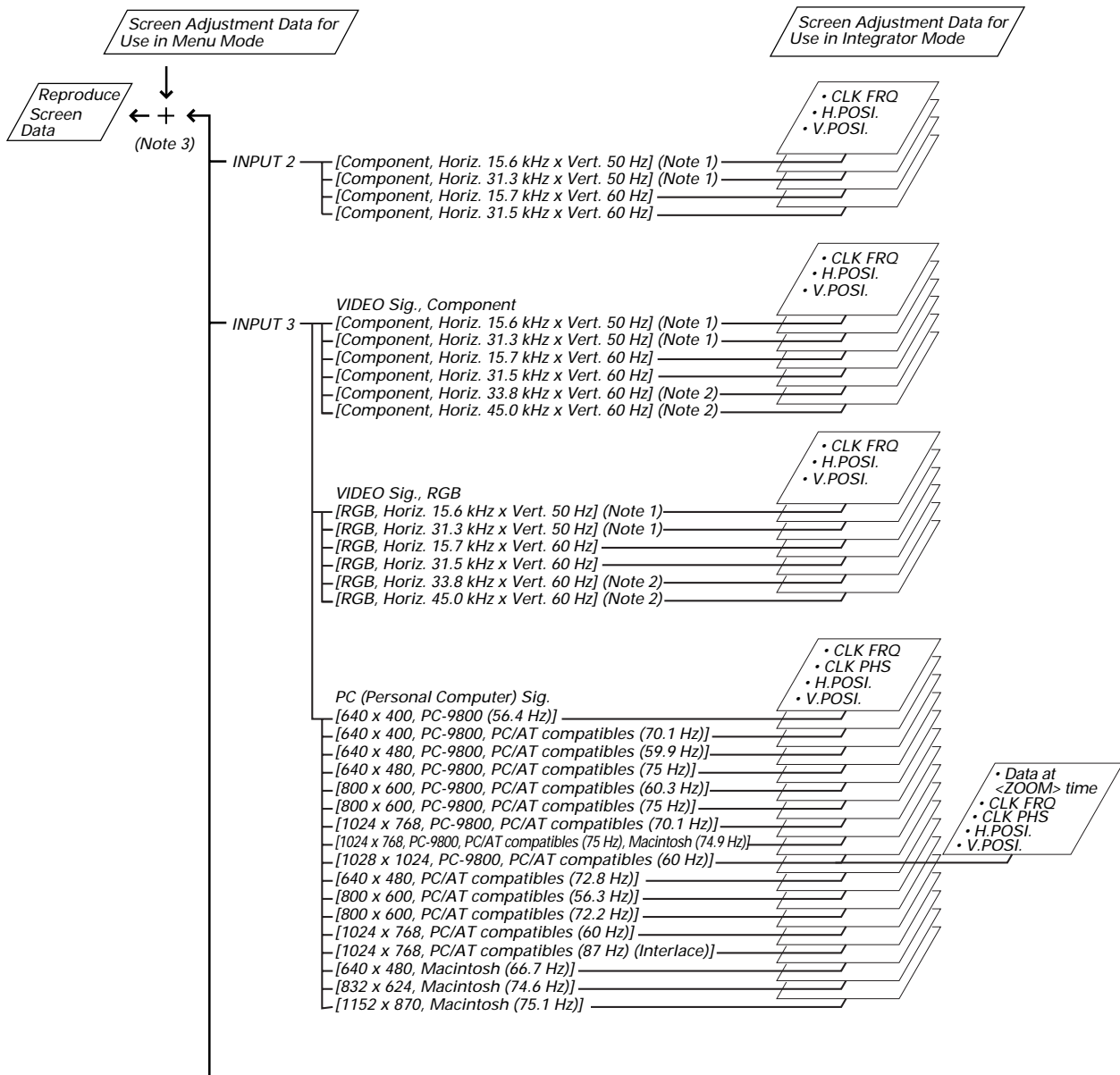
The SCREEN parameters are set to median values when performing INITIALIZE, for example.

The SCREEN parameters cannot be adjusted when selecting INPUT 1.

Note 1: EURO models only.

Note 2: U.S. models and TAIWAN models only.

Note 3: CLK PHS is effective both on the Menu and the Integrator mode at one time.

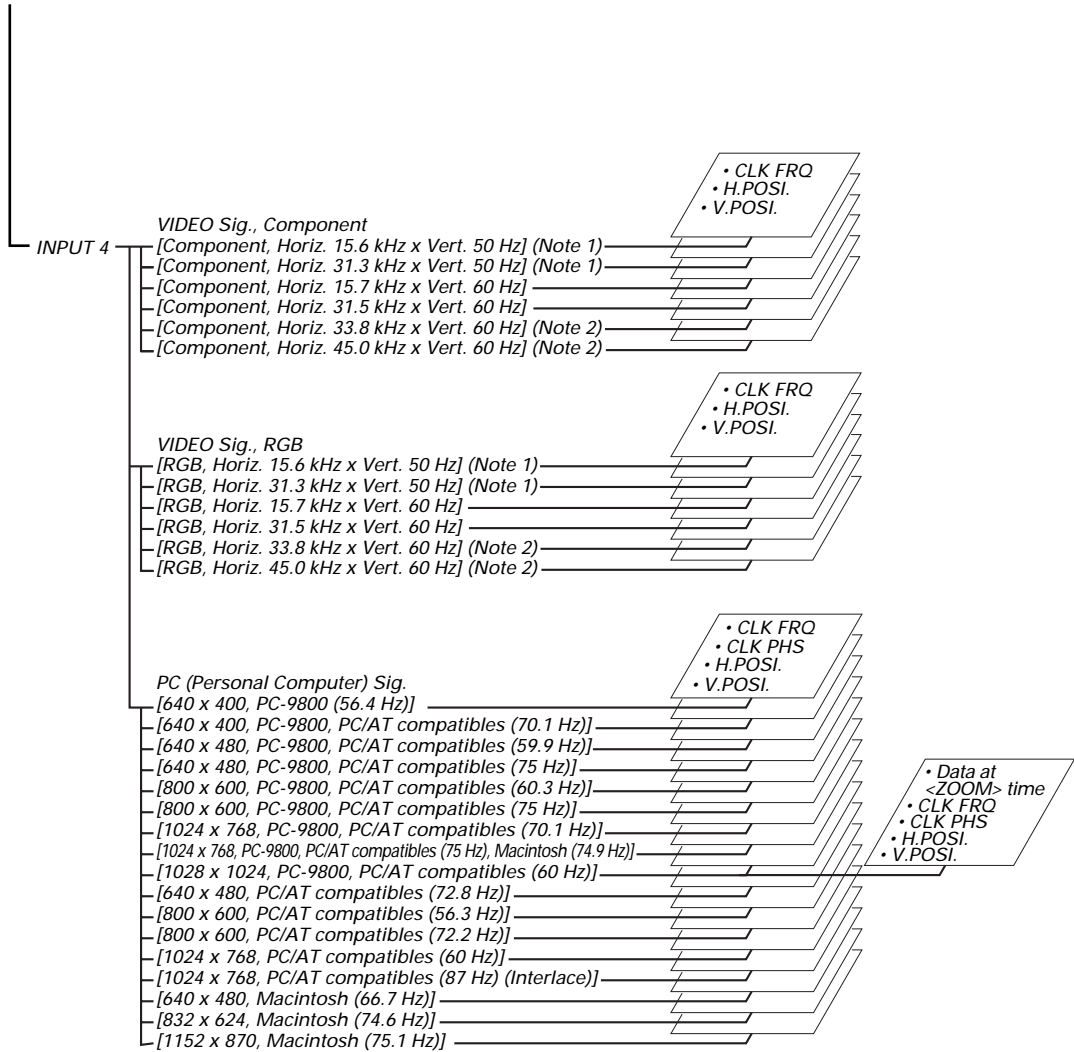


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Macintosh® is a registered trademark of Apple Computer Inc.

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### 5.5 RS-232C Adjustment Mode

Through the unit's RS-232C port, you can use a PC to make various adjustments and settings.

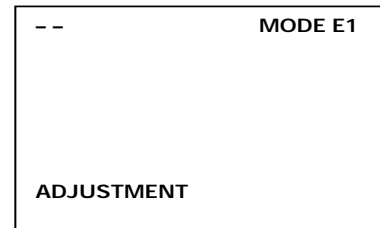
#### 5.5.1 About the RS-232C adjustment mode

1) Data Adjusted in RS-232C Adjustment Mode

- This data is written to the same memory area allocated for Integrator mode (refer to "5.4.5", paragraph 6), Memory Area Table).

2) Display in the RS-232C Adjustment Mode

- The display will appear much like the illustration to the right. The ID number of the set of adjustments will be indicated in the upper left corner in the screen, where "--" is displayed in the illustration. A display such as "E1" in the upper right of the screen is for factory adjustments.



3) Notes

- (1) Adjustments are saved to last memory with the <AJN> command. You must execute this command when adjustments are complete.
- (2) Some RS-232C commands can be used in Normal operating mode. Refer to "5.5.5 List of RS-232C Commands"
- (3) If the conditions described in "5.1.5 Last Memory" are all met, adjustment data and set items are stored in last memory, except when:
  - <IN 1-4> (input switching) is used in Normal operating mode.
  - <MMN.Z> (mirror-mode switching) is used in Normal operating mode.
  - <AJY> (transition to RS-232C adjustment mode) is used in Normal operating mode.

(4) About <DIN> (OSD displays disabled) and <DIY> (OSD displays enabled)

Whether in <DIN> or <DIY> state, the following are shown:

- Menu screen
- Warning just before the Auto Power Off feature comes on ("NO SYNC! AUTO POWER OFF").
- Warning that the temperature in the display set has risen to crucially high levels ("THERMAL WARNING! PLEASE SHUT DOWN").

(5) The RS-232C adjustment mode is automatically released under the following circumstances:

- The KEY LOCK/UNLOCK button is pressed.

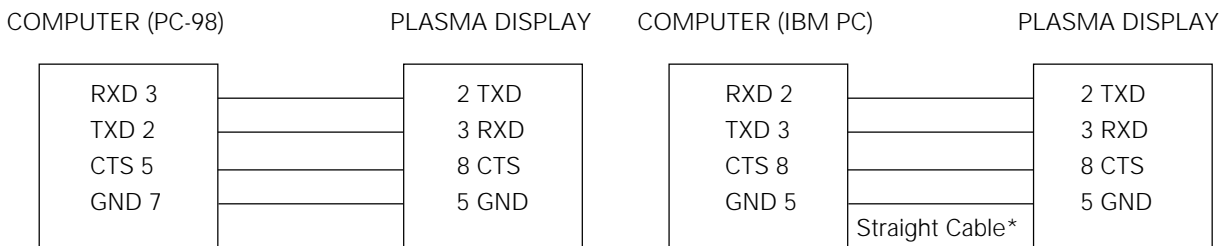
# RS-232C Adjustment Mode

## 5.5.2 Interface

- 1) Connector  
D-sub 9 pins
- 2) Pin Assignment

PIN NO.	Symbol	Signal NAME
2	TXD	Transmitted Data
3	RXD	Recieved Data
8	CTS	Clear To Send
5	GND	Signal Ground

- 3) Baud Rate  
4800 bps (switchable to 1200, 2400, 9600, 19200 bps)  
NOTE: Set the unit baud rate to match that of the PC in use. With long RS-232C cables, we recommend using lower baud rates.
- 4) Data Format  
Start: 1-bit  
Data: 8-bit  
Parity: 0 (no parity)  
Stop: 1-bit
- 5) Connection



\* D-sub 9Pin-D-sub 25Pin conversion cables are now available on the market.

- 6) Protocol  
From Computer to Plasma display

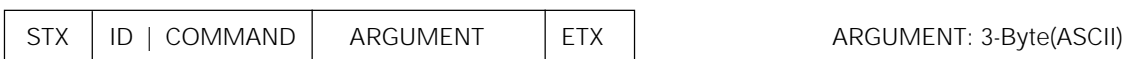
(1) When transmitting commands individually



(2) When transmitting commands in batches



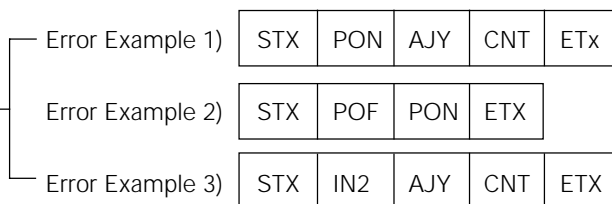
③ When transmitting direct numeric commands



(Note after the STX a 2 byte ID must be sent. "\*" can be used as a wildcard ID.)

Transmit PON and POF commands one by one. (Allow an interval of three or more seconds between commands.)

Transmit an input switching command (IN 1-4) and <AJY> command, allowing sufficient time between them. (Allow an interval of approximately three or more seconds between input switching commands (IN 1-4).)





### 5.5.3 List of RS-232C commands

#### Keys to the table

- Normal Validity: Shows availability in the normal operating mode. Commands shown as valid are so whether or not preceded by an <AJY> command.
- Direct Validly: Shows commands that, if transmitted followed by numerical values, can or cannot directly set the corresponding items to those values sent out.
- Up/Down Validity: Shows commands that, if transmitted followed by UPn/DWn (n standing for any numbers from 0 to 9), can or cannot increase or decrease the corresponding current adjustments by those numbers.

O: Yes    X: No

	Command Name	Full Name	Normal Validity	Direct Validity	Up/Down Validity	Function
<b>A</b>	ABN	ABL NO	X	X	X	Sets ABL to OFF.
	ABY	ABL YES	X	X	X	Sets ABL to ON.
	AJN	ADJUST NO	X	X	X	Terminates RS-232C adjustment mode.
	AJY	ADJUST YES	O	X	X	Initiates RS-232C adjustment mode.
	APN	AUTO POWER OFF NO	X	X	X	Sets Auto Power Off to OFF.
	APY	AUTO POWER OFF YES	X	X	X	Sets Auto Power Off to ON.
	AZN	FULL AUTO ZOOM NO	O	X	X	Sets Full Auto Zoom to OFF.
	AZY	FULL AUTO ZOOM YES	O	X	X	Sets Full Auto Zoom to ON.
<b>B</b>	BBY	VIDEO RGB YES	X	X	X	Sets INPUT to VIDEO: RGB.
	BRT	BRIGHTNESS	X	O	O	Adjusts BRIGHTNESS.
	BHI	BLUE HIGH	X	O	O	Adjusts BLUE HIGH-LIGHT.
	BLW	BLUE LOW	X	O	O	Adjusts BLUE LOW-LIGHT.
	BSL	BLUE SIDE MASK LEVEL	X	O	O	Adjusts BLUE SIDE MASK LEVEL.
	BR1	BAUD RATE 1	X	X	X	Sets RS-232C baud rate to 1200 bps.
	BR2	BAUD RATE 2	X	X	X	Sets RS-232C baud rate to 2400 bps.
	BR3	BAUD RATE 3	X	X	X	Sets RS-232C baud rate to 4800 bps.
	BR4	BAUD RATE 4	X	X	X	Sets RS-232C baud rate to 9600 bps.
	BR5	BAUD RATE 5	X	X	X	Sets RS-232C baud rate to 19200 bps.
<b>C</b>	CFR	CLOCK FREQUENCY	X	O	O	Adjusts PLL frequency.
	CL1	CLAMP MODE 1	X	X	X	Sets Clamp Position Setting Mode to 1.
	CL2	CLAMP MODE 2	X	X	X	Sets Clamp Position Setting Mode to 2.
	CM1	COLOUR MODE 1	O	X	X	Sets White Balance Adjustment Data to Mode 1.
	CM2	COLOUR MODE 2	O	X	X	Sets White Balance Adjustment Data to Mode 2 (retake).
	CNT	CONTRAST	X	O	O	Adjusts CONTRAST.
	COL	COLOUR	X	O	O	Adjusts COLOUR (except when RGB is selected).
	CP1	VIDEO COMPONENT-1 YES	X	X	X	Sets INPUT to VIDEO: COMPONENT 1.
	CP2	VIDEO COMPONENT-2 YES	X	X	X	Sets INPUT to VIDEO: COMPONENT 2.
	CPH	CLOCK PHASE	X	O	O	Adjusts PLL phase.
	<b>D</b>	DTL	DETAIL	X	O	O
DIN		OSD DISPLAY NO	X	X	X	Disables OSD displays (excepting Menu screen and some warnings).
DIY		OSD DISPLAY YES	X	X	X	Enables OSD displays (excepting Menu screen and some warnings).
DOF		DISPLAY OFF	X	X	X	Turns OSD display OFF.
DW0		DOWN 10	X	—	—	Decreases adjustment values by 10.
DWn		DOWN n	X	—	—	Decreases adjustment values by n.
DWF		DOWN FULL	X	—	—	Decreases adjustment values to minimum.
<b>F</b>	FRP	FRESH POSITION	X	X	X	Sets phase adjustment data to median value.
	FRW	FRESH WHITE BALANCE	X	X	X	Sets picture quality and white balance adjustment data to median values.

## RS-232C Adjustment Mode

	Command Name	Full Name	Normal Validity	Direct Validity	Up/Down Validity	Function
<b>G</b>	GHI	GREEN HIGH	X	○	○	Adjusts GREEN HIGH-LIGHT.
	GLW	GREEN LOW	X	○	○	Adjusts GREEN LOW-LIGHT.
	GPS	GET POSITION DATA	X	X	X	Sends out position adjustment data in TxD.
	GSL	GREEN SIDE MASK LEVEL	X	○	○	Adjusts GREEN SIDE MASK LEVEL.
	GST	GET STATUS	X	X	X	Sends out various adjustment data in TxD
	GWB	GET W/B DATA	X	X	X	Sends out picture quality and white balance adjustment data in TxD.
<b>H</b>	HMD	HOUR METER DISP.	X	X	X	Lets hour meter show up.
	HPS	HORIZONTAL POSITION	X	○	○	Adjusts horizontal position.
<b>I</b>	IDC	ID CLEAR	X	X	X	Clears ID.
	IDS	ID SET	X	X	X	Sets ID.
	IN1	INPUT 1	○	X	X	Selects INPUT 1 (S/RCA or BNC).
	IN2	INPUT 2	○	X	X	Selects INPUT 2 (RCS3).
	IN3	INPUT 3	○	X	X	Selects INPUT 3 (BNC5).
	IN4	INPUT 4	○	X	X	Selects INPUT 4 (mD-SUB15).
<b>K</b>	KLN	KEY LOCK NO	X	X	X	Enables controls on display/remote.
	KLY	KEY LOCK YES	X	X	X	Disables controls on display/remote.
<b>M</b>	MMN	MIRROR MODE NO	○	X	X	Resets mirror mode setting.
	MMZ	MIRROR MODE XY	○	X	X	Sets mirror mode to XY (upside down and left-right reversed).
	MPN	MP MODE NO	X	X	X	Sets MP mode to OFF.
	MPY	MP MODE YES	X	X	X	Sets MP mode to ON.
<b>N</b>	NT4 (Note 1)	TV SYSTEM 4.43 NTSC	○	X	X	Sets TV SYSTEM to 4.43NTSC.
	NTS (Note 1)	TV SYSTEM NTSC	○	X	X	Sets TV SYSTEM to NTSC.
	NRN	NTSC-RGB OFF	X	X	X	Sets NTSC-RGB to OFF.
	NRY	NTSC-RGB ON	X	X	X	Sets NTSC-RGB to ON.
<b>P</b>	PAL (Note 1)	TV SYSTEM PAL				Sets TV SYSTEM to PAL.
	PCY	PC RGB YES	X	X	X	Sets INPUT to PC: RGB.
	POF	POWER OFF	○	X	X	Turns off power.
	PON	POWER ON	○	X	X	Turns on power.
<b>R</b>	RHI	RED HIGH	X	○	○	Adjusts RED HIGH-LIGHT.
	RLW	RED LOW	X	○	○	Adjusts RED LOW-LIGHT.
	RSL	RED SIDE MASK LEVEL	X	○	○	Adjusts RED SIDE MASK LEVEL.
<b>S</b>	SCM (Note 1)	TV SYSTEM SECAM	○	X	X	Sets TV SYSTEM to SECAM.
	SM0	SCREEN MODE 0	○	X	X	Sets screen size to Original.
	SM1	SCREEN MODE 1	○	X	X	Sets screen size to 4:3 Normal.
	SM2	SCREEN MODE 2	○	X	X	Sets screen size to Full.
	SM3	SCREEN MODE 3	○	X	X	Sets screen size to Zoom.
	SM4	SCREEN MODE 4	○	X	X	Sets screen size to Cinema Wide.
	SM5	SCREEN MODE 5	○	X	X	Sets screen size to Natural Wide.
	STD	STD.WHITE BALANCE DATA	X	X	X	Resets picture quality and white balance adjustment data to defaults.
	SHP	SHARPNESS	X	○	○	Adjusts SHARPNESS (unavailable for RGB).
	<b>T</b>	TNT	TINT	X	○	○
TVA (Note 1)		TV SYSTEM AUTO	○	X	X	Sets TV SYSTEM to AUTO.
<b>U</b>	UP0	UP10	X	—	—	Increases adjustment values by 10.
	UPn	UP n	X	—	—	Increases adjustment values by n.
	UPF	UP FULL	X	—	—	Increases adjustment values to maximum.
<b>V</b>	VPS	VERTICAL POSITION	X	○	○	Adjusts horizontal position.
<b>Y</b>	YCM (Note 2)	3D Y/C MOTION	X	X	X	Sets Motion mode to ON.
	YCS (Note 2)	3D Y/C STILL	X	X	X	Sets Motion mode to OFF.

Note 1: EURO models only

Note 2: U.S. models and TAIWAN models only.

### 5.5.4 About the GET commands

What are GET commands?

- These commands are used to transmit adjustment data and other information to PCs from a microcomputer in the plasma display.
- The This information is transmitted in ASCII code.

NOTE: Command names are given in parentheses < >.

1) <GPS> (GET POSITION DATA) — SCREEN parameters are issued in the following formats.

- (1) STX (02H)
- (2) <CFR>: Adjustment data for CLK FRQ (3 bytes)
- (3) <CPH>: Adjustment data for CLK PHS (3 bytes)
- (4) <HPS>: Adjustment data for H POSI (3 bytes)
- (5) <VPS>: Adjustment data for V POSI (3 bytes)
- (6) ETH (03H)

NOTES: • This command is invalid if the input function is INPUT 1.

- When the input function is INPUT 2, or INPUT 3 or 4 and in the VIDEO setting, the issued CLK PHASE adjustment data is the dummy data.

2) <GWB> (GET W/B DATA) — PICTURE and WHITE BALANCE parameters are issued in the following formats:

- (1) STX (02H)
- (2) <CNT>: Adjustment data for CONTRAST (3 bytes)
- (3) <BRT>: Adjustment data for BRIGHT (3 bytes)
- (4) <RHI>: Adjustment data for R HIGH (3 bytes)
- (5) <GHI>: Adjustment data for G HIGH (3 bytes)
- (6) <BHI>: Adjustment data for B HIGH (3 bytes)
- (7) <RLW>: Adjustment data for R LOW (3 bytes)
- (8) <GLW>: Adjustment data for G LOW (3 bytes)
- (9) <BLW>: Adjustment data for B LOW (3 bytes)
- (10) <COL>: Adjustment data for COLOUR (3 bytes)
- (11) <TNT>: Adjustment data for TINT (3 bytes)
- (12) <SHP>: Adjustment data for SHARP (3 bytes)
- (13) <DTL>: Adjustment data for DETAIL (3 bytes)
- (14) Dummy data (3 bytes)
- (15) Dummy data (3 bytes)
- (16) Dummy data (3 bytes)
- (17) Dummy data (3 bytes)
- (18) Dummy data (3 bytes)
- (19) Dummy data (3 bytes)
- (20) Dummy data (3 bytes)
- (21) Dummy data (3 bytes)
- (22) ETX (03H)

NOTE: When the input function is INPUT 3 or 4 and in the RGB setting, the adjustment data for COLOUR, TINT, SHARP, and DETAIL transmitted is the dummy data.

## RS-232C Adjustment Mode

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3) <GET> (GET STATUS) — The status of various settings is transmitted in the following formats:

• Output items	[Example of output]	→ Setting status when the signals to the left are issued
(1) STX (02H)		
(2) Version of microcomputer software	(5 bytes) [5435A]	→ Version A
(3) Input function status	(3 bytes) [IN1]	→ INPUT 1
(4) Color-mode setting status	(3 bytes) [CM1]	→ COLOUR MODE 1
(5) Full auto zoom setting status	(3 bytes) [AZN]	→ Full Auto Zoom: OFF
(6) Screen-size setting status	(3 bytes) [SM2]	→ Screen-Size Setting: FULL
(7) Auto power off setting status	(3 bytes) [APN]	→ Auto Power Off: OFF
(8) 3-dimensional Y/C Separator Setting Status	(3 Bytes) [ YCM]	→ 3D Y/C MODE: MOTION (For U.S. models and Taiwanese models)
(9) COLOUR SYS Setting Status	(3 Bytes) [TVA]	→ COLOUR SYS: AUTO (For EURO models only)
(10) Status of connected equipment settings and input signal format settings	(3 bytes) [BBY]	→ INPUT SETTING: VIDEO; SIGNAL: RGB
(11) Clamp position setting status	(3 bytes) [CL1]	→ CLAMP: MODE 1
(12) ABL setting status	(3 bytes) [ABY]	→ ABL: ON
(13) MP mode setting status	(3 bytes) [MPY]	→ MP: ON
(14) KEY LOCK/UNLOCK	(3 bytes) [KLN]	→ UNLOCK (available either from the remote or the operating panel of the main unit)
(15) OSD display setting status	(3 bytes) [DIN]	→ OSD not displayed
(16) Mirror mode setting status	(3 bytes) [MMZ]	→ MIRROR MODE: XY
(17) Dummy data	(3 bytes)	
(18) STD-RGB setting status	(3 bytes) [NRY]	→ STD-RGB: ON
(19) ETX (03H)		

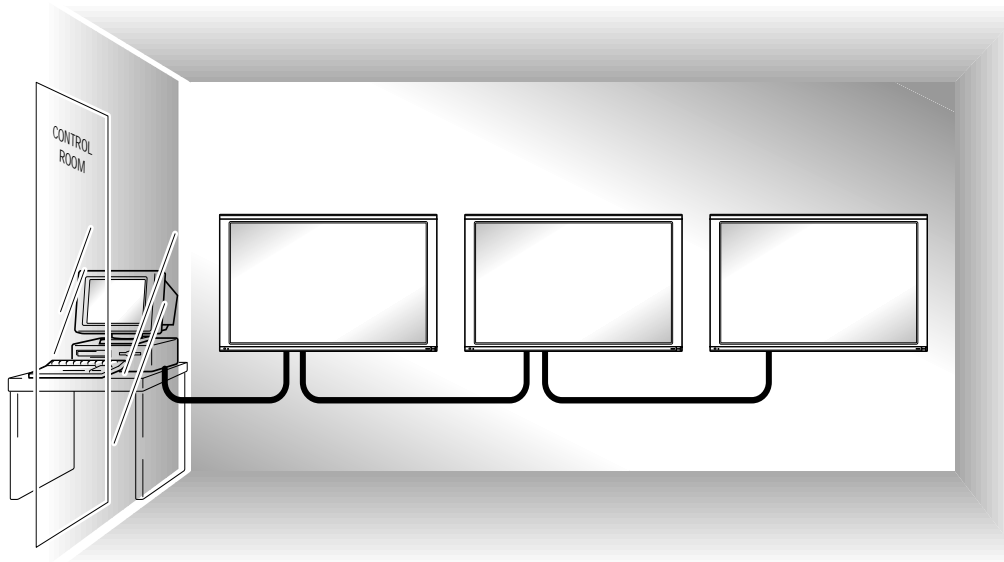
NOTES: • Refer to P.74 to P.94 and P.113 for the setting for each item.

- When the input function is INPUT 1, the dummy data is issued for:
  - (10) Status of connected equipment settings and input signal format settings
  - (11) Clamp position setting status
  - (12) ABL setting status
  - (13) MP mode setting status
- When the input function is INPUT 2, or INPUT 3 or 4 and in the VIDEO setting, the dummy data is issued for:
  - (8) 3-dimensional Y/C separator setting status
  - (11) Clamp position setting status
  - (12) ABL setting status
  - (13) MP mode setting status
- When the input function is INPUT 3 or 4 and in the PC setting, the dummy data is issued for:
  - (8) 3-dimensional Y/C separator setting status

## 5.6 Combination Connection

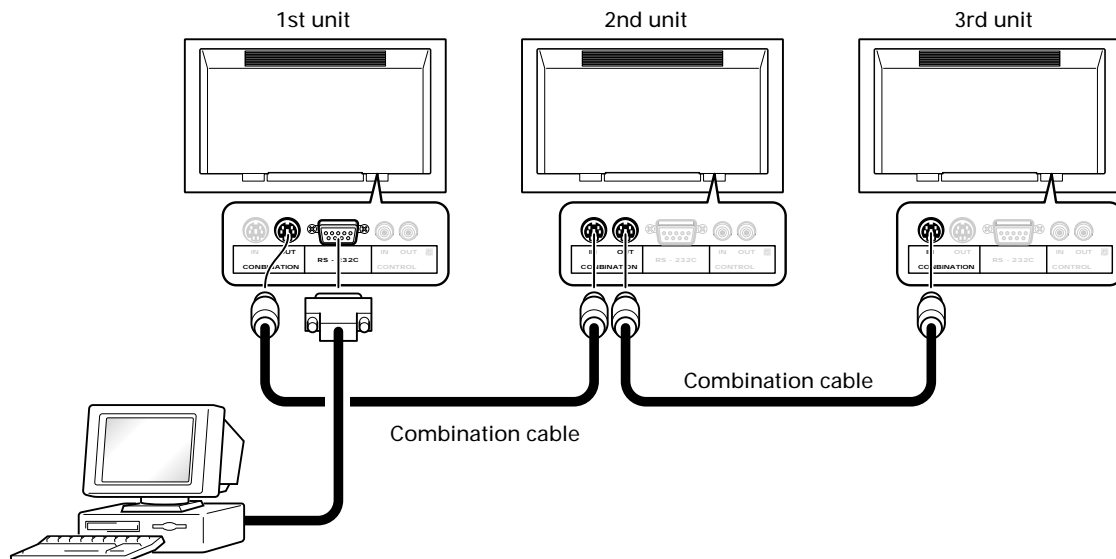
This connection method is useful for operating and adjusting multiple units from a single PC. By assigning IDs (refer to "5.6.2") to each unit, you can control them either simultaneously or individually.

Example: Controlling and "staging" multiple installed units



### 5.6.1 Connections

As shown below, connecting multiple units allows you to control all of them from a single PC.



You may use either combination input or control port (RS-232C connector), but not both at once. Using both simultaneously will result in malfunction or system breakdown. Don't connect combination inputs to other combination inputs or combination outputs to other combination outputs. General-purpose Mini DIN6 (straight) cables may be used as combination cables.

## Combination Connection

### 5.6.2 Assigning IDs

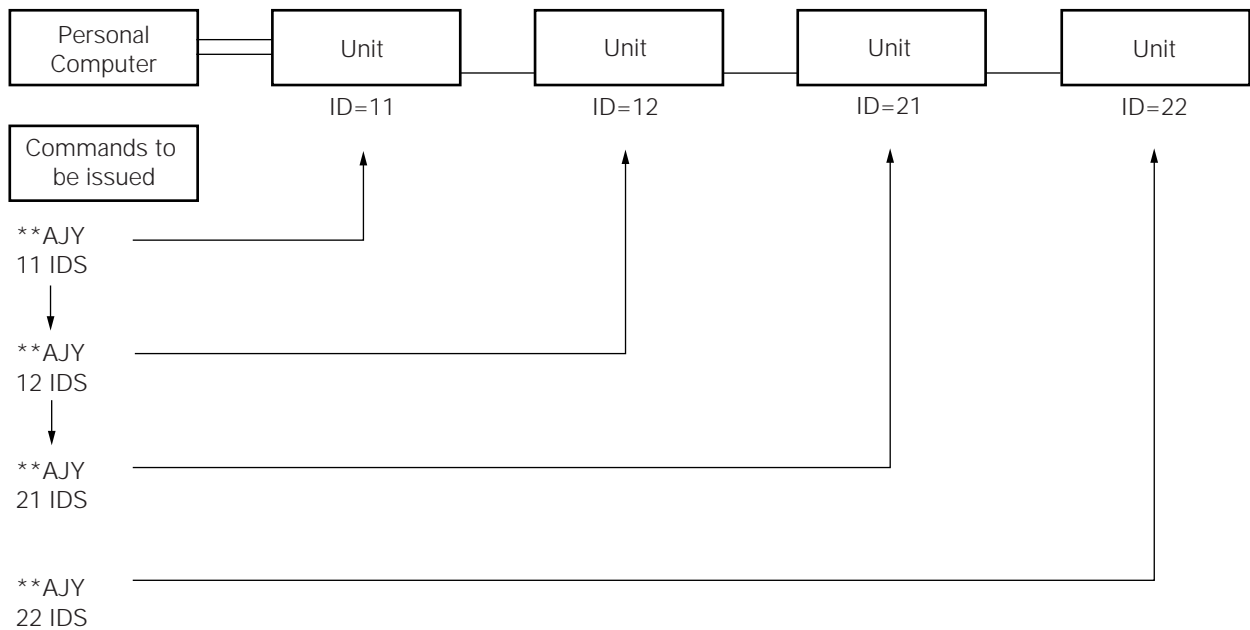
When connection is complete, assign an ID to each unit in the system. This assignment is made on your PC.

Commands: IDC (ID CLEAR) clearing an assigned ID

IDS (ID SET) assigning an ID

IDS is valid only when no ID has been assigned yet. The lowest ID is assigned to the unit directly connected to the PC, the next higher ID number to the second unit, and so on.

Example: In the case of four connected units (when assigning IDs for the first time from your PC):



Issuing commands in the order shown above assigns IDs to the units in your system. The units should be connected by combination cables, as shown on the previous page. Once an ID is assigned to a unit, the unit receives only those commands bearing that ID. When issuing a command to a unit, attach the appropriate ID at the beginning of the command.

For IDs, you may use numbers from 0 to 9 and letters A to F (case-insensitive).

Asterisks (\*) may be used as in the following examples:

`**IDC`: Clears all assigned IDs.

`*1AJY`: Places all units having a second ID digit of 1 into adjustment mode.

`2*IN1`: Switches the function of all units with a first ID digit of 2 to INPUT 1.

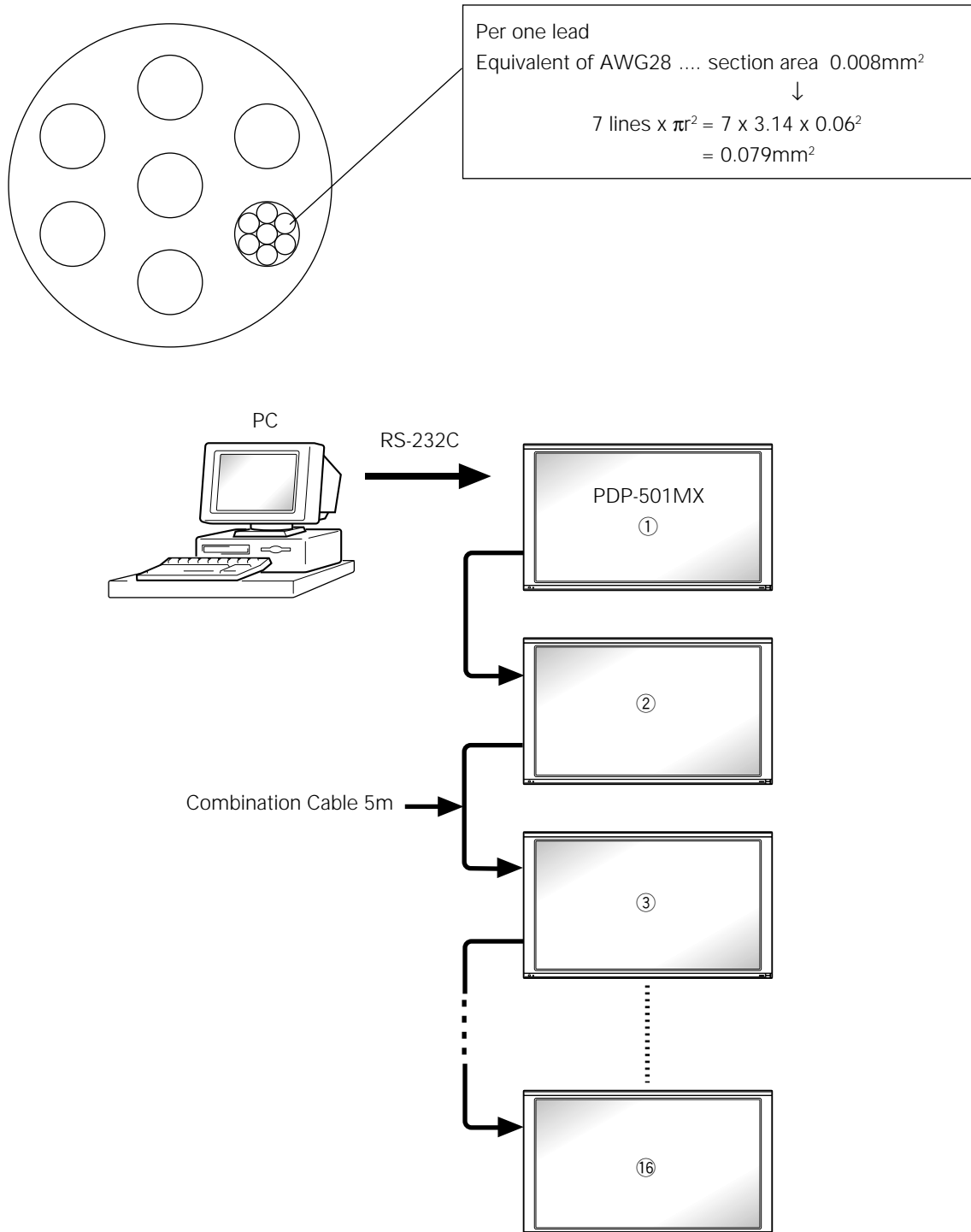
### Cautions about ID Assignment

Clearing an ID for any unit removes all following units from control from the computer. Issuing an `<**IDC>` command removes all units from control except the first unit (the unit having ID 11 in the illustration above). In this case, issuing a command of `11 IDS` makes the second unit controllable from the computer. That is, assigning an ID to a unit makes it possible to control the following connected unit.

## Combination Cable Connection

Up to 16 pcs. of unit operation connecting with combination cables has been ensured under the following conditions:

- Conditions:
- ① Length of RS-232C Cable PC ↔ PDP-501MX: 5m
  - ② Length of Combination Cable: 5m
  - ③ Connecting Cable Type: Mini DIN6 straight (7 leads cable)



Note: Regarding the maximum number of units for the series connection using video output terminals, please refer to 2.3 Controls and Connectors.

## Combination Cable Connection

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### 5.7 KEY LOCK/UNLOCK

#### 5.7.1 Functions

In KEY LOCK status, the operating panel of the main unit and the remote control unit are disabled, preventing any other person from disturbing the work in progress. (RS-232C commands in this status remain effective.)

Attempting to operate the operating panel of the main unit or the remote control unit in this status will display "KEY LOCK" in the upper right corner of the screen.

This unit is factory preset to KEY UNLOCK, with the main unit's operating panel and remote control unit both enabled.

#### 5.7.2 How to switch KEY LOCK/UNLOCK

Two methods are available:

- 1) With the Operating Panel of the Main Unit (a hidden button is provided for this purpose)

Locate and press the KEY LOCK/UNLOCK button hidden in the opening between the STANDBY/ON and INPUT buttons on the main unit's operating panel.

This hidden button toggles KEY between LOCK and UNLOCK. Pressing this KEY LOCK/UNLOCK button while in Menu mode, Integrator mode, or RS-232C adjustment mode automatically places the unit in Normal operating mode, and at the same time invokes KEY LOCK status.

- 2) Using RS-232C Commands

Enter the RS-232C adjustment mode and perform <AJY>. Issue a <KLY> command to invoke KEY LOCK status, or issue a <KLN> command to invoke KEY UNLOCK.

Precautions and Recommendations for Operations

# About the Pseudo-Contour

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## 6.1 About the Pseudo-Contour

When images representing a series of different brightness or color tones (such as human skin tones) move at a certain speed, they are sometimes accompanied by striped shadows. This pattern is known as pseudo-contour.

This phenomenon is an optical illusion deriving from the plasma display's characteristic tone wedge, and is not found with still images.

Using our new driver method, we've succeeded in significantly reducing pseudo-contour, making it possible to achieve quality video, particularly for motion pictures.

However, this phenomenon may appear when

- MP mode is switched OFF for PC input
- A 1028 x 768, 87-Hz (interlaced) signal is supplied, whether MP mode is switched OFF or ON.

## 6.2 Cautions

1) If the display shuts down on its own and will not power up again for some time, an abnormal condition (parts breakdown, for example) is the likely cause. Turn off the main power switch for the plasma display and switch it on again after waiting several seconds. If the display shuts down, it needs to be repaired. If it remains powered up, there is no problem, and you may continue using it.

2) Displaying the same images (still images, telops, etc.) for extended periods may cause them to be burned on to the screen. You can avoid this problem by remaining aware of the software content in use, playback method, system configuration, and other factors.

3) The following signals may damage the screen:

- Multifold-generated copy of VTR signals
- Copyright-protected VTR signals
- Scrambled CATV signals
- Signals with significantly phase-shifted sync and video signals

4) Images are blacked out for approximately one to three seconds when input is switched, to permit the plasma display driver to temporarily suspend operation while video memory refreshes. When you switch input between different frequencies, a longer black-out interval is needed (approximately up to three seconds) due to the array of data to be changed in video memory. Allow for this interval when "staging" video.

5) The fan will begin spinning faster as ambient temperature rises beyond 25°C. This is normal.

6) About the plasma panel's screen-saver feature (Detection of still images)

Brightness will drop slightly when photo images or slow-moving images, such as those supplied by PCs, are shown for extended periods. The unit detects the lack of motion and automatically dims the screen brightness to protect the plasma display panel. This is normal and does not indicate a problem.

The feature generally kicks in approximately five minutes after powering-up or switching input in Normal operating mode. This feature does not function in RS-232C adjustment mode (AJY) or in Integrator mode.

7) Software problems

We have encountered the following problems with the microcomputer software version 5435A:

- The still-image detector functions in RS-232C adjustment mode (AJY) → Make adjustments while performing <AJN> every five minutes.
- The still-image detector does not function after exiting Integrator mode → Switch power off, then switch it back on after exiting Integrator mode.

We apologize for these problems. You may compensate for them using the methods described above.

### 1) Unplug the Power Cord from the Outlet.

### 2) Cabinet and Remote

Never use solvents such as benzene or thinner, which can damage or destroy the coating of the cabinet or the remote.

Remove dirt by lightly wiping with a soft cloth.

If necessary, slightly moisten the cloth with neutral detergent diluted with water. In humid conditions, wipe off condensation with a dry cloth.

### 3) Screen (Front Protection Panel)

The screen surface (front protection panel) is coated with a delicate anti-glare material. To clean the screen, dust off and wipe lightly with a soft cloth. Do not rub with tissue paper or hard abrasive materials.

Never use solvents such as benzene and thinner, which can discolor or render the screen opaque.

For cleaning, we recommend the following cloth and fluid.

Name	Part Number
Cleaning Cloth: Wiping Cloth	AED1174
Cleaning Cloth: Minimax	GED-009
Cleaning Liquid: B4	GEM1004

For light soiling, dust off particles, then lightly wipe with Minimax.

For heavy soiling, dust off particles, then wipe with the end of Minimax lightly moistened with B4. Once the surface dries, wipe with dry Minimax.

### 4) Vent

Every month, remove dirt from the vent openings that house fans on the sides and rear of the main unit, using a vacuum cleaner set to its lowest suction setting. Be sure to switch off the main power on the main unit before cleaning the vents.

Blocked vents can lead to dangerously high internal temperatures, resulting in malfunctions or fire.

### 5) Readjustment of White Balance

This unit uses phosphor elements, as do CRTs. These phosphors degrade over time, reducing brightness. Since green and blue phosphors degrade faster than red, we recommend readjusting the white balance every 1000 hours.

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