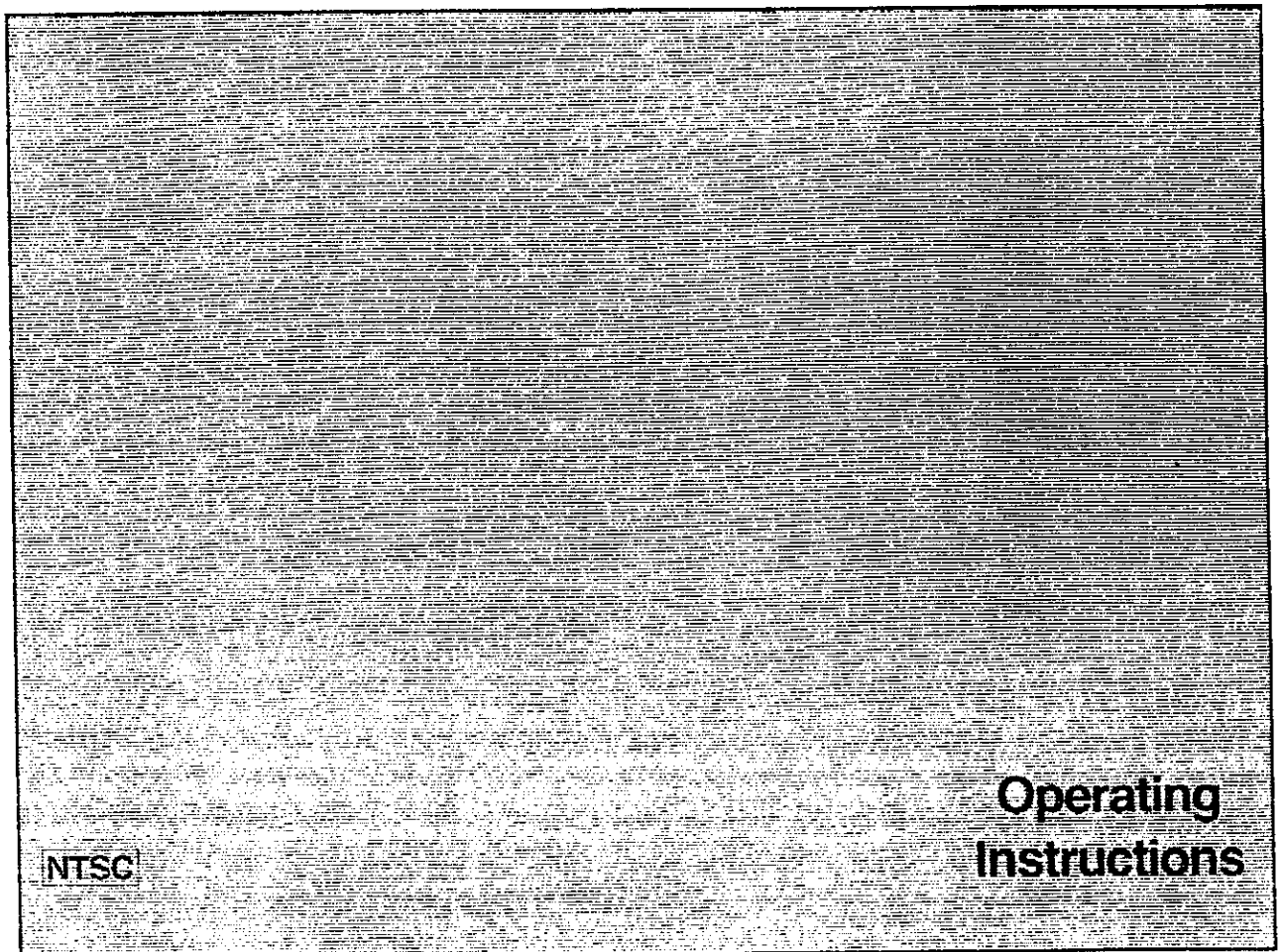




PROJECTION MONITOR RECEIVER

SD-P4053



NTSC

**Operating
Instructions**

ARP 2273

5-1-99

Thank you for purchasing the PIONEER Projection Monitor Receiver.

If you have not read the precautionary instructions enclosed with these operating instructions, please do so before proceeding.

After learning how to operate the Projection Monitor be sure to keep this manual handy for future reference.

While the official name of the product is the "PROJECTION MONITOR RECEIVER", for the sake of brevity the text refers to it as the "Projection Monitor" or 'simply' the "Monitor".

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IMPORTANT NOTICE

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO WET LOCATIONS.

The model number and the serial number of this Projection Monitor are located on the rear panel. Please write the serial number on the enclosed warranty card and keep it in a safe place for future reference.

NOTE:

There are no user serviceable parts inside the Projection Monitor.

IMPORTANT



The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

PRELIMINARY INSTRUCTIONS

WHERE TO PUT THE MONITOR

LIGHTING

Bright lights or direct sunlight will dull the picture. Position the monitor so that the screen faces away from windows.

AIR CIRCULATION

Leave space for air to circulate behind the monitor. Keep it away from curtains and other furnishings that could block ventilation.

HEAT DAMAGE

Damage may occur if you leave the monitor in direct sunlight or near a heater.

OPTIMUM VIEWING DISTANCE

10 to 23 feet is the range recommended for viewing comfort.

POWER SOURCE

This Projection Monitor operates on AC 120 V, standard household voltage.

NEVER CONNECT THE PROJECTION MONITOR TO OTHER THAN THE SPECIFIED VOLTAGE, OR TO DIRECT CURRENT.

POWER OUTLET

- This monitor requires an AC 120 volt polarized outlet. The plug will fit only one way. If it will not go in, turn it around and try the other way. If you are still unable to insert the plug, call an electrician to replace the wall socket.
- A damaged cord or plug is a fire hazard. If you notice wear or damage, have it fixed by qualified service personnel.
- Plug directly into the wall socket. Do not use extension cords or other receptacles. Do not overload the outlet; it is a fire hazard.

NOTE:

- *Never remove the back cover of the Projection Monitor as this will expose you to dangerously high voltage and other hazards. If the monitor does not operate properly, unplug it and refer to page 38.*

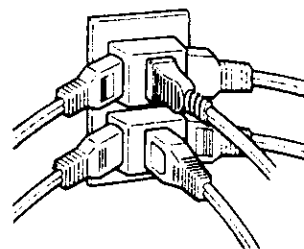
POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the monitor, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed in such a way that they are not likely to be stepped on. A damaged power cord can cause a fire or give you an electrical shock. Check the power cord regularly. If you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

• POLARIZED PLUG



• DANGEROUS



FEATURES

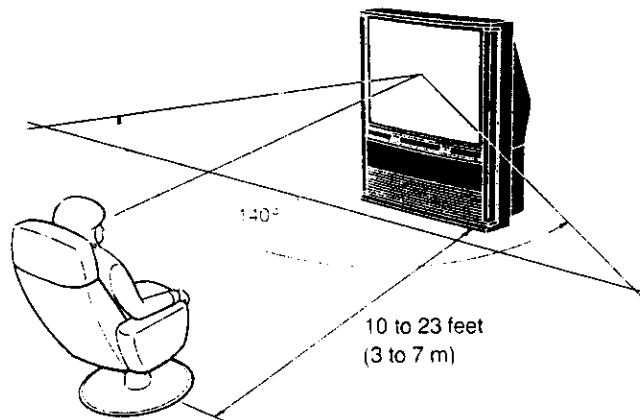
Sharp, Clear Images with 730 line Horizontal Resolution (Video input)

- A 10 MHz video bandwidth and Dynamic Picture Control circuitry provide sharp detail and crisp outlines.
- New, high-resolution picture tubes improve focusing performance by 20%.
- Dynamic focusing circuit enhances resolution at picture edges.

Wide Viewing Range Screen

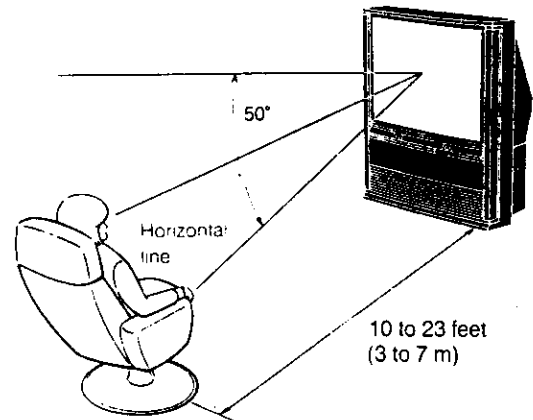
- 140° Horizontal Viewing Angle and 50° Vertical Viewing Angle.

Best Horizontal Viewing Angle



Best Vertical Viewing Angle

Watch from at least 10 feet (3 m) away from the screen.
(Optimum viewing distance is 10 to 23 feet.)



You may sometimes see double images or rainbowlike effects if you view from outside of the recommended area shown here.

Amazingly Bright Picture Intensity of 600 Foot-Lambert

- New, highly efficient lens system passes more light.
- High-power picture tubes employ advanced anode stabilization circuitry and 6000 pF capacitors.
- Newly developed phosphorescent screen for the picture tubes.

Much Greater Contrast with Extended Gradation

- Dynamic Black Level Correction Circuit for true black reproduction under all conditions.

Equipped with the Digital Picture-in-Picture — 1, 4 or 9 sub pictures can be displayed on the screen simultaneously

- This function lets you enjoy various display mode of sub pictures.

Microcomputerized Dynamic Picture Optimizer (DPO)

- DPO (Dynamic Picture Optimizer) circuit detects room light and optimizes the TV picture accordingly.

Equipped with the VNR (Video Noise Reduction) system for reducing noise on the screen while watching a TV program or prerecorded video cassette tape

- This system reduces noise on the screen, allowing you to enjoy your favorite programs with improved picture quality.

AV Memory

- After adjusting the picture and sound quality, you can store your settings in "AV memory". Two AV memory settings can be stored and recalled.

High fidelity color reproduction and brighter whiteness produced by a newly developed Linear White Circuit

- The linear white circuit adjusts the blue phosphor characteristics and aligns the Red, Green and Blue drive circuits. This allows the monitor to reproduce brighter whites and natural fresh colors.

Newly designed Dynamic Sound Expansion system to reproduce a wider and more dynamic sound field with any video source including TV programs

- Dynamic theater sound effects for movies and sports programs, natural sound localization for music programs, and a monaural sound modified to produce stereo-like sound. Simulated stereo sound is included in the dynamic sound expansion system.

INSTALLATION

ANTENNA CONNECTION

Connect to an outdoor antenna, cable box or centralized antenna terminal (see page 12 for details).

MOUNTING

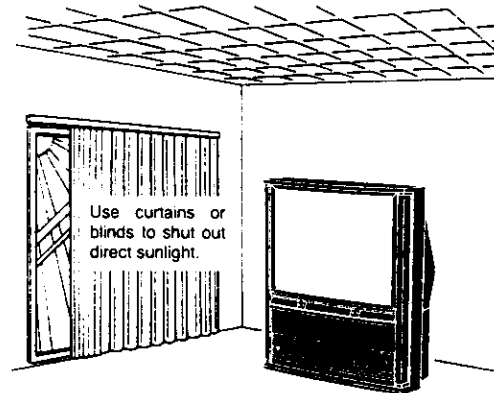
The Projection Monitor is designed to be placed on the floor or on a sturdy platform. The mounting surface should be flat and steady.

INSTALLATION PRECAUTIONS:

Place of Installation

- When the Projection Monitor is operating, it is cooled by air-flow through ventilation holes in the rear and bottom. Therefore, avoid placing it in a location where the cooling air-flow is hindered (e.g. against a wall).
- Avoid places subject to extremely high temperatures or humidity, or to temperatures of 41 °F (5 °C) or lower. Also avoid dusty places.
- Do not set the Projection Monitor in an unstable location (such as on a shaky or tilted platform).
- When setting the Projection Monitor on a floor made of soft material, make sure that the floor is not damaged by the weight of the Projection Monitor.
- If the room temperature suddenly rises (or if the Projection Monitor is moved from a cool place to a hot place), condensation may form on the lenses, resulting in picture distortion or color fading. If this occurs, simply wait a while (with the POWER SWITCH on) and the condensation will disappear.

Downward spot lights or fluorescent lights in an overhead "Honey-comb" prevent direct illumination of the screen.



Cover shiny surfaces (floor and walls) with non-reflective materials. (carpet, rugs, wallpaper, etc.).

OPERATING PRECAUTIONS

Keep away from magnetic fields

The picture may be distorted if strong magnetic fields are nearby. External speakers should be set at least 2 feet (60 cm) away from the Projection Monitor. Electric fans and other motor driven appliances and toys may also be sources of magnetism.

When moving the monitor

Pull out the plug and move the monitor carefully. Be particularly careful not to bump or scratch the screen. To avoid damage to the caster wheels you may need to lift the monitor when going over irregular surfaces.

Install in a flat, steady place

Do not put the Projection Monitor on a surface that is tilted, unsteady or prone to shake or vibrate. A shaky or slanted platform is dangerous.

Adjust room illumination

Excessively bright or dim lighting may strain your eyes. Draw the curtains if necessary to shut out direct sunlight.

When not using the monitor for a long time

For safety, unplug the power cord when leaving the monitor turned off for a long period of time.

Condensation and picture blurring

- You may see a blurred picture if the monitor is moved from a cool to a warm location or if room temperature rises very rapidly. This occurs when moisture from the air condenses on the optical parts.
- The picture will return to normal if you leave the monitor turned off for 1 or 2 hours, then turned on.
- A gradual change in temperature can prevent condensation from forming.

A word about still pictures

- Do not project a still picture on your Monitor for a long period of time.
(For example: when using your Monitor for video games, monitoring your personal computer, or while playing back videodiscs.) This can adversely affect the monitor's CRT. If this cannot be avoided, reduce the contrast of the picture in order to minimize any damage which might occur.

INSERTING BATTERIES IN THE REMOTE CONTROL UNIT

You will find the remote control unit packed inside the projection monitor box. Open the remote control unit and insert the batteries. Follow the procedure below:

- 1 Open the battery compartment on the rear of the remote control unit. Press down with your thumb while sliding the lid outward.
- 2 Note the polarity (+ and -) markings in the case. Insert the supplied batteries so that they match the markings.
- 3 Close the lid by sliding it back in until it clicks into place and press the RESET button with the tip of a ballpoint pen. The remote control unit is now ready to use.

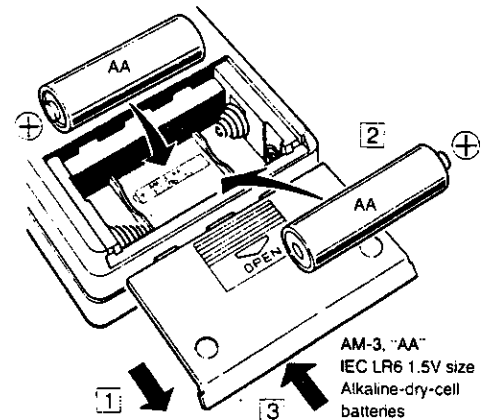
Battery Replacement

If the TRANSMIT/LEARN indicator does not light when you press a key, try pressing the RESET button and reattempting your command. If the indicator still does not light, the batteries are low and should be replaced as soon as possible. Be sure to press the RESET button after the batteries are replaced and the battery compartment cover is closed. (Even when the RESET button is pressed, the programmed signals will not be erased.)

NOTE:

- The remote control unit's power switch is connected to the battery compartment cover. The unit will not operate without the cover even if the batteries are loaded, and memory will only be retained for approximately 15 minutes (even if the batteries are loaded.)
- Never close the cover when the batteries are not loaded. The programmed commands will be lost within a few seconds if you do so.

INSERTING BATTERIES



Incorrect use of batteries may lead to leakage or rupture. Always be sure to follow these guidelines:

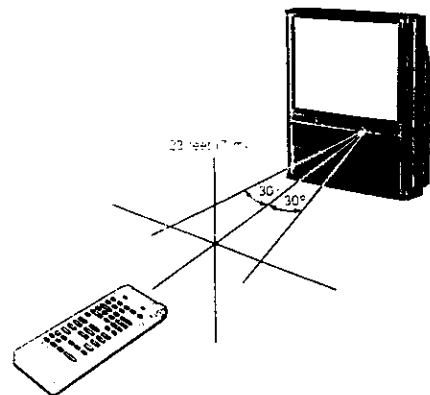
- A. Always insert batteries into the battery compartment correctly matching the positive + and negative - polarities, as indicated inside the compartment.
- B. Never mix new and used batteries.
- C. Batteries of the same size may have different voltages, depending on their type. Do not mix different type of batteries.

REMOTE CONTROL OPERATION RANGE

- Point the remote control unit toward the front of the Projection Monitor when you press any of the control keys.
- The remote control unit should be effective at distances of up to about 23 feet (7 m) from the Projection Monitor and at angles of up to about 30 degrees from a line perpendicular to the front panel.
- Furniture and other obstacles may block the infrared light beam so that it cannot reach the sensor on the Projection Monitor's front panel.
- If there is no response even when the remote control is used directly in front of the monitor, the dry cell batteries may need replacement.
- Performance of the remote control unit is adversely affected by strong fluorescent light. Keep such lights away from the sensor window in particular.

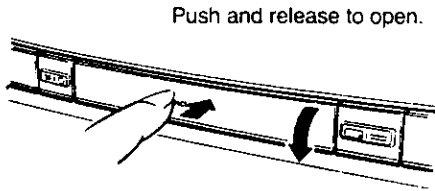
NOTE:

These figures are general and do not necessarily apply to programmed commands.



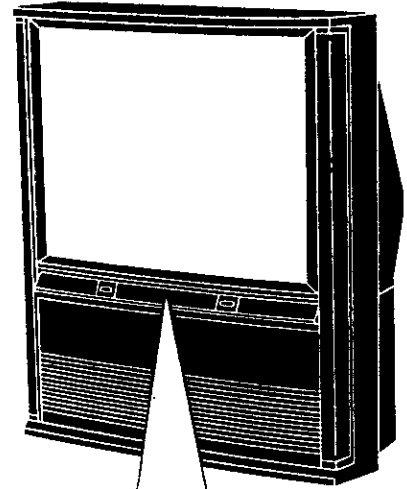
FRONT PANEL FACILITIES

A flip-down door conceals the control panel. Push gently and release to open the door.
To close the door, lift it back up into place.



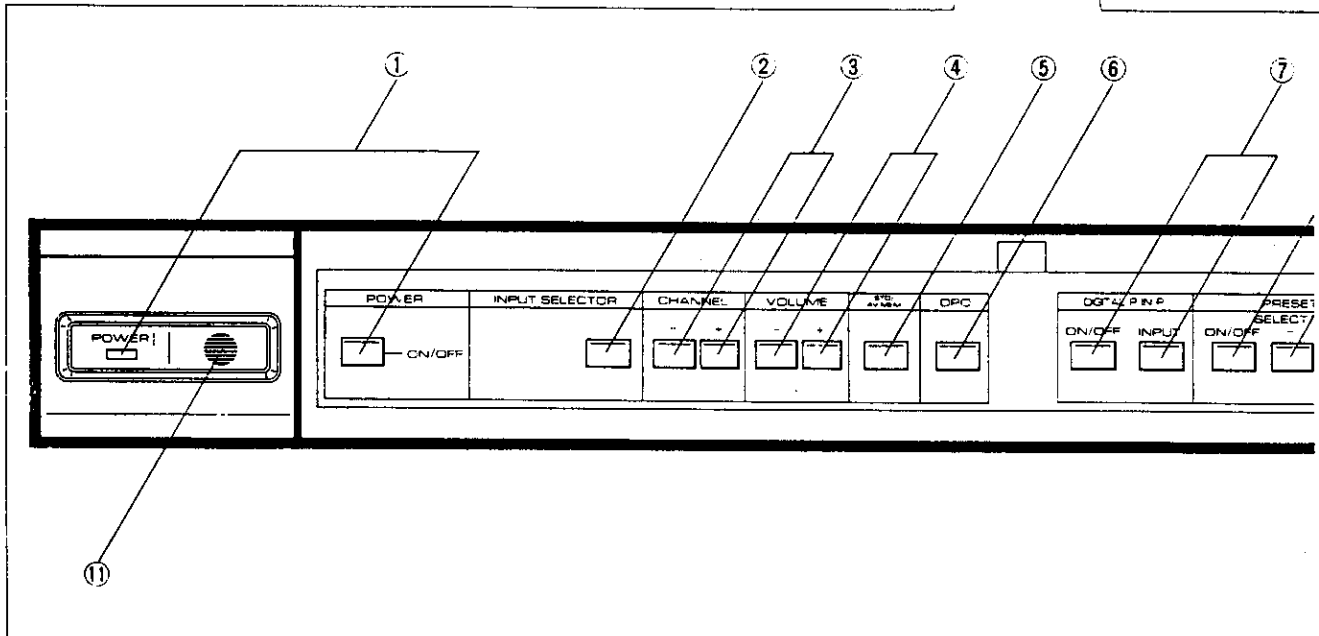
NOTE:

● If you accidentally pull the door open, it may not shut properly. Push in when shutting the door to restore it to normal operation.



Control Panel

★ Use the remote control unit to operate most functions (see pages 14 to 23).



Attention

The Projection Monitor Receiver will not function properly in the following cases:

- Lightning storms.
- High static electricity environment.
- Poor voltage regulation in the power source.

If the Projection Monitor does not operate properly, reset it as follows.

- ① Unplug from the power supply for approximately 1 minute.
- ② Plug the power cord in again to reset it.

FRONT PANEL FACILITIES

① POWER SWITCH AND INDICATOR

Press once to turn on the power. Press again to turn the power off. The POWER indicator lights up when the power is on. This unit is equipped with an Auto OFF circuit. 30 minutes after the input signal ceases to be supplied (for example, the TV channel being received stops broadcasting), the power automatically turns off.

② INPUT SELECTOR BUTTON

Press to select your program source: TV, LD player, VIDEO 1, VIDEO 2 or VIDEO 3. Each press of the button changes the selection to the next source.

③ CHANNEL BUTTONS

Press plus (+) or minus (-) to tune to a higher or lower channel. Only those channels in tuner preset can be tuned in by this method. For details, see page 27.

④ VOLUME BUTTONS

Press the plus (+) or minus (-) button to raise or lower the volume.

⑤ STD/AV MEM (Standard/AV Memory) BUTTON

Press to switch between the standard (STD) picture/sound settings and the AV MEMORY 1 and AV MEMORY 2 settings which have been input with the MENU SET button.

⑥ DPO (Dynamic Picture Optimizer) BUTTON

Press to turn DPO on or off as desired. When DPO is on, it automatically adjusts the picture to compensate for room illumination. For details, see page 36.

NOTE:

- When the DPO button is pressed and held for more than 2 seconds, the linear white system will be turned off and "LINEAR WHITE OFF" will appear on the screen. The linear white system will resume operation approx. 4 seconds after the DPO button is released.

⑦ DIGITAL P IN P (Picture-in-Picture) BUTTONS

ON/OFF: Press to turn the Picture-in-Picture function on and off.

INPUT: Press to select the sub screen program and one sub-picture mode will be selected.

- For details on the Picture-in-Picture function, refer to the remote control unit's operating instructions.

NOTES:

- If only the **S-VIDEO** LD and VIDEO jacks of the LD player and/or VCR are connected to the Projection Monitor, the Picture-in-Picture function will not operate when these buttons are pressed.
- When the P IN P button is pressed and held for more than 2 seconds, The Projection Monitor will go into its demonstration mode. "P IN P DEMONSTRATION" will appear on the screen while Picture-in-Picture demonstration mode is engaged.
- The Picture-in-Picture demonstration mode will be cancelled if any other operation key or operation button is pressed; and the Projection Monitor will enter the selected operation mode.

⑧ PRESET MENU BUTTONS

These buttons are used to perform the following functions: color convergence, tuner presetting, TV-CATV selection, relabeling input displays, system mode setting and AV memory storage. For details, refer to the description of each function.

ON/OFF: Press to turn the Menu (functions above) on and off. When the button is pressed on, the function names CONVERGENCE, AV MEMORY, DPO BASE, INPUT LABEL, TV-CATV MODE, TUNER PRESET and SYSTEM MODE are displayed on the screen.

SELECT/ADJUST (+ / -): Press to select the desired function. The selected function is displayed in red.

SET: Press to activate the selected function.

NOTE:

- Refer to page 37, if you wish to use the SYSTEM MODE function.

⑨ INPUT JACKS (VIDEO-3)

These front panel jacks are convenient for connecting portable VCR, a video camera recorder or other temporary video source to the monitor. When the audio signal of the source to be connected is monaural, connect the L (MONO) jack.

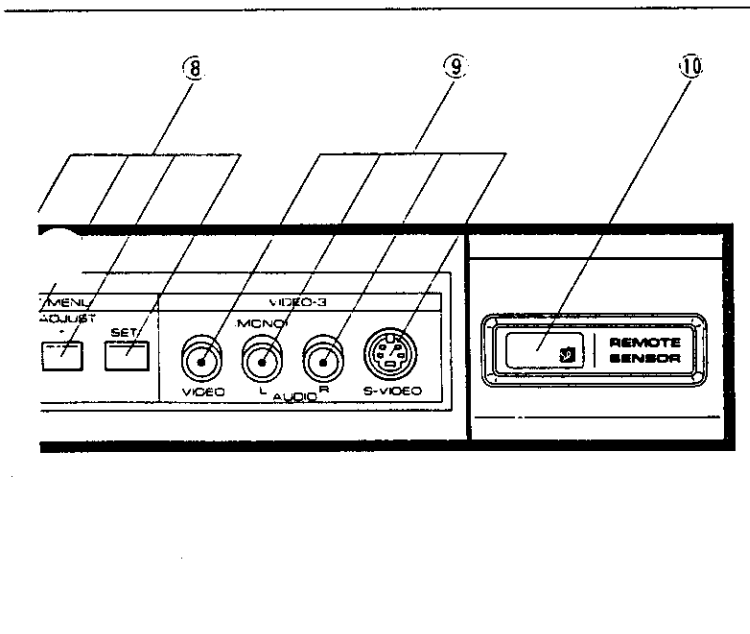
Use the S-VIDEO jack when connecting an S-VHS or ED Beta VCR, or an LD player which has an S-output jack.

⑩ REMOTE CONTROL SENSOR

This sensor picks up infrared signals from the remote control unit.

⑪ DPO SENSOR

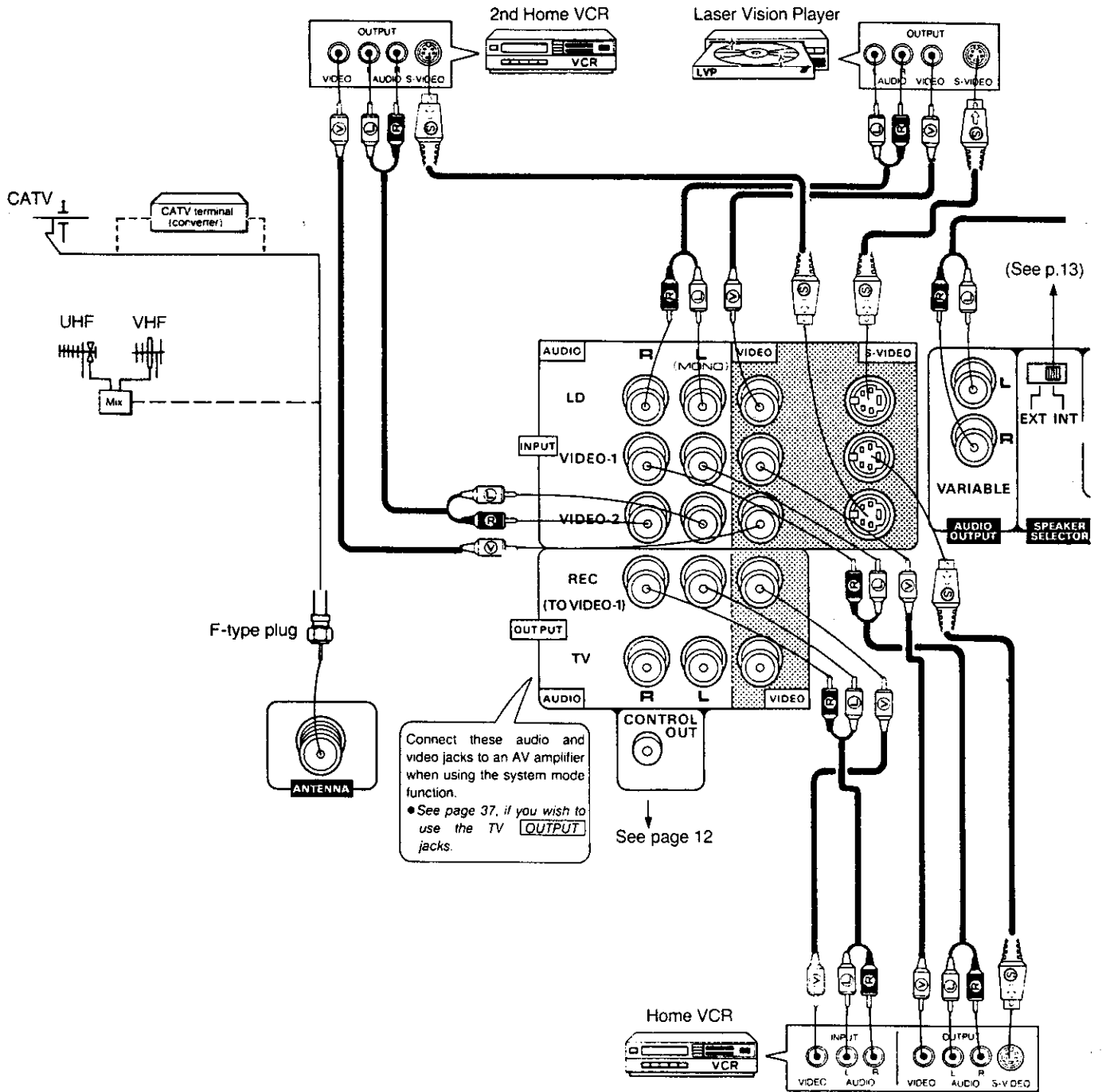
This sensor detects ambient lighting for the DPO (Dynamic Picture Optimizer) circuit which optimizes the TV picture accordingly.

**NOTE:**

- On rare occasions, an electrical discharge may occur inside the CRT. It makes a short, sharp pop and results in a 1 or 2 second power failure. The power will return automatically. You need not worry about the discharge: it is not a defect and will disappear with regular use. The Picture-in-Picture function will be cancelled automatically if a power failure occurs when this function is engaged.

SYSTEM CONNECTION DIAGRAM

Refer to the instructions for your VCR, LD Player and other components for details concerning connections.
Turn off all components before making connections.



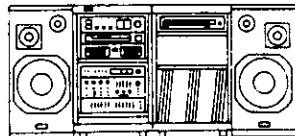
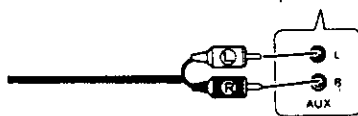
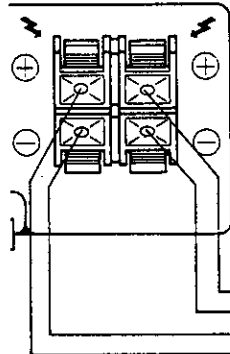
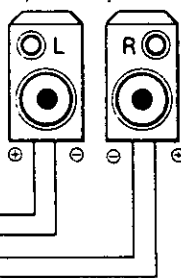
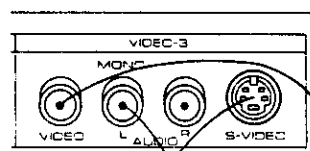
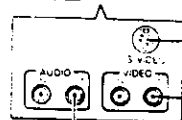
SYSTEM CONNECTION DIAGRAM

INPUT JACKS

These are 4 sets of inputs for VCRs, LD Players and other video sources. Use RCA-type pin plug cords (the same as those used in hi-fi systems) for connections. When the audio source to be connected is monaural, connect the source to the L-(MONO) jack.

NOTE:

- These video input jacks will be cut automatically when connecting both RCA-type pin plug cords and **S-VIDEO** cords at the same time.

Stereo system**AUX input terminal****EXTERNAL SPEAKERS****Speaker systems****Control panel****TV camera, etc.****S-VIDEO INPUT JACKS**

Use the **S-VIDEO** VIDEO jacks (VIDEO-1 to 3) to input S-VHS or ED Beta VCR video signals.

Use the **S-VIDEO** LD jack to input signals from an LD Player which has an S-output jacks.

NOTE:

When making S-VIDEO connections for either a VCR or an LD Player, be sure to keep the standard VIDEO and AUDIO pin plug cords connected between the VCR/LD Player and the Projection Monitor. If only the **S-VIDEO** LD and VIDEO jacks are used connected, the Picture-in-Picture function cannot be used.

OUTPUT TO VIDEO-1 REC-JACKS



These are used for connecting the monitor to a VCR for recording, or for linking it to another monitor. These jacks output the video and audio signals of the source currently selected by the INPUT SELECTOR.

Connect these output jacks to your VCR's inputs. Connect the VCR's outputs to the monitor's VIDEO-1 inputs. Connect the VCR's outputs to the monitor's VIDEO-1 inputs if you have the VCR.

ATTENTION

- If a VCR is connected to the VIDEO-2 inputs, then that VCR should not be connected to these outputs. The design of some VCRs causes an oscillation feedback loop in such situations.

CONTROL OUT JACKS

This jack is used to extend remote control to other PIONEER equipment bearing the  (System Remote) mark. Use mono miniplug cords (available at audio and video shops) to connect the monitor's CONTROL OUT jack to the CONTROL IN jack of the other component. The other component can be connected to still another in the same manner, from the CONTROL OUT jack of one to the CONTROL IN jack of the other. If a component has only a CONTROL IN jack then put that component last in the sequence. Otherwise, you may connect them in any order that is convenient. If another component has the  mark and its own remote control sensor, then the CONTROL OUT/IN jack connection is not required. However, this connection may improve the response of remote control, since you will not need to point the remote control unit at different components (see page 12).

AUDIO OUTPUT (VARIABLE) JACKS

These jacks output the audio signal from the video program material currently selected for viewing on the monitor. Connect these audio output jacks to the AUX input jacks of your stereo system. You can then use the remote control unit to adjust the volume.

NOTE:

- Signals from these output jacks will be affected by AV memory, bass and treble tone adjustments using the STD/AV MEM key, SOUND key, ADJUST ◀ and ▶ key, as well as the dynamic sound expansion function using the D-SOUND EXPANSION key.

SPEAKER SELECTOR SWITCH

This switch lets you select either the built-in speakers or external speakers (see page 13).

NOTE:

- Set to INT when using the built-in speakers. Do not use the INT setting if using speakers connected to the EXTERNAL SPEAKERS terminals on the rear panel. When set to INT no sound is output from the external speakers.
- Set to EXT when using external speakers (or if you will be directing the output through your stereo system). When set to EXT no sound is output from the internal speakers.

EXTERNAL SPEAKERS TERMINALS (R, L)

For connection of external speakers (purchased separately).

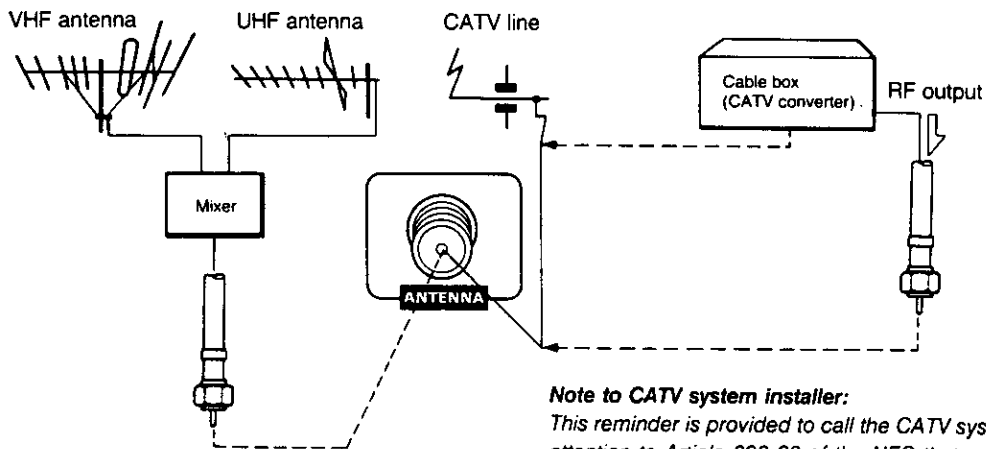
ANTENNA CONNECTIONS

A good color picture depends on a good TV signal. So does good multi-channel (stereo and SAP) sound. To ensure the highest signal quality, choose an antenna that suits your reception area and have it properly installed. Ask your dealer for advice. If you subscribe to cable or have a central antenna for your building, then you will not need an external antenna. However, proper connections from the TV signal source to your monitor are essential. Please refer to the instructions below.

USING THE ANTENNA CABLE CONNECTOR

The cable connector plugs into the monitor's antenna terminal. This monitor is designed to be connected to a 75 ohm coaxial cable using an F-type plug.


Connect the cable box RF output cable or the antenna cable connector into the ANTENNA terminal.

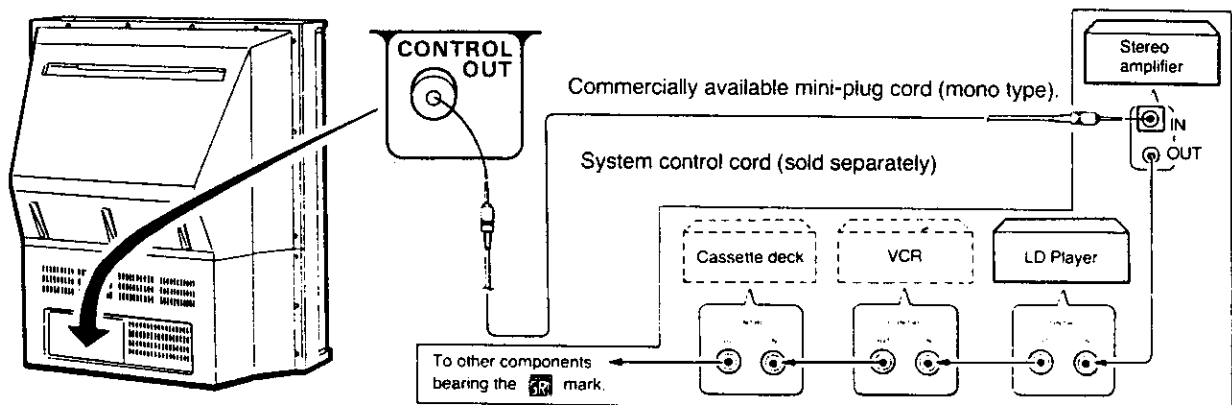


Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground should be connected to the grounding system of the building, as close to the point of cable entry as practical.

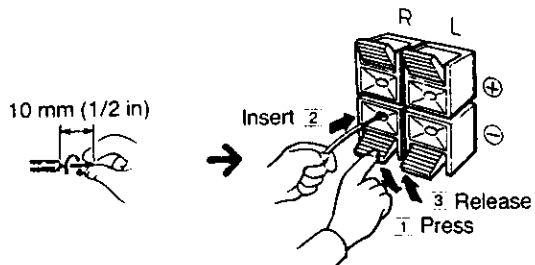
SYSTEM REMOTE CONTROL CONNECTIONS

Many PIONEER  audio and video components can be connected to provide remote control for an entire audio/video system. Use mini-plug cords (monaural) which may be purchased in most audio and video stores. Connect from the CONTROL OUT jack of one component to the IN jack of the next component.



SPEAKERS

CONNECTING EXTERNAL SPEAKER WIRES



Strip each wire so that about half an inch is exposed. Twist the core.

Turn off the power of the monitor and connected equipment. Press the lever, insert the wire, and release the lever to lock the wire into place. Pull gently on the wire to check that it is securely connected.

Do this for each wire. Be careful to connect the right speaker's plus and minus terminal wires to the "R" "+" and "-" terminals. Likewise, connect the left speaker's plus and minus terminal wires to the "L" "+" and "-" terminals.

Precautions

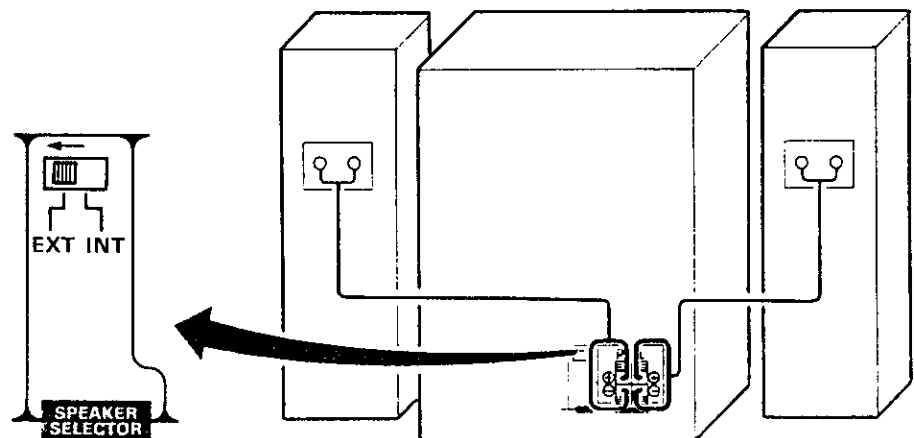
- Make sure that exposed wires do not protrude and touch each other.
- If you do not hear a normal stereo image when listening to a stereo program, it may be because the "+" and "-" connections are reversed for one of the external speakers.
- Make sure that the right speaker is connected to the "R" terminals and the left speaker to the "L" terminals. Make sure that each speaker's two wires are properly connected to the appropriate "+" and "-" terminals.

NOTES:

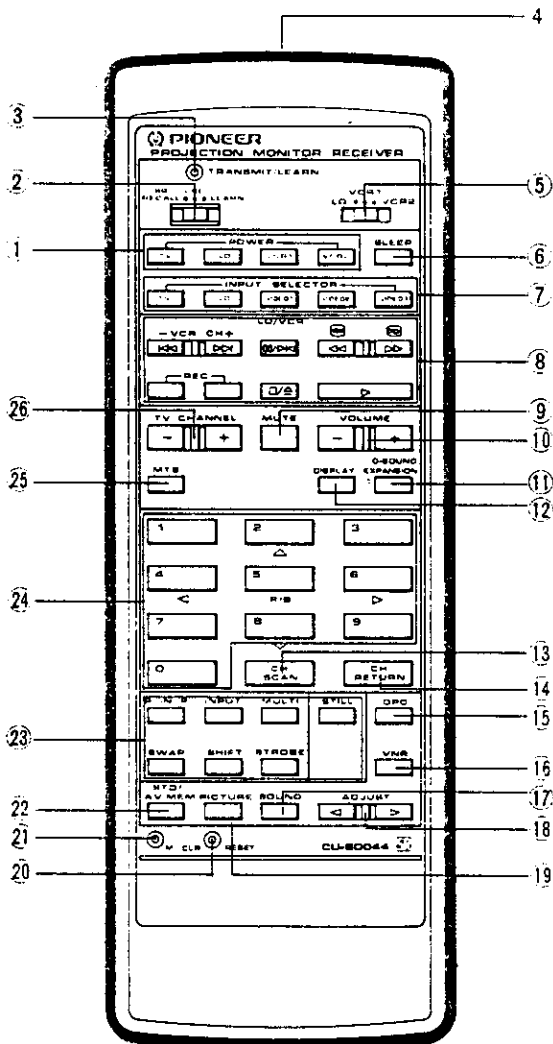
- Use speakers with an impedance rating ranging from 8 ohms to 16 ohms.
- Ordinary speakers are not magnetically shielded and may disturb the picture if placed too close to the monitor. If you notice a problem, move the speakers about 2 feet (60 cm) away from the monitor.

SPEAKER SELECTOR SWITCH

Set this switch to the INT position if you will be listening to the built-in speakers. If you have connected external speakers (or if you will be listening through your stereo system), then you can turn off the built-in speakers by setting the selector to the EXT position.



REMOTE CONTROL UNIT FACILITIES

**1 POWER (TV/LD/VCR1/VCR2)**

Turns the power of the monitor on and off. Also turns the power of LD Players and VCRs bearing the mark on and off.

- Store the POWER control command code from other remote control units to the VCR2 key. For details, see pages 20 and 21.

2 LEARN MODE Switch

SR RECALL: Use this setting to command PIONEER equipment marked with the mark (No memory function).

USE: In this mode the remote control unit is able to command other components with commands you input using the LEARN function, as well as PIONEER equipment.

LEARN: This setting activates the capability of the unit to "learn" and store command codes from other remote control units.

3 TRANSMIT/LEARN Indicator

Flashes when commands are being sent in the USE or SR RECALL modes of the LEARN MODE selector. In the LEARN mode, however, it:

- lights when ready to accept programming information, and
- flashes to signal that you have chosen an incorrect key to store a programmed command, or when the memory is full.

4 Transmitting and Remote Control Code Receiver Window

Transmits remote control signals using infrared rays. When memorizing a remote control code, the window will function as an infrared receiver.

5 TRANSMIT MODE Switch

Set to the position that corresponds to the component you wish to operate.

LD: To control the LD Player.

VCR1: To send commands to VCR 1.

VCR2: To send commands to VCR 2.

- If you wish to use LD/VCR control keys for VCR2 remote control, store command codes from other remote control units to the LD/VCR control keys. For details, see pages 20 and 21.

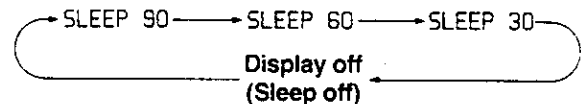
6 SLEEP

Press to set the sleep timer

The switching sequence is 90, 60, 30 (in minutes) and OFF (cancel). The screen will confirm your setting and the projection monitor will shut down when that amount of time has elapsed.

While the timer is working, the auto-off facility will not function.

The POWER OFF display will appear on the screen approximately 1 minute before turning off the power. The POWER OFF display will flash alternately red and black until the power is turned off.



Each time the SLEEP key is pressed, the sleep time decreases in intervals of 30 minutes (90→60→30→0 (Off)). When the SLEEP key is held down, the sleep time decreases in one minute intervals.

For example, to set sleep time to 40 minutes:

Press the SLEEP key once ('90' is displayed).

Press the SLEEP key again and hold it ('60' is displayed briefly, then the display decreases in 1 minute intervals: 59, 58, 57, ... etc.).

Release the SLEEP key when the display reads '40'.

7 INPUT SELECTOR

(TV/LD/VIDEO 1/VIDEO 2/VIDEO 3)

Press the key to select the source you wish to watch. The screen will display your selection.

8 LD/VCR Control Keys

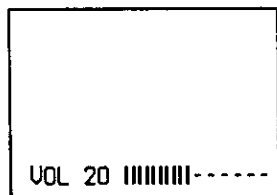
If your LD Player or VCR (Video Cassette Recorder) is a PIONEER model bearing the mark, you can control the component using these keys. For details, see page 23.

REMOTE CONTROL UNIT FACILITIES

9 MUTE

Press to temporarily turn off the sound. Press again to return to the previous volume level. This is useful, for example, when answering telephone.

The volume display will turn red while the mute function is engaged. If the mute function is left on for over approx 10 minutes, the function will be cancelled automatically, and the volume level will be reset to 0. The volume display will disappear from the screen when the mute function is cancelled.

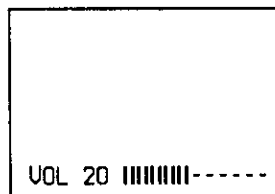


10 VOLUME +, -

Press the + key to increase the volume, and the - key to decrease it. Volume adjustment will appear on the screen as numbers and a bargraph. '63' indicates the maximum volume level.

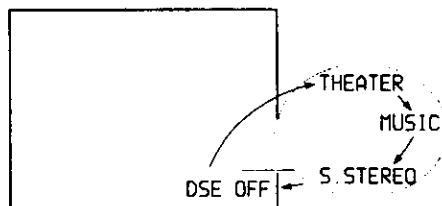
The display will disappear from the screen after 4 seconds.

* Volume display will change color automatically according to the selected input mode.



11 D-SOUND EXPANSION (Dynamic Sound Expansion)

Press once to display the current channel and/or other information on the screen approx. 4 seconds.



12 DISPLAY

Press once to display the current channel and/or other information on the screen.

13 CH SCAN (Channel scan)

Press to display 4 (or 9) memorized TV stations on the split screen at the same time. After pressing the CH SCAN key, use the MULTI key to select 4 station display mode or 9 station display mode.

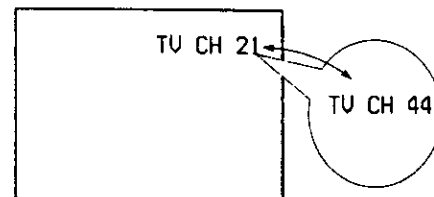
Channel Scan Features

When 4 screen or 9 screen mode is selected, use this feature to select one of the television stations currently displayed for full - screen viewing.

Press the Channel call 10-key that correspond to the channel that you wish to watch.

14 CH RETURN (Channel return)

Press to switch between the current channel and the channel you were watching immediately before. This is useful, for example, if you wish to switch back and forth between two sporting events.

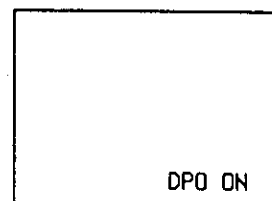


15 DPO (Dynamic Picture Optimizer)

You can turn DPO on or off as desired. When DPO is on, it automatically adjusts the picture to compensate for room illumination. For details, see page 36..

NOTE:

•When the DPO button is pressed and held for more than 2 seconds, the linear white system will be turned off and "LINEAR WHITE OFF" will appear on the screen. The linear white system will resume operation approx. 4 seconds after the DPO button is released.

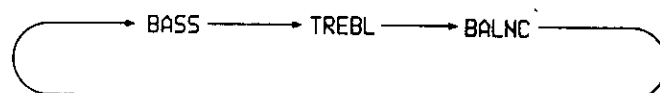


16 VNR (Video Noise Reduction)

You can turn VNR on or off as desired. When VNR is on, the noise on the screen is reduced. For details, see page 17.

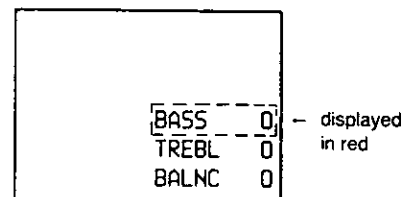
17 SOUND

Press to select the sound parameter to be adjusted.



18 ADJUST

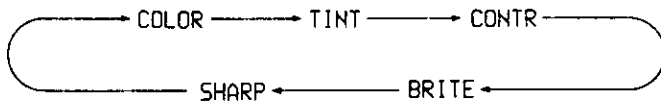
Press the > key to increase the value of the item currently selected using the PICTURE key or SOUND key, and the < key to decrease it.



example: SOUND ADJUST display

19 PICTURE

Press to select the picture parameter to be adjusted.

**20 RESET Button**

Press to reset the microcomputer in the remote control unit to its initial mode in the following cases:

- When replacing the batteries.
- If the remote control unit will not function properly when the operation key is pressed, etc.

NOTE:

On rare occasions, an electrical discharge may occur inside the unit, causing some command malfunction. If this happens pressing RESET should correct the problem. The possibility exists, however, that instead of correcting the problem, pressing RESET may erase the programmed memory.

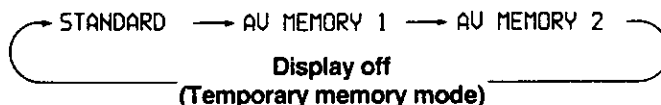
21 M. CLR Button

Erases all commands programmed through the LEARN function; press lightly with the tip of a ballpoint pen or other fine-tipped instrument during learn mode to activate this function. For details, see page 22.

22 STD/AV MEM (Standard/AV Memory)

Press to switch between the standard (STD) picture/sound quality settings and your AV MEMORY 1 and AV MEMORY 2 setting.

This key only recalls settings stored in AV MEMORY. To put the current picture/sound settings into AV MEMORY, use the control panel's PRESET MENU buttons. For details, see pages 34 and 35.

**23 Picture-in-Picture Control Keys**

Any program source connected to the Projection Monitor can be displayed on the screen simultaneously with any other source. Also, the multiscreen mode (4 sub screen or 9 sub screen) can be selected.

P IN P: Press to turn the Picture-in-Picture function on and off.

INPUT: Press to select the input source for the sub-picture when one sub-picture mode will be selected.

MULTI: Press to select the number of sub-pictures which appear on the screen (1, 4 or 9).

SWAP: When only one sub-picture is displayed, press to exchange the position of the main picture and sub-picture.






SHIFT: Press to move the sub-picture to a different place on the screen.

STROBE: Press to select the strobe feature. Be sure to select the multiscreen mode (4 sub screen or 9 sub screen) using the MULTI key.

STILL: Press to select still screen or normal mode.

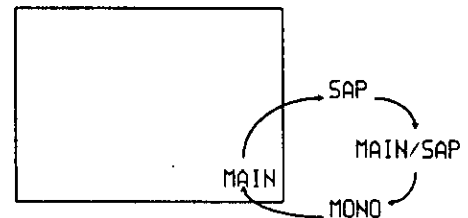
24 Direct Channel Selection/Color Convergence Pad

Press the key (or keys) that correspond to the channel that you wish to watch, to switch directly to that channel from any other channel.

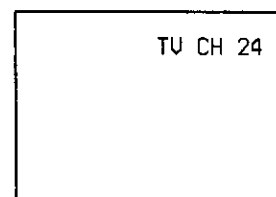
The , , ,  and  keys are also used for color convergence operation. For details, see page 24.

25 MTS (Multi-channel TV Sound)

Press to select the reception mode for multi-channel TV sound (MTS). The switching sequence is as follows.

**26 TV CHANNEL - , +**

Press the left (-) or right (+) side of this key to scan up or down among the channels in tuner preset.



REMOTE CONTROL UNIT FACILITIES

Dynamic sound expansion effects

This monitor is equipped with the newly designed Dynamic Sound Expansion system to reproduce a wider and more dynamic sound field for any video source including TV programs. A monaural sound track can also be modified to produce stereo-like sound. Simulated stereo sound is included in the dynamic-sound expansion system.

Press the D-SOUND EXPANSION key repeatedly to select the mode of dynamic sound expansion as follows:

THEATER: Set to this mode while watching movies or sports programs.

MUSIC: Set to this mode while watching music programs.

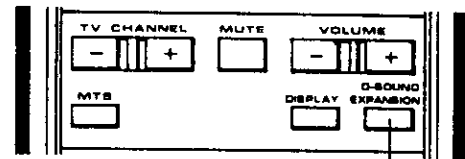
S. STEREO

(Simulated Stereo): Set to this mode while watching monaural sound programs.

When you wish change from monaural sound to a simulated stereo sound with the dynamic-sound expansion system:

Press the D-SOUND EXPANSION key repeatedly until S. STEREO is displayed on the screen.

* After the monaural program is finished, it is recommended you turn the dynamic-sound expansion system off or set the monitor to THEATER or MUSIC.



D-SOUND EXPANSION key

NOTES:

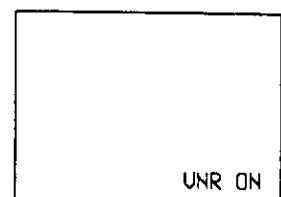
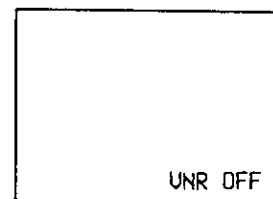
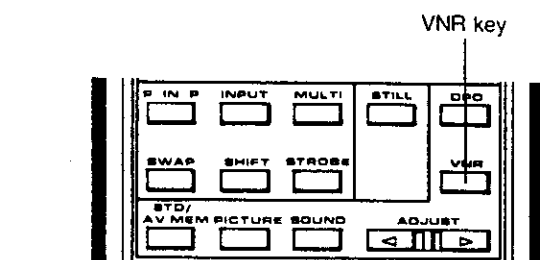
- The selected mode will appear on the screen for 4 seconds.
- The dynamic-sound expansion system effect is performed by both the internal speakers and external speakers which are connected to the EXT SPEAKERS terminals.
- Only the signals from the AUDIO OUTPUT (VARIABLE) jacks will be altered when the dynamic-sound expansion system is engaged.
The original output signal is sent through the other OUTPUT REC jacks.

VNR (Video Noise Reduction) system operation

To improve picture quality with VNR while watching a TV program or prerecorded video cassette tape playback

VNR system will reduce the noise contained in the video signal and improve the picture quality of TV programs or video tape playback pictures.

Press the button once to display the VNR mode (VNR ON or VNR OFF) on the screen, then press the button once or twice to select either VNR ON or VNR OFF.



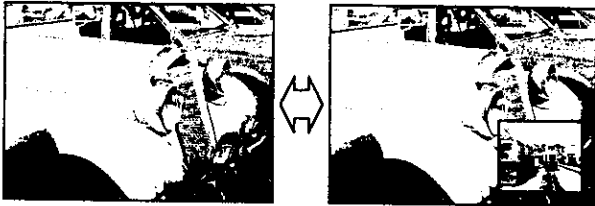
REMOTE CONTROL UNIT FACILITIES

Picture-in-Picture functions

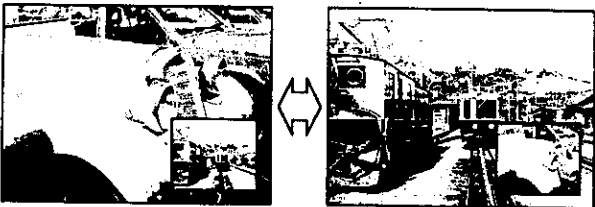
Any one of the three sources connected to the Projection Monitor can be displayed simultaneously on a small area of the screen, while one of the other sources is being watched on the main screen.

To turn the Picture-in-Picture function on and off

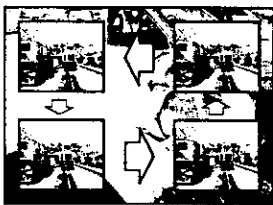
Press the P IN P key repeatedly to turn the sub-picture on and off.

**To replace the main screen picture with the sub-picture**

Press the SWAP key. Each time this key is pressed, the main screen and the sub-picture will switch positions.

**To change the position of the sub-picture**

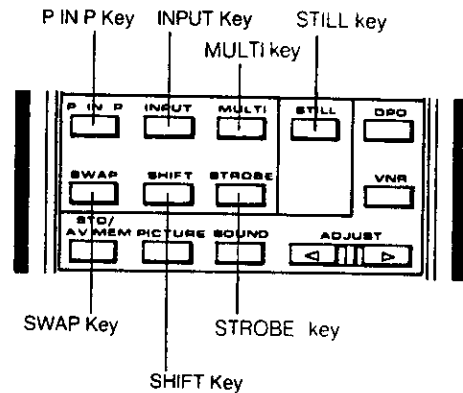
Press the SHIFT key repeatedly. Each time this key is pressed, the sub-picture will move (counterclockwise) to a different corner of the main screen.

**To select the input source of the sub-picture while watching the main screen**

Press the TV, LD, VIDEO 1, VIDEO 2 or VIDEO 3 INPUT SELECTOR key. When the INPUT key on the remote control unit is pressed, the selected video source for the sub-picture will be displayed (ie, video disc playback, TV program or video cassette tape playback).

**Sub-picture input display**

When using the picture-in-picture function, press the INPUT key to display the sub-picture input source above (or below) the sub-picture. Press the DISPLAY key to display the input source of the main picture in the upper right hand corner of the screen. Sub-picture mode will appear in the lower left corner of the screen.

**To watch a still picture on the main screen**

Press the STILL key to freeze the picture. The sound track will continue to play back normally, but the picture will freeze.

To cancel still or picture-in-picture function

Press the STILL key again. The screen will be reset to normal mode. Alternatively, press the P IN P key to cancel the picture-in-picture function.

Picture-in-Picture function using the Multi-screen feature

The multi-screen feature can select 4 subscreen mode or 9 subscreen mode, and the strobe or manual features.

- 1 Press the P IN P key to turn the picture-in-picture function on.

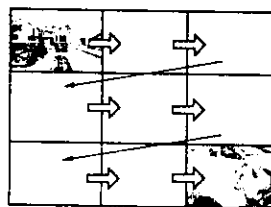
2 Press the MULTI key repeatedly to select 1, 4 or 9 screen. When selecting 4 subscreen or 9 subscreen mode, the main screen will disappear and 4 or 9 subscreen will appear on the screen. The lower right hand corner of the screen plays back normally. If the 1 screen mode is selected, the main screen will reappear.

- 3 Press the STROBE or SHIFT key.

When the STROBE key is pressed, the picture will be displayed at specific intervals. At each interval, a still picture appears in one of the 4 (or 9) screens. The final screen picture plays back normally. Press the SHIFT key repeatedly if you wish to change the active subscreen's position. The subscreen selected most recently will play back normally.

- 4 To cancel the multi-picture feature:

Press the MULTI key. The main and sub-screen will reappear. Alternatively, press the P IN P key to cancel the picture-in-picture function.



9 screen mode



4 screen mode

REMOTE CONTROL UNIT FACILITIES

To display the picture of several television stations using the channel scan feature

The channel scan feature can display 4 or 9 television station pictures at the same time. The stations which have been memorized in the TV tuner will be displayed on the split screen.

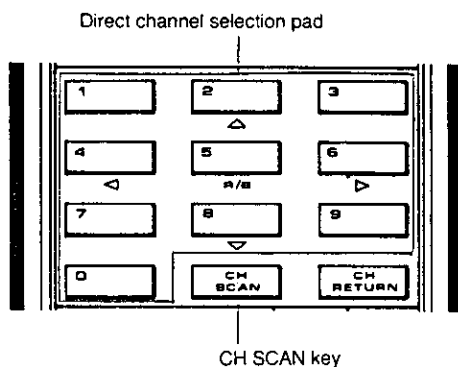
All the displayed pictures will appear as still images when the channel scan feature is engaged.

- 1 Press the TV INPUT SELECTOR key or press the INPUT SELECTOR button repeatedly until a TV program appears.
- 2 Press the CH SCAN key to display the first 4 stations on the screen. The memorized TV stations will appear in order from the top left corner to bottom right corner of the screen.
- 3 Press the MULTI key repeatedly to select 4- or 9-screen mode. The selected TV station will appear in the sub-screen in the upper left corner of the screen.
- 4 To display the next group of memorized TV stations: Press the CH SCAN key again. Press the CH SCAN key repeatedly to select the memorized stations you wish to watch.
- 5 To cancel the channel scan feature: Press the P IN P key again.

If you wish to select a station when the channel scan feature is engaged.

Press the direct channel selection pad you wish to select.

* Press the DISPLAY key to reappear channel numbers on the screen.



Attention

Do not use the Picture-in-Picture function for more than 2 hours. It may damage the picture tubes inside the Projection Monitor. If you wish to this function for more than 2 hours, change the sub-picture position on the screen every once in a while by pressing the SHIFT key.

NOTES:

- If only the **[S-VIDEO]** LD and VIDEO jacks are used to connect the LD player and VCR to the Projection Monitor, the Picture-in-Picture function will not operate when these buttons and keys are pressed.
- The sound of the sub-picture(s) cannot be heard when the Picture-in-Picture system is engaged.
- When a copy-protected tape is played back in the main screen, the sub-picture may be distorted.
- With some VCRs, the screen may fluctuate, when the VCR is not in playback mode. This is not a malfunction.
- TV channels can be selected with the TV CHANNEL +/- key or the direct channel selection pad when the TV key of the INPUT SELECTOR is pressed. Both the main screen and the subpicture will change TV channels at the same time when TV channels are selected.
- Signals output from the Projection Monitor will not be altered when the Picture-in-Picture function is engaged. Only the main picture signal is sent through the monitor output jacks.
- The picture-in-picture function will be cancelled automatically if none of the picture-in-picture control keys or CH SCAN key are pressed for more than 8 minutes when still mode, multi-mode or channel scan mode is engaged.
- If the input signal (including burst signal) is not supplied to the main screen, the picture-in-picture function will not function properly.
- During still playback, special effect playback, or when searching an LD or video cassette tape visually forward or backward using the main screen, shaking may occur in the sub-picture.
- After the multi-screen feature is engaged, input to the sub-screen cannot be changed by pressing the INPUT key. If you wish to change the input, press the MULTI key to cancel the multi-screen mode or select one sub-picture mode, and select the desired input source of main. Then select the multi-screen feature again.
- Sub-picture mode only appear if the main screen signal is not supplied on the monitor when turn the picture-in-picture function on. Pictures will appear on both the main screen and sub-picture when the main screen signal is supplied.
- If any TV program is received or TV program is tuned in clearly, black and white picture will appear in the sub-picture when the CH SCAN key is pressed. If this happens, select a TV program tuned in clearly, then press the CH SCAN key.
- Channel scan feature can display only memorized TV stations which can be tuned using the TV tuner of the monitor. If the RF terminal of the CATV converter is connected to the monitor, channel scan feature can display CATV converter selected station only, not all the stations memorized in the CATV converter.

Programmable remote control functions

This remote control unit can "learn" the commands of other remote control units, regardless of their manufacturer, as long as the other unit is of the infrared type. In some cases you may still need the original remote control unit, but you will be able to use this unit for most of your video as well as audio system control needs.

NOTE:

It is advisable to program the unit in a room separate from the system with which it is to be used. This will prevent problems such as sudden high-volume output or accidental tape erasure that may occur if command signals reach your components during programming. Or, you may wish to unplug your component system and conduct programming in the same room. Simply turning off the power may not be sufficient since power on/off switching may also be remote controllable. Also do not throw away the original remote control units after programming. You might need the original ones in the future.

This remote control unit contains preprogrammed commands compatible with PIONEER equipment. If your home audio/video center consists exclusively of PIONEER components, you can use the unit without any additional programming. It is also possible to return to the original PIONEER commands after assigning other commands. (Refer to "Returning to the Initial Settings" for details.)

Which keys can be programmed with new commands?

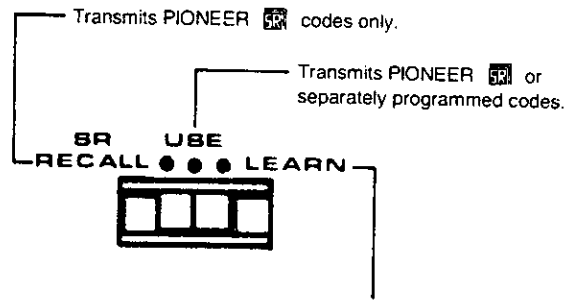
Setting the LEARN MODE switch to the LEARN position allows the unit to memorize codes. Once programmed, these new commands can be transmitted only when the LEARN MODE switch is in the USE position. The SR RECALL setting will only allow transmission of the initialized PIONEER codes.

For LD/VCR controls in area (A), the keys can be programmed with a different command from another remote for each TRANSMIT MODE. In other words, each key can have up to three different functions, differentiated by the setting of the TRANSMIT MODE.

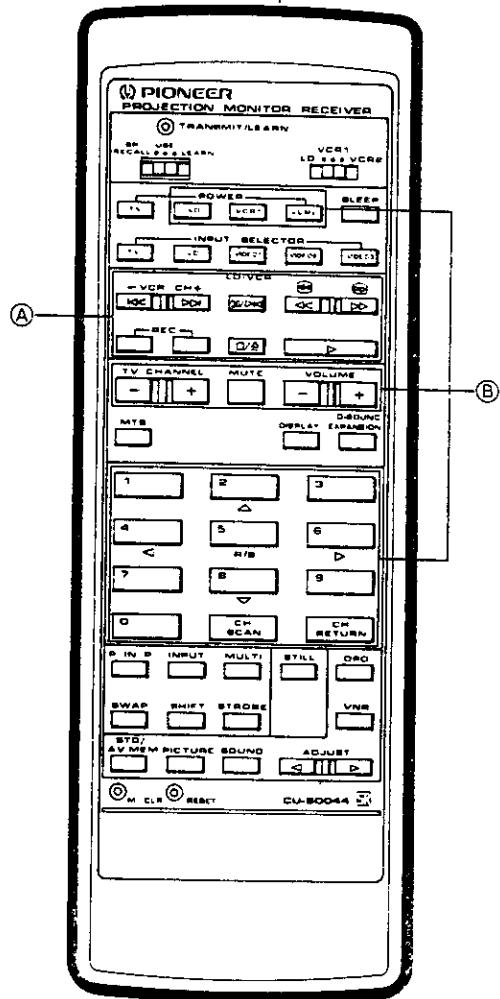
For POWER and other TV controls in area (B), each key can be programmed with only a single command, regardless of the TRANSMIT MODE setting.

Other Important Notes

- A total of 44 other codes can be memorized using these keys. (This may vary depending on the command format of the codes to be memorized.)
- There are 2 keys on the unit for recording, to help prevent misoperation. To start recording, or to memorize a command code with the REC keys, both of them must be pressed at the same time.
- When the batteries run down, all functions will stop automatically. If the indicators no longer light or flash, or components do not respond to signals from the unit, the batteries need to be replaced. (Always use alkaline cells.)
- When programming keys, make sure that both units are loaded with fresh batteries.
- Programming may be impossible from some types of infrared remote control units



Receives codes input during programming from other remote control units.



How to program the remote control buttons

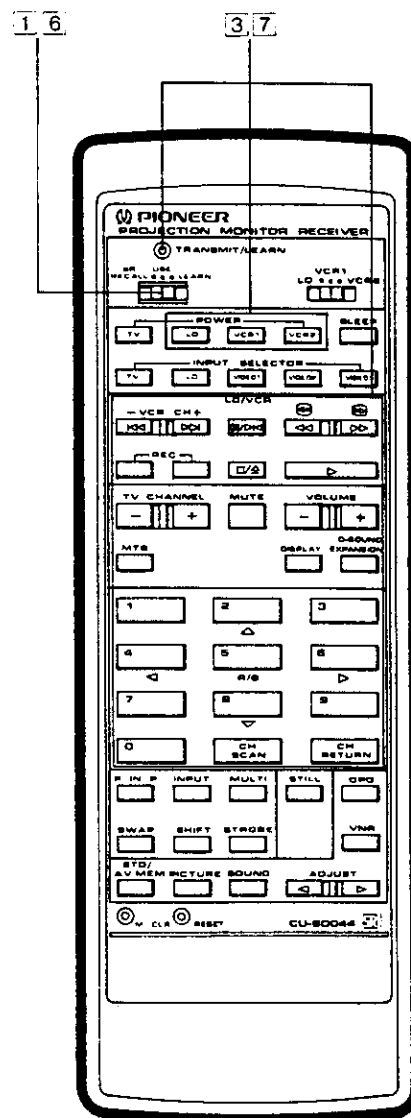
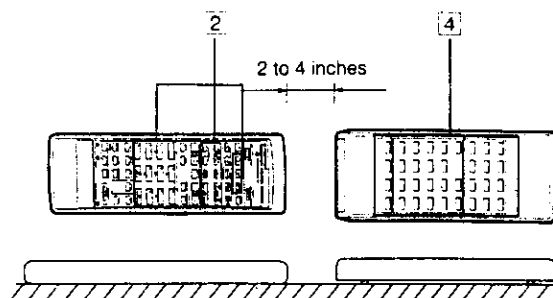
- 1 Set the LEARN MODE switch to LEARN.
- 2 Place the other remote control unit and the programmable remote control unit on a table facing each other, separated by a distance of 2 to 4 inches (5 to 10 cm).
Programming will not be possible if the units are too close to each other.
- 3 Press the key on the programmable remote control unit that you wish to program until the TRANSMIT/LEARN indicator lights up.
- 4 Press a key on the other remote control unit until the TRANSMIT/LEARN indicator goes off.
- 5 To program other keys, repeat steps 3 and 4.
- 6 When finished, set the LEARN MODE switch back to the USE position.
- 7 Point the programmable remote control unit toward the corresponding component and check operation by pressing the keys you just finished programming.
If the component does not work as expected, repeat steps 1 to 7. Try changing the distance between the remote control units in step 2.

NOTE:

- When programming, make sure that function indicators (e.g., ►, ►►, ■) are programmed from the original remote control unit into the matching keys of the programmable unit; this will greatly facilitate operation.
 - Do not press the keys excessively while performing programming operations.
 - The TRANSMIT MODE switch will shut off automatically while performing programming operations.
 - If the LEARN indicator flashes, it indicates either that you are trying to store a command with a key incapable of being used with the LEARN function or that the remote control unit's programming capacity has been exceeded. In the latter case, the function last programmed will not be stored correctly. All previously programmed functions, however, will be retained in the memory and may be used as they are if the last function is not essential. For re-programming information, refer to "Returning to the Initial Settings."
1. If programming is not carried out successfully:
 - Position the remote control units at a greater distance from each other.
 - Position the remote control units slightly out of line with each other.
 2. If the remote control unit is directly subjected to strong fluorescent light, programming may not be possible.
 3. If remote control operation is not successful although programming was successful:
 - Press the RESET button. (The programmed signals will not be erased.)
If the problem still cannot be corrected, press the M. CLR button and try programming again.
 - After programming is completed, set the LEARN MODE switch to the USE position.

How to use the remote control buttons

- 1 Set the LEARN MODE switch back to the USE position.
- 2 Point the programmable remote control unit toward the corresponding component and check operation by pressing the keys you just finished presetting.



Overlay

An overlay sheet is provided, on which you can write the functions of keys you have programmed from other remote control units. It fits over the unit keyboard for your own personal reference.

Questions and Answers on Programming Commands

Q: The remote control unit for my VCR has two REC keys, which both have to be programmed at the same time to start recording. How should I program this into my programmable remote control unit?

A: Press and hold both REC keys on the programmable remote control until the TRANSMIT/LEARN indicator lights up, and then press the two keys on the VCR remote control simultaneously.

Q: The remote control unit of my VCR has a REC key and a PLAY key, and they both have to be pressed at the same time to start recording. How should I program this into my programmable remote control unit?

A: Press and hold both REC keys on the programmable remote control until the TRANSMIT/LEARN indicator lights up, and then press the REC and PLAY keys on the VCR remote control simultaneously.

NOTE:

If both keys are not pressed simultaneously in the above mentioned operations, the commands will not be memorized.

Battery Replacement

Replace the batteries as soon as possible if pressing the control keys does not cause the TRANSMIT/LEARN indicator to light even after the RESET button has been pressed.

Be sure to always use the specified batteries (LR6/AM3 alkaline batteries).

NOTE:

The unit's power switch is connected to the battery compartment cover. Therefore:

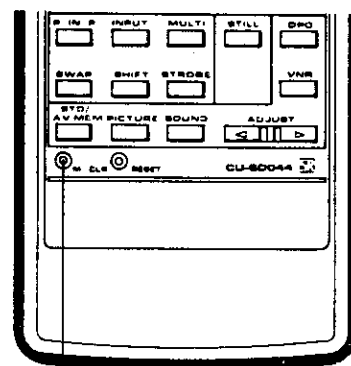
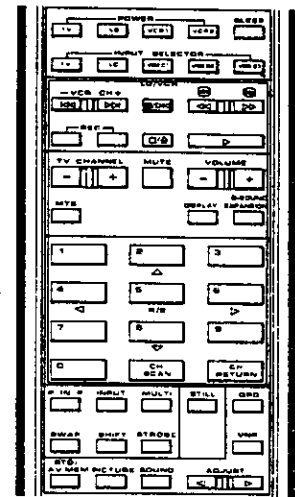
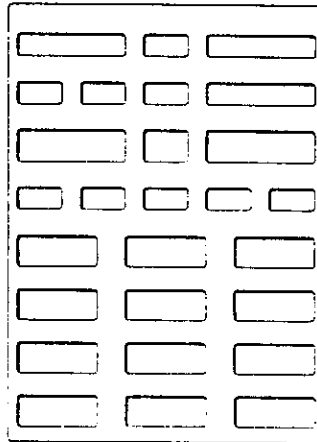
- *The unit will not operate when the cover is off even if batteries are loaded.*
- *If the cover is replaced when batteries are not loaded the memory will be lost after a few seconds.*
- *With batteries loaded and the cover off, memory is retained for about 15 minutes.*
- *Be very careful not to lose the battery compartment cover.*

Returning to the Initial Settings

Follow the instructions below to return all settings to the PIONEER Remote Control Code Settings.


- ① Set the LEARN MODE selector to the LEARN position.
- ② Press any programmable key. (The TRANSMIT/LEARN indicator will light.)
- ③ Using a ball-point pen or similar object, press and hold the M.CLR button down until the indicator flashes and then goes out.

All commands you programmed will be erased, and the unit will be reset to use codes initially set by PIONEER.
















M.CLR button

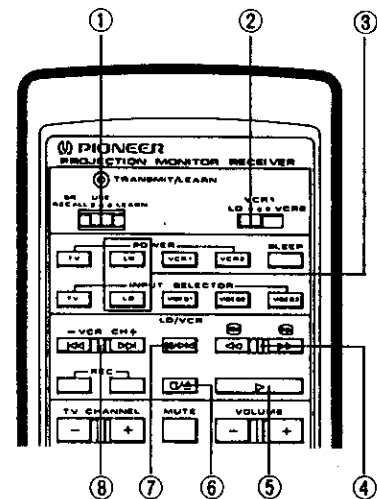
Control keys for a PIONEER LD Player and VCR bearing the mark

If your LD Player or VCR is a PIONEER model bearing the  marking, your remote control unit can perform most basic operations without remote control code programming.








The TRANSMIT MODE switch is used to select whether the programmable remote control unit operation keys will function as LD or VCR control keys.

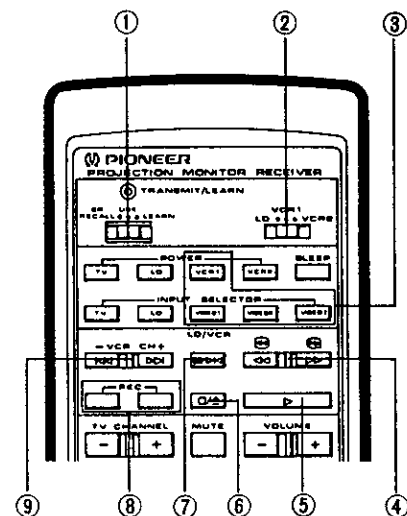
LD Player Control

- ① **Set the LEARN MODE switch to SR RECALL.**
After presetting the remote control codes of the programmable remote control unit, set the switch to SR RECALL.
- ② **Set the TRANSMIT MODE switch to LD.**
- ③ **Press the LD POWER key to turn the power on.**
Then press the LD INPUT SELECTOR key to set the input selector of the monitor to LD.
- ④ **Scan (/) key**
Press the  side of the key to search in the forward direction while playing back the videodisc.
Press the  side of the key to search in the reverse direction while playing back the videodisc.
- ⑤ **Play () key**
Press to begin playback.
- ⑥ **Stop/Eject (/) key**
Press once to stop playback, twice to eject the disc.
- ⑦ **Pause/Still (/) key**
Press to interrupt videodisc playback temporarily. Press the button again to resume playback.
- ⑧ **Chapter Skip Key (/)**
Press the  side of the key to skip directly to beginning of the next chapter, press the  side to skip directly back to the beginning of the chapter currently in play. This operation can only be performed on an LD Player with chapter skip function.



VCR Control

- ① **Set the LEARN MODE switch to SR RECALL.**
After presetting the remote control codes of the programmable remote control unit, set the switch to SR RECALL.
- ② **Set the TRANSMIT MODE switch to VCR1.**
- ③ **Press the VCR1 POWER key**
To turn the power on. Then press the VIDEO INPUT SELECTOR key to set the input selector of the monitor to VIDEO.
- ④ **Rewind/Fast Forward (/) key**
This key allows high-speed movement through parts of the tape that you don't wish to watch. Press the left side of the key to rewind the tape, and the right side to advance.
During playback, use this key to search visually forward or backward.
Keep pressing the left or right side of the key until the section you wish to watch appears, then release it to resume normal speed playback.
- ⑤ **Play ()**
Press to begin playback.
- ⑥ **Stop/Eject (/) key**
Press once to stop playback.
* Eject function will be performed only if your VCR is equipped with the remote control eject function.
- ⑦ **Pause/Still (/) key**
Temporarily interrupts recording or playback, producing a still picture during playback.



- ⑧ **REC (Record) keys**
Press both keys at the same time to start recording.
- ⑨ **VCR CHANNEL +/- key**
Press to select the channel of the TV tuner on the VCR.

HOW TO ALIGN COLOR CONVERGENCE

This Projection Monitor uses three separate TV tubes — a red, a green, and a blue tube. The red, green and blue images are projected onto the screen where they converge to form a full color picture. If they do not converge correctly, then you will see colored borders around the images.

Your dealer should adjust the color convergence when your monitor is delivered. However, convergence may drift over time or if you move the monitor.

Follow the steps below if color convergence alignment is needed.

- 1 Turn on the power and select an active channel. Wait a moment for the picture to stabilize.
- 2 Press the MENU ON/OFF button on the control panel. The monitor screen displays the menu (CONVERGENCE, AV MEMORY, DPO BASE, INPUT LABEL, TV-CATV MODE, SYSTEM MODE, and TUNER PRESET). Make sure that "CONVERGENCE" is displayed in red. If not, press the MENU SELECT/ADJUST buttons until "CONVERGENCE" turns red.
- 3 Press the MENU SET button on the control panel. If color convergence is correct, there will be one vertical white line and one horizontal white line, as shown in figure 1.
- 4 If you see separate colored lines (Fig. 2 to 4), use the R/B, ◀, ▶, ▲, and ▼ keys on the remote control unit to make the red and blue lines disappear into the other lines. Pressing the R/B key alternates the controlled (red or blue) line. Pressing the ◀ key moves the vertical line to the left, while pressing the ▶ key moves the vertical line to the right. Pressing the ▲ key moves the horizontal line upward, while pressing the ▼ key moves the horizontal line downward. In figure 2, for example, press the R/B key to control the red line, and then press the ◀ key until the red line converges. Press the R/B key again to control the blue line, and then press the ▼ key until the blue line converges. Convergence is correct when all three colors (red, green, and blue) converge, producing single white lines.
- 5 Press the MENU ON/OFF button when convergence is correct.

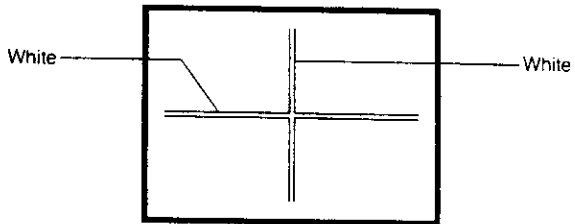
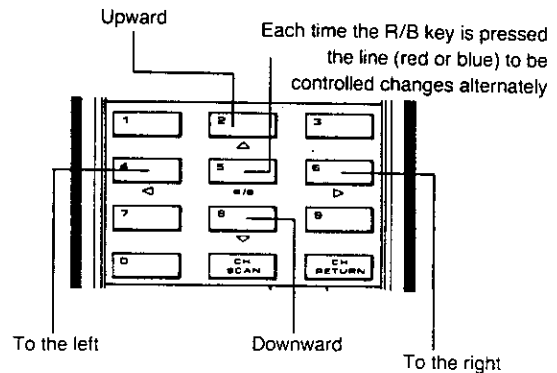
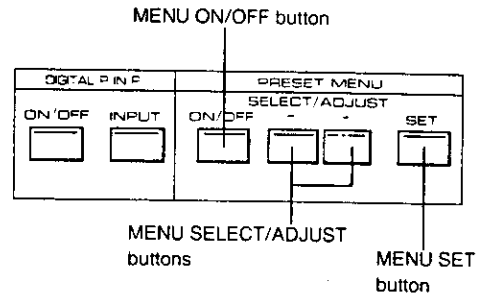


Fig. 1 Correctly aligned

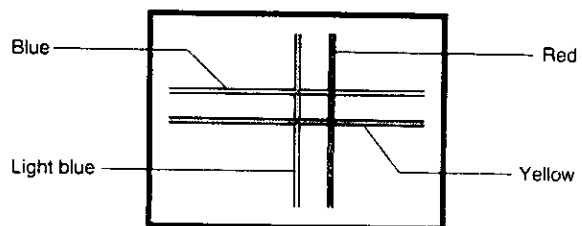


Fig. 2 Horizontal and vertical misalignment

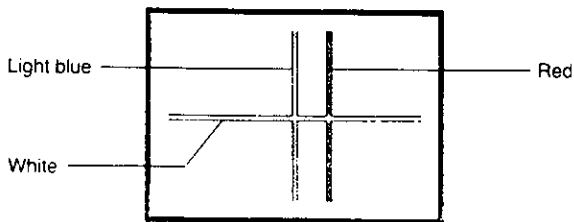


Fig. 4 Horizontal misalignment

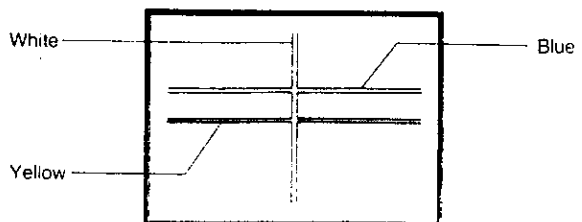


Fig. 3 Vertical misalignment

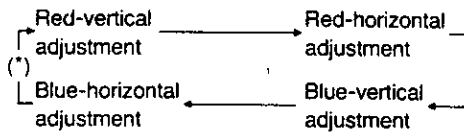
HOW TO ALIGN COLOR CONVERGENCE

Color convergence alignment without using the remote control unit

Color convergence adjustment can be performed by either the operation keys of the remote control unit as described in operation 4 of the above procedures, or the MENU SELECT/ADJUST buttons and MENU SET button on the control panel as described below:

- ① Press the MENU SET button to select the adjustment mode. The adjustment modes appear in the following order:

● Convergence adjustment test pattern and arrow will appear on the screen accordingly.



* Alignment proof mode: selected image only appears.

- ② Use the SELECT/ADJUST buttons as follows:

During Red or Blue Vertical adjustment

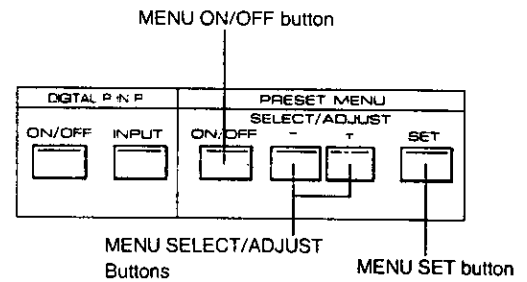
Press the + button to move the horizontal line upwards.

Press the - button to move the horizontal line downwards.

During Red or Blue Horizontal adjustment

Press the + button to move the vertical line to the right.

Press the - button to move the vertical line to the left.



HOW TO ALIGN COLOR CONVERGENCE

Notes for the convergence alignment adjustment

By repeatedly pressing the 5 R/B key or the MENU SET button when the convergence alignment adjustment is engaged, a selected image can be displayed on the screen instead of the alignment cross pattern.

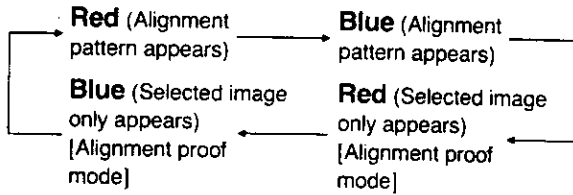
This is the alignment proof mode, which allows you to check the center of the images to ensure that colored borders are not seen after the adjustment.

In the alignment proof mode the alignment can also be adjusted by pressing the 2, 4, 6 and 8 keys or pressing the MENU SELECT/ADJUST button. However, it is difficult to adjust the alignment properly when only the images appears on the screen.

If you can still see colored borders around the images, press the 5 R/B key or the MENU SET button again until the proper convergence alignment pattern reappears, and adjust the alignment by following the operations described on the previous page.

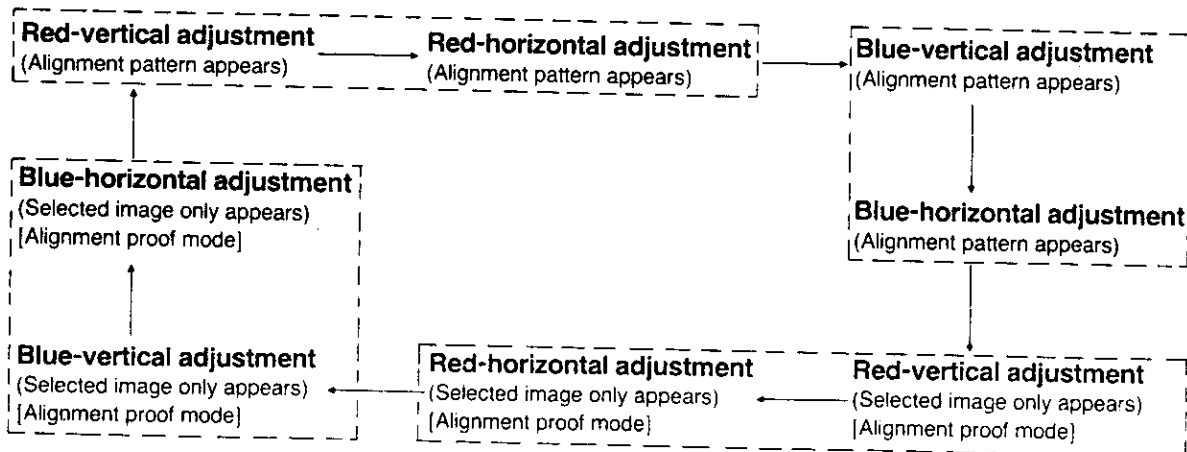
After all convergence alignment adjustment is finished, press the MENU ON/OFF button to set the monitor to its normal mode.

Each time the 5 R/B key is pressed, the alignment adjustment mode will change as follows:

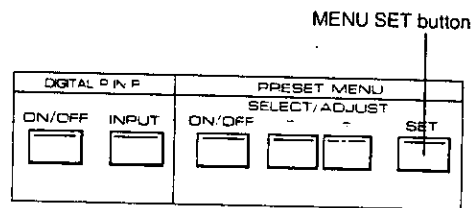
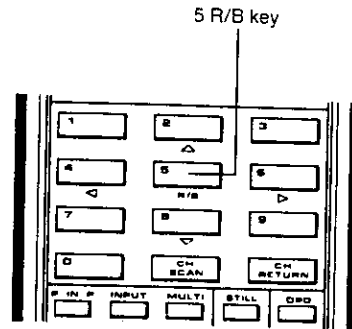


Convergence alignment adjustment can be performed by pressing the 2, 4, 6 and 8 keys on the remote control after the alignment mode is selected.

Each time the MENU SET button is pressed, the alignment adjustment will change as follows:



Convergence alignment adjustment can be performed by pressing the MENU SELECT/ADJUST button on the front panel after the alignment mode is selected.



TV CHANNEL SELECTION

The Projection Monitor uses a frequency synthesizer tuning system to permit reception of up to 127 channels (including cable channels). This electronic tuning system gives you two ways of selecting channels.

You can use the remote control keys numbered "0" through "9" to directly input the channel number. Or you can use the two CHANNEL keys marked "+" and "-" on the remote control unit or the CHANNEL buttons marked "+" and "-" on the control panels to select one channel after another. In the latter case, you can remove or add channels to "TUNER PRESET" so that it contains only those channels that you usually watch.

usually watch.

The 127 possible channels include broadcast TV channels 2-13 (VHF), 14-69 (UHF), as well as cable (CATV) channels 1-13 (VHF), 14-22 (mid-band), 23-36 (super-band), 37-65 (hyper-band), and 94-99 (mid-band).

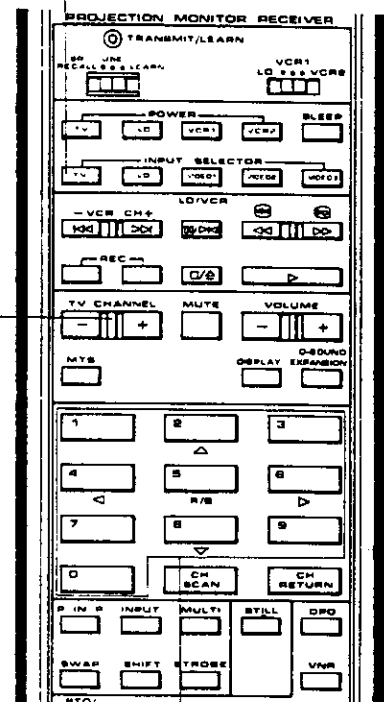
NOTE:

- **TUNER PRESET** refers to channel access by pressing the CHANNEL keys marked "+" and "-". You can specify which channels are to be included in TUNER PRESET before using this function. Details follow.

BROADCAST TV CHANNEL SELECTION (When the VHF/UHF antenna is connected to the ANTENNA terminal on the rear panel.)

- 1 Press the INPUT SELECTOR button so that "TV CHXX" appears on the monitor screen, or press the TV input selector key on the remote control unit.
- 2 Select channels directly by pressing the channel number on the remote control "CHANNEL CALL" 10-key pad. For example, to receive channel "23", press 2 and then 3. For channels 2 through 9, first press 0 (zero), then the number; or just press the number and wait for about four seconds. (While waiting for you to input a second digit, the first digit blinks. If you do not input a second digit within 4 seconds, then the first digit is selected as the channel number.)
- 3 Channel memory selection is also possible. Using the CHANNEL keys marked "+" and "-" on the remote control unit or CHANNEL buttons marked "+" and "-" on the control panel you can scan through the channels which are in tuner preset. To add or delete channels from memory, see TUNER PRESET on page 32.

TV Input selector key



Channel call 10-key pad

TV CHANNEL key

TV CHANNEL SELECTION

PRESETTING YOUR CATV SYSTEM (When the cable box output is connected to the ANTENNA terminal on the rear panel.)

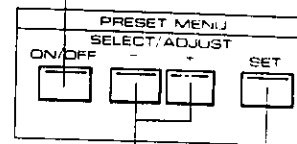
- 1 Press the INPUT SELECTOR button so that "TV CHXX" appears on the monitor screen, or press the TV input selector key on the remote control unit.
- 2 Turn on the menu with the MENU ON/OFF button and press the MENU SELECT/ADJUST buttons so that the TV-CATV MODE display turns red.
- 3 Press the MENU SET button. Each press the MENU button, "AIR", "STD" or "HRC" appears on the screen.
- 4 Select "STD (standard)" or "HRC" with the MENU SET button. (Ask your dealer or cable service provider which is correct for your local CATV system.) Each press of the MENU SET button moves the selection from AIR to STD, to HRC, and then back to AIR again.
The displayed mode ("STD" or "HRC") is now preset in the ANTENNA memory, so you can receive your local CATV broadcast when the TV is turned on.
- 5 Press the MENU ON/OFF button to return to normal operation.

CABLE (CATV) CHANNEL SELECTION

It is necessary to preset your local CATV system in ANTENNA memory. To preset your CATV system, see "PRESETTING YOUR CATV SYSTEM".

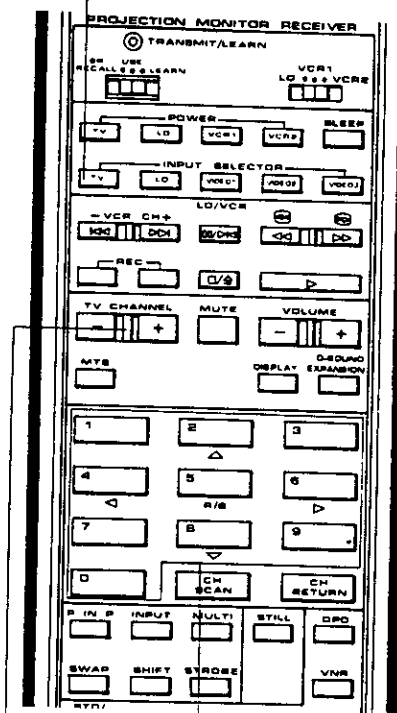
- 1 Press the INPUT SELECTOR button so that "TV CHXX" appears on the monitor screen, or press the TV input selector key on the remote control unit.
- 2 Select channels directly by pressing the channel number on the remote control 10-key pad. For example, to receive channel "23", press the 2 and then 3. For channels 1 through 9, first press 0 (zero), then the number; or just press the number and wait for about four seconds. Note that channel numbers "00", and "66" through "93" are not assigned, so the selected channel will not change if you input these numbers.
You can select VHF channels (1-13), mid-band channels (A1-A6, A-I), super-band channels (J-W), and hyper-band channels (AA-CCC). Refer to the standard cable channel assignment table shown on page 22. Your local cable service provider's channel assignments may differ from those shown in the table.
- 3 Channel memory selection is also possible. Using the CHANNEL keys marked "+" and "-" on the remote control unit or the CHANNEL buttons marked "+" and "-" on the control panel you can scan through the channels in channel memory. To add or delete channels from memory, see TUNER PRESET on page 32.

MENU ON/OFF button

MENU SELECT/
ADJUST buttons

MENU SET button

TV Input selector key



10-key pad

TV CHANNEL key

TV CHANNEL SELECTION

CABLE (CATV) CHANNEL ASSIGNMENT TABLE

Channel number assignment for the cable tuning mode begins with 01 through 65, omits the unassigned numbers 66 through 93, then proceeds from 94 through 99. The specific channel number assignments and the corresponding alphabetical designation are shown below in the channel table.

TV	VHF L	MID	VHF H	SUPER	HYPER	UHF
	2-6	—	7-13	—	—	14-69
CATV	2-6 (STD)	A-6 (94) A (14)	7-13	J (23) Q (30) AA (37) KK (47) TT (56)	—	—
		A-5 (95) B (15)		K (24) R (31) BB (38) LL (48) UU (57)		
		A-4 (96) C (16)		L (25) S (32) CC (39) MM (49) VV (58)		
		A-3 (97) D (17)		M (26) T (33) DD (40) NN (50) WW (59)		
		A-2 (98) E (18)		N (27) U (34) EE (41) OO (51) XX (60)		
	1-6 (HRC)	A-1 (99) F (19)		O (28) V (35) FF (42) PP (52) YY (61)		
		G (20)		P (29) W (36) GG (43) QQ (53) ZZ (62)		
		H (21)		HH (44) RR (54) AAA (63)		
		I (22)		II (45) SS (55) BBB (64)		
				JJ (46) CCC (65)		

For example: Channel number "14" corresponds to mid-band cable channel "A".

NOTE:

- Cable (CATV) services can vary from area to area. The channel number assignments shown in the channel table may not correspond with the channel numbers used by your local cable company. Direct tuning to cable channels without the use of the cable company "converter" or "preselector" will depend on the specific channels in use by the cable company. Direct tuning to cable channels is limited to unencoded (unscrambled) channels only. Check your local cable company compatibility requirements.

MULTI-CHANNEL TV SOUND (MTS)

A multi-channel TV sound decoder is built into the Projection Monitor.

This MTS decoder permits stereo and SAP sound reception. (SAP is a "second audio program" often used for a second language.) The MTS decoder is only effective if the broadcast includes stereo or SAP signals.

STEREO RECEPTION

If necessary, use the remote control MTS key to switch to the MAIN setting. The set will switch automatically between mono and stereo according to the signals received.

MONO RECEPTION

You can force monophonic reproduction of all programs by using the MTS key to select MONO.

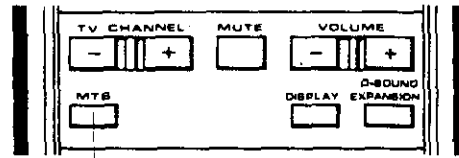
If you hear a lot of static while receiving a stereophonic TV program, set the MTS mode to MONO by pressing the MTS key.

SAP (SECOND AUDIO PROGRAM) RECEPTION

TV stations have the option of broadcasting a second audio program (SAP) signal. This additional sound channel accompanies another mono signal or stereo signal. However, the SAP sound itself is in mono.

Use the MTS key to switch to the SAP or MAIN/SAP setting if you wish to hear the "second audio program" sound. (At the MAIN/SAP setting, the SAP sound will come from the right speaker while the left speaker produces the main sound signal.)

You will still hear stereo or mono sound when there is no SAP signal.



MTS key

NOTE:

The MTS display is shown on the screen when the channel is tuned in, or the DISPLAY key on the remote control unit is pressed.

• Broadcast stereo and SAP reception operate in accordance with the Broadcast Television Systems Committee (BTSC) standard only. Stereo audio transmission from CATV (Cable television) systems can vary from area to area and may not be compatible with the BTSC standard. Check with your local cable company for specific compatibility requirements.

Audio Reception Mode Display (selected by the MTS key)

Mode selected \ Broadcasted mode		MONO	STEREO	MONO + SAP	STEREO + SAP
		MONO	STEREO	MONO + SAP	STEREO + SAP
MAIN	Display	TU CH 00	TU CH 00 STEREO	TU CH 00 MAIN	TU CH 00 STEREO (SAP)
	REPRODUCTION Mode	MONO	L and R	MONO (MAIN)	L and R
SAP	Display	TU CH 00	TU CH 00 STEREO	TU CH 00 SAP	TU CH 00 SAP (STEREO)
	REPRODUCTION Mode	MONO	L and R	SAP	SAP
MAIN/SAP	Display	TU CH 00	TU CH 00 STEREO	TU CH 00 MAIN/SAP	TU CH 00 MAIN/SAP (ST)
	REPRODUCTION Mode	MONO	L and R	L: MONO (MAIN) R: SAP	L: MONO (MAIN) R: SAP
MONO	Display	TU CH 00 MONO	TU CH 00 MONO	TU CH 00 MONO	TU CH 00 MONO
	REPRODUCTION Mode	MONO	MONO	MONO (MAIN)	MONO (MAIN)

HOW TO RELABEL INPUT DISPLAYS

The input label function can be used to replace the input displays; such as LD, VIDEO 1, VIDEO 2 or VIDEO 3; with the model numbers or model names of the components that are connected to the monitor. For example, you can display 'LD-S2' on the screen when selecting the LD input source.

The input label can be up to 8 characters long the 43 characters, including _ (space), listed below.

- 1 Turn on the monitor and select the input (LD or VIDEO) that you wish to replace with the model number of the unit connected to the monitor.
Example: Replacing the LD display with model number 'LD-S2'.
- 2 Press the MENU ON/OFF button, and then press the MENU SELECT/ADJUST buttons until the INPUT LABEL display turns red.
- 3 Press the MENU SET button. 'LD' will appear in the right-hand corner of the screen.
- 4 Press the MENU SELECT/ADJUST buttons to select the desired character.
* Press the + or - button repeatedly until the desired character appears.
- 5 Press the MENU SET button to set the selected character.
- 6 If you wish to select additional characters, repeat steps 4 and 5.
- 7 Press the MENU ON/OFF button once when you finish replacing the input labels.

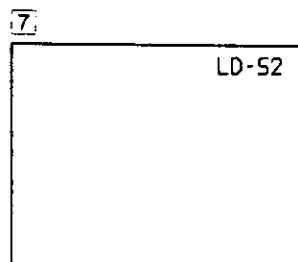
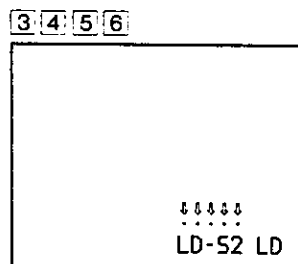
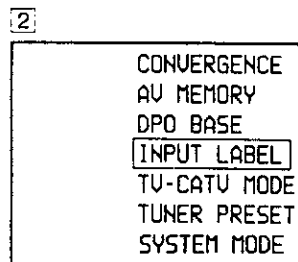
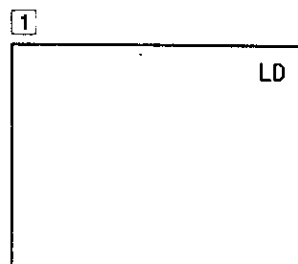
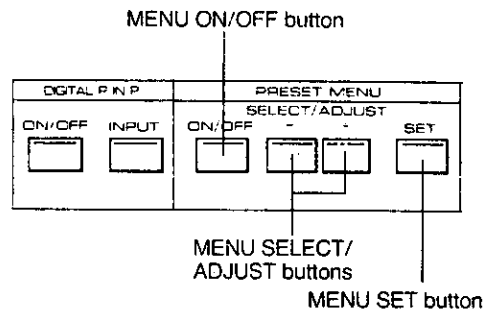
Now you can display the model number by pressing the remote control INPUT SELECTOR key or the control panel INPUT SELECTOR button.

NOTE:

- The following 43 characters, including _ (Space), can be selected.

ABCDEFGHIJKL MNOPQRSTU VWXYZ0123456789: <> -
Space

- Make sure to press the MENU SET button after selecting the character.



TUNER PRESET

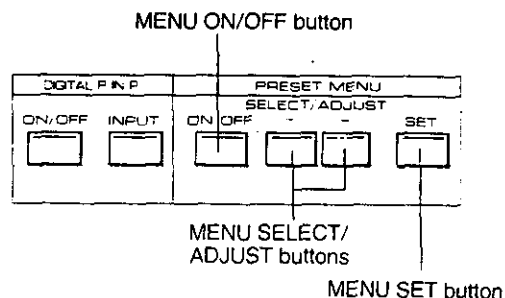
You can customize this special tuning system so that it will select only your personal choice of channels. When the Projection Monitor leaves the factory, all possible channels are in TUNER PRESET.

Using the menu function you can add or delete channels to or from TUNER PRESET to suit your tastes.

TUNER PRESET can be set to match your personal preferences among the channels available in your area. Please refer to your local TV or cable program guide. Follow the procedures below to customize TUNER PRESET to your requirements.

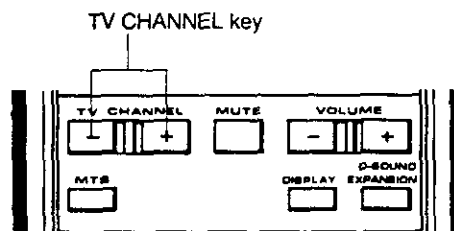
Removing channels from TUNER PRESET

- 1 Turn on the monitor and set the input selector to TV mode.
- 2 Turn on the MENU ON/OFF button, and press the MENU SELECT/ADJUST buttons until the TUNER PRESET display turns red.
- 3 Press the MENU SET button. The channel numbers appear on the screen.
- 4 Press the MENU SELECT/ADJUST buttons until the channel number to be deleted blinks (the preset channel numbers are displayed in green).
- 5 Press the MENU SET button to delete the currently selected channel from TUNER PRESET. The blinking number turns red. The red numbers show the deleted channel numbers.
- 6 Repeat steps 4 and 5 to delete additional undesired channels.
- 7 Press the MENU ON/OFF button after presetting is completed.



Adding channels to TUNER PRESET

- 1 Turn on the monitor and set the input selector to TV mode.
- 2 Turn on the MENU ON/OFF button, and press the MENU SELECT/ADJUST buttons until the TUNER PRESET display turns red.
- 3 Press the MENU SET button. The channel numbers appear on the screen.
- 4 Press the MENU SELECT/ADJUST buttons until the channel number to be added blinks. (The deleted channel numbers are displayed in red.)
- 5 Press the MENU SET button to add the currently selected channel to TUNER PRESET. The blinking number turns green. The green numbers show the added channel numbers.
- 6 Repeat steps 4 and 5 to add additional desired channels.
- 7 Press the MENU ON/OFF button after presetting is completed.



Other memory features

The Projection Monitor also remembers many other settings related to day-to-day operation. So when you turn the monitor on, it comes up with your previous channel and volume settings. It also remembers your previous picture quality settings.

Now you can recall the preset channels by pressing the remote control CHANNEL "+" and "-" keys or the control panel CHANNEL "+" and "-" buttons.

USING THE STATION LABEL FUNCTION

The station label function can be used to label each station with a call sign, network name, etc. For example, 'ABCD' can be displayed on the screen when that TV station is selected. The station label can be up to 4 characters long using the 43 characters, including _ (space) listed below.

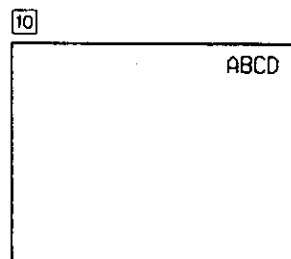
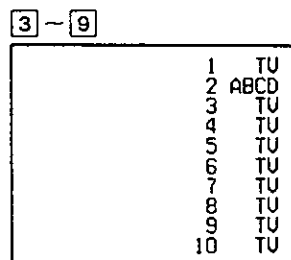
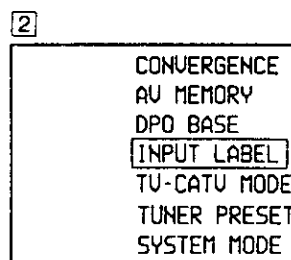
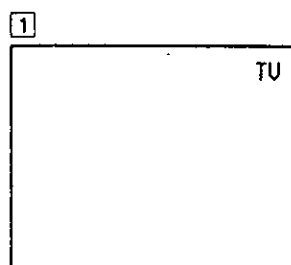
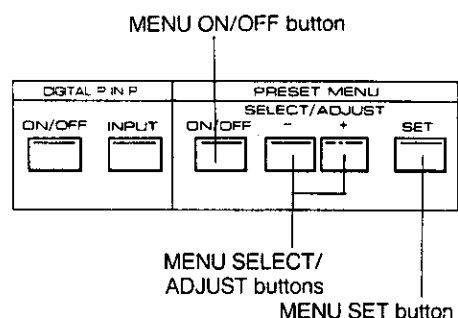
- 1 Turn on the monitor and set the input selector to TV mode.
- 2 Press the MENU ON/OFF button, to display the menu. Then press the MENU SELECT/ADJUST buttons until the INPUT LABEL display turns red.
- 3 Press the MENU SET button. The TV channel display appears.
- 4 Press the MENU SELECT/ADJUST button repeatedly until the desired TV channel is displayed.
- 5 When the desired channel is displayed, press the MENU SET button. The first character in the display turns red.
- 6 Press the MENU SELECT/ADJUST buttons repeatedly to select the desired character (the first character of your station label). Press the + or - button repeatedly until the desired character appears.
- 7 When the selected character is displayed, press the MENU SET button. The second character in the display turns red.
- 8 Repeat steps 4 and 5 to input each of the remaining three characters.
- 9 To input station labels for other channels, repeat steps 3-6.
- 10 Press the MENU ON/OFF button when you finish inputting all of the desired station labels.

NOTE:

- The following 43 characters, including _ (Space), can be selected.

ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789:;<>- _ . / * ? [] { } |
 Space

- Make sure to press the MENU SET button after selecting the character.



PICTURE AND SOUND ADJUSTMENT

The remote control unit has a PICTURE key and a SOUND key. These keys allow you to adjust color, tint, contrast, brightness, sharpness, bass, treble, and balance.

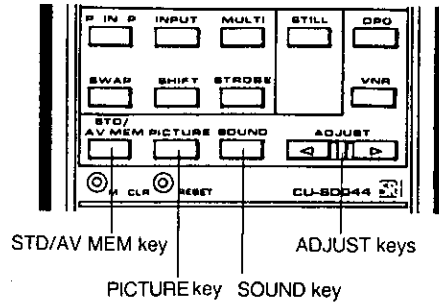
1. Press the PICTURE key or SOUND key until the item to be adjusted turns red.
2. Press the ADJUST ► key to raise the value of the selected item. Press the ◀ key to lower it.

Set each item to any value you like; the current value is shown on the screen.

Picture and sound adjustment mode will be cancelled approx. 4 seconds after the ADJUST ► or ◀ key is released.

NOTE:

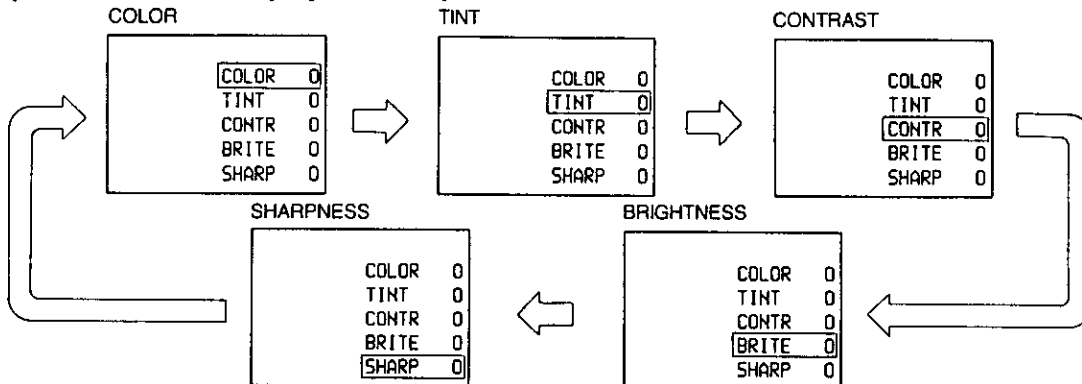
- The Projection Monitor has been adjusted before shipping. Please make additional adjustments to suit your personal taste.
- These picture and sound quality settings can be stored in the AV MEMORY preset memory. See AV MEMORY on page 35.
- To return to the standard settings initially set at the factory, simply press the STD/AV MEM key so that the screen shows 'STANDARD'.
- The COLOR, Contrast (CONTR) and Brightness (BRITE) adjustments cannot be selected while the DPO switch is on. If you wish to adjust them, turn the DPO off.



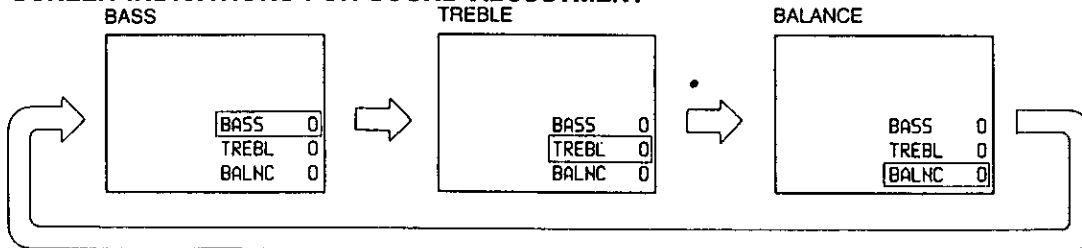
Temporary AV Memory recall

When the display disappears from the screen, the existing AV settings will be stored in the temporary memory mode. In this mode, the monitor's temporary AV memory settings will be restored when the power is turned on.

SCREEN INDICATIONS FOR PICTURE AND SOUND ADJUSTMENT (Selected item is displayed in red.)



SCREEN INDICATIONS FOR SOUND ADJUSTMENT



NOTE:



- If the color seems abnormal but cannot be fixed by color or tint adjustment, you may need to align the color convergence (see page 24).
- Bass and treble tone control adjustment range will be shown as a value between -32 and +31, and balance adjustment range will be shown as a value between L32 and R31.

- During the DPO adjustment and AV memory operation, 'DPO', 'STD', 'AV1' or 'AV2' will be shown on the left side of the screen. When the tone control or picture quality control are adjusted, these displays will disappear from the screen except for the 'DPO' display.

AV MEMORY

After making adjustments, you can store your picture and tone quality settings in the two AV MEMORY presets. Follow the procedure below.

Storing a Setting

- 1 Watch a TV show, video tape, or video disc.
- 2 Adjust the picture and tone using the PICTURE key, SOUND key and ADJUST key.
- 3 Press the MENU ON/OFF button to display the MENU, and press the MENU SELECT/ADJUST buttons until the AV MEMORY display turns red.
- 4 Press the MENU SET button.
- 5 Press the MENU SELECT/ADJUST button to select the AV memory (AV MEMORY 1 or AV MEMORY 2) in which the setting is to be stored. The unlocked display () will appear on the screen next to the selected AV MEMORY.
- 6 Press the MENU SET button to store the settings in AV memory. Upon completion of memory storage, the locked display () appears on the screen.
- 7 Press the MENU ON/OFF button to return to normal operation.

Recalling a Setting

Press the STD/AV MEM key on the remote control unit. Each press of the STD/AV MEM key moves the selection from STANDARD to AV MEMORY 1, to AV MEMORY 2, display off and then back to STANDARD again. (Press the key while the previous legend is still on the screen, otherwise, it will return to the STANDARD setting.)

Returning to the Standard Setting

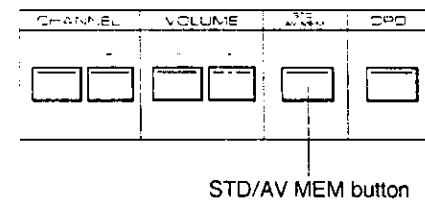
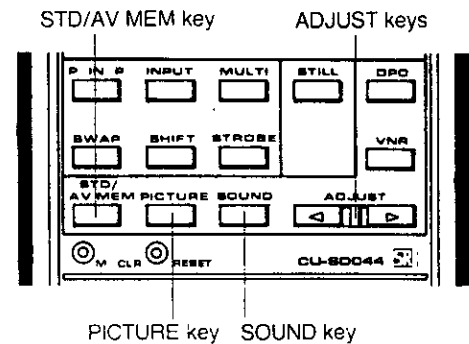
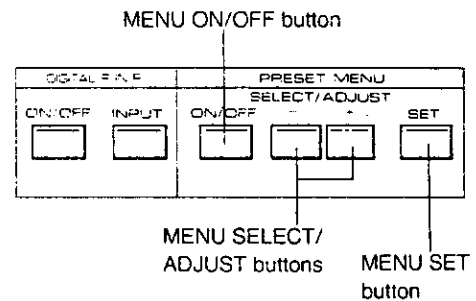
Press the STD/AV MEM key so that the screen shows STANDARD.

Recalling a setting with the STD/AV MEM key on the control panel

Press the STD/AV MEM button repeatedly to recall a setting, as described above for the remote control operation keys.

NOTE:

- Adjustments made to the AV memory, bass and treble tone, etc. will only affect the output from the AUDIO OUTPUT (VARIABLE) jacks.
All other signals output from the Projection monitor will be unaffected.
Only the original output signal is sent through the monitor output jacks.



AV Memory assignment

AV memory can be assigned to a selected input source: TV, LD or VIDEO. For example, the AV memory settings for TV can be stored in the STANDARD mode, LD settings in AV MEMORY 1 and VIDEO settings in AV MEMORY 2. Press the input selector key repeatedly to select the desired input source, then press the STD/AV MEM key repeatedly to recall the desired settings.

DPO ADJUSTMENT

When the DPO (Dynamic Picture Optimizer) switch is on, the monitor automatically adjusts the contrast, brightness and color to match room lighting conditions. This is done according to factory preset specifications which ordinarily do not need to be changed. However, if the DPO is giving you too bright or too dim a picture, you can change its response by following these directions.

DPO adjustment is necessary under the following conditions.

Room conditions	Monitor screen condition	Adjustment
Dim light	Too much brighter than room lighting	DPO DARK Adjustment
Bright light	Dark monitor screen (Picture cannot be seen clearly)	DPO LIGHT Adjustment

- 1 Under dim or bright room lighting conditions, watch a TV show, video tape, or video disc.
- 2 Press the MENU ON/OFF button to display the MENU, and press the MENU SELECT/ADJUST buttons until the DPO BASE display turns red.
- 3 Press the MENU SET button. "DPO LIGHT" and "DPO DARK" appear on the screen.
- 4 Press the MENU SELECT/ADJUST buttons to select the adjustment as follows:
Bright room → select DPO LIGHT
Dim room → select DPO DARK
- 5 Press the MENU SET button. "COLOR", "CONTR (Contrast)" and "BRITE (Bright)" appear on the screen.
- 6 Press the MENU SET button to select the adjustment items; "COLOR", "CONTR" or "BRITE".
Press the MENU SELECT/ADJUST buttons to adjust the selected item.
- 7 Repeat step 6 to adjust the other two adjustment items.
- 8 Press the MENU ON/OFF button after all adjustments are completed.

DPO system and AV MEMORY system

When the DPO system is turned off, the monitor picture will be set according to its original picture data (reference AV MEMORY data, memorized AV MEMORY 1 data or AV MEMORY 2 data).

When the DPO system is turned on, the monitor picture will be set according to a combination of the original AV MEMORY data (reference AV MEMORY data, AV MEMORY 1 or AV MEMORY 2 data) and the DPO adjustment data.

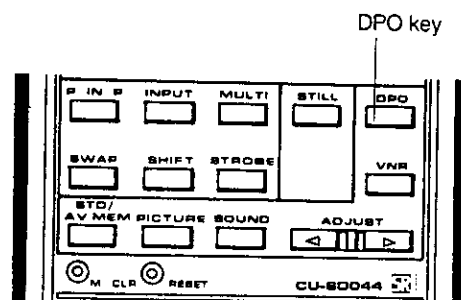
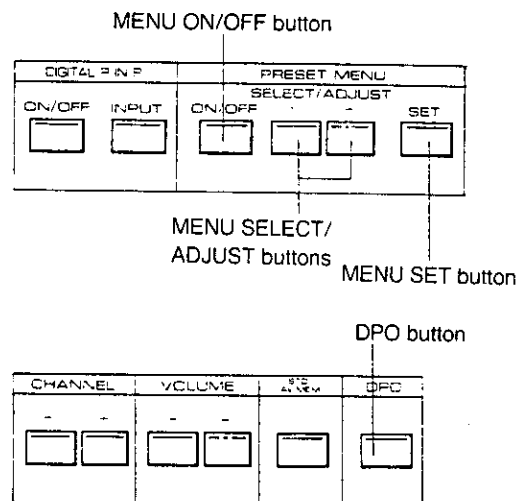
Attention

The following picture adjustments should not be performed when the DPO system is engaged.

They are automatically adjusted to the proper level by the DPO microcomputer according to lighting conditions when the system is turned on.

If you wish to adjust these items, turn the DPO system off before making adjustments.

- COLOR
- CONTRAST (CONTR)
- BRIGHTNESS (BRITE)



HOW TO TURN THE SYSTEM MODE FUNCTION ON AND OFF

On the system mode function

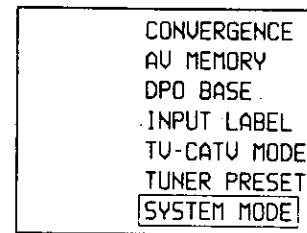
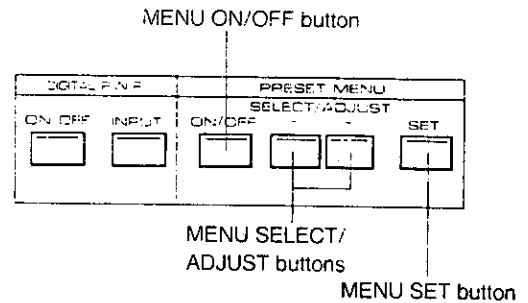
The system mode function is used to internally separate the TV tuner section from the Monitor section of the Projection Monitor. This allows the TV signal to be sent through an AV amplifier before being displayed on screen.

The system mode function can be used to connect all your audio and video components, including the Projection Monitor, to your AV amplifier, and control the operations of all of them with the AV amplifier's remote control unit.

Attention:

- The input selector is automatically set to LD or TV mode when the system mode is engaged.
When the system mode is on, the input selector of the Projection Monitor will not change when the input select button is pressed.
- When using system mode, be sure to turn this function off. The input selector will resume normal operation when system mode is turned off. Follow the instructions below to turn the system mode function on and off.
- If the built-in speakers of the Projection Monitor are being used as the center channel speaker for the surround sound system, the Projection Monitor volume must be set to its maximum position (63).
- When resetting the Projection Monitor after system mode is turned off, set the volume control to its minimum position first.

- 1 Turn on the Projection Monitor.
- 2 Press the MENU ON/OFF button, and press the MENU SELECT/ADJUST buttons until the SYSTEM MODE display turns red.
- 3 Press the MENU SET button to turn the SYSTEM MODE on.
To turn the system mode off, press the MENU SET button again. SYSTEM OFF appears on the screen for 4 seconds.
- 4 Press the MENU ON/OFF button to return to normal operation.



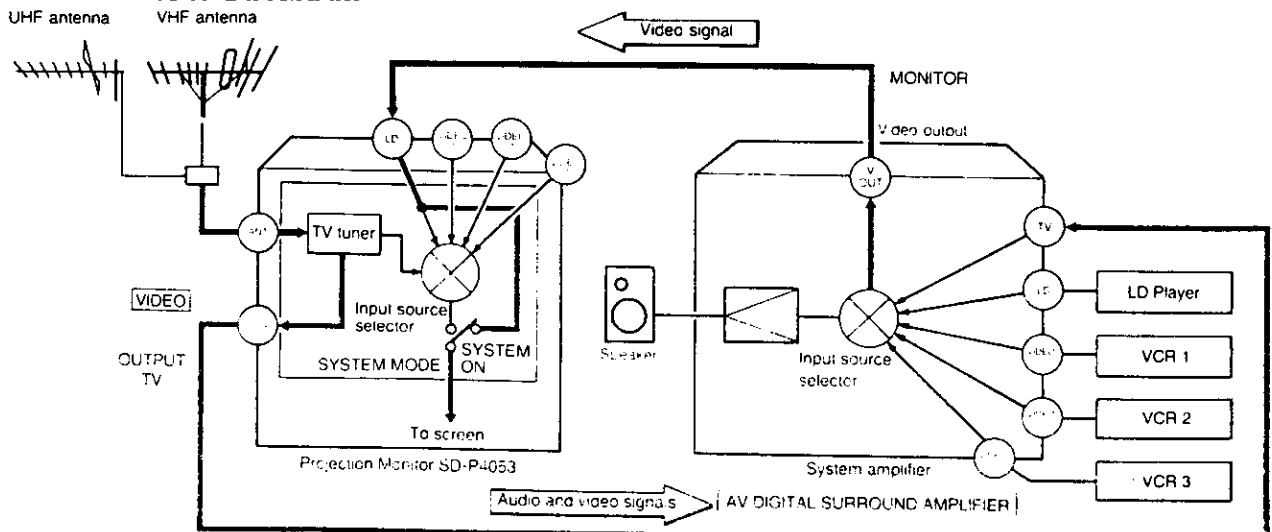
Notes on system mode

When system mode is engaged, the only pictures that can be displayed as a sub-picture are television broadcast pictures. When system mode is selected, the menu display appears on the screen. To make the menu display disappear, press the MENU ON/OFF button.

NOTE:

- Check the power of the Projection Monitor before and after using it. Be sure you turn the power of the Projection Monitor on and off with the remote control unit of the Projection Monitor.
- Perform all volume adjustment with the connected AV amplifier's VOLUME control.

SIGNAL FLOW DIAGRAM



Use commercially available VIDEO/AUDIO cords for connections

TROUBLESHOOTING

Please check the following chart and try the suggested solutions before consulting a PIONEER authorized service center. Often you can fix the problem by making a simple adjustment on the Projection Monitor. Faulty connections may be to blame, or it may be another piece of equipment that is causing the trouble.

SYMPTOM	POSSIBLE CAUSE AND SUGGESTED SOLUTION
NO PICTURE	AC power cord is not plugged into the wall socket. Plug in the AC power cord. Power switch is off. Turn on the power switch on the Projection Monitor, or turn on the TV POWER key on the remote control unit. Selected video signal source is not connected to input jacks, or source component (VCR, etc.) is not turned on or is not providing a signal. Check connections and source unit operation.
COLOR IS WASHED OUT	Color value is too low. Use PICTURE/SOUND key and ADJUST keys to increase COLOR value. Brightness value is too high. Use PICTURE/SOUND key and ADJUST keys to reduce BRIGHT value.
COLOR TINT IS WRONG	Tint value is too high or low. Use PICTURE/SOUND key and ADJUST keys to adjust TINT value.
STATIC IN TV PICTURE	Interference from motor vehicles, neon signs, etc. Try changing the height or direction of the TV antenna. Move the antenna away from the source of interference.
GHOSTING ON SCREEN	This "multipath" distortion is caused when the TV signal is received along two paths directly after being reflected from tall buildings, mountains or other obstacles. Strong winds may have changed the direction of the TV antenna. Try changing the height or direction of the antenna. An antenna with better directional characteristics may be required.
COLORED STRIPES ON SCREEN	Interference from other radio or TV signals. Try changing the height or direction of the antenna. Try changing to a coaxial antenna cable. Coaxial cable is shielded to minimize pickup of interfering signals.
COLORED EDGES ON IMAGES	Color convergence needs adjustment. Tune in a channel, select CONVERGENCE from among the menu items and adjust using the convergence controls on the remote control unit (see page 24 for details).
UNCLEAR PICTURE	Connections are loose or cables are damaged. Check connections and try using new cables. Antenna may be damaged. Check antenna.
POOR PICTURE OR COLOR QUALITY	Interference from a nearby speaker or other source of magnetism. Move source of interference away from the monitor.
NO SOUND	Rear panel SPEAKER SELECTOR is set to EXT, but external speakers are not connected. Set selector to INT.
NO ON-SCREEN CHANNEL OR OTHER DISPLAY; SLEEP TIMER DOES NOT OPERATE	Strong light striking the remote control sensor may cause the internal microcomputer to malfunction. Change the position of the Projection Monitor or change the lighting so that the sensor is not exposed to strong light sources.

- *Abnormal functioning of this monitor may be caused by lightning, static electricity, or other external interference. To restore normal operation, turn the power off and then on again, or unplug the AC power cord and then plug it in again.*
- *With some VCRs, when the VCR is not in play mode, the screen sometimes fluctuates. This is not a malfunction.*

CARE OF YOUR PROJECTION MONITOR

DO NOT:

- Do not use strong cleansers, solvents, polishes, or chemically treated cloths to clean the screen or cabinet.
- Do not touch or scratch the screen.
- Do not fasten or place rubber or vinyl items on the monitor.
- Do not use tape on the monitor.
- Do not put any object on the monitor.

DO:

- Use a soft cloth to dust the screen and cabinet.
- If necessary, unplug the monitor and wipe with a soft cloth moistened with warm water (and mild soap if dirt has built up). Dry with a soft, dry cloth.
- Treat the screen with care to avoid scratches or damage.
- Ask your local dealer to clean the interior of the monitor if maximum picture brightness decreases. This may be caused by dust build-up inside.

BLOCK DIAGRAM

