SONY.

Trinitron® Color Video TV

Operating Instructions

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

KV-13VM20/21
KV-20VM20

Owner's Record

The model and serial numbers are located at the rear of the VIDEO 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: Setting UP

This section shows you the steps necessary for installing and presetting your VIDEO TV, and how to connect optional video and audio equipment.

Chapter 2: Using Basic VIDEO TV Features

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

Chapter 3: Using Advanced TV Features

This section shows you the steps for other useful TV features with using the On-Screen Menus.

Chapter 4: Using Basic VCR Features

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

Chapter 5: Using advanced VCR Features

This section shows you the steps for other useful VCR features with using the On-Screen Menus.
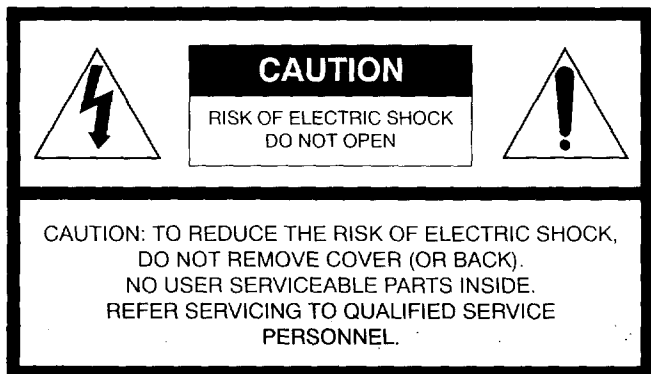
Appendix

This section gives you specifications and troubleshooting information.

WARNING

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

	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.

⚡ 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 product.

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 820-40 of the NEC that provides guidelines for proper grounding and, in particular specifies that the cable grounding system of the, building, as close to the point of cable entry as practical.

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

Do not use this VIDEO TV if moisture has condensed, such as on its CRT, otherwise it may cause malfunction. In this case, leave the VIDEO TV unused until it gets dry.

Precautions

Safety

• Operate the VIDEO TV only on 120V 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 solic object fall into the cabinet, unplug the VIDEO TV and have it checked by qualified personnel before operating it any further.
• Unplug the VIDEO TV from the wall outlet if you are not to 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 VIDEO TV in a hot or humid place, or in a place subject to excessive dust or mechanical vibration.

Cleaning

Clean the VIDEO 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 VIDEO TV in the future.

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

CAUTION:

When using TV games, computers, and similar products with your VIDEO TV, keep the brightness and contrast functions at low settings. If a fixed (non-moving) pattern is left on the screen for long periods of time at a high brightness or contrast setting, the image can be permanently imprinted onto the screen. These types of imprints are not covered by your warranty because they are the result of misuse.

This VIDEO TV receiver provides display of television closed captioning in accordance with 15.119 of the FCC rules.

Information

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Table of Contents

Introducing the Sony Trinitron® Color VIDEO TV

About the Manual

We highly recommend that you read this manual before using your VIDEO TV combined Television and VCR.
Keep the manual handy for future reference.

Features

With the following features, you can:

- Watch up to 125 cable channels for a total of 181 possible off-air and cable channels with the **multi-band VHF/UHF/CATV tuner**.
- Call up on-screen menus to set timer-activated functions (Current time set, On/Off Timer), Cable on/off, AUTO Program, CH Erase/Add, Tape remain by using the **SET UP** feature.
- View the closed caption and the text by using **Caption Vision**.
- Enjoy automatic Playback by automatically playing, a cassette tape that has had its erase-protection tab removed.
- Record programs without using the program recording timer while you are away, by using the **QUICK TIMER**.
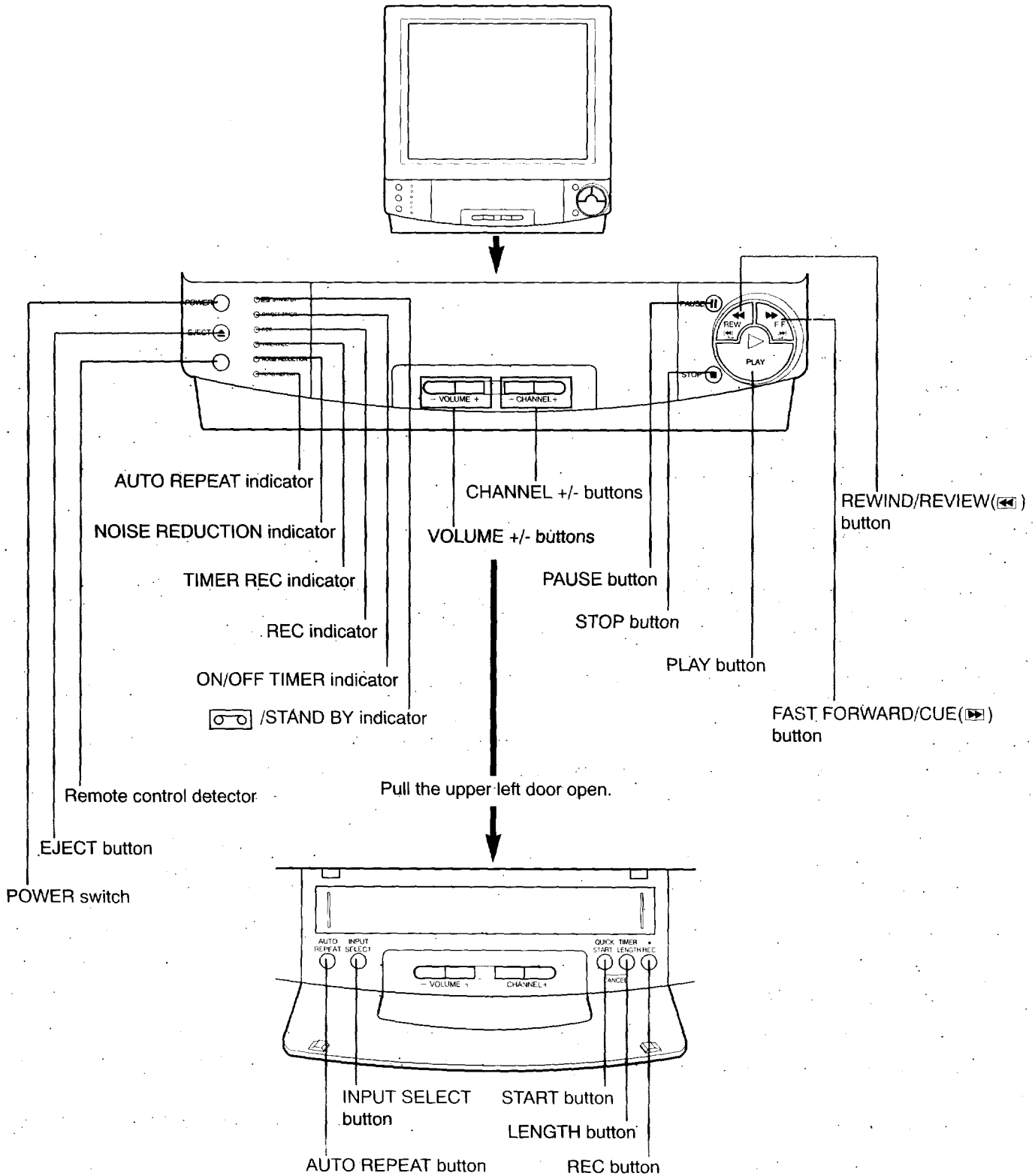
With the supplied Remote Commander, you can:

- Switch quickly between two channels by using **JUMP**.
- Set the TV to automatically shut off after 30, 60, and 90 minutes by using the **SLEEP** timer.
- Program the VCR to make up to six unattended recordings within a 1-month period, including daily and weekly recordings, by using **TIMER ON SCREEN**.
- Select the SP(standard play), LP(long play) or EP (extended play) speed by using **TAPE SPEED**.
- Stop the tape and view a single frame by using **PAUSE**.
- Make sections of tape so you can quickly and easily return to the section you want to watch, by using **INDEX** and **MARK**.
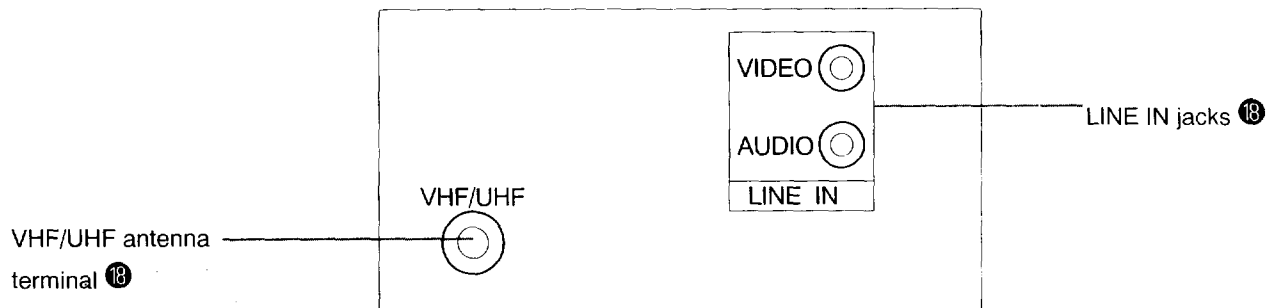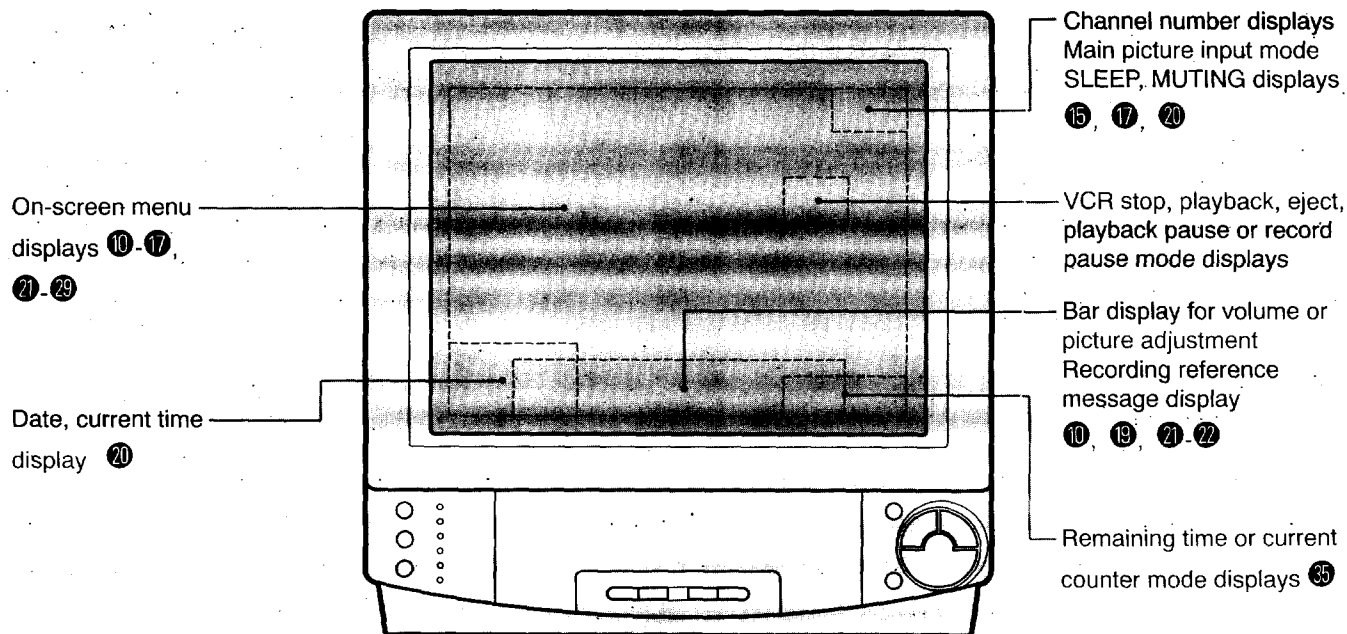
Locating the Controls

Front Panel

AUTO REPEAT indicator

NOISE REDUCTION indicator

TIMER REC indicator

REC indicator

ON/OFF TIMER indicator

[▭▭] /STAND BY indicator

Remote control detector

EJECT button

POWER switch

CHANNEL +/- buttons

VOLUME +/- buttons

Pull the upper left door open.

PAUSE button

STOP button

PLAY button

REWIND/REVIEW(◀◀) button

FAST FORWARD/CUE(▶▶) button

INPUT SELECT button

START button

LENGTH button

AUTO REPEAT button

REC button

Locating the controls

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

VIDEO ◯

AUDIO ◯

LINE IN

LINE IN jacks ⑱

VHF/UHF

VHF/UHF antenna
terminal ⑱

Screen Displays

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

Channel number displays
Main picture input mode
SLEEP, MUTING displays
⑮, ⑰, ⑳

On-screen menu
displays ⑩-⑰,
㉑-㉙

VCR stop, playback, eject,
playback pause or record
pause mode displays

Bar display for volume or
picture adjustment
Recording reference
message display
⑩, ⑲, ㉑-㉒

Date, current time
display ⑳

Remaining time or current
counter mode displays ㉟

Remote Commander

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

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MUTING button ㉒ ——————————————— POWER switch ⑲, ㊴, ㊷

INPUT SELECT button ⑫ ——————————————— EJECT button ㉚

0 - 9 button ⑱, ㉒ ——————————————— JUMP button ㉒

——————————————— SLEEP button ㉒

DISPLAY button ㉒ ——————————————— ENTER button ⑰, ⑲

COUNTER/REMAIN button ㉟

COUNTER RESET button ㉟ ——————————————— CH(channel) +/- scan button ⑲

TAPE SPEED button ㉛, ㊱ ——————————————— VOL.(volume) +/- button ⑲

——————————————— A/V WINDOW buttons
⑪-⑰, ㉑-㉙

——————————————— TRACKING buttons ㉞

——————————————— INDEX buttons ㊸-㊺

STOP button ㉜-㉝, ㉟-㊱ ——————————————— PAUSE button ㉜, ㊱

REWIND/REVIEW button ㉝ ——————————————— FAST FORWARD/CUE
button ㉜-㉝

REC buttons ㊱ —————————————————

——————————————— PLAY button ㉝

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

Installling battery

1 Remove the battery
compartment cover
(Rear of commander).

2 Insert one AA Battery (R6)
being careful of the correct
polarity.

Battery life
Under normal operation, the battery will last
up to a half of year. If the Remote Com-
mander does not operate properly, the
battery might be exhausted. Replace it with
new one.

**To avoid damage from possible battery
leakage**
Remove the battery if you do not plan to
use the Remote Commander for a fairly
long time.

Chapter 1: Setting Up
Connecting TV Antenna/Cable

Although you can use either an indoor or outdoor antenna with the VIDEO TV, an outdoor antenna will provide you with 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
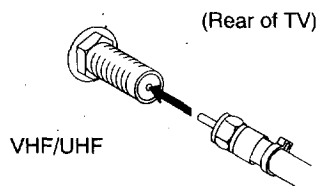
75-ohm coaxial cable (round)	300-ohm twin-lead cable (flat)

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).

a 7mm(1/4inch) 10mm(3/8inch) F-type connector

b 3mm(1/8inch)

c

d

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.

a Loosen both screws on the connector with screwdriver.

b

c Attach the cable and tighten both screws with a screwdriver.

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

(Rear of TV)

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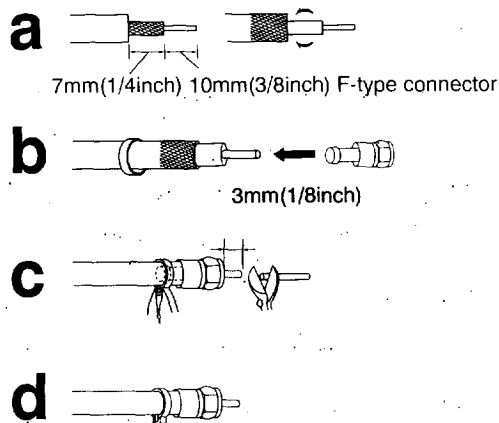
2 Plug the connector into the VHF/UHF terminal at the rear of the VIDEO TV.

(Rear of TV)

VHF/UHF

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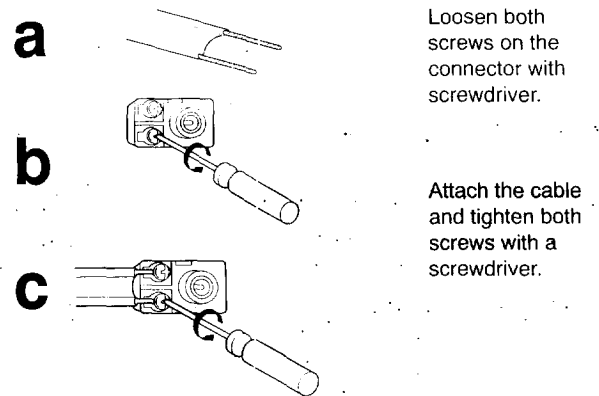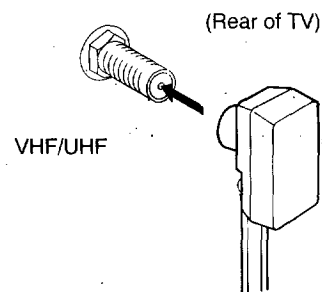
Connecting Both VHF and UHF antennas

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

1 Prepare the VHF antenna end using the appropriate connector (p. 8).

2 Connect the cables to the mixer.

3 Attach the mixer to the VHF/UHF terminal.

(Rear of TV/VCR)

UHF   VHF

VHF/UHF

3

1

2
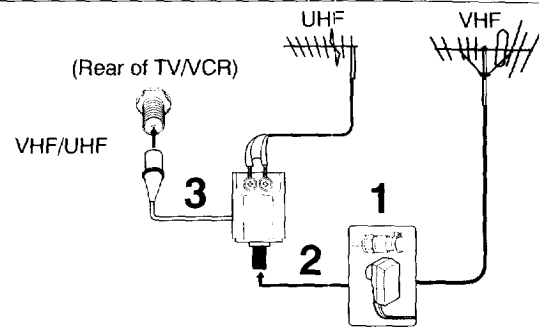
When the U/V mixer is used
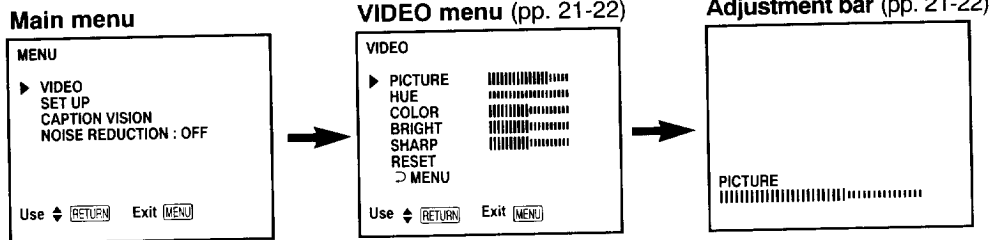Snow and noise may appear in the pictures when viewing cable TV channels over 37 (W + 1).

Note

For better picture quality, we would recommend you to connect an outdoor antenna.

Using the On-Screen Menus

The following flow chart shows the different levels of on-screen menus that you can use to make various adjustments and settings. See the indicated pages for instructions on using each feature.

For picture quality adjustment

Main menu

```
MENU

▶ VIDEO
  SET UP
  CAPTION VISION
  NOISE REDUCTION : OFF




Use ♦ [RETURN]   Exit [MENU]
```

VIDEO menu (pp. 21-22)

```
VIDEO

▶ PICTURE   |||||||||||||||||····
  HUE       |||||||||||||||||·····
  COLOR     ||||||||||·········
  BRIGHT    ||||||||||·········
  SHARP     ||||||||||·········
  RESET
  ⊃ MENU

Use ♦ [RETURN]   Exit [MENU]
```

Adjustment bar (pp. 21-22)

```



PICTURE
||||||||||||||||||||||||·············
```

For presetting and other functions

Main menu

```
MENU

  VIDEO
▶ SET UP
  CAPTION VISION
  NOISE REDUCTION : OFF



Use ♦ [RETURN]   Exit [MENU]
```

SET UP menu
(pp. 12-17, 25-29)

```
SET UP

▶ ON/OFF TIMER
  TAPE REMAIN:T-120
  CLOCK SET
  CABLE ON
  AUTO PROGRAM
  CH ERASE/ADD
  ⊃ MENU

Use ♦ [RETURN]   Exit [MENU]
```

```
ON/OFF TIMER

▶ EVERY SUN-SAT
  12:00AM -h CH--
  ⊃ MENU




Use ♦ [RETURN]   Exit [MENU]
```

ON/OFF TIMER screen (pp. 27-29)

```
SET UP

  ON/OFF TIMER
▶ TAPE REMAIN:T-120
  CLOCK SET
  CABLE OFF
  AUTO PROGRAM
  CH ERASE/ADD
  ⊃ MENU

Use ♦ [RETURN]   Exit [MENU]
```

TAPE REMAIN screen (p. 35)

```
CLOCK

▶ --/-  --:--
  ⊃ MENU




Use ♦ [RETURN]   Exit [MENU]
```

CLOCK SET screen (pp. 25-26)

```
SET UP

  ON/OFF TIMER
  TAPE REMAIN:T-120
  CLOCK SET
▶ CABLE ON
  AUTO PROGRAM
  CH ERASE/ADD
  ⊃ MENU

Use ♦ [RETURN]   Exit [MENU]
```

CABLE ON/OFF screen (p. 12)

```
                          2



  AUTO PROGRAM



```

AUTO PROGRAM screen (pp. 13-14)

```
CH ERASE/ADD            33

▶ ERASE
  ADD
  ⊃ MENU



Select the channel
Use ♦ [RETURN]   Exit [MENU]
```

CHANNEL ERASE/ADD screen (pp. 15-17)

For closed caption setting

Main menu

```
MENU

   VIDEO
   SET UP
 ▶ CAPTION VISION
   NOISE REDUCTION : OFF



Use ✦ RETURN   Exit MENU
```

➡️
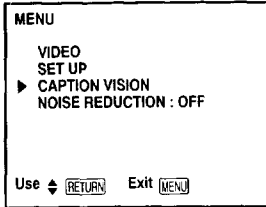
CAPTION VISION menu (p. 24)

```
CAPTION VISION

 ▶ CC/TEXT OFF
   CC 1
   CC 2
   TEXT1
   TEXT2
   ⊃ MENU

Use ✦ RETURN   Exit MENU
```
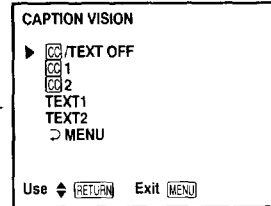
CAPTION VISION screen (p. 24)

For noise reduction function

Main menu

```
MENU

   VIDEO
   SET UP
   CAPTION VISION
 ▶ NOISE REDUCTION : OFF



Use ✦ RETURN   Exit MENU
```

➡️

NOISE REDUCTION menu (p. 23)

```
MENU

   VIDEO
   SET UP
   CAPTION VISION
 ▶ NOISE REDUCTION : ON



Use ✦ RETURN   Exit MENU
```
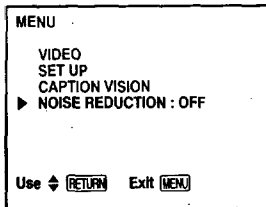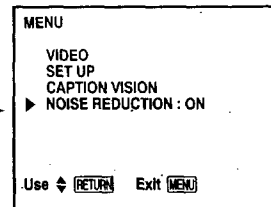
NOISE REDUCTION screen (p. 23)
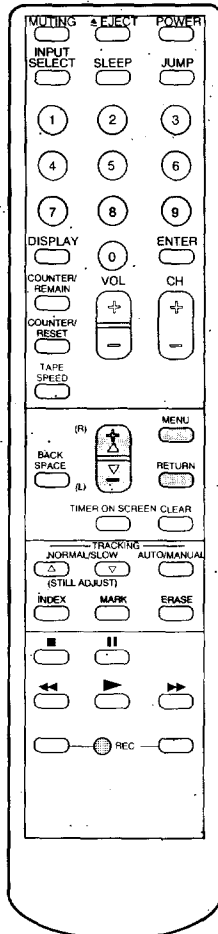
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Navigating Through the Menus

To display the main menu
Press MENU.

To return to the previous menu
Press △+ or ▽- to select MENU.
Then press RETURN.

To return to the main menu
Repeat the above, until you reach the main menu.

To return to the normal screen
Press MENU on the Remote Commander.

Note

The menus disappear automatically if you do not press a button within 60 seconds.

Turning the Cable Mode On or Off

All of the controls are on the Remote Commander.

If you have cable connected to your VIDEO TV (p. 10) follow the steps below to turn the cable connection on or off. CABLE is preset to OFF when you use your VIDEO TV for the first time. Turn CABLE to OFF to preset or watch VHF or UHF channels.
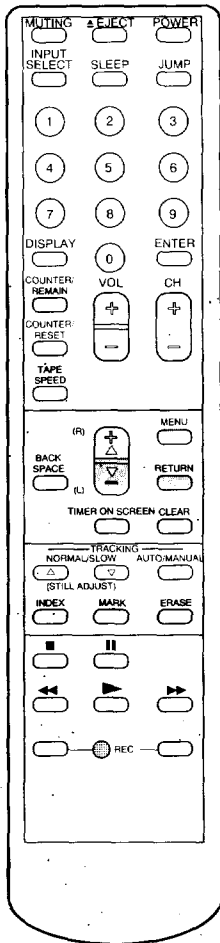
1 Press △+ or ▽- to select SET UP, in main menu.

(R) (L)

```
MENU

  VIDEO
▶ SET UP
  CAPTION VISION
  NOISE REDUCTION : OFF


Use ♦ RETURN   Exit MENU
```

Press RETURN.
The SET UP menu appears.

RETURN

```
SET UP

▶ ON/OFF TIMER
  TAPE REMAIN:T-120
  CLOCK SET
  CABLE : OFF
  AUTO PROGRAM
  CH ERASE/ADD
  Ɔ MENU

Use ♦ RETURN   Exit MENU
```

2 Press △+ or ▽- to select CABLE.

(R) (L)

```
SET UP

  ON/OFF TIMER
  TAPE REMAIN:T-120
  CLOCK SET
▶ CABLE : OFF
  AUTO PROGRAM
  CH ERASE/ADD
  Ɔ MENU

Use ♦ RETURN   Exit MENU
```
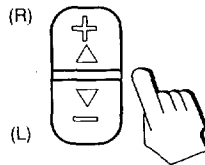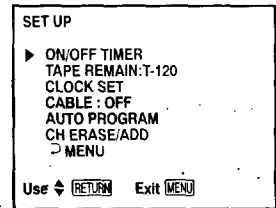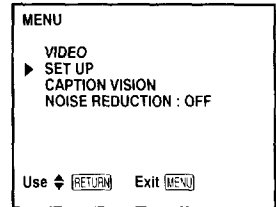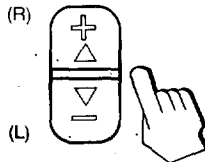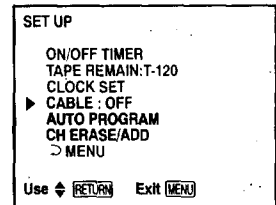
Press RETURN.

3 Press △+ or ▽- to select ON or OFF alternately.

```
SET UP

  ON/OFF TIMER
  TAPE REMAIN:T-120
  CLOCK SET
▶ CABLE : OFF
  AUTO PROGRAM
  CH ERASE/ADD
  Ɔ MENU

Use ♦ RETURN   Exit MENU
```

◄──►

```
SET UP

  ON/OFF TIMER
  TAPE REMAIN:T-120
  CLOCK SET
▶ CABLE : ON
  AUTO PROGRAM
  CH ERASE/ADD
  Ɔ MENU

Use ♦ RETURN   Exit MENU
```

Press RETURN.
The setting is completed.

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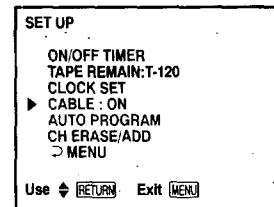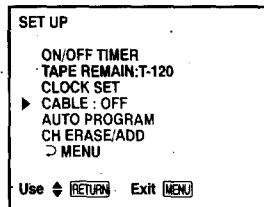
To return to the normal screen
Press MENU.

Note

If the VIDEO TV is in LINE mode, you cannot select CABLE. Repeatedly press INPUT SELECT to change to TV mode.

Presetting TV Channels

Once you have preset the channels on your VIDEO TV, you will be able to use the channel +/- buttons on the VIDEO TV or the Remote commander to scan the channel you selected.

Presetting TV Channels Automatically

Note

Perform auto programming during the day rather than late at night, when some channels may not be broadcasting.

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

POWER ○   POWER
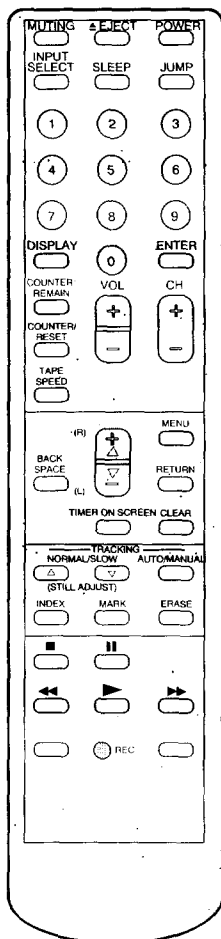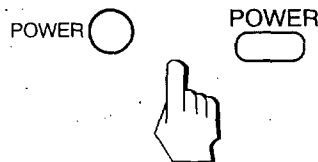
2 Using the Menu, select cable off to receive VHF/UHF channel. Select cable on to receive cable stations.
(Follow the steps in "Turning the Cable Mode Or or Off", p. 12.)

3 Press MENU.
The main menu appears.

MENU

```
MENU

▶ VIDEO
  SET UP
  CAPTION VISION
  NOISE REDUCTION : OFF



Use ♦ RETURN    Exit MENU
```

4 Press △+ or ▽- to select SET UP.

(R)

(L)

```
MENU

  VIDEO
▶ SET UP
  CAPTION VISION
  NOISE REDUCTION : OFF



Use ♦ RETURN    Exit MENU
```

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Turning the Cable Mode On or Off
Presetting TV Channels
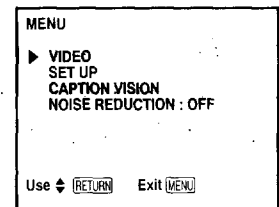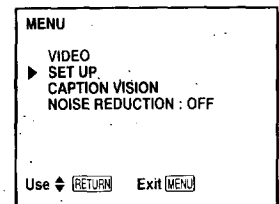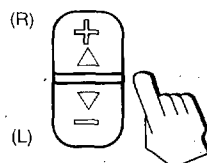
Presetting TV Channels
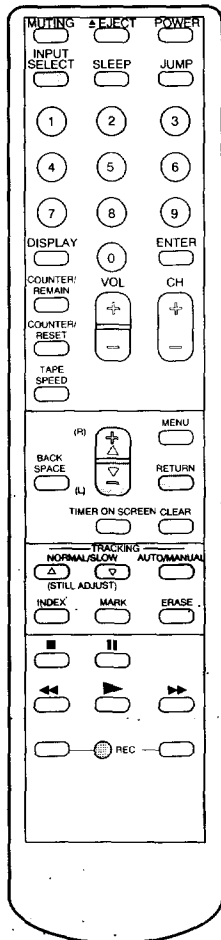
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Receivable channels for this TV
VHF: 2-13
UHF: 14-69
Cable: 1-125

To select TV channels without presetting
Press 0-9 and ENTER.

To return to the normal screen
Press MENU.

To erase unnecessary channels, or to add channels that could not be preset automatically because their signal was too weak, follow the steps in "Erasing Unnecessary Channels CHANNEL ERASE" and "Presetting Only Desired Channels-CHANNEL ADD" (pp. 15-17).

Press RETURN.
The SET UP menu appears.

RETURN

```
SET UP

▶ ON/OFF TIMER
  TAPE REMAIN:T-120
  CLOCK SET
  CABLE OFF
  AUTO PROGRAM
  CH ERASE/ADD
  ⊃ MENU

Use ♦ RETURN   Exit MENU
```
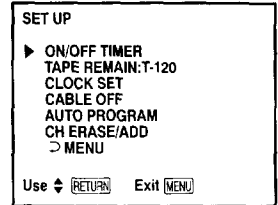
Note

If the VIDEO TV is in LINE mode, you cannot select AUTO PROGRAM. Press INPUT SELECT to change to TV mode.

5 Press △+ or ▽- to select AUTO PROGRAM.

(R)
(L)

```
SET UP

  ON/OFF TIMER
  TAPE REMAIN:T-120
  CLOCK SET
  CABLE OFF
▶ AUTO PROGRAM
  CH ERASE/ADD
  ⊃ MENU

Use ♦ RETURN   Exit MENU
```

Press RETURN.

RETURN

```
                    2

      AUTO PROGRAM
```
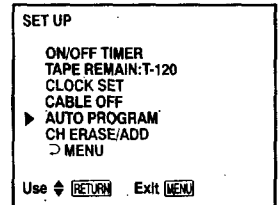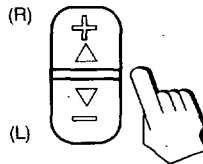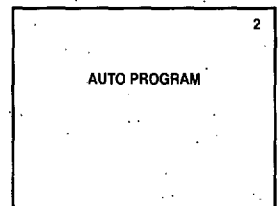
"AUTO PROGRAM" appears on the screen and receivable channels (other than the channels already preset) are preset in numerical sequence. The channels previously preset will not remain in the TV's memory.
When no more channels can be found, the programming stops and the lowest numbered channel is displayed.

Erasing Unnecessary Channels - CHANNEL ERASE

Use this feature to erase unnecessary TV channels, so that when you press CH+/-, the channel(s) are skipped.

1 Press the CH +/- button to select the channel you want to erase.
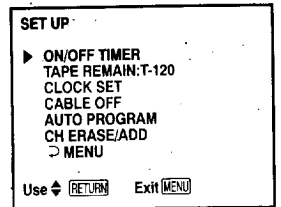For example, to erase channel 8, press CH + or - until 8 appears.
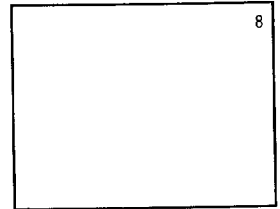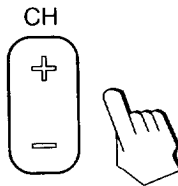
CH

```
8
```
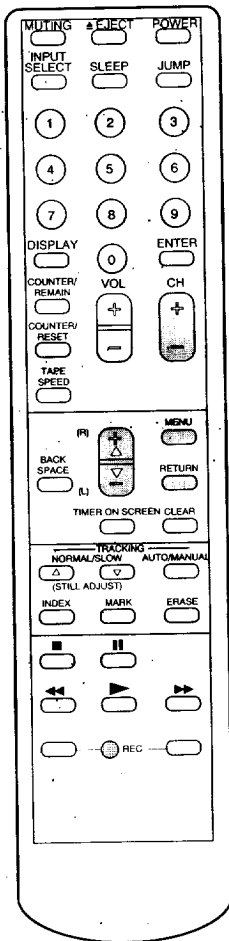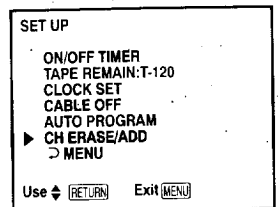
2 Press MENU.
The main menu appears.

MENU

```
MENU

▶ VIDEO
  SET UP
  CAPTION VISION
  NOISE REDUCTION : OFF


Use ♦ [RETURN]   Exit [MENU]
```

3 Press △+ or ▽- to select SET UP.

(R)

(L)

```
MENU

  VIDEO
▶ SET UP
  CAPTION VISION
  NOISE REDUCTION : OFF


Use ♦ [RETURN]   Exit [MENU]
```

Press RETURN.
The SET UP menu appears.

RETURN

```
SET UP

▶ ON/OFF TIMER
  TAPE REMAIN:T-120
  CLOCK SET
  CABLE OFF
  AUTO PROGRAM
  CH ERASE/ADD
  ⊃ MENU

Use ♦ [RETURN]   Exit [MENU]
```
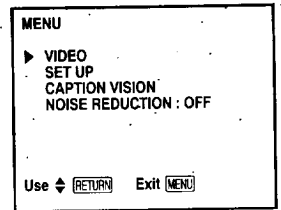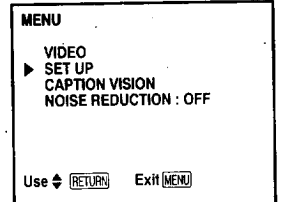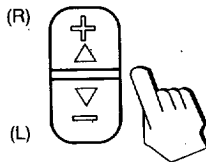
4 Press △+ or ▽- to select CH ERASE/ADD.

(R)

(L)

```
SET UP

  ON/OFF TIMER
  TAPE REMAIN:T-120
  CLOCK SET
  CABLE OFF
  AUTO PROGRAM
▶ CH ERASE/ADD
  ⊃ MENU

Use ♦ [RETURN]   Exit [MENU]
```
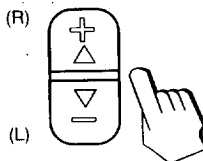
RM-Y126

Presetting TV Channels

Press RETURN.
The CH ERASE/ADD screen appears, and the cursor points to ERASE.

RETURN

```
CH ERASE/ADD                    8

▶  ERASE
    ADD
    ⊃ MENU


   Select the channel

   Use ♦ RETURN   Exit MENU
```
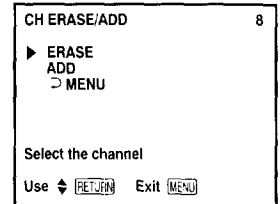
Note

If the VIDEO TV is in LINE mode, you cannot select CHANNEL ERASE/ADD. Press INPUT SELECT to change to TV mode.

5 Press RETURN.
A "-" sign appears in front of the channel number display showing that the channel is erased from the channel scan memory.

RETURN

```
CH ERASE/ADD                   -8

    ERASE
    ADD
▶   ⊃ MENU



   Use ♦ RETURN   Exit MENU
```
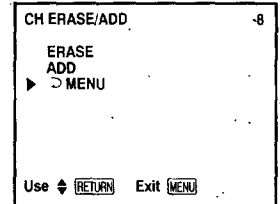
6 Press MENU.

MENU

The next time you press the CH +/- buttons, channel 8 will be skipped.

To erase other channels
Repeat steps 1-6.
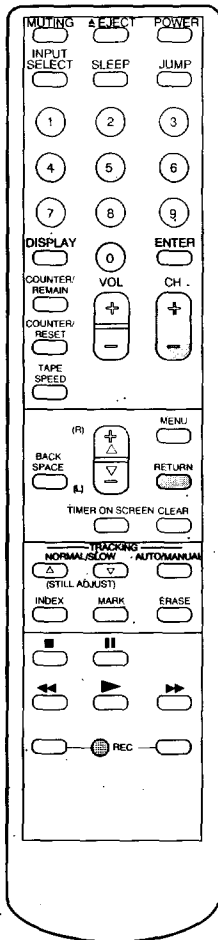
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To return to the normal screen
Press MENU.

Presetting only Desired channels - CHANNEL ADD

Use this feature to add channels one at a time to the channel scan memory.

1 Press 0-9 and ENTER to select the channel you want to add. For example, to add channel 25, Press 2, 5 and ENTER.
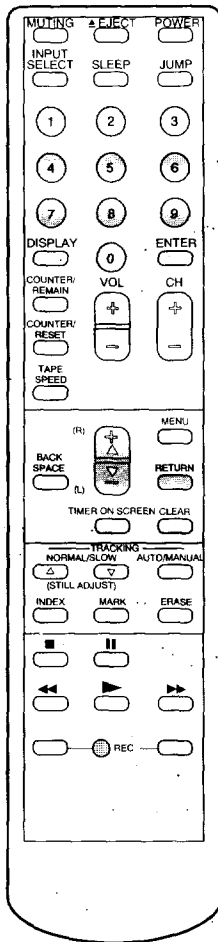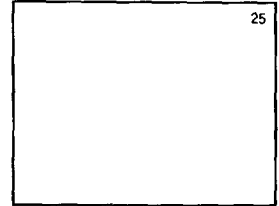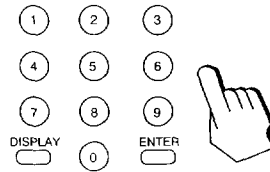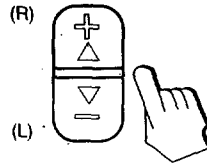
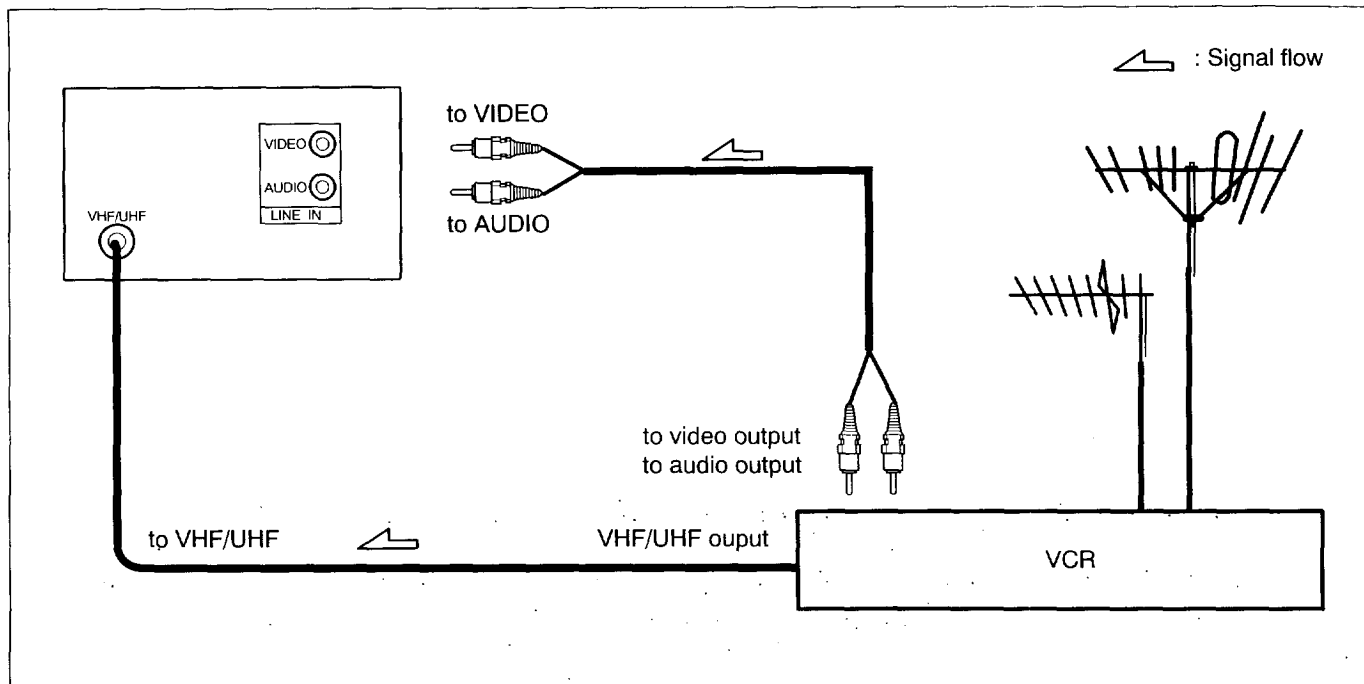**2 - 4** (Follow steps 2-4 in "Erasing Unnecessary Channels-CHANNEL ERASE," pp. 15-16)

Note

If the TV is in LINE mode, you cannot select CH ERASE/ADD. Press INPUT SELECT to change to TV mode.

5 Press △+ or ▽- to select ADD.
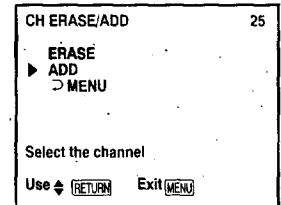
```
CH ERASE/ADD            25

   ERASE
 ▶ ADD
   ⊃ MENU


Select the channel

Use ♦ [RETURN]   Exit [MENU]
```

Press RETURN.
A "+" sign appears in front of the channel number display showing that the channel is added to the channel scan memory.

RETURN

```
CH ERASE/ADD           +25

   ERASE
   ADD
 ▶ ⊃ MENU




Use ♦ [RETURN]   Exit [MENU]
```
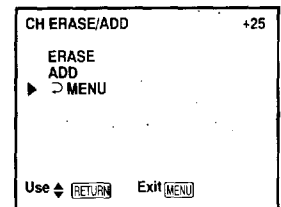
6 Press MENU.

To add other channels
Repeat steps 1-6.

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To return to the normal screen
Press MENU.

Presetting TV Channels

Connecting Other Equipment

△⊐ : Signal flow

to VIDEO

to AUDIO

VIDEO ◎

AUDIO ◎

LINE IN

VHF/UHF ◎

to VHF/UHF

to video output
to audio output

VHF/UHF ouput

VCR

---

1 Remove the antenna cable from the VIDEO TV Antenna terminal. Connect the antenna cable to the antenna terminal of the other Video/Audio source (ex. Video recorder). Then connect a coaxial cable from the VHF output terminal back to the antenna terminal of the VIDEO TV.

2 To use your VIDEO TV to monitor an audio/video source (such as another VCR, a camcorder or a laser disc player), connect the audio/video source output jacks to the AUDIO/VIDEO IN jacks on the VIDEO TV.
Then select LINE IN using the input select on the VIDEO TV or Remote commander.

Notes

- Repeatedly press INPUT SELECT on the VIDEO TV or on the Remote Commander so that "LINE" appears on the screen.
- To return to TV mode, repeatedly press INPUT SELECT on the VIDEO TV or on the Remote Commander so that a channel number appears on the screen.
- 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 VIDEO TV.
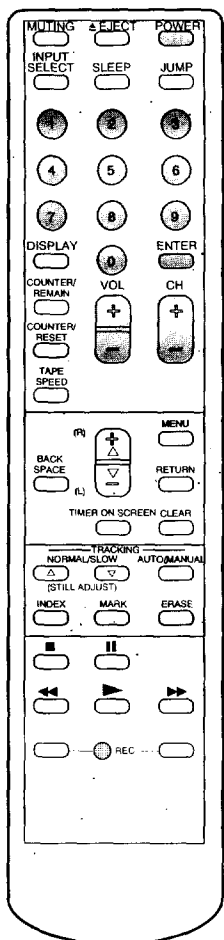
Watching TV Programs
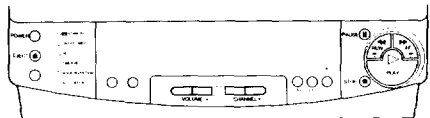
1 Press POWER on the VIDEO TV or the Remote Commander to turn the TV on.

POWER ◯   POWER
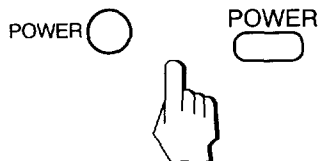
2 Turn the cable mode on or off to select the type of channel you want to watch, VHF/UHF or cable TV.
(Follow the steps in "Turning the Cable Mode On or Off," p.12.)

If "LINE" is displayed on the screen, press INPUT SELECT on the Remote Commander so that the channel number appears.
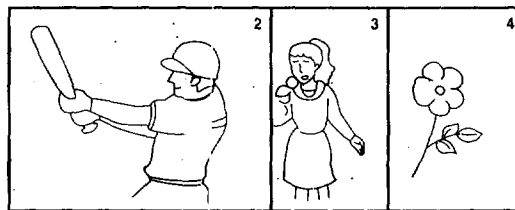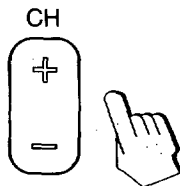
3 Select a channel in one of the following two ways:

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

CH

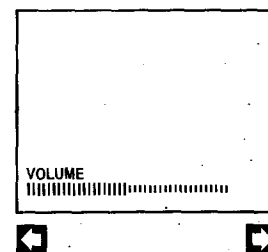* For more information on presetting channels, see pp. 13-17.

To select a channel directly
Press 0-9 and ENTER.
For example, to select channel 14, press 1, 4 and ENTER.
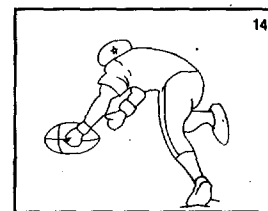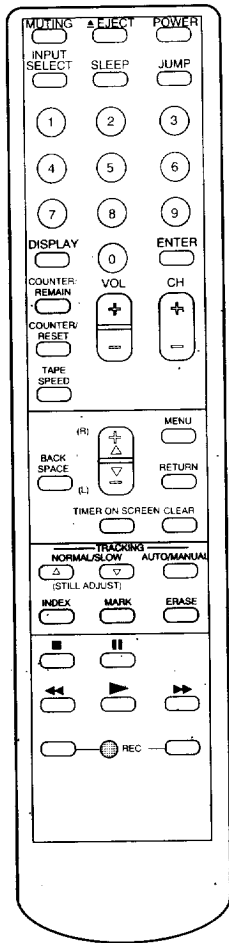
4 Press VOL +/- to adjust the volume.

VOLUME

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

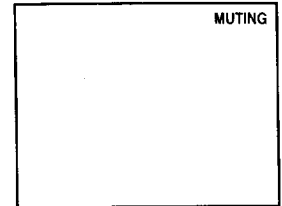Press VOL + to increase the volume.
Press VOL - to decrease the volume.

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Connecting Other Equipment
Watching TV Programs

Using Convenient Features

Muting the Sound - MUTING

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

To restore the sound
Press MUTING again.

	MUTING

Keeping the Displays On-Screen - DISPLAY

To display the channel
Press DISPLAY.
All the existing displays appear: channel number date, time, VCR operating mode and tape counter.

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

	10
3/11FRI	
12:00AM	
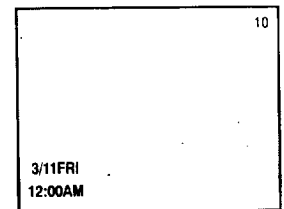
Setting the Sleep Timer - SLEEP

The sleep timer turns off the TV automatically after the amount of time you select.

Press SLEEP.
Each time you press SLEEP, the time increments 30, 60, 90 and OFF mode appear in sequence.

SLEEP

	SLEEP OFF
	SLEEP 30
	SLEEP 60
	SLEEP 90

The SLEEP display appears about one minute before the TV turns off.

To cancel the setting
Press SLEEP untill OFF mode appears.
The "SLEEP OFF" display appears for about three secords.
OR
Turn the TV off.
The sleep timer setting is cancelled.
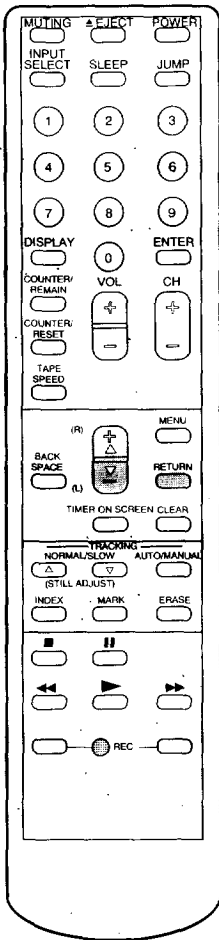
Switching Quickly Between Two Channels - JUMP

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.
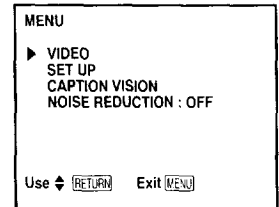
JUMP

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Adjusting Picture Quality

You can adjust the picture for each input mode (TV mode, LINE) by pressing INPUT SELECT to select the input mode before making the adjustments.
These adjustments are retained in memory even when you turn off the TV until you change the adjustments again.
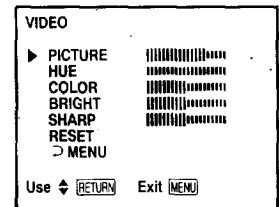
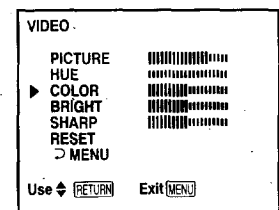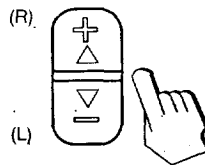**1** Press MENU.
The main menu appears, and the cursor points to VIDEO.

MENU
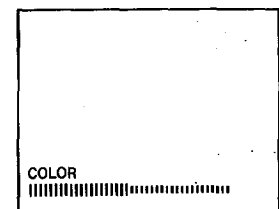
```
MENU

▶ VIDEO
  SET UP
  CAPTION VISION
  NOISE REDUCTION : OFF


Use ♦ RETURN   Exit MENU
```

2 Press RETURN.
The VIDEO menu appears.

RETURN

```
VIDEO

▶ PICTURE   |||||||||||||||····
  HUE       ||||||··||||||||···
  COLOR     ||||||||||·········
  BRIGHT    ||||||||||·········
  SHARP     ||||||||||·········
  RESET
  ⊃ MENU

Use ♦ RETURN   Exit MENU
```

3 Press △+ or ▽- to select the item you want to adjust.
For example, to adjust the picture color, select COLOR.

(R)

(L)
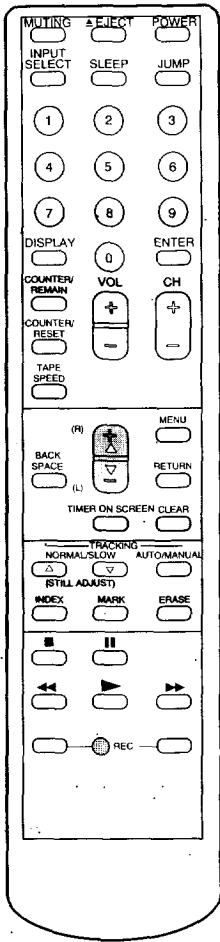
```
VIDEO ·

  PICTURE   ||||||||||||||·····
  HUE       ||||||||||||||·····
▶ COLOR     |||||||||·········
  BRIGHT    ||||||||||·········
  SHARP     ||||||||||·········
  RESET
  ⊃ MENU

Use ♦ RETURN   Exit MENU
```

Press RETURN.
The adjustment bar appears.

RETURN

```
COLOR
|||||||||||||||||||||||····················
```
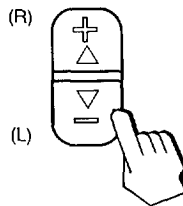
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Adjusting Picture Quality

4 Press △+ or ▽- to make the adjustment.

(R)

(L)

COLOR
||||||||||||||||||||||··············

Increase color intensity ▣

(R)

(L)

COLOR
||||||||||||||||||||||··············

▣ Decrease color intensity
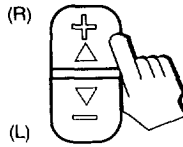
Press RETURN.
The new setting appears in the VIDEO menu.

RETURN

VIDEO

▶ PICTURE |||||||||||||||·····
  HUE |||||||||||||·······
  COLOR ||||||||||||········
  BRIGHT ||||||||||··········
  SHARP |||||||||||·········
  RESET
  ↺ MENU

Use ↕ [RETURN]   Exit [MENU]
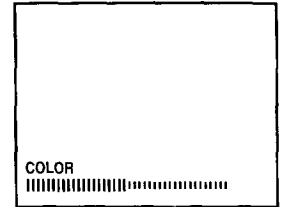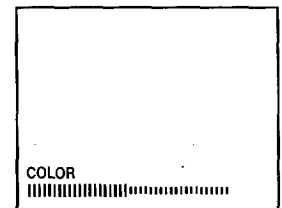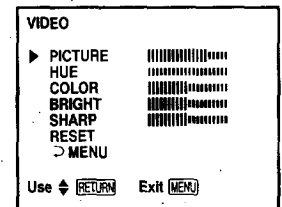
To adjust other items
Repeat steps 3-4.

	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
BRIGHT	darken the picture	brighten the picture
SHARP	soften the picture	sharpen the picture

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To return to the normal screen
Press MENU.

To restore the factory (mid-level) setting
Go to the VIDEO menu and select RESET by pressing △+ or ▽- . Then press RETURN. All the settings except for PICTURE will be restored to mid-level settings.
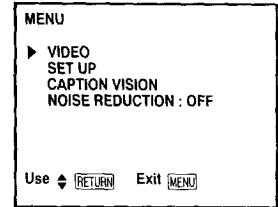
Using Noise Reduction Function

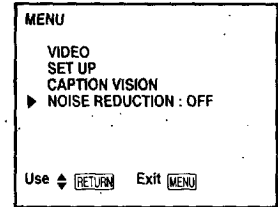You can reduce the picture noise on the screen in VCR playback mode.

1 Press MENU.
*The main menu appears, and the cursor points to VIDEO.*

MENU

```
MENU

▶ VIDEO
   SET UP
   CAPTION VISION
   NOISE REDUCTION : OFF


Use ♦ [RETURN]   Exit [MENU]
```
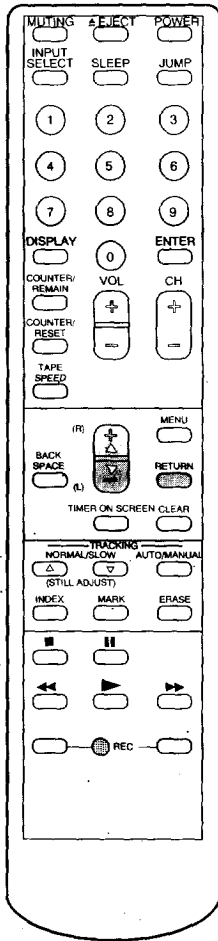
2 Press △+ or ▽- to select NOISE REDUCTION.

```
MENU

   VIDEO
   SET UP
   CAPTION VISION
▶ NOISE REDUCTION : OFF


Use ♦ [RETURN]   Exit [MENU]
```

3 Press RETURN, then △+ or ▽- to select ON.

NOISE REDUCTION indicator lights up.

```
MENU

   VIDEO
   SET UP
   CAPTION VISION
▶ NOISE REDUCTION : ON


Use ♦ [RETURN]   Exit [MENU]
```
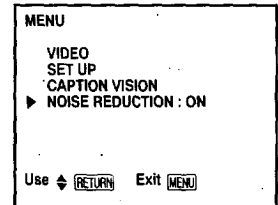
4 Press RETURN.
The picture noise is reduced.

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Adjusting Picture Quality
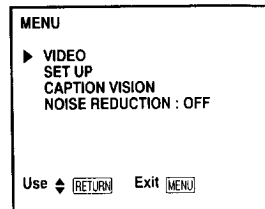Using Noise Reduction Function

Chapter 3: Using Advanced TV Features
Using Closed Caption

1 Press MENU.
The main menu appears.

MENU

```
MENU
▶ VIDEO
  SET UP
  CAPTION VISION
  NOISE REDUCTION : OFF

Use ♦ RETURN   Exit MENU
```
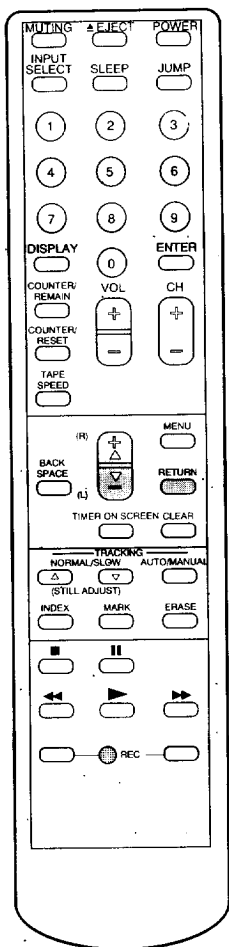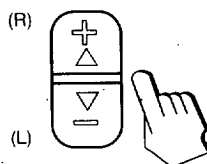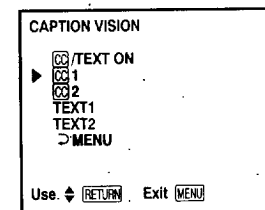
2 Press △+ or ▽- to select CAPTION VISION.
Then press RETURN.
The CAPTION VISION screen appears.

(R)   RETURN
(L)

```
CAPTION VISION
▶ CC/TEXT OFF
  CC1
  CC2
  TEXT1
  TEXT2
  ⊃MENU

Use ♦ RETURN   Exit MENU
```
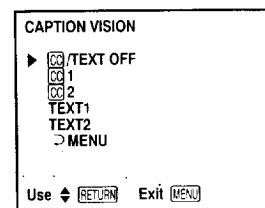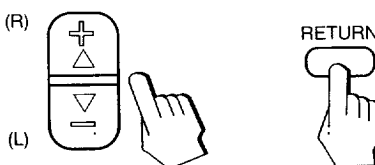
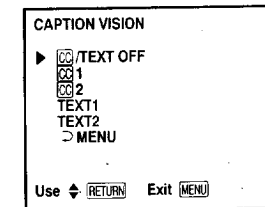**3** Press △+ or ▽- to select closed caption mode.
(R)
(L)

Select CC1 or CC2 to view Captions.
A Caption is a printed version of the dislogue or sound effects of a program. (The mode should be set to CC1 for most programs.)

```
CAPTION VISION
  CC/TEXT ON
▶ CC1
  CC2
  TEXT1
  TEXT2
  ⊃MENU

Use. ♦ RETURN   Exit MENU
```

Select TEXT1 or TEXT2 to view Text.
Text is information that is presented using the half to full television screen.
It is usually not related to the program.

```
CAPTION VISION
  CC/TEXT ON
  CC1
  CC2
▶ TEXT1
  TEXT2
  ⊃MENU

Use ♦ RETURN   Exit MENU
```
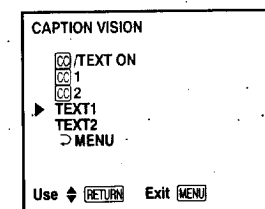
Select CC/TEXT OFF if you do not want to use the CAPTION VISION mode.

Press RETURN.
The Setting is completed.

RETURN

```
CAPTION VISION
▶ CC/TEXT OFF
  CC1
  CC2
  TEXT1
  TEXT2
  ⊃MENU

Use ♦ RETURN   Exit MENU
```

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Note

Captions may appear with a white box or another error instead of a certain word. Poor reception of TV programs can also cause errors in Closed Caption.
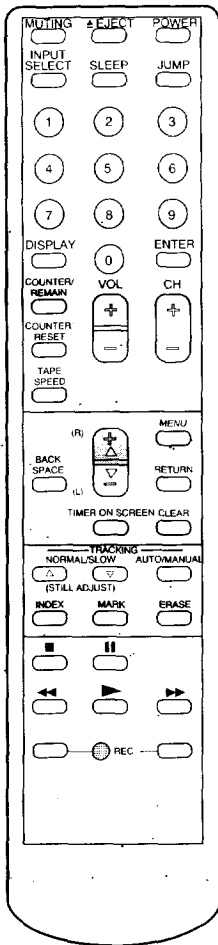
Using the Timer-Activated Functions

Setting the Clock - CURRENT TIME SET

Follow these instructions to set the current time. The correct time must be set in order to use the other timer-activated functions (ON/OFF TIMER).
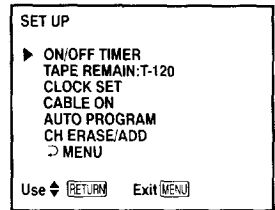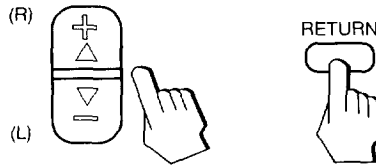**EXAMPLE:**
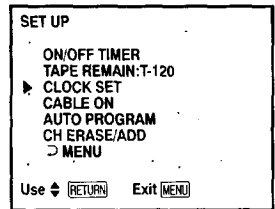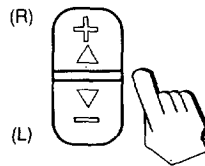Set the time to 11:30AM, Friday on the 25th of February, 1994.
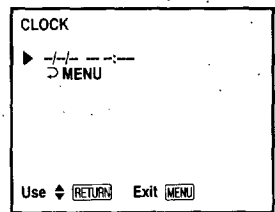
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1 In main menu, press △+ or ▽- to select SET UP.
Then press RETURN.
The SET UP screen appears.

(R)

RETURN

(L)

```
SET UP

▶ ON/OFF TIMER
   TAPE REMAIN:T-120
   CLOCK SET
   CABLE ON
   AUTO PROGRAM
   CH ERASE/ADD
   ⊃ MENU

Use ♦ [RETURN]   Exit [MENU]
```

2 Press △+ or ▽- to select CLOCK SET.

(R)

(L)

```
SET UP

   ON/OFF TIMER
   TAPE REMAIN:T-120
▶ CLOCK SET
   CABLE ON
   AUTO PROGRAM
   CH ERASE/ADD
   ⊃ MENU

Use ♦ [RETURN]   Exit [MENU]
```

Press RETURN.
The CLOCK SET screen appears.

RETURN

```
CLOCK

▶ --/--  --:--
   ⊃ MENU




Use ♦ [RETURN]   Exit [MENU]
```

3 Press RETURN again.
"Set the month" appears on the screen.
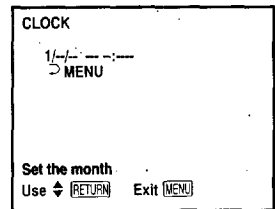
RETURN

```
CLOCK

   1/--/--  --:--
   ⊃ MENU



Set the month
Use ♦ [RETURN]   Exit [MENU]
```
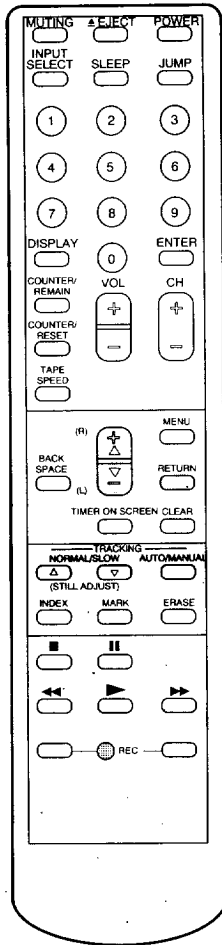
To change or correct the setting before completing it
Press BACK SPACE to return to the item to be erased.

4 Press △+ or ▽- to set the month.
Each time you press △+ or ▽-, the month changes in sequence.

```
CLOCK

   2/--/--  --:--
   ⊃ MENU



Set the month
Use ♦ [RETURN]   Exit [MENU]
```

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To display the time
Press DISPLAY.

To return to the normal screen
Press MENU.

Notes

• The internal clock of this VIDEO TV operates on a 12-hour cycle.

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

• All the settings including CLOCK will be erased if you unplug the VIDEO TV or a power failure occurs. Reset the current time by following steps 1-8.

• If the ON/OFF TIMER or QUICK TIMER has been set, you can not change the clock. To change the clock, cancel the ON/OFF TIMER (p. 29) or QUICK TIMER(p. 42) first.
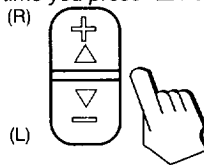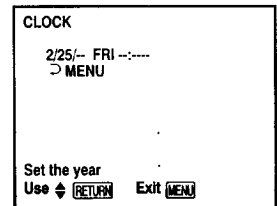

Press RETURN.
"Set the day" appears on the screen.

RETURN


```
CLOCK

2/1/-- -- --:---
⊃ MENU




Set the day
Use ↕ [RETURN]    Exit[MENU]
```

---
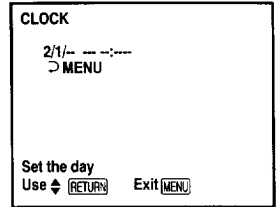
5 Press △+ or ▽- to set the day.
Each time you press △+ or ▽-, the day changes consecutively.

(R)

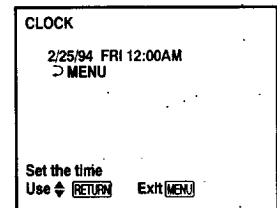

(L)

Press RETURN.
"Set the year" appears on the screen.

```
CLOCK

2/25/-- FRI --:----
⊃ MENU




Set the year
Use ↕ [RETURN]    Exit[MENU]
```

---

6 Press △+ or ▽- to set the year.
Each time you press △+ or ▽-, the year changes in sequence and the day of the week automatically changes.

Press RETURN.
"Set the time" appears on the screen.

```
CLOCK

2/25/94 FRI 12:00AM
⊃ MENU




Set the time
Use ↕ [RETURN]    Exit[MENU]
```

---

7 Press △+ or ▽- to set the hour.
Each time you press △+ or ▽-, the hour changes in sequence starting with "12:00AM."

Press RETURN.

```
CLOCK

2/25/94 FRI 11:00AM
⊃ MENU




Set the time
Use ↕ [RETURN]    Exit[MENU]
```

---
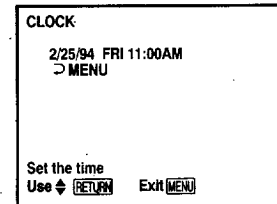
8 Press △+ or ▽- to set the minute.
Each time you press △+ or ▽-, the minute changes in sequence.

Press RETURN.
The setting is completed and the clock starts.

```
CLOCK

2/25/94 FRI 11:30AM
▶ ⊃MENU




Use ↕ [RETURN]    Exit[MENU]
```

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.
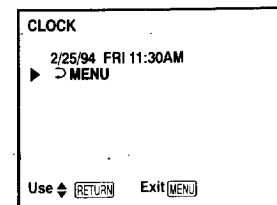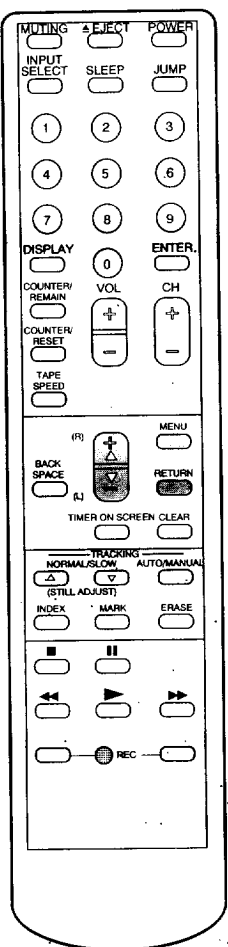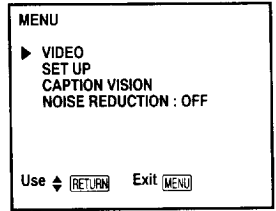
EXAMPLE: Set the timer to turn on the VIDEO TV every Monday through Friday at 3:15 PM for 2 hours, on channel 21.
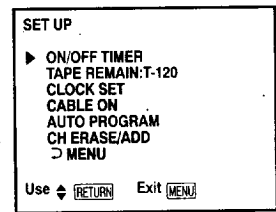
1 Press MENU.
The main menu appears.
MENU


```
MENU
 ▶ VIDEO
   SET UP
   CAPTION VISION
   NOISE REDUCTION : OFF


Use ♦ [RETURN]   Exit [MENU]
```

2 Press △+ or ▽- to select SET UP.
Then press RETURN.
The SET UP menu appears and the cursor points to ON/OFF TIMER.
(R)   RETURN
(L)

```
SET UP
 ▶ ON/OFF TIMER
   TAPE REMAIN:T-120
   CLOCK SET
   CABLE ON
   AUTO PROGRAM
   CH ERASE/ADD
   ⊃ MENU

Use ♦ [RETURN]   Exit [MENU]
```
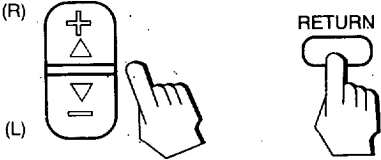
3 Press RETURN.
The ON/OFF TIMER screen appears.
RETURN

```
ON/OFF TIMER
 ▶ EVERY SUN-SAT
   12:00AM -h CH - - -
   ⊃ MENU



Use ♦ [RETURN]   Exit [MENU]
```
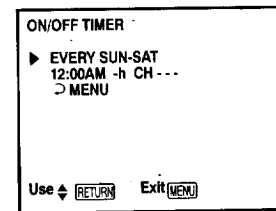
Note

If the ON/OFF TIMER display does not function, the current time has not been set and you cannot select ON/OFF TIMER. To set the clock, see "Setting the Clock-CURRENT TIME SET," pp 25-26.

4 Press RETURN again.
"Set the day" appears on the screen.
RETURN
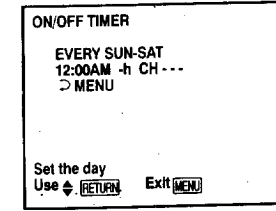
```
ON/OFF TIMER

   EVERY SUN-SAT
   12:00AM -h CH - - -
   ⊃ MENU



Set the day
Use ♦ [RETURN]   Exit [MENU]
```

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5 Press △+ or ▽- to set the day.

Each time you press △+ or ▽-, the days of the week change as shown in Fig. 1.
Then press RETURN.

"Set the time" appears on the screen.

(R) (L)

RETURN

```
ON/OFF TIMER

  EVERY MON-FRI
  12:00AM -h CH - - -
  ⊃ MENU


Set the time
Use ♦ RETURN    Exit MENU
```
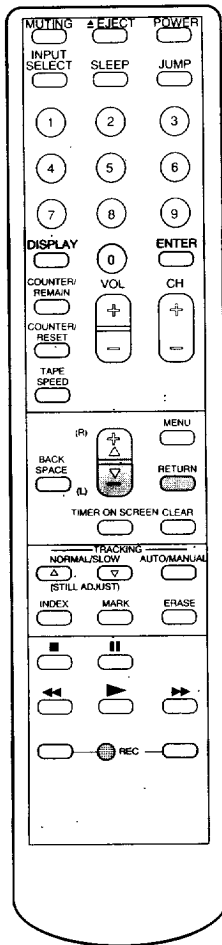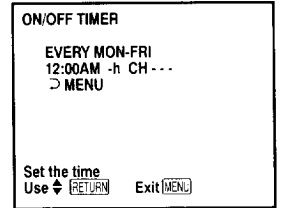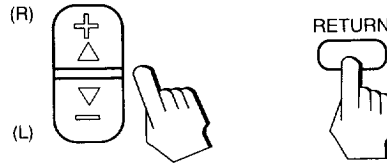
6 Press △+ or ▽- to set the hour that you want the TIMER to start.

Each time you press △+ or ▽-, the hour changes in sequence.
Then press RETURN.

(R) (L)

RETURN

```
ON/OFF TIMER

  EVERY MON-FRI
  3:00PM -h CH - - -
  ⊃ MENU


Set the time
Use ♦ RETURN    Exit MENU
```
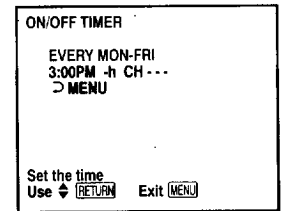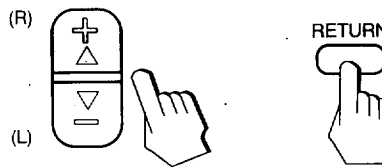
7 Press △+ or ▽- to set the minutes.

Each time you press △+ or ▽-, the minutes change in sequence.
Then press RETURN.

"Set the duration" appears on the screen.

(R) (L)

RETURN

```
ON/OFF TIMER

  EVERY MON-FRI
  3:15PM 1h CH - - -
  ⊃ MENU


Set the duration
Use ♦ RETURN    Exit MENU
```
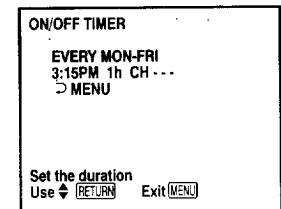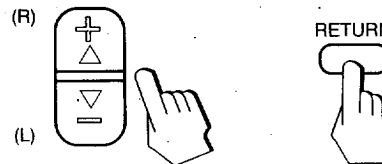
8 Press △+ or ▽- to set the duration of time.

Each time you press △+ or ▽-, the duration changes from "1" to "9" in sequence.
Then press RETURN.

"Select the channel" appears on the screen.

(R) (L)

RETURN

```
ON/OFF TIMER

▶ EVERY MON-FRI
  3:15PM 2h CH - - -
  ⊃ MENU


Select the channel
Use ♦ RETURN    Exit MENU
```

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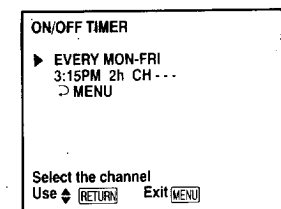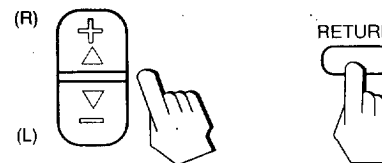
9 Press △+ or ▽- to set the channel that you want the TV to tune in.
Each time you press △+ or ▽-, the channel number changes in sequence.

(R)
(L)

```
ON/OFF TIMER

EVERY MON-FRI
3:15PM  2h  CH21
⊃ MENU


Select the channel
Use ↕ [RETURN]   Exit [MENU]
```
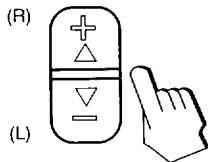
Press RETURN.
The setting is completed , and the ON/OFF TIMER indicator on the front of the VIDEO TV lights up.

RETURN

```
ON/OFF TIMER

EVERY MON-FRI
3:15PM 2h CH21
▶  ⊃ MENU



Use ↕ [RETURN]   ·Exit [MENU]
```
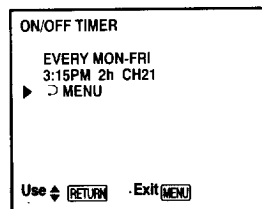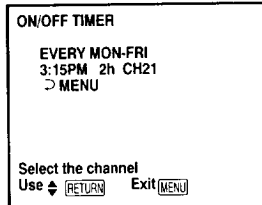
Cancelling the ON/OFF TIMER

1 Select the ON/OFF TIMER screen. (Refer to page 27.)
Press RETURN.
EVERY SUN-SAT will be displayed in red.

2 Press BACK SPACE to erase the ON/OFF TIMER.

```
ON/OFF TIMER

▶ EVERY SUN-SAT
  12:00AM -h CH - - -
  ⊃ MENU



Use ↕ [RETURN]   Exit [MENU]
```
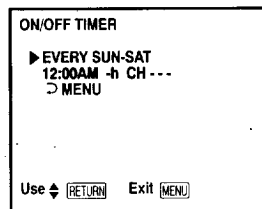
To change or correct setting the ON/OFF TIMER

1. Before completing it
   Press BACK SPACE to return to the item to be changed or corrected.
   When it is displayed in red, set it again by using the △+ or ▽- .

2. After completing it
   Select the ON/OFF TIMER screen.
   Then, press RETURN to return to the item to be changed or corrected.
   When it is displayed in red, set it again by using the △+ or ▽- .

Notes

• 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 at the proper time. To set the clock, see "Setting the Clock-CURRENT TIME SET," pp 25-26.
• All the settings including ON/OFF TIMER will be erased if you unplug the VIDEO TV or a power failure occurs. Reset the TIMER by following steps 1-9.

Fig. 1
Selecting the day(s) of the week
When you press △+, the days of the week appear in the following order.

```
EVERY SUN-SAT  ──▶  EVERY MON-FRI
     ▲                    ▼
EVERY SATURDAY        SUNDAY
     ▲                    ▼
EVERY FRIDAY          MONDAY
     ▲                    ▼
EVERY THURSDAY       TUESDAY
     ▲                    ▼
EVERY WEDNESDAY      WEDNESDAY
     ▲                    ▼
EVERY TUESDAY        THURSDAY
     ▲                    ▼
EVERY MONDAY         FRIDAY
     ▲                    ▼
EVERY SUNDAY  ◀───   SATURDAY
```

(▽ -: reverse order)
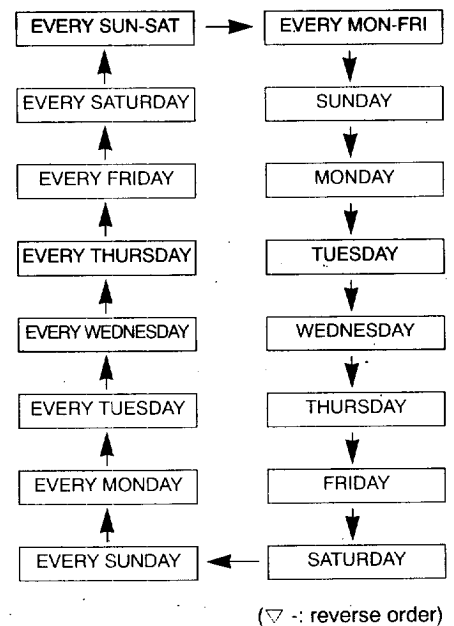
Notes

• **To return to the normal screen**
  Press MENU.

Using the Timer-Activated Functions

Playback

## Inserting a Video Cassette
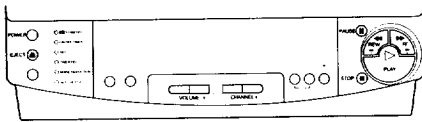
1 Insert a video cassette with the arrow mark facing upwards.

Arrow mark

▲ EJECT
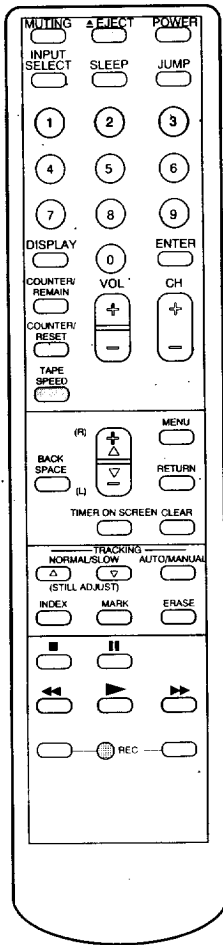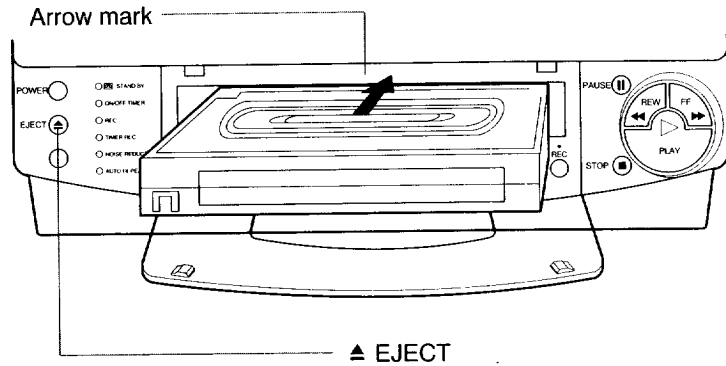
2 Gently press the center of the front side of the cassette until the mechanism draws it into the compartment.
When the cassette has been inserted, the [▭] / STAND BY indicator lights and the VIDEO TV turns on automatically.

Note

When you insert a cassette without a safety tab, playback starts automatically (AUTO PLAYBACK function).

Ejecting the cassette
Press EJECT ▲.
You can also eject the cassette when the power is off.

Protecting your cassette against accidental erasure
The cassette is provided with a safety tab to protect against accidental recording.
Break off the safety tab with a screwdriver or other suitable tool.
If the safety tab is removed, the cassette will be ejected when you try to record on the cassette.

Safety tab

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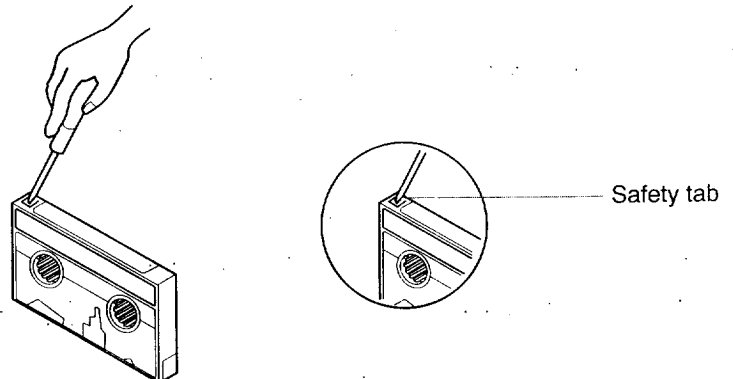
To record on a cassette with the safety tab broken off, simply cover the tab hole with adhesive tape.

Adhesive tape
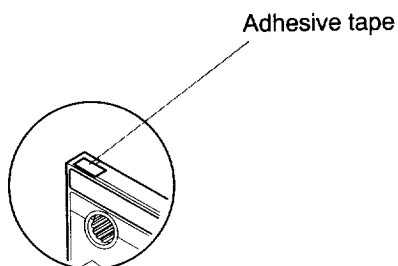
Maximum recording time of a tape

The quality of tape you use greatly affects record/playback quality and the life of the VIDEO TV. Use only cassette tapes that have the official VHS logo.
High-grade tapes give the best results, especially at the EP speed. They also have a better oxide coating that helps prevent dirty video heads. Although T-160 tapes offer the longest recording time, they contain thinner tape that is more likely to stretch or cause tape jams. We suggest that you use T-120 or shorter tapes.

Recording in the SP, LP or EP mode is possible with this unit. When recording, select the desired recording mode (SP, LP or EP) with TAPE SPEED on the Commander. During playback, the unit automatically detects the recording format, and then plays back the tape in the appropriate mode.
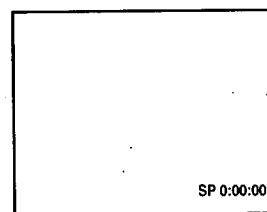
The following chart shows the maximum recording times for T-60, T-120 and T-160 tapes at the three recording speeds.

Speed	T-60	T-120	T-160
SP	1 Hour (60 Minutes)	2 Hours (120 Minutes)	2 2/3 Hours (160 Minutes)
LP	2 Hours (120 Minutes)	4 Hours (240 Minutes)	5 1/3 Hours (320 Minutes)
EP	3 Hours (180 Minutes)	6 Hours (360 Minutes)	8 Hours (480 Minutes)

SP 0:00:00

Playback

Playback
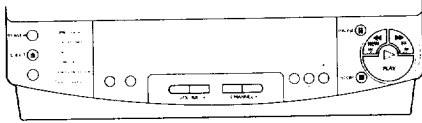
Playing Back a Prerecorded Cassette Tape

1 Insert a prerecorded cassette into the tape compartment. The VIDEO TV automatically turns on.

Note

When playing back rental tapes, NOISE REDUCTION indicator lights at the same time image detail improves.

2 If playback does not start, press PLAY ▶. The tape plays back at the speed at which was recorded.
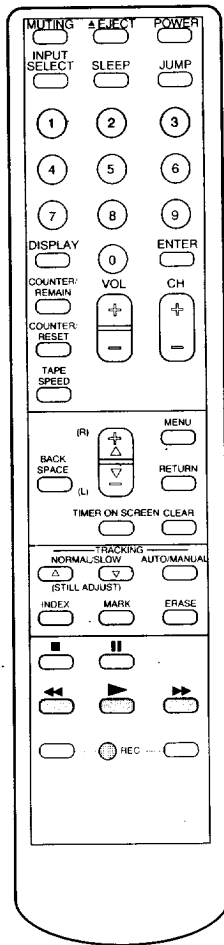
To stop playback
Press STOP ■.

To stop playback for a moment
Press PAUSE **II**.
II▶ appears on the screen and image will stop on the screen.
To resume playback, press PAUSE **II** or PLAY ▶.
▶ appears on the screen.

When the tape is played back to the end
The tape is automatically rewound to the beginning (auto rewind). The power remains on.
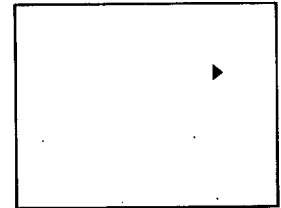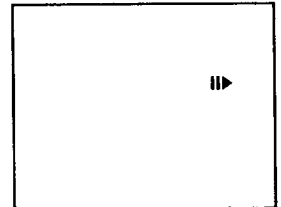
To rewind the tape to its beginning and to playback automatically (Auto Playback Function)
Press AUTO REPEAT on the VIDEO TV during playback or stop mode. The AUTO REPEAT indicator lights and until you press the button again to release AUTO REPEAT function the auto playback will continuously work.

Variable Speed Playback

You can enjoy playing back pictures in variable speeds on the VCR.

Still Picture
During playback mode, press PAUSE **II**. To resume normal playback, press PLAY ▶ or PAUSE **II**.

Notes

• ·No sound accompanies the picture, which may be unstable or have video "noise" in it. This is normal.
• If the VCR is left in the pause mode for more than about 5 minutes, the VIDEO TV re-enters TV reception mode automatically.

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To advance the tape rapidly

While the tape is being played back, pressing FAST FORWARD ►► will move the tape forward at high speed so you can see the picture and choose where to stop. When you do this, [►►] appears on the screen.

If you release the button, the VCR will return to normal playback.

When tape is not being played back and the VCR is in the stop mode, pressing FAST FORWARD ►► winds the tape forward at very high speed without displaying the picture.
When you do this, ►► appears on the screen.

You can stop the forward running of the tape at any time by pressing STOP ■ .

If during the operation, the tape rewinds forward to the end, the machine will automatically stop and then rewind the tape back to the beginning again.
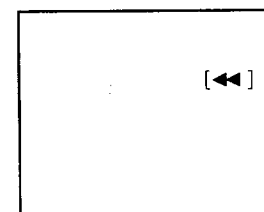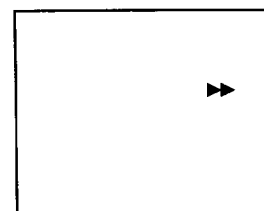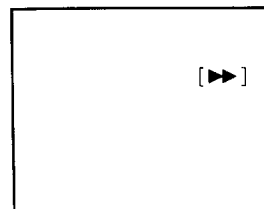
To rewind the tape rapidly
If you press REWIND/REVIEW ◄◄ while the tape is being played back, you can play the tape backwards to find a particular spot. When you do this, [◄◄] appears on the screen and the tape will be rewound at very high speed.
At the end, ■ appears on the screen and invite you to press PLAY► .

[►►]

►►

[◄◄]

Viewing TV Programs During Tape Playback

While a tape is being played, you can switch to watching TV broadcasts.
Press STOP ■ .
The VIDEO TV returns to normal TV reception mode.

Playback

Playback

Playing Back a tape recorded on another VCR

When playing back a tape recorded on another VCR, there might be some picture noise.

Tracking ensures that the tape is correctly aligned with the playback head. It only works in the "playback" mode and its principle purpose is to minimize picture shake and what is called "noise" (fuzzy lines across the picture during playback and still picture).

It is adjusted either automatically or manually.

Automatic tracking adjustment function
When playback starts, the auto tracking automatically adjusts the picture. "AUTO TRACKING" flashes for 5 seconds.

The automatic tracking control is activated in the following conditions:
• When the cassette is inserted for the first time.
• When the recording mode on the playback tape is switched from SP to EP and back again.
• When the picture is distorted by scratches on the tape.
• When TRACKING AUTO/MANUAL is pressed after the picture is adjusted manually.

If auto tracking does not work, the tracking was probably last adjusted manually.

Adjusting the tracking manually
When the playback picture proves to have streaks or snow during normal playback, adjust the picture manually with TRACKING NORMAL/SLOW (STILL ADJUST).
Press either △ or ▽ to obtain the best possible picture. When playing back a tape recorded on another VCR, the tracking condition is automatically adjusted on this VCR.
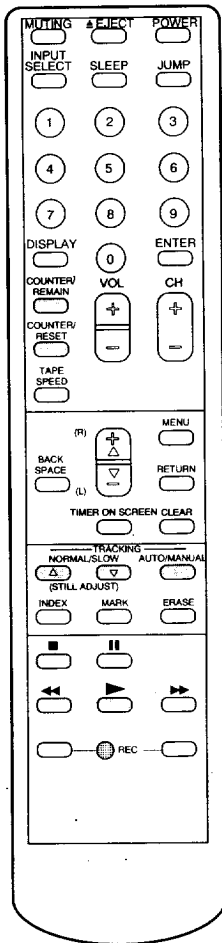
Notes

• Auto tracking adjustment may be impossible when the recording condition of the tape is poor.
• During auto tracking adjustment, streaks or noise may appear.

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Using COUNTER/REMAIN

To display the counter, press COUNTER /REMAIN
once.
The tape counter shows the tape travel time in
hours, minutes and seconds during recording or
playback.

```
                              SP 0:00:00
```
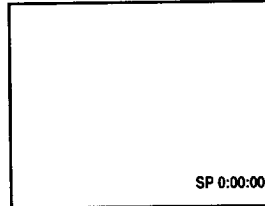
To see the remaining tape time during recording or
playback,
press COUNTER/REMAIN twice.
The remaining tape time appears with "REM."

```
                              REM 1 : 36
```
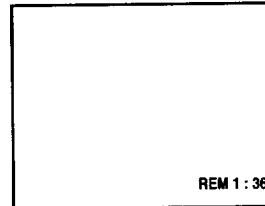
Note

For seeing the remaining tape time, first
check the tape mode.
If you want to see the remaining tape time in
T-120, press RETURN then △+ or ▽- until
T-120 appears in TAPE REMAIN screen.
For OTHERS, press the button until
OTHERS appears.

Using Counter Memory Function

The counter memory makes it easy to return to a particular spot on the tape after
recording or playback. The tape stops when the counter reaches SP 0:00:00. This
feature is especially helpful when editing a recording.

1 Press COUNTER/REMAIN to see the counter.

2 Start recording or playback, and press
COUNTER RESET at the point you want to
return to.
The counter displays SP 0:00:00.

```
                              SP 0:00:00
```
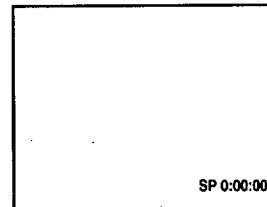
3 Press STOP ■ when you finish recording or playing the tape.

4 Press REWIND/REVIEW ◄◄.
The tape stops at SP 0:00:00.

5 Press PLAY ▶ to play the tape.

Playback

Recording TV Programs

Recording TV Programs
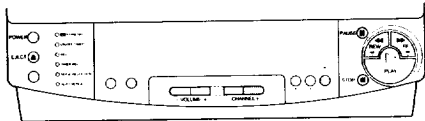
Caution
Television programs, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws. Also, use of this recorder with cable television transmission and/or program owner.
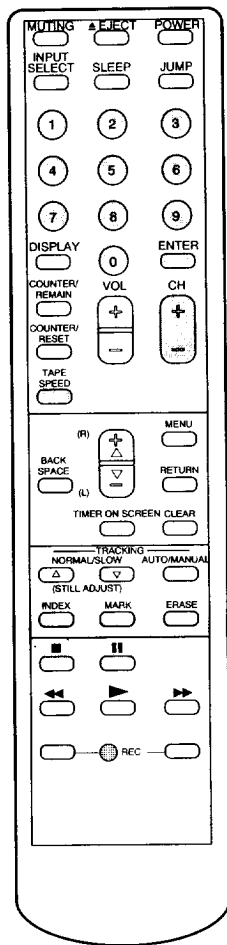
1 Insert a cassette with the safety tab.
The VIDEO TV turns on automatically (Auto power on).

2 Select the recording tape speed, SP, LP or EP, with TAPE SPEED.

3 Select the channel to be recorded with CHANNEL +/- or 0-9 buttons and ENTER.

4 Press the two REC buttons on the Commander at the same time, or the REC button on the unit.
The REC indicator lights.

To stop recording
Press STOP ■.

Temporarily to stop recording at a particular point
Press PAUSE **II** to eliminate unwanted station breaks or program material while recording a TV program.
REC **II** appears on the screen.
To resume recording, press PAUSE **II** again.
When the recording pause mode lasts for more than approximately 5 minutes, the unit enters the stop mode.

Note

When the tape reaches its end
The tape rewinds to the beginning. The power will remain on.

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Recording a Program Without Watching the TV

Turn off the power of the TV.
There will be no interference with the recording.
You cannot watch another program while recording one program.

Timer Recording

You can preset up to six recordings up to one month in advance. The recordings can be preset with the Commander while referring to the TIMER SET/CHECK display on the screen.

Before you begin, check the following points.
- The date and clock must be set correctly. (See "Setting the Clock - CURRENT TIME SET" on pp. 25-26.)
- Make sure that the cassette tape is long enough to record all the programs.
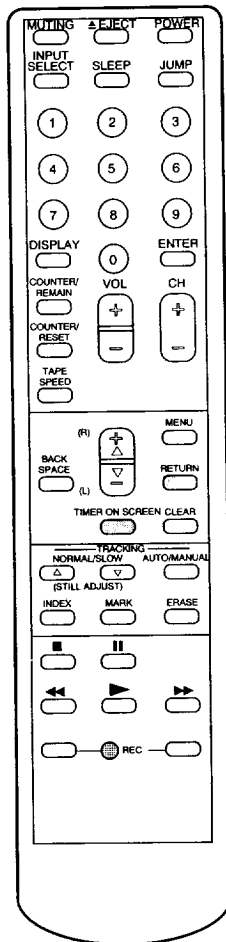- Make sure that the safety tab on the cassette is not broken off.

> **Recording from today to one month later**
> If today is August 31st, you can set the timer to record a program broadcast between today and September 30 (for 31 days). If today is January 31st, you can set the timer to record a program broadcast between today and February 28th (for 29days). A leap year is automatically considered.

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Setting the Timer

Example: Suppose you want to record a program broadcast on channel 26 from 9:00 PM on Thursday March 10 in EP mode. Note that 12:00 AM is midnight and 12:00 PM is noon.

1 Press TIMER ON SCREEN.
The TIMER SET/CHECK menu appears.

TIMER ON SCREEN

TIMER SET/CHECK			
DATE	START	STOP	CH
▶ -/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -

Use ✦ RETURN Exit MENU

2 Press RETURN.
Make sure that today's date is flashing.
If not, reset the correct time. See "Setting the Clock - CURRENT TIME SET" on pp. 25-26.

RETURN

TIMER SET/CHECK 3/1 TUE			
DATE	START	STOP	CH
3/4FRI	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -

Use ✦ RETURN Exit MENU

Note

During timer recording, [○─○] / STAND BY indicator flashes.

Timer Recording
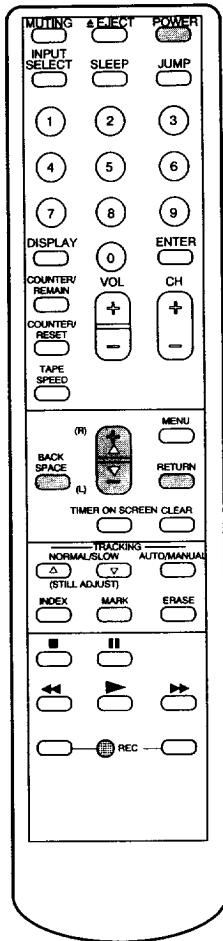
3 Press △+ or ▽- to set the month and date to 3/10 THU.
The day of the week is automatically set.

(R)
(L)
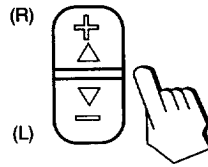
TIMER SET/CHECK 3/1 TUE			
DATE	START	STOP	CH
3/10THU	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -

Use ↕ [RETURN]   Exit [MENU]

---

4 Press RETURN to flash the hours section under "START" then △+ or ▽- until 9 PM appears.

RETURN

(R)
(L)

TIMER SET/CHECK 3/1 TUE			
DATE	START	STOP	CH
3/10THU	9:-- PM	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -

Use ↕ [RETURN]   Exit [MENU]

---

5 Press RETURN to flash the minute section under "START" then △+ or ▽- until 00 appears.

RETURN

(R)
(L)
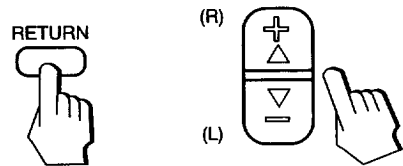
TIMER SET/CHECK 3/1 TUE			
DATE	START	STOP	CH
3/10THU	9:00PM	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -

Use ↕ [RETURN]   Exit [MENU]

---

6 Press RETURN.
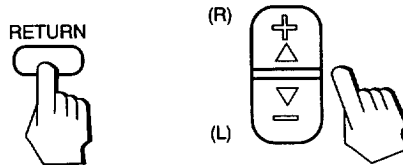The hours section flashes under "STOP." Set the turn-off time referring to steps 4 and 5.

RETURN

TIMER SET/CHECK 3/1 TUE			
DATE	START	STOP	CH
3/10THU	9:00PM	10:55PM	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -

Use ↕ [RETURN]   Exit [MENU]

---

7 Press RETURN to flash the CH position then △+ or ▽-until 26 appears.

RETURN

(R)
(L)
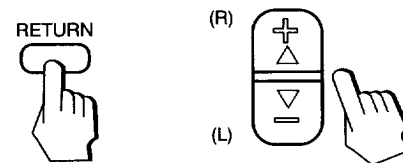
TIMER SET/CHECK 3/1 TUE			
DATE	START	STOP	CH
3/10THU	9:00PM	10:55PM	26 -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -

Use ↕ [RETURN]   Exit [MENU]

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8 Press RETURN to flash the recording speed position then △+ or ▽- until EP appears.
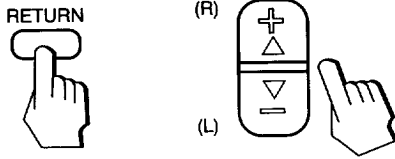
RETURN (R) (L)

TIMER SET/CHECK 3/1 TUE			
DATE	START	STOP	CH
3/10THU	9:00PM	10:55PM	26 EP
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -

Use ↕ [RETURN] Exit [MENU]

Note

The AT (AUTO SPEED) mode starts recording at the SP speed, but if it determines there isn't enough tape left to complete the programmed recording, it switches to the EP speed.

9 Press RETURN to store the setting.

RETURN

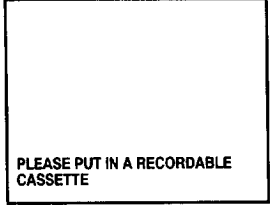| TIMER SET/CHECK 3/1 TUE			
DATE	START	STOP	CH
▶ 3/10THU	9:00PM	10:55PM	26 EP
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -
-/--	-:--	-:--	-- -

Use ↕ [RETURN] Exit [MENU]

10 After you finish programming, press POWER to turn off the VIDEO TV. *The TIMER REC indicator lights.*

To change or correct the setting before completing it
Press BACK SPACE to return to the item to be changed.

To preset another program
Move the cursor to the second line after step 9 and repeat steps 2 to 10.

Daily/Weekly Recording
You can preset the timer-activated recording to the same program everyday of the week (Daily recording), or one day of the week(Weekly recording).

Follow steps 1 through 2 in "Setting the Timer" on page 37.

You can select the following programs.

Each time you press ▽-, the indication under "DATE" on screen changes in the following order.

EVERY SUN ← SUN - SAT (Everyday of the week)
↑   ↓
EVERY MON   MON - SAT (Everyday except Sunday)
↑   ↓
...   MON - FRI (Everyday except
↑   Saturday and Sunday)
└────── EVERY SAT ◄──────┘

Notes

The following messages under each case appear on the screen:

• "PLEASE PUT IN A RECORDABLE CASSETTE" ---

PLEASE PUT IN A RECORDABLE CASSETTE

When switched to stand-by mode for timer recording, if a cassette is not inserted or a cassette without safety tab is inserted.

• "PLEASE PUSH POWER OFF TO SET TIMER"---
When the VIDEO TV is still turned on before the timer recording starts or when SLEEP OFF time and TIMER REC START overlap.

• "PLEASE STOP THE TAPE"---
When TIMER ON SCREEN is pressed at the same time the tape is being played back.

• "VCR IS RECORDING"---
When PLAY, FAST FORWARD, REWIND /REVIEW, EJECT, CH +/-, 0~9 buttons, INPUT SELECT, JUMP or MENU is pressed at the same time the timer recording is being done.

• "TIMER REC STARTS IN 5 MINUTES"---
5 minutes before timer recording starts.

• "PLEASE SET THE CLOCK FIRST"---
When TIMER ON SCREEN is pressed in the condition the current time is not set.
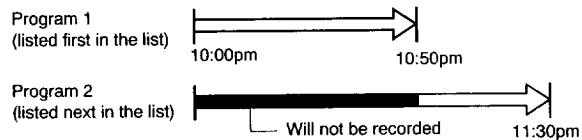
Timer Recording
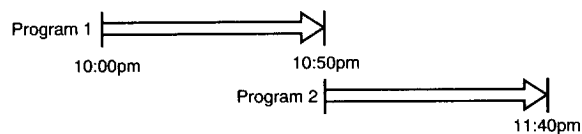
Timer Recording

When preset timer recordings overlap

If the turn-on time of two programs are the same

The program listed first on the TIMER SET/CHECK display has priority over the other programs. The timer recording of lower priority programs will be done from the point after program 1 is finished.

Program 1
(listed first in the list) 10:00pm   10:50pm

Program 2
(listed next in the list)   └── Will not be recorded   11:30pm

If the recording start time of program 2 is the same as the recording end time of program 1

Program 1   10:00pm   10:50pm

Program 2   11:40pm

If the recording start time of program 2 comes before recording of program 1 is over

The recording of program 2 will begin after program 1 is finished.

Program 1   11:30pm
10:00pm
Program 2
10:45pm   12:15pm
└── Will not be recorded
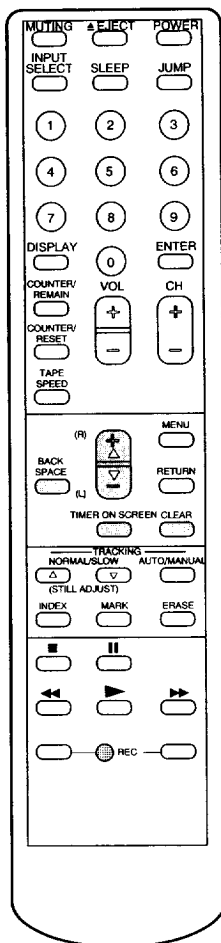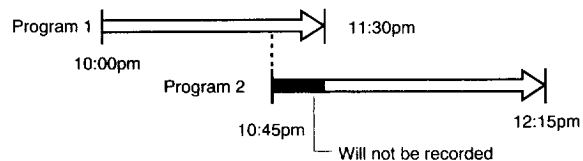
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Note

If a power interruption occurs
- If a power interruption lasting less than approximately three hours occurs while the VCR is waiting for the preset time, the VIDEO TV re-enter the timer recording standby mode.
- If a power interruption lasting more than approximately three hours occurs before a timer recording, the memory clears. Reset the date and time for timer recording.
- If a power interruption lasting less than approximately three hours occurs during a timer recording, the VIDEO TV starts recording again.

Checking the Timer Settings

You can display all of the timer settings on the VIDEO TV screen to check the settings.

1 Press TIMER ON SCREEN.
The TIMER SET/CHECK display appears.

TIMER ON SCREEN


```
TIMER SET/CHECK 3/1 TUE
    DATE    START   STOP    CH
▶ 3/10THU  9:00AM  10:55AM  26EP
  3/11FRI  1:00PM   2:15PM  10AT
  3/4FRI   1:00PM   2:15PM  10SP
  MON-FRI 11:00AM   2:15PM  11SP
  SUN-SAT 11:00AM   2:15PM  25AT
  EVERY-SAT 11:00AM 2:15PM  25AT

Use ♦ RETURN  Exit MENU
```

2 Press TIMER ON SCREEN again to return to the original screen.

Changing or Cancelling the Timer Settings

The timer settings can be changed or cancelled by referring to the TIMER SET/CHECK display.

1 Press TIMER ON SCREEN.
TIMER SET/CHECK display appears.

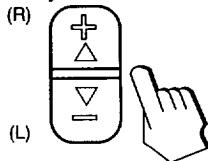TIMER ON SCREEN


```
TIMER SET/CHECK 3/1 TUE
    DATE    START   STOP    CH
▶ 3/10THU  9:00AM  10:55AM  26EP
  3/11FRI  1:00PM   2:15PM  10AT
  3/4FRI   1:00PM   2:15PM  10SP
  MON-FRI 11:00AM   2:15PM  11SP
  SUN-SAT 11:00AM   2:15PM  25AT
  EVERY-SAT 11:00AM 2:15PM  25AT

Use ♦ RETURN  Exit MENU
```

2 Press △+ or ▽- to move the cursor to the program you wish to change or cancel.

(R)

(L)


```
TIMER SET/CHECK 3/1 TUE
    DATE    START   STOP    CH
  3/10THU  9:00AM  10:55AM  26EP
▶ 3/11FRI  1:00PM   2:15PM  10AT
  3/4FRI   1:00PM   2:15PM  10SP
  MON-FRI 11:00AM   2:15PM  11SP
  SUN-SAT 11:00AM   2:15PM  25AT
  EVERY-SAT 11:00AM 2:15PM  25AT

Use ♦ RETURN  Exit MENU
```
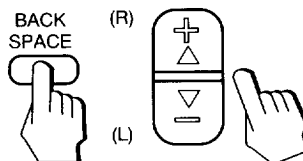
3 To change it, flash the item to be changed by pressing BACK SPACE and make the required changes by pressing △+ or ▽-.

BACK SPACE (R) (L)

To cancel it, move the cursor to the item to be cancelled by pressing △+ or ▽- then press CLEAR.

CLEAR

4 Press TIMER ON SCREEN to return to the original screen.

Timer Recording

Quick Timer Recording
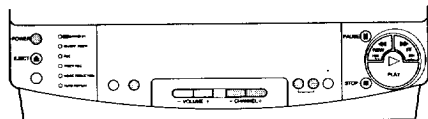
This function is convenient when, for example, you want to set the VCR to start recording immediately without going through the whole timer setting procedure.

Notes

- Make sure that the clock is set correctly before you activate Quick Timer Recording.
- During Quick Timer Recording, you cannot change the channel on the VIDEO TV.

1 Insert a cassette. The VIDEO TV automatically turns on.

2 Press INPUT SELECT so that a channel number appears.
Press TAPE SPEED to select the recording speed, SP, LP or EP.

Notes

- To extend the Quick Timer Recording time, press LENGTH to advance the recording time in 30-minute increments.

- To clear the Quick Timer Recording setting, press LENGTH and START at the same time.

- If you try the Quick Timer Recording immediately without setting the start time, delete the step 4.

- If the tape runs out during Quick Timer Recording, recording will stop and the power goes off. The tape will not rewind automatically.

- If a power interruption occurs during Quick Timer Recording, recording will stop and the power goes off. If the power interruption lasts less than three hours and the power is restored before the recording end time, recording will start again from that point.

3 Select the desired channel number with the 0-9 buttons and ENTER or CHANNEL +/-.
If you try to select the Cable TV channel, first set CABLE to ON in SET UP menu.

4 Repeatedly press START on the front panel to preset the start time.

START

```
                          26



QUICK TIMER
START TIME  12:30 AM
LENGTH       0:00
```
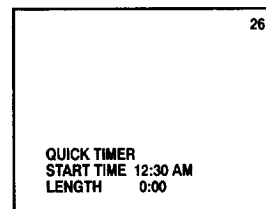
5 Press LENGTH on the front panel to set the recording time which appears on the screen.
Each time you press LENGTH, the time length advances in 30-minute increments up to 9 hours.

LENGTH

```
                          26



QUICK TIMER
START TIME  12:30 AM
LENGTH       0:30
```
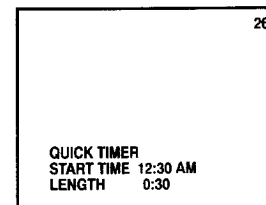
6 Press POWER to turn off the VIDEO TV.

The VCR turns on at the preset time and starts recording, then stops at the preset time.
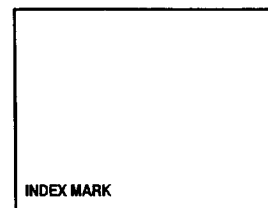
Index Function

INDEX signal marks on the tape let you scan through the start of different programs or search for a specific section of tape.
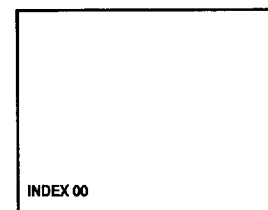
Marking INDEX Signals

Automatic INDEX mark
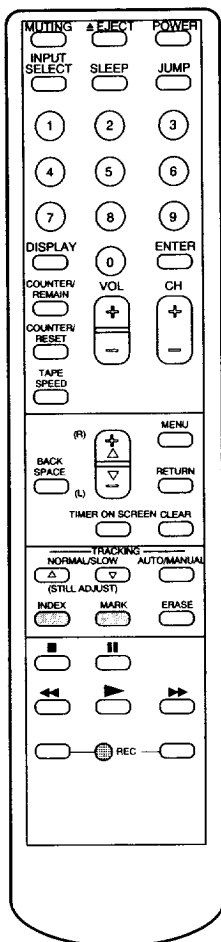An INDEX signal is automatically marked at the beginning of recording.

INDEX MARK

Manual INDEX mark
INDEX signals can be marked at any desired point during any recording or normal playback.

Press INDEX once.
INDEX 00 appears.

INDEX 00

Then press MARK at the point where you want to mark INDEX signal. INDEX MARK appears on the screen.

Notes

* Leave an interval of more than 2 minutes between INDEX signals when marking them one after the other so that the VCR can detect them correctly.
* While an INDEX signal is being marked during playback, the recorded sound will not be heard, but it will not be erased.
* You cannot mark an INDEX signal in the following cases:
  - On a tape without safety tab.
  - On an unrecorded portion of a tape.
  - Immediately before a point on the tape where the tape speed changes.

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Index Function

Playing Back from the INDEX Point

The beginning of each program can be found and played back by using the INDEX signals.
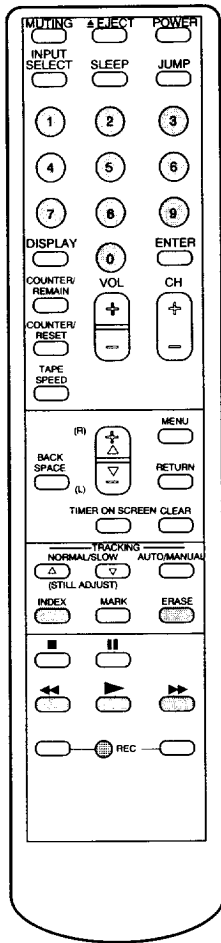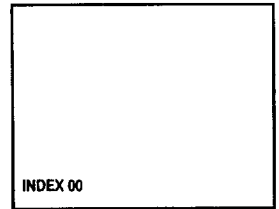
1 Insert a cassette with INDEX signals.

2 Press INDEX once during playback.
INDEX 00 appears on the screen.

INDEX

INDEX 00

3 Press either FAST FORWARD▶▶ or REWIND/REVIEW ◀◀ to start the INDEX scan.The tape rewinds or rapidly advances to the next marked signal.

The tape plays back for about 5 seconds, then rewinds or rapidly advances to the next INDEX signal. Each time INDEX signal is detected and playback begins, the INDEX scan number (INDEX SCAN 04) appears.

INDEX SCAN04
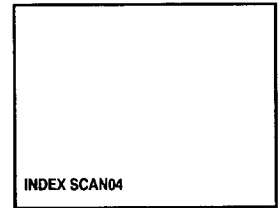
4 When the desired program is detected, press PLAY▶.
Playback starts from that point.

RM-Y126

Locating the Desired Program (INDEX Search)

A particular program can be located and played back by designating how many INDEX signals ahead or behind that program is from the current position.
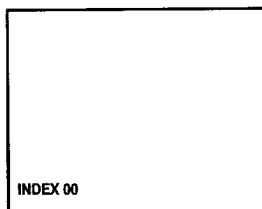
1 Insert a cassette with INDEX signals.

2 Press INDEX.
INDEX 00 appears.

INDEX

> INDEX 00

3 Using the 0-9 buttons, enter the number of INDEX signals you want to skip. For example, if the tape is at INDEX 02 and you want to locate INDEX 05, press 0 3.

4 Press either FAST FORWARD ▶▶ or REWIND /REVIEW ◄◄.
INDEX SEARCH03 appears on the screen. When the desired signal is found, playback begins automatically.

> ▶▶
>
> INDEX SEARCH03
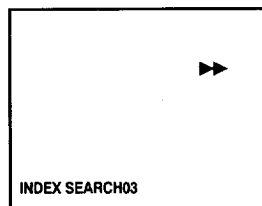
Erasing INDEX Signals

You can erase unnecessary INDEX signals.

1 Press INDEX during playback.
INDEX 00 appears.

2 Press ERASE.
INDEX ERASE appears on the screen.

ERASE

> INDEX ERASE
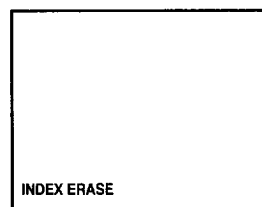
3 Press either FAST FORWARD ▶▶ or REWIND/REVIEW ◄◄ .
The first subsequent INDEX signal is erased and the tape begins playback.

Note

While INDEX signal is being erased, the recorded sound is temporarily muted.

Index Function

Specification

Television system	American TV standard	**Power consumption**	KV-13VM20/21: 85W KV-20VM20: 100W
Recording system	Rotary two-head helical scan system	**Dimensions (WHD)**	KV-13VM20/21: $15^{1/2}$" X $16^{5/8}$" X 15" 390 X 416 X 384mm KV-20VM20: $20^{7/8}$" X $20^{1/8}$" X 19" 531 X 511 X 482mm
Channel coverage	VHF: 2 - 13 UHF: 14-69 Cable TV: 1-125		
Picture tube	KV-13VM20/21: Microblack™ Trinitron® tube 13-inch picture measured diagonally 14-inch picture tube measured diagonally KV-20VM20: Trinitron® Tube 20-inch picture measured diagonally 21-inch picture tube measured diagonally	**Weight**	KV-13VM20/21: Net: 14.65 kg(32.3 lbs) Gross: 16.65 kg(36.7 lbs) KV-20VM20: Net: 28.3kg(62.4lbs) Gross: 30kg(66.1lbs)
		Tape Speed	SP: 33.35 mm/sec. LP: 16.67 mm/sec. EP: 11.12 mm/sec.
Antenna	75-ohm external antenna terminal for VHF/UHF	**Maximum recording/playback time**	9 hours in EP mode
LINE IN	VIDEO IN (phono jack) (1 each) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO IN (phono jack) (1 each) Input level: 400 mVrms Input impedance: 47 kilohms	**Fast-forward and rewind time**	Approx. 4 min. 30 sec. (T-120 tape)
		Supplied accessories	Remote commander RM-Y126 (1) with 1 size AA (R6) battery Antenna Adapter (1)
Power requirements	120V AC, 60 Hz		

Note

Design and specifications are subject to change without notice.

Troubleshooting

VCR OPERATION

Symptoms	Suggestions
Cannot load video cassettes	• Insert the cassette with the window side up and the safety tab facing you. • Check if a video tape is already in the VCR.
No operation when buttons are pressed	• Cancel the QSR stop time.
Auto play function doesn't work or TV programs can't be recorded	• Make sure that the receiving channel of the set is properly tuned. • Make sure that the safety tab on the video cassette tape is still intact. • Check antenna wires, connections and direction.
Timer recording can't be performed	• Make sure the recording start/stop time is correct. • Reconnect the power plug to an AC outlet, and reset the program recordings.
There is no picture in playback, or the playback picture is noisy or contains streaks	• Check that power is set to ON. • Check that the video cassette tape has a recorded program. • Check the tracking control (for noise streaks)
Video cassette tape was inserted incorrectly	• Wait a few seconds. The video cassette tape should eject itself.

Troubleshooting

If you have a problem with the VIDEO TV, first check the power cord connection, then go through the following list. Should the difficulty persist, unplug the unit, and contact your Sony dealer or local authorised Sony service facility.

VIDEO TV RECEPTION

Symptoms	Suggestions
No picture or sound	• Make sure the unit is plugged into a working AC outlet. • Make sure it is not set to LINE IN mode. • Check that POWER is set to ON. • Check the antenna wires, connections and direction.
Picture OK, sound poor	• Adjust the sound.
Sound OK, no picture	• Try another channel. • Adjust the picture.
Picture weak or blurred	• Check the antenna wires, connections and direction. • Adjust picture control.
Picture rolls vertically	• Check the antenna wires, connections and direction.
Ghosts (multiple images)	• Check the antenna wires, connections and direction. • Install a directional antenna.
Wrong color or no color	• Adjust color and hue controls.
No response to button pressing	• Press the buttons carefully again. Unplug the set, then plug it in and try again.
No response to remote control	• Check the polarity (+ and −) of the batteries. • Replace the batteries.