

Operating Instructions

English



No user-serviceable parts inside. Refer servicing to qualified service personnel.



The lightning flash with arrow-head within a triangle is intended to tell the user that parts inside the product are a risk of electric shock to persons.



The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are in the papers with the appliance.

WARNING: To prevent damage which may result in fire or shock hazard, do not expose this appliance to rain or moisture.

Do not place containers with water (flower vase, cups, cosmetics, etc.) above the set. (including on shelves above, etc.)

WARNING: 1) To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

 Do not remove the grounding pin on the power plug. This apparatus is equipped with a three pin grounding-type power plug. This plug will only fit a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician. Do not defeat the purpose of the grounding plug.

Important Safety Instructions

- 1) Read these instructions. All the safety and operating instructions should be read before the appliance is operated.
- 2) Keep these instructions. The safety and operating instructions should be retained for future reference.
- Heed all warnings.
 All warnings on the appliance and in the operating instructions should be adhered to.
- 4) Follow all instructions. All operating and use instructions should be followed.
- 5) Do not use this apparatus near water. For example, near a bathtub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.
- 6) Clean only with dry cloth.

to overturn.

Do not use liquid cleaners or aerosol cleaners. Use a dry cloth for cleaning.

- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. Slots and Openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments / accessories specified by the Manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart / apparatus combination to avoid injury from tip-over. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination



- 13) Unplug this apparatus during lightning storms or when unused for long periods of time. This will prevent damage to the product due to lightning and power-line surges.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 15) To prevent electric shock, ensure the grounding pin on the AC cord power plug is securely connected.

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Note:

Do not allow a still picture to be displayed for an extended period, as this can cause a permanent afterimage to remain on the plasma display.

Examples of still pictures include logos, video games, computer images, teletext and images displayed in 4:3 mode.

Trademark Credits

- VGA is a trademark of International Business Machines Corporation.
- Macintosh is a registered trademark of Apple Computer, USA.
- S-VGA is a registered trademark of the Video Electronics Standard Association.
 Even if no special notation has been made of company or product trademarks, these trademarks have been fully respected.

COMPLIANCE INFORMATION STATEMENT

(DECLARATION OF CONFORMITY PROCEDURE)

Responsible Party: Address: Telephone: Fax: Type of Equipment: Moel Name:

Yamaha Electronics Corporation 6660 Orangethorpe Avenue Buena Park, CA90620 714-522-9105 714-670-0108 High Definition Plasma Monitor PDM-1

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) this device may not cause harmful interference, and

2) this device must accept any interference received, including interference that may cause undesired operation. See the user manual instructions if interference to radio reception is suspected.

FCC INFORMATION (for US customers only)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT! This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. IMPORTANT: When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

3. NOTE: This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices.

This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Electronics Corp., U.S.A. 6660 Orangethorpe Ave, Buena Park, CA 90620.

The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

CANADIAN NOTICE:

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

Safety Precautions

WARNING

Set up

Do not place the plasma display on sloped or unstable surfaces.

• The plasma display may fall off or tip over.

Do not place any objects on top of the plasma display.

If water spills onto the plasma display or foreign objects get inside it, a short-circuit may occur which could result in fire
or electric shock. If any foreign objects get inside the plasma display, please consult an Authorized Service Center.

Do not cover the ventilation holes.

• Doing so may cause the plasma display to overheat, which can cause fire or damage to the plasma display.

If using the pedestal (optional accessory), leave a space of $3 \, {}^{15}/{}_{16}$ " (10 cm) or more at the top, left and right, $2 \, {}^{3}/{}_{8}$ " (6 cm) or more at the bottom, and $2 \, {}^{3}/{}_{4}$ " (7 cm) or more at the rear. If using some other setting-up method, leave a space of $3 \, {}^{15}/{}_{16}$ " (10 cm) or more at the top, bottom, left and right, and ${}^{3}/{}_{4}$ " (1.9 cm) or more at the rear.

Avoid installing this product near electronic equipment that easily receives electromagnetic waves.

• It may cause interference in image, sound, etc. In particular, keep video equipment away from this product.

AC Power Supply Cord

The plasma display is designed to operate on 120 V AC, 50/60 Hz.

Securely insert the power cord plug as far as it will go.

• If the plug is not fully inserted, heat may be generated which could cause fire. If the plug is damaged or the wall socket plate is loose, they should not be used.

Do not handle the power cord plug with wet hands.

• Doing so may cause electric shocks.

Do not do anything that might damage the power cable. When disconnecting the power cable, hold the plug, not the cable.

• Do not make any modifications, place heavy objects on, place near hot objects, heat, bend, twist or forcefully pull the power cable. Doing so may cause damage to the power cable which can cause fire or electric shock. If damage to the cable is suspected, have it repaired at an Authorized Service Center.

If the plasma display will not be used for a long period of time, unplug the power cord from the wall outlet.

If problems occur during use

If a problem occurs (such as no picture or no sound), or if smoke or an abnormal odor is detected from the plasma display, unplug the power cord immediately.

• Continuous use of the Display under these conditions might cause fire or permanent damage to the unit. Have the Display evaluated at an Authorized Service Center. Services to the Display by any unauthorized personnel are strongly discouraged due to its high voltage dangerous nature.

If water or foreign objects get inside the plasma display, if the plasma display is dropped, or if the cabinet becomes damaged, disconnect the power cord plug immediately.

• A short may occur, which could cause fire. Contact an Authorized Service Center for any repairs that need to be made.

This plasma display is for use only with the following optional accessories. Use with any other type of optional accessories may cause instability which could result in the possibility of injury.

- Speakers (main speaker) ······ NS-F100, NS-F80, NS-F70
 - (center speaker) ······ NS-CF100
- Pedestal ······PDS-150
- Wall Mounting Unit ····· PWK-150

Always be sure to ask a qualified technician to carry out set-up.

When using the plasma display

Do not bring your hands, face or objects close to the ventilation holes of the plasma display.

• Top of the plasma display is usually very hot due to the high temperature of exhaust air being released through the ventilation holes. Burns or personal injuries can happen if any body parts are brought too close. Placing any object near the top of the display could also result in heat damages to the object as well as to the Display if its ventilation holes are blocked.

Be sure to disconnect all cables before moving the plasma display.

• Moving the Display with its cables attached might damage the cables which, in turn, can cause fire or electric shock.

Disconnect the power plug from the wall outlet as a safety precaution before carrying out any cleaning.

• Electric shocks can result if this is not done.

Clean the power cable regularly to prevent it from becoming dusty.

• Built-up dust on the power cord plug can increase humidity which might damage the insulation and cause fire. Unplug the cord from the wall outlet and clean it with a dry cloth.

Cleaning and maintenance

The front of the display panel has been specially treated. Wipe the panel surface gently using only a cleaning cloth or a soft, lint-free cloth.

- If the surface is particularly dirty, soak a soft, lint-free cloth in a weak detergent solution and then wring the cloth to remove excess liquid. Use this cloth to wipe the surface of the display panel, then wipe it evenly with a dry cloth, of the same type, until the surface is dry.
- Do not scratch or hit the surface of the panel with fingernails or other hard objects. Furthermore, avoid contact with volatile substances such as insect sprays, solvents and thinner, otherwise the quality of the surface may be adversely affected.

If the cabinet becomes dirty, wipe it with a soft, dry cloth.

- If the cabinet is particularly dirty, soak the cloth in a weak detergent solution and then wring the cloth dry. Use this cloth to wipe the cabinet, and then wipe it dry with a dry cloth.
- Do not allow any detergent to come into direct contact with the surface of the plasma display. If water droplets get inside the unit, operating problems may result.
- Avoid contact with volatile substances such as insect sprays, solvents and thinner, otherwise the quality of the cabinet surface may be adversely affected or the coating may peel off. Furthermore, do not leave it for long periods in contact with articles made from rubber or PVC.

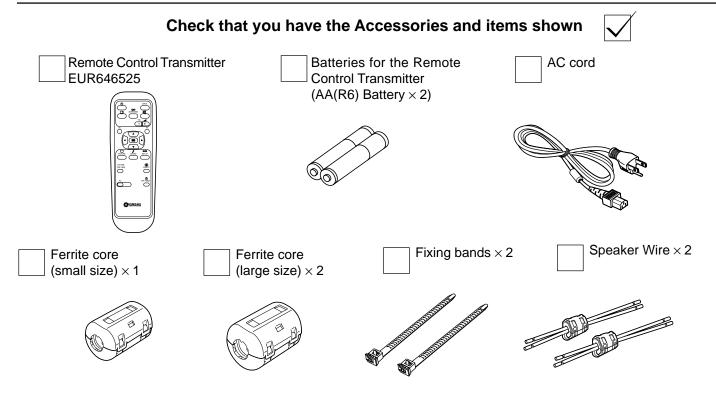
Note:

Do not allow a still picture to be displayed for an extended period, as this can cause a permanent after-image to remain on the plasma display.

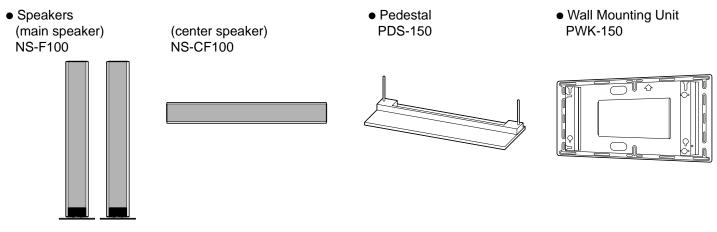
Examples of still pictures include logos, video games, computer images, teletext and images displayed in 4:3 mode.

Accessories

Accessories Supplied



Optional Accessories



NS-F80 (for shelf-placing) NS-F70 (for wall-hanging)

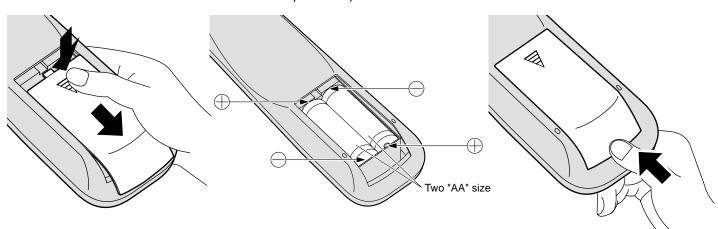
For assembling

Full instructions are supplied with each of the optional accessories for use with this plasma display.

Remote Control Batteries

Requires two AA batteries.

- 1. Turn the transmitter face down. Press and slide off the battery cover.
- Install the batteries as shown in the battery compartment. (Polarity + or – must match the markings in the compartment.)
- 3. Replace the cover and slide in reverse until the lock snaps.



Helpful Hint:

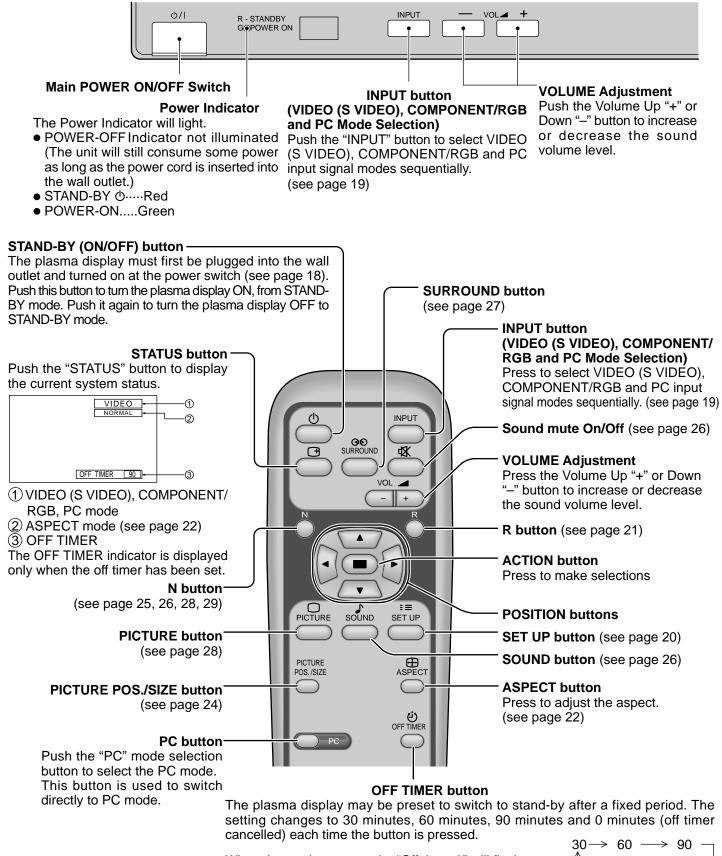
For frequent remote control users, replace old batteries with Alkaline batteries for longer life.

▲ Precaution on battery use

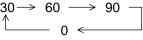
Incorrect installation can cause battery leakage and corrosion that will damage the remote control transmitter. **Observe the following precautions:**

- 1. Batteries should always be replaced as a pair. Always use new batteries when replacing the old set.
- 2. Do not combine a used battery with a new one.
- 3. Do not mix battery types (example: "Zinc Carbon" with "Alkaline").
- 4. Do not attempt to charge, short-circuit, disassemble, heat or burn used batteries.
- 5. Battery replacement is necessary when the remote control acts sporadically or stops operating the plasma display.

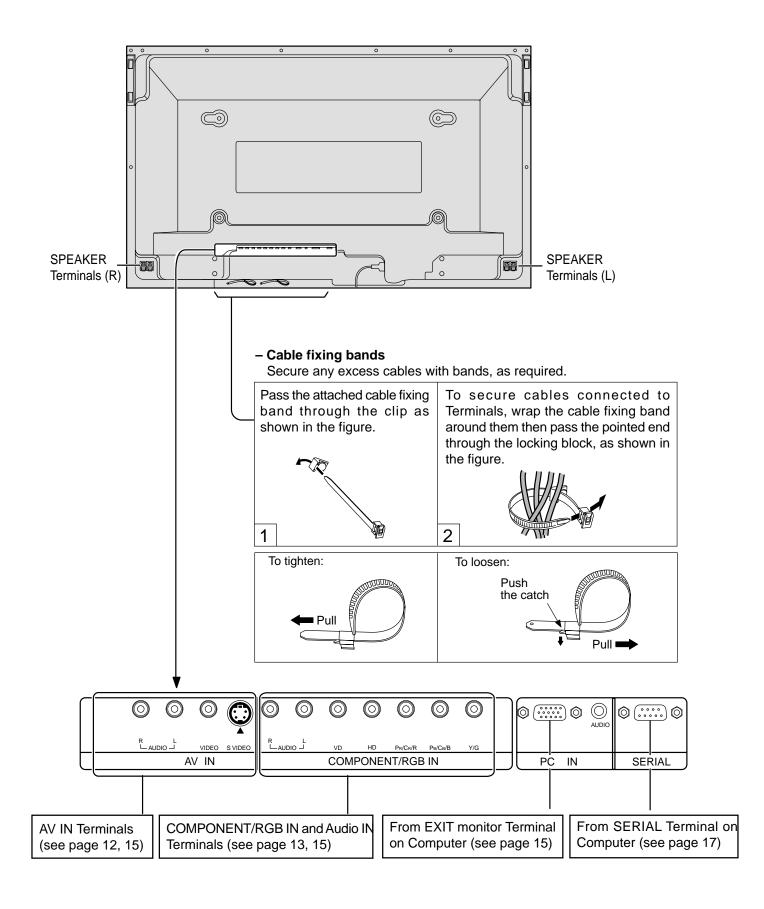
Basic Controls



When three minutes remain, "Off timer 3" will flash. The off timer is cancelled if a power interruption occurs.

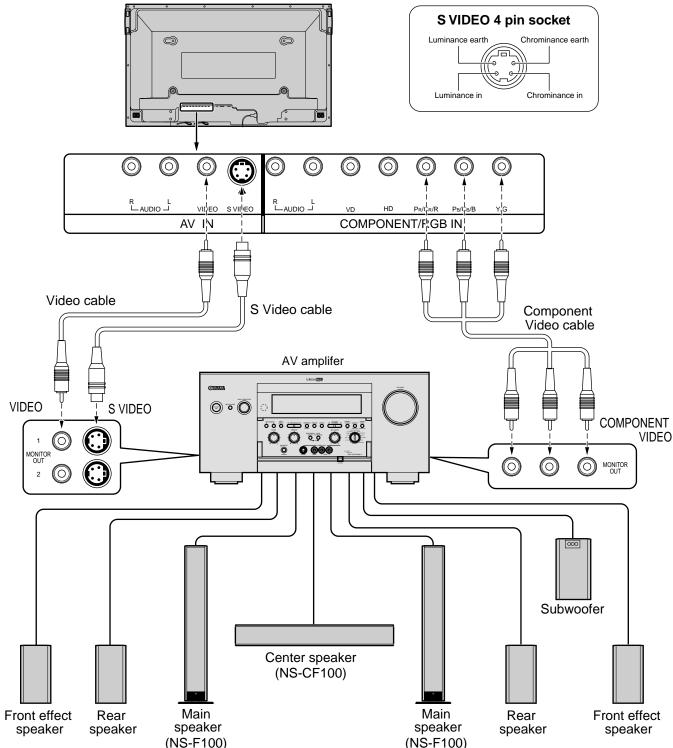


Connections



Basic connection

(Example) When connecting an AV amplifer



Notes:

(1) Change the "COMPONENT/RGB-IN" setting in the "SET UP" menu to "COMPONENT". (see page 34)

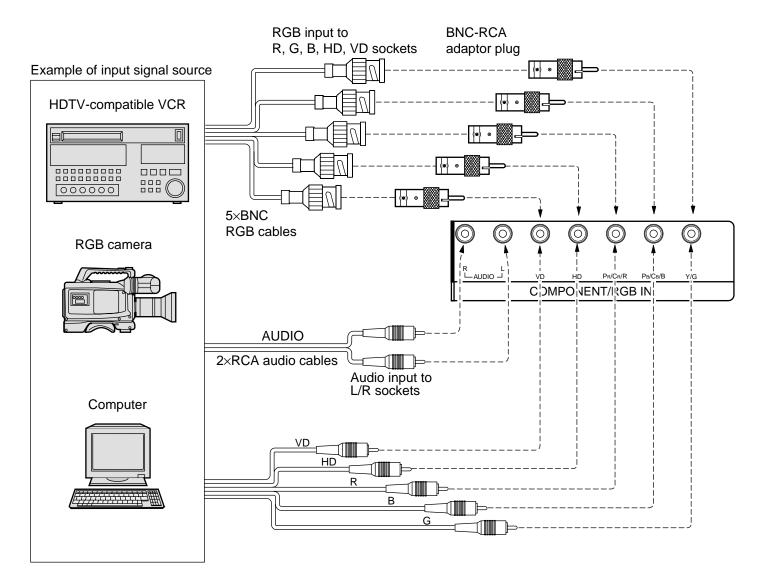
(2) Any equipment and cables other than the display illustrated above are not included.

(3) Choose one connecting cable from Video, S Video or Component Video, that is suitable for the equipment being used.

(4) The quality of images obtained varies between connection methods in the descending order of Component Video, S Video and Video.

COMPONENT/RGB Input connection

RGB signal (R, G, B, HD, VD) connection

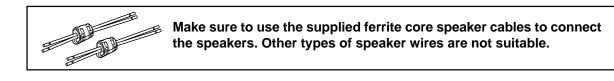


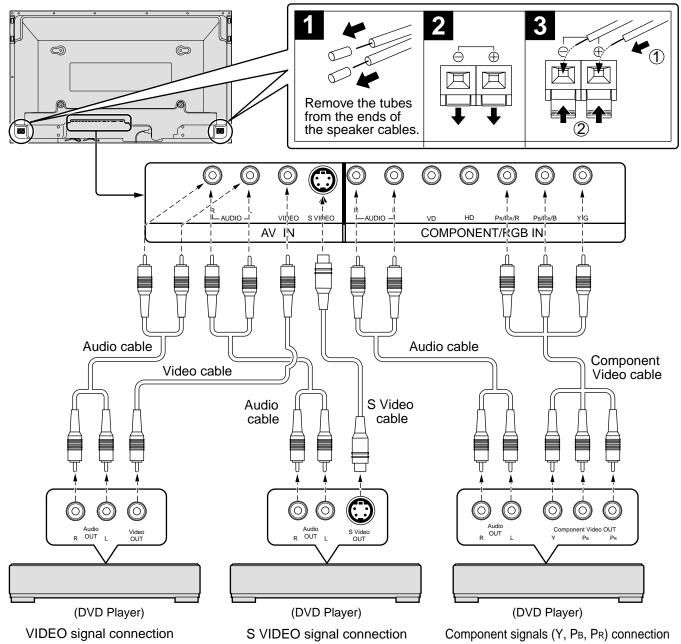
Notes:

- (1) Change the "COMPONENT/RGB-IN" setting in the "SET UP" menu to "COMPONENT". (see page 34)
- (2) Any equipment and cables other than the display illustrated above are not included.
- (3) Choose one connecting cable from Video, S Video or Component Video, that is suitable for the equipment being used.
- (4) The quality of images obtained varies between connection methods in the descending order of Component Video, S Video and Video.

Speaker Terminals connection

When you do not use an AV amplifer, connect the speakers directly with the speaker terminals of the plasma display. Refer to the speaker's Installation Manual for details on speaker installation.





Notes:

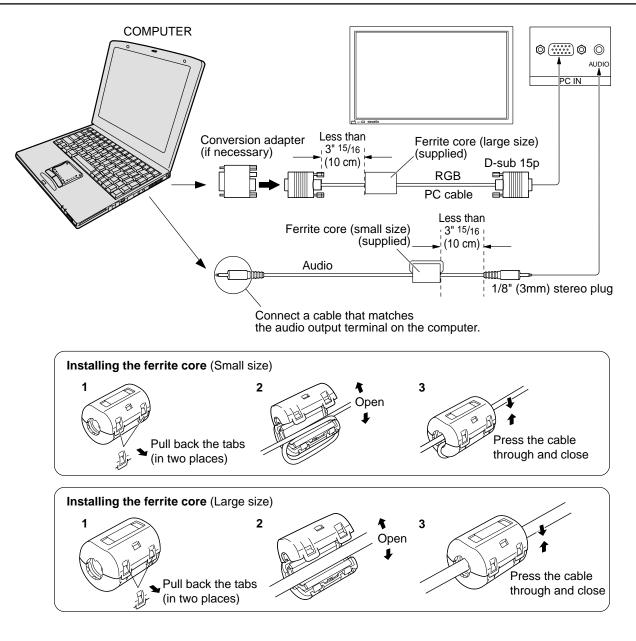
(1) Change the "COMPONENT/RGB-IN" setting in the "SET UP" menu to "COMPONENT". (see page 34)

(2) Any equipment and cables other than the display illustrated above are not included.

(3) Choose one connecting cable from Video, S Video or Component Video, that is suitable for the equipment being used.

(4) The quality of images obtained varies between connection methods in the descending order of Component Video, S Video and Video.

PC Input Terminals connection

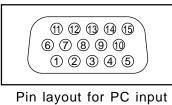


Notes:

- (1) Computer signals which can be input are those with a horizontal scanning frequency of 15.6 to 110 kHz and vertical scanning frequency of 48 to 120 Hz. (However, the image will not be displayed properly if the signals exceed 1,200 lines.)
- (2) The display resolution is a maximum of 1,024 × 768 dots when the aspect mode is set to "NORMAL", and 1,366 × 768 dots when the aspect mode is set to "FULL". If the display resolution exceeds these maximums, it may not be possible to show fine detail with sufficient clarity.
- (3) The PC input terminals are DDC1/2B-compatible. If the computer being connected is not DDC1/2B-compatible, you will need to make setting changes to the computer at the time of connection.
- (4) Some PC models cannot be connected to the set.
- (5) There is no need to use an adapter for computers with DOS/V compatible D-sub 15P terminal.
- (6) The computer shown in the illustration is for example purposes only.
- (7) Additional equipment and cables shown are not supplied with this set.
- (8) Do not set the horizontal and vertical scanning frequencies for PC signals which are above or below the specified frequency range.

Connections

Signal Names for D-sub 15P Connector



Pin No.	Signal Name	Pin No.	Signal Name	Pin No.	Signal Name
1	R	6	GND (Ground)	(11)	GND (Ground)
2	G	7	GND (Ground)	12	SDA
3	В	8	GND (Ground)	13	HD/SYNC
4	GND (Ground)	9	NC (not connected)	14	VD
5	GND (Ground)	10	GND (Ground)	15	SCL

AV (VIDEO, S VIDEO) input

terminal

	signal name	horizontal frequency(kHz)	vertical frequency(Hz)
1	NTSC	15.734	59.95
2	PAL	15.625	50
3	PAL60	15.734	59.95
4	SECAM	15.625	50
5	Modified NTSC	15.734	59.95

COMPONENT/RGB input

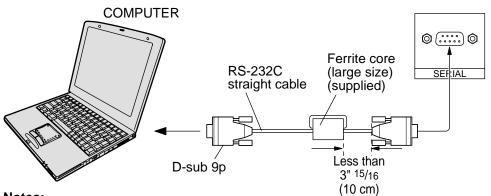
	signal name	horizontal frequency(kHz)	vertical frequency(Hz)
1	525 (480) /60i	15.734	59.94
2	625 (575) /50i	15.625	50
3	525 (480) /60p	31.468	59.94
4	625 (575) /50p	31.25	50
5	750 (720) /60p	45	60
6	1,125 (1,080) /60i	33.75	60
7	1,125 (1,080) /50i	28.125	50
8	1,125 (1,080) /24p	27	24
9	1,125 (1,080) /24sF	27	48

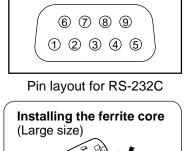
PC input

	signal name	horizontal frequency(kHz)	vertical frequency(Hz)
1	$640 \times 400 @70$	31.5	70
2	$640 \times 400 @60$	31.5	59.94
3	Macintosh13" (640×480)	35	67
4	640×480 @75	37.5	75
5	852×480 @60	31.7	60
6	$800 \times 600 @60$	37.9	60
7	$800 \times 600 @75$	46.9	75
8	$800 \times 600 @85$	53.7	85
9	Macintosh16" (832 $ imes$ 624)	49.7	75
10	1,024×768 @60	48.4	60
11	1,024 × 768 @70	56.5	70
12	1,024×768 @75	60	75
13	1,024×768 @85	68.7	85
14	Macintosh21" (1,152 × 870)	68.7	75
15	1,280×1,024 @60	64	60
16	1,280×1,024 @75	80	75
17	1,280×1,024 @85	91.1	85
18	1,600×1,200 @60	75	60

SERIAL Terminals connection

The SERIAL terminal is used when the plasma display is controlled by a computer.





Open

Notes:

(1) Use the RS-232C cable to connect the computer to the plasma display.

(2) The computer shown is for example purposes only.

(3) Additional equipment and cables shown are not supplied with this set.

The SERIAL terminal conforms to the RS-232C interface specification, so that the plasma display can be controlled by a computer which is connected to this terminal.

The computer will require software which allows the sending and receiving of control data which satisfies the conditions given below. Use a computer application such as programming language software. Refer to the documentation for the computer application for details.

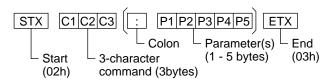
Communication parameters

Signal level	RS-232C compliant
Synchronization method	Asynchronous
Baud rate	9600 bps
Parity	None
Character length	8 bits
Stop bit	1 bit
Flow control	—

D0 0000 0	
RS-2320 Cor	version cable
D-sub 9-pin female	Details
2	R X D
3	TXD
5	GND
4 • 6	Non use
7 8	Shorted
1•9	NC

Basic format for control data

The transmission of control data from the computer starts with a STX signal, followed by the command, the parameters, and lastly an ETX signal in that order. If there are no parameters, then the parameter signal does not need to be sent.



Notes:

- (1) If multiple commands are transmitted, be sure to wait for the response for the first command to come from this unit before sending the next command.
- (2) If an incorrect command is sent by mistake, this unit will send an "ER401" command back to the computer.

Command

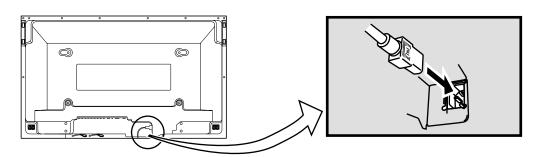
ails
e (processed as
s set by this unit)
(toggle)
; ;

With the power off, this display responds to PON command only.

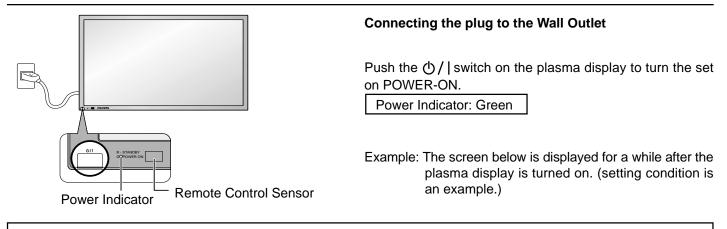
Power ON/OFF and Input Signal Selection

AC cord connection

Connecting the AC cord plug to the plasma display.



Power ON/OFF



When the POWER is turned on for the first time, the LANGUAGE selection screen is displayed.

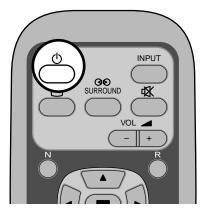
From the second time on, language selection can be done from the setup menu. (see page 19)

Select the desired language using the \blacktriangle and \blacktriangledown keys and press the ACTION \bigcirc button.



From the second time on, the screen shown below is displayed for a while (setting condition is an example).







Press the $\ensuremath{\textcircled{O}}$ button on the remote control to turn the plasma display off.

Power Indicator: Red (STAND-BY)

Press the O button on the remote control to turn the plasma display on.

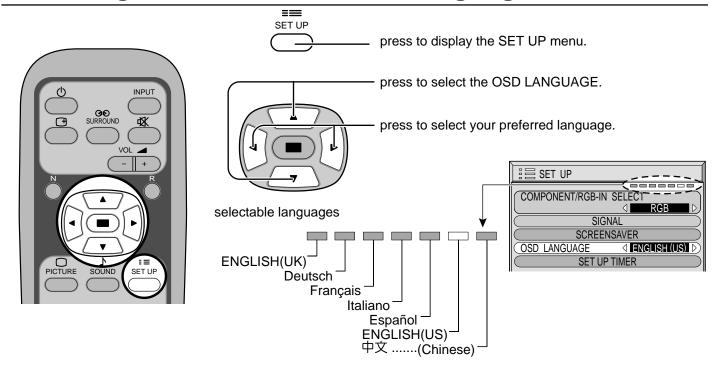
Power Indicator: Green

To turn the power for the plasma display off, press the O switch on the plasma display, when the plasma display is on or in standby mode.

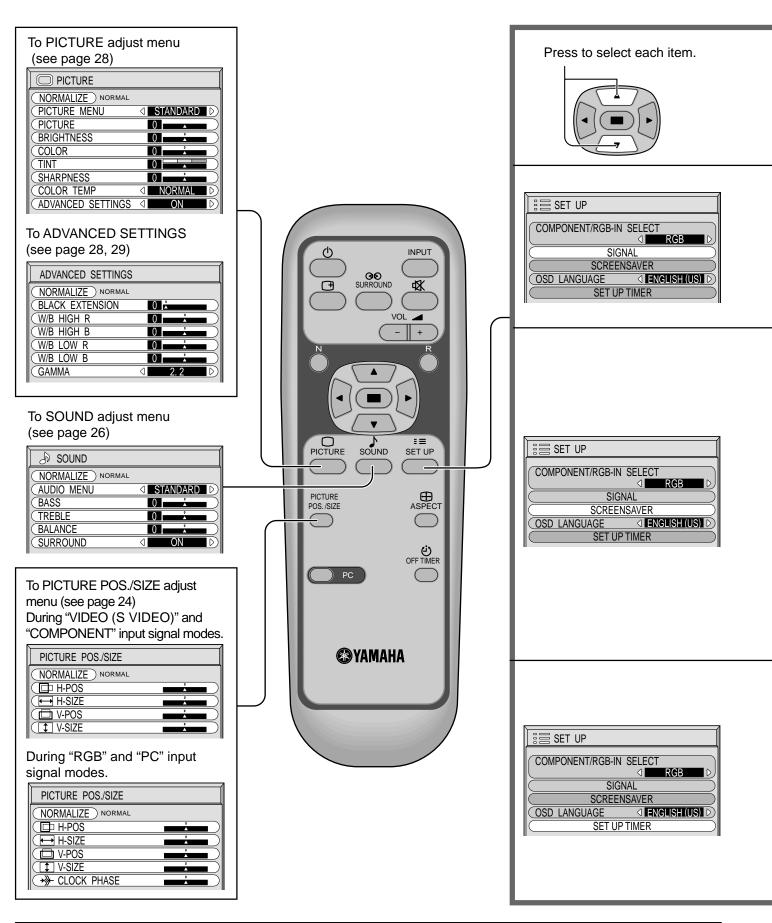
Select the Input Signal

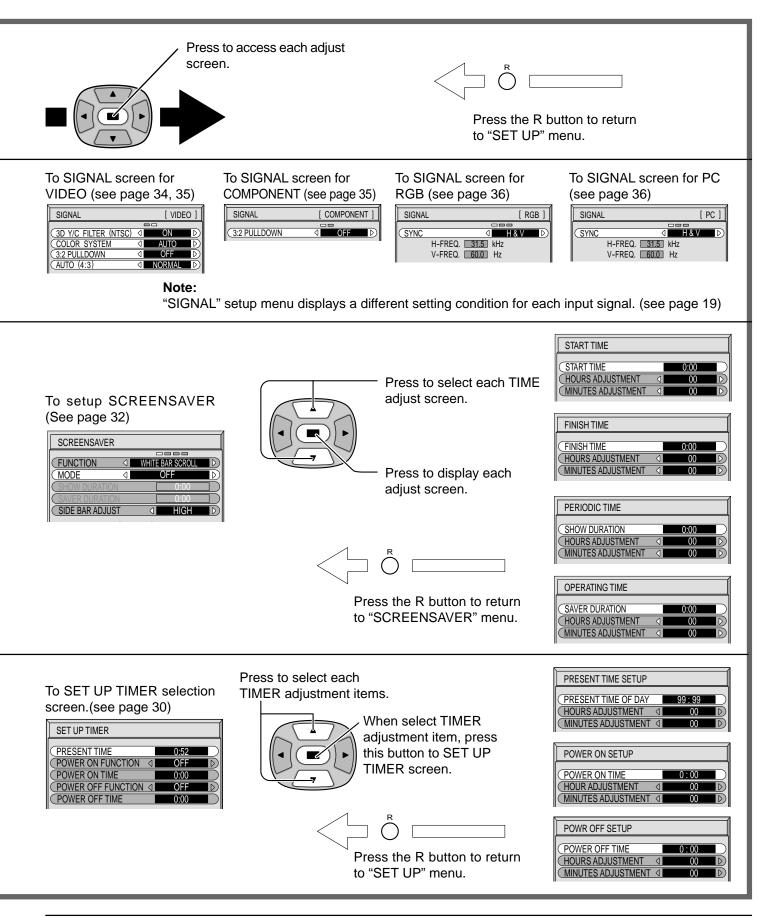
	INPUT	Press the INPUT button to select the input video signal desired from equipment such as a VCR which has been connected to the plasma display. Input signals will change as follows: For COMPONENT INPUT (see page 32) \rightarrow VIDEO \rightarrow COMPONENT \rightarrow PC For RGB INPUT (see page 32) \rightarrow VIDEO \rightarrow RGB \rightarrow PC
CU INPUT SURROUND VOL - +		

Selecting the On-Screen Menu Language



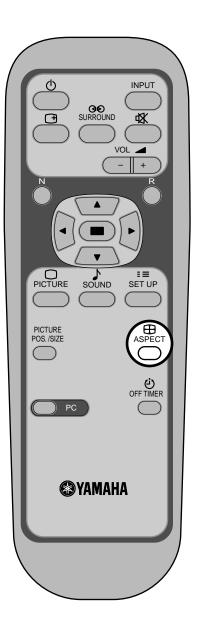
On-Screen Menu Display from Remote Control





ASPECT Controls

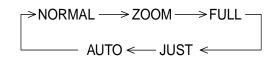
The plasma display will allow you to enjoy viewing the picture at its maximum size, including wide screen cinema format picture.





ASPECT button

The aspect mode changes each time the ASPECT button is pressed.



Notes:

- (1) During RGB and PC input signal modes, the mode switches between "NORMAL", "ZOOM" and "FULL" only.
- (2) For a 1,125i (1,080i), 750p (720p) signal input during "COMPONENT" input signal mode, the mode is set to "FULL" mode, and switching is not possible.

For a 525i (480i), 625i (575i), 525p (480p) and 625p (575p) signal input during "COMPONENT" input signal mode, "AUTO" cannot be selected.

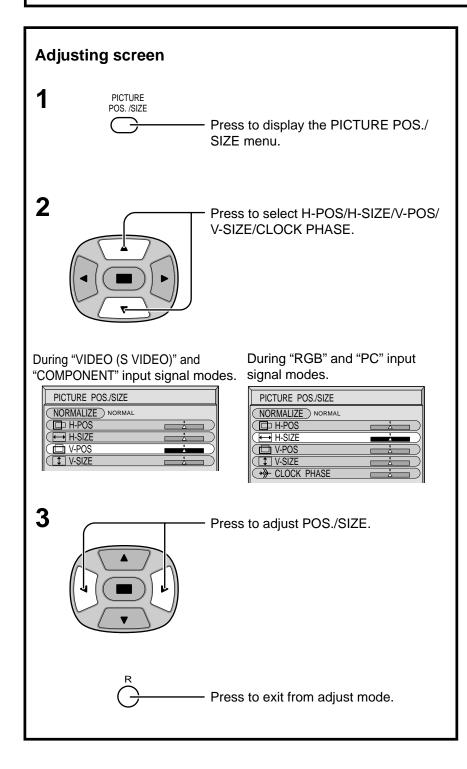
(3) The aspect mode is memorized separately for each input terminal (VIDEO (S VIDEO), COMPONENT, RGB and PC).

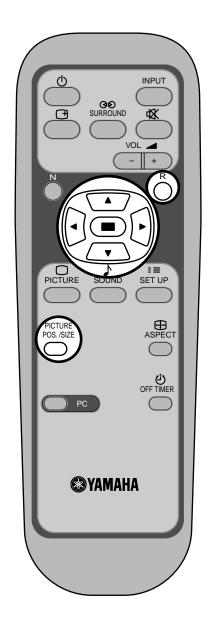
Mode	Picture	Explanation
NORMAL		NORMAL will display a 4:3 picture at its standard 4:3 size.
ZOOM	$\begin{array}{c c} & & & & & \\ \hline & & & & \\ \hline & & & & \\ \hline & & & &$	ZOOM mode magnifies the central section of the picture.
FULL		FULL will display the picture at its maximum size but with sight elongation.
JUST		JUST mode will display a 4:3 picture at its maximum size but with aspect correction applied to the center of the screen so that elongation is only apparent at the left and right edges of the screen. The size of the picture will depend on the original signal.
AUTO	For an elongated image For a 4:3 image For a	The display will automatically become enlarged (depending on the picture source), allowing you to view the picture at its maximum size. Note: AUTO mode is designed to automatically adjust the aspect ratio to handle a mix of 16:9 and 4:3 program material. Certain 4:3 program material, such as stock market data screens, may occasionally cause the image size to change unexpectedly. When viewing such programs, it is recommended that the ASPECT be set to NORMAL.

Notes:

- (1) Do not allow the picture to be displayed in 4:3 mode for an extended period, as this can cause a parmanent after-image to remain on the plasma display panel.
- (2) The S VIDEO terminal on this set can detect specially encoded signals that are compatible with a wide screen monitor. When a full image from the S VIDEO terminal of specially encoded video is detected by the set, the screen size is automatically set to FULL mode.

Adjusting PICTURE POSITION/SIZE





Notes:

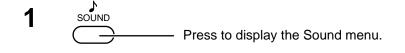
- (1) Adjustment details are memorized separately for different input signal formats (Adjustments for component signals are memorized for 525i (480i), 625i (575i), 525p (480p), 1,125i (1,080i) and 625p (575p), 750p (720p) each, and RGB/PC signals are memorized for each frequency.)
- (2) If a "Cue" or "Rew" signal from a VCR or DVD player is received, the picture position will shift up or down. This picture position movement cannot be controlled by the PICTURE POS./SIZE function.

	When the Position Left " " " button is pressed	When the Position Right ">" button is pressed
H-POS		
	When the Position Left "◄" button is pressed	When the Position Right ">" button is pressed
H-SIZE	$ \rightarrow \begin{array}{c} 0 \\ 0 \\ 0 \end{array} \begin{array}{c} 0 \\ 0 \end{array} $	
	When the Position Left " " " button is pressed	When the Position Right "►" button is pressed
V-POS		
	When the Position Left " " " button is pressed	When the Position Right "▶" button is pressed
V-SIZE		
CLOCK PHASE (RGB/PC in Mode)	Flickering and distortion can be eliminated by us carry out adjustment.	sing the Position Left "◀" or Right "▶" button to

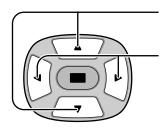
- $\dot{\mathbb{P}}$ - Helpful Hint ($\overset{\mathsf{N}}{\bigcirc}$ / $(\mathsf{NORMALIZE})$ Normalization)

While the PICTURE POS./SIZE display is active, if either the N button on the remote control is pressed at any time or the (ACTION button) is pressed during "NORMALIZE", then all adjustment values are returned to the factory settings.

SOUND Adjustment



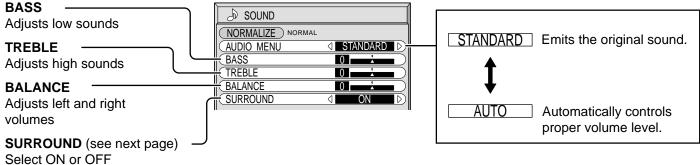
2 Select to adjust each item.



Press to select the desired adjustment menu.

Select the desired level by listening to the sound.





• To end adjustments

Press the R button

Note:

Press the SURROUND button to directly turn the surround effect ON and OFF. (see next page) BASS, TREBLE and SURROUND settings are memorized separately for each SOUND mode (STANDARD, AUTO).

$-\frac{1}{2}$ - Helpful Hint ($^{N}_{O}$ / NORMALIZE) Normalization)

While the "SOUND" menu is displayed, if either the N button on the remote control is pressed at any time or the (ACTION button) is pressed during "NORMALIZE", then all adjustment values are returned to the factory settings.

MUTE

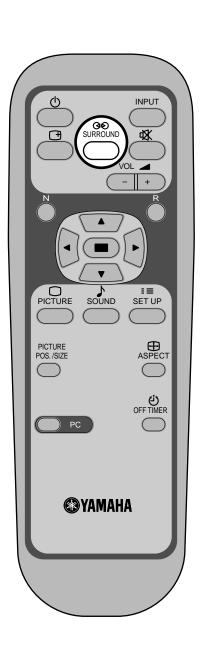
Useful when answering the phone or receiving visitors.



Press this button to mute the sound.

Press again to reactivate sound. Sound is also reactivated when power is turned off or volume level is changed.

SURROUND Controls

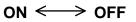


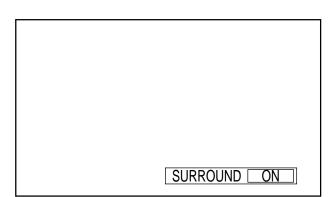


SURROUND Button

The benefits of surround sound are enormous. You can be completely enveloped in sound; just as if you were at a concert hall or cinema.

The surround setting switches on and off each time the SURROUND button is pressed.





Note:

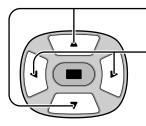
The surround settings are memorized separately for each SOUND mode (STANDARD, AUTO).

PICTURE Adjustments



Press the PICTURE button on the Remote Control to display the PICTURE menu.

2 Select to adjust each item.



Press to select the menu to adjust.

Select the desired level by looking at the picture behind the menu.

O PICTURE

PICTURE MENU

PICTURE

COLOR

TINT

BRIGHTNESS

SHARPNESS

COLOR TEMP

ADVANCED SETTINGS

NORMALIZE) NORMAL

STANDARD

ON

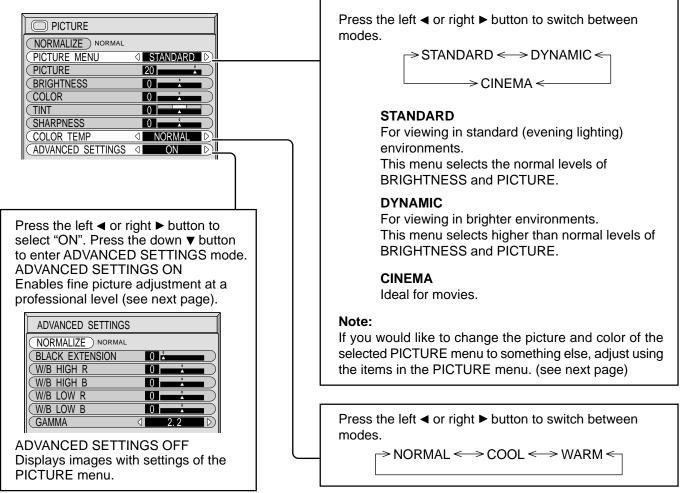
20

0

0

0

0 ×



- $\frac{1}{2}$ - Helpful Hint ($\stackrel{N}{O}$ / NORMALIZE) Normalization)

While the "PICTURE" menu is displayed, if either the N button on the remote control is pressed at any time or the (ACTION button) is pressed during "NORMALIZE", then all adjustment values are returned to the factory settings.

Item	Effect		Adjustments
PICTURE	Less	More	Adjusts the proper picture contrast.
BRIGHTNESS	Darker	Brighter	Adjusts for easier viewing of dark pictures such as night scenes and black hair.
COLOR	Less	More	Adjusts color saturation.
TINT (NTSC only)	Reddish	Greenish	Adjust for natural flesh tones.
SHARPNESS	Less	More	Adjusts picture sharpness.

Notes:

- "COLOR", "TINT" and "SHARPNESS" settings cannot be adjusted for "RGB" and "PC" input signal modes.
- (2) You can change the level of each function (PICTURE, BRIGHTNESS, COLOR, TINT, SHARPNESS) for each PICTURE menu.
- (3) The setting details for STANDARD, DYNAMIC and CINEMA respectively are memorized separately for each input mode (VIDEO (S VIDEO), COMPONENT RGB and PC).
- (4) The "TINT" setting can be adjusted for NTSC signal only during "VIDEO (S VIDEO)" input signal.

Note:

In PICTURE, there is nor a noticeable change even when contrast is increased with a bright picture or reduced with a dark picture.

ADVANCED SETTINGS

Item	Effe	ect	Details
BLACK EXTENSION	Less	More	Adjusts the dark shades of the image in gradiation.
W/B HIGH R	Less	More	Adjusts the white balance for light red areas.
W/B HIGH B	Less	More	Adjusts the white balance for light blue areas.
W/B LOW R	Less	More	Adjusts the white balance for dark red areas.
W/B LOW B	Less	More	Adjusts the white balance for dark blue areas.
GAMMA	Down	Up	$2.0 \longleftrightarrow 2.2 \longleftrightarrow 2.5$

Notes:

(1) Carry out "W/B" adjustment as follows.

- Adjust the white balance of the bright sections using the "W/B HIGH R" and "W/B HIGH B" settings.
- B Adjust the white balance of the dark sections using the "W/B LOW R" and "W/B LOW B" settings.
- C Repeat steps A and B to adjust.
- Steps (A) and (B) affect each other's settings, so repeat each step in turn to make the adjustment.
- (2) The adjustment values are memorized separately for each input mode (VIDEO(S VIDEO), COMPONENT, RGB and PC).
- (3) The adjustment range values should be used as an adjustment reference.

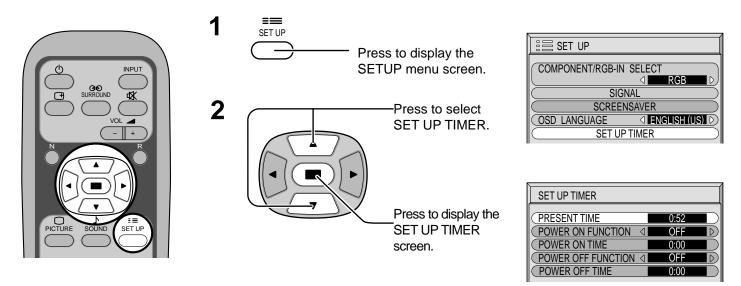
On the remote control unit, while the "**ADVANCED SETTINGS**" menu is displayed, if either the N button is pressed at any time or the () (ACTION button) is pressed during "NORMALIZE", then all adjustment values are returned to the factory settings.

SET UP TIMER

The timer can switch the Plasma Display ON or OFF.

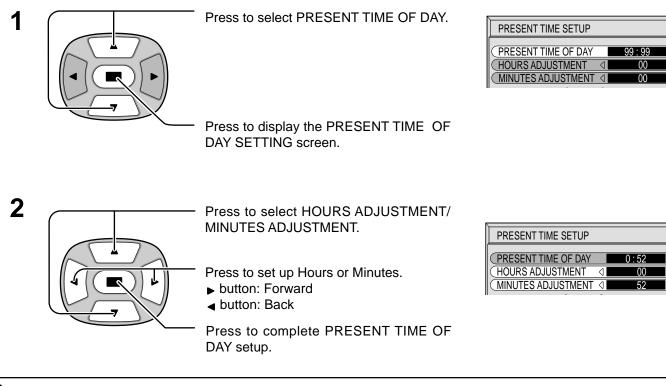
Before attempting Timer Set, confirm the PRESENT TIME OF DAY and adjust if necessary. Then set POWER ON TIME/POWER OFF TIME.

Display the SET UP TIMER screen

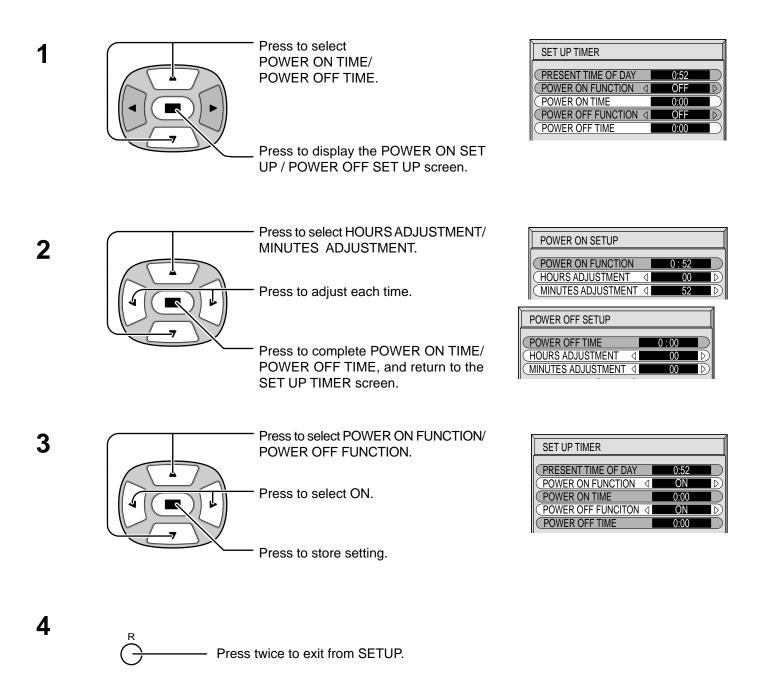


PRESENT TIME OF DAY Set

To set up PRESENT TIME, follow the procedure described below.



TIMER Set



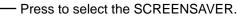
SCREENSAVER (For preventing after-images)

Do not display a still picture, especially in 4:3 mode, for any length of time. If the display must remain on, a SCREENSAVER should be used.

Press to display the SETUP menu screen.

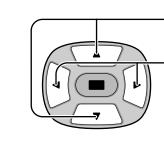


3



Press to select the SCREENSAVER screen.

NEGATIVE / SCROLL selection



Press to select the Function.

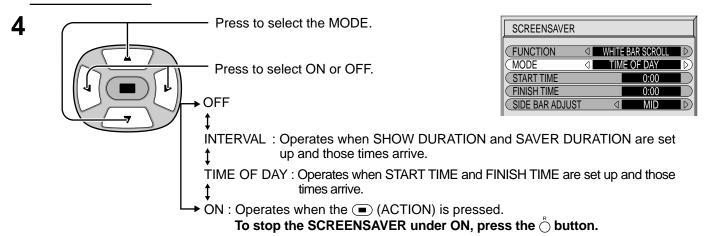
Press to select the desired function.

WHITE BAR SCROLL ← → NEGATIVE

WHITE BARSCROLL : A white bar will scroll from left to right.

NEGATIVE : A negative image will be displayed on the screen.

MODE selection



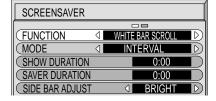
If the MODE is at ON, the menu screen will disappear and the SCREENSAVER will be activated.

After selecting TIME OF DAY or INTERVAL, the relevant SET UP TIME will become available for selection and the OPERATING TIME may be set. (Time cannot be set when "MODE" is "ON" or "OFF.")

SCREENSAVER			
FUNCTION	\triangleleft	WHITE BAR SCROLL	\square
MODE	\triangleleft	INTERVAL	\triangleright
SHOW DURATION		0:00	
SAVER DURATION		0:00	
SIDE BAR ADJUST		↓ HIGH	

SCREENSAVER			
FUNCTION	4		
FUNCTION	 	WHITE BAR SCROLL	
MODE	\triangleleft	TIME OF DAY	\square
START TIME		0:00	
FINISH TIME		0:00	
SIDE BAR ADJUST		⊲ MID	\triangleright

SCREENSAVER			
FUNCTION	4	WHITE BAR SCROLL	ert
MODE	4	OFF	\triangleright
SHOW DURATION		0:00	
SAVER DURATION	1	0:00	
SIDE BAR ADJUST	Г	⊲ HIGH	\triangleright
	-		



E SET UP

OSD LANGUAGE

COMPONENT/RGB-IN SELECT

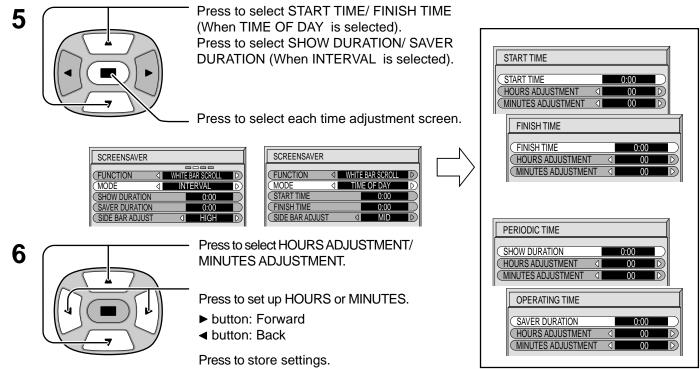
SIGNAL SCREENSAVER

SET UP TIMER

RGP

ENGLISH (US)

Setup of SCREENSAVER Time



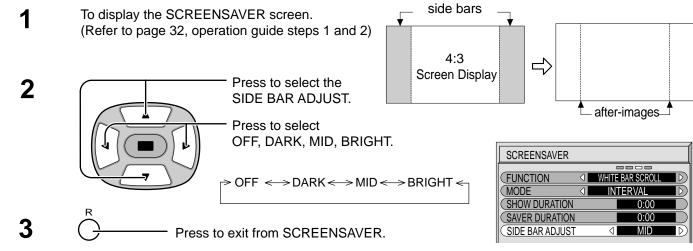
Note :

Timer function will not work unless "PRESENT TIME OF DAY" is set.

SIDE BAR ADJUST

Do not display a picture in 4:3 mode for an extended period, as this can cause an after-image to remain on the side bars on either side of the display field.

To prevent the appearance of such an after-image, change the brightness of the side bars.



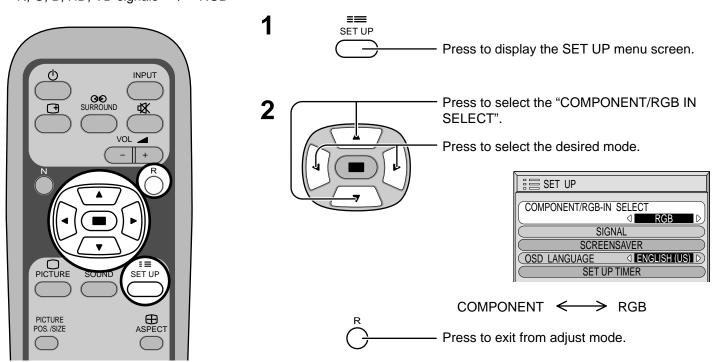
Notes:

- Setting the side bar to BRIGHT mode for an extended period may result in occurence of after-images.
- The side bars may flash (alternate black/white) depending on the picture being shown on the screen. In such an occurrence, use the Cinema mode.

SET UP for Input Signals

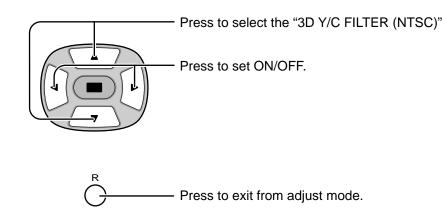
COMPONENT/RGB IN SELECT

Select to match the signals from the source connected to the COMPONENT/RGB input terminals. Y, P_B, P_R signals \implies "COMPONENT" R, G, B, HD, VD signals \implies "RGB"



3D Y/C FILTER – For NTSC Video images

Select "SIGNAL" from the "SET UP" menu during VIDEO (S VIDEO) input signal mode. ("SIGNAL [VIDEO]" menu is displayed.)



N		
SIGNAL		[VIDEO]
3D Y/C FILTER (NTSC)	4	ON D
COLOR SYSTEM	\triangleleft	AUTO D
3:2 PULLDOWN	\triangleleft	OFF D
AUTO (4:3)	\triangleleft	NORMAL D

Note:

When on, this setting only affects NTSC input signals.

COLOR SYSTEM / AUTO

Select SIGNAL from the "SET UP" menu during VIDEO (S VIDEO) input signal mode. ("SIGNAL [VIDEO]" menu is displayed.)

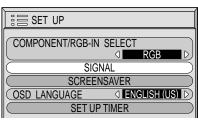
 Press to select the "COLOR SYSTEM" or "AUTO".

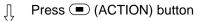
 Press to select each function.

 Press to select each function.

 If the image becomes unstable:

 With the system set on Auto, under conditions of low level or noisy input signals the image may in rare cases become unstable. Should this occur, set the system to match the format of the input signal.





SIGNAL		[VIDEO]
3D Y/C FILTER (NTSC)	\triangleleft	ON D
COLOR SYSTEM	4	AUTO D
3:2 PULLDOWN	\triangleleft	OFF D
(AUTO (4:3)	\triangleleft	NORMAL D

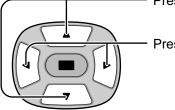
Mode	Function
Color system	Set the color system to match the input signal. If set to "AUTO", the color system is determined automatically.
AUTO (4:3)	Set to "NORMAL" to view 4:3 images in an unchanged format when AUTO is selected. If you would like to view 4:3 images in "Just" format, set to "JUST".

3:2 PULLDOWN

When on, the display attempts to reproduce a more natural interpretation of sources such as movie pictures, which are recorded at 24 frames per second.

If the picture is not stable, turn the setting to off.

Select "SIGNAL" from the "SET UP" menu during VIDEO (S VIDEO) or COMPONENT input signal mode. ("SIGNAL [VIDEO]" menu is displayed.)



Press to select 3:2 PULLDOWN.

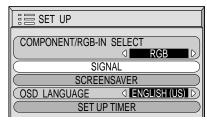
Press to set ON/OFF.

Note:

When ON, this setting only affects the following signal input.

- NTSC signal input during "VIDEO (S VIDEO)" input signal mode.
- 525i(480i) signal input during "COMPONENT" input signal mode.

Press to exit from adjust mode.



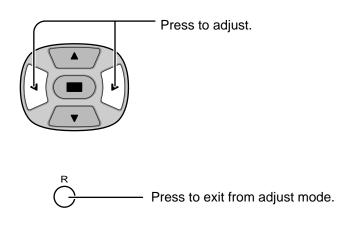
Press ((ACTION) button

N			
SIGNAL		[VIDEO]
3D Y/C FILTER (NTSC)	\triangleleft	ON 🛛	\mathcal{D}
COLOR SYSTEM	\triangleleft	AUTO 🛙	D
3:2 PULLDOWN	\triangleleft	OFF D	D
(AUTO (4:3)	\triangleleft	NORMAL	D

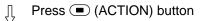
]
\mathbb{D}

SYNC

Select SIGNAL from the "SET UP" menu during RGB or PC input signal mode.



SIGNAL SCREENSAVER OSD LANGUAGE CENCEL SET UP



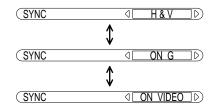
SIGNAL	•	[RGB]
SYNC	 H-FREQ. 31.5 V-FREQ. 60.0 	

SIGNAL	-	[PC]
SYNC	4	H&V D)
	H-FREQ. <u>31.5</u> kHz V-FREQ. <u>60.0</u> Hz	

Setting RGB sync signal

Confirm that the input is set to RGB INPUT (this setting is valid only for RGB INPUT).

- H & V: The H and V sync signals are input from the HD/VD connector.
- ON G: Uses a synchronized signal on the Video G signal, which is input from the G connector.
- ON VIDEO: The composite video signal input from the VIDEO input terminal is used by dividing the sync signals.



Setting PC sync signal

Confirm that the input is set to PC INPUT (this setting is valid only for PC INPUT). H & V: The H and V sync signals are input from the HD/VD connector.

ON G: Uses a synchronized signal on the Video G signal, which is input from the G connector.

H-FREQ (kHz)/V-FREQ (Hz)

Displays the H (Horizontal)/V (Vertical) frequencies.

This display is valid only for RGB input and PC input.

Display range: Horizontal 15.6 - 110 kHz Vertical 48 - 120 Hz



H-FREQ.	31.5 kHz
V-FREQ.	60.0 Hz

Troubleshooting

Before you call for service, determine the symptoms and make a few simple checks as shown below.

Symptoms		Chasks	
Picture	Sound		
	Noisy Sound	Electrical Appliances Cars/Motorcycles Fluorescent light	
Normal Picture	No Sound	Volume (Check whether the mute function has been activated on the remote control.)	
? No Picture	No Sound	Not plugged into AC outlet Not switched on PICTURE and BRIGHTNESS/Volume setting (Check by pushing the power switch or stand-by button on the remote control.)	
? No Picture	Normal Sound	If a signal with a non-applicable color system format, or frequency is input, only the input terminal indication is displayed.	
No Color	Normal Sound	Color controls set at minimum level. (see page 28, 29) Color system (see page 35)	

Plasma display panel

Symptoms	Check	
Some parts of the screen do not light up	The plasma display panel is manufactured using an extremely high level of precision technology, however, sometimes some parts of the screen may be missing picture elements or have luminous spots. This is not a malfunction.	
After-images appear	Do not allow a still picture to be displayed for an extended period, as this can cause a permanent after-image to remain on the plasma display. Examples of still pictures include logos, video games, computer images, teletext and images displayed in 4:3 mode. Note:	
	The permanent after-image on the plasma display resulting from fixed image use is not an operating defect and as such is not covered by the Warranty. This product is not designed to display fixed images for extended periods of time.	
Whirring sounds can be heard from the display unit.	The display unit is fitted with a cooling fan to dissipate heat generated during normal use. The whirring sound is caused by rotation of the fan and is not a malfunction.	

Specifications

		PDM-1	
Ро	wer Source	120 V AC, 50/60 Hz	
Ро	wer Consumption		
Maximum		5.5 A	
Sta	nd-by condition	2.	4 W
Po	wer off condition	0.	9 W
pla	asma display panel	Drive method AC type	
-		50-inch, 16:	9 aspect ratio
	Contrast Ratio	30	00:1
Sc	reen size	1,106 mm (W) \times 622 mm (H) \times 1,269 mm (diagonal)	
		. ,	f pixels
		1,049,088 (1,366 (W) × 7	68 (H)) [4,098 × 768 dots]
Op	perating condition		
-	nperature	34 °F - 104 °F (0 °C - 40 °C)	
Hu	midity		- 80 %
Ap	plicable signals		
•	Color System	NTSC, PAL, PAL60, SECAM, Modified NTSC	
	Coopping format	525i (480i), 625i (575i), 525p (480p), 625	p (575p), 750p (720p), 1,125/60i, 50i, 24p,
	Scanning format	24SF (1,080/60i, 50i, 24p, 24SF) SMPTE 274M	
		XGA display	
		VGA, SVGA, XGA	
	PC signals	SXGA, UXGA (compressed)	
		Horizontal scanning frequency 15.6 - 110 kHz	
		Vertical scanning frequency 48 - 120 Hz	
Со	onnection terminals		
	AV	Video IN (RCA)	1.0 Vp-p (75-ohm)
		S VIDEO IN (MINI DIN 4PIN)	Y: 1 Vp-p (75-ohm), C: 0.286 Vp-p (75-ohm)
		AUDIO IN (RCA PIN JACK \times 2)	0.5 Vrms (high impedance)
	COMPONENT/RGB	Y/G (RCA)	1.0 Vp-p/composite (75-ohm)
			0.7 Vp-p/non-composite (75-ohm)
		PB/B (RCA)	0.7 Vp-p (75-ohm)
		PR/R (RCA)	0.7 Vp-p (75-ohm)
		HD (RCA)	1.0 - 5.0 Vp-p (high impedance)
			1.0 - 5.0 Vp-p (high impedance)
			0.5 Vrms (high impedance)
	PC	(HIGH-DENSITY D-SUB 15PIN)	R,G,B/0.7 Vp-p (75-ohm)
		AUDIO IN (M3.5 JACK)	HD, VD/1.0 - 5.0 Vp-p (high impedance) 0.5 Vrms (high impedance)
	SERIAL	EXTERNAL CONTROL TERMINAL (D-SUB9PIN)	RS-232C COMPATIBLE
	JERIAL	LATERINAL CONTROL TERMINAL (D-SUBSPIN)	

	PDM-1	
Accessories Supplied		
Remote Control Transmitter		
Batteries	2 × AA Size	
Ferrite core	(small size) $ imes$ 1, (large size) $ imes$ 2	
Fixing bands	2 pcs	
Speaker Wire		
Optional Supplied		
Speakers(main speaker)	NS-F100, NS-F80, NS-F70	
Speakers(center speaker)	NS-CF100	
Pedestal	PDS-150	
Wall-mounting unit	PWK-150	
Dimensions (W × H × D)	47.6" (1,210 mm) × 28.5" (724 mm) × 3.9" (98 mm) 3.9" 98 mm) 100 mm 100 mm	
Mass (Weight)	s (Weight) approx. 94.8 lbs (main unit only)	

Note:

Design and specifications are subject to change without notice. Weight and dimensions shown are approximate.

