

SONY.

4-032-388-21 (1)

Trinitron® Color TV

KV-27TS27

KV-32TS20

KV-27TS31

KV-32TS35

KV-32TW75

Operating Instructions

Before operating your TV, please read this manual thoroughly and retain it for future reference.

Owner's Record

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

Model No. _____ Serial No. _____

Contents

Preface

This section tells you about special features, safety information, and preparatory information for using this manual.

Chapter 1: Set up

This section shows you the steps necessary for installing and presetting your TV.

Chapter 2: Basic Operation

This section gives you basic information about operating and adjusting your TV.

Chapter 3: Advanced Operation

This section shows you how to use Picture-in-Picture, the On-Screen Menus and other useful features, as well as the Remote Commander.

Chapter 4: Other Connections

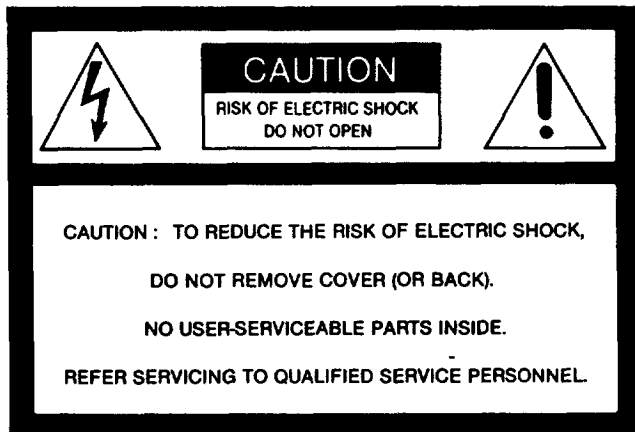
This section shows you how to connect optional video and audio equipment.

Appendix

This section gives you specifications and troubleshooting information.

- For a detailed table of contents, see page 3.

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



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION:

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

Note to CATV system installer

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

Use of this television receiver for other than private viewing of programs broadcast on UHF or VHF or transmitted by cable companies for the use of the general public may require authorization from the broadcaster/cable company and/or program owner.

Safety

- Operate the TV only on 120 V AC.
- One blade of the plug is wider than the other for safety purposes and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- Should any liquid or solid object fall into the cabinet, unplug the TV and have it checked by qualified personnel before operating it any further.
- Unplug the TV from the wall outlet if you are not going to use it for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

Installing

- To prevent internal heat build-up, do not block the ventilation openings.
- Do not install the TV in a hot or humid place, or in a place subject to excessive dust or mechanical vibration.

Cleaning

Clean the TV with a soft dry cloth. Never use strong solvents such as thinner or benzine, which might damage the finish of the cabinet.

Repacking

Keep the original carton and packing materials to use for safe transport of your TV in the future.

If you have any questions or problems concerning your TV, please contact your nearest Sony dealer.

For details concerning safety precautions, see the supplied leaflet "IMPORTANT SAFEGUARDS."

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Introducing the Sony KV-27TS and KV-32TS/TW Series

With the following features, you can:

- Receive up to 125 cable channels for a total of 181 possible off-air and cable channels with the **multi-band VHF/UHF/CATV tuner**.
- Receive the picture and sound of your VCR through the **VIDEO IN jacks**.
- Receive superior VCR playback pictures when you connect a VCR equipped with an S video output jack to the **S VIDEO IN jack** (except for KV-27TS27).
- Watch your portable camera images (8mm, video, etc.) by connecting to the **CAMCORDER/VIDEO IN jacks** on the front panel (except for KV-27TS27 and KV-32TS20).
- Receive stereo programs and Second Audio Program (SAP) broadcasts with the built-in **Multichannel TV Sound (MTS) decoder**.
- Receive TV or video sound through an audio system, by connecting to the **variable audio output jacks**.
- Simulate the sound quality of a concert hall or movie theater with the **SURROUND system**.
- Watch another TV channel, video or cable image as a window picture, using **Picture-in-Picture** (KV-32TS35 and KV-32TW75 only).
- Call up an on-screen menu for instructions on how to set the On/Off Timer, Channel Block and Time Display, using the **GUIDE** feature.
- Call up an on-screen menu for instructions on how to set the time, caption the channel display, add or erase channels from the channel scan memory, and turn the cable mode on or off, using the **SET UP** feature.

With the supplied Remote Commander, you can:

- Operate the TV, plus Sony and most other makers' video equipment or Sony multi disc player with the **Pre-Programmed feature** (except for KV-27TS27 and KV-32TS20).
- Automatically preset all receivable channels with **AUTO PROGRAM**.
- Switch quickly between two channels, using **JUMP**.
- Set the TV to automatically shut off after approximately one hour, using the **SLEEP timer**.
- Set the internal clock to display the **CURRENT TIME** on-screen.

And enjoy other features giving you a high quality picture...

- **Colorpure Filter™** produces fine picture detail without color spill or color noise.
- The **New Dynamic picture™ system** adjusts picture contrast automatically to produce more detail in both bright and dark areas of every scene.
- The **Velocity Modulation (VM) circuitry** produces clean and sharp black and white contrasts (except for KV-27TS27 and KV-27TS31).

Identifying Your TV

Check the model number of your TV set.

This manual covers five models and there are slight differences among them. Check the table below to see what is equipped with your TV before you begin operating it.

Instructions in this manual are based on model

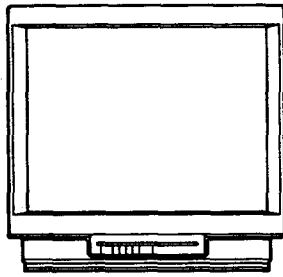
KV-32TS35 (one of the models with maximum number of features) and **Remote Commander RM-Y102**. If you have a different model, please disregard any information that does not apply to your TV.

Table of models **YES: equipped** **NO: not equipped**

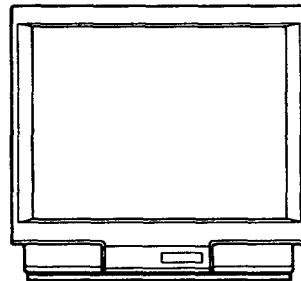
	KV-27TS27	KV-32TS20	KV-27TS31	KV-32TS35/KV-32TW75
Picture-in-Picture feature	NO	NO	NO	YES
Pre-Programmed feature	NO	NO	YES	YES
SURROUND system	YES	YES	YES	YES
Front panel A/V jacks	NO	NO	YES	YES
VARIABLE AUDIO OUT jacks	YES	YES	YES	YES
S-VIDEO IN jacks	NO	YES	YES	YES
Remote Commander	RM791	RM791	RM-Y101	RM-Y102

Design

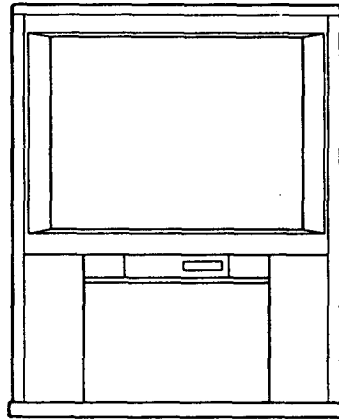
KV-27TS27
KV-32TS20



KV-27TS31
KV-32TS35

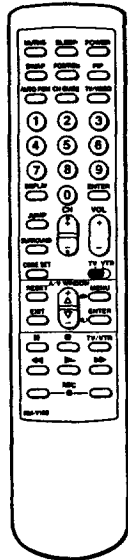


KV-32TW75 (natural wood finish)

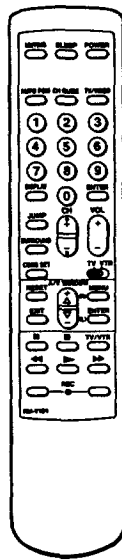


Supplied
Remote
Commander

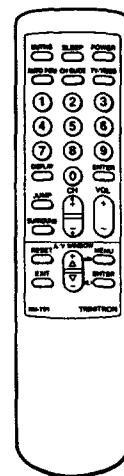
RM-Y102



RM-Y101



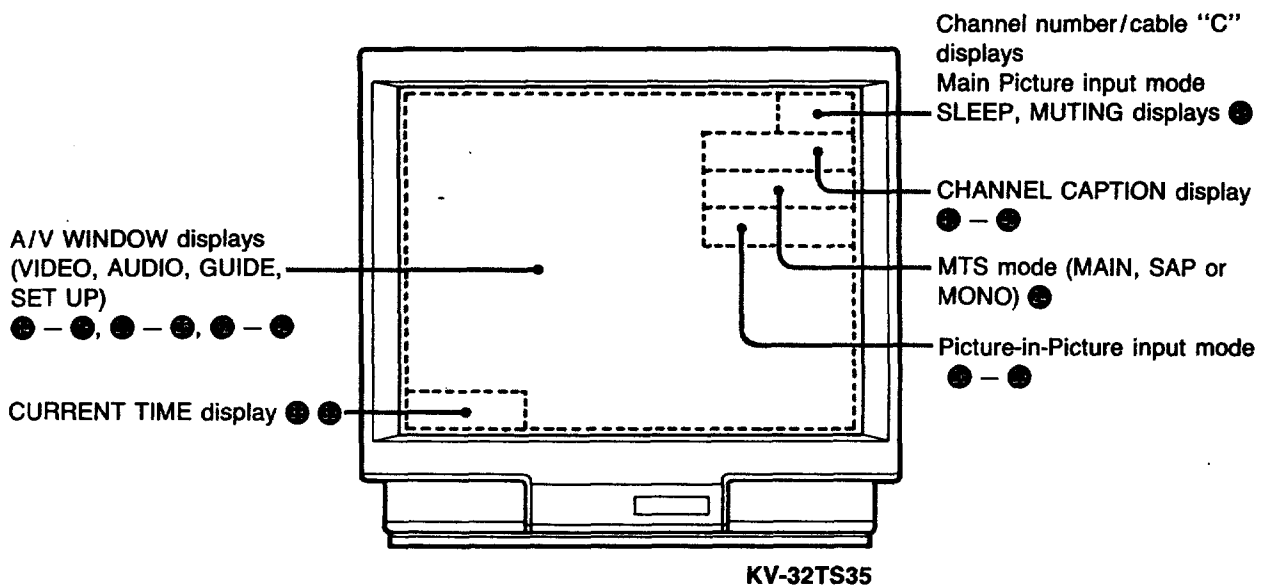
RM-791



Locating the Controls

Screen Displays

For details, refer to the pages indicated by the numbered black circles ●.

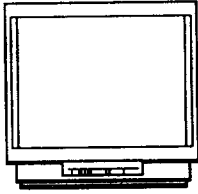




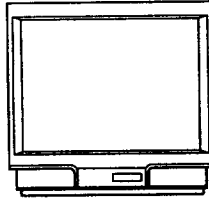
Front Panel

Locating the controls

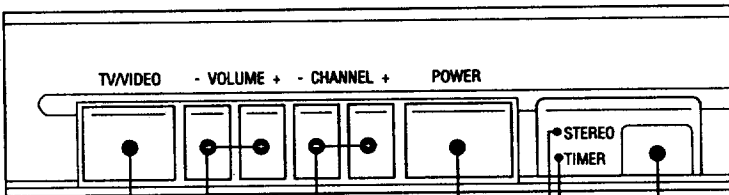
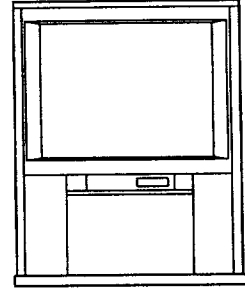
KV-27TS27
KV-32TS20



KV-27TS31
KV-32TS35



KV-32TW75



TV/VIDEO button* ●●

VOLUME +/- buttons* ●●●●

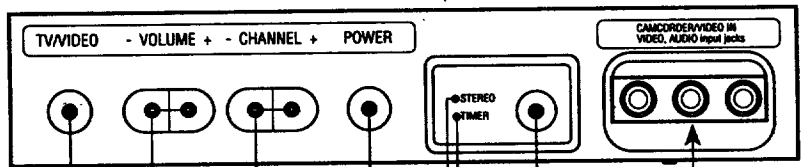
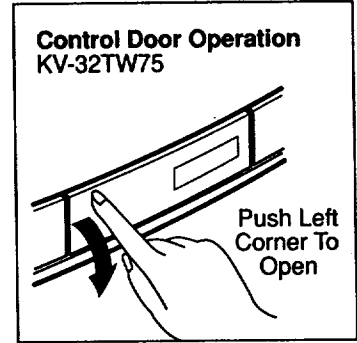
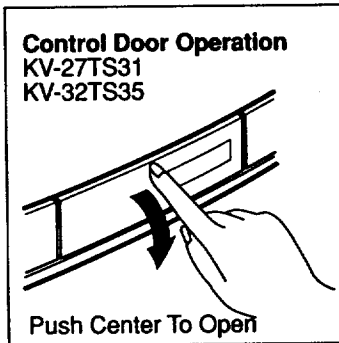
CHANNEL +/- buttons* ●●●●●●

POWER button* ●●●●

STEREO indicator lamp ●

TIMER indicator lamp ●

Remote detector



TV/VIDEO button* ●●

VOLUME +/- buttons* ●●●●

CHANNEL +/- buttons* ●●●●●●

POWER button* ●●●●

STEREO indicator lamp ●

TIMER indicator lamp ●

Remote detector

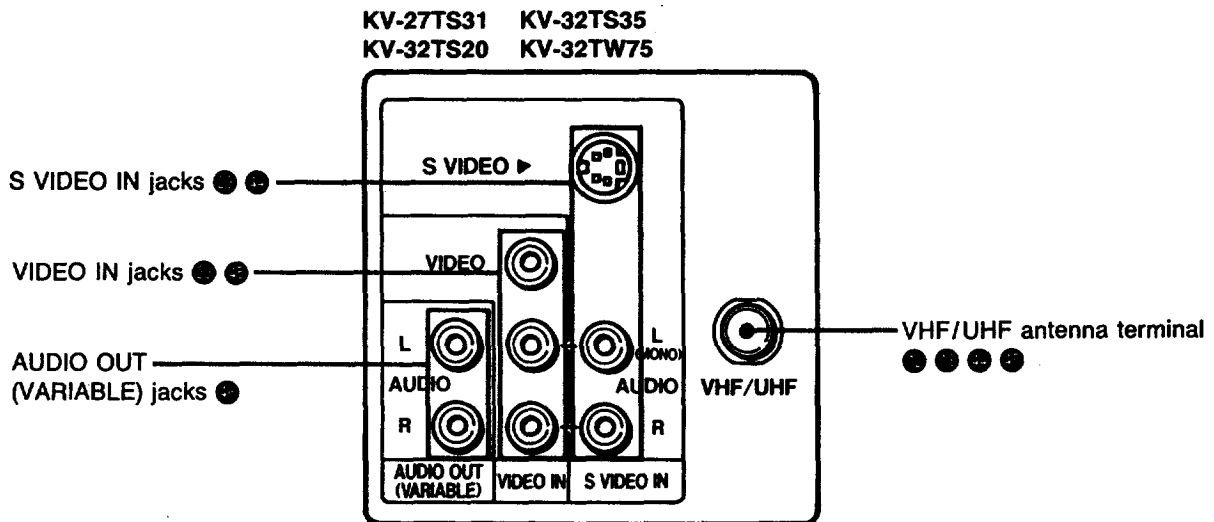
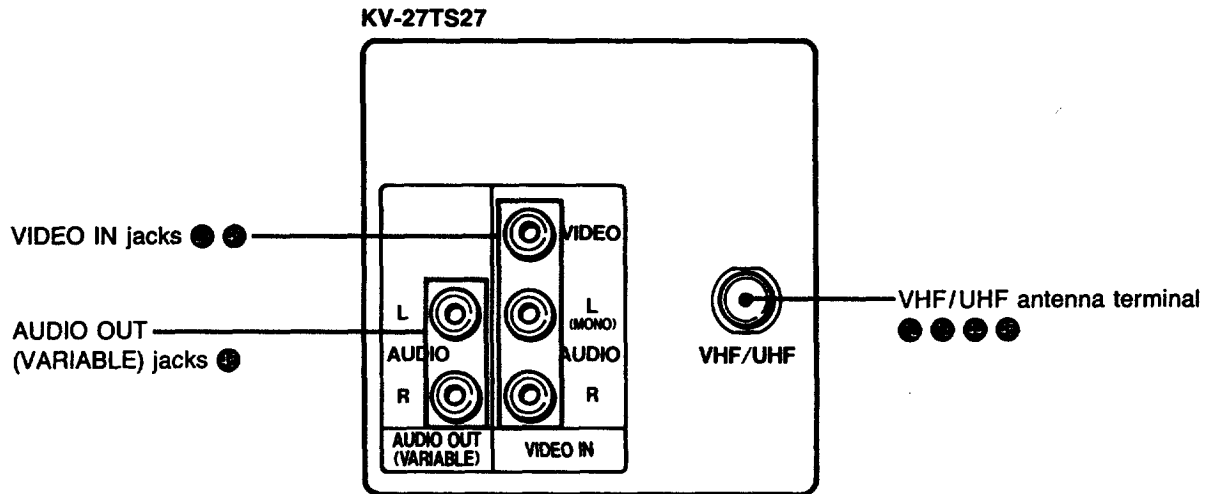
CAMCORDER/VIDEO IN VIDEO, AUDIO input jacks ●

* BUTTONS with the same function are also located on the Remote Commander (pp. 9-10)

Locating the Controls

Rear Panel

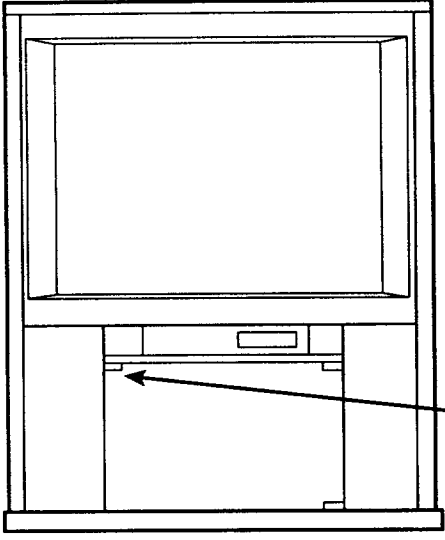
For details, refer to the pages indicated by the numbered black circles ●.





Installing the Glass Door and VCR Shelf (KV-32TW75 only)

Locating the controls



Push here to close.
To open, push again.

KV-32TW75

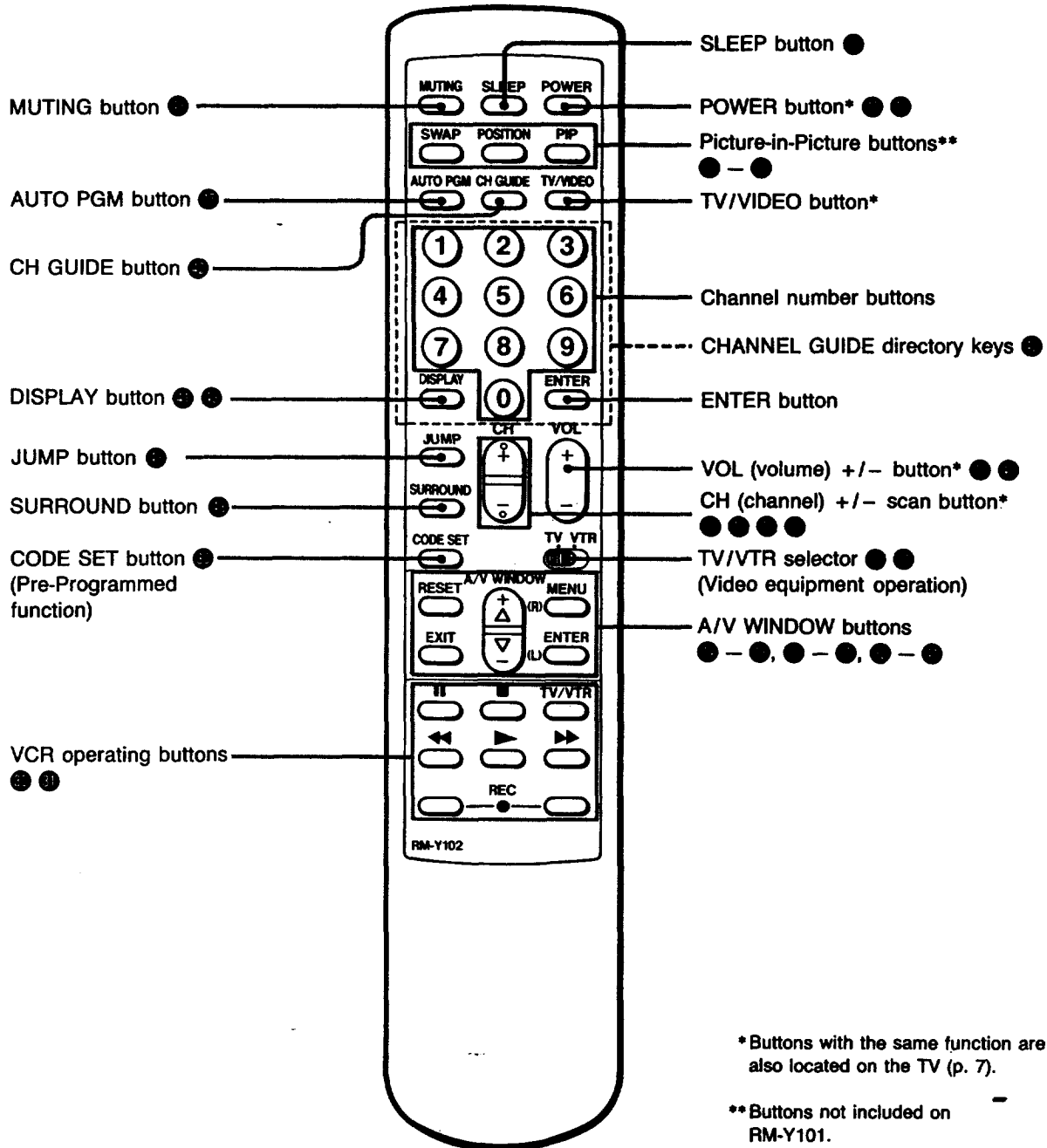
Parts list			
1	Bushing		1
2	Bottom Hinge		1
3	Top Hinge		1
4	Screw 4X4		4
5	Metal tube		4
6	Plate pad		1
7	Push plate		1

<p>Insert bushing 1 into the cabinet hole. Check that the projection of the screw through the hinge allows for proper installation of the hinge to the glass, then insert the bottom hinge 2 into the bushing.</p>	<p>Insert the metal tube shelf supports 5 and, aligning the grooves with the supports, insert the shelf.</p>	<p>Attach the top hinge 3 to one end of the glass door and tighten the screws. Attach plate pad 6 to the other end, then push plate 7 over the plate pad.</p>	<p>Pushing the glass door hinge up into the hole located on the cabinet ceiling, slide the door into the bottom hinge; then tighten the screws.</p>
<p>Check projection of this area of screw 1.</p>	<p>Coated side</p> <p>Align the grooves with 5.</p>		

Locating the Controls

Remote Commander

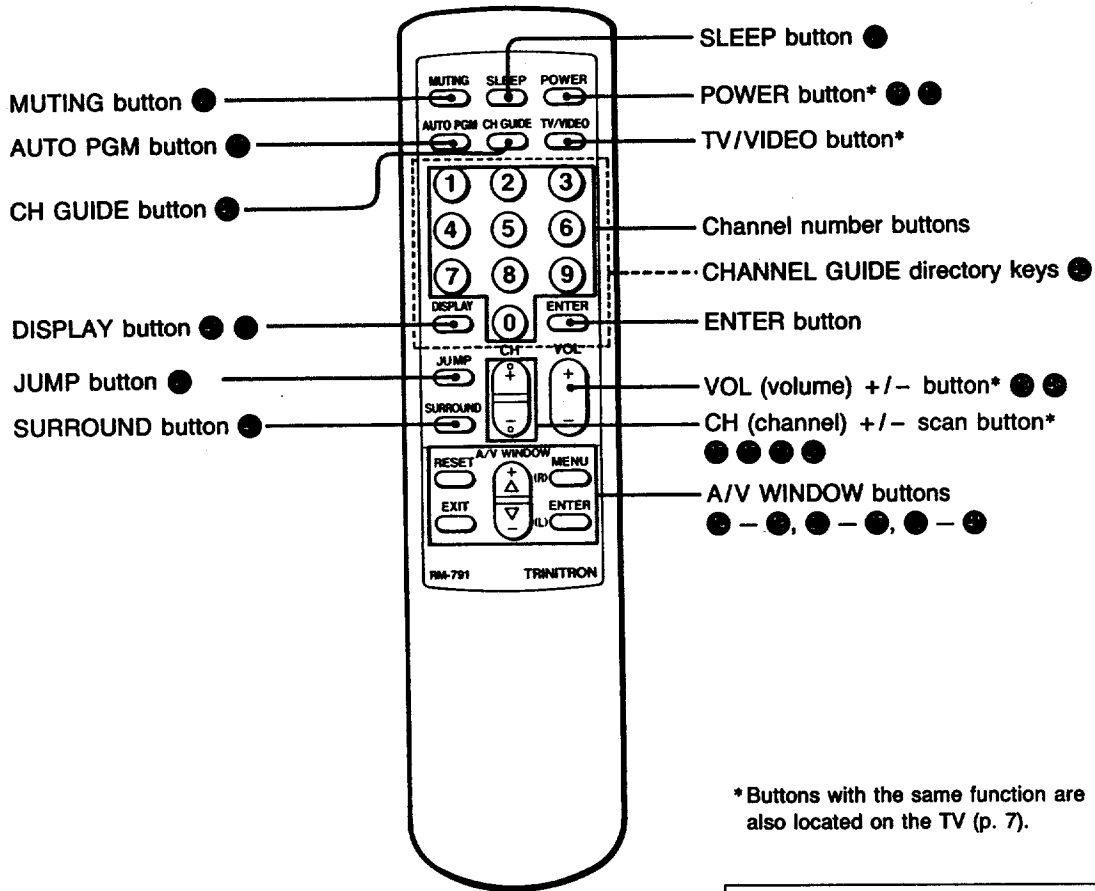
For details, refer to the pages indicated by the numbered black circles ●.



RM-Y102: KV-32TS35
KV-32TW75
(RM-Y101: KV-27TS31)

*Buttons with the same function are also located on the TV (p. 7).

**Buttons not included on RM-Y101.



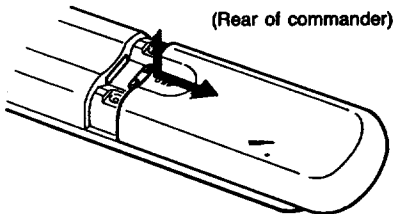
RM-791: KV-27TS27
KV-32TS20

*Buttons with the same function are also located on the TV (p. 7).

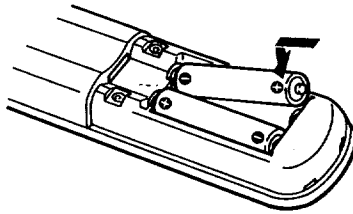
WARNING
Batteries may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

Installing Batteries

1 Remove the battery compartment cover.



2 Insert two size AA (R6) batteries in correct polarity.



Battery life

With normal operation, batteries will last up to half a year. If the Remote Commander does not operate properly, the batteries might be exhausted. Replace both with new ones.

To avoid damage from possible battery leakage

Remove the batteries when you will not be using the Remote Commander for a fairly long time.

Chapter 1: Set up Connecting TV Antenna/Cable

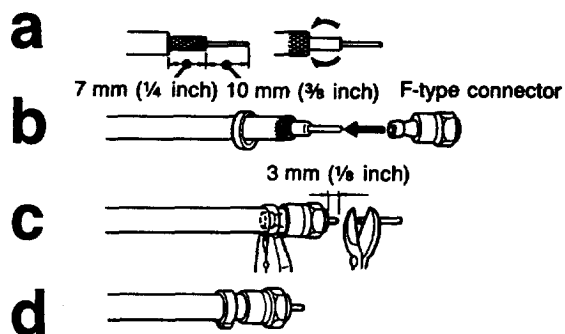
You can use either an indoor or outdoor antenna with your TV. We recommend using an outdoor antenna for better picture quality. You can receive cable TV by connecting a cable supplied by your local cable company.

Connecting VHF, UHF or VHF/UHF Combination Antenna or CATV Cable

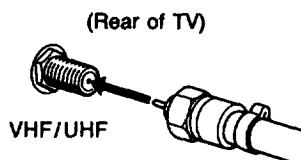
75-ohm coaxial cable (round)

- 1 Check your antenna cable type and prepare the end of the cable using the F-type connector.

Attach an F-type connector (not supplied).



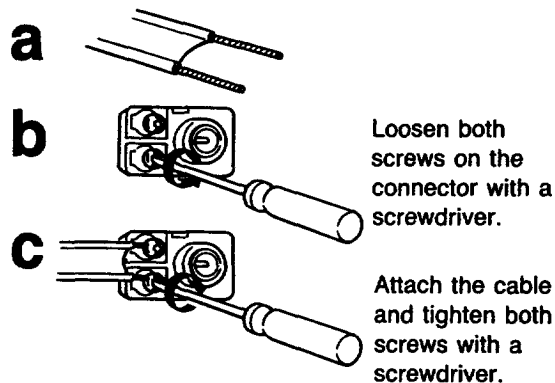
- 2 Plug the connector into the VHF/UHF terminal at the rear of the TV.



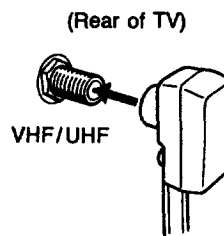
300-ohm twin-lead cable (flat)

- 1 Check your antenna cable type and prepare the end of the cable using the 300-ohm twin-lead cable.

Attach the supplied antenna connector.



- 2 Plug the connector into the VHF/UHF terminal at the rear of the TV.

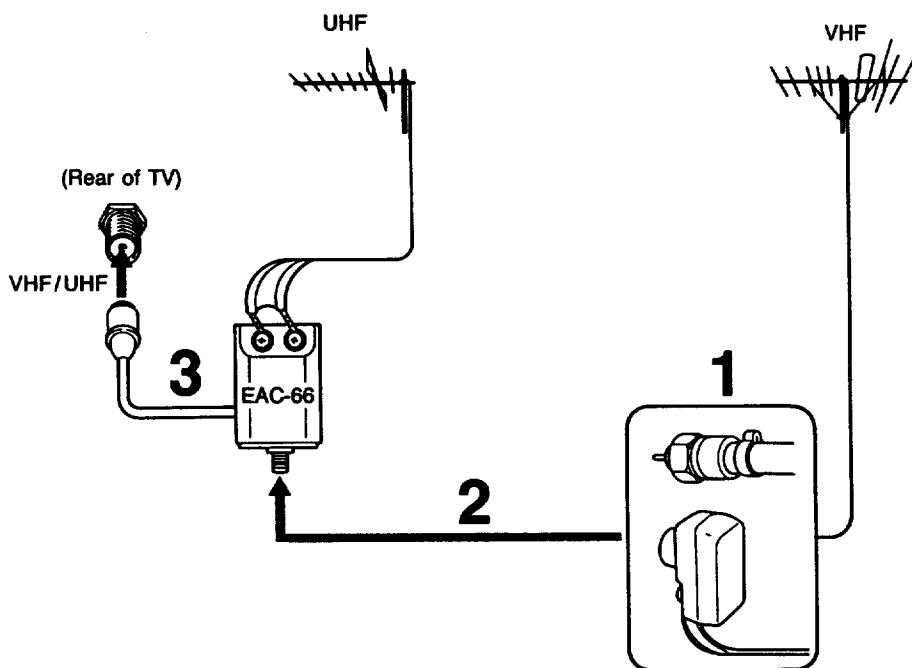


* Most combination antennas are equipped with a signal splitter. Remove the splitter and attach the appropriate connector.

Connecting both VHF and UHF antennas

Use the EAC-66 U/V mixer (not supplied).

- 1** Prepare the VHF antenna end using the appropriate connector (p. 12).
- 2** Connect the cables to the mixer.
- 3** Attach the mixer to the VHF/UHF terminal.



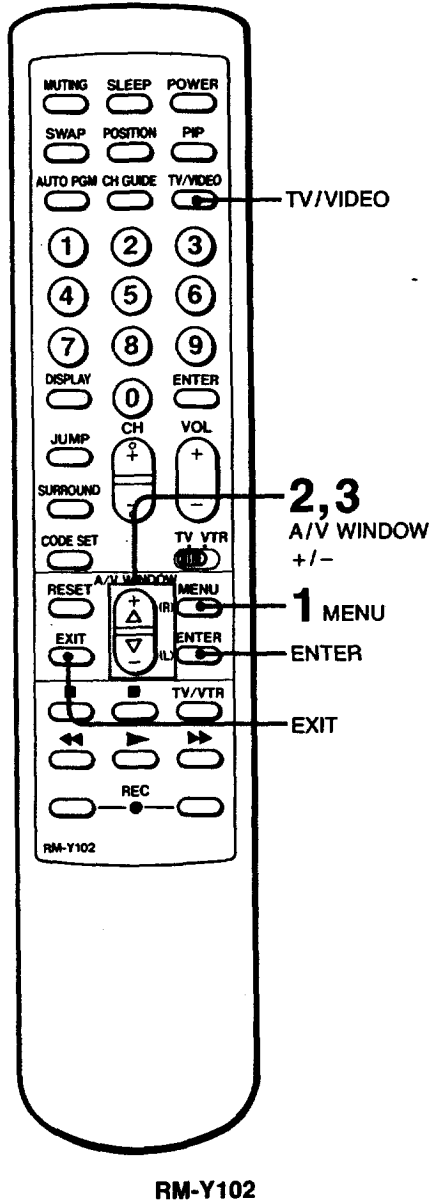
When the U/V mixer is used

Snow and noise may appear in the pictures of the cable TV channels over 37 (W + 1).

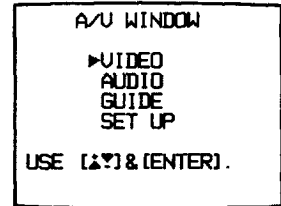
Turning the Cable Mode On or Off

All of the controls are on the Remote Commander.

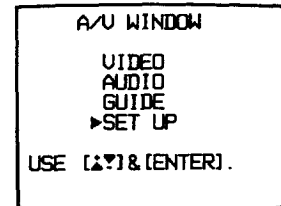
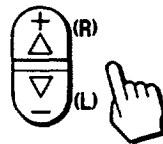
If you have cable connected to your TV (p. 12), follow the steps below to turn the cable connection on or off. Cable mode is preset to ON when you use your TV for the first time; turn cable OFF to preset or watch VHF or UHF channels (pp. 15 – 19).



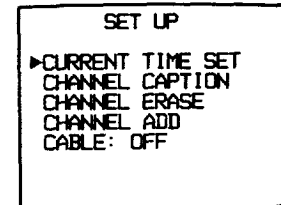
1 Press MENU to display the following screen.



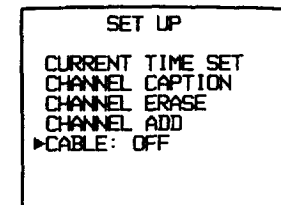
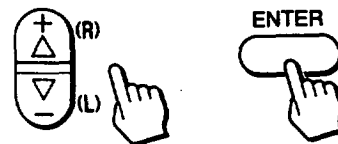
2 Press the +/- button to select SET UP.



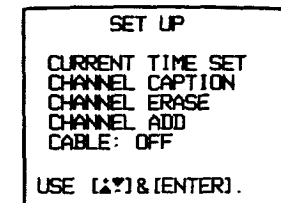
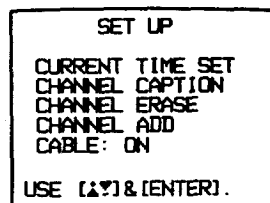
Press ENTER.



3 Press +/- button and ENTER to select CABLE.



Press the +/- button and ENTER to select ON or OFF alternately.



To return to TV mode.
Press EXIT.

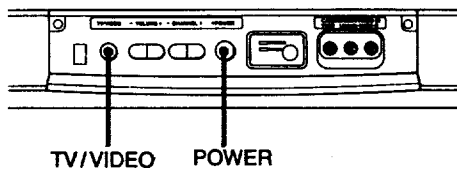
Notes

- You cannot set CABLE ON/OFF while the TV is in VIDEO mode. Before setting, select TV mode by pressing TV/VIDEO.
- The menu will be cancelled automatically after 10 seconds if you do not push any buttons during that time.

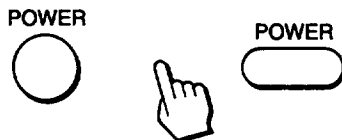
Presetting TV Channels



Presetting TV Channels Automatically



1 Press POWER on the TV or the Remote Commander to turn the TV on.

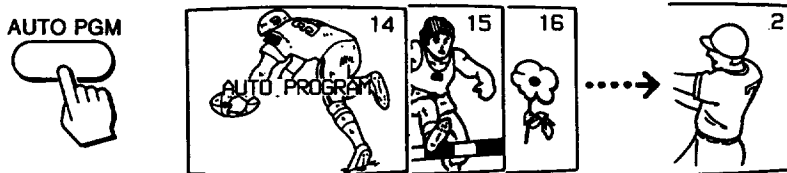


2 Turn the cable connection on or off, depending on if you want to preset cable or VHF/UHF channels.

(FOLLOW THE STEPS ON P. 14)

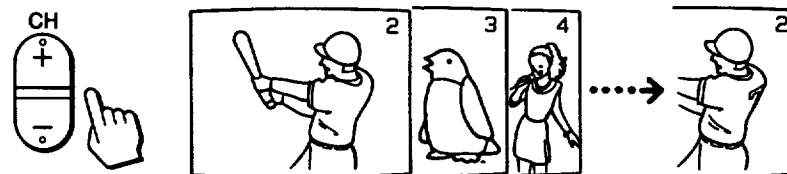
If "VIDEO" or "S VIDEO" is displayed on the screen, press the TV/VIDEO button on the TV or the Remote Commander so that a channel number appears.

3 Press AUTO PGM.



"AUTO PROGRAM" is displayed on the screen and receivable channels (other than the channels already preset) will be preset in numerical sequence. The channels previously preset remain in the TV's memory. When no more channels can be found, the programming stops and the lowest numbered channel is displayed.

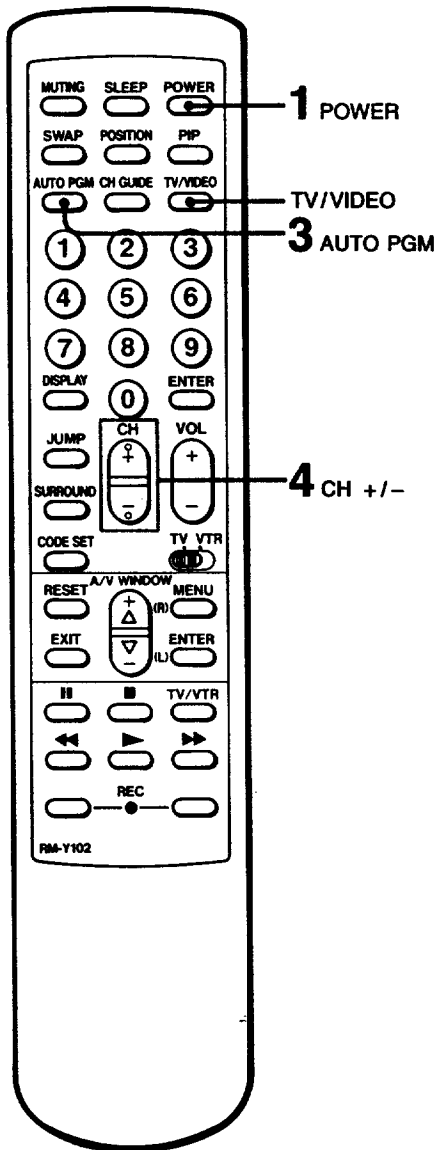
4 Press CH +/- to check or view preset channels.



Channels that can be received on this TV:

- VHF: 2 — 13
- UHF: 14 — 69
- Cable: 1 — 125

To erase unnecessary channels, or to add channels that could not be preset automatically because their signal strength was too weak, follow the steps in "Erasing Unnecessary Channels" (p. 16) and "Presetting Only Desired Channels" (p. 18).



RM-Y102

Turning the cable mode on or off
Presetting TV channels

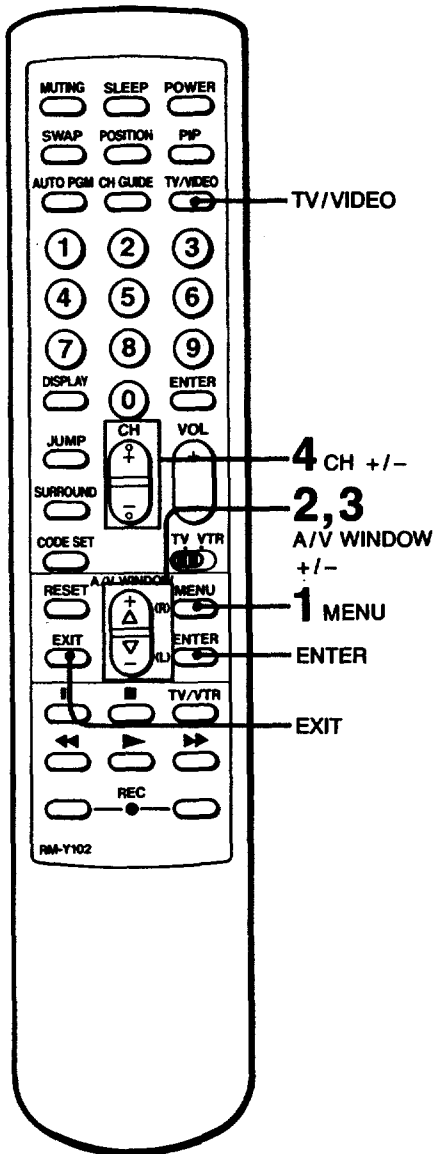
Presetting TV Channels

Erasing Unnecessary Channels — CHANNEL ERASE

Use this feature to erase non-receiving channels from the channel scan memory.

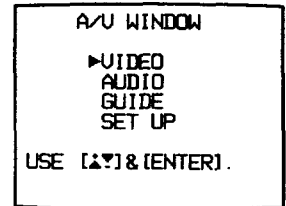
Note

You cannot use CHANNEL ERASE while the TV is in VIDEO mode. Before erasing channels, select TV mode by pressing TV/VIDEO.

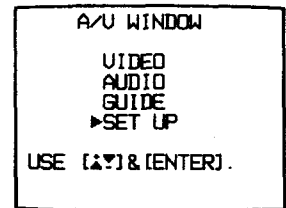
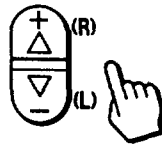


RM-Y102

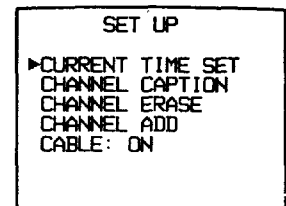
1 Press MENU to display the following screen.



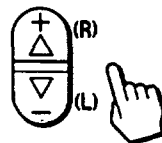
2 Press the +/- button to select SET UP.



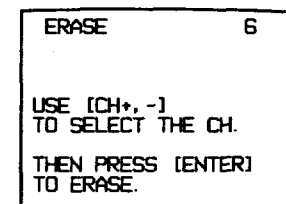
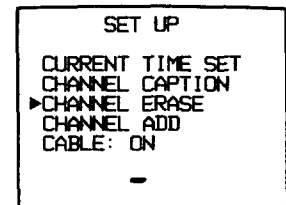
Press ENTER.



3 Press the +/- button to select CHANNEL ERASE.

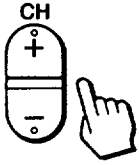


Press ENTER.





4 Press the CH +/- button to select the channel you want to erase.



```

ERASE      8

USE [CH+, -]
TO SELECT THE CH.
THEN PRESS [ENTER]
TO ERASE.

```

Press ENTER.
 A "-" appears before the channel number, showing that the channel has been erased from the channel scan memory.



```

ERASE      - 8

USE [CH+, -]
TO SELECT THE CH.
THEN PRESS [ENTER]
TO ERASE.

```

The next time you press the CH +/- buttons, channel 8 will be skipped.
 Repeat step 4 to erase other channels.

To return to TV mode
 Press EXIT.

Note

When you erase a VHF or UHF channel, the cable TV channel with the same number is also erased, and vice versa.

Cable TV channel chart*

Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to the chart below.

Number on this TV	Corresponding cable TV channel
1	A-8
5	A-7
6	A-6
14	A
15	B
16	C
17	D
18	E
19	F
20	G
21	H
22	I
23	J
24	K
25	L
26	M
27	N
28	O
29	P
30	Q
31	R
32	S
33	T
34	U
35	V
36	W
37	W + 1
38	W + 2
39	W + 3
⋮	⋮
93	W + 57
94	W + 58
95	A-5
96	A-4
97	A-3
98	A-2
99	A-1
100	W + 59
101	W + 60
102	W + 61
⋮	⋮
123	W + 82
124	W + 83
125	W + 84

Presetting TV channels

* This designation of cable TV channels conforms to the EIA/NCTA recommendation.
 Check with your local cable TV company for more complete information on the available channels.

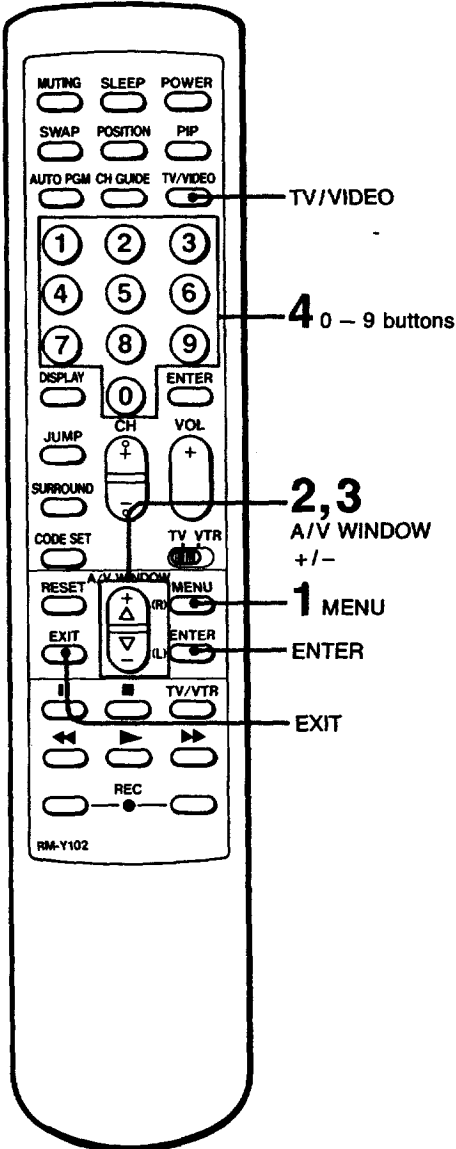
Presetting TV Channels

Presetting Only Desired Channels — CHANNEL ADD

Use this feature to add channels one by one to the channel scan memory.

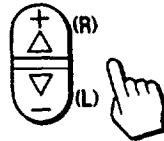
Note

You cannot use CHANNEL ADD while the TV is in VIDEO mode. Before adding channels, select TV mode by pressing TV/VIDEO.

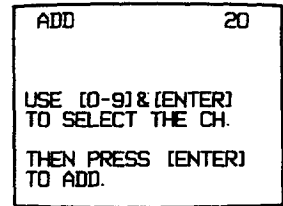
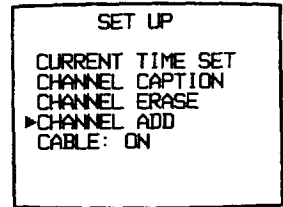


1-2 (FOLLOW STEPS 1 & 2 ON PAGE 16)

3 Press the +/- button to select CHANNEL ADD.



Press ENTER.

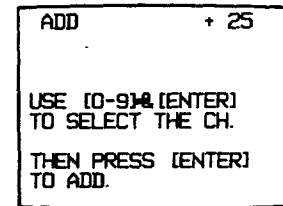
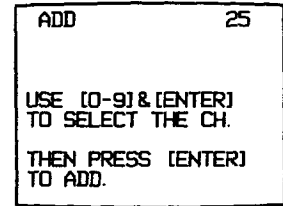


4 Press the 0 - 9 buttons to select the channel you want to add. For example, to add channel 25, press 2, 5 and ENTER.



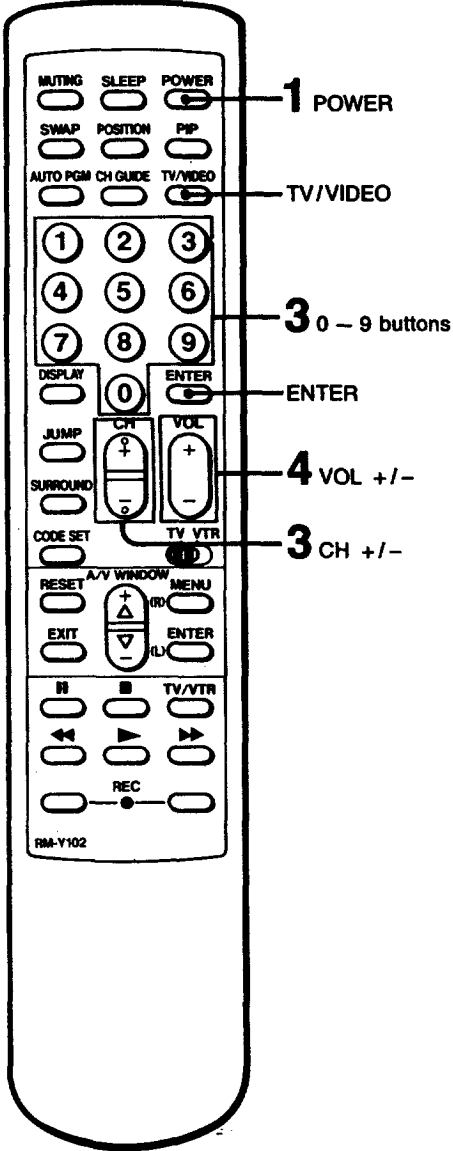
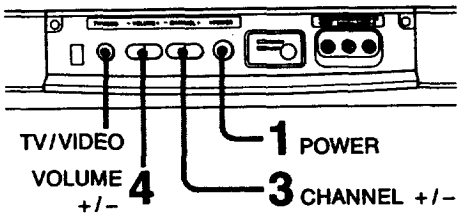
Press ENTER again.

A "+" appears before the channel number, showing that the channel has been added to the channel scan memory.



Repeat step 4 to add other channels.

To return to TV mode
Press EXIT.



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1 Press POWER on the TV or the Remote Commander to turn the TV on.

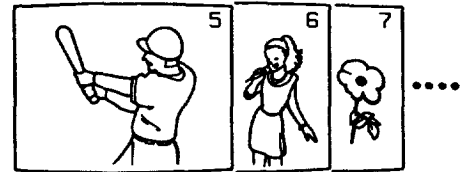
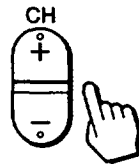


2 Turn the cable mode on or off, depending on if you want to watch cable or VHF/UHF channels.
 (FOLLOW THE STEPS ON P.14)

If "VIDEO" or "S VIDEO" is displayed on the screen, press the TV/VIDEO button on the TV or on the Remote Commander so that a channel number appears.

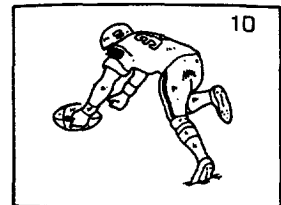
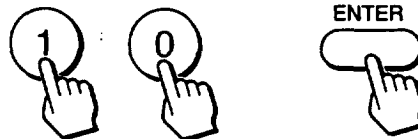
3 Select a channel in one of the following two ways:

To scan the preset channels* in numerical sequence
 Press CH +/-.

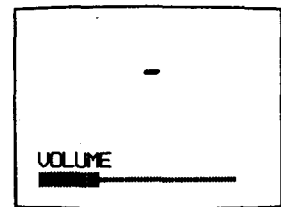
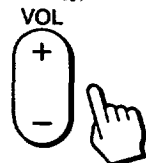


*For more on presetting channels, see pp. 15 - 18.

To select a channel directly
 Press the channel number button(s) and then ENTER.
 For example, to select channel 10, press 1, 0 and ENTER.



4 Press VOL +/- to adjust the volume.



The display will disappear automatically after 3 seconds.

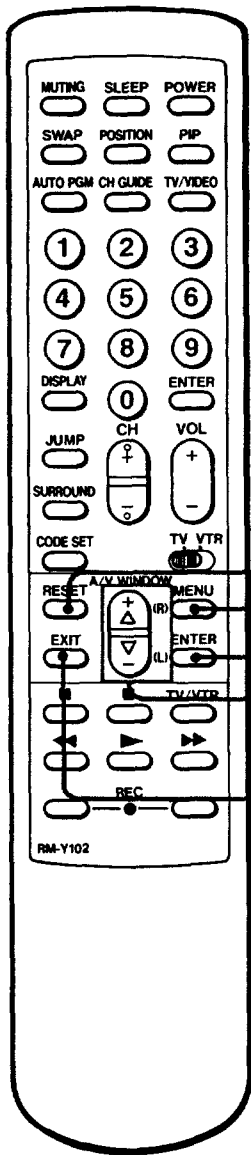
← To reduce the volume → To increase the volume

To turn off the TV
 Press POWER on the TV or the Remote Commander again.

Watching TV programs

Adjusting Picture and Sound Quality

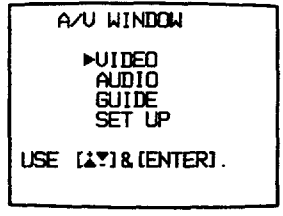
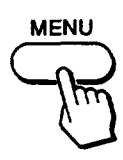
Adjusting the Picture



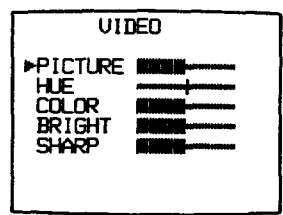
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RESET
1 MENU
2, 3, 4 ENTER
3, 4 A/V WINDOW
 +/-
 EXIT

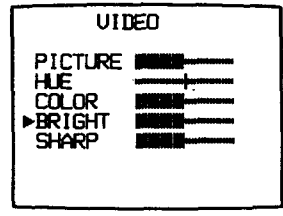
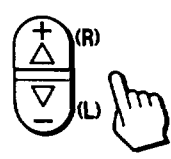
1 Press MENU to display the following screen.
VIDEO is already selected for you.



2 Press ENTER.



3 Press the +/- button to select the quality you want to adjust.
 For example, to adjust the picture brightness, select BRIGHT.

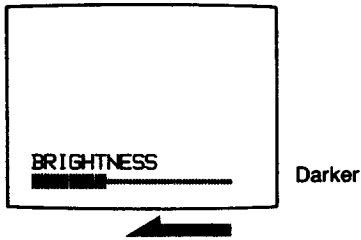
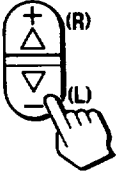
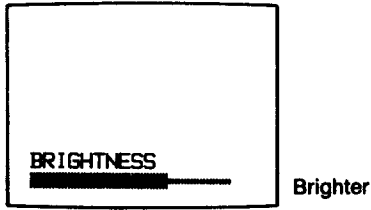


Press ENTER.



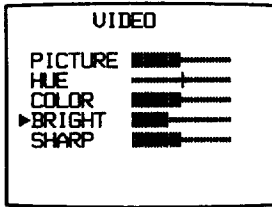
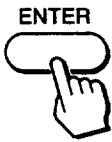


4 Press the +/- button to make the adjustment.



Press ENTER.

The new setting will appear in the VIDEO menu.



To return to TV mode
Press EXIT.

To restore the factory (mid-level) setting
Go to the VIDEO menu and press RESET.
All the settings except for PICTURE will be restored to the mid-level setting.



Adjusting picture and sound quality

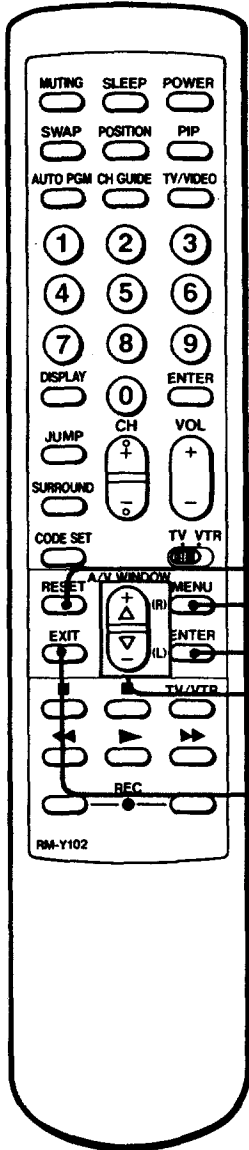
To adjust another item
Repeat steps 3 and 4.

	Press - to:	Press + to:
PICTURE	decrease picture contrast with soft color	increase picture contrast with vivid color
HUE	make skin tones become purplish	make skin tones become greenish
COLOR	decrease color intensity	increase color intensity
BRIGHTNESS	darken the picture	brighten the picture
SHARPNESS	soften the picture	sharpen the picture

The menus and adjustment bars will disappear automatically after 10 seconds if you do not press any other buttons during that time.

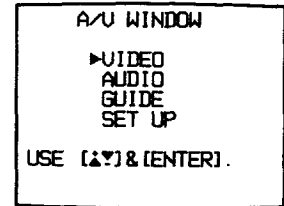
Adjusting Picture and Sound Quality

Adjusting the Sound

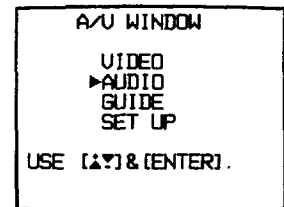
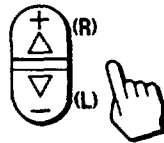


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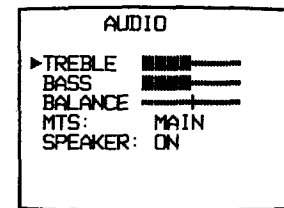
1 Press MENU to display the following screen.



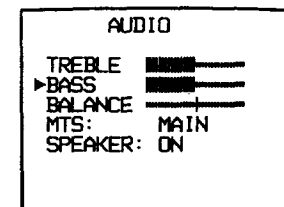
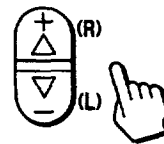
2 Press the +/- button to select AUDIO.



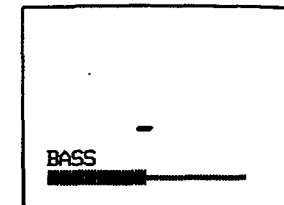
Press ENTER.



3 Press the +/- button to select the sound quality (TREBLE, BASS or BALANCE) that you want to adjust. For example, to adjust the bass response, select BASS.

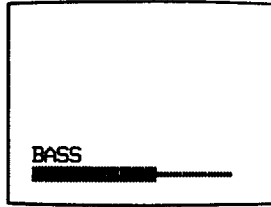


Press ENTER.

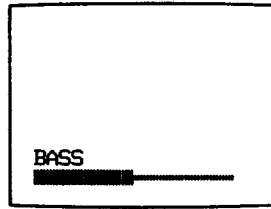




4 Press the +/- button to make the adjustment.



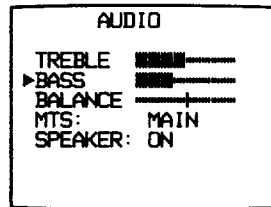
To increase bass response



To decrease bass response

Press ENTER.

The new setting will appear in the AUDIO menu.



To adjust another item
Repeat steps 3 and 4.

	Press - to:	Press + to:
TREBLE	decrease the treble response	increase the treble response
BASS	decrease the bass response	increase the bass response
BALANCE	emphasize the left speaker's volume	emphasize the right speaker's volume

The menus and adjustment bars will disappear automatically after 10 seconds if you do not press any buttons during that time.

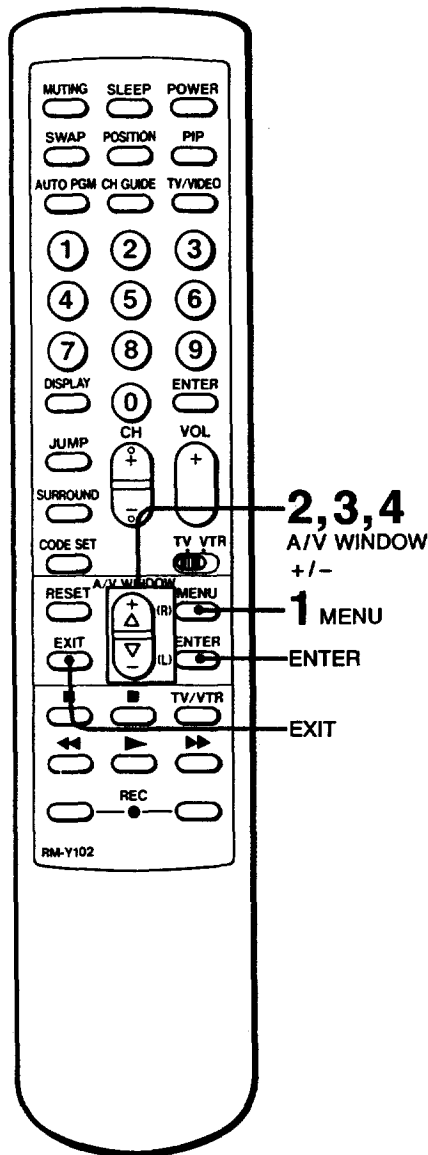
To restore the factory (mid-level) settings
Go to the AUDIO menu and press RESET.
The settings for MTS and SPEAKER will not be affected (pp. 24 – 25).

To return to TV Mode
Press EXIT.

Adjusting Picture and Sound Quality

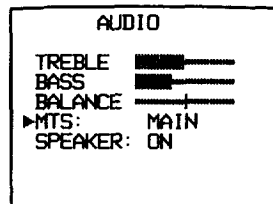
Receiving a Multichannel TV Sound program — MTS

1-2 (FOLLOW STEPS 1 AND 2 ON PAGE 22)



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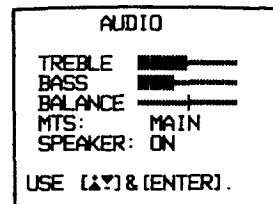
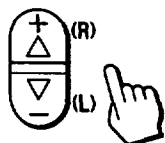
3 Press the +/- button and ENTER to select MTS.



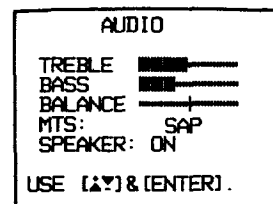
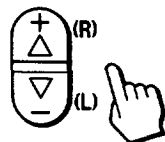
4 Press the +/- button to select MAIN, SAP or MONO modes alternately. (Display is red)

Select the MAIN mode to listen to STEREO sound.

The STEREO indicator lamp on the TV will light up whenever a stereo broadcast is received.



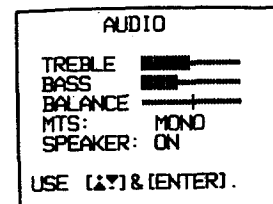
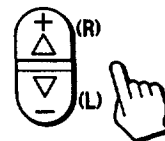
Select the SAP mode to listen to Second Audio Programs.



Note

During SAP mode, the sound of non-SAP programs will be muted.

Select the MONO mode to eliminate excessive noise during stereo broadcasts, caused by a weak incoming signal.



Press ENTER.

The display will turn green, indicating that the mode has been set.



Turning the SPEAKER ON or OFF

Use this feature to turn the TV speakers off when you connect an audio system (p. 46)

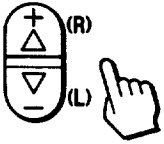
To return to TV mode
Press EXIT.

1-2

(FOLLOW STEPS 1 and 2 ON PAGE 22)

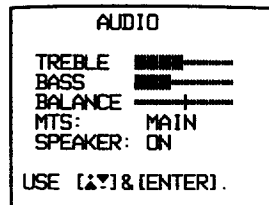
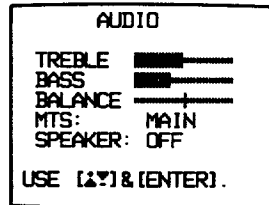
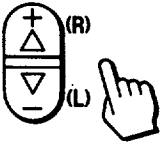
3

Press the +/- button and ENTER to select SPEAKER.



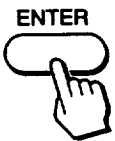
4

Press the +/- button to select ON or OFF modes alternately.
(Display is red).

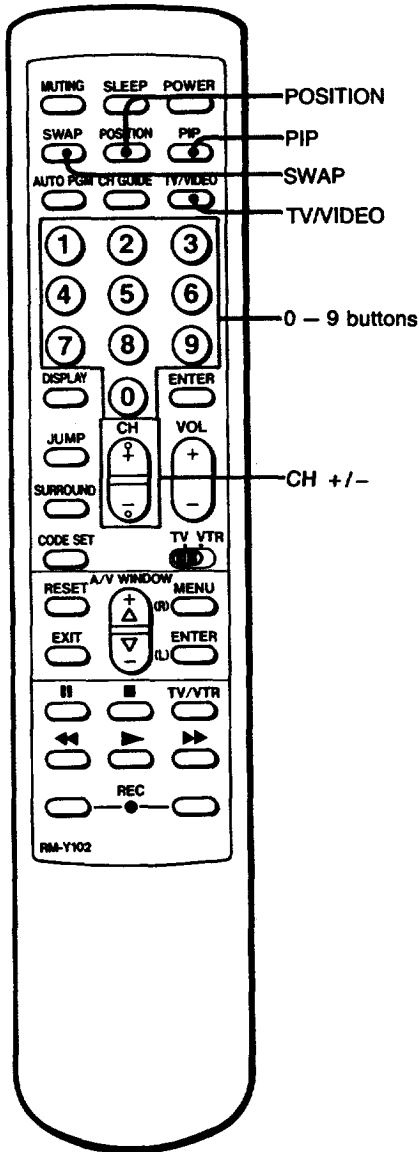


Press ENTER.

Display will turn green, indicating that the mode has been set.



Adjusting picture and sound quality



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With this feature, you can watch both the main picture and a video source, simultaneously, by means of a window picture.

For example, use Picture-in-Picture when you want to watch a TV program and a video source from connected equipment (VCR, video disc player, etc.) at the same time.

If you connect a VCR, you can watch two different TV programs at the same time.

Displaying a window picture — PIP

Press PIP.



Input source mode or TV channel for the main picture (display is green)

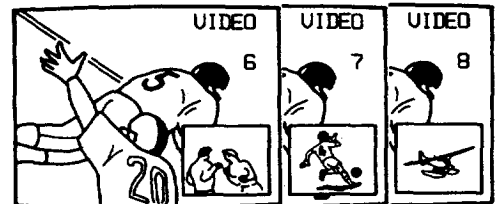
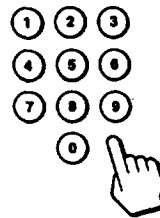
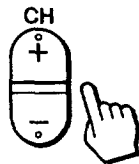


Input source mode or TV channel for the window picture (display is white)

A window picture will appear in the same input mode as the last time you used PIP.

Scanning channels in the window picture

Press CH +/- or the 0 – 9 buttons and ENTER.

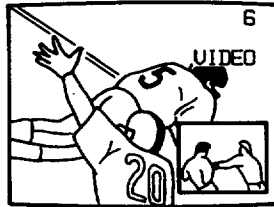
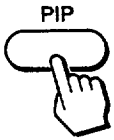


To make the window picture disappear
Press PIP again.

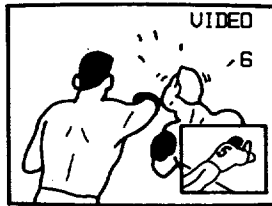
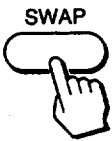


Swapping the main and window pictures — SWAP

- 1** Press PIP to display a window picture.

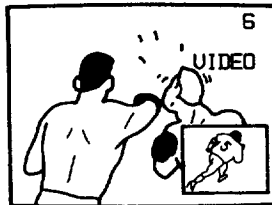
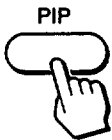


- 2** Press SWAP.

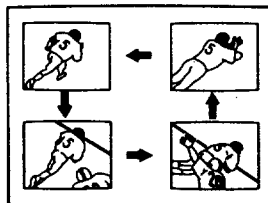


Changing the position of the window picture — POSITION

- 1** Press PIP to display a window picture.



- 2** Press POSITION.
Each time you press POSITION, the window picture will move counterclockwise on the screen, as illustrated below.



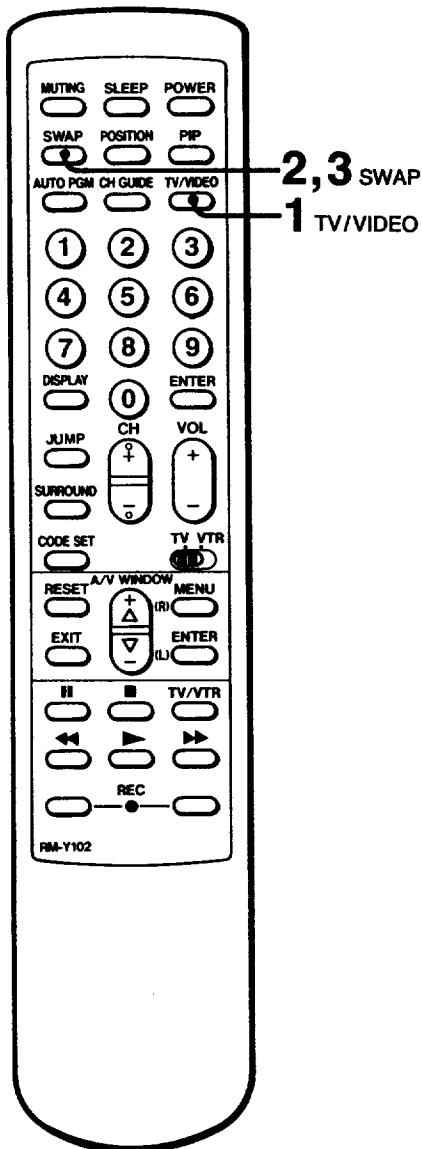
To change the input mode of the window picture

- 1 Press TV/VIDEO to change the input mode of the main picture.
(Selects TV, VIDEO, S VIDEO in sequence)
- 2 Press SWAP to swap the main picture with the window picture.

Notes

- You cannot hear the sound of the window picture channel.
- If the main picture is blocked, the display "BLOCKED" will appear on the main screen, and Picture-in-Picture will not function (pp. 36 – 37 — Setting CHANNEL BLOCK).
- If the main picture is not receiving an image, the window picture will disappear. It will reappear when you switch to a receiving channel.
- When the main picture is black and white, depending on the TV signal some window picture images may also be black and white.
- When you turn PIP on, or when you turn the TV on with PIP mode on, the window picture will appear at the bottom right of the screen.
- Depending on the condition of the main picture's signal, the window picture may be affected.

Using Picture-in-Picture

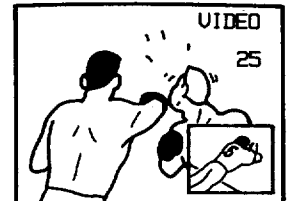


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Displaying a VIDEO input image as a window picture

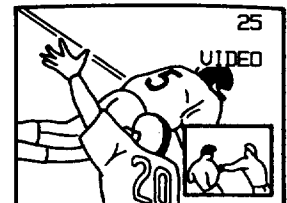
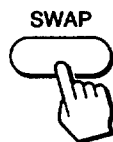
To watch VIDEO images (VCR playback or TV through a VCR tuner) using Picture-in-Picture, first select a program mode (cable or VHF/UHF) by following the steps on p. 14, "Turning the Cable Connection On or Off." Then follow the steps below.

- 1 Press TV/VIDEO to select the appropriate video input mode. (Selects TV, VIDEO and S VIDEO modes in sequence)

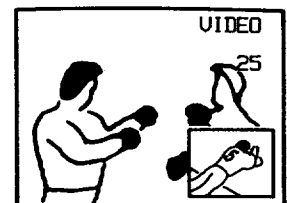
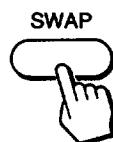


The video image from the input mode you select will appear as the main picture.

- 2 Press SWAP so that the video input picture becomes a window picture.



- 3 Press SWAP again to change the video input picture back to the main picture.



You can only change VIDEO input modes of the main picture.

Note

To operate your VCR with the supplied Remote Commander, see pp. 30 – 31 — "Using the Remote Commander."

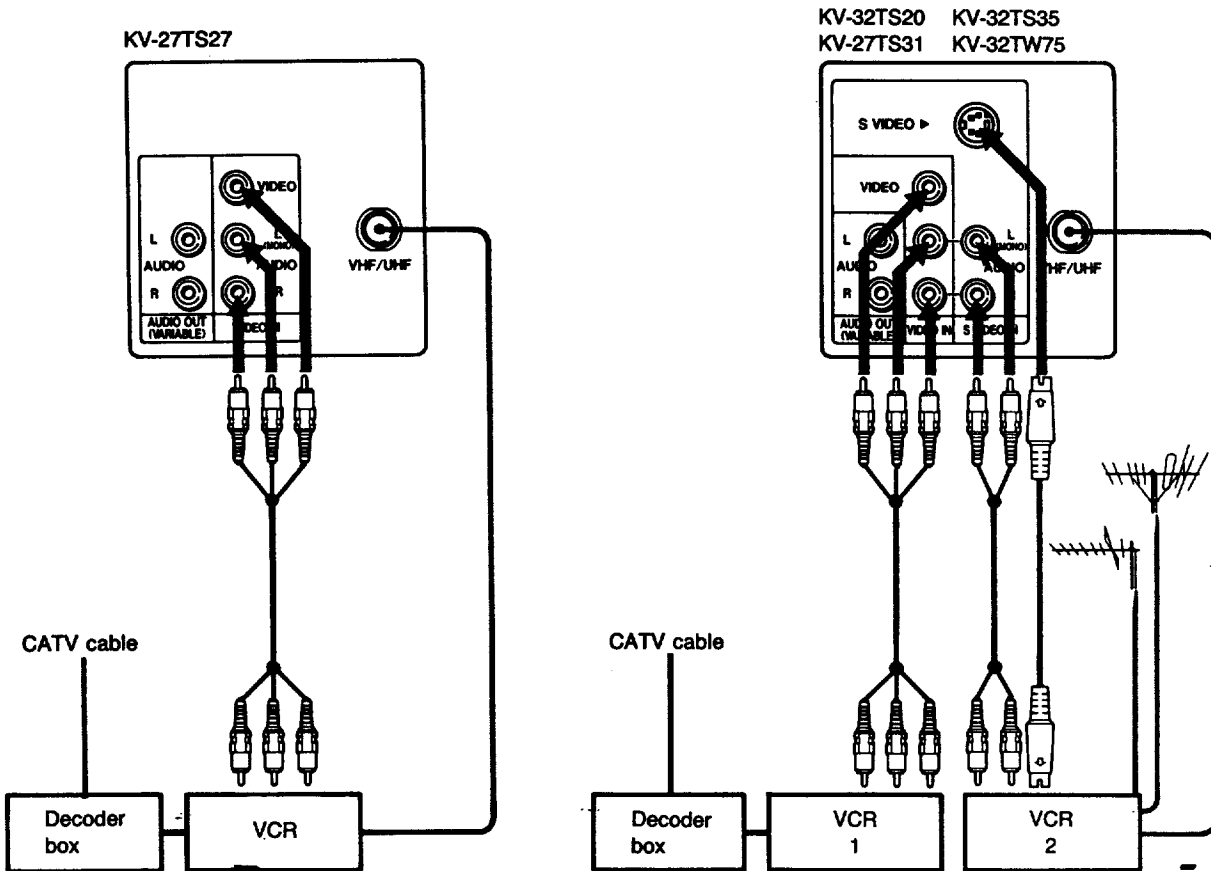
Displaying pay cable TV as a window picture

In order to use Picture-in-Picture with pay cable TV images, make sure the connections are made as illustrated below. Select cable mode by following the steps on p. 14, "Turning the Cable Connection On or Off." Then follow the steps below.

1-3 Follow steps 1 – 3 in "To display a VIDEO input image as a window picture" (page 28).

4 Put your VCR on an inactive channel (CH 3 or 4).

5 Change pay cable TV channels with the decoder box.



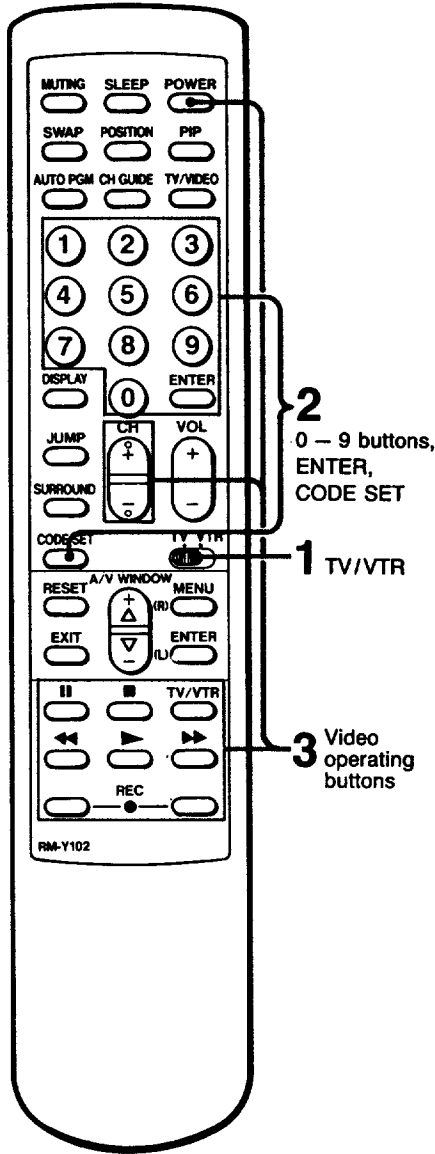
Using Picture-in-Picture

Using the Pre-Programmed Remote Commander

You can operate other video equipment that has an infrared remote detector with this supplied Pre-Programmed Remote Commander (except for KV-27TS27 and KV-32TS20).

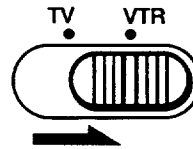
Operating Sony or non-Sony Video Equipment — Pre-Programmed Function

With the supplied Remote Commander, you can operate a Sony video cassette recorder (Beta, 8mm, VHS) or multi disc player as well as most non-Sony video equipment connected to your TV by following the steps below.



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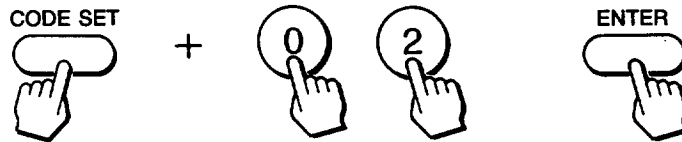
1 Set the TV/VTR selector to VTR.



Note

When the selector is set to VTR, the POWER and CH +/- buttons on the Remote Commander function as video operating buttons and cannot be used to operate the TV.

2 While pressing CODE SET, press the 0 - 9 buttons to enter the manufacturer's code number (see chart on p. 31). For example, to operate a Sony 8 mm VCR, press 0, 2 and ENTER.



3 Use the video operating buttons on the Remote Commander to operate the video equipment.

Operating a VCR

- | | |
|--|-------------------------------------|
| To turn on or off | Press POWER |
| To change channels (when watching TV programs through the VCR's tuner) | Press CH +/- |
| To record | Press ● (2 buttons simultaneously). |
| To play | Press ►. |
| To stop | Press ■. |
| To fast forward | Press ►►. |
| To rewind the tape | Press ◄◄. |
| To pause | Press ■■. |
| To search the picture forward and backward | Press ►► or ◄◄ during playback. |

Operating a Video Disc Player

- | | |
|--|--|
| To play | Press ►. |
| To stop | Press ■. |
| To pause | Press ■■. |
| | <i>To resume normal playback, press again.</i> |
| | *This function is effective only for CAV (standard-play disc). With CLV (extended-play disc), the TV will go into the standby mode if ■■ is pressed. |
| To search the picture forward and backward | Keep pressing ►► or ◄◄ during playback. |
| | <i>To resume normal playback, release the button.</i> |

Manufacturers and Code Numbers (VCR)

Manufacturer	Code number
SONY	01, 02, 03, 04
CANON	05
EMERSON	22, 30, 33
FISHER	10, 11, 12, 15
FUNAI	29
GENERAL ELECTRIC	05, 08
GOLDSTAR	25
HITACHI	07, 08
JVC	16
MAGNAVOX	05, 06, 09
MITSUBISHI	18, 19, 26, 27
MULTITECH	29
NEC	16, 23, 31
PANASONIC	05, 06
PHILCO	05, 06
PHILIPS	05, 06, 09
QUASAR	05, 06
RCA	07, 08
SAMSUNG	24, 32
SANYO	11, 15
SCOTT	21
SHARP	13, 14
SHINTOM	34
SYLVANIA	05, 06, 09
SYMPHONIC	29
TEKNIKA	28, 29
TOSHIBA	20, 21
TOTE VISION	25
ZENITH	17

Notes

- If more than one code number is listed for manufacturers other than Sony, try entering them one by one, until you come to the correct code for your equipment.
- If the video equipment does not have a certain function, the corresponding button on this Remote Commander will not operate.

CAUTION

When you remove the batteries from the Remote Commander, all the settings will revert to the Sony Beta setting. Reset the codes-by following the steps on p. 30.

The code numbers for Sony equipment are assigned as follows:

- 01 Beta, ED Beta VCR
- 02 8mm VCR
- 03 VHS VCR
- 04 Video disc player

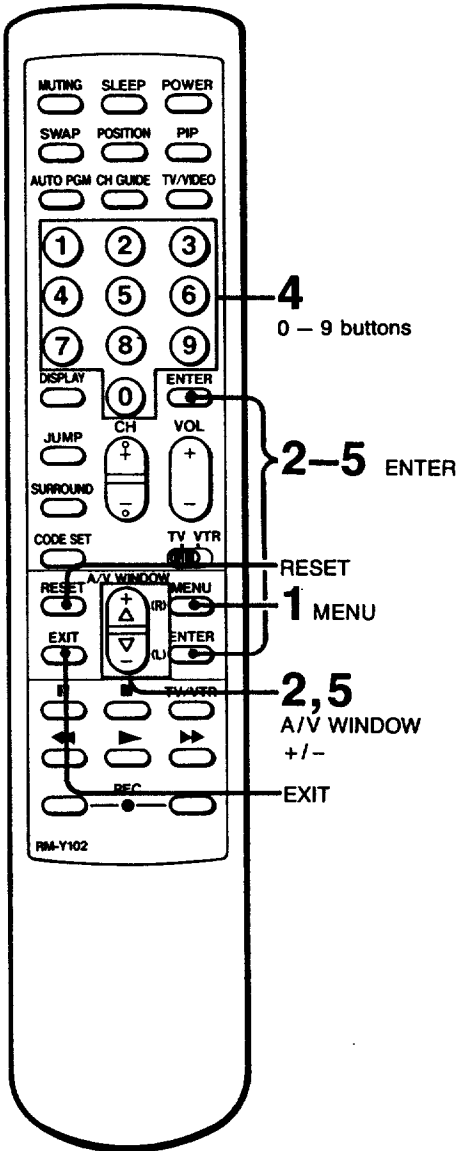
For your convenience

Write the manufacturer name and code number for your equipment onto one of the supplied self-adhesive labels and affix to the Remote Commander for easy reference.

	BRAND	CODE
1		
2		
3		

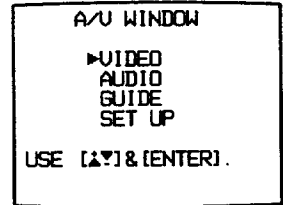
Setting the CURRENT TIME

Set the current time before using the Timer-activated functions from the GUIDE menu (pp. 34 – 39).

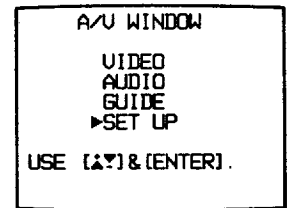
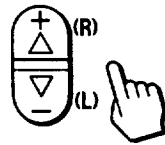


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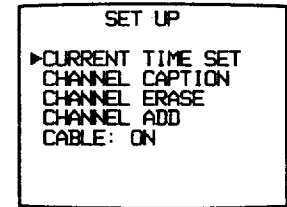
1 Press MENU to display the following screen.



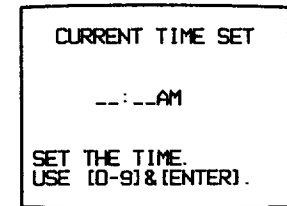
2 Press the +/- button to select SET UP.



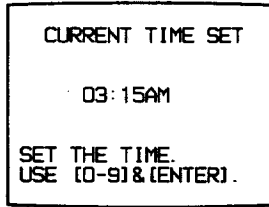
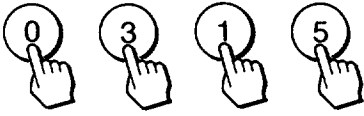
Press ENTER.
CURRENT TIME SET is already selected for you.



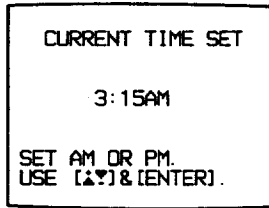
3 Press ENTER.



4 Press the 0 – 9 buttons and ENTER to enter the current time. For example, to set the time at 3:15, press 0, 3, 1, 5. (You must press 4 digits.)



Press ENTER.



To clear the time setting
Press RESET.

To reset the time
Press RESET while in the CURRENT TIME screen, and repeat steps 4 and 5.

To display the time
Set TIME DISPLAY ON/OFF (pp. 38 – 39).

To return to TV mode
Press EXIT.

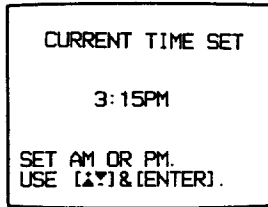
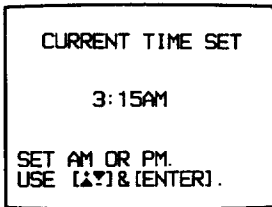
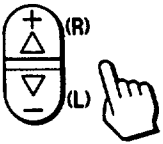
Notes

- The internal clock of this TV operates on a 12-hour cycle. If a 24-hour cycle number (for instance, 13:00) is entered, it will be cleared when you press ENTER.

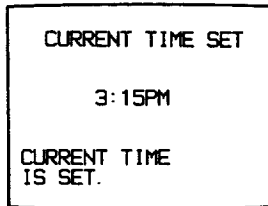
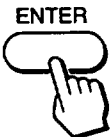
12:00 AM stands for midnight.
12:00 PM stands for noon.

- All the settings including TIME SET will be erased if you unplug the TV, or if a power failure occurs. Reset the current time by following steps 1 – 5.

5 Press the +/- button, to select AM or PM alternately.

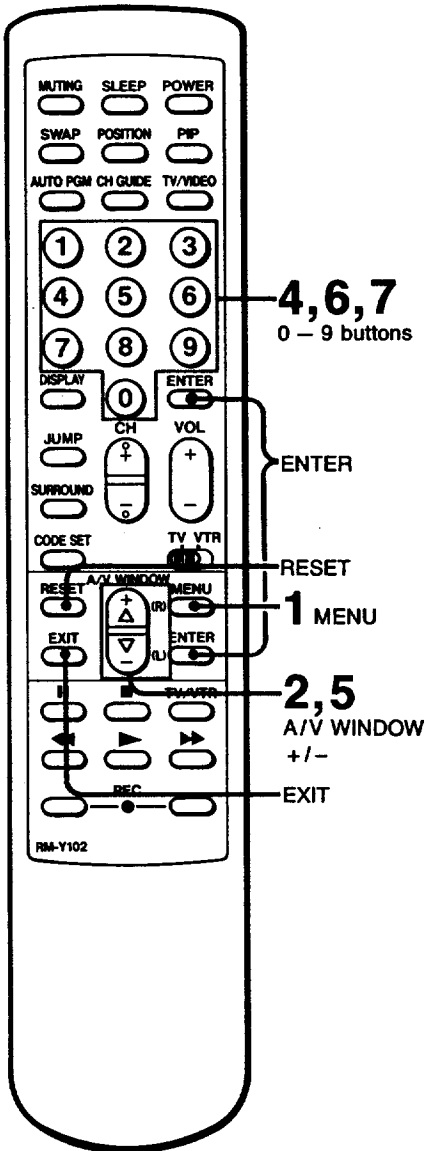


Press ENTER.



Using the Timer-activated Functions — GUIDE

Using the GUIDE feature, you can call up an on-screen menu giving instructions on how to use the timer-activated functions: ON/OFF TIMER, CHANNEL BLOCK, AND TIME DISPLAY ON/OFF.



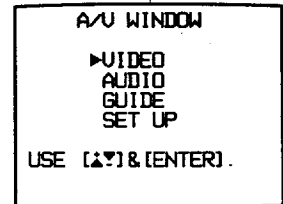
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Setting the ON/OFF TIMER

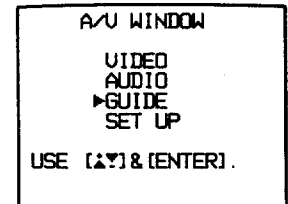
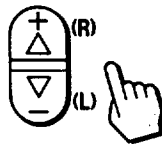
With this function you can set your favorite program to appear on the screen at the time that you set.

EXAMPLE: Set the timer to turn on the TV to channel 21 at 3:15 PM, for 2 hours.

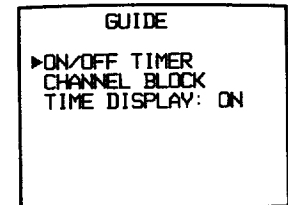
1 Press MENU to display the following screen.



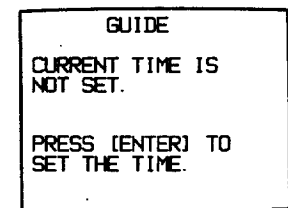
2 Press the +/- button to select GUIDE.



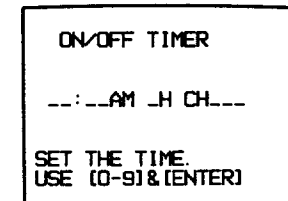
Press ENTER.
ON/OFF TIMER is already selected for you.



3 Press ENTER.



If this screen appears, follow steps 3 – 5 on pp. 32 – 33. Then begin again from step 1 on this page.



If this screen appears, continue from step 4 on the next page.



4 Set the time that you want the TIMER to start by pressing 0 – 9 (you must press 4 digits) and ENTER.



```

ON/OFF TIMER

03:15AM _H CH___

SET THE TIME.
USE [0-9] & [ENTER].
  
```

5 Select AM or PM by pressing the +/- buttons, and press ENTER.



```

ON/OFF TIMER

3:15PM _H CH___

SET AM OR PM.
USE [Δ▽] & [ENTER].
  
```

6 Set the duration of time that you want the TV to remain on, by pressing 1 – 9 and ENTER.



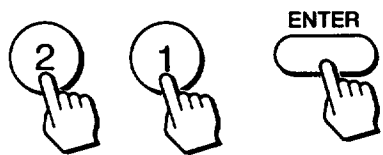
```

ON/OFF TIMER

3:15PM 2H CH___

SET THE DURATION.
USE [0-9] & [ENTER].
  
```

7 Set the channel that you want the TV to turn on to, by pressing 0 – 9 and ENTER.



```

ON/OFF TIMER

3:15PM 2H CH 21

SET THE CHANNEL.
USE [0-9] & [ENTER].
  
```

The following screen will appear, showing that the TIMER has been set.

```

ON/OFF TIMER

3:15PM 2H CH 21

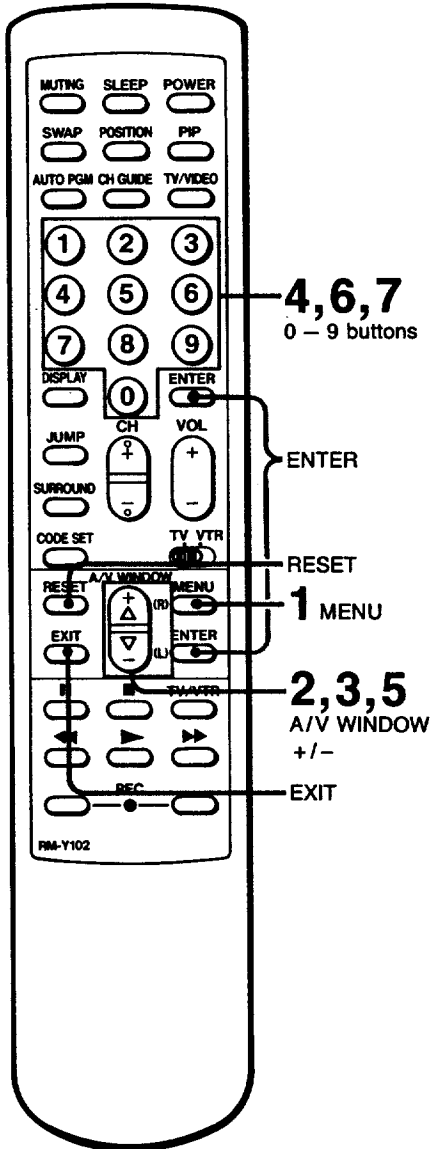
ON/OFF TIMER
IS SET.
  
```

To clear the ON/OFF TIMER setting
Press RESET.

To return to TV mode
Press EXIT.

Notes

- While the TIMER is set, the TIMER indicator lamp on the TV will be lit.
- One minute before the timer goes off, the "TV WILL TURN OFF" display will appear on the screen.
- If you have not set the clock correctly, the ON/OFF TIMER will not operate. See p. 32 (TIME SET) to set the clock.
- The TIMER setting will be erased if you unplug the TV, or if a power failure occurs. Repeat steps 1 – 7 to reset the TIMER.



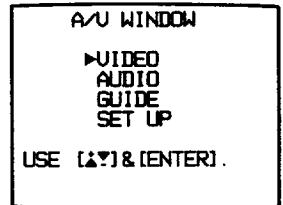
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Setting CHANNEL BLOCK

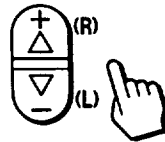
Use this function to block a channel from appearing on the screen during the preset time, for instance, to prevent children from watching undesirable programs.

EXAMPLE: Set CHANNEL BLOCK at 8:45 PM, for one hour, on channel 38.

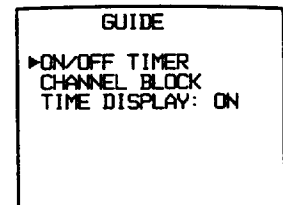
1 Press MENU to display the following screen.



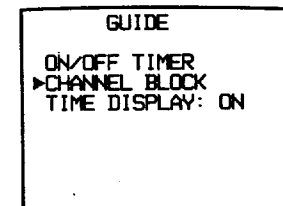
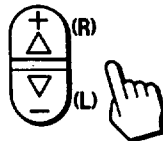
2 Press the +/- button to select GUIDE.



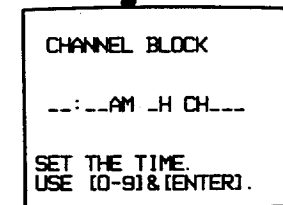
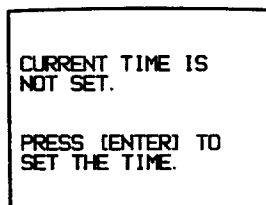
Press ENTER.



3 Press the +/- buttons to select CHANNEL BLOCK.



Press ENTER.

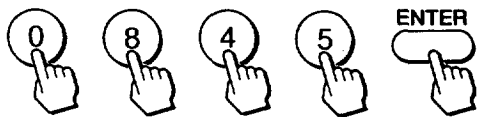


If this screen appears, follow steps 3 – 5 on pp. 32 – 33. The begin again from step 1 on this page.

If this screen appears, proceed to step 4 on the next page.

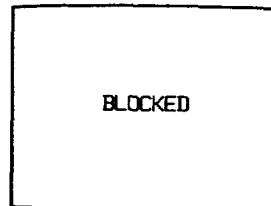


4 Set the time that you want CHANNEL BLOCK to start by pressing 0 – 9 (you must press 4 digit) and ENTER.



CHANNEL BLOCK
08:45AM _H CH___
SET THE TIME.
USE [0-9] & [ENTER].

If you select a channel which has been blocked, the BLOCKED screen will appear.



5 Select AM or PM by pressing the +/- button, and press ENTER.



CHANNEL BLOCK
8:45PM _H CH___
SET AM OR PM.
USE [+/-] & [ENTER].

To clear the BLOCK setting
Press RESET.

To return to TV mode
Press EXIT.

Notes

- If you set a new CHANNEL BLOCK by following steps 1 – 7, the original setting will be erased.
- If you have not set the clock correctly, CHANNEL BLOCK will not operate. See p. 32 (TIME SET) to set the clock.

6 Set the duration of time that you want the TV to remain blocked (up to 9 hours), by pressing 1 – 9 and ENTER.



CHANNEL BLOCK
8:45PM 1H CH___
SET THE DURATION.
USE [0-9] & [ENTER].

7 Set the channel that you want to block, by pressing 0 – 9 and ENTER.



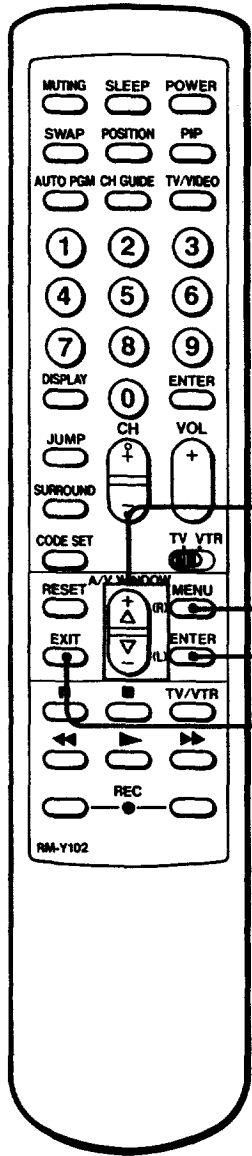
CHANNEL BLOCK
8:45PM 1H CH 38
SET THE CHANNEL.
USE [0-9] & [ENTER].

The following screen will appear, showing that CHANNEL BLOCK has been set.



CHANNEL BLOCK
8:45PM 1H CH 38
CHANNEL BLOCK
IS SET.

Using the Timer-activated Functions — GUIDE

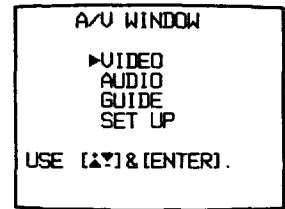


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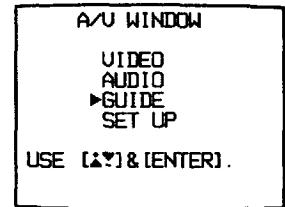
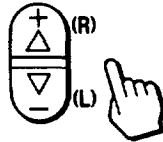
2,3,4
A/V WINDOW
+/-
1 MENU
ENTER
EXIT

Setting the TIME DISPLAY

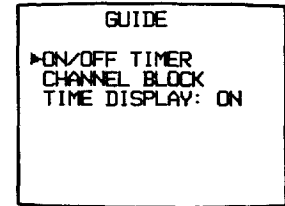
1 Press MENU to display the following screen.



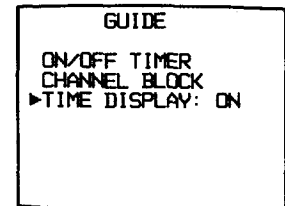
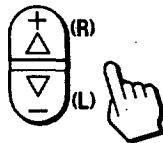
2 Press the +/- button to select GUIDE.



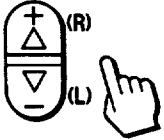
Press ENTER.



3 Press the +/- button and ENTER to select TIME DISPLAY.



4 Press the +/- button to select ON or OFF alternately.
(Display is red)



```
GUIDE
ON/OFF TIMER
CHANNEL BLOCK
TIME DISPLAY: OFF

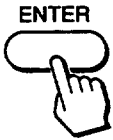
USE [▲▼] & [ENTER].
```

```
GUIDE
ON/OFF TIMER
CHANNEL BLOCK
TIME DISPLAY: ON

USE [▲▼] & [ENTER].
```

Press ENTER.

The display will turn green, showing that the mode has been set.



```
GUIDE
ON/OFF TIMER
CHANNEL BLOCK
▶TIME DISPLAY: ON
```

To return to TV mode
Press EXIT.

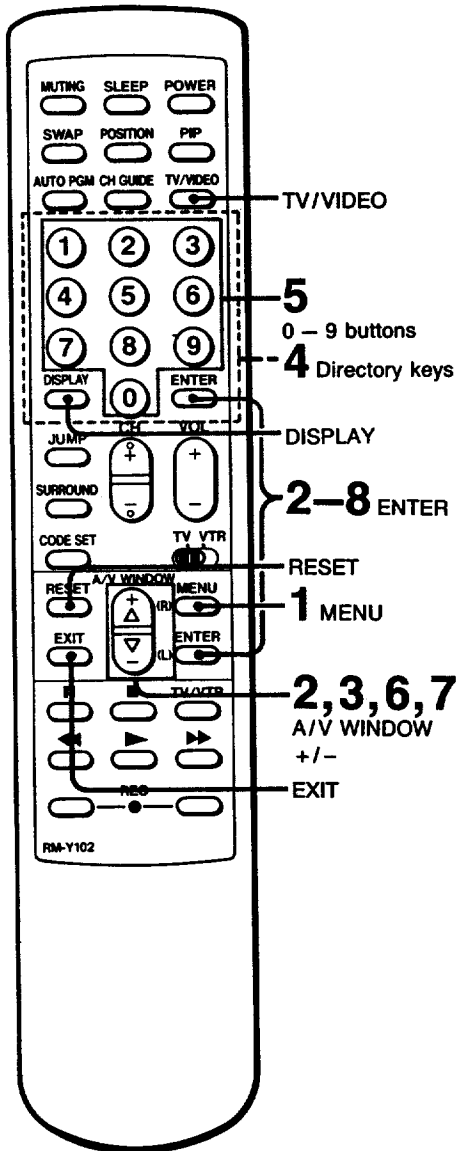
Notes

- When TIME DISPLAY is set to ON, the time will remain on the screen.
- The menu screens will be cancelled automatically after 10 seconds if you do not push any buttons during that time.

Using CHANNEL CAPTION

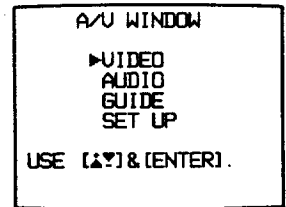
Captioning the channel display — CHANNEL CAPTION

Use this feature to caption up to 12 channel number displays with the matching channel call letters. For example, caption channel 20 with ESPN.

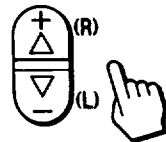


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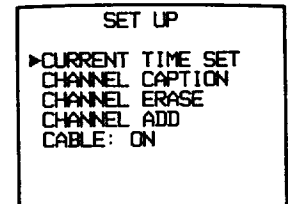
1 Press MENU to display the following screen.



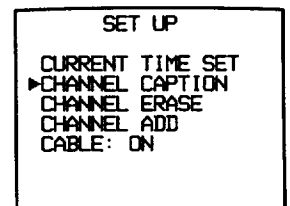
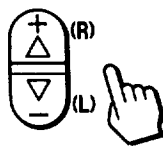
2 Press the +/- button to select SET UP.



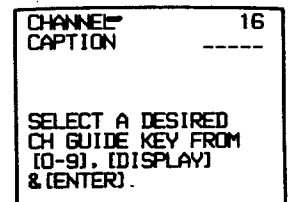
Press ENTER.



3 Press the +/- button to select CHANNEL CAPTION.

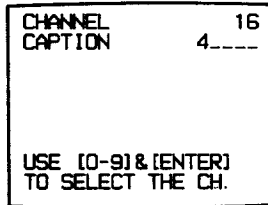
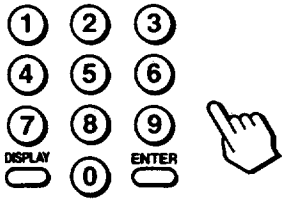


Press ENTER.





4 Enter a directory (CHANNEL GUIDE — see p. 42) number for the caption by pressing one of the directory keys. For example, to set caption number 4, press 4.



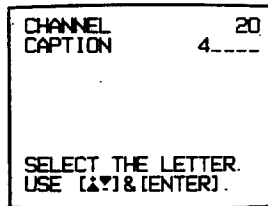
To erase unneeded captions
Call the caption setting screen by following steps 1 – 4, and press RESET.

To return to TV mode
Press EXIT.

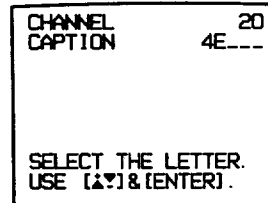
Notes

- You cannot use CHANNEL CAPTION while the TV is in VIDEO or S VIDEO mode. Before setting captions, select TV mode by pressing TV/VIDEO.

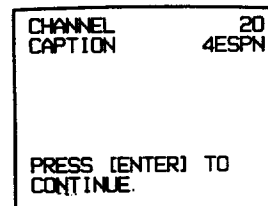
5 Select the channel you want to caption by pressing 0 – 9 and ENTER.



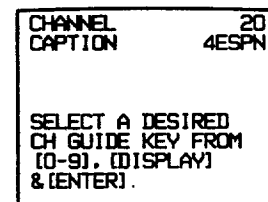
6 Select the first letter by pressing the +/– button and ENTER. Press + to advance alphabetically; press – to go back.



7 Select each remaining letter by repeating step 6. (For a 3-letter caption, leave a space by pressing ENTER only.)



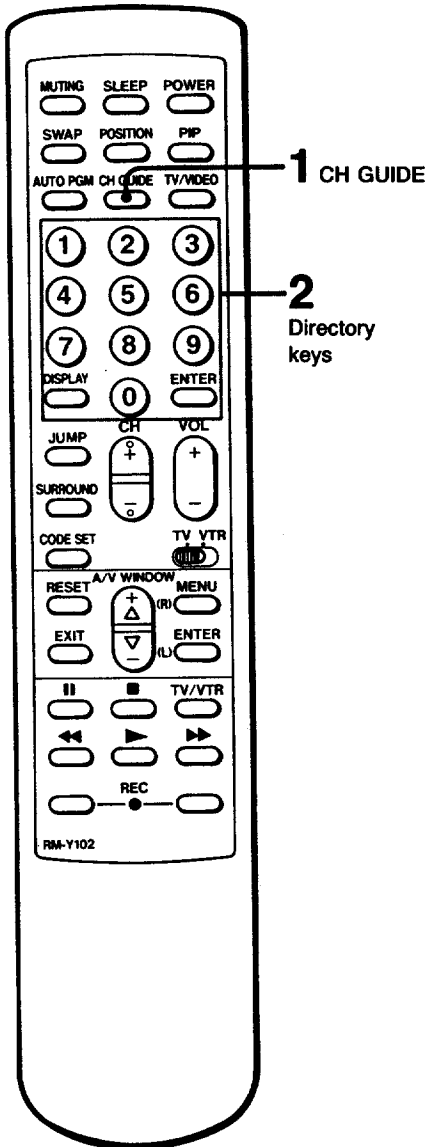
8 To set the next caption, press ENTER again, and repeat the steps from step 4.



Using CHANNEL CAPTION

Viewing the captions you have set — CHANNEL GUIDE

Use this feature to display the captions you have set, and to select a channel directly for viewing.



RM-Y102

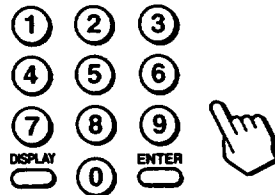
- 1 Press CH GUIDE.
A directory appears, corresponding to the directory keys on the Remote Commander.



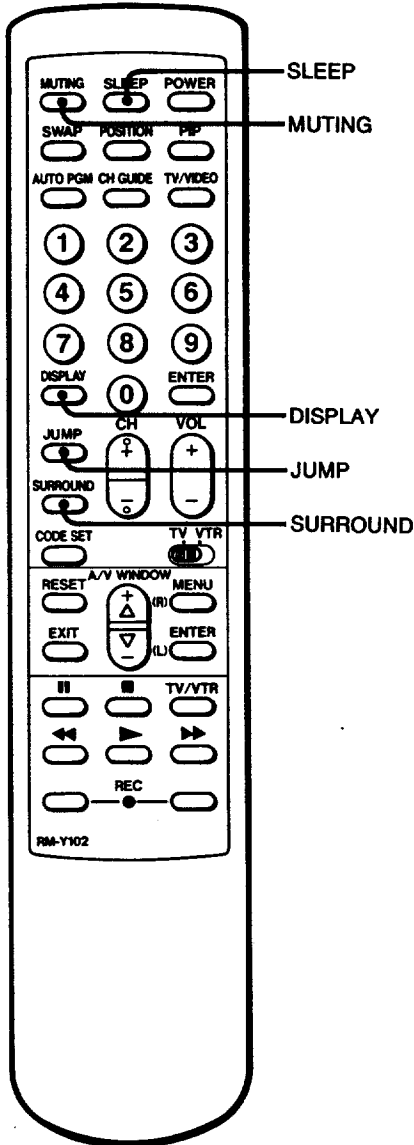
CHANNEL GUIDE		
1ABC	2DIS	3CNN
4ESPN	5_____	6_____
7_____	8_____	9_____
D_____	O_____	E_____

To cancel the CHANNEL GUIDE screen
Press CH GUIDE again.

- 2 Press the directory key of the channel you want to watch.



Enjoying Other Useful Features



RM-Y102

Muting the sound — MUTING

Press MUTING.
The display "MUTING" will appear on the screen.

To restore the sound
Press MUTING again, or press VOL +.



Keeping the channel displayed — DISPLAY


To display the channel
Press DISPLAY.
All the current displays will appear for 3 seconds, then disappear. The channel display will remain on the screen.


To cancel the display
Press DISPLAY again.
The channel display will disappear.



Listening to surround sound — SURROUND

Gives sound reproduction with the atmosphere of a movie theater or a concert hall.

To set
Press SURROUND.
The display  will appear on the screen for a few seconds.

To cancel
Press SURROUND again.
The display  will appear for a few seconds.



Using the sleep timer — SLEEP

Turns TV off automatically about 1 hour after setting.
Press SLEEP.

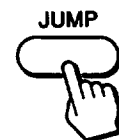
*A green "SLEEP ON" display appears for a few seconds.
(A red "SLEEP" display will appear 1 minute before the TV shuts off.)*

To cancel the setting
Press SLEEP again.
A green "SLEEP OFF" display appears for a few seconds.
OR
Turn the TV off.
The sleep timer setting will be cancelled.



Switching quickly between 2 channels — JUMP

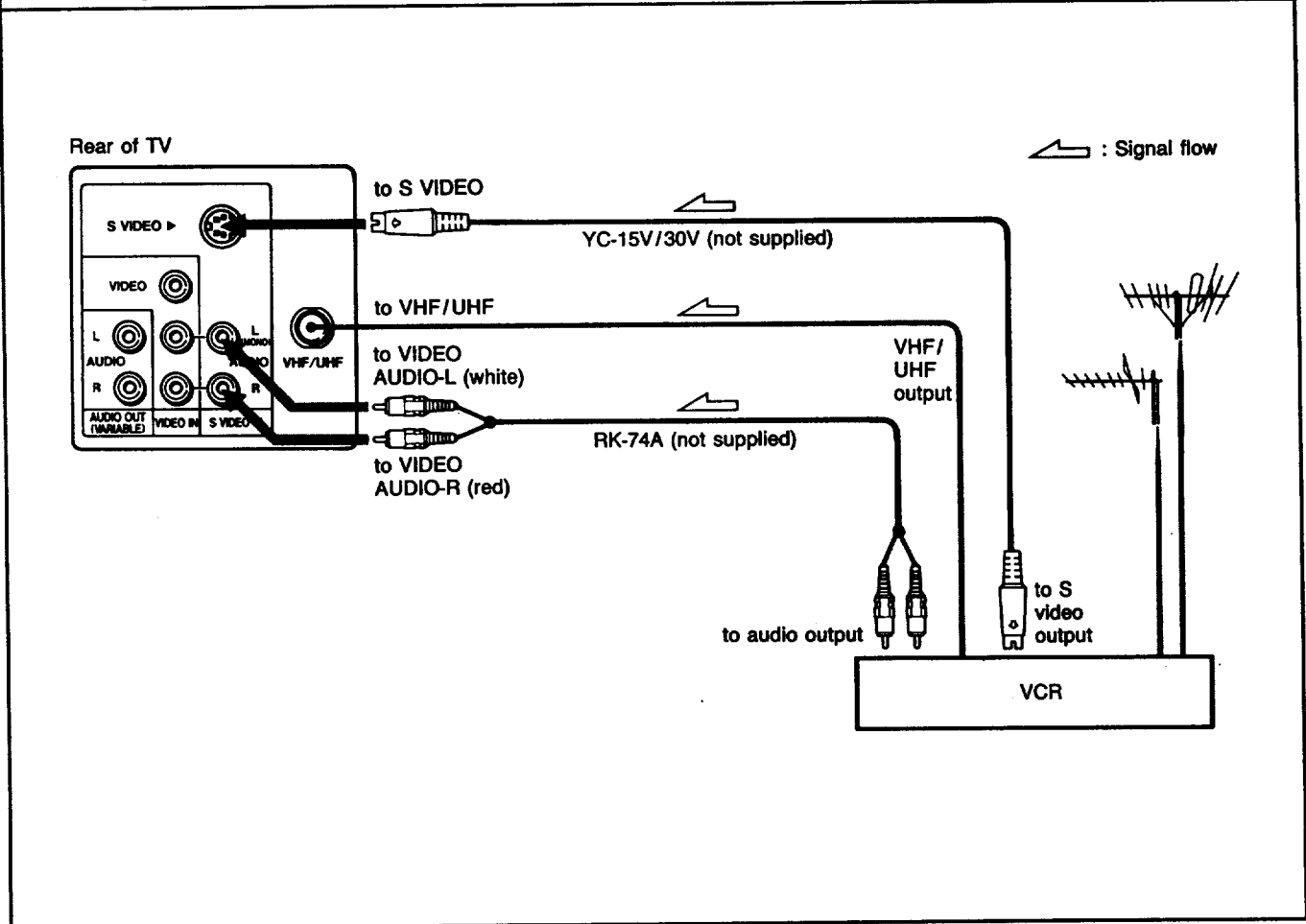
Press JUMP once to recall the channel you were watching previously; press JUMP again to switch back. Use this feature to keep track of two programs alternately.



Connecting Video Equipment

- After connecting, you will be able to . . .
- Play back video tapes
 - Record TV programs
 - Record one TV program while viewing another
 - Watch 2 TV programs at once using a window picture (Picture-in-Picture, p. 26)

Connecting a VCR with an S video output jack (except KV-27TS27)



Notes

- If you connect a monaural VCR, connect the audio output of the VCR to the L (MONO) jack of VIDEO IN on the TV. The monaural sound will be heard from both speakers.
- For operating instructions, refer to the instruction manual furnished with the VCR.
- If the picture or sound is affected, move the VCR away from the TV.

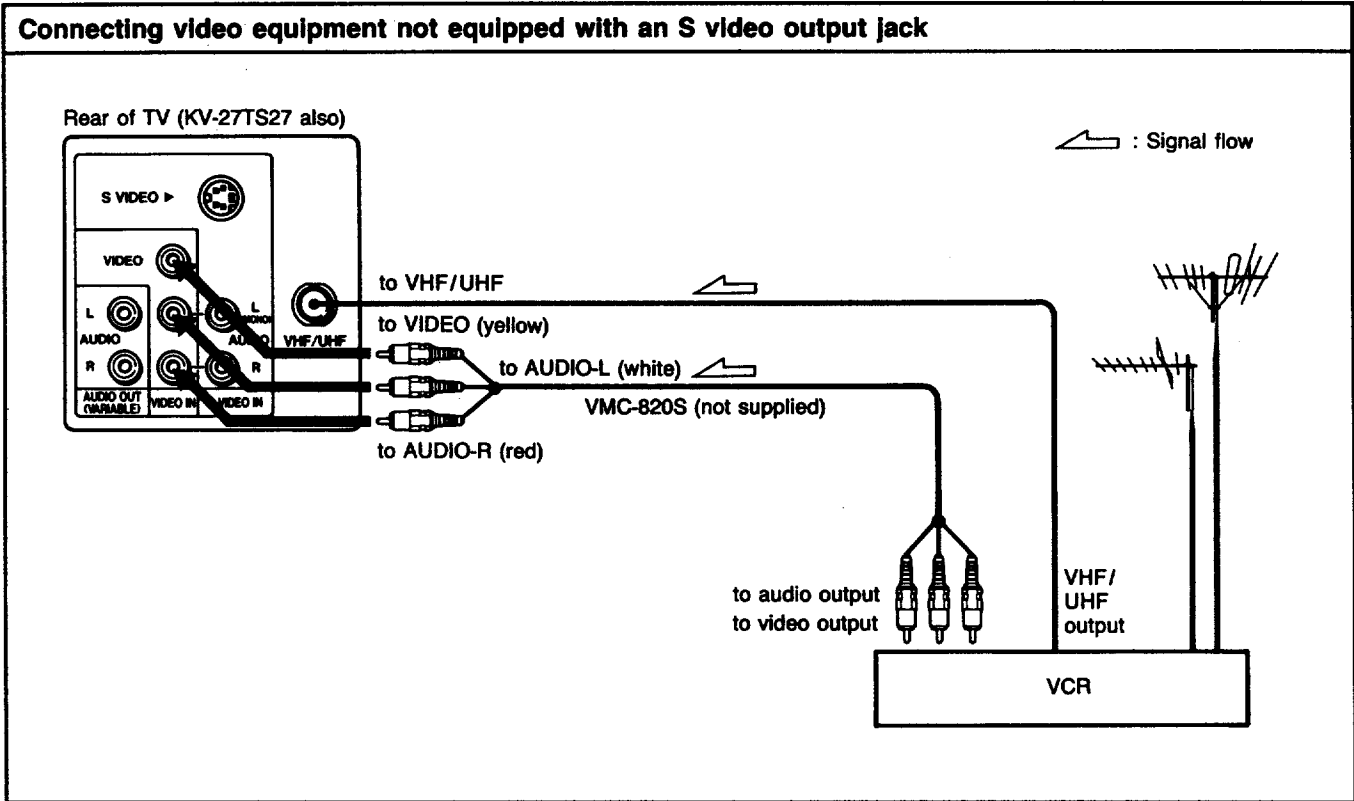
About S video input

Video input and output signals can be separated into Y (luminance or brightness) and C (chroma or color) signals. Usually these two signals are combined in a VCR and sent as one signal to a TV. Separation of the Y and C signals prevents them from interfering with one another, thereby improving picture (especially color) quality.

This TV is equipped with an S video input jack through which these separated signals can be input directly. This way you can connect your S video-equipped VCR separately from a non-S video VCR.

Connecting Video Equipment

Connecting video equipment not equipped with an S video output jack



Preparing for use

- 1 Turn on the TV.
- 2 Press the TV/VIDEO button on the TV or on the Remote Commander so that "VIDEO" (for equipment connected to VIDEO IN) or "S VIDEO" (for equipment connected to S VIDEO IN) appears on the screen.

When you cannot obtain a clear picture and/or sound
 Make sure that the TV/VTR mode select control on the VCR is set to TV. Reselect the channel you want to view with the controls on the TV or the Remote Commander.

Note

Connect one video equipment to the VIDEO IN jack on either the front or rear panel. If you connect equipment to both jacks and turn them both on at once, the TV's main and window pictures will be distorted.

Operating your equipment

(except for KV-27TS27 and KV-32TS20)

When using a Sony or other manufacturer's infrared remote control VCR or a Sony multi-disc player, you can operate most of the equipment using the supplied pre-programmed Remote Commander (pp. 30 – 31.)

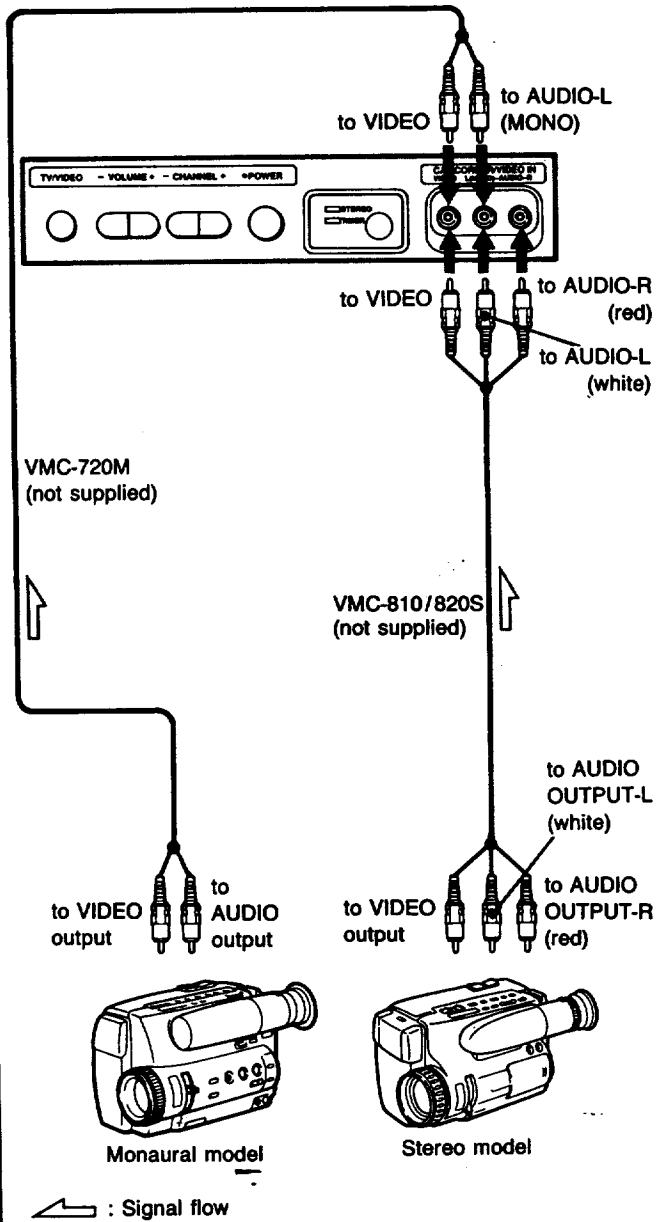
To return to TV mode

Press the TV/VIDEO button on the TV or Remote Commander so that a channel number appears on the screen.

Connecting Camcorders

Playing back recorded tapes

Front of TV (except for KV-27TS27 and KV-32TS20)

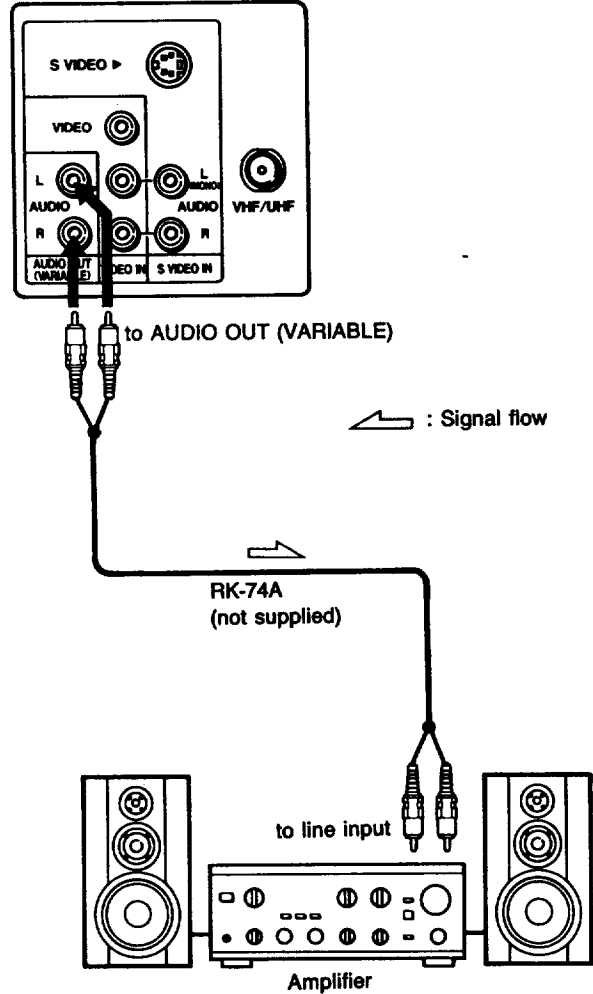


Preparing for use

Same as p. 45.

Listening to TV or connected VCR sound through an audio system

Rear of TV (KV-27TS27 also)



Set the amplifier's function to line input.

Preparing for operation

Turn the TV's speakers off by calling up the A/V WINDOW AUDIO menu, and setting SPEAKER to OFF. (Follow the steps on p. 25.)

Adjusting the sound level

Leave the amplifier volume, bass and treble controls at their mid position and adjust the level with the VOLUME +/- buttons on the TV or the VOL +/- button on the Remote Commander.

Television system	American TV standards
Channel coverage	VHF: 2 – 13 UHF: 14 – 69 Cable TV: 1 – 125
Picture tube	Microblack™ Trinitron® tube 27-inch picture measured diagonally 28-inch picture tube measured diagonally (KV-27TS27, KV-27TS31) 32-inch picture measured diagonally 34-inch picture tube measured diagonally (KV-32TS20, KV-32TS35, KV-32TW75)
Antenna	75-ohm antenna terminal for VHF/UHF
Input	VIDEO and S VIDEO S VIDEO in (4-pin mini DIN) Y: 1 Vp-p, 75-ohms unbalanced, sync negative C: 0.286 Vp-p (Burst signal), 75-ohms Video (phono jacks): 1 Vp-p, 75-ohms unbalanced, sync negative Audio (phono jacks): 500mVrms (100% modulation) Impedance: 47 kilohms
Output	AUDIO OUT (VARIABLE) (phono jacks) More than 408 mVrms at the maximum volume setting (variable) Impedance: 5 kilohms
Speaker output	5 W × 2
Power requirements	120 V AC, 60 Hz
Power consumption	

KV-27TS27	160W
KV-27TS31	160W
KV-32TS20	185W
KV-32TS35	195W
KV-32TW75	195W
Standby mode	5W

Dimensions/Weight

	Dimensions (w/h/d)	Weight
KV-27TS27	660.5 × 602.5 × 465.5 mm (26 ¹ / ₈ × 23 ³ / ₄ × 18 ³ / ₈ in.)	46 kg (99 lbs 4 oz)
KV-27TS31	660.5 × 602.5 × 468 mm (26 ¹ / ₈ × 23 ³ / ₄ × 18 ¹ / ₂ in.)	46 kg (99 lbs 4 oz)
KV-32TS20	712 × 781 × 579 mm (28 ¹ / ₈ × 30 ³ / ₄ × 22 ⁷ / ₈ in.)	71 kg (156 lbs 9 oz)
KV-32TS35	712 × 781 × 579 mm (28 ¹ / ₈ × 30 ³ / ₄ × 22 ⁷ / ₈ in.)	71 kg (156 lbs 9 oz)
KV-32TW75	905 × 1089 × 689 mm (35 ³ / ₄ × 42 ⁷ / ₈ × 27 ¹ / ₄ in.)	117 kg (257 lbs 15 oz)

Supplied accessories

(KV-27TS27, KV-32TS20)

Remote Commander RM-791 (1) with 2 size AA (R6) EVEREADY batteries

(KV-27TS31)

Remote Commander RM-Y101 (1) with 2 size AA (R6) EVEREADY batteries

(KV-32TS35, KV-32TW75)

Remote Commander RM-Y102 (1) with 2 size AA (R6) EVEREADY batteries

Recommended accessories



UV mixer EAC-66

Connecting cable

VMC-810/820S, YC-15 V/30 V, RK-74A

Design and specifications are subject to change without notice.

Troubleshooting

Symptom	Possible causes and remedies
Poor or no picture (screen not lit), good sound	<ul style="list-style-type: none"> • Adjust PICTURE. • Adjust BRIGHTNESS. • Check antenna/cable connections.
Good picture, no sound	<ul style="list-style-type: none"> • Press VOLUME + on the TV or VOL + on the Remote Commander. • Press MUTING on the Remote Commander. • Check that the MTS button is set correctly. • Check that the TV/VIDEO button is set correctly. • Check that "SPEAKER ON" is set.
No picture (screen not lit), no sound	<ul style="list-style-type: none"> • Is POWER switched on? • Plug the unit into a wall outlet. • Check that the TV/VIDEO button is set correctly.
No color	<ul style="list-style-type: none"> • Is it a color program? • Adjust COLOR.
Snow and noise only	<ul style="list-style-type: none"> • Is it an active or the correct channel? • Check the CABLE setting. • Check antenna/cable connections.
 <p>Dotted lines or stripes</p>	<p>This is often caused by local interference. (e.g. cars, neon signs, hairdryers etc.) Adjust the antenna for minimum interference.</p>
 <p>Double images or ghosts</p>	<p>Reflections from nearby mountains or buildings often cause this problem. A highly directional outdoor antenna or a CATV cable may improve the picture.</p>
<p>Try another channel. It could be station trouble.</p>	

If the problem persists, contact your nearest service facility.