HITACHI

PROJECTION COLOR TV
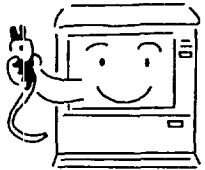
50FX30B   60FX32B

OPERATING GUIDE
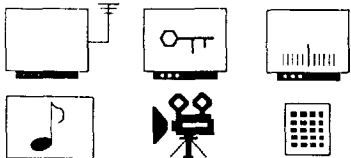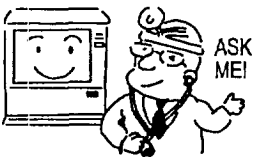
Follow all warnings and instructions marked on this television receiver.

CAUTION	
RISK OF ELECTRIC SHOCK DO NOT OPEN	⚠

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

The lightning flash with arrowhead symbol, 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 a sufficient magnitude to constitute a risk of electric shock to persons.

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.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS TELEVISION SYSTEM TO RAIN OR MOISTURE.

NOTE: • There are no user serviceable parts inside the receiver.
• Model and serial numbers are indicated on back side of the set.

POWER SOURCE

This projection color TV is designed to operate on 120 volts 60Hz, AC household current. Insert power cord into a 120 volt 60Hz outlet.

TO PREVENT ELECTRIC SHOCK, DO NOT USE THE TELEVISION'S PLUG WITH AN EXTENSION CORD, RECEPTACLE, OR OTHER OUTLET UNLESS THE BLADES AND GROUND TERMINAL CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

NEVER CONNECT THE TV TO 50Hz, DIRECT CURRENT, OR ANYTHING OTHER THAN THE SPECIFIED VOLTAGE.

NOTE: This television receiver will display television closed captioning, (CC or ▢), in accordance with paragraph 15.119 of the FCC rules.

⚠ **CAUTION:** Never remove the back cover of the set as this can expose you to very high voltages and other hazards. If the set does not operate properly, unplug the set and call your dealer or service shop.

IMPORTANT SAFEGUARDS

CAUTION:

• Read all of these instructions.

• Save these instructions for later use.

• Follow all warnings and instructions marked on the television receiver.

SAFETY POINTS YOU SHOULD KNOW ABOUT YOUR HITACHI TELEVISION RECEIVER

Our reputation has been built on the quality, performance, and ease of service of HITACHI television receivers.

Safety is also foremost in our minds in the design of these units. To help you operate these products properly, this section illustrates safety tips which will be of benefit to you. Please read it carefully and apply the knowledge you obtain from it to the proper operation of your HITACHI television receiver.

Please fill out your warranty card at once and mail it to HITACHI. This will enable HITACHI to notify you promptly in the improbable event that a safety problem should be discovered in your product model.

FOR YOUR PERSONAL SAFETY

1. This television set is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other.) This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
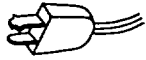
2. When the power cord or plug is damaged or frayed, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
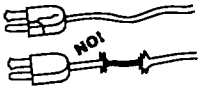
3. Do not overload wall outlets and extension cords as this can result in fire or electric shock.

4. Do not allow anything to rest on or roll over the power cord, and do not place the TV where the power cord is subject to traffic or abuse. This may result in a shock or fire hazard.

5. Do not attempt to service the television set yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

6. Never push objects of any kind into the television's cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the television set.
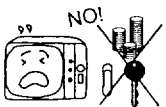
7. If the television set has been dropped or the cabinet has been damaged, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
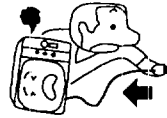
8. If liquid has been spilled into the television set, unplug it from the wall outlet and refer service to qualified service personnel.

9. Do not subject your television set to impact of any kind. Be careful not to damage the picture tube surface.

10. Unplug the television set from the wall outlet before cleaning. Use a damp cloth for cleaning. Do not use liquid or aerosol cleaners.

11-1. Do not place the television set on an unstable cart, stand, or table. The television set may fall, causing serious injury to a child or an adult, and serious damage to the appliance. Use only with a cart or stand recommended by the manufacturer, or sold with the television set. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.

11-2. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

PROTECTION AND LOCATION OF YOUR SET

12. Do not use the television set near water, for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.

• Never expose the set to rain or water. If the set has been exposed to rain or water, unplug set from wall outlet and refer to qualified service personnel.

13. Choose a place where light (artificial or sunlight) does not shine directly on the screen.

14. Avoid dusty places, since accumulated dust inside the chassis may cause failure of the set when high humidity persists.

15. The set has slots, or openings in the cabinet for ventilation purposes which provide reliable operation of the receiver and protect the TV from overheating. These openings must not be blocked or covered.
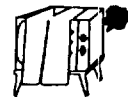
• Never cover the slots or openings with cloth or other material.

• Never block the bottom ventilation slots of the set by placing it on a bed, sofa, rug, etc.

• Never place the set near or over a radiator or heat register.

• Never place the set in a "built-in" enclosure, unless proper ventilation is provided.

PROTECTION AND LOCATION OF YOUR SET

16-1. If an outside antenna is connected to the television set, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges, Section 810 of the National Electrical Code, NFPA No. 70-1975, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit connection to grounding electrode, and requirements for the grounding electrode.

ANTENNA LEAD IN WIRE

GROUND CLAMP

ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)

ELECTRIC SERVICE EQUIPMENT

GROUNDING CONDUCTORS (NEC SECTION 810-21)

GROUNDING CONDUCTORS

POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250 PART H)

NEC NATIONAL ELECTRICAL CODE

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS.

16-2. **Note to CATV system installer:**
(Only for television sets with CATV reception) This reminder is provided to call CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that t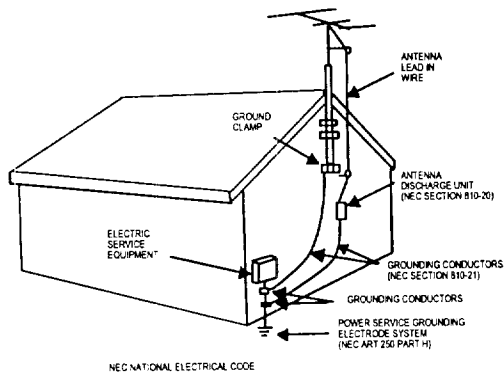he cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

17. An outside antenna system should not be located in the vicinity of overhead power lines or other electrical lights or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
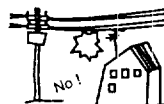
18. For added protection for the television set during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect antenna. This will prevent damage due to lightning and power-line surges.

OPERATION OF YOUR SET

19. This television set should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply at your home, consult your television dealer or local power company. For television sets designed to operate from battery power, refer to the operating instructions.

20. If the television set does not operate normally by following the operating instructions, unplug the television set from the wall outlet and refer servicing to qualified service personnel. Adjust only those controls that are covered in the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the television set to normal operation.
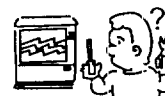
21. If your television set is to remain unused for a period of time, (such as when going on a holiday), turn the television set OFF and unplug it from the wall outlet.

IF THE SET DOES NOT OPERATE PROPERLY

22. If you are unable to restore normal operation by following the detailed procedure in your operating instructions, do not attempt any further adjustments. Unplug the set and call your dealer or service technician.

23. Whenever the television set is damaged or fails, or if there is a distinct change in performance that indicates a need for service, unplug the set and have it checked by a professional service technician.

24. It is normal for some television sets to make occasional snapping or popping sounds, particularly when being turned on or off. If the snapping or popping is continuous or frequent, unplug the set and consult your dealer or service technician.

FOR SERVICING AND MODIFICATION

25. Do not use attachments not recommended by the television set manufacturer as they may cause hazards.

26. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

27. Upon completion of any service or repairs to the television set, ask the service technician to perform routine safety checks to determine that the television is in safe operating condition.

<u>WARNING</u>

Continuous on-screen displays such as video games, stock market quotations, computer generated graphics, and other fixed (non-moving) patterns can cause permanent damage to projection television receivers. Such "PATTERN BURNS" constitute misuse and are <u>NOT COVERED</u> by your HITACHI Factory Warranty.

When using the Picture-in-Picture function, the sub-picture should not be left permanently in one corner of the screen or a "PATTERN BURN" may develop over a long period of time.

This projection television receiver was intended mainly for the private viewing of programs broadcast by TV stations and cable companies and programs from other video sources. Public viewing may require prior authorization from the broadcaster or owner of the video program.

Check to make sure you have the following accessories before disposing of the packing material.
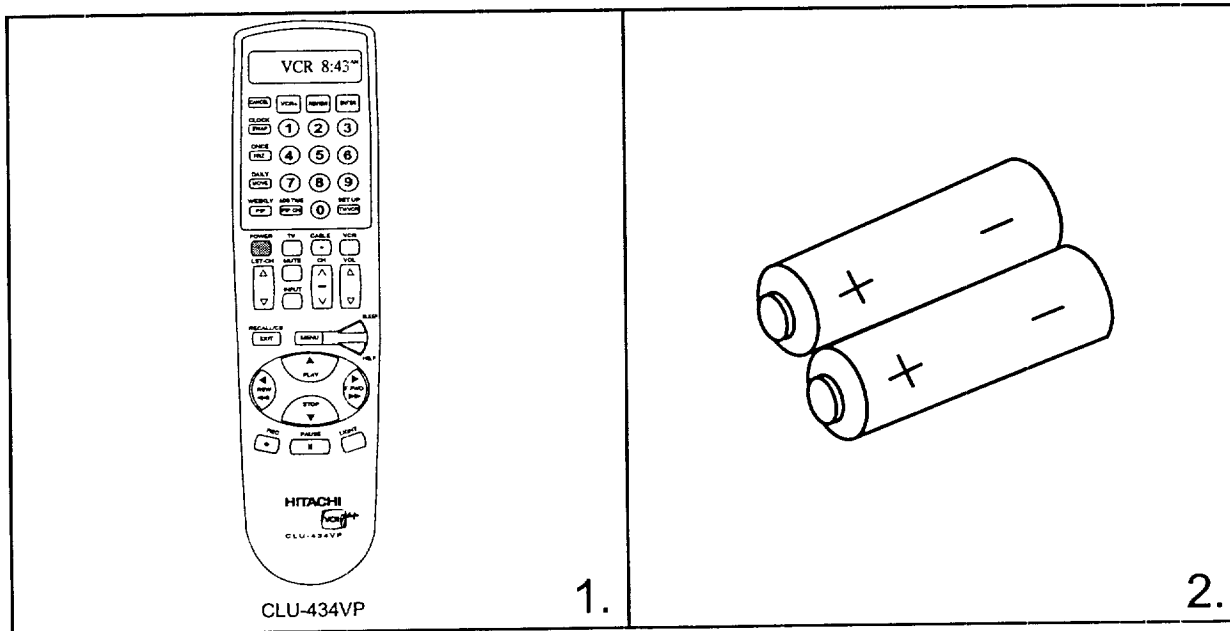
1. Remote Control Unit CLU-434VP (Part No. HL00731).
2. Two "AA" size, 1.5V batteries (For Remote Control Unit).

REMOTE CONTROL BATTERY INSTALLATION AND REPLACEMENT

1. Open the battery cover of the remote transmitter by pushing the notched part of the cover with your fingers and pulling the cover off.

2. Insert two new "AA" size batteries for the remote. When replacing old batteries, push them towards the springs and lift them out.

3. Match the batteries to the (+) and (-) marks in the battery compartment.

4. Replace the cover.

BOTTOM VIEW
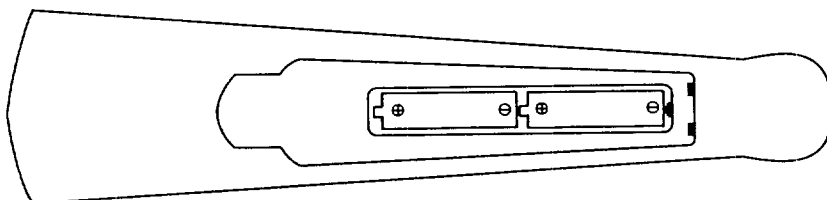
HOW TO SET UP YOUR NEW HITACHI PROJECTION TV

ANTENNA

Unless your TV is connected to a cable TV system or to a centralized antenna system, a good outdoor color TV antenna is recommended for best performance. However, if you are located in an exceptionally good signal area that is free from interference and multiple image ghosts, an indoor antenna may be sufficient.

LOCATION

Select an area where sunlight or bright indoor illumination will not fall directly on the picture screen. Also, be sure that the location selected allows a free flow of air to and from the perforated back cover of the set.
To avoid cabinet warping, cabinet color changes, and increased chance of set failure, do not place the TV where temperatures can become excessively hot, for example, in direct sunlight or near a heating appliance, etc.

VIEWING

The major benefit of the HITACHI Projection Television is its large viewing screen. To see this large screen at its best, test various locations in the room to find the best spot for viewing. The drawings below give several suggestions.

The best picture is seen by sitting directly in front of the TV and about 10 to 18 feet from the screen. Picture brightness decreases as the viewer moves to the left and right of the receiver.

During daylight hours, reflections from outside light may appear on the screen. If so, drapes or screens can be used to reduce the reflection or the TV can be located in a different section of the room.

If the TV's audio output will be connected to a Hi-Fi system's external speakers, the best audio performance will be obtained by placing the speakers equidistant from each side of the receiver cabinet and as close as possible to the height of the picture screen center. For best stereo separation, place the external speakers at least 4 feet from the side of the TV, place the surround speakers to the side or behind the viewing area. Differences in room sizes and acoustical environments will require some experimentation with speaker placement for best performance.
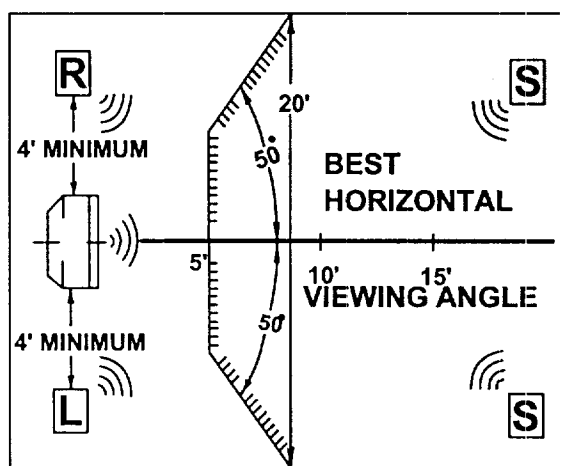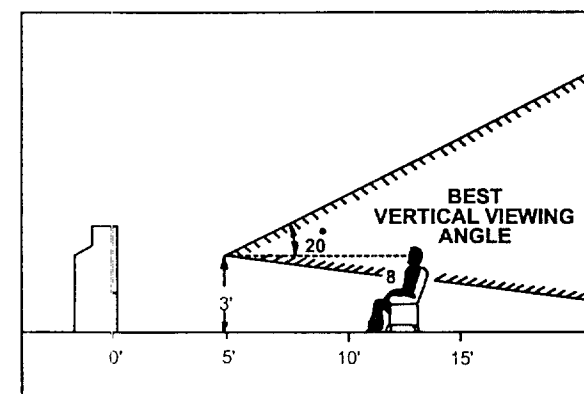
7

Most video/audio connections between components can be made with shielded video and audio cables that have phono connectors. For best performance, video cables should use 75-Ohm coaxial shielded wire. Cables can be purchased from most stores that sell audio/video products. Below are illustrations and names of common connectors. Before purchasing any cables, be sure of the output and input connector types required by the various components. Also make sure the cables are the correct length.
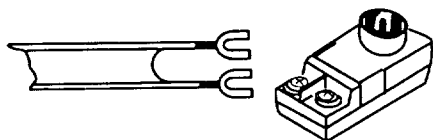
300-Ohm Twin Lead Connector
This outdoor antenna cable must be connected to an antenna adapter (300-Ohm to 75-Ohm).

"F" Type 75-Ohm Coaxial Antenna Connector
For connecting RF signals (antenna or cable TV) to the antenna jack on the television.
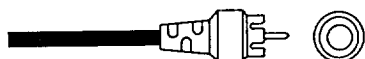
Phono Connector
Used on all standard video and audio cables which connect to inputs and outputs located on the television's rear jack panel and front control panel.

S-Video (Super Video) Connector
This connector is used on camcorders, VCRs and laser-disc players with an S-Video feature in place of the standard video cable to produce a high quality picture.

ANTENNA CONNECTIONS TO REAR JACK PANEL

VHF (75-Ohm) antenna/CATV (cable TV)
When using a 75-Ohm coaxial cable system, connect the outdoor antenna or CATV coaxial cable to the ANT A (75-Ohm) terminal. If you have a second antenna or cable TV system, connect the coaxial cable to the ANT B terminal.
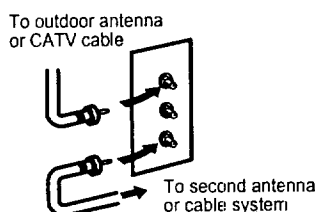
VHF (300-Ohm) antenna/UHF antenna
When using a 300-Ohm twin lead from an outdoor antenna, connect the VHF or UHF antenna leads to screws of the VHF or UHF adapter. Plug the adapter into the antenna terminal on the TV.
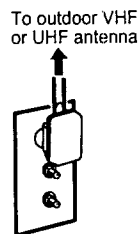
When both VHF and UHF antennas are connected
Attach an optional antenna cable mixer to the TV antenna terminal, and connect the cables to the antenna mixer. Consult your dealer or service store for the antenna mixer.

To outdoor antenna or CATV cable

To second antenna or cable system

To outdoor VHF or UHF antenna

To UHF Antenna   ANT A/ANT B   To outdoor antenna or CATV system

Antenna mixer

8
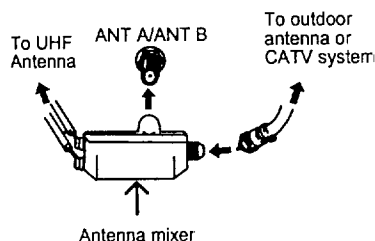
FRONT PANEL CONTROLS

FRONT VIEW
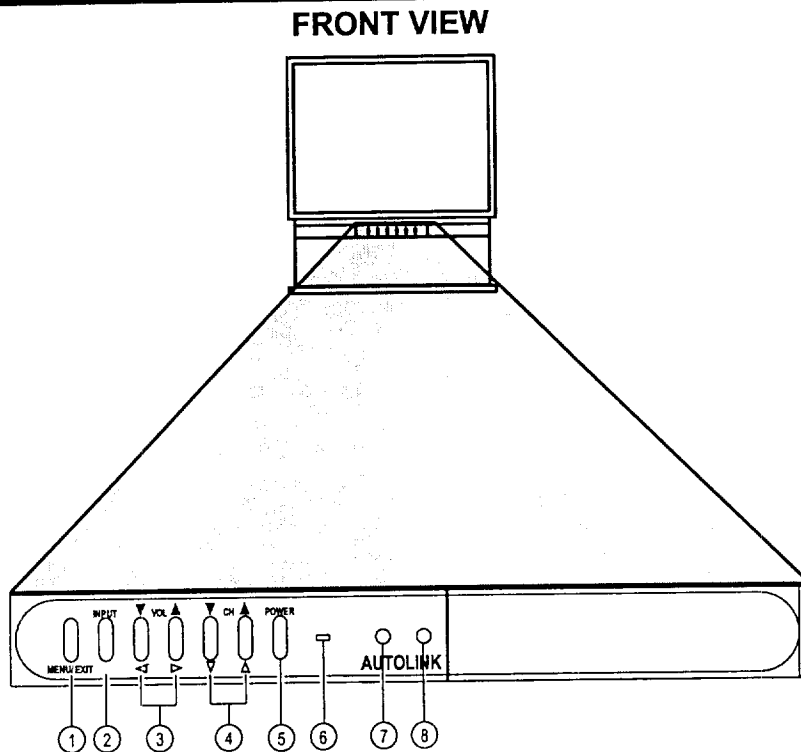
(1) **MENU/EXIT button**
This button allows you to enter the MENU mode and set TV features to your preference without using the remote. This button also serves as the EXIT button when in MENU mode.

(2) **INPUT selector**
Press this button to select the current antenna source, VIDEO: 1, 2, or alternate antenna source. Your selection is shown in the top right corner of the screen.

(3) **VOLUME level**
Press these buttons for your desired sound level. The volume level will be displayed on the TV screen. These buttons also serve as the cursor left and right buttons when in MENU mode.

(4) **CHANNEL selector**
Press these buttons until the desired channel appears in the top right corner of the TV screen. These buttons also serve as the cursor down and up buttons when in MENU mode.

(5) **POWER button**
Press this button to turn the TV on or off.

(6) **POWER light**
You will see a red light when the TV is turned on.

NOTE: Your HITACHI TV will appear to be turned "OFF" if there is no video input when VIDEO: 1 or 2 is selected. Check the Power Light to make sure the TV is off when not in use.

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(7) **AI (Artificial Intelligence) sensor**
The Artificial Intelligence sensor will make automatic picture adjustments depending on the amount of light in the room to give the best picture. (See page 50.)

(8) **REMOTE CONTROL sensor**
Point your remote control at this area when selecting channels, adjusting volume, etc.

9
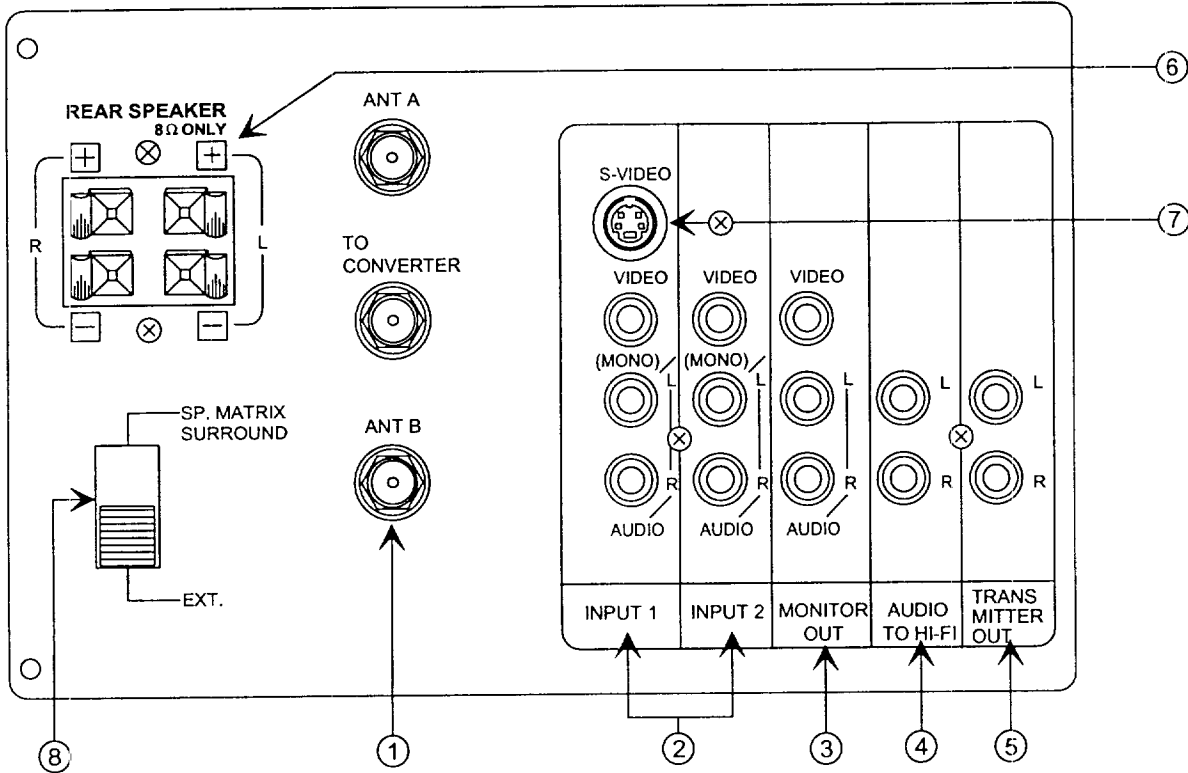
(1) **Antenna Input/Output**
The remote control allows you to switch between two separate 75-Ohm RF antenna inputs, ANT A and ANT B. ANT A input can be displayed as a Main Picture or Sub-Picture. ANT B can only be displayed as a Main Picture. (ANT B cannot be displayed as a PIP sub-picture.) The antenna output labeled TO CONVERTER allows the ANT A connection to pass directly to a different source such as a cable box.

(2) **Audio/Video Inputs 1, 2**
The INPUT button will step through each video source and antenna source input each time it is pressed. Use the audio and video inputs to connect external devices, such as VCRs, camcorders, laserdisc players, etc. (If you have mono sound, insert the audio cable into the left channel jack.)

(3) **Monitor Out**
These jacks provide fixed audio and video signals which are used for recording.

(4) **Audio to Hi-Fi**
These jacks provide variable audio output to a separate stereo system amplifier. With this connection, the audio to the stereo can be controlled by the television's main volume.

(5) **Transmitter Out**
These jacks provide variable audio output to a set of wireless speakers. They can also be used for another stereo system amplifier. With this connection, the audio can be controlled by the television's remote control.

(6) **Rear Speaker Terminals**
These terminals are used to connect external speakers, which are used for the surround sound feature. The volume level is controlled by the remote control's main volume buttons. Use speakers with 8-Ohm impedance only.

(7) **S-Video**
Input 1 provides S-Video (Super Video) jacks for connecting equipment with S-Video output capability.

(8) **Speaker Matrix Surround Switch**
Use this switch to choose between the surround and external speaker features. See page 13 for Audio System Setup. The television's Internal Speakers will be switched off when "EXT." is selected.

Outside antenna or
cable TV coaxial cable

See connections
on page 12.

2-way signal splitter

DO NOT SHORT CIRCUIT THESE TERMINALS.
A SHORT CIRCUIT MAY DAMAGE YOUR TV.
(such damage is NOT covered by your television warranty)

DO NOT USE METAL STAPLES, NAILS, OR OTHER CONDUCTIVE MATERIAL TO SECURE YOUR SPEAKER WIRING.

STOP

CONNECT ONLY 8 Ohm SPEAKERS

REAR SPEAKER
8 Ω ONLY
R   L

ANT A

TO CONVERTER

ANT B

SP MATRIX SURROUND

EXT

S-VIDEO

VIDEO VIDEO VIDEO

(MONO)L (MONO)L

L   L

AUDIO AUDIO AUDIO   R   R

INPUT 1 INPUT 2 MONITOR OUT AUDIO TO HI-FI TRANS MITTER OUT

Surround Speakers

INPUT OUTPUT

Optional, see tips
on page 12

Cable TV box

ANT IN S-VHS V L R
OUTPUT

VCR #1

V L R
OUTPUT

Laserdisc player, VCR,
camcorder, etc.

L R
INPUT

Wireless
Speaker

Wireless
Speaker
Transmitter

Wireless
Speaker

L R
INPUT

INPUT
V L R

VCR #2

Stereo System Amplifier

Typical full feature set-up. Follow the connections that pertain to your personal entertainment system.

Connect after turning the power to the TV OFF.

Press the Right Speaker red button and insert the positive (+) lead wire into the hole next to the button. Once the wire is in place, pull the red button back to original position and the wire is locked into place. In the same manner, press the Right Speaker black button and insert the negative (-) lead wire. Repeat this procedure for the Left Speaker.

CAUTION: Do not short speaker terminals, (do not connect a wire directly across any two terminals). This could cause damage to your audio outputs or damage your TV in other ways.

TO EXTERNAL SPEAKER
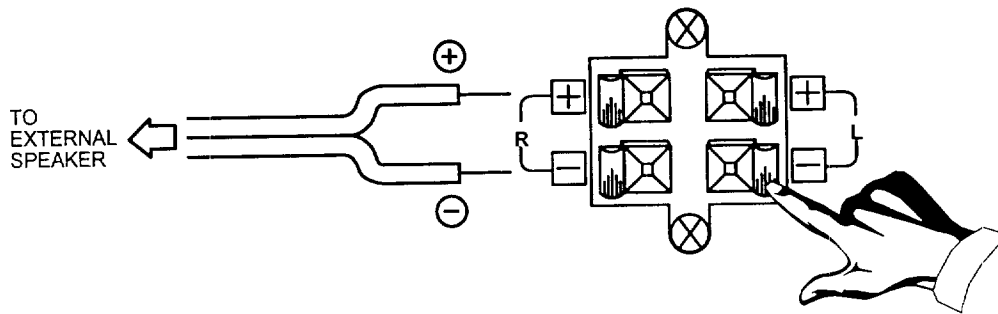
CAUTION: Do not connect speakers simultaneously to the Rear Speaker terminal of the Projection TV and an external amplifier. This could damage both the TV and the speakers. Your TV was designed to use 8-Ohm speakers only. Any other type may degrade the audio performance of your entertainment system.

PROJECTION TV   SPEAKER   AMPLIFIER
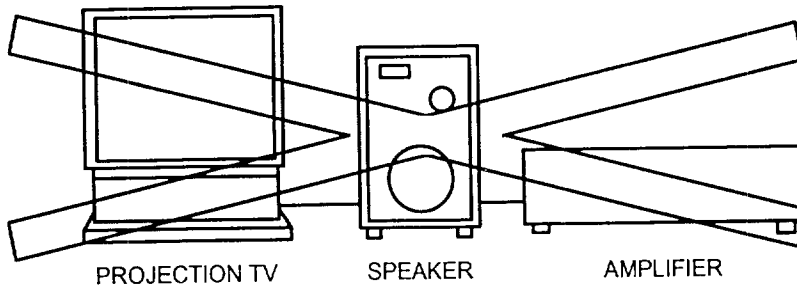
TIPS ON REAR PANEL CONNECTIONS

The S-Video connection is provided for high performance laserdisc players, VCRs etc., that have this feature. Use this connection in place of the standard video connection if your device has this feature.

If your device has only one audio output (mono sound), connect it to the left audio jack on the TV.

Refer to the operating guide of your other electronic equipment for additional information on connecting your hook-up cables.

A single VCR can be used for VCR #1 and VCR #2, but note that a VCR cannot record its own video or line output (INPUT: 1 in the example on page 11.) Refer to your VCR operating guide for more information on "line" input-output connections.

AUDIO SYSTEM SETUP

Match the numbers below to the diagram for speaker placement and refer to the table for the different surround sound requirements.

(1) The television's internal speakers.

(2) These speakers are connected to a separate audio amplifier. Use the AUDIO TO HI-FI output on the TV.

(3) These speakers are connected to the Rear Speaker 8-Ohm output on the TV.

(4) These speakers are controlled by a wireless speaker transmitter. Use the TRANSMITTER OUT output on the TV.
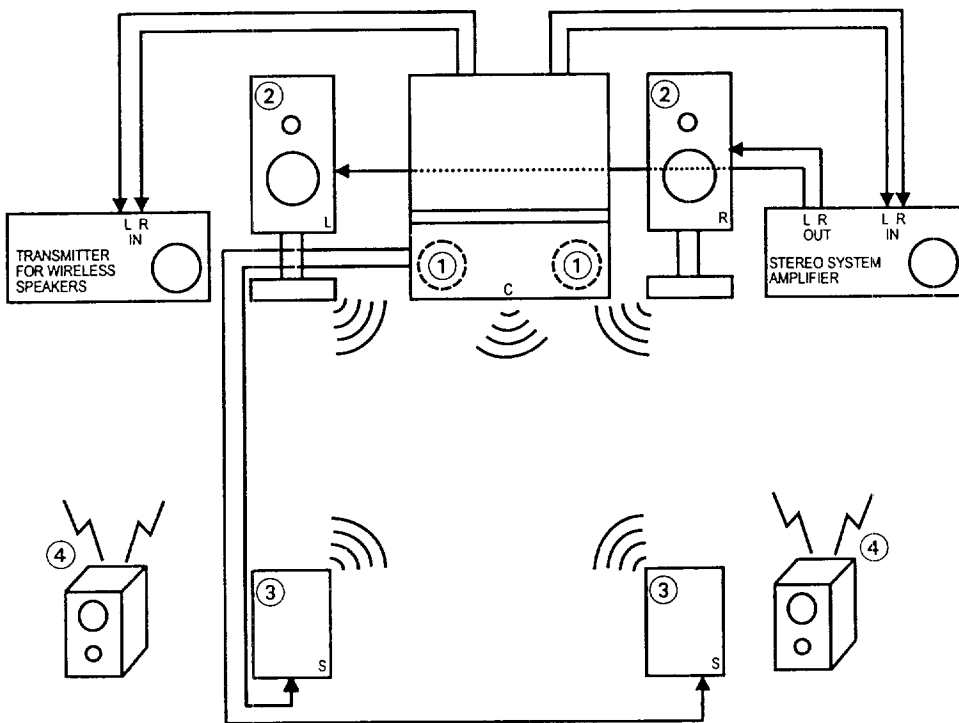
SURROUND FEATURE	SURROUND SWITCH*	REQUIRED CONNECTION	OPTIONAL CONNECTION	EFFECT
OFF	Sp. Matrix Surround	(1)	(2) (4)	Receive Mono and Stereo sound.
MATRIX	Sp. Matrix Surround	(1) (3)	(2) (4)	Receive Movie/Theater-like sound.
EXTERNAL SPEAKERS	EXT.	(2)	(3) (4)	This feature turns off the TV's internal speakers.

* See page 10 for location of Surround Switch.

In addition to controlling all the functions on your HITACHI Projection TV, the new remote is designed to operate different types of VCRs and CATV (Cable TV)/Satellite converters with one touch. Basic operation keys are grouped together in one area.

To operate your TV, point the remote at the remote sensor of the TV and press the TV button on the remote. The remote will now control your TV.

To operate your VCR, point the remote at the remote sensor of the VCR, and press the VCR button on the remote. The remote will now control your VCR. (See page 22 for instructions on how to program the remote to control your VCR.)

To operate your Cable/Satellite Box, point the remote at the remote sensor of the cable/satellite box and press the CABLE button on the remote. The remote will now control your cable/satellite box. (See page 23 for instructions on how to program the remote to control your cable/satellite box.)
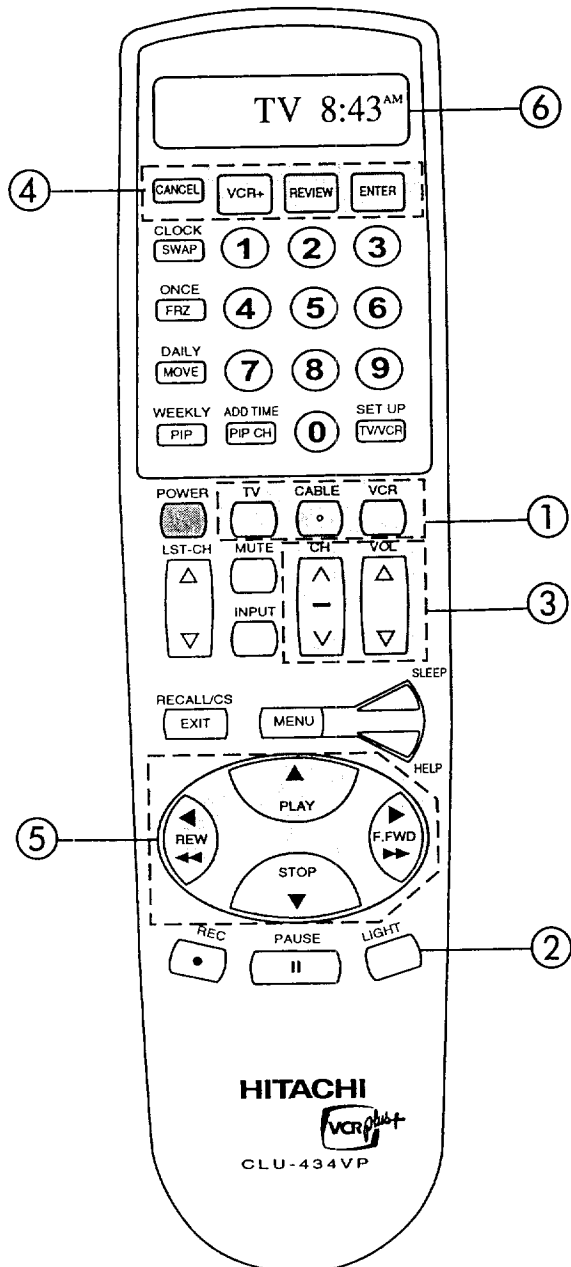
(1) **REMOTE CONTROL MODE BUTTONS**
These buttons allow the remote to control your TV, VCR, or Cable Box depending on which mode is chosen, as explained above.

(2),(3) **LIGHT BUTTON**
When you are in a dark room, press the light button ((2)) to light up the buttons shown in (3). The light will stay on for about 8 seconds if the light button is not pressed again. These buttons will not appear to light if the room is too bright.

(4) **PRECODED VCRPlus+ BUTTONS**
These buttons always transmit the chosen VCR Plus+ codes.

(5) **CURSOR/VCR BUTTON**
When the remote is in TV mode, these are the Cursor buttons. When the remote is in VCR or CABLE mode, these buttons transmit the chosen VCR codes.

(6) This display allows you to view which mode the remote control is in as well as the time. This is also used to determine VCRPlus+ status. (See pages 22, 23, and 26 for more information.)

① **TV POWER button**
Press this button to turn the TV set on or off.
If a Special Event Reminder is set, it will be dis-
played when the TV is first turned on. (See page 55.)

② **EXIT/RECALL/CHANNEL SKIP button**
Press this button when no menu is displayed if you
want to check the channel being received, or if it
has stereo (ST) or second audio program (SAP).

You can also check the time, CHANNEL ID, and if
the SLEEP TIME has been set.
(See pages 18, 38, and 40.)

When in MENU mode, this button will exit all On-
Screen Displays.

Press this button twice quickly, when no menu is
displayed, to enable the CHANNEL SKIP function.
This will tune the TV to the last channel viewed and
after 30 seconds, tune back to the original channel.

CHANNEL ID · Audio Selected · Main Picture Source
NEWS · STEREO · ▶31 · Audio Broadcast
· ST/SA · 14 · Sub Picture Source
SLEEP 0:15 · 10:15 · PIP · TIME
SLEEP TIMER

If a video input is used: · Video Input
VIDEO1 (S-IN) · When an S-Video Input is connected
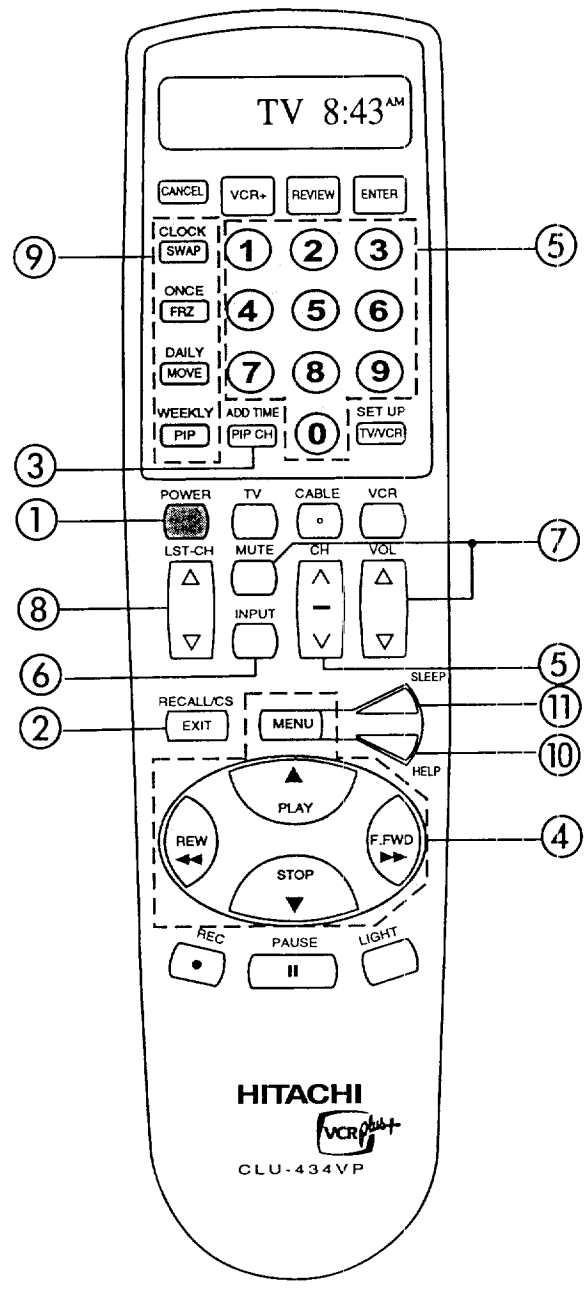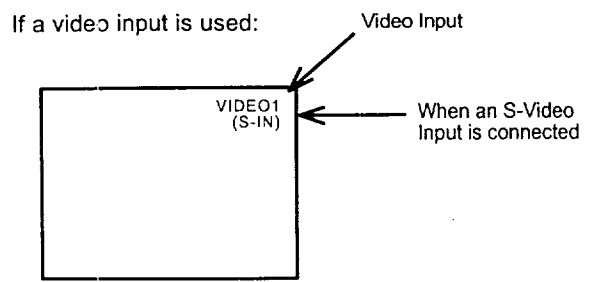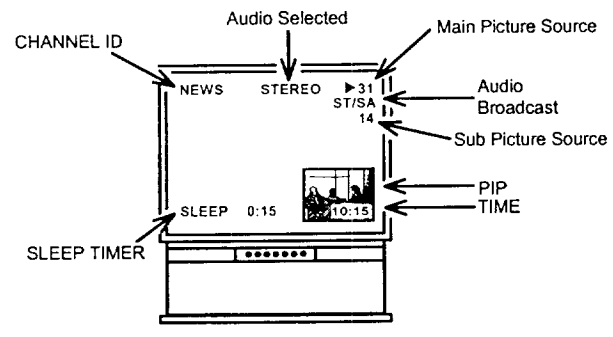
You can also use the RECALL button to quickly clear
many of the other on-screen displays.

TV 8:43ᴬᴹ

CANCEL · VCR+ · REVIEW · ENTER
CLOCK [SWAP] ① ② ③
ONCE [FRZ] ④ ⑤ ⑥
DAILY [MOVE] ⑦ ⑧ ⑨
WEEKLY [PIP] · ADD TIME [PIP CH] · ⓪ · SET UP [TV/VCR]

POWER · TV · CABLE · VCR
LST-CH · MUTE · CH · VOL
INPUT
SLEEP
RECALL/CS · EXIT · MENU
HELP
PLAY
REW · F.FWD
STOP
REC · PAUSE · LIGHT

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③ **PIP CH button**
Use the PIP CH button to select between main picture and sub-picture tuning. An arrow next to the channel number will indicate which channel is being controlled.

④ **MENU, CURSOR buttons**
All the On-Screen Display features can be set or adjusted by using these buttons.

The MENU button will start the On-Screen Display.

The CURSOR buttons will highlight functions or adjust and set different features.

⑤ **CHANNEL SELECTOR buttons**
CHANNEL SELECTOR buttons are used to set Family Favorites, Channel Memory, etc..

Enter two or three numbers to select channels. Enter "0" first for channels 1 to 9. For channels 100 and above, press the 1 button, wait until another dash appears next to the channel display on your TV, then enter the remaining two numbers using the number buttons.

Channel selection may also be performed by pressing CH up (∧) or down (∨).

You may also use these buttons for QUICK LIST. Press and hold the CH up (∧) or down (∨) button and a window will appear, allowing you to choose the channel you wish to tune. Release the CH (∧) or (∨) button when the channel you wish to tune is highlighted, and the TV will tune to that channel.

NOTE:	The TV may not receive some channels if you are not in the correct SIGNAL SOURCE mode. (See page 34.)

⑥ **INPUT button**
The INPUT button will select between both antenna signals and the two sets of video input jacks each time the button is pressed. If the Picture-in-Picture is on, the INPUT button will select between the two sets of video input jacks and both antenna sources when main channel is chosen with the PIP CH button. If the sub-picture is chosen, the INPUT button will select between the two sets of video input jacks and the ANT A antenna source (ANT B source cannot be displayed as a PIP sub-picture.)

NOTE:	When ANT A is selected, the channel number in the upper right corner of the screen is in green. When ANT B is selected, the channel number is in yellow.
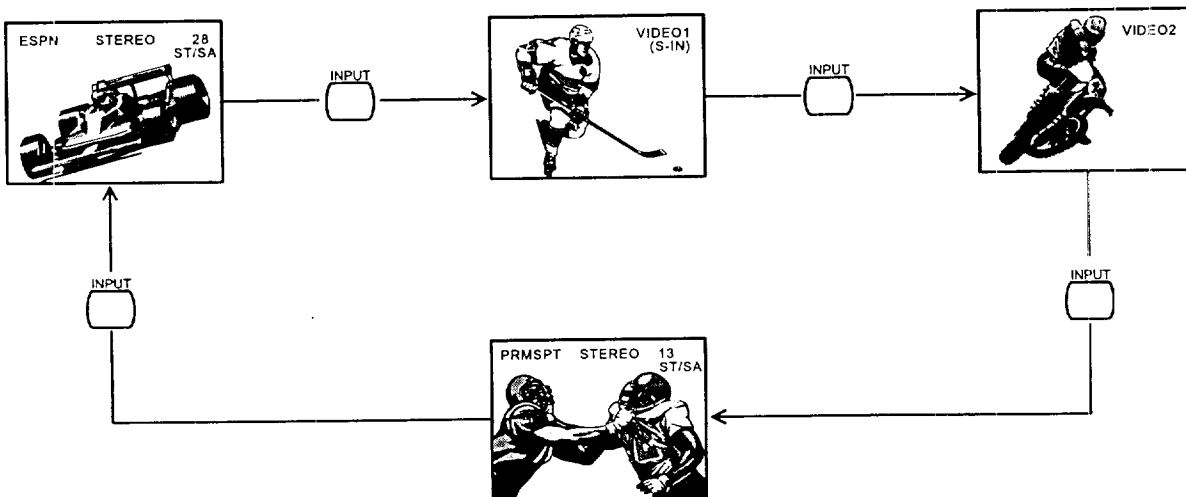
⑦ **VOLUME, MUTE buttons**
Press the VOLUME up (△) or down (▽) button until you obtain the desired sound level.

To turn the sound off instantly to answer the telephone, etc., press the MUTE button. Press the MUTE button again or press the VOLUME up (△) button to restore the sound.
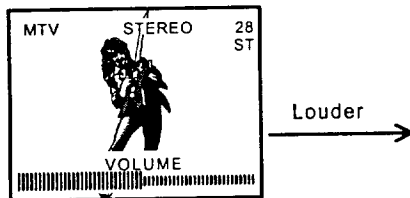
Closed Caption will appear when TV is muted, regardless of CLOSED CAPTIONED on/off.
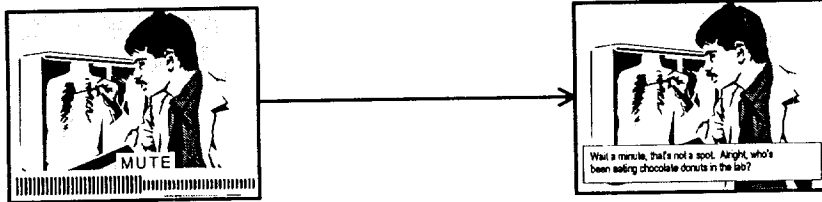
⑧ **LAST CHANNEL (LST-CH) button**
Use this button to select between the last two channels viewed. (Good for watching two sporting events, etc.)
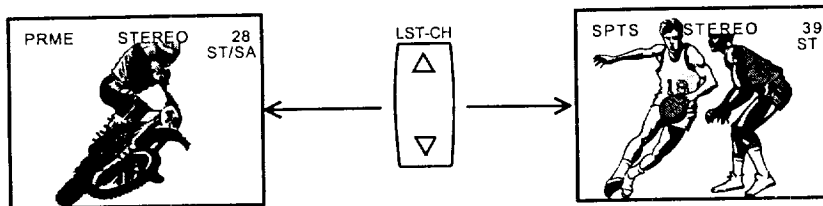
⑨ **PICTURE-IN-PICTURE**
See separate section on page 19 for a description.

⑩ HELP button

Press this button when a menu is displayed to view HELP text, which gives a description of the displayed menu.
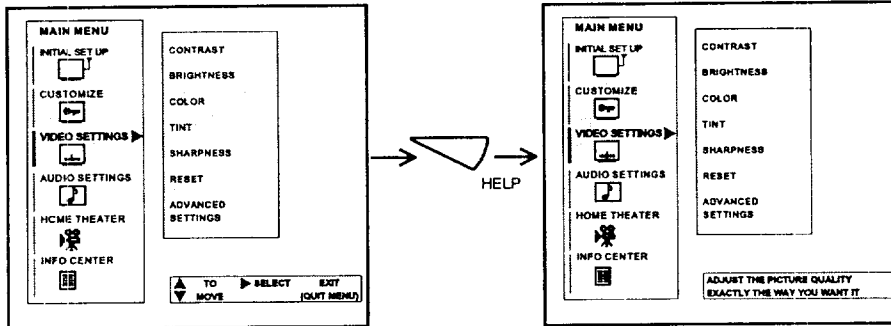
⑪ SLEEP button

Press this button to display the sleep timer in the lower left corner of the screen. Every subsequent press of this button will add 15 minutes to this timer, up to a maximum of 3 hours. Once set, use RECALL when you want to view time remaining. If the SLEEP button is pressed while the timer is set, it will reset to the original condition.

NOTE:	If the TV button is pressed and the remote is already in TV mode, the date and day will be displayed for about 5 seconds. (See page 26 for Remote Control Clock Set procedure.)

Your HITACHI Projection TV incorporates Dual Tuner technology designed for improved viewing enjoyment. This Dual Tuner feature allows you to view antenna inputs on both MAIN and PIP sub-pictures simultaneously, with separate tuning control for each. The Dual Tuner can operate with only one input (ANT A only) or two inputs (ANT A and ANT B).

ANT A input can be viewed as both the main picture and the sub-picture simultaneously. ANT B can only be viewed as a main picture. To select between main picture and PIP sub-picture tuning, press the PIP CH button on the remote. The arrow next to the channel display will move with every press of the PIP CH button. When the arrow is next to the top channel display, channel tuning is for the main picture. When the arrow is next to the lower channel display, channel tuning is for the PIP sub-picture. This method of picture tuning is the same for one antenna input (ANT A only) and two antenna inputs (ANT A and ANT B).

The Picture-in-Picture feature is convenient when you want to watch more than one program at the same time. You can watch a TV program while viewing other programs from the ANT A source or any of the video inputs.
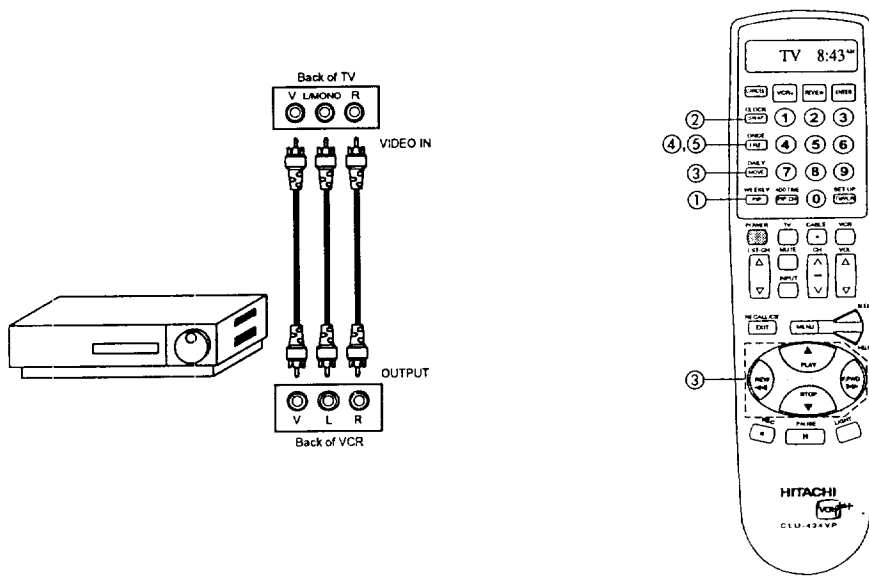
(1) **PIP button**
Press the PIP button and a screen appears which allows you to use PLAY (▲) or STOP (▼) to select which type of PIP you wish to view.

SINGLE MODE PIP
Press the PIP button a second time and a sub-picture appears in one corner of the screen. Press the button again to reduce the size of the sub-picture. Press the PIP button a fourth time to remove the sub-picture from the screen. Use the PIP CH button to select between main and sub-picture tuning control (indicated by arrow next to channel number.) Press the INPUT button when sub-picture channel tuning is being controlled, to change between VIDEO: 1, VIDEO: 2, and ANT A antenna source. (ANT B source cannot be viewed as a sub-picture.)
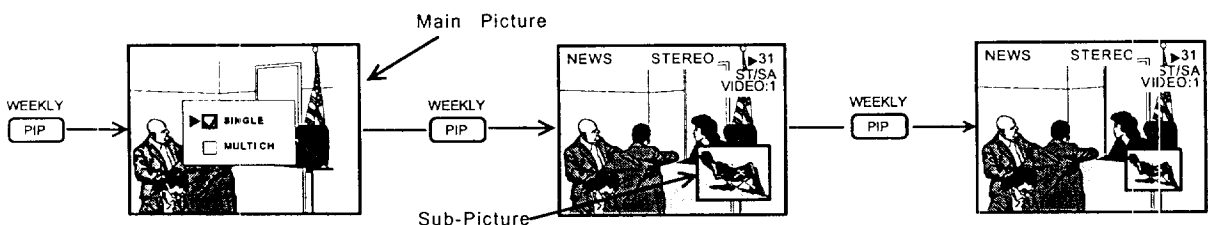
NOTE:	Since ANT B source cannot be viewed as a sub-picture, only single PIP mode is possible when ANT B is selected as the Main Channel.

PICTURE-IN-PICTURE CONT.

MULTI CH PIP
Press the PIP button a second time to begin Multi-Channel PIP. This feature will automatically scan through all active channels (those set in memory) and display them as PIP sub-pictures, along the right edge of the screen. Press the PIP button a third time to remove the sub-pictures from the screen.

NOTE:	1.	If no buttons are pressed when in MULTI-CHANNEL PIP mode, auto-scanning will continuously scan.
	2.	If a channel is tuned during this MULTI-CHANNEL scanning, sub-pictures will be removed from the screen.

(2) **SWAP button**
If you wish to switch what is being shown on the main picture to the sub-picture, press the SWAP button.
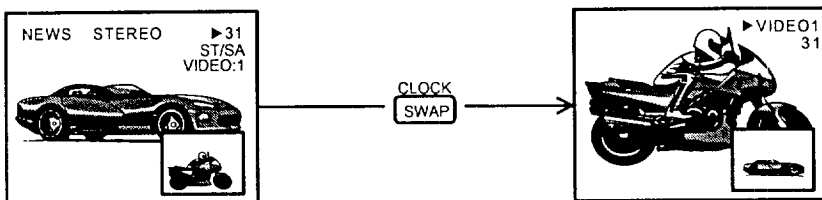
NOTE:	The SWAP button will only operate when SINGLE PIP mode is chosen.
	The SWAP function will not operate if ANT B input is set as the main channel (ANT B input cannot be displayed as a sub-picture).

(3) **MOVE button**
To move the sub-picture to another corner, press the MOVE button. The sub-picture moves one step counter-clockwise every time the MOVE button is pressed. (Example below illustrates the MOVE operation for initial shipping conditions. If you have customized a PIP position, the MOVE operation may differ slightly from this example.)
It is also possible to customize one PIP position. To do this, simply use the remote control REW(◄), F.FWD (►), PLAY (▲), or STOP (▼) buttons while the sub-picture is displayed, to shift the sub-picture to a position you prefer.
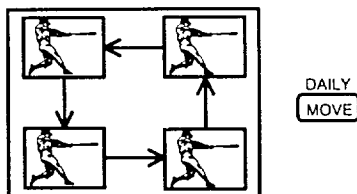
NOTE:	The MOVE and CUSTOMIZING PIP position functions will only operate when SINGLE PIP mode is chosen.
	Make sure the remote control is in TV mode while customizing the PIP position.

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1) FREEZE (FRZ) button (With PIP ON)
If you wish to freeze the sub-picture, press the FRZ button. This is convenient when trying to write down the address for a mail order company, recording statistics for a sporting event, etc. To return the picture to motion, press the button again.

NOTE:	The FREEZE function will only operate when SINGLE PIP mode is chosen.

5) FREEZE (FRZ) button (With PIP OFF)
Press the FRZ button without a sub-picture and a screen appears which allows you to use PLAY (▲) or STOP (▼) to select which type of FREEZE mode you wish to view.

SINGLE FREEZE
Press the FRZ button a second time to freeze one frame of the picture you are currently viewing. Press this button again or PIP to return to normal viewing.
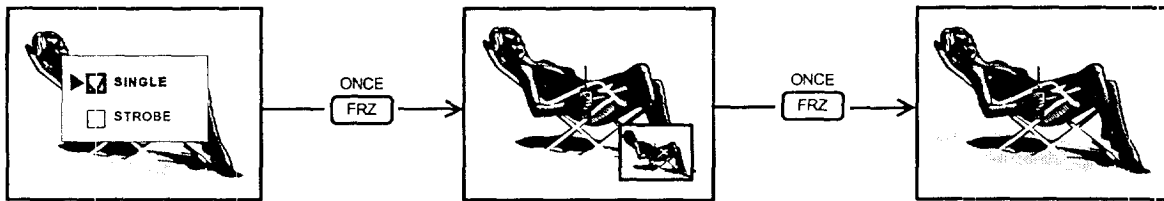
STROBE FREEZE
Press the FRZ button a second time to freeze four frames of the picture you are currently viewing. Press this button again or PIP to return to normal viewing. This feature is useful for viewing a moving picture that has many details, for example, a close play in a sporting event or golf swing.

⚠ CAUTION:	A pattern burn may develop if the sub-picture is left in the same corner permanently. If the PIP feature is used frequently, occasionally shift the sub-picture to a different corner. You may also vary its position using the REW (◄), F.FWD (►), PLAY (▲), or STOP (▼) buttons.

NOTE:	1. Only sound from the main picture can be heard, unless you choose sub-picture audio from HOME THEATER-WIRELESS SOUND mode and use the TRANSMITTER OUT outputs on the rear panel. (See page 54.) 2. Each freeze frame is delayed about 0.1 (1/10) second.

USING THE VCRPlus+ REMOTE TO CONTROL VCR FUNCTIONS

Operating the precoded function for your VCR.

This remote is designed to operate different types of VCRs. You must first program the remote to match the remote system of your VCR. (Refer to page 25.)

1. Turn ON your VCR.

2. Aim the remote control at the front of your VCR.

3. Hold down the VCR button on the remote. After approximately 2 seconds, the message VCR-_ _ will appear in the remote control display. While still holding down the VCR button, enter the 2 digit preset code that matches your VCR as shown on page 25. The remote will turn off your VCR when the correct 2 digit preset code is entered. When this occurs, the remote control is programmed for your VCR. If the VCR does not turn off after 5 seconds, try a different 2 digit preset code.

4. The remote will now control your VCR.

NOTES:
1. If your VCR cannot be operated after performing the above procedures, this means that your VCR's code has not been precoded into the remote.
2. In the unlikely event that your VCR cannot be operated after performing the above procedures, please consult your VCR operating guide.
3. The remote control will remember the codes you have programmed in until the batteries are removed from the remote control. After replacing the batteries repeat the entire programming procedure as stated above.
4. The MENU button will act as the VCR MENU button for HITACHI VCRs.
5. The SLEEP button will act as your VCR '100' button if required.
6. The ENTER button will act as your VCR ENTER button if required.
7. If the VCR button is pressed and the remote is already in VCR mode, the date and day will be displayed for about 5 seconds. (See page 26 for Remote Control Clock Set procedures.)
8. If the remote has not been programmed for a VCR and the VCR button is pressed the message "Err: SETUP" will be displayed.

---
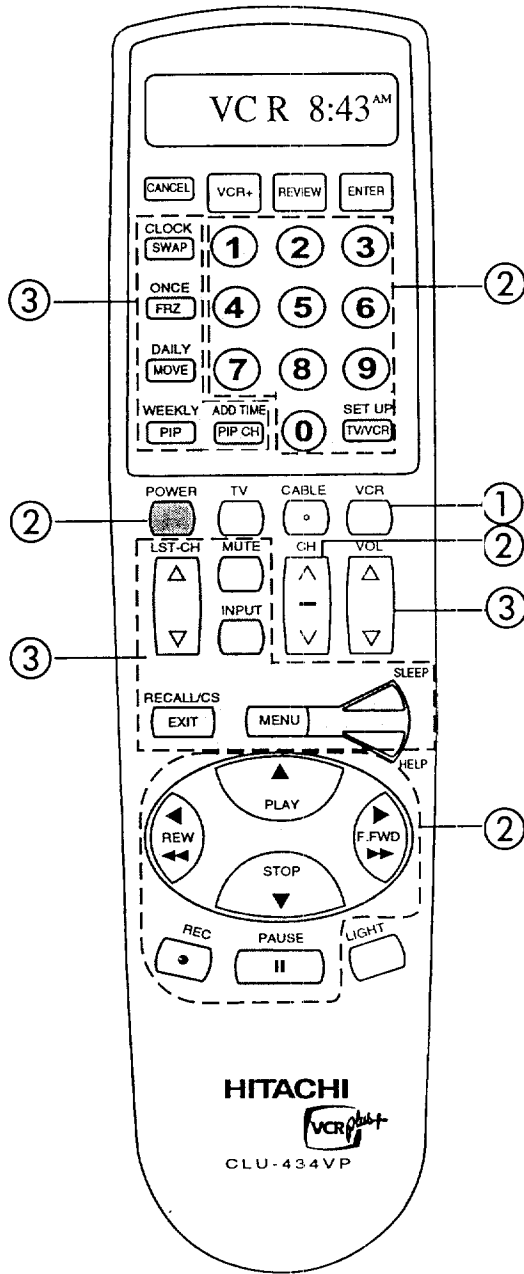
① **VCR button**
   This button allows the remote to control your VCR by setting it to VCR mode.

② **PRECODED VCR buttons**
   These buttons transmit the chosen precoded VCR codes.

③ **EXCLUSIVE TV buttons**
   These buttons are for operating the TV.

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USING THE VCRPlus+ REMOTE TO CONTROL CABLE/SATELLITE BOX FUNCTIONS

Operating the precoded function for your cable/satellite box.

This remote is designed to operate different types of cable boxes and satellite systems. You must first program the remote to match the remote system in your cable/satellite box. (Refer to page 25.)

1. Turn ON your cable/satellite box.

2. Aim the remote control at the front of your cable/satellite box.

3. Hold down the CABLE button on the remote. After approximately 2 seconds, the message CAB-_ _ will appear in the remote control display. While still holding down the CABLE button, enter the 2 digit preset code that matches your cable/satellite box as shown on page 25. The remote will turn off your cable/satellite box when the correct 2 digit preset code is entered. When this occurs, the remote control is programmed for your cable/satellite box. If the cable/satellite box does not turn off after 5 seconds, try a different 2 digit preset code.

4. The remote will now control your cable/satellite box.

NOTES:

1. If your cable/satellite box cannot be operated after performing the above procedures, this means that your cable/satellite box code has not been precoded into the remote.
2. In the unlikely event that your cable/satellite box cannot be operated after performing the above procedures, please consult your cable/satellite box operating guide.
3. The remote control will remember the codes you have programmed in until the batteries are removed from the remote control. After replacing the batteries repeat the entire programming procedure stated above.
4. The SLEEP button will act as your cable/satellite box '100' button if required.
5. The ENTER button will act as your cable/satellite box ENTER button if required.
6. If the CABLE button is pressed and the remote is already in CABLE mode, the date and day will be displayed for about 5 seconds. (See page 26 for Remote Control Clock Set procedure.)
7. If the remote has not been programmed for a cable box and the CABLE button is pressed, the message "ERR: SETUP" will be displayed.
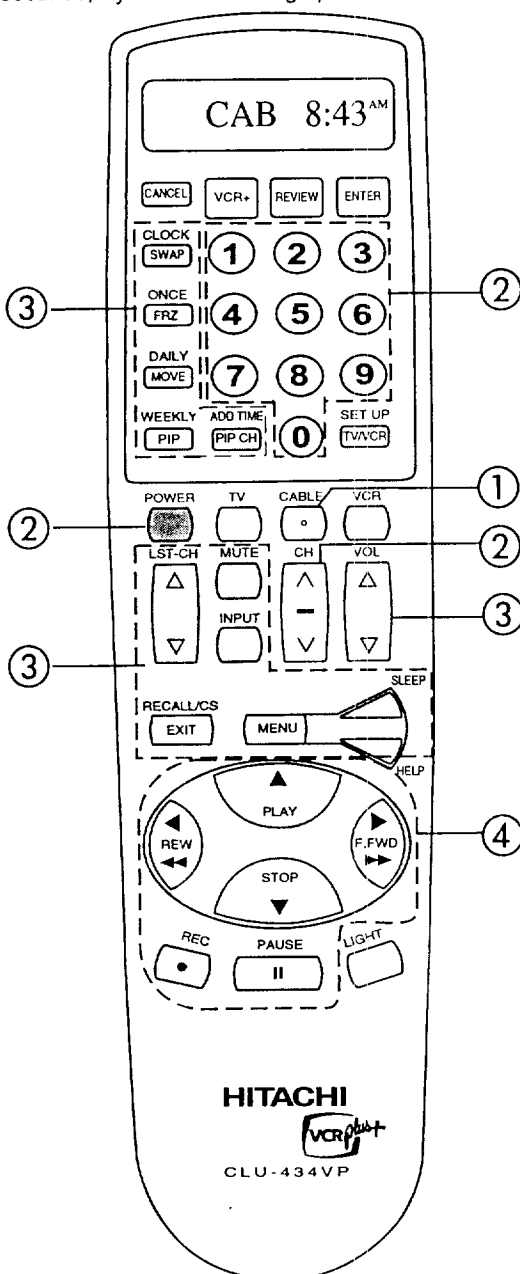
① **CABLE button**
This button allows the remote to control your cable box by setting it to CABLE mode.

② **PRECODED CABLE/SATELLITE BOX buttons**
These buttons transmit the chosen precoded CABLE/SATELLITE codes.

③ **EXCLUSIVE TV buttons**
These buttons are for operating the TV.

④ **PRECODED VCR buttons**
These buttons transmit the chosen precoded VCR codes.

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USING THE VCRPlus+ REMOTE TO CONTROL CABLE/SATELLITE BOX AND VCR FUNCTIONS

In addition to controlling all the functions on your HITACHI Projection TV, the new VCRPlus+ remote is designed to operate different types of VCRs and CATV (Cable TV)/Satellite converters with one touch. The procedures for programming the remote to control your Cable/Satellite box or VCR have been explained on the previous pages. (See pages 22 and 23.)

However, many Cable/Satellite boxes and VCRs vary in control functions. For example, in order to change channels, some VCRs require the user to press an ENTER button after pressing the digit keys. Your VCRPlus+ remote control allows you to program the remote for these varying control functions, based upon your specific needs.

The following procedure allows you to program the VCRPlus+ remote for your specific needs. The table below gives a description of each special function which can be programmed into the remote.

1. Press the VCRPlus+ button on the remote.
2. Enter the 4 digit FUNCTION CODE for the special function you wish to enable, according to the table below.
3. Press the ONCE/[FRZ] button on the remote.
4. Repeat steps 1-3 until all special functions you wish to enable have been programmed into the remote.
5. Press the TV button on the remote to return to normal operation.

NOTE:	If your Cable/Satellite box or VCR does not require these special functions, or you do not wish to enable these functions, it is not necessary to follow these procedures.

FUNCTION CODE	FUNCTION DESCRIPTION
0090	User has set the cable brand number but may wish to change the VCR channel instead of the cable box channel in VCRPlus+ recording. (See page 29 for details.)
0091	For some VCRs (or Cable boxes), after pressing the digit keys to change the channel number, the user will need to press the ENTER key to confirm the channel number has been changed. This function enables the remote to automatically send the ENTER IR code after the channel has been changed. (This function will disable the CH100 function in 0092)
0092	Automatically sends out the CH100 IR code when a 3 digit channel is entered. (This function will disable ENTER code in 0091)
0093	When a two digit channel is changed, some VCRs (or Cable boxes) may require a longer separation time between the two digits. This function makes the separation between two digits to be 1 second.
0094	When a two digit channel is changed, some VCRs (or Cable boxes) may require a shorter separation time between the two digits. This function makes the separation between two digits to be 0.25 second.
0080	Clear all special function settings.
0081	Clear the 0091 function.
0082	Clear the 0092 function.
0083	Clear the 0093 function.
0084	Clear the 0094 function.

* Special functions 0091, 0092, 0093 and 0094 will be cleared if a new VCR brand number is set.

CABLE AND VCR CODES

CABLE BRAND ....CODES

ABC 01, 03, 05, 06, 09,
............11, 12, 14, 30
Allegro 85
Antronix 44
Archer 28, 40, 44
Belcor 31
Cable Star 31
Century 40
Citizen 40
Colour Voice 19, 25
Comtronics 29, 34
Contec 15
Dae Ryung 06
Eastern 02
Electricord 37
Everquest 13
Focus 57
Garrard 40
GC Electronics 31, 44
GE 67
Gemini 13, 32, 36, 46
General Instrument 09, 24, 51
GoldStar 29, 39
Hamlin 08, 16, 27, 49, 50, 80
Hitachi 09
Hytex 05
Jasco 40
Jerrold 03, 09, 10, 12, 13,
............30, 51, 75, 83
Macom 26
Magnavox 21, 62
Memorex 00
Movie Time 35, 37, 42
NSC 35, 36, 42, 68, 69
Oak 05, 15, 47
Panasonic 00, 17, 38
Paragon 00, 76
Philips 19, 21, 22, 23, 24, 25,
............40, 46, 54, 59, 79, 81
Pioneer 18, 39, 65
Popular Mechanics 57
Pulsar 00
RCA 17
Realistic 44
Recoton 57
Regal 16, 49, 50, 53
Regency 02
Rembrandt 09, 36
Runco 00
Samsung 29, 39
Scientific Atlanta ..04, 06, 14, 52, 86
Signal 13, 29
Signature 09
SL Marx 29
Sprucer 17, 55
Starcom 03, 13, 30
Stargate 13, 29
Starquest 13
Starsight 58, 59
Sylvania 01
Teleview 29
Texscan 01, 71
Tocom 10, 11, 33
Toshiba 00
Tusa 13
TV86 35
Unika 40,44
United Artists 05
United Cable 03
Universal 28, 31, 37, 40, 43, 44
Videoway 48
VID Tech 41
Viewstar ..21, 34, 35, 45, 59, 72, 79
Zenith 00, 56, 64, 74
Zentek 57

SATELLITE BRAND ....CODES

Drake 23
General Instrument 61
Jerrold 61, 62
Macom 73
Primestar 61, 62
RCA 60, 82
Sony 63
United Satellite 77
Zenith Drake 66
Zenith 70, 78

TELEVISION BRAND ......CODES

Hitachi 00
Megatron 00

VCR BRAND ....CODES

Admiral 61
Adventura 00
Aiko 50
Aiwa 00
Akai 14, 23, 49, 60, 67
American High 09
Asha 48
Audio Dynamics 04
Audiovox 10
Beaumark 48
Bell & Howell 30, 55
Brandt 38
Broksonic 33, 37, 43, 51, 52
Calix 10
Canon 09
Capehart 05
Carver 28
CCE 27, 50
Citizen 10, 50
Colt 27
Craig 10, 19, 27, 48
Curtis Mathes 09, 14, 22
Cybernex 48
Daewoo ...03, 05, 17, 29, 50, 54, 70
Daytron 05, 70
DBX 04
Dynatech 00
Electrohome 10
Electrophonic 10
Emerex 06
Emerson ..00, 01, 10, 16, 23, 32, 33,
.......37, 40, 41, 43, 44, 45, 50,
..........................51, 52
Fisher 19, 21, 25, 30, 55
Fuji 07, 09
Funai 00
Garrard 00
GE 09, 22, 24, 39
Goldstar 04, 10, 11
Go Video 56
Go Video Deck 1 62
Go Video Deck 2 63
Gradiente 00
Harley Davidson 00
Harman/Kardon 11
Harwood 27
Headquarter 18
HI-Q 19
Hitachi 14, 15, 24, 31, 57
Jensen 14
JVC 02, 04, 14, 25, 26, 58
KEC 10, 50
Kenwood 04, 11, 14, 26
KLH 27
Kodak 9, 10
Lloyd 00
Lloyd's 40
Logik 27
LXI 10

VCR BRAND ....CODES
(cont.)

Magnavox 09, 12, 28, 32, 34
Magnin 48
Marantz 09, 28
Marta 10
Matsushita 09
MEI 09
Memorex 00, 09, 10, 12,
............18, 19, 20, 30, 48
MGA 16, 23
MGN Technology 48
Minolta 15, 31
Mitsubishi 16, 23, 26, 36, 49, 59
Montgomery Ward 13, 69
Motorola 09, 20
MTC 00, 48
Multitech 00, 27
NEC 04, 11, 13, 14, 26, 30
Nikko 10
Noblex 48
Olympus 09, 47
Optimus 10, 20, 30
Orion 51
Panasonic 09, 35, 46, 47, 53, 66
Penney 09, 10, 11, 13, 15, 21, 48
Pentax 15, 24, 31
Philco 09
Philips 09, 28, 32
Pilot 10
Pioneer 26, 65
Portland 05, 70
Protec 27
Pulsar 12
Quarter 18
Quartz 18
Quasar 09
Radio Shack 00, 10
Radix 10
Randex 10
RCA 15, 22, 24, 31, 34, 39, 42
Realistic 00, 09, 10, 18, 19,
............20, 25, 30, 48
Ricoh 08
Runco 12
Samsung 11, 17, 48
Sanky 12, 20
Sansui 14, 26
Sanyo 18, 19, 30, 48, 55
Scott 16, 17, 32, 33, 37, 43, 44
Sears 09, 10, 15, 18, 19,
............21, 25, 30, 31
Sharp 20, 61
Shintom 27
Shogun 48
Signature 2000 ....13, 69
Singer 27
Sony 06, 07, 08, 09
STS 15
Sylvania 00, 09, 16, 28, 32
Symphonic 00
Tatung 04, 14
Teac 00, 04, 14
Technics 09, 35
Teknika 00, 09, 10, 64
Telefunken 38
TMK 40, 48
Toshiba 16, 17, 25, 44
Totevision 10, 48
Unitech 48
Vector 17
Vector Research 11, 13
Video Concepts 13, 17, 23
Videosonic 48
Wards 00, 09, 15, 19, 20, 22,
............27, 34, 44, 48
XR-1000 ....00, 09, 27
Yamaha 04, 11
Zenith 07, 08, 12, 25, 68

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The VCRPlus+ feature makes timed recordings a snap. You do not need to enter the specific channel, date, and time of the program you wish to record. Instead, all you need to do is enter the programs PlusCode (a number of up to eight digits). This special code is easy to find in your favorite TV program guide or daily newspaper.

Before using the VCRPlus+ function, it is necessary to set the remote control clock as well as assign your local broadcast and cable channels to the VCRPlus+ channel codes. The remote should already be programmed to control your VCR. (See page 22.)

REMOTE CONTROL CLOCK SET

1. Press the VCR+ button on the remote control.

2. Press the CLOCK button on the remote and the following is displayed:

```
SET
   Hr -_ _
```

3. Enter the hour by pressing the digit buttons on the remote.

4. Press the ENTER button on the remote and the following is displayed:

```
SET
   Min -_ _
```

5. Enter the minute by pressing the digit buttons on the remote.

6. Press the ENTER button on the remote. Then press the '1' button for AM or the '2' button for PM and the following is displayed:

```
SET
   MO -_ _
```

7. Enter the month by pressing the digit buttons on the remote. (01-January, 02-February, etc.)

8. Press the ENTER button on the remote and the following is displayed:

```
SET
   DA -_ _
```

9. Enter the day by pressing the digit buttons on the remote.

10. Press the ENTER button on the remote and the following is displayed:

```
SET
   YR -_ _
```

11. Enter the last two numbers of the year by pressing the digit buttons on the remote.

12. Press the ENTER button on the remote and the time is now set and displayed. Remote Control Clock Set is now complete.

NOTE: If the batteries are removed from the VCRPlus+ remote control, it may be necessary to repeat the Remote Control Clock Set procedure.

VCRPlus+ CHANNEL SET UP

Once the Remote Control Clock Set procedure is complete, it is necessary to assign your local broadcast and cable channels to the VCRPlus+ channel codes.

To begin, it is necessary to get a copy of a publication that carries the VCRPlus+ Guide Channel codes in your area. Your local TV program guide or Sunday newspaper TV section should carry these codes, which are two or three digit numbers located next to each station. (If you have cable, you may also need to get a copy of your cable company channel line-up.)
See example to the right.

Broadcast Stations

Los Angeles

2 KCBS (CBS) 02 ◄————— GUIDE CH

4 KNBC (NBC) 04

Palm Springs

6 KMIR (NBC) 36

Cable Stations

(HBO) Home Box Office 33

(LIF) Lifetime 48

(MAX) Cinemax 45

(SHO) Showtime 41

(TMC) The Movie Channel 58

(USA) USA Network 44

Sample television listing showing guide channel numbers.

JSING THE VCRPlus+ FUNCTIONS

1. Look at column 1 of the chart to the right. Compare the stations in column 1 with those in your local TV guide or cable company channel line-up. List all stations you receive in the blank lines of column 1.
2. In column 2, write in the corresponding VCRPlus+ guide channel codes found in your local TV guide or cable company channel line-up.
3. In column 3, list the channel number on which you actually receive each station, according to your local TV guide or cable company channel line-up.
4. You are now ready to assign your local broadcast and cable channels to the VCRPlus+ channel codes.
   Press the VCR+ button on the remote control and the following is displayed:

   > VC R PLUS+

5. Press the SETUP button on the remote and the following is displayed:

   > GUIDE CH TV CH
   > — — — — — — —

6. Refer to the chart where you have entered numbers in column 2 and column 3, corresponding to each local broadcast or cable station. Using the digit buttons on the remote, enter the two digit numbers from column 2 (Guide CH).
7. Press the ENTER button on the remote.
8. Using the digit buttons on the remote, enter the number from column 3 (TV CH).
9. Press the ENTER button on the remote.
10. Repeat steps 6 through 9 until all rows on your chart have been completed. (All stations are programmed.)
11. Repeatedly press the REVIEW button on the remote to review each entry you have programmed into the remote. You have reviewed all assigned station once the following is displayed:

    > GUIDE CH TV CH
    > —
    > — — — — — —

12. If you wish to delete an entry, press REVIEW until the entry appears, then press the CANCEL button on the remote one time. Now press the ENTER button on the remote. The entry has now been deleted.
13. Once all stations have been assigned and reviewed, press a remote control mode button (TV, Cable, or VCR) or ENTER to return the remote to normal operation.

Column 1	Column 2	Column 3
Cable and Broadcast Stations (call letters)	VCRPlus+ Assigned Channel (Guide CH)	Your Home Channel (TV CH)
Broadcast Stations		
ABC		
CBS		
NBC		
FOX		
PBS		

NOTE:
1. Be sure to assign your local broadcast and cable channels to the VCRPlus+ channel codes or your VCR will record a different channel than the one you intended. If the number in column 2 matches the number in column 3 (VCRPlus+ guide channel code and actual TV channel are the same), it is not necessary to set up that channel according to the above procedure. Also, these stations will not be shown upon REVIEW because they are default settings.
2. You can skip this channel setup for any station you do not plan to record.
3. Only one TV channel can be programmed for each VCRPlus+ Guide Channel.
4. If the batteries are removed from the VCRPlus+ remote control, it may be necessary to repeat the VCRPlus+ Channel Set Up procedure.

USING VCRPlus+ TO RECORD A PROGRAM

Once the Remote Control Clock Set has been set, the remote has been programmed for your VCR, and the VCRPlus+ channel set up is complete, you may take advantage of this quick and easy method of recording. To begin, it is necessary to get a copy of a publication that carries the VCRPlus+ PlusCodes. These special PlusCodes can be found in your favorite TV program guide or newspaper. Below is a sample program listing with PlusCodes next to each program.

> **10:30 4 29** GOLDEN GIRLS (CC) 55996 61286
>
> Awaiting the results of an HIV test Rose (Betty White) has an agonizing 72 hours to kill--if the uncertainty doesn't kill her first.
> **9** DENNIS MILLER 60 min 854809
> **29** MOTORWEEK '92 65064
> **30** JOY OF MUSIC 69828
> **38** NIGHTLINE (CC) - Ted Koppel 631151
> **59** STAR TREK 60 min. 229199
>
> **PlusCodes**

1. Check your TV program guide for the PlusCode of the program you wish to record.
2. Press the VCR+ button on the remote control.
3. Enter the PlusCode found in step 1, using the digit buttons on the remote. If an error is made, press the CANCEL button and re-enter the PlusCode.
4. You must now decide if you want the program to be recorded ONCE (one time only), DAILY (every day), or WEEKLY (once a week). Press the button on the remote which corresponds to your choice.
5. The remote control will display program information depending upon which mode was chosen in step 4.
    ONCE: date of program, program guide channel, program time
    DAILY: DA, program guide channel, program time
    WEEKLY: day of program, program guide channel, program time
6. Review the program information to make sure it matches the program you wish to record. If it does, then the remote has been programmed correctly and the display will time-out after about 5 seconds. If it does not, press the CANCEL button on the remote to cancel the entry.
7. Repeat steps 3 through 6 if you wish to program the remote to control more than one program.
8. Once the remote has been programmed with the correct PlusCodes, press a remote control mode button (TV, CABLE, or VCR) to return to normal operation.

REVIEW A PROGRAM

Occasionally you may wish to review the VCRPlus+ programs you have entered in the remote control for recording.

1. Press the VCR+ button on the remote control.
2. Repeatedly press the REVIEW button on the remote to review each recording entry.
3. Once all recording entries have been viewed, 'END' will be shown in the remote control display. Press a remote control mode button (TV, CABLE, or VCR) or the CANCEL button to return the remote to normal operation.

ADD TIME TO PROGRAM

Sometimes you may wish to add time to increase your total recording time. For example, you may specify additional time when recording sporting events, to allow adequate recording time.

1. Press the VCR+ button on the remote control.
2. Press the REVIEW button on the remote until the program you wish to add time is displayed.
3. Press the ADD TIME button on the remote. Time will be added in 15 minute increments (up to a maximum of 4 hrs., 15 mins.) with each subsequent press of the ADD TIME button.
4. Press the ENTER button to set the added time. It will be entered automatically if no button is pressed for about 5 seconds.
5. Repeat steps 2 through 4 to add time to additional programs.
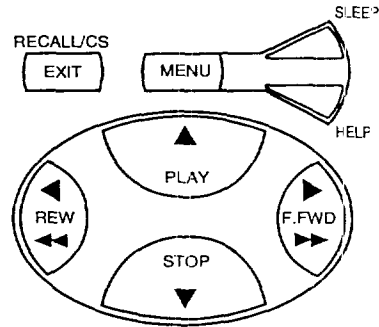6. Press a remote control mode button (TV, CABLE, or VCR) to return the remote to normal operation.

NOTE: When reviewing the VCRPlus+ programs entered in the remote control, you will notice one or several dashed lines under the date displayed. Each dash represents 1 hour or portion thereof. (i.e., 30 minute program = 1 dashed line, 1 hour 15 minute program = 2 dashed lines.)

USING THE VCRPlus+ FUNCTIONS

DELETE A PROGRAM

You may occasionally wish to delete a program which has been entered into the remote control for recording.

1. Press the VCR+ button on the remote control.
2. Press the REVIEW button on the remote until the program you wish to delete is displayed.
3. Press the CANCEL button on the remote, then 'CANCELLED' will be shown in the remote control display.
4. Repeat steps 2 and 3 to delete additional programs.
5. Press a remote control mode button (TV, CABLE, or VCR) to return the remote to normal operation.

NOTE:

1. If the program information displayed on the remote does not match the program you wish to record, the wrong PlusCode has been entered. Check your TV program guide and repeat the above procedure. If the program information is still incorrect, make sure the VCRPlus+ Channel Set Up procedure has been completed. (See page 26.)

2. Some stations may have two VCRPlus+ codes. Enter the code which corresponds to the channel on which you receive the station. Use the REVIEW function (see page 28) to make sure the information programmed into the remote matches the program you wish to record.

3. The program guide channel displayed with program information on the remote should match the column 2 number (page 27) for the station you wish to record.

4. It will not be possible to use this VCRPlus+ record function if the remote control clock is not set or the remote has not been programmed for your VCR.

5. Make sure there is a blank tape in your VCR for recording.

6. When the remote is programmed to control your VCR only or it controls your VCR and cable box but function code 0090 has been enabled (see page 24):
    *   VCR should be off.
    *   Remote should be aimed at your VCR.
    *   At the program Start Time, the remote will power on the VCR, tune the correct VCR channel, and start recording.
    *   At the program End Time, the remote will stop recording and power off the VCR.

7. When the remote is programmed to control your VCR and cable box:
    *   Cable box should be on.
    *   VCR should be off.
    *   Remote should be aimed at your VCR and cable box.
    *   At the program Start Time, the remote will tune the correct cable box channel, power on the VCR, and start recording.
    *   At the program End Time, the remote will stop recording and power off the VCR.

8. If 'CLASH' is displayed when entering a VCRPlus+ program, another program is scheduled for recording at that time.

9. If you enter a program recording mode (ONCE, DAILY, or WEEKLY) which is invalid, the message "Err: CODE" will be displayed. (i.e., you choose DAILY for a program which is on only once a week.)

10. If recording is manually stopped before VCRPlus+ recording End Time, the remote control will remain in record mode and turn the VCR off at End Time. To prevent this, delete the program using the delete procedure.
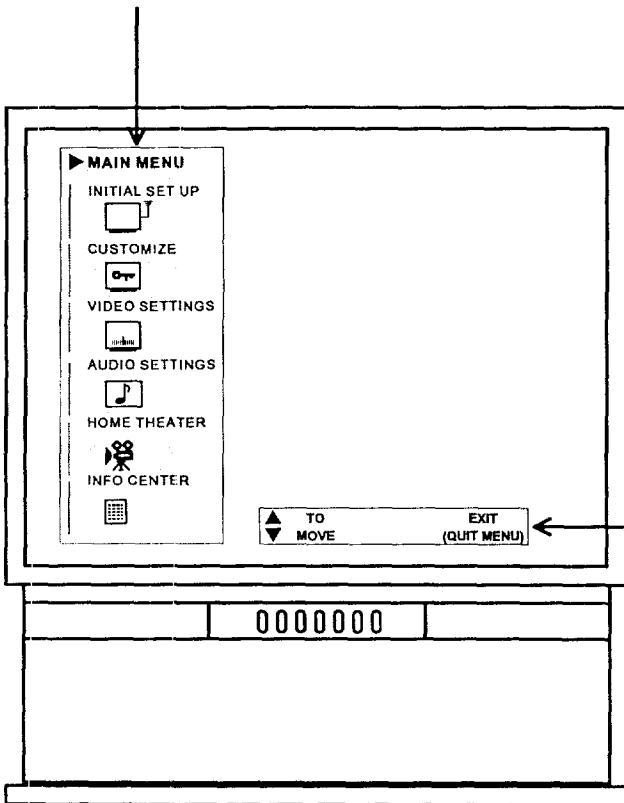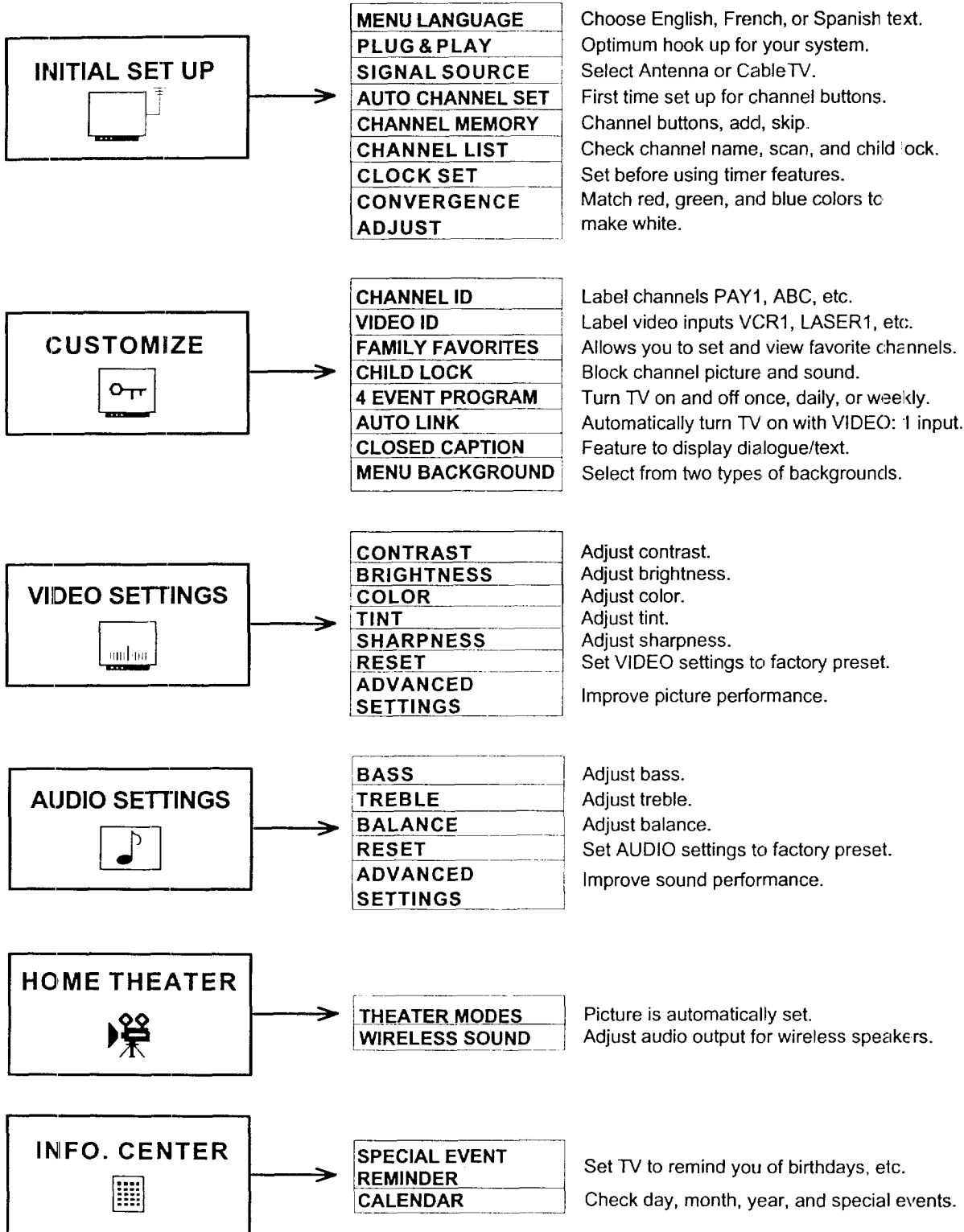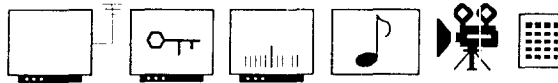
1. Press MENU on the remote control to display the different features on your HITACHI Projection TV.

2. Press REW (◀), F.FWD (▶), PLAY (▲), or STOP (▼) to highlight a different feature.

3. Press EXIT on the remote control to quickly exit from a menu.

4. Press HELP on the remote control when a menu is displayed, and text will appear giving a description of that menu.

This part of the screen shows what selections are available.

▶MAIN MENU

INITIAL SET UP

CUSTOMIZE

VIDEO SETTINGS

AUDIO SETTINGS

HOME THEATER

INFO CENTER

| ▲ | TO | EXIT |
| ▼ | MOVE | (QUIT MENU) |

This part of the screen shows which remote control buttons to use.

0000000

INITIAL SET UP	MENU LANGUAGE	Choose English, French, or Spanish text.
	PLUG & PLAY	Optimum hook up for your system.
	SIGNAL SOURCE	Select Antenna or CableTV.
	AUTO CHANNEL SET	First time set up for channel buttons.
	CHANNEL MEMORY	Channel buttons, add, skip.
	CHANNEL LIST	Check channel name, scan, and child lock.
	CLOCK SET	Set before using timer features.
	CONVERGENCE ADJUST	Match red, green, and blue colors to make white.

CUSTOMIZE	CHANNEL ID	Label channels PAY1, ABC, etc.
	VIDEO ID	Label video inputs VCR1, LASER1, etc.
	FAMILY FAVORITES	Allows you to set and view favorite channels.
	CHILD LOCK	Block channel picture and sound.
	4 EVENT PROGRAM	Turn TV on and off once, daily, or weekly.
	AUTO LINK	Automatically turn TV on with VIDEO: 1 input.
	CLOSED CAPTION	Feature to display dialogue/text.
	MENU BACKGROUND	Select from two types of backgrounds.

VIDEO SETTINGS	CONTRAST	Adjust contrast.
	BRIGHTNESS	Adjust brightness.
	COLOR	Adjust color.
	TINT	Adjust tint.
	SHARPNESS	Adjust sharpness.
	RESET	Set VIDEO settings to factory preset.
	ADVANCED SETTINGS	Improve picture performance.

AUDIO SETTINGS	BASS	Adjust bass.
	TREBLE	Adjust treble.
	BALANCE	Adjust balance.
	RESET	Set AUDIO settings to factory preset.
	ADVANCED SETTINGS	Improve sound performance.

HOME THEATER	THEATER MODES	Picture is automatically set.
	WIRELESS SOUND	Adjust audio output for wireless speakers.

INFO. CENTER	SPECIAL EVENT REMINDER	Set TV to remind you of birthdays, etc.
	CALENDAR	Check day, month, year, and special events.

| INITIAL SET UP | Select INITIAL SETUP when setting your TV up for the first time. Use PLAY (▲) or STOP (▼) on the remote to highlight the function desired. |
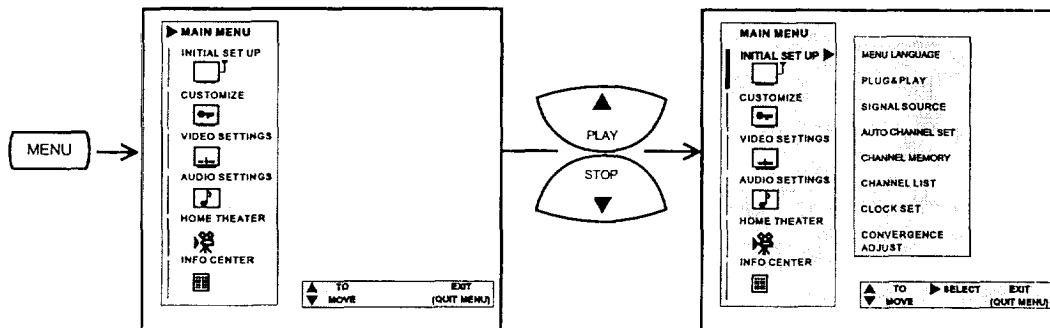
NOTE: To see an auto-demonstration of the on-screen display with HELP text displayed, press and hold the POWER button on the TV set for approximately 5 seconds. Press the POWER button on the TV again to end the auto-demonstration.

| MENU LANGUAGE | This feature will allow you to select any one of three different languages for all on-screen displays. |
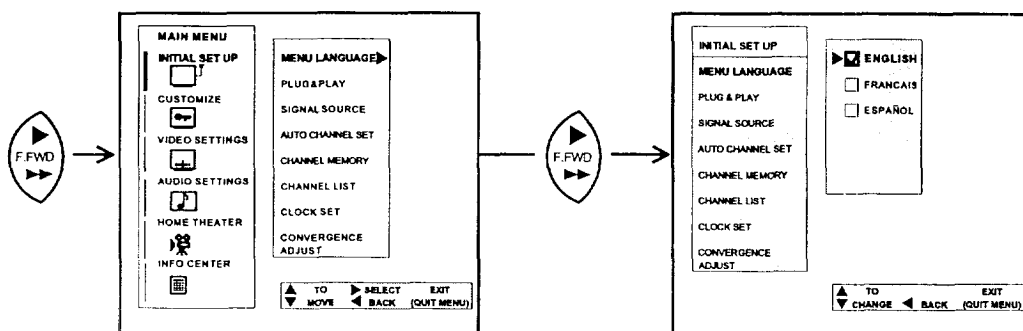
Use PLAY (▲) or STOP (▼) to select the MENU LANGUAGE of your choice.

Press EXIT to quit menu or REW (◄) to return to previous menu.

INITIAL SETUP

<table>
<tr><td>**PLUG & PLAY**</td><td>This graphic guide function will help you to properly set up your TV or Home Theater System. Simply answer two questions and a graphic will be displayed, showing you the optimum setup for your personalized system.</td></tr>
</table>
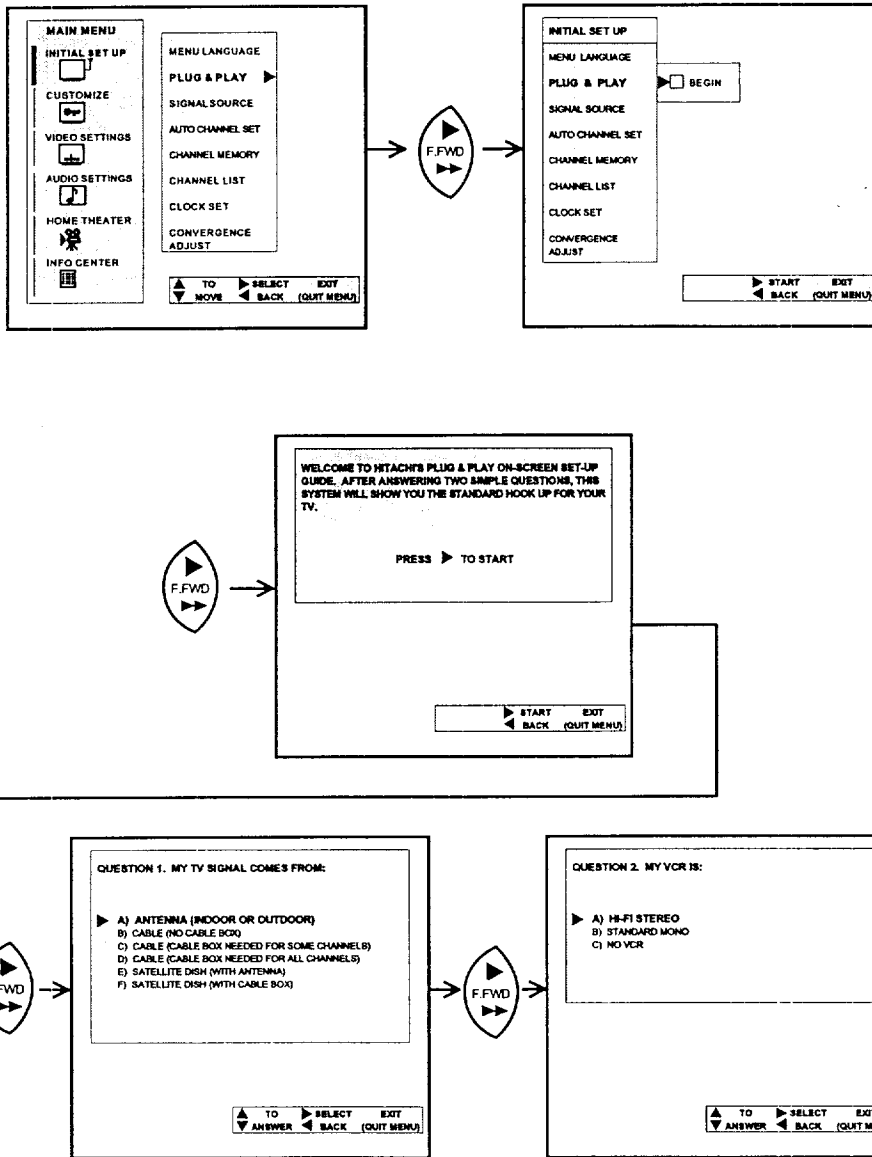
Press PLAY (▲) or STOP (▼) to highlight the correct answers to both questions.
Press F.FWD (▶) to display the graphic guide.
Press EXIT to quit menu or F.FWD (▶) to begin AUTO CHANNEL SET. (See page 35.)

SIGNAL SOURCE	Select ANTENNA if you are using an indoor or outdoor antenna. Select CATV if you have cable TV.
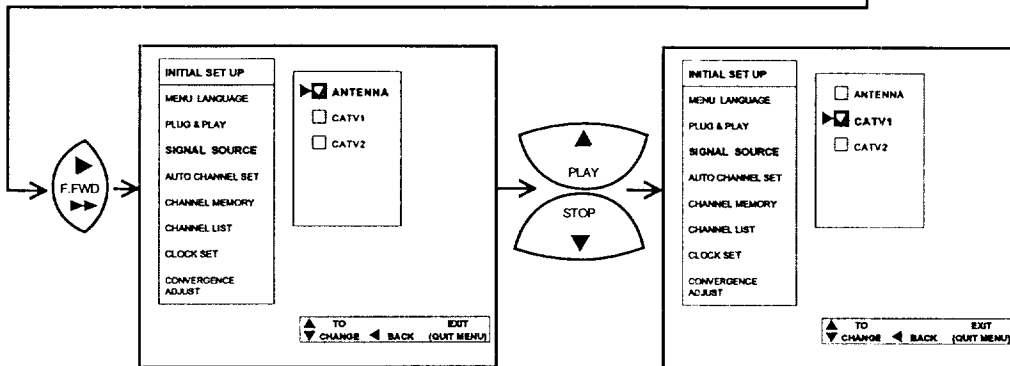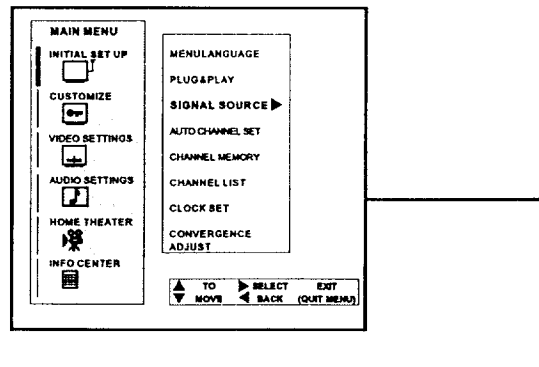
Press PLAY (▲) or STOP (▼) to highlight and select the correct SIGNAL SOURCE mode.
Press EXIT to quit MENU or REW (◄) to return to previous menu.

RECEPTION BAND		
	CATV 1 OR CATV 2	
AIR	CATV CHANNEL	Indicated on the screen
VHF 2 ~ 13ch UHF 14 ~ 69ch	VHF 2 ~ 13	2 ~ 13
	Mid band A ~ I	14 ~ 22
	A-5 ~ A-1	95 ~ 99
	Super Band J ~ W	23 ~ 36
	Hyper band W + 1 ~ W + 28	37 ~ 64
	Ultra band W + 29 ~ W + 84	65 ~ 125

Reception channels for each mode are shown at the left.

Refer to your cable or TV guide for channel identification standards.

If certain CATV channels are poor or not possible in CATV1 mode, set SIGNAL SOURCE to CATV2.

INITIAL SETUP

| AUTO CHANNEL SET | This feature will automatically store active TV channels in CHANNEL MEMORY. This will allow you to skip over unused channels when using CHANNEL UP (∧) or DOWN (∨). |
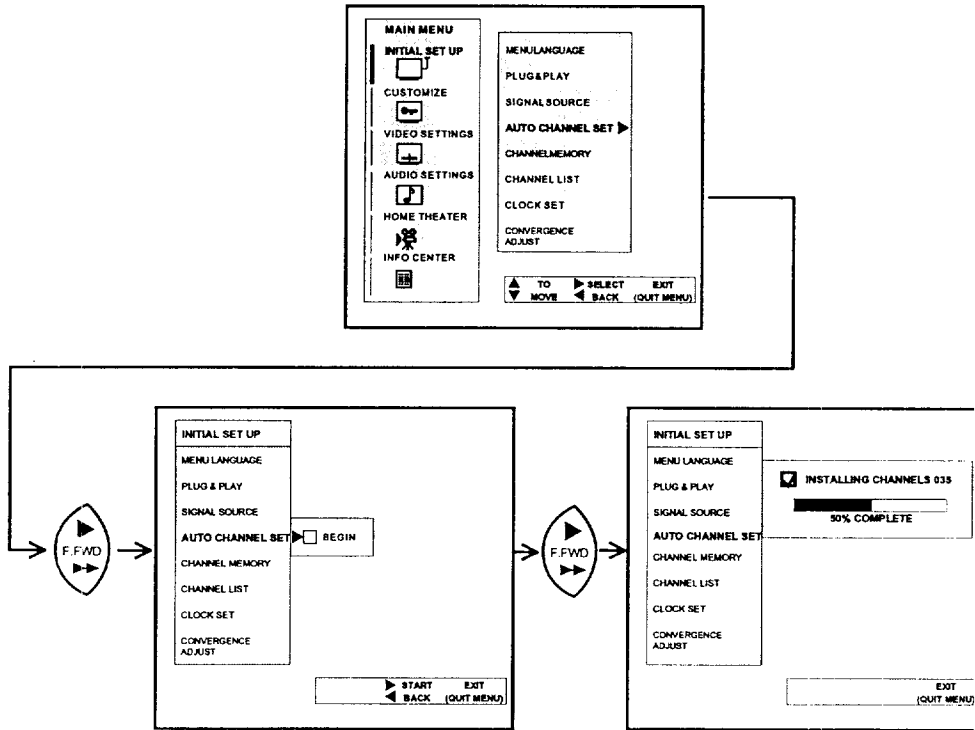
If the EXIT button is pressed while the AUTO CHANNEL SET function is engaged, programming will stop. If two antennas are connected, switch antenna inputs with the INPUT button and repeat AUTO CHANNEL SET for the second antenna input.

Remember to select the correct SIGNAL SOURCE mode before using AUTO CHANNEL SET for the second antenna input.

See CHANNEL MEMORY to add or erase additional channels.

| CHANNEL MEMORY | Use this function after AUTO CHANNEL SET to add or erase additional channels to the remote control CHANNEL ∧ or ∨ buttons. |
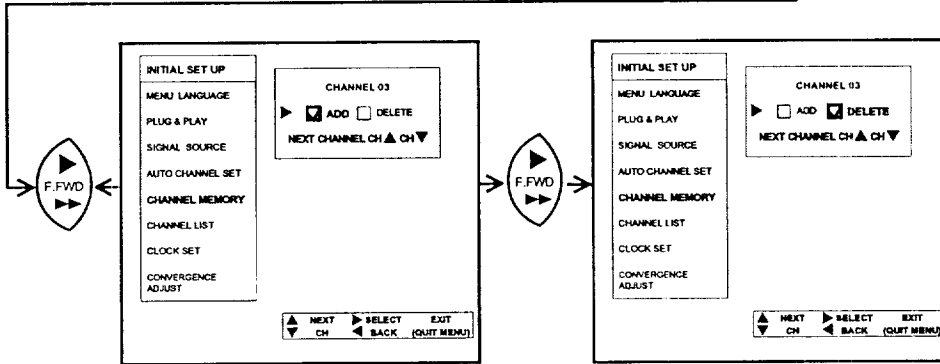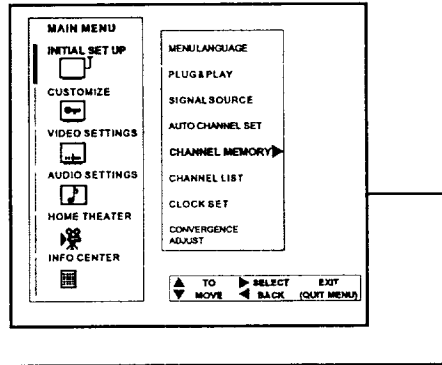
Add or erase additional channels while still in CHANNEL MEMORY using PLAY (▲) or STOP (▼), CHANNEL (∧) or (∨), and number buttons and then add or erase using F.FWD (►).

Press EXIT to quit menu or REW (◄) to return to previous menu.

INITIAL SETUP

CHANNEL LIST	This function allows you to review which channels are labeled in CHANNEL ID (NAME), which have been added to CHANNEL MEMORY (SCAN), and which are protected by CHILD LOCK (LOCK).
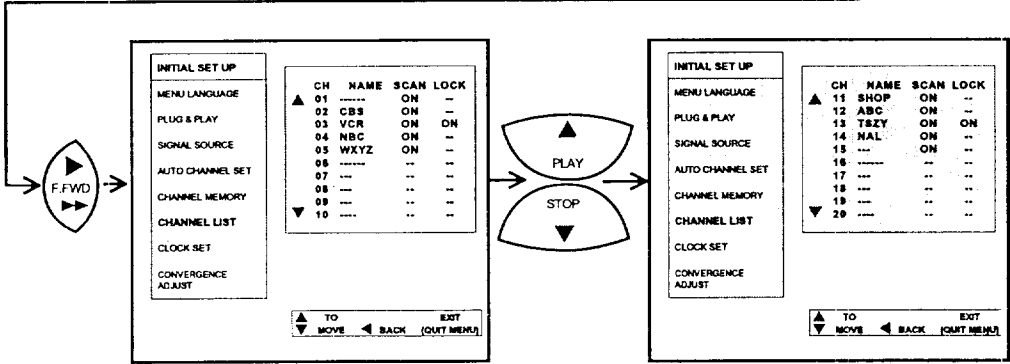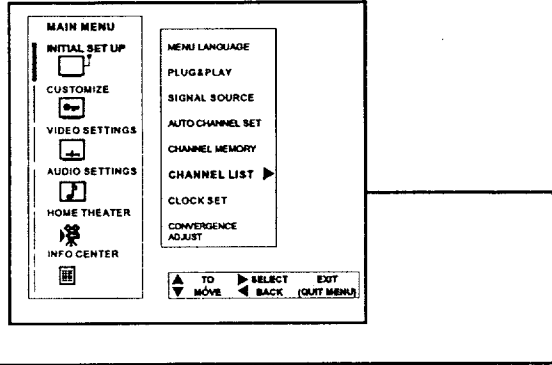
Press PLAY (▲) or STOP (▼) to review more channels.
Press EXIT to quit menu or REW (◄) to return to previous menu.

| CLOCK SET | The time must be set before you can use 4 EVENT PROGRAM, SPECIAL EVENT REMINDER, or CALENDAR. |
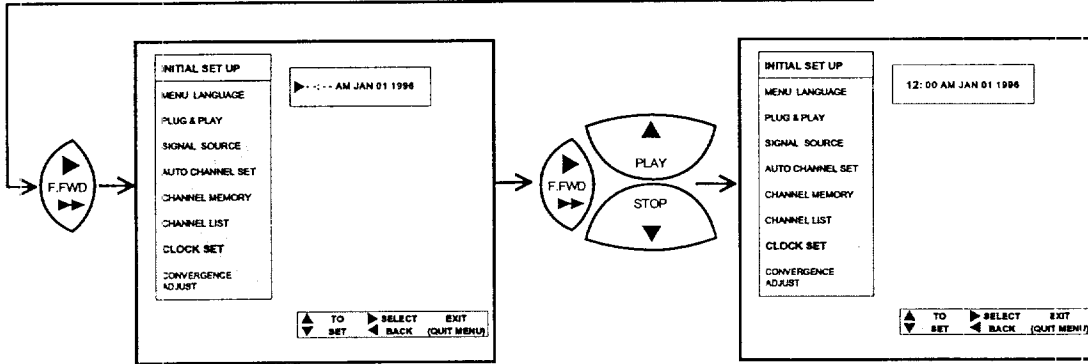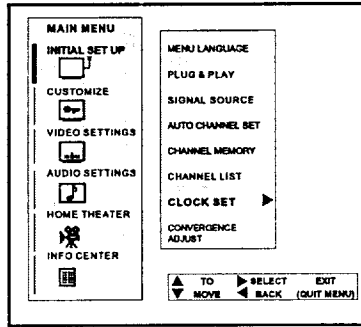
Use PLAY (▲) or STOP (▼) to set the time, date, and year.
Press F.FWD (▶) to change position.
Press EXIT to quit menu or REW (◄) to return to previous menu.

INITIAL SETUP

CONVERGENCE ADJUST

Your HITACHI projection TV has three color projection tubes: one for red, one for green, one for blue. When mixed together in the proper proportion, the output of these three color tubes can produce any color. To produce these colors, however, the beams must be precisely aligned over each other so that the colors can be mixed. The process of aligning these picture beams is called "convergence".

Over a period of time, the picture tubes can drift out of alignment due to normal bumps and vibrations or moving the TV. If you move your TV, or if, after a time, you notice color rings or halos around objects in the picture, you may want to converge (align) the colors.

To simplify convergence, the following feature allows you to display a test pattern of horizontal and vertical lines on the screen. Properly converged, the lines appear white, which is actually a combination of the outputs of the three color tubes. The output of the green tube is stationary. The outputs of the red and blue tubes can be adjusted. When properly aligned, the outputs of all three tubes should be directly over each other to produce the white lines.
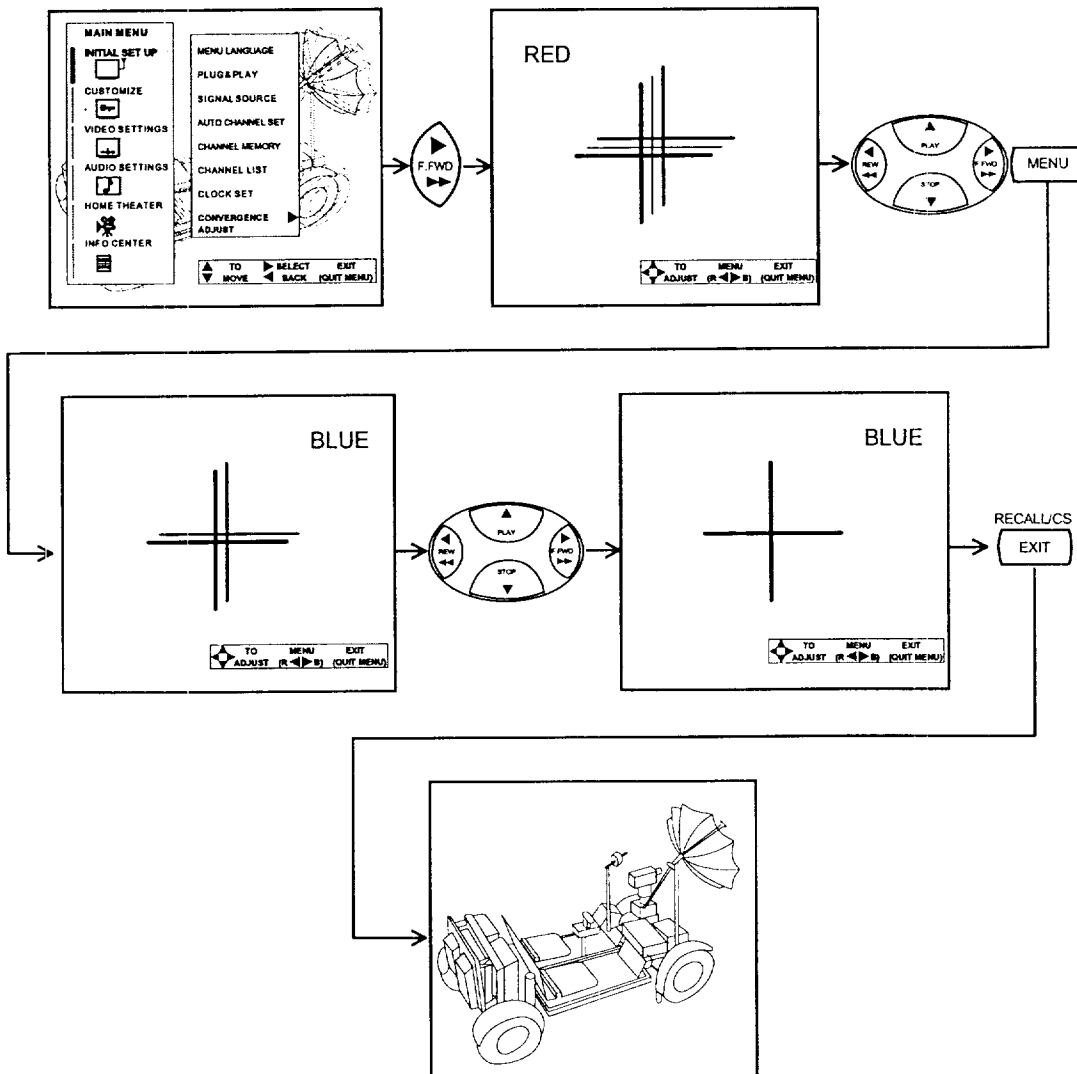
Press PLAY (▲) or STOP (▼) to move the color displayed up or down.
Press REW (◄) or F.FWD (►) to move the color displayed left or right.
Press MENU to change the color.
Press EXIT to quit menu.

NOTE: Please use the EXIT button on your remote to quit this menu. To quit this menu without a remote, turn the TV off.
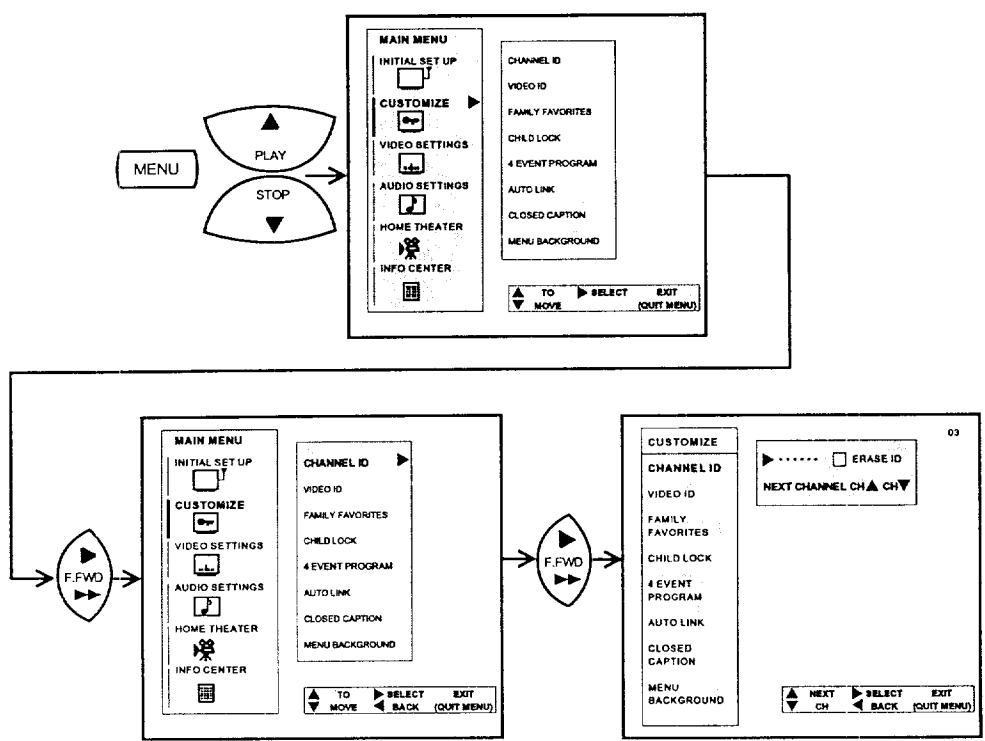
CUSTOMIZE	This selection contains advanced features which will make TV viewing easier and more enjoyable.

CHANNEL ID	Use this feature to give up to 20 channels a name when ANTENNA signal source is selected and up to 60 channels a name when CATV1 signal source is selected.

Press PLAY (▲) or STOP (▼) to select letters.
Press F.FWD (▶) to change character position.
Press PLAY (▲) or STOP (▼), CHANNEL (∧) or (∨), and the number buttons to select and label additiona channels.
The CHANNEL ID will now appear in the top left corner of the screen.
Press EXIT to quit menu or REW (◀) to return to previous menu.

The (✶) represents a blank space.

Select ERASE ID to erase a CHANNEL ID.

NOTE:	If ANT A and ANT B are in the same SIGNAL SOURCE mode (see page 34), the CHANNEL ID for both antenna inputs will be the same. CHANNEL ID will be displayed only when channel is displayed as main picture.

CUSTOMIZE

| VIDEO ID | Use this feature to give a name to any of the two video inputs. |
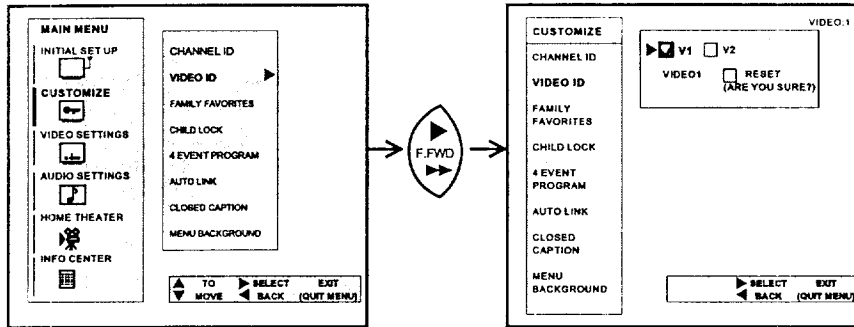
Press F.FWD (▶) to select the video input to be renamed.
Press PLAY (▲) or STOP (▼) to select letters.
Press F.FWD (▶) to change position.
Press EXIT to quit menu or REW (◀) to return to previous menu.

The (∗) represents a blank space.
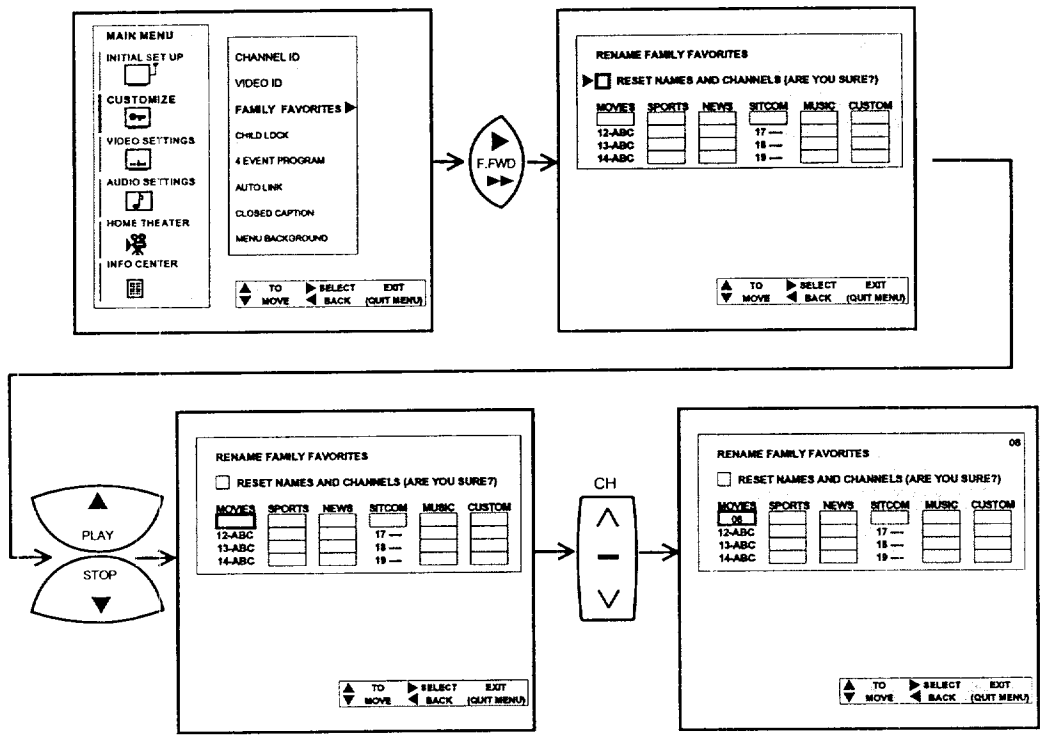Select RESET to set VIDEO ID to original condition.

| NOTE: | VIDEO ID will be displayed only when VIDEO input is displayed as main picture. |

FAMILY FAVORITES (MENU) | This function allows you to group your favorite channels into six personalized categories that you can rename. A total of 24 channels can be stored in the FAMILY FAVORITES function.

To rename the categories, use REW (◄), F.FWD (►), PLAY (▲), or STOP (▼) to highlight the category you would like to rename.
Use PLAY (▲) or STOP (▼) to change a letter and F.FWD (►) to select the next character to change.

To reset categories and channels back to original factory preset, select RESET then press F.FWD (►).

To enter a channel into a category, highlight a box below the category title.
Press PLAY (▲) or STOP (▼) or the number buttons to enter the desired channel. Repeat until category has been set with your favorite channels. The channel to be added is displayed in the top right corner of the screen.
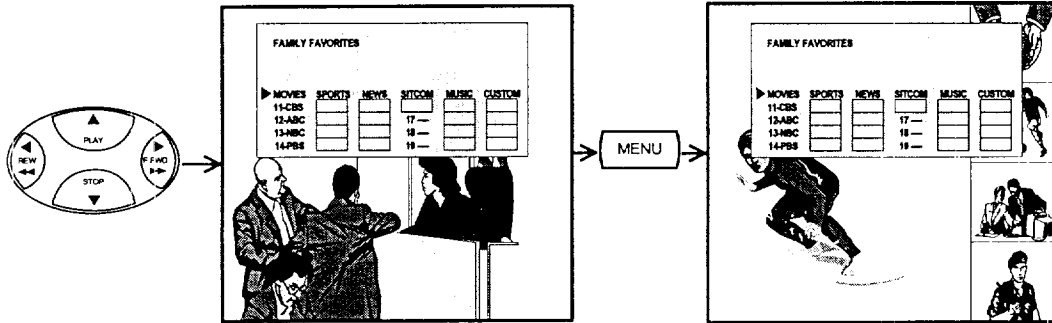Enter channel 00 to erase a favorite channel.

NOTE: This function cannot be accessed when ANT B is the main channel.

CUSTOMIZE

FAMILY FAVORITES (OPERATION)	Use this function to display FAMILY FAVORITES selections as sub-pictures or to tune the main picture to a desired favorite channel.

Press any one of the REW (◀), F.FWD (▶), PLAY (▲) or STOP (▼) buttons.

Select a category heading using REW (◀) or F.FWD (▶).

Press MENU and the category will be displayed as sub-pictures at the right edge of the screen. This is useful for previewing a category.

Use REW (◀), F.FWD (▶), PLAY (▲) or STOP (▼) to highlight a favorite channel and the TV will automatically tune to that channel.

Press EXIT to remove FAMILY FAVORITES OSD from the screen.

| NOTE:	If a category has some blank channel entries, these channels will appear as black sub-pictures. The remote control must be in TV mode.

CHILD LOCK	This function will block out the picture and sound of the selected channel or video input. It can also be used to keep the TV from being viewed for a scheduled amount of time that you set.

The code to enter CHILD LOCK is a four digit key number. The factory preset code is 0000.
Use PLAY (▲) or STOP (▼) or the number keys to select number and F.FWD (▶) to change position.
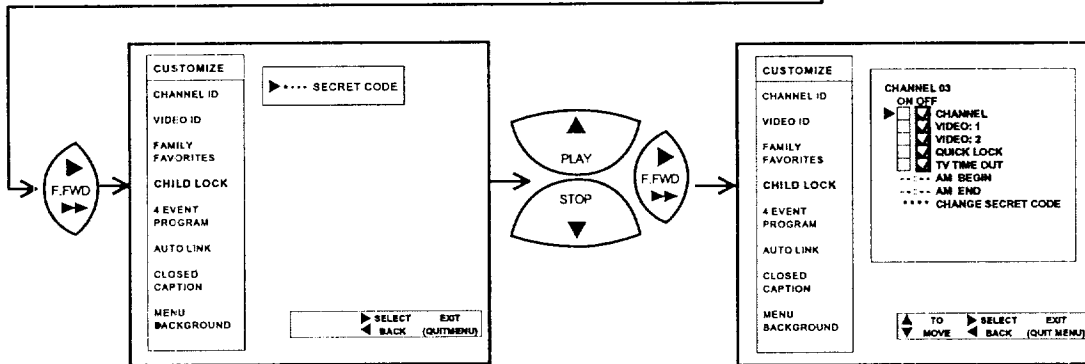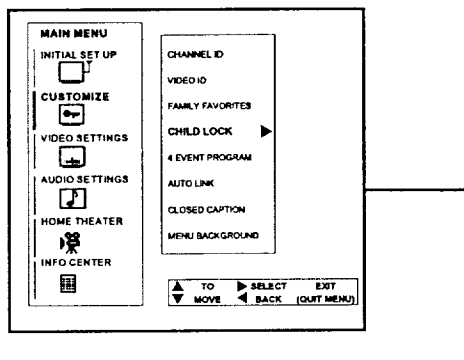
Use PLAY (▲) or STOP (▼) to highlight function and the F.FWD (▶) button to set ON or OFF.

When CHANNEL is turned on, the picture and sound for the chosen channel will be blocked out.
When VIDEO: 1 or 2 is turned on, the picture and sound for the chosen video input will be blocked out (to lock a Video input, you must be tuned to the input you wish to lock).
When QUICK LOCK is turned on, the picture and sound for channels 3, 4 and all video inputs will be blocked out.
When TV TIME OUT is turned on, you can set the BEGIN and END times and the TV cannot be viewed during that time period.

To change the key number, select CHANGE SECRET CODE. Enter a new four digit key number you prefer.

If you forget your key number, use the factory code 7777 to erase your key number. This will reset the key number back to the factory preset 0000.
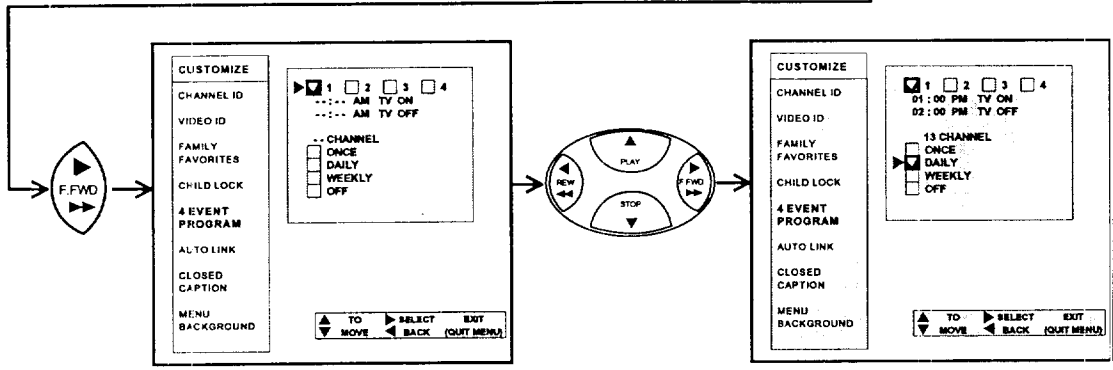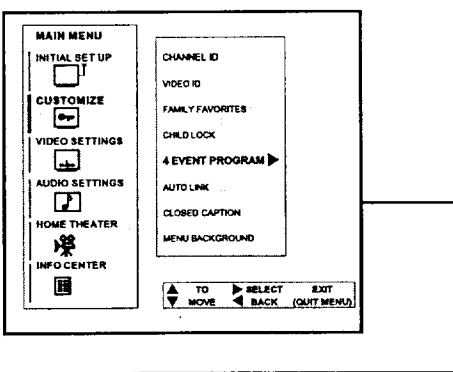
NOTE:	If ANT A and ANT B are in the same SIGNAL SOURCE mode (see page 34), when a channel is locked, it is locked on both antenna inputs. When using TV TIME OUT make sure the clock is set (see page 38).

CUSTOMIZE

4 EVENT PROG.	This function will automatically turn the TV on and off, one time only, every day or once a week.

Press F.FWD (▶) to select PROGRAM 1, 2, 3 or 4.
Press PLAY (▲) or STOP (▼) to select the time the TV will turn on and off.
Use F.FWD (▶) to change position.
Press PLAY (▲) or STOP (▼) to highlight then F.FWD (▶) to select MODE: ONCE (one time only) or MODE: DAILY (TV will turn on/off at the same time every day), or MODE: WEEKLY (TV will turn on/off at same time every week).
Press PLAY (▲) or STOP (▼), CHANNEL (∧) or (∨), or number buttons to set the channel the TV will tune to when it automatically turns on.

NOTE: The OFF Timer will only activate if the TV was turned on or tuned with the ON Timer and no channel selection was made after this time. If you change the channel after the ON Timer has been activated, the OFF Timer will deactivate.
If no remote control button is pressed after ON Timer is activated, the TV will automatically turn off after 3 hours.
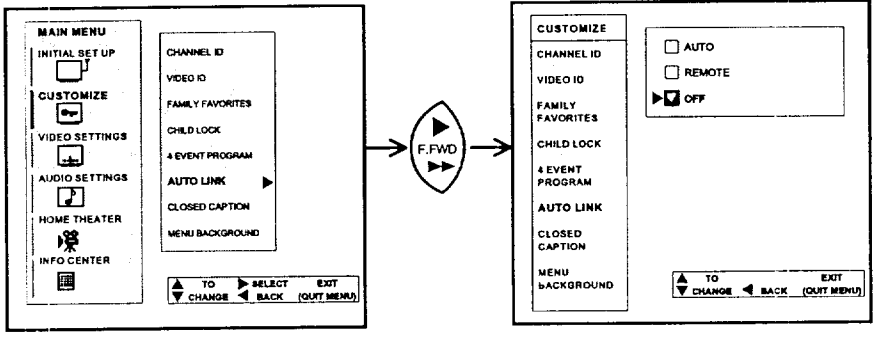

⚠ CAUTION: Do not use your TV as a deterrent when away from home by using the ON and OFF TIMERS. For safety, the TV should be turned off when you are away from home.

| AUTO LINK | Use this function to automatically turn the TV on and tune to VIDEO: 1, when it detects a VIDEO: 1 input. |

```
┌─────────────────────────────┐      ┌─────────────────────────────────┐
│ MAIN MENU                   │      │ CUSTOMIZE                       │
│ INITIAL SET UP  CHANNEL ID  │      │ CHANNEL ID    ☐ AUTO            │
│   [  ]          VIDEO ID    │      │ VIDEO ID      ☐ REMOTE          │
│ CUSTOMIZE       FAMILY FAVORITES │  │ FAMILY        ► ☑ OFF           │
│   [  ]          CHILD LOCK  │      │ FAVORITES                       │
│ VIDEO SETTINGS  4 EVENT PROGRAM │  │ CHILD LOCK                      │
│   [  ]          AUTO LINK  ►│      │ 4 EVENT                         │
│ AUDIO SETTINGS  CLOSED CAPTION │   │ PROGRAM                         │
│   [  ]          MENU BACKGROUND │  │ AUTO LINK                       │
│ HOME THEATER               │      │ CLOSED                          │
│   [  ]                      │      │ CAPTION                         │
│ INFO CENTER                 │      │ MENU          ▲ TO      EXIT     │
│   [  ]  ▲ TO  ►SELECT  EXIT │      │ BACKGROUND    ▼ CHANGE ◄ BACK (QUIT MENU) │
│         ▼ CHANGE ◄ BACK (QUIT MENU) │                              │
└─────────────────────────────┘      └─────────────────────────────────┘
                          ( ► F.FWD ►► )
```

Use PLAY (▲) or STOP (▼) to change AUTO LINK setting.

When AUTO is selected, the TV will turn on and tune to VIDEO: 1 automatically, when a VIDEO: 1 input is detected.
This is convenient when you want to watch a movie with your VCR or laserdisc player.

When REMOTE is selected, the TV will turn on and tune to VIDEO: 1 automatically, when a VIDEO: 1 input is detected and the VCR play button on your remote control is pressed.
This is convenient when you want to record a movie with your VCR and watch it later.
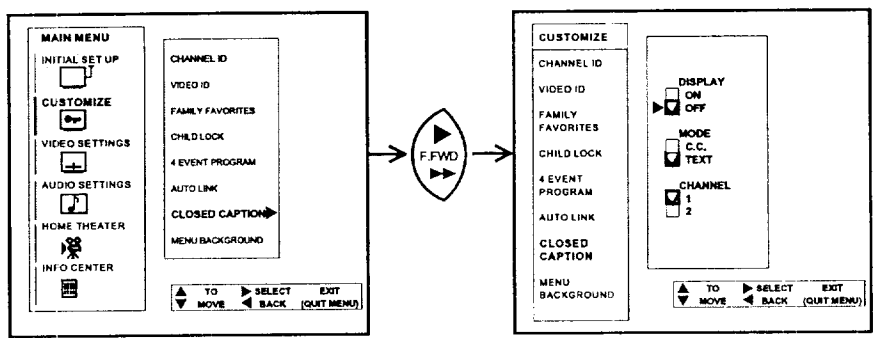
Select OFF to disable this function.
Press EXIT to quit menu or REW (◄) to return to previous menu.

CUSTOMIZE

| CLOSED CAPTION | Closed captions are the dialogue, narration, and/or sound effects of a television program or home video which are displayed on the TV screen. Your local TV program guide denotes these programs as [cc] or [⊐]. |

DISPLAY: ON/OFF will turn the [cc] display on or off.

MODE: C.C. (Closed Caption) is for the program you are viewing.

MODE: TEXT is for additional information such as news reports or a TV program guide. This information covers the entire screen and viewing the TV program is not possible. TEXT may not be available with every [cc] program.

CHANNEL: 1 is used for the primary language (usually English).
**CHANNEL:**   2 is sometimes used for a second language (may vary by region).

Use PLAY (▲) or STOP (▼) to highlight the function to change; press F.FWD (►) to change the function.
Press EXIT to quit menu or REW (◄) to return to previous menu.

NOTE:	If you do not have sound, make sure MUTE is not set.
	CCD will display when MUTE is pressed, whether CCD is in the ON or OFF mode.

MENU BACKGROUND | This function allows you to choose from two menu backgrounds.
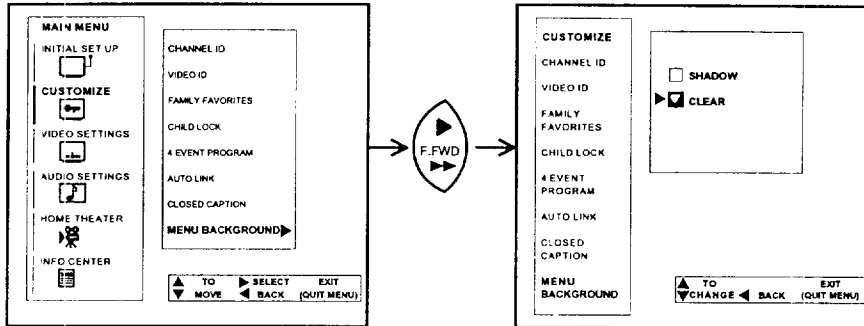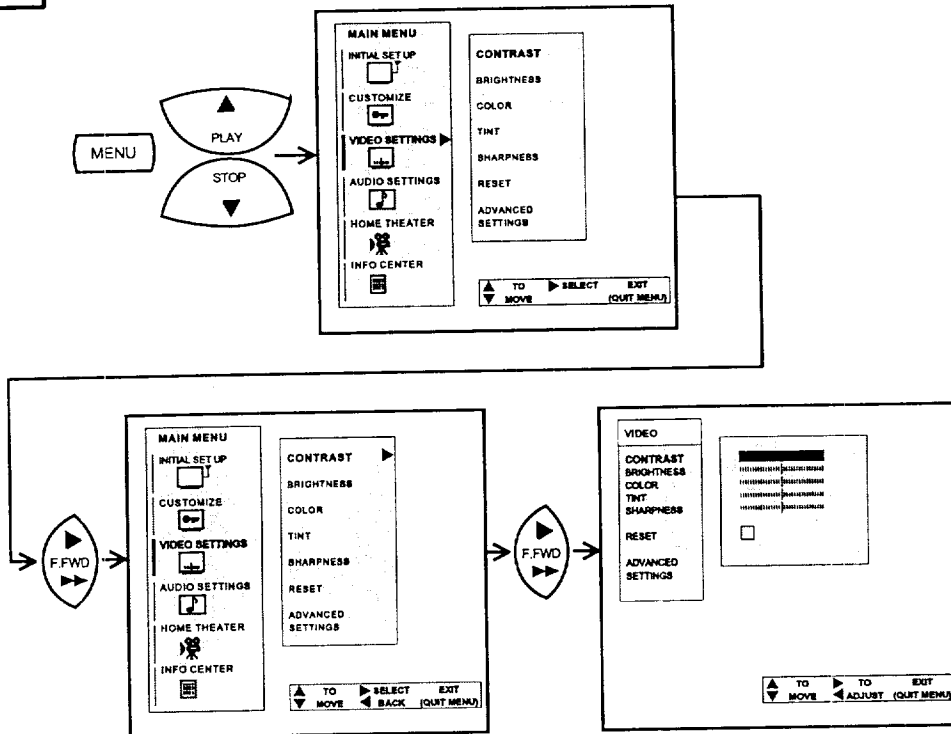
Use PLAY (▲) or STOP (▼) to change MENU BACKGROUND setting.
Select SHADOW and a light background is visible. Select CLEAR and no background is visible.
Press EXIT to quit menu or REW (◄) to return to previous menu.

VIDEO SETTINGS

VIDEO SETTINGS	Select VIDEO SETTINGS to adjust picture settings and improve picture quality.

Use the PLAY (▲) or STOP (▼) buttons to highlight the function to be adjusted.
Press the REW (◄) or F.FWD (►) buttons to adjust the function.
Use the PLAY (▲) or STOP (▼) buttons to highlight RESET or ADVANCED SETTINGS, then the REW (◄) button to return to previous menu.
Press EXIT to quit menu.

| NOTE:	If CONTRAST is selected, you are adjusting CONTRAST. The additional menu items BRIGHTNESS, COLOR, TINT, and SHARPNESS can be selected and adjusted in the same manner.

CONTRAST	Use this function to change the contrast between black and white levels in the picture. This adjustment will only affect the picture when PICTURE SETTINGS AI is OFF. (See page 50.)

BRIGHTNESS	Use this function to adjust overall picture brightness.

COLOR	Use this function to adjust the level of color in the picture.

TINT	Use this function to adjust flesh tones so they appear natural.

SHARPNESS	Use this function to adjust the amount of fine detail in the picture.

RESET	When RESET is selected, press CURSOR ► to return video adjustments to factory preset conditions.

ADVANCED SETTINGS

Your HITACHI Projection TV has an AI (Artificial Intelligence) function which will automatically adjust picture settings to produce the highest quality picture possible.
When AI is highlighted, use F.FWD (▶) to turn the AI on or off.
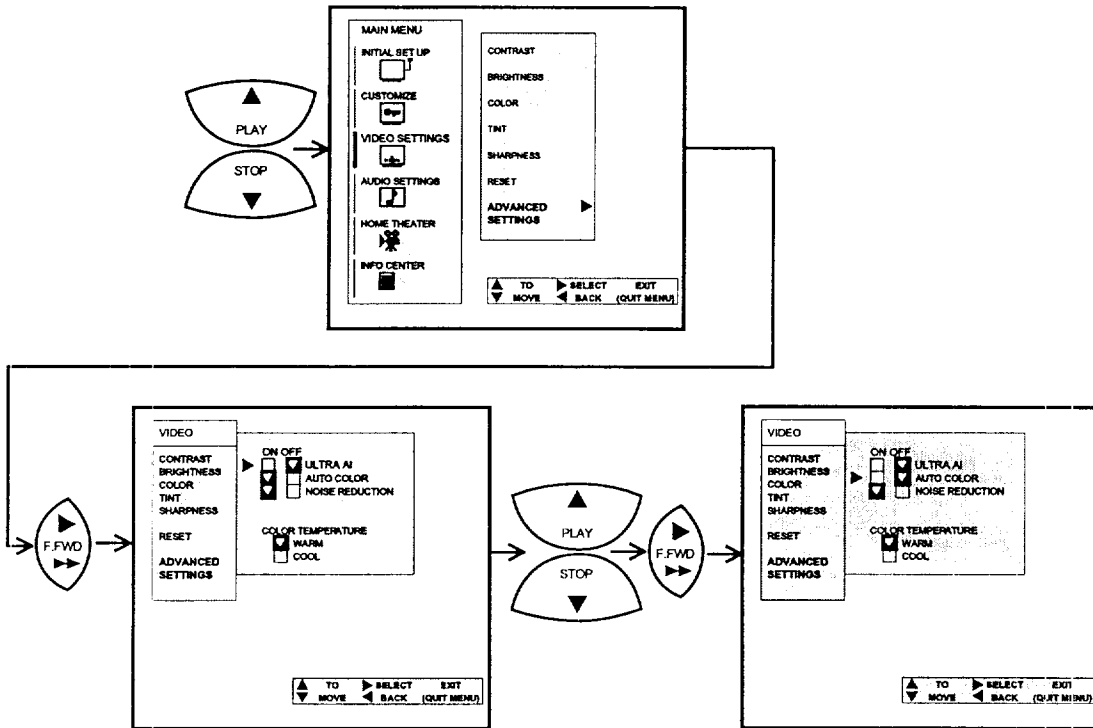
Use PLAY (▲) or STOP (▼) to select function.
Use F.FWD (▶) to change the function setting.
Press EXIT to quit menu or REW (◀) to return to previous menu.

AI (ARTIFICIAL INTELLIGENCE)
When the AI function is on, the TVs' internal computer will perform the following:

1. Automatically monitor and adjust contrast depending on room lighting (sensor is located in the front panel) to produce a more natural picture.

2. Automatically monitor and adjust color levels and maintain natural flesh tones.

3. Automatically compensate for weak or strong TV signals to produce a clear picture.

Turn the AI function off to control other PREFERENCE SETTINGS.

AUTO COLOR
The AUTO COLOR function automatically monitors and adjusts the color to maintain constant color levels even after a program or channel changes. It also maintains natural flesh tones while preserving fidelity of background colors.
For best picture performance leave the AUTO COLOR function on.

NOISE REDUCTION
The NOISE REDUCTION function automatically reduces conspicuous noise in the picture without degrading picture quality.
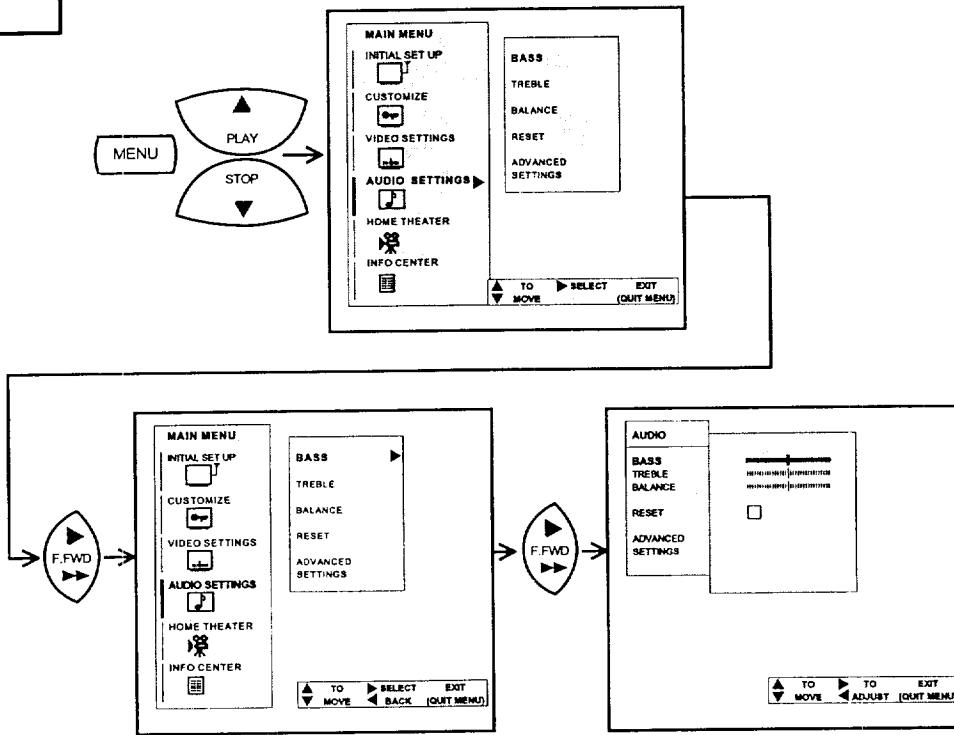
COLOR TEMPERATURE
Set this to WARM for hotter colors with more red, or set to COOL for less intense colors with more blue.

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AUDIO SETTINGS

Select AUDIO SETTINGS to adjust the TV to your preference and to improve the sound quality.

Use PLAY (▲) or STOP (▼) to highlight the function to be adjusted.
Press REW (◄) or F.FWD (►) to adjust the function.
Use PLAY (▲) or STOP (▼) to highlight RESET or ADVANCED SETTINGS, then REW (◄) to return to previous menu.
Press EXIT to quit menu.

NOTE: If BASS is selected you are adjusting BASS. The additional menu items TREBLE and BALANCE can be selected and adjusted in the same manner.

| BASS |
This function controls the low frequency audio to all speakers.

| TREBLE |
This function controls the high frequency audio to all speakers.

| BALANCE |
This function will control the left to right balance of the TV internal speakers, the AUDIO TO HI FI output, the TRANSMITTER OUT output, and the Surround Speakers.
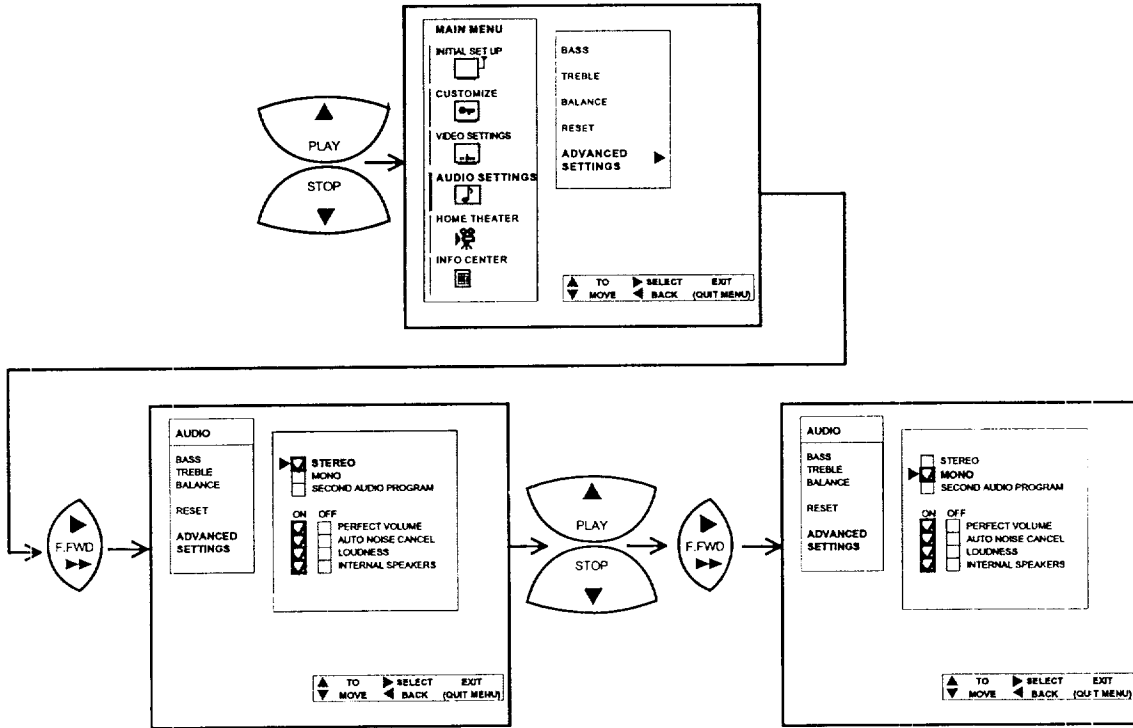
| RESET |
When RESET is selected, press F.FWD (►) to return audio adjustments to factory preset conditions.

ADVANCED SETTINGS	Use ADVANCED SETTINGS to improve the sound performance of your TV depending on listening conditions.

Press PLAY (▲) or STOP (▼) to highlight a function.
Press F.FWD (▶) to change the function setting.
Press EXIT to quit menu or REW (◄) to return to previous menu.

MTS MODE

Multi-Channel Television Sound will allow you to select STEREO (a stereo broadcast), SAP (second audio program) which may be a secondary language, weather report, etc. or MONO (monaural sound) used when receiving a weak stereo broadcast.

The sources received will be displayed below the channel number. The source you select will be displayed to the left of the channel number. See example below for each selection when both stereo and second audio are received (monaural is always received).

STEREO SELECTED

SAP SELECTED

MONO SELECTED

PERFECT VOLUME
This function will automatically adjust volume so each channel has the same average volume level.

AUTO NOISE CANCEL
This function eliminates the noise between stations. If a channel is tuned and is noisy, this function will automatically eliminate the audio for that channel.

LOUDNESS
This function will improve the quality of both low and high frequency sounds when listening at low volume levels.

INT. SPEAKERS
This function is useful when first setting up the external speakers, or if you prefer to use only speakers from a separate stereo system.
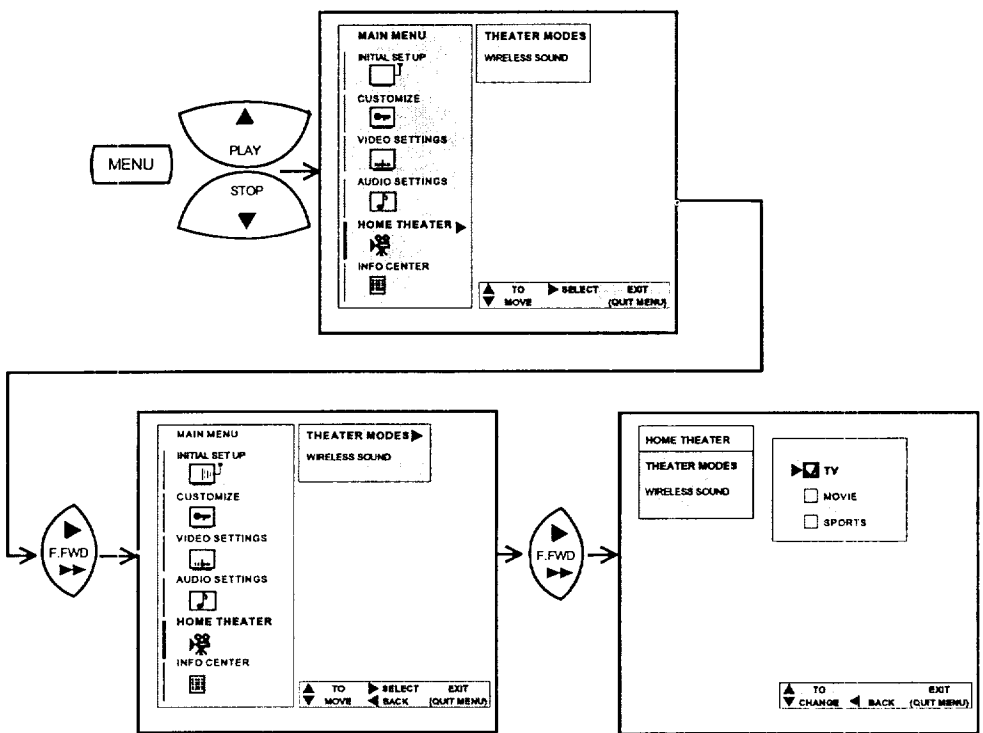
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HOME THEATER

HOME THEATER	Use this function to choose picture settings for a true HOME THEATER experience.

THEATER MODES	Use this function to choose from automatic picture settings to optimize your TV's performance.

Use PLAY (▲) or STOP (▼) to change THEATER MODES settings.

Select TV mode to set AI to your preference.

When MOVIE mode is chosen, AI is automatically set to ON.

When SPORTS mode is chosen, AI is automatically set to ON. (AI is automatically made brighter by increasing contrast, to improve sports viewing.)

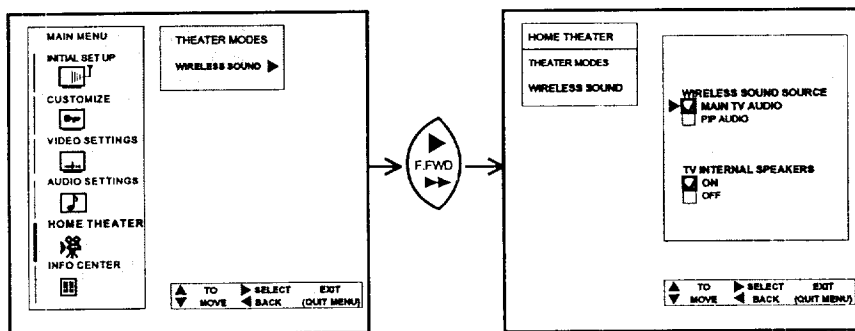Press EXIT to quit menu or REW (◄) to return to previous menu.

WIRELESS SOUND	This feature allows you to choose between two possible variable audio outputs for a separate set of wireless speakers or another stereo amplifier. The audio output may be either MAIN TV AUDIO or SUB PICTURE AUDIO.

This feature also allows you to turn the internal speakers on or off, when MAIN TV AUDIO is chosen. You can also adjust PIP volume if you have chosen SUB PICTURE AUDIO as your variable audio output.

Press PLAY (▲) or STOP (▼) to highlight a function.
Press F.FWD (▶) to select the function.
Press EXIT to quit menu or REW (◄) to return to previous menu.

MAIN TV AUDIO
When set to MAIN TV AUDIO mode, your wireless speakers will play the same audio program as played on your TV. When set to this mode, you may choose to turn the television's internal speakers on or off. Also, the volume of your wireless speakers will be controlled by the TV volume control.

SUB PICTURE AUDIO
When set to SUB PICTURE AUDIO mode, your wireless speakers will play the PIP sub-picture audio program. The volume of your wireless speakers will now be controlled by the PIP VOL. control, which may be varied from 00 (min.) to 32 (max.). If no sub-picture is displayed, the wireless speakers will play the main channel audio program with the volume being controlled by the TV volume control.
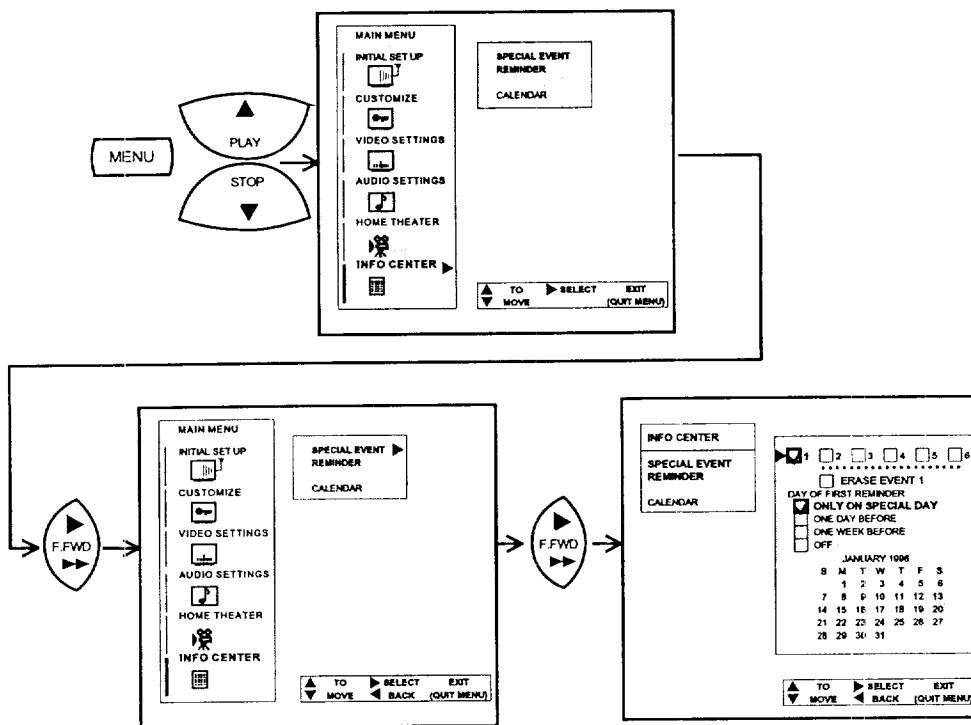
INFO CENTER

| INFO. CENTER | This function allows your TV to assist you with your busy day to day schedule. |

| SPECIAL EVENT REMINDER | Use this function to set up to six special events into memory. These events can then be viewed in CALENDAR mode. |

Press F.FWD (▶) to select EVENT 1 to 6.
Press PLAY (▲) or STOP (▼) to select a letter.
Press F.FWD (▶) to change position.

To erase a special event, select ERASE EVENT then press F.FWD (▶).
Highlight the day of first reminder using CURSOR buttons, then press F.FWD (▶) to select.
Select date of reminder using CURSOR buttons.

To exit date set mode but remain in SPECIAL EVENT REMINDER menu, press the MENU button.
Press EXIT to quit menu or REW (◀) to return to previous menu.

| NOTE: | Special events set into memory will appear as blinking green dates in CALENDAR mode. A: the selected time, the message will appear in CALENDAR mode. When the TV is turned on, the SPECIAL EVENT REMINDER message will automatically appear at the selected time. Each special event message can be a maximum of 20 characters long. |

CALENDAR	Use this function to check the day, month, and year. Dates programmed in SPECIAL EVENT REMINDER will appear blinking and spec al event message will be displayed.
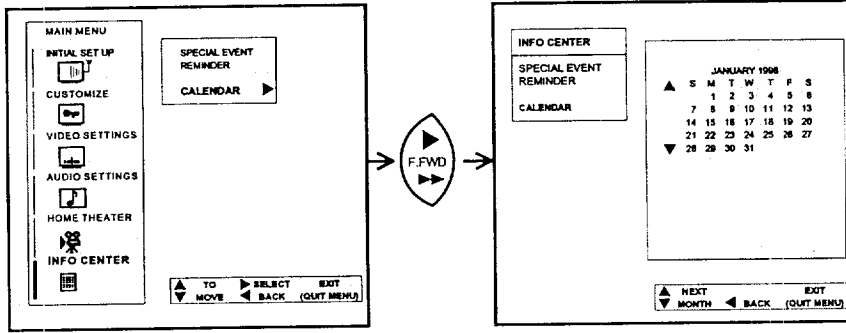
Press PLAY (▲) or STOP (▼) to change the month.
Press EXIT to quit menu or REW (◄) to return to previous menu.

NOTE:	Dates of SPECIAL EVENT REMINDER will appear blinking. Special event message will be displayed only if current date is within the Day Of First Reminder Specifications as chosen in SPECIAL EVENT REMINDER. (See page 55.) CALENDAR will appear blinking when a Special Event message is set.

CARE OF YOUR HITACHI PROJECTION TV
AND VCRPlus+ REMOTE CONTROL

DO

Dust the screen and cabinet with a soft cloth.

Clean the screen with a soft cloth moistened in warm water. Dry with a soft cloth (A mild soap may be used if the screen is extremely dirty).

Place your TV and remote control away from extreme heat, humidity and extremely dusty places.

Remove the plug from the wall outlet if your television will not be used for a long period of time, for instance, when you go on vacation.

DO NOT

Do not clean your screen or cabinet with strong cleaners, polishes, or chemically treated cloth.

Do not place rubber or vinyl products or cellophane tape on your set.

Do not touch the screen too often.

Do not subject the remote control to shocks such as dropping it on the floor, etc. Physical damage to the precision parts may result.

Avoid placing the remote control in a high humidity place or getting it wet. Don't leave it on or near a heater. Excessive heat or moisture may cause the unit to cease operation.

When the batteries run down, remote control operation will become erratic or possibly stop altogether. Replace the old batteries with two fresh "AA" size batteries.

Exposure of the viewing screen to prolonged direct sunlight or heat may cause the screen to permanently warp, resulting in a distorted picture.

	• IGNITION NOISE: Black spots or horizontal streaks may appear, picture may flutter or drift. Usually caused by interference from automobile ignition systems, neon lamps, electrical drills, and other electrical appliances.
	• GHOSTS: Ghosts are caused by the television signal following two paths. One is the direct path and the other is reflected from tall buildings, hills or some other objects. Changing the direction or position of the antenna may improve reception. Ghosting may also be caused by defects in the antenna system such as unshielded leads or connecting several sets to the same antenna without using multiple antenna couplers.
	• SNOW: If your receiver is located in the fringe area of a television station where the signal is weak, your picture may be marred by the appearance of small dots. When the signal is extremely weak, it may be necessary to install a special antenna to improve the picture.
	• RADIO FREQUENCY INTERFERENCE: The interference produces moving ripples or diagonal streaks, and in some cases, causes loss of contrast in the picture.

SYMPTOMS	Be sure external connection is correct	Be sure power cord is plugged in	Be sure TV is switched ON	Try another channel (station trouble)	Check antenna connections (back of TV)	Check antenna for broken lead-in wire	Check outside antenna	Check for local interference	Adjust Contrast control	Adjust Brightness control	Adjust Color control	Adjust Tint control	Adjust Volume control
No Picture, no sound	●	●	●	●	●	●	●						
Sound OK, picture poor	●			●	●	●	●	●	●	●			
Picture OK, sound poor	●			●	●	●	●	●					●
Picture blurred	●			●	●	●	●	●					
Lines or streaks in picture				●	●	●	●	●					
Poor reception on some channels				●	●	●	●	●					
Picture rolls vertically				●			●						
No color	●			●	●	●	●				●		
Poor color	●			●	●	●	●				●	●	

This HITACHI Projection Television incorporates advanced power surge protection technology designed to protect against component or circuit damage due to internal voltage or power surges.

IF YOUR SET SHOULD APPEAR TO HAVE A LOSS OF POWER, PLEASE FOLLOW THIS PROCEDURE:

1) Press the power switch (ON/OFF switch) once.
2) If there is still no power, wait 30 seconds and press the power switch again.
3) If there is still no power, unplug the power cord from the wall. Wait thirty seconds and plug the power cord back in. Press the power switch again.

This protective technology should provide for years of lasting entertainment from your HITACHI Projection Television.

Features:

* Superfine Picture Quality
  * 850 Line Horizontal Resolution (50FX30B)
  * 1000 Line Horizontal Resolution (60FX32B)
* Pure Green and Red Filter Lenses
* Artificial Intelligence System
* VCRPlus+ Remote Control (Controls many VCR brands and Cable/Satellite equipment)
* High Definition On-Screen Display (UltraTEC)
* Full set of Input Jacks, including S-Video
* Closed Caption Decoder
* High Resolution Picture-In-Picture with Freeze
* Tuned Port Bass Reflex Speakers
* Digital Convergence
* Dual Antenna Inputs
* Auto Link

Inputs:
* Power Input . . . . .AC 120V, 60Hz

* Power Consumption (operating)
  50FX30B 163W
  60FX32B 163W

* Power Consumption (Maximum)
  50FX30B 216W
  60FX32B 216W

* Antenna input impedance . . . . .75 Ohm
* Channel coverage .181 ch.
  VHF-Band . . . . .2 ~ 13
  UHF-Band . . . . .14 ~ 69
  CATV Mid Band . . . . .A-5 ~ A-1
  . . . . .A-I
  Super Band . . . . .J-W
  Hyper Band .W+1 - W+28
  Ultra Band .W+29 - W+84

* Video .1.0Vp-p, 75 Ohm
* S-Video
  Luminance (Y) . . . . .1.0Vp-p, 75 Ohm
  Chrominance (C) . . . . .0.286Vp-p, 75 Ohm
* Audio input level .47k Ohm
* Average input level 470mVrms
* Maximum input level 940mVrms

Outputs:
* Video . . . . .1.0Vp-p. 75 Ohm

* Audio (fixed) . . . . .470mVrms, 1k Ohm

Dimensions:

	50FX30B	60FX32B
Height (in.)	51 13/16	60 7/16
Width (in.)	43 3/16	51 5/16
Depth (in.)	23 1/8	26 3/8
Weight (lbs.)	230	362

NOTE: Due to improvements, specifications in this operating guide are subject to change without notice.

HITACHI

To locate an authorized
HITACHI service facility
in the continental U.S.A.
and Canada,

DIAL TOLL FREE

7 days a week, 24 hours a day

800 HITACHI

(1-800-448-2244)

Hitachi Home Electronics (America), Inc.

Hitachi has made every effort to assure you hours of trouble free operation from your unit. However, should you require service, a network of Hitachi Authorized Service Facilities has been established in all 50 states and Puerto Rico. Each facility will provide you with convenient and expedient assistance. Our service hotline operator will direct you to the Hitachi Authorized Service Facility nearest you. Just present proof of purchase and/or delivery receipts to the Hitachi Authorized Service Facility, and service will be rendered in accordance with the terms of the limited warranty as stated on your warranty card or operating guide.

Should you have any questions regarding warranty, service, operation or technical assistance, please contact:

Hitachi Home Electronics (America), Inc.
3890 Steve Reynolds Blvd.
Norcross, GA 30093
Tel: 770-279-5600

Hitachi Sales Corporation of Hawaii
3219 Koapaka St.
Honolulu, HI 96819
Tel: 808-839-3621

For TVs purchased in Canada only, please contact one of the Hitachi offices below, should you have any questions regarding service, operation or technical assistance.

MONTREAL	TORONTO	VANCOUVER
9425 Trans Canada	6740 Campobello Road	20800 Westminster Hwy., Unit 1103
Saint-Laurent, Quebec	Mississauga, Ontario	Richmond, B.C.
H4S 1V3	L5N 2L8	V6V 2W3
Tel: (514) 956-9882	Tel: (905) 821-4545	Tel: (604) 214-0777
Fax: (514) 956-9761	Fax: (905) 826-6627	Fx: (604) 214-0772

NOTES

HITACHI