

SONY

3-757-525-21 (1)

Video Camera Recorder **8**

# CCD-TR61/TR65

AC Power Adaptor

**AC-V25 / V25A**

## Operation Manual

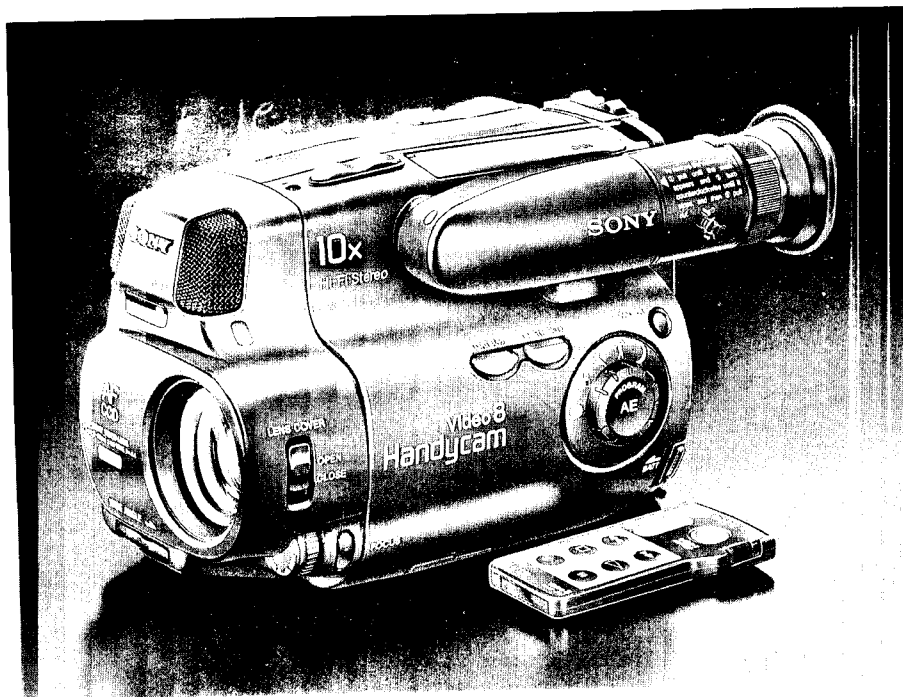
Before operating the unit, please read this manual thoroughly and retain it for future reference.

### Owner's Record

The model and serial numbers are located on the bottom. Record the serial number in the space provided on the right hand. Refer to these numbers whenever you call your Sony dealer regarding this product.

Model No. CCD-TR61/TR65    Serial No. \_\_\_\_\_

Model No. AC-V25/V25A    Serial No. \_\_\_\_\_



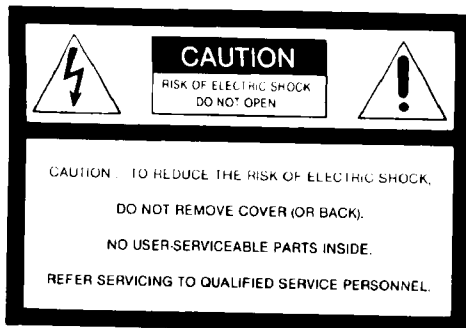
(Photo: CCD-TR61)

## Video8 Handycam

©1993 by Sony Corporation

## WARNING

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



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



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

## RECYCLING NICKEL-CADMIIUM BATTERIES



**NICKEL-CADMIIUM BATTERY.  
MUST BE DISPOSED OF PROPERLY.**

**Ni-Cd**

Nickel-Cadmium batteries are recyclable. You can help preserve our environment by returning your unwanted batteries to your nearest Sony Service Center or Factory Service Center for collection, recycling or proper disposal.

**Note:** In some areas the disposal of nickel-cadmium batteries in household or business trash may be prohibited.

For the Sony Service Center nearest you call  
1-800-222-SONY (United States only)  
For the Factory Service Center nearest you call  
416-499-SONY (Canada only)

**Caution: Do not handle damaged or leaking  
nickel-cadmium batteries.**

## For the Customers in the U.S.A.

### WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation if this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### CAUTION

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

## For the Customers in CANADA

### Notice for the customers in Canada

This apparatus complies with the Class B limits for radio noise emissions set out in Radio Interference Regulations.

### 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.

## Welcome to Video 8

Congratulations on your purchase of this Sony Handycam® camcorder. With your Handycam you can capture life's precious moments with superior picture and sound quality. Your Handycam is loaded with advanced features, but at the same time it is very easy to use. You will soon be producing home video that you can enjoy for years to come.

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## **About This Manual**

If you want to shoot as soon as possible, read the chapters "Getting Started" and "Basic Operations" first. As you read through this manual, buttons and settings on the camcorder are shown in capital letters.

e.g. Set the POWER switch to CAMERA.

### **Note on TV Color Systems**

TV color systems differ from country to country. To view your recordings on a TV, you need an NTSC system based TV. When you want to use a PAL-M system based TV, you will need an NTSC/PAL-M transcoder (as this is an NTSC system based camcorder). Please check the list on page 39 to see the TV color system of your country.

### **Note on the Supplied RFU Adaptor**

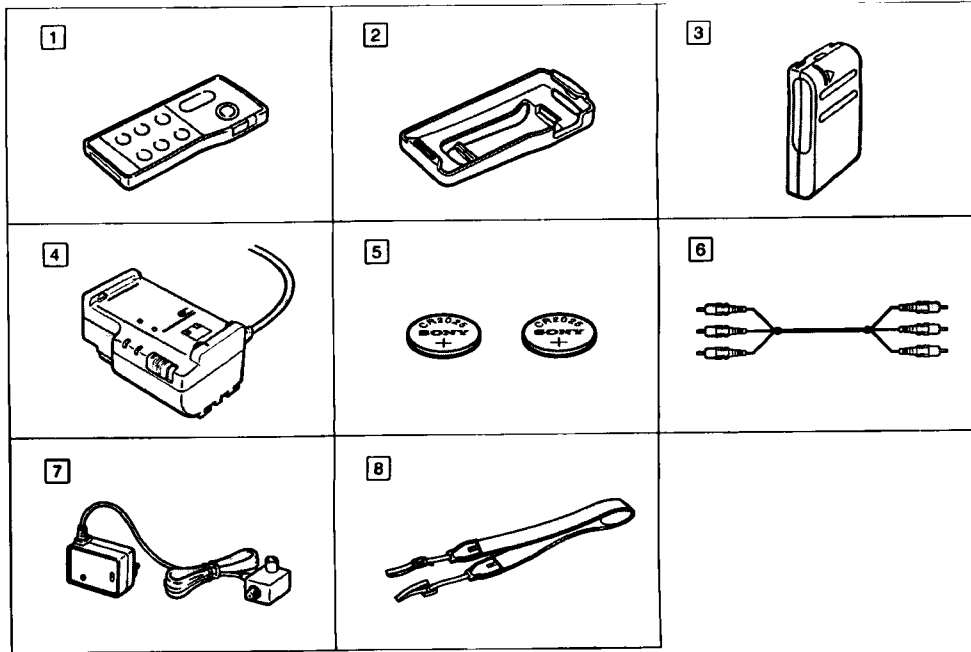
Since each country has its own electricity and TV color system, you may not be able to use the RFU adaptor when you use the camcorder abroad.

### **Precaution on Copyright**

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

# Checking Supplied Accessories

Check that the following accessories are supplied with your camcorder.



- 1 **Wireless Remote Commander** (1) (p. 43)
- 2 **Remote Commander holder** (1) (p. 44)
- 3 **Battery pack NP-55** (1) (p. 6)
- 4 **AC power adaptor AC-V25/V25A** (1) (p. 6, 48)
- 5 **Lithium Battery CR2025** (2) (p. 10)  
(One is for the camcorder and the other is for the Remote Commander)
- 6 **A/V connecting cable** (1) (p. 22)
- 7 **RFU adaptor RFU-90UC** (1) (p. 22)
- 8 **Shoulder strap** (1) (p. 44)

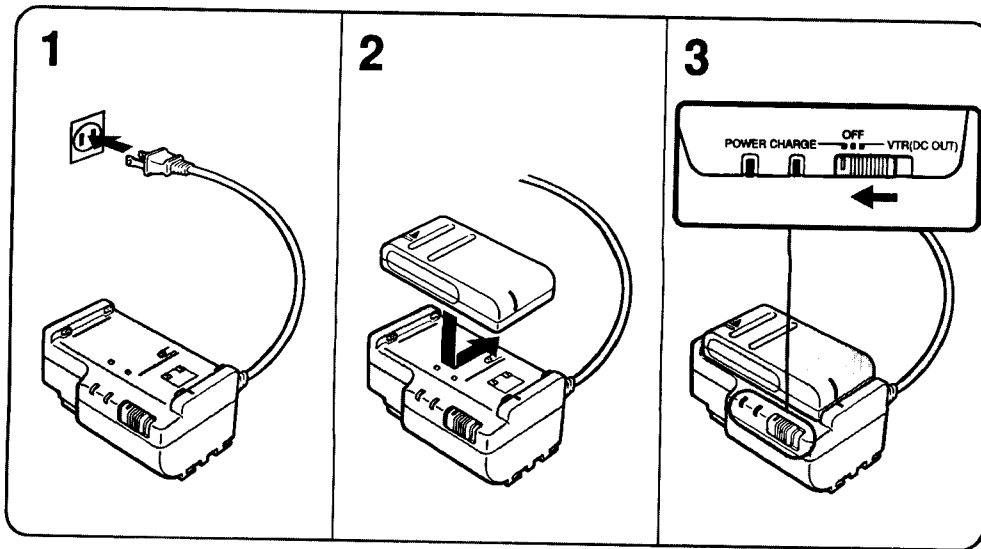
# Charging and Installing the Battery Pack

Before using your camcorder, you first need to charge and install the battery pack. To charge the battery pack, use the supplied AC-V25/V25A AC power adaptor.

## Charging the Battery Pack

Charge the battery pack on a flat place without vibration. (1) Connect the power cord to a wall outlet. (2) Align the right side of the battery pack with the white line on the AC power adaptor, then slide the battery pack in the direction of the arrow. (3) Set the selector to CHARGE. The POWER lamp (green) and the CHARGE lamp (orange) light up. Charging begins.

When charging is completed, the CHARGE lamp goes out. Set the selector to OFF and unplug the unit from the wall outlet. Then remove the battery pack and install it on the camcorder. To stop charging, set the selector to OFF.



## Charging Time and Battery Life

When the battery life of a color viewfinder is different from that of a monochrome viewfinder, the battery life of a color viewfinder is indicated in the parenthesis.

Battery pack	NP-55 (supplied)	NP-77H NP-77HD	NP-77	NP-66H	NP-55H
Charging time*	70	160	140	120	80
Battery life**	50	135 (125)	105 (95)	100 (90)	60 (55)


\* Approximate charging time to charge an empty battery pack using the AC-V25/V25A (Lower temperatures require a longer charging time.)

\*\* Approximate continuous recording time indoors

### Important!

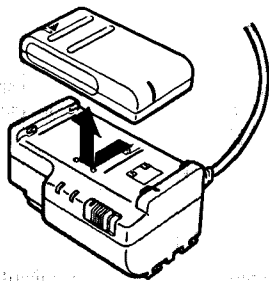
#### Use the battery completely before re-charging!

Before you recharge the battery, make sure the battery has been used up (discharged) completely. Repeated charging while some capacity remains causes a lowering of battery capacity. However, the original battery capacity can be recovered if you use the battery completely and charge it fully again.

To use up the battery, remove the cassette and slide the POWER switch to CAMERA with the battery attached, and leave the camcorder until the  indicator and the red lamp flash in the viewfinder.

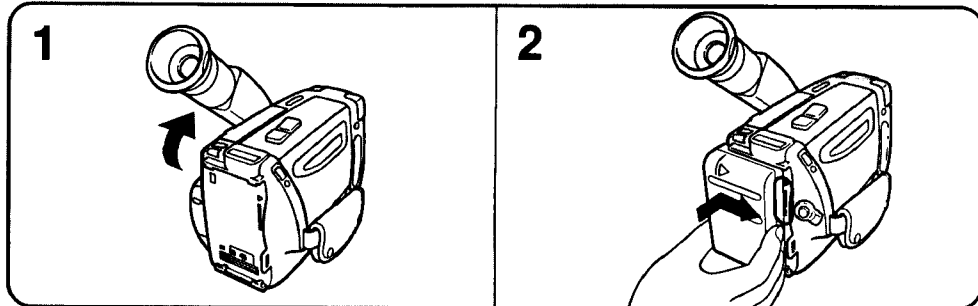
### Removing the Battery Pack

Slide the battery pack in the direction of the arrow (see drawing).



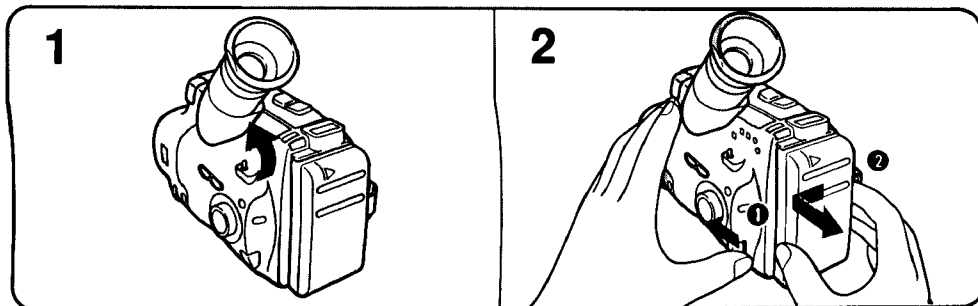
### Installing the Battery Pack

(1) Lift up the viewfinder. (2) Align the right side of the battery pack with the white line on the camcorder, and slide the battery pack to the right.



### Removing the Battery Pack

(1) Lift up the viewfinder. (2) While pressing BATT, slide the battery pack to the left.



### Note on charging the battery pack

- The POWER lamp will remain lit for a while even if the battery pack is removed and the power cord is unplugged after charging the battery pack. This is normal.
- If the POWER lamp does not light, set the selector to OFF and disconnect the power cord. After about one minute, reconnect the power cord and set the selector to CHARGE again.
- You cannot operate the camcorder using the AC power adaptor while charging the battery pack.

# Tips for Using the Battery Pack

This section shows you how you can get the most out of your battery pack.

## Preparing the Battery Pack

### Always Carry Additional Batteries

Have sufficient battery pack power to do 2 to 3 times as much recording as you have planned. "Battery life" indicated in this manual is measured by the continuous recording time of the camcorder, placed at room temperature using a fully-charged battery.

### Battery Life Is Shorter in Cold Environment

Battery efficiency is decreased and the battery will be used up more quickly if you are recording in cold environment.


### To Save Battery Power


Turn the STANDBY switch on the camcorder down when not recording to save battery power. [a] A smooth transition between scenes can be made even if recording is stopped and started again. While positioning the subject, selecting an angle, or looking through the viewfinder lens, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.

## When to Replace the Battery Pack

While you are using your camcorder, the remaining battery indicator decreases gradually as battery power is used up.



When the remaining battery indicator reaches the lowest point, the  indicator appears and starts flashing in the viewfinder. [b]

When the  indicator in the viewfinder changes from slow flashing to rapid flashing while you are recording, slide the POWER switch to OFF on the camcorder and replace the battery pack. Leave the tape in the camcorder to obtain smooth transition between scenes after the battery pack is replaced.

### Note on the remaining battery indicator

The remaining battery indicator of the camcorder may indicate a different remaining capacity from that of the NP-77HD battery pack (not supplied). The indicator of NP-77HD is more accurate.

## Note on the Rechargeable Battery Pack

### The Battery Heats Up

*During charging or recording, the battery pack heats up. This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack. This is not cause for concern.*

### Battery Care

- Remove the battery pack from the camcorder after using the battery pack, and keep it in a cool place. When the battery pack is attached to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is set to OFF, which shortens battery life.
- The battery pack is always discharging even when it is not in use after charging. Therefore, you should charge the battery right before using the camcorder.

### How to Use the Switch on the Battery Pack

This switch is provided so that you can mark the charged battery. Set the switch to the "no mark" position when charging is completed. Set the switch to the "red mark" position when the battery is used up (or in whichever direction you want to remind yourself). [c]



## The Life of the Battery Pack

The battery pack can be fully charged and discharged about 500 times under normal temperatures. If the battery indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

## Charging Temperature


You should charge batteries at temperatures from 10°C to 30°C (from 50°F to 86°F). Lower temperatures require a longer charging time.

## Note on Charging

### A Brand-new Battery

A brand-new battery pack is not charged. Before using the battery pack, charge it completely.

### Before Recharging a Used Battery Pack

- Make sure to use up the battery before recharging.
- If recording is completed before the  indicator appears in the viewfinder, you should remove the tape, slide the POWER switch to CAMERA, turn up the STANDBY switch, and leave the camcorder until the battery indicator flashes rapidly.
- When you use the AC-S10 power adaptor, the DC-S10 car battery charger or BC-S10 portable battery charger, you can use the discharging function.
- **Charging the usable battery causes a lowering of battery capacity. Battery capacity can be recovered if you fully discharge and charge the battery again.**

### After Long Storage

Recharge the battery pack after a long period of storage. If the battery pack is charged fully but not used for a long time (about 1 year), it becomes discharged. Charge it again, but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

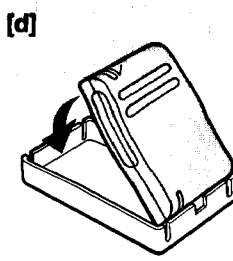
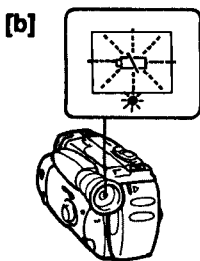
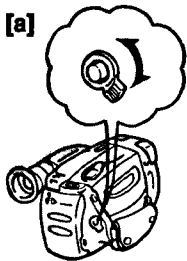
## Note on the Terminals

If the terminals (metal parts on the back) are not clean, the battery duration will be shortened.

When the terminals are not clean or when the battery pack has not been used for a long time, repeat installing and removing the battery pack. This improves the contact condition. Also, wipe the + and - terminals with a soft cloth or paper.

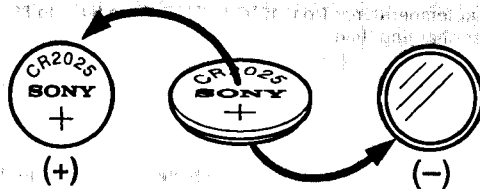
## Be Sure to Observe the Following

- **To prevent an accident caused by a short circuit, do not allow metal objects such as a necklace to touch the battery terminals. Carry the battery pack attaching to the terminal cover. [d]**
- Keep the battery pack away from fire.
- Keep the battery pack dry.
- Do not open nor convert the battery pack.
- Do not expose the battery pack to any mechanical shock



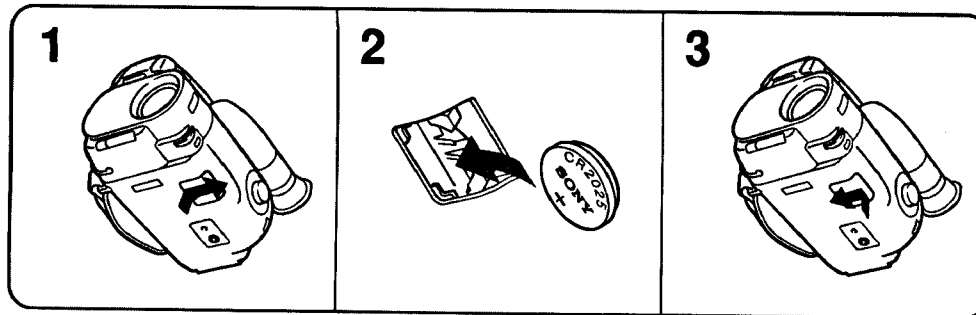
## Inserting the Lithium Battery

Your camcorder is supplied with two lithium batteries. One is for the camcorder, and the other is for the Remote Commander. The lithium battery has a positive (+) side and a negative (-) side as illustrated below. Be sure to install the lithium battery with the positive side facing out.



## Inserting the Lithium Battery Into the Camcorder

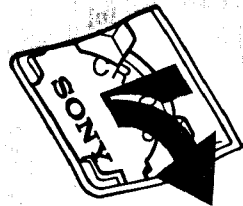
To activate the clock and the world clock, you must insert a lithium battery. (1) Detach the lid of the lithium battery compartment on the bottom of the camcorder. (2) Install the lithium battery with the positive (+) side facing out. (3) Replace the lid.



## To Remove the Lithium Battery

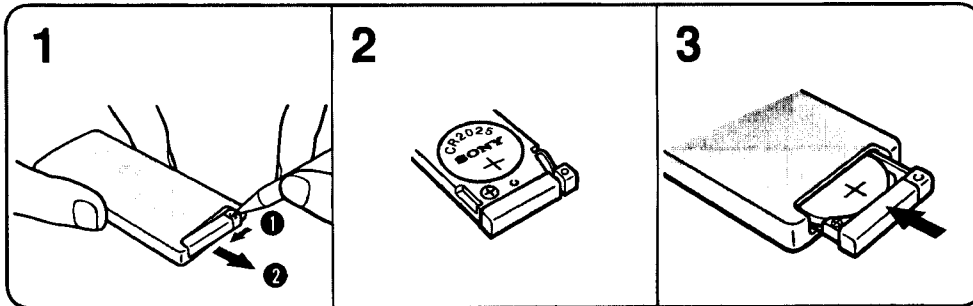
Push the Battery down once and pull it out from the holder.

When replacing the lithium battery, keep the battery pack or other power source attached. Otherwise, you will need to reset the date and time.




## Inserting the Lithium Battery into the Remote Commander

To use the Remote Commander, you must insert the lithium battery. Use one of the supplied CR2025 lithium batteries. (1) Pull out the lithium battery holder from the Remote Commander. (2) Insert the lithium battery with the positive (+) side facing upward. (3) Put the lithium battery holder back into the Remote Commander.



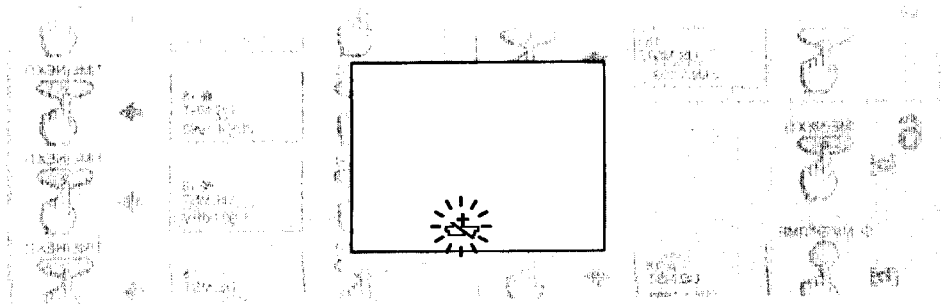
Inserting the Lithium Battery

### Lithium Battery Life

The lithium battery for the camcorder lasts for about 1 year under normal operation. When the battery becomes weak or dead, the  indicator flashes in the viewfinder for about 5 seconds when you set the POWER switch to CAMERA.

The lithium battery for the Remote Commander lasts about 6 months under normal operation. When the battery becomes weak or dead, the Remote Commander does not work.

In either case, replace the battery with a Sony CR2025 or Duracell DL-2025 lithium battery. Use of any other battery may present a risk of fire or explosion.



### WARNING

The battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

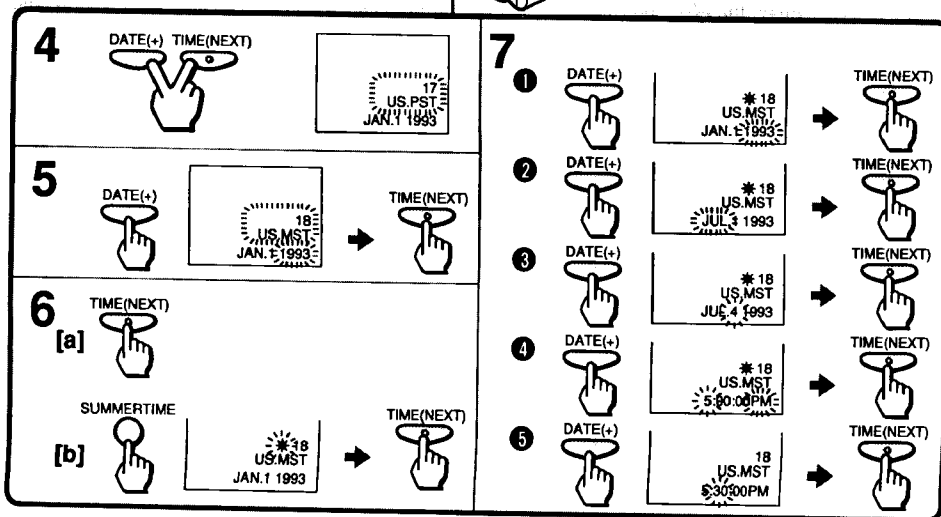
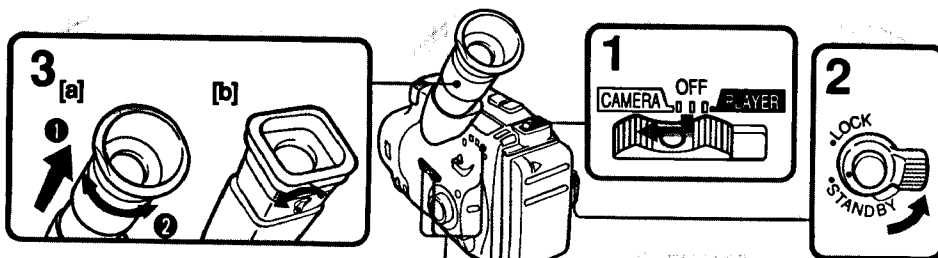
### Caution

Keep the lithium battery out of the reach of children.

Should the battery be swallowed, consult a doctor immediately.

# Setting the Date and Time

You need to set the camcorder's date and time to record the correct ones onto your video. Before setting the clock, make sure a power source and lithium battery are installed. (1) While pressing the small green button on the POWER switch, slide it to CAMERA. (2) Turn the STANDBY switch to STANDBY. (3) Adjust the viewfinder lens: [a] When using a monochrome viewfinder, pull out the viewfinder until it clicks and turn the viewfinder lens adjustment ring so that the indicators in the viewfinder come into sharp focus. [b] When using a color viewfinder, move the viewfinder lens adjustment lever so that the indicators in the viewfinder come into sharp focus. (4) Press DATE (+) and TIME (NEXT) simultaneously until the area name and number appear in the viewfinder. (5) Press DATE (+) to set your home area. (See the table below.) (6) Set the Time: [a] For standard time, press TIME (NEXT). [b] For Daylight Saving Time, press DST and then press TIME (NEXT). (7) Adjust the flashing digits of the year, month, day and hour and minutes by pressing DATE (+) and TIME (NEXT). Note that when you keep DATE (+) pressed, the digits advance faster.



Time Zone	Area Name	Area Number
Hawaii Standard Time	HAWAII	15
Alaska Standard Time	ANCHRGE	16
Pacific Standard Time Western Canada	US. PST	17
Mountain Standard Time	US. MST	18
Central Standard Time	US. CST	19
Eastern Standard Time Eastern Canada	US. EST	20

**To Correct the Date and Time Settings**

Press TIME (NEXT) repeatedly until the minute digits stop flashing. Then repeat steps 4 to 7.

**To Check the Preset Date and Time**

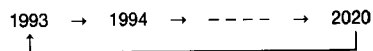
Press DATE (+) or TIME (NEXT). When you press the same button again, the indicator goes off.

**To Reset to Standard Time**

Press DST. The  indicator goes off.

**Note on the setting of the year**

When you set the year, each time you press DATE (+) the digits change as follows.

**Note on the time indicator**

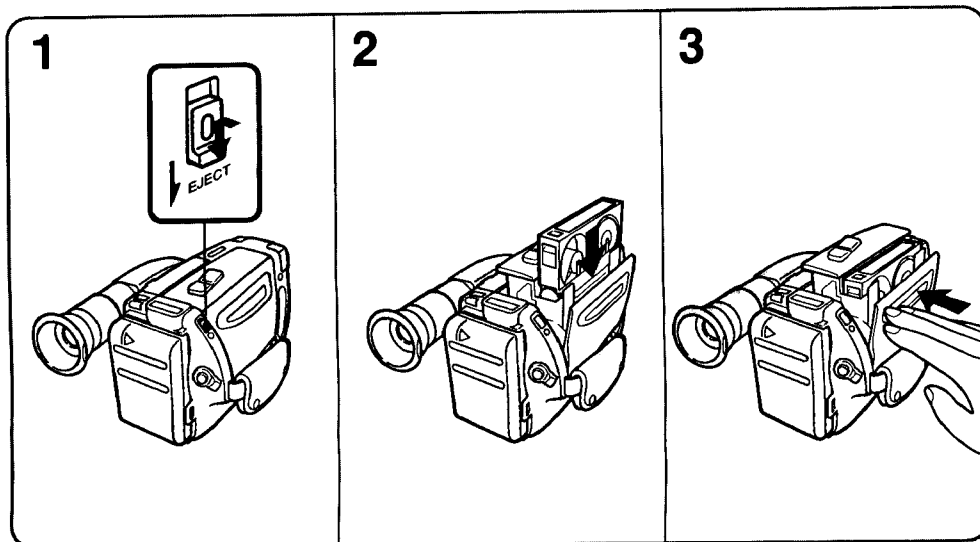
The internal clock of this camcorder operates on a 12-hour cycle.

12:00 AM stands for midnight.

12:00 PM stands for noon.

## Inserting a Cassette

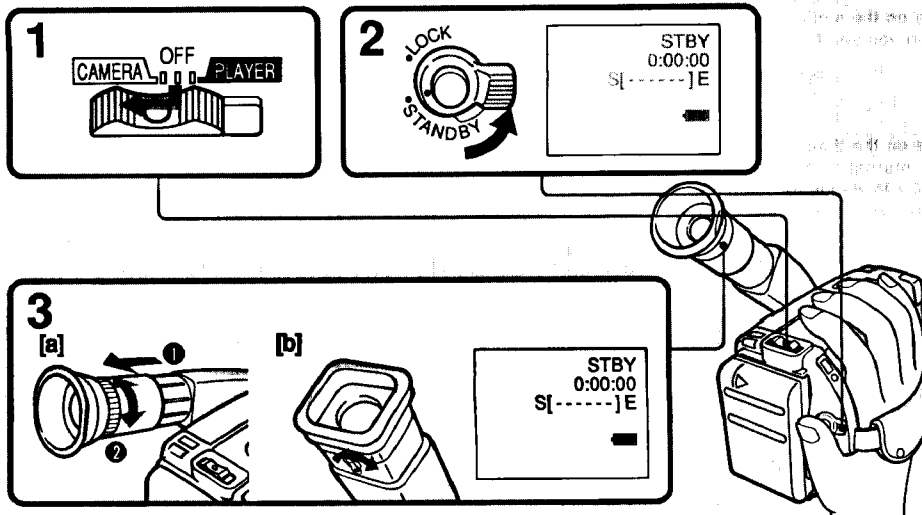
Make sure that the power source is installed. (1) While pressing the small blue button on the EJECT knob, slide it down. The cassette holder automatically lifts up and opens. (2) Insert a tape with the window facing out. (3) Close the cassette holder by pressing the "PUSH" mark on the cassette holder.

**To Eject the Cassette**

While pressing the small blue button on the EJECT knob, slide it down.

# Adjusting the Viewfinder Lens

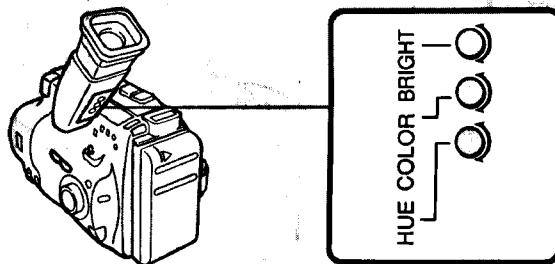
Before you use the camcorder for the first time or after someone else has used it, focus the viewfinder lens. Make sure that the power source is attached to the camcorder. (1) While pressing the small green button on the POWER switch, slide it to CAMERA. (2) Turn the STANDBY switch to STANDBY. (3) Focus on the indicators: [a] When using a monochrome viewfinder, pull out the viewfinder until it clicks, and turn the viewfinder lens adjustment ring so that the indicators in the viewfinder come into sharp focus. [b] When using a color viewfinder, move the viewfinder lens adjustment lever so that the indicators in the viewfinder come into sharp focus.



## When Using a Color Viewfinder

### To adjust the picture quality

If you want to change hue, color and brightness of the picture displayed on the viewfinder screen, turn the screws on the viewfinder slowly using a screwdriver (not supplied). You do not need to adjust them in everyday operation.

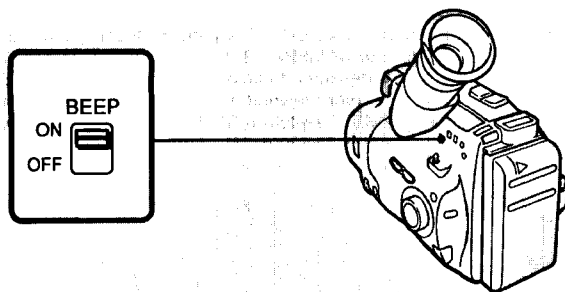


	Turn clockwise	Turn counterclockwise
BRIGHT	More brightness	Less brightness
COLOR	More color intensity	Less color intensity
HUE	Greenish skin tones	Reddish skin tones

## BEEP Feature

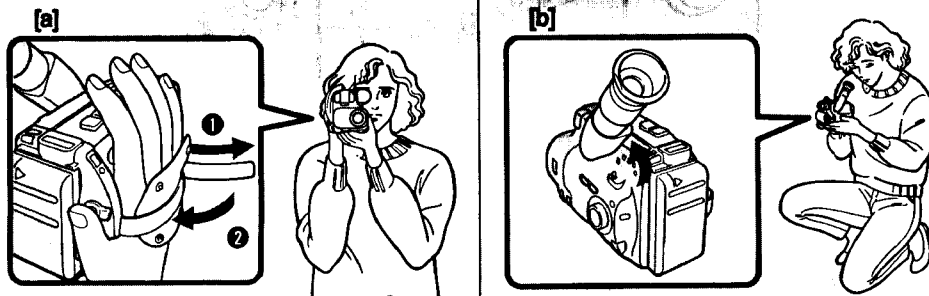
A beep sounds when you start recording and two beeps sound when you stop recording, confirming the operation.

Several beeps also sound as a warning of any unusual condition of the camcorder. Note that the beep sound is not recorded on the tape. If you do not want to hear the beep sound, set BEEP to OFF.



## Hints for Better Shooting

For hand-held shots, you'll get better results by holding the camcorder according to the following suggestions:



- Hold the camcorder firmly and secure it with the grip strap so that you can easily manipulate the controls with your thumb. [a]
- Place your right elbow against your side.
- Place your left hand under the camcorder to support it.
- Place your eye firmly against the viewfinder eyecup.
- Use the viewfinder frame as a guide to determine the horizontal plane.
- You can also record in a low position to get an interesting recording angle. Turn the viewfinder up for recording from a low position. [b]

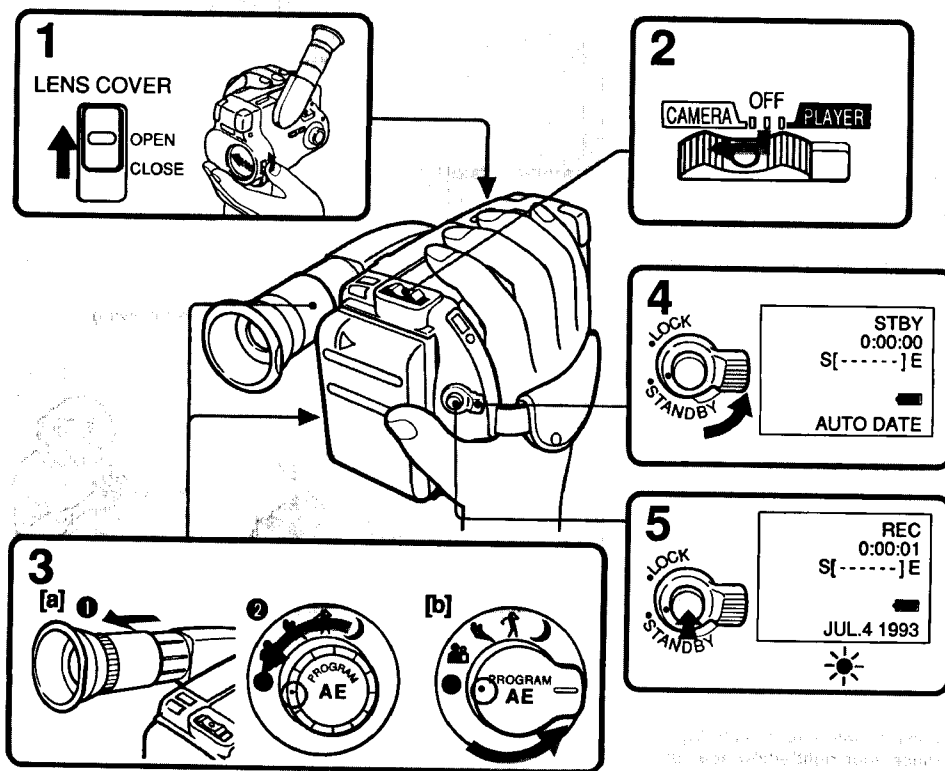
### Place the camcorder on a flat surface or use a tripod

Try placing the camcorder on a table top or any other flat surface of suitable height. If you have a tripod for a still camera, you can also use it with the camcorder (p. 41). Make sure the tripod screw is shorter than 6.5 mm (9/32 in).

# Camera Recording

Make sure that the power source is installed and a cassette is inserted. If you set the date (p. 12), the date is automatically recorded for 10 seconds after you start recording (AUTO DATE feature). This feature works only once a day. You can use the Remote Commander to record yourself with your friends or family. When you use the Remote Commander, make sure that the REMOTE COMMANDER switch on the camcorder is set to ON (p. 43).

Before you record one-time events, you may want to make a trial recording to make sure that the camcorder is working perfectly. (1) Slide the LENS COVER switch to OPEN. (2) While pressing the small green button on the POWER switch, slide it to CAMERA. (3) Set the PROGRAM AE dial: [a] When using a monochrome viewfinder, pull out the viewfinder until it clicks, and set the white mark of the PROGRAM AE dial to the green position. [b] When using a color viewfinder, set the white mark of the PROGRAM AE dial to the green position. (4) Turn the STANDBY switch to STANDBY. Adjust the viewfinder lens so that the indicators in the viewfinder come into sharp focus (p. 14). (5) Press START/STOP. The camcorder starts recording and the red lamp lights up in the viewfinder.



### To Stop Recording Momentarily

Press START/STOP again. The "STBY" indicator appears in the viewfinder (Standby mode).

### To Finish Recording

Turn the STANDBY switch to LOCK and slide the POWER switch to OFF. Slide the LENS COVER switch to CLOSE and eject the tape (p. 13).

### Notes on Standby mode

If you leave the camcorder in Standby mode for 5 minutes, the camcorder goes off automatically. This prevents wearing down the battery and wearing out the tape. To resume Standby mode, turn the STANDBY switch to LOCK once and turn it to STANDBY again. To start recording, press START/STOP.



#### Note on the tape counter

The tape counter indicates the recording or playback time. Use it as a guide. There will be a time lag of several seconds from the actual time. To set the counter to zero, press COUNTER RESET.

#### Note on the AUTO DATE feature

The AUTO DATE feature works once a day. However, the date may automatically appear more than once a day when:

- you reset the date and time.
- you eject and insert the tape again.
- you stop recording within 10 seconds.

#### If you wear glasses

When using a monochrome viewfinder, you can bend back the eyecup to get a better view of the viewfinder.

When using a color viewfinder, you cannot bend back the eyecup.



#### When moving from indoors to outdoors (or vice versa)

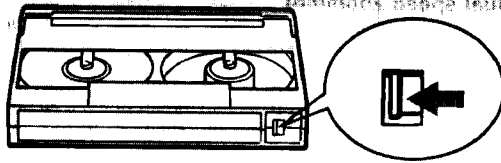
Turn the STANDBY switch to STANDBY and point the camcorder at a white object for about 15 seconds so that the white balance is properly adjusted.

#### Note on recording

When you record from the beginning of a tape, run the tape for about 15 seconds before starting the actual recording. This will ensure that you won't miss any start-up scenes when you playback the tape. You can record tapes in SP (standard play) mode only.

## Preventing Accidental Erasure

To prevent accidental erasure, slide the tab on the cassette to expose the red mark. If you try to record with the red mark exposed, the  and  indicators flash in the viewfinder, and you cannot record. To re-record on this tape, slide the tab back out covering the red mark.

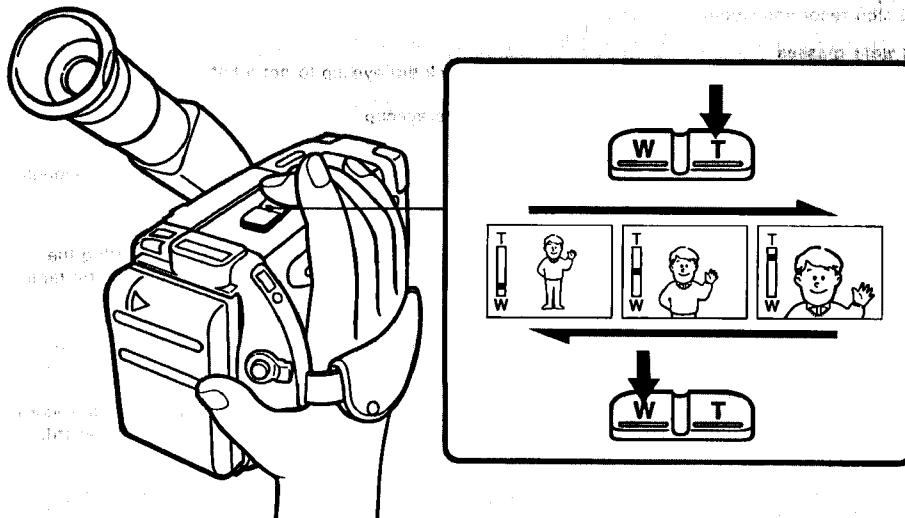


### Using the Zoom Feature

Zooming is a recording technique that lets you change the size of the subject in the scene. You can also use the zoom to focus manually or to decide on a shooting angle before you start recording. For more professional-looking recordings, use the zoom function sparingly.

"T" side: for telephoto (subject appears closer)

"W" side: for wide-angle (subject appears farther away)



### Zooming Speed (Dual speed zooming)

Press the power zoom button firmly for a high-speed zoom, press it softly for a relatively slow zoom.

#### When you shoot a subject using a telephoto zoom

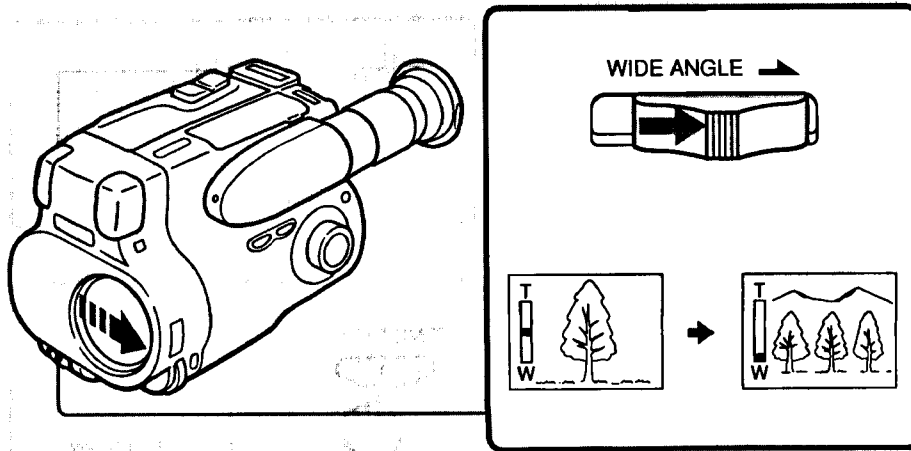
If you cannot get a sharp focus while in extreme telephoto zoom, press the "W" side of the power zoom button until the focus is sharp. You can shoot a subject that is at least 80 cm (about 31 1/2 inches) away from the lens surface in the telephoto position, or 1 cm (about 1/2 inches) in the wide-angle position.

#### Manual focusing in macro

You can also shoot with manual focus while doing close-ups (p. 27).

## Using the WIDE ANGLE

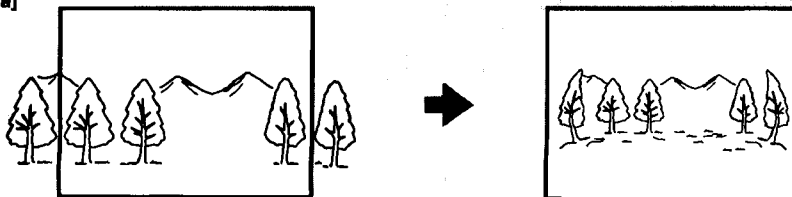
The WIDE ANGLE delivers wide-angle pictures easily. Set the WIDE ANGLE switch in the direction of the arrow.



### Note on using the WIDE ANGLE

- When you use the WIDE ANGLE, the power zoom button does not function.
- When you use the WIDE ANGLE, zooming is automatically set to the maximum wide-angle setting. The power zoom indicator stays at the end of the "W" side.
- The frame of the picture through the WIDE ANGLE changes [a] and the picture has slightly lower quality.
- When you use the WIDE ANGLE together with the auto-focus function in the following types of situations, the camera will focus not on the subject but on the light source. In this event, either orient the camera so that light does not enter the frame directly, or else use focus the shot manually.
  - When shooting into the light
  - When shooting a subject that gives off a large amount of light
- If there is dust between the regular lens and the WIDE ANGLE, the subjects may become out of focus. Remove the dust by using a blower.
- You cannot use any optional lens or filter with the WIDE ANGLE.

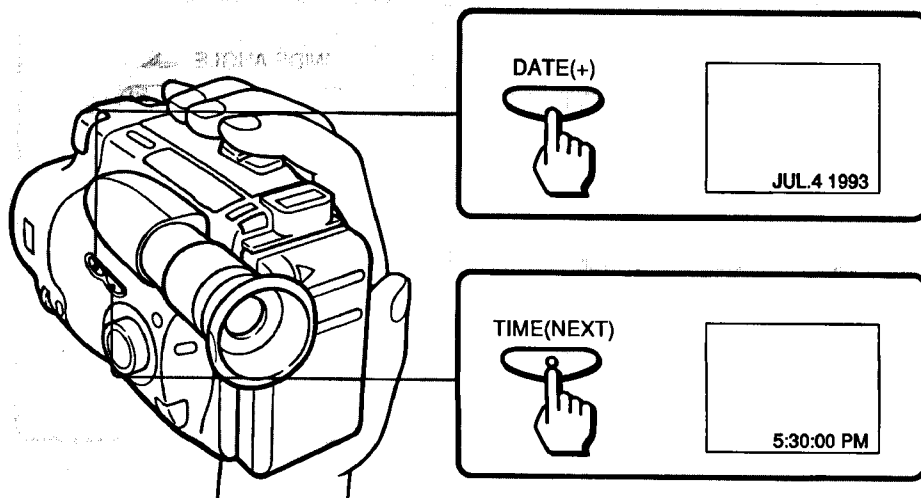
[a]



## Camera Recording

### Recording the Date or Time

While you are recording, press DATE (+) or TIME (NEXT). The date or time displayed in the viewfinder is recorded with the picture. You cannot record the date and time at the same time. Except for the date or time indicator, no indicator in the viewfinder is recorded.

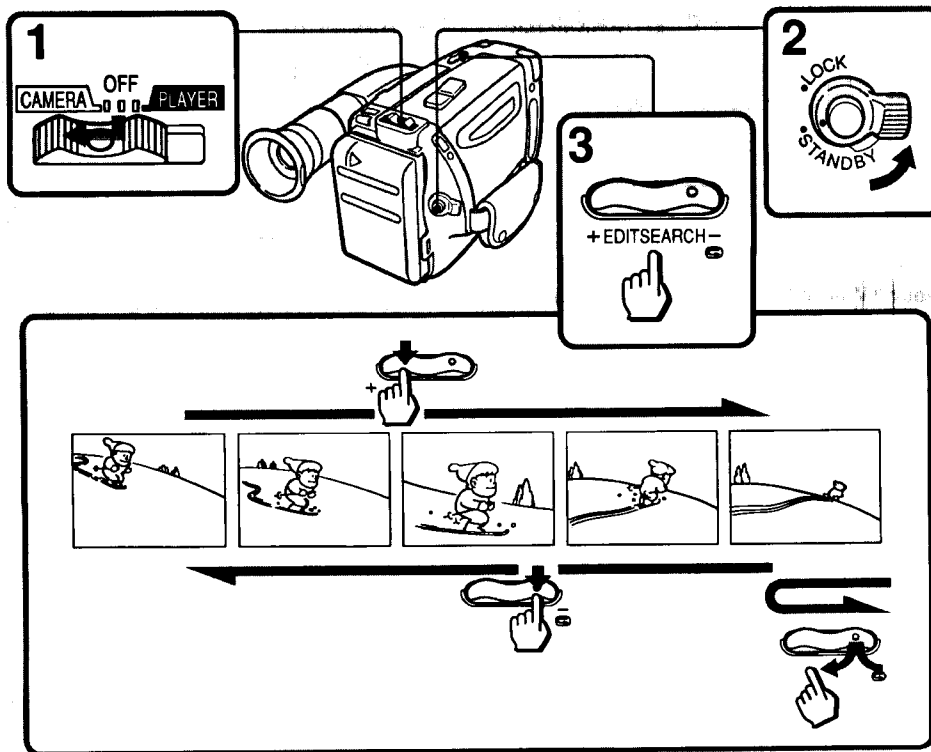


### To Stop Recording with the Date and Time

Press DATE (+) or TIME (NEXT) again. The date or time indicator disappears. The recording continues.

## Checking the Recorded Picture in the Viewfinder

Using EDITSEARCH, you can review the last recorded scene or check the recorded picture in the viewfinder. (1) While pressing the small green button on the POWER switch, slide it to CAMERA. (2) Turn the STANDBY switch to STANDBY. (3) Press the - (Ⓢ) side of EDITSEARCH momentarily; the last few seconds of the recorded portion plays back (**Rec Review**). Keep pressing EDITSEARCH to play back the last recorded portion (**Edit Search**).  
+ side: to view the forward playback picture  
- side: to view the reverse playback picture



Camera Recording

### To Stop Playback

Release EDITSEARCH.

### To Begin Re-recording

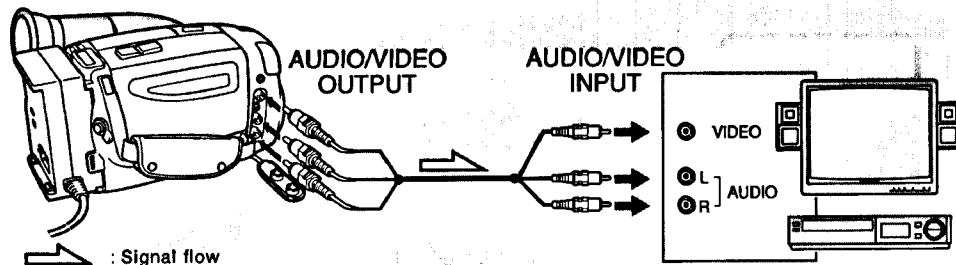
Press START/STOP. Re-recording begins from the point you released EDITSEARCH. Provided you do not eject the tape, the transition between the last scene you recorded and the next scene you record will be smooth.

## Connections for Playback

You can use this camcorder as a VCR by connecting it directly to your TV for playback. There are several ways to connect the camcorder to your TV.

### Connecting to a TV with Audio/Video Input Jacks or VCR

Connect the camcorder to the TV using the supplied A/V connecting cable. Set the TV/VCR selector on the TV to VCR.



### If your TV or VCR is a Monaural Type

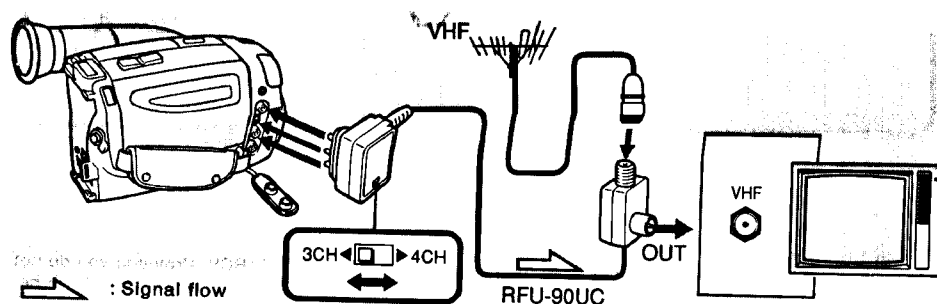
Connect only the white plug for audio on both the camcorder and the TV or the VCR. With this connection, the sound is in monaural.

#### Note on playing back a bilingual tape

You can listen to the main sound (only) by connecting the L ch plug. If you connect both L ch and R ch, the sound from both channels is mixed.

### Connecting to a TV without Audio/Video Input Jacks

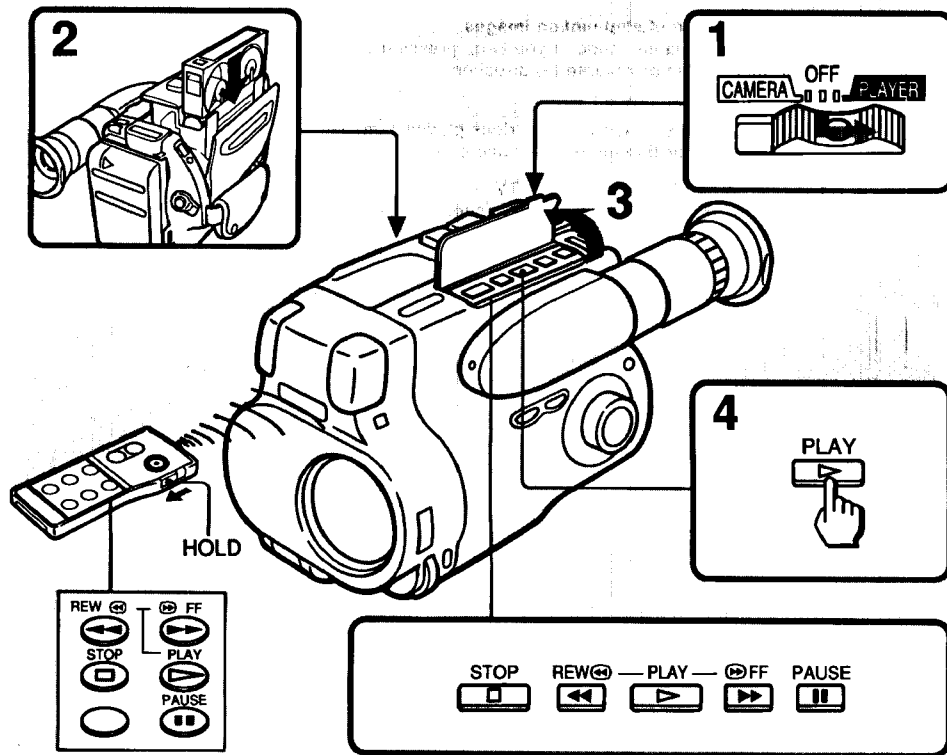
Connect the camcorder to the TV using the supplied RFU adaptor. Make sure that the TV is turned off to prevent speaker damage before hooking up your camcorder. Set the channel selector on the RFU adaptor and your TV to VHF CH 3 or CH 4, whichever is not active in your area. With this connection, the sound is in monaural.



# Playing Back a Tape

## Playing Back a Tape

You can monitor the playback picture in the viewfinder. You can also monitor the picture on a TV screen, after connecting the camcorder to a TV or VCR (p. 22). You can use the supplied Remote Commander to control playback, if you want. Before using the Remote Commander, slide the HOLD switch in the opposite direction of the arrow. (1) While pressing the small green button on the POWER switch, slide it to PLAYER. (2) Insert the recorded tape with the window facing out. (3) Open the lid of the control panel. (4) Press  $\triangleright$ . Playback starts.



Connections for Playback / Playing Back a Tape

To stop playback, press  $\square$ .  
To rewind the tape, press  $\lll$ .  
To fastforward the tape, press  $\ggg$ .

(See next page for further information.)

## Playing Back a Tape

### Various Playback Modes

#### To view a still picture

Press **||** during playback. To resume playback, press **||** or **▷**.

#### To locate a scene (Picture search)

Keep pressing **◀◀** or **▶▶** during playback. To resume normal playback, release the button.

#### To monitor the high-speed picture during fastforward or rewind (Skip scan)

Keep pressing **◀◀** while rewinding or **▶▶** while advancing the tape. To resume normal playback, press **▷**.

#### To view the picture in a sequence of stop-motion images

Press **EDITSEARCH** in playback pause mode. If you keep pressing **EDITSEARCH**, you can view the picture playback in the forward (+) or reverse (-) direction.

#### Note on playback

- Streaks appear and the sound is muted in the various playback modes.
- When still picture mode lasts for 5 minutes, the camcorder automatically enters stop mode.

#### To display the viewfinder screen indicators on the TV

Press **DATA SCREEN/DISPLAY** on the Remote Commander. To erase the indicators, press it again.



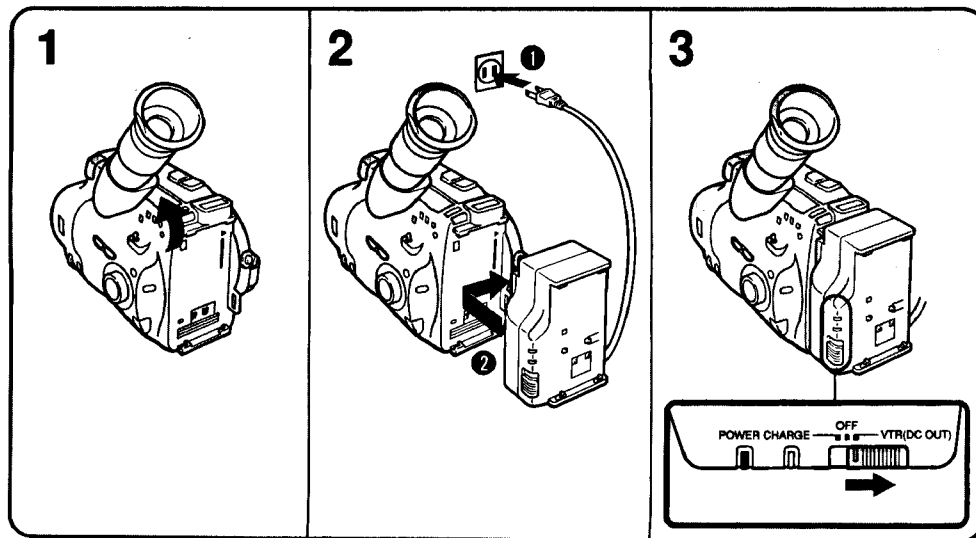
## Using Alternate Power Sources

You can choose any of the following power sources for your camcorder: battery pack (p. 7), house current, and 12/24 V car battery. Choose the appropriate power source depending on where you want to use your camcorder.

Place	Power source	Accessory to be used
Indoors	House current	AC power adaptor AC-V25/V25A (supplied), AC-S10, AC-V55
Outdoors	Battery pack	Battery pack NP-55 (supplied), NP-77HD, NP-77H, NP-77, NP-66H, NP-55H
In the car	12 V or 24 V car battery	DC pack DCP-77

### Using House Current

To use the supplied AC-V25/V25A AC power adaptor: (1) Lift up the viewfinder. (2) Connect the AC power cord to a wall outlet. The POWER lamp (green) lights up. Connect the bottom of the AC power adaptor to the battery mounting surface of the camcorder. (3) Set the selector to VTR (DC OUT).



#### Note on the POWER lamp

- The POWER lamp will remain lit for a while even if the unit is unplugged after use. This is normal.
- If the POWER lamp does not light, set the selector to OFF and disconnect the power cord. After about one minute, reconnect the power cord and set the selector to VTR (DC OUT) again.

#### To remove the adaptor

The adaptor is removed in the same way as the battery pack. (p. 7)

## Using Alternate Power Sources

### Using a Car Battery

Use the DCP-77 DC pack (not supplied). Connect the cord of the DC pack to the cigarette lighter socket of the car (12 V or 24 V). Connect the DC pack to the battery mounting surface of the camcorder.

#### To remove the DC pack

The DC pack is removed in the same way as the battery pack. (p. 7)

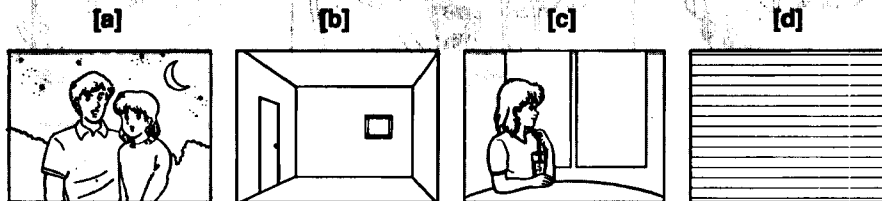
### Options for Charging the Battery Pack

- AC-S10 AC power adaptor:  
You can charge a battery pack whether it is used up or not with this adaptor because it has a discharging function.
- BC-S10 portable battery charger (ideal for travel):  
You can charge a battery pack on 100 — 240 V AC current.

## Focusing Manually

### When to Use Manual Focus

In the following cases you should obtain better results by adjusting the focus manually.



- Insufficient light [a]
- Subjects with little contrast — walls, sky, etc. [b]
- Too much brightness behind the subject [c]
- Horizontal stripes [d]
- Subject through frosted glass
- Subjects beyond nets, etc.
- Bright subject or subject reflecting light
- Shooting a stationary subject when using a tripod


#### Note on using the WIDE ANGLE

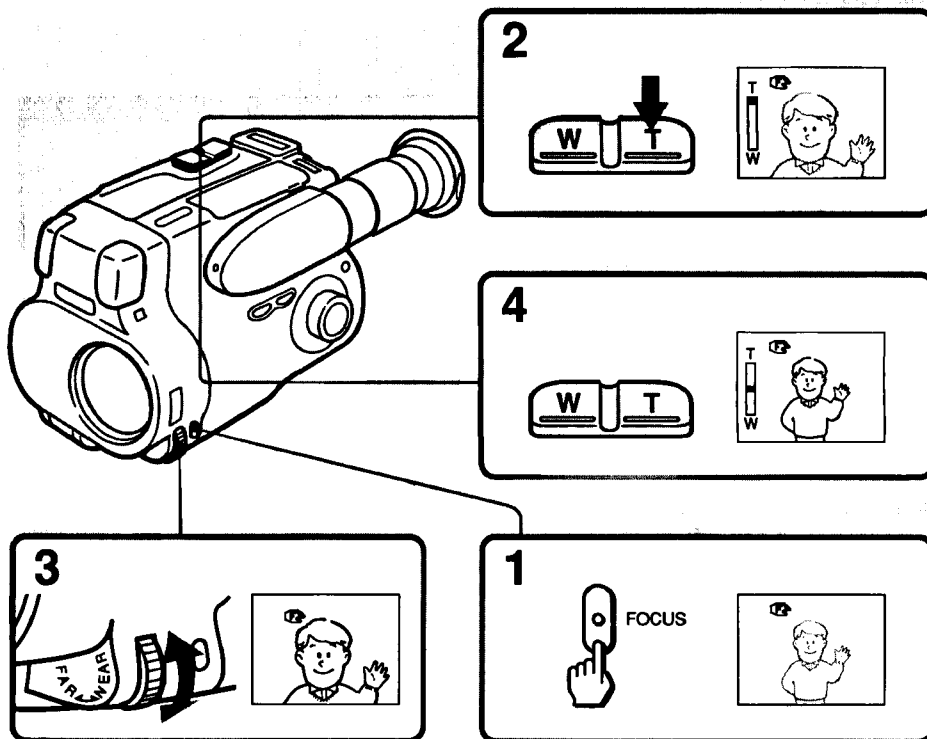
Readjust the focus if, while using manual focusing, you have switched to the WIDE ANGLE or if you have switched from the WIDE ANGLE to the normal lens.

## Focusing Manually

### Focusing Manually


When focusing manually, first focus in telephoto before recording, and then reset the shot length.

- (1) Press FOCUS. The  indicator appears in the viewfinder. (2) Keep pressing the "T" (telephoto) side of the power zoom button until the zooming stops. (3) Turn the focus dial to achieve a sharp focus. (4) Set the desired shot length.



Using Alternate Power Sources / Focusing Manually

### To Reactivate Autofocusing

Press FOCUS until the  indicator in the viewfinder disappears.

### Shooting in relatively dark places

Shoot at wide-angle after focusing in the telephoto position.

### Note on the focus dial

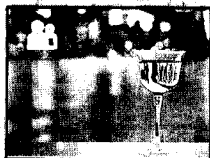
The focus dial does not have a stop position.

# Using the PROGRAM AE Function

You can select from four PROGRAM AE (Auto Exposure) modes to suit your shooting situation. When you use PROGRAM AE, you can get a Portrait effect (the subject is in focus and the background is out of focus) or capture high-speed action or record night views.

## Selecting the Best Mode

Select one of four modes, referring to the following.



### Portrait mode

- A still subject such as a person or a flower
- Zooming in on a subject in the telephoto mode
- A subject behind an obstacle such as a net

### Sports mode

- Outdoor sports scene such as football, tennis, golf or skiing
- A landscape in a moving car

### High speed shutter mode

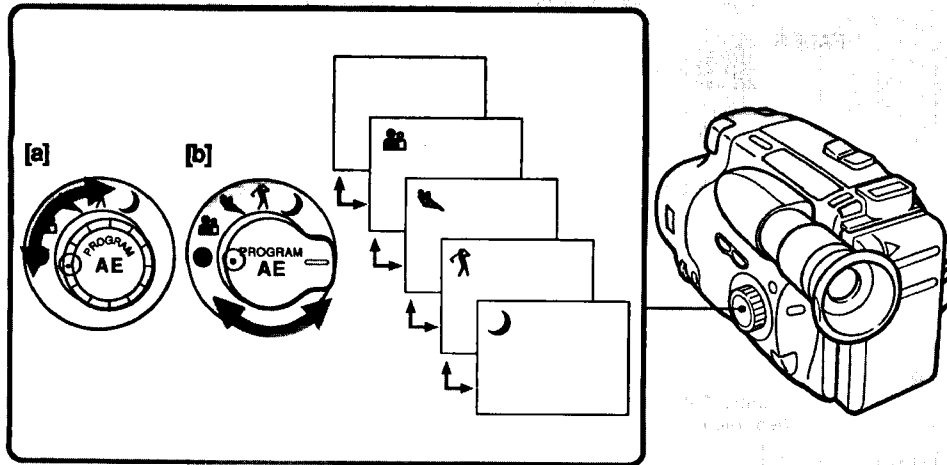
- A golf swing or a tennis match in fine weather with the ball captured clearly
- Playing back certain scenes with high-speed movements in a clear, sharp picture

### Twilight mode

- Recording night views, neon signs or fireworks

## Using the PROGRAM AE Function

Set the white mark of the PROGRAM AE dial to the desired PROGRAM AE mode ([a] When using a monochrome viewfinder [b] When using a color viewfinder). The indicator of the selected PROGRAM AE mode appears in the viewfinder.



### Note on shutter speed

The shutter speed in each PROGRAM AE mode is as follows:

Portrait mode — between 1/60 to 1/2000

Sports mode — between 1/60 to 1/500

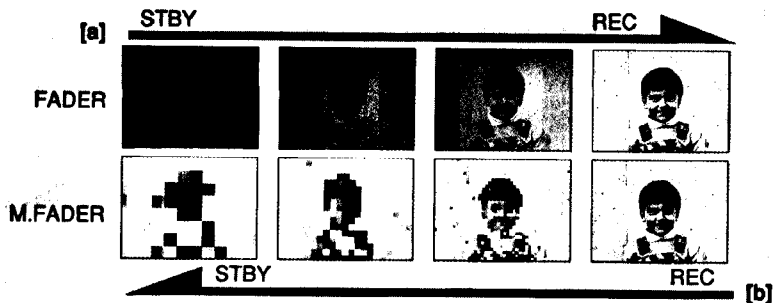
High-speed shutter mode — 1/4000

Twilight mode — 1/60

Using the PROGRAM AE Function

# Fade-In and Fade-out

You can fade a picture in or out with sound to give your recording a professional appearance. When fading in, you can make the picture gradually appear from black or mosaic while increasing the sound [a]. When fading out, you can make the picture gradually fade to black or mosaic while decreasing the sound [b].

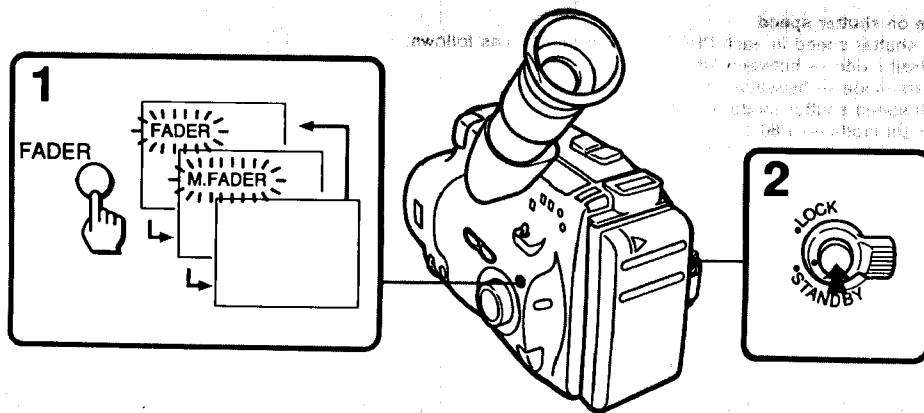


## When Fading In

(1) During the camcorder is in Standby mode, press FADER. (2) Press START/STOP. The fade indicator stops flashing and the recording starts fading in.

## When Fading out

(1) During recording, press FADER. (2) Press START/STOP. The fade indicator stops flashing and the picture fades out. Then, recording stops.



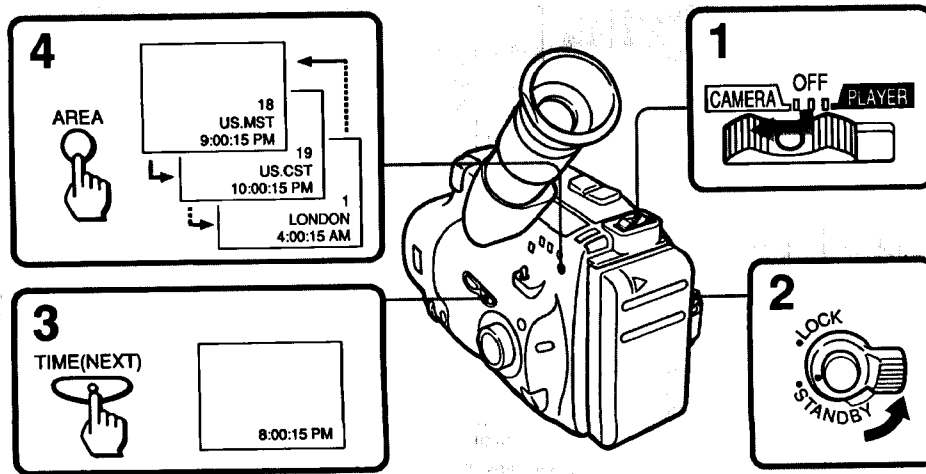
## To Cancel the Fade-In/Fade-out Function

Before pressing START/STOP, press FADER until the fade indicator disappears.

# Using the World Clock

Before using the world clock, you need to set the date and time in your home area (p. 12). Reset the clock according to the local time zone by pressing AREA. First, find the area name in the "Time Zone Chart" on page 32.

(1) While pressing the small green button on the POWER switch, slide it to CAMERA. (2) Turn the STANDBY switch to STANDBY. (3) Press TIME (NEXT). The setting of time appears. (4) Press AREA to select the area name where you will use the camcorder.

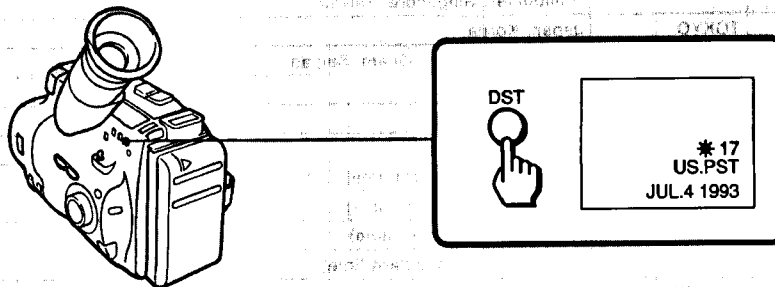


## To Check the Date

Press DATE (+). To turn off the date indicator, press DATE (+) again.

## To Adjust to Daylight Savings Time

Press DST. The \* indicator appears and the time changes to daylight savings time. To reset to standard time, press DST again.



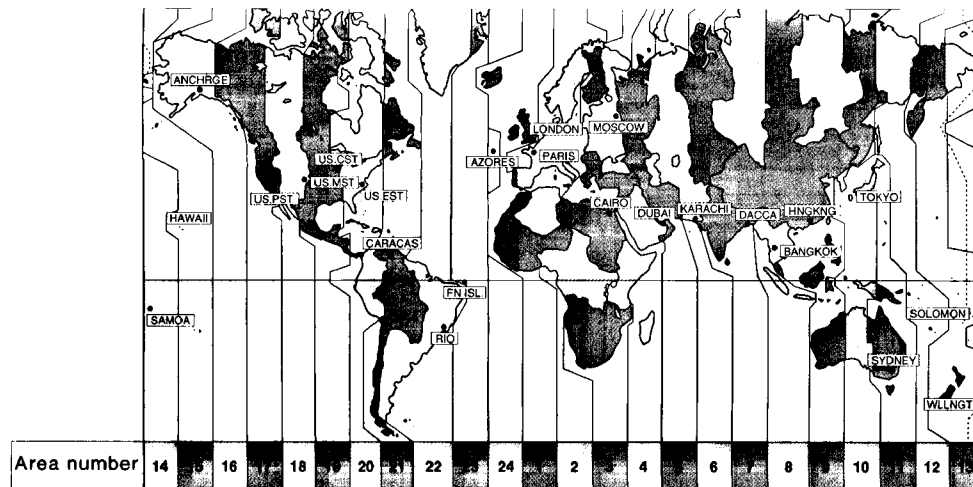
## To Reset to Your Home Area Time again

Press AREA until your home area name appears.

Fade-in and Fade-out / Using the World Clock

# Using the World Clock

## Time Zone Chart



Area number	Area name	Nations or area*
1	LONDON	England, Morocco, Portugal, GMT (Greenwich Mean Time)
2	PARIS	Austria, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, CET
3	CAIRO	Egypt, Finland, Greece, Israel, Turkey
4	MOSCOW	Ethiopia, Iraq, Kenya, Mauritius, Saudi Arabia, former Soviet Union (Moscow)
5	DUBAI	United Arab Emirates
6	KARACHI	Maldives, Pakistan
7	DACCA	Bangladesh, India, Myanmar
8	BANGKOK	Cambodia, Indonesia (Jakarta), Thailand, Vietnam
9	HNGKNG	Australia (Perth), China, Hong Kong, Indonesia (Bali, Borneo), Malaysia, Philippines, Singapore, Taiwan
10	TOKYO	Japan, Korea
11	SYDNEY	Australia (Sydney), Guam, Saipan
12	SOLOMON	New Caledonia
13	WLLNGTN	Fiji, New Zealand
14	SAMOA	Western Samoa
15	HAWAII	HST (Hawaii standard time), Tahiti
16	ANCHRGE	AST (Alaska standard time)
17	US. PST	PST (Pacific standard time)
18	US. MST	MST (Mountain standard time)
19	US. CST	CST (Central standard time), Mexico
20	US. EST	EST (East standard time), Canada (Montreal), Jamaica, Peru
21	CARACAS	Chile, Dominica, Venezuela
22	RIO	Argentina, Brazil, Uruguay
23	FN ISL.	Fernando de Noronha
24	AZORES	Azores Islands

\* These are common names. They may be different from formal country names.

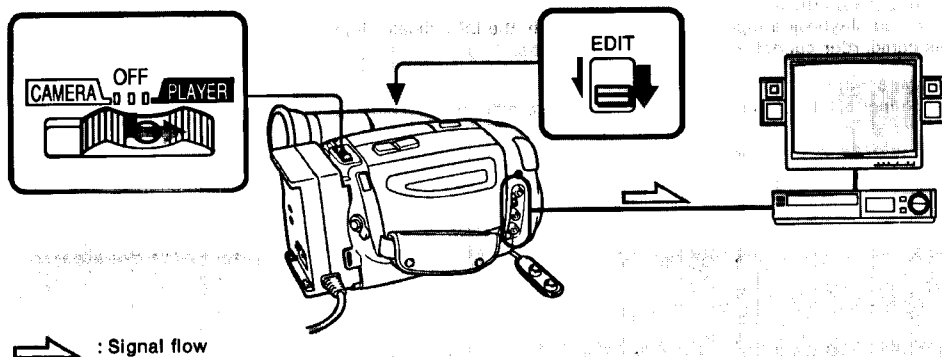


# Editing onto Another Tape

You can create your own video program by editing with any other **8** 8 mm, **Hi8** Hi8, **B** Betamax, **VHS** VHS, **S-VHS** S-VHS, **VHS-C** VHSC or **S-VHS-C** S-VHSC VCR that has audio/video inputs.

## Before Editing

Connect the camcorder to the VCR using the supplied A/V connecting cable. (p. 22)  
Set the input selector on the VCR to LINE, if available. Set EDIT on the camcorder in the direction of the arrow. Set the POWER switch to PLAYER.



## Starting Editing

(1) Insert a blank tape (or a tape you want to record over) into the VCR. And insert your recorded tape into the camcorder. (2) Play back the tape on the camcorder until you locate the point where you want to start editing, then set the camcorder in the playback pause mode. (3) On the VCR, locate the recording start point and set the VCR in the recording pause mode. (4) Press **||** on the camcorder and VCR simultaneously to start editing.

### To Edit More Scenes

Repeat steps 2 to 4.

### To Stop Editing Momentarily

Press **||** on the VCR.

### To Stop Editing

Press **□** on both the camcorder and the VCR.

### Use of the EDITSEARCH button

You can playback the tape in normal/reverse direction by keep pressing EDITSEARCH during Standby or playback pause mode. You can also playback still pictures successively at specific intervals by pressing EDITSEARCH intermittently.

### Note on the EDIT switch

When you set EDIT in the direction of the arrow, you can keep picture deteriorations resulting from editing to a minimum. However, when you edit or copy to another VCR, avoid using the edited tape for multiple generations of editing. After editing, be sure to set this switch in the opposite direction of the arrow.

### Note on the DATA SCREEN/DISPLAY function

If you have displayed the viewfinder screen indicators on the TV, erase the indicators by pressing DATA SCREEN/DISPLAY on the Remote Commander so that they will not be superimposed on the edited tape.

Using the World Clock / Editing onto Another Tape

## Playback Modes

The playback mode (SP or LP) is selected automatically according to the format in which the tape has been recorded. The quality of the recorded picture in LP mode, however, will not be as good as that in SP mode.

### Note on AFM Hi-Fi stereo

When you playback a tape, the sound is in monaural if:

- You record the tape using this camcorder, then play it back on an AFM Hi-Fi monaural video recorder/player.
- You record the tape on an AFM Hi-Fi monaural video recorder, then play it back on this camcorder.

### LP (long play) mode

When you playback a tape recorded in LP mode, the LP indicator lights up in the viewfinder. This camcorder cannot record a tape in LP mode.

### Foreign 8 mm video

You cannot playback the software recorded on a different TV color system. Because the TV color systems differ from country to country, you may not be able to playback foreign pre-recorded software. Refer to page 39 to check the TV color system of foreign countries.

## Maintenance Information and Precautions

### Video Head Cleaning

To ensure clear pictures, clean the video heads periodically. When playback pictures are "noisy" or hardly visible, the video heads may be contaminated.



[a]

[b]

**[a]** Slight contamination

**[b]** Critical contamination

If this happens, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied). After checking the picture, if it is still "noisy", repeat the cleaning. (Do not repeat cleaning more than 5 times.)

### Caution

Do not use a commercially available wet-type cleaning cassette. It may damage the video heads.

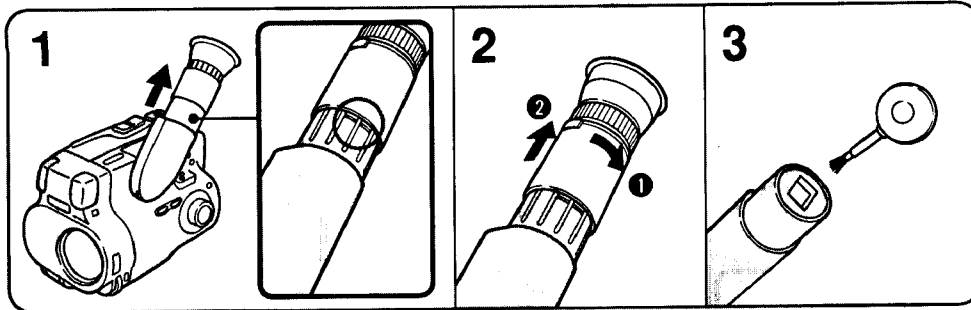
### Note

If the V8-25CLH cleaning cassette is not available in your area, consult your Sony service facility.

## Removing Dust from Inside the Viewfinder

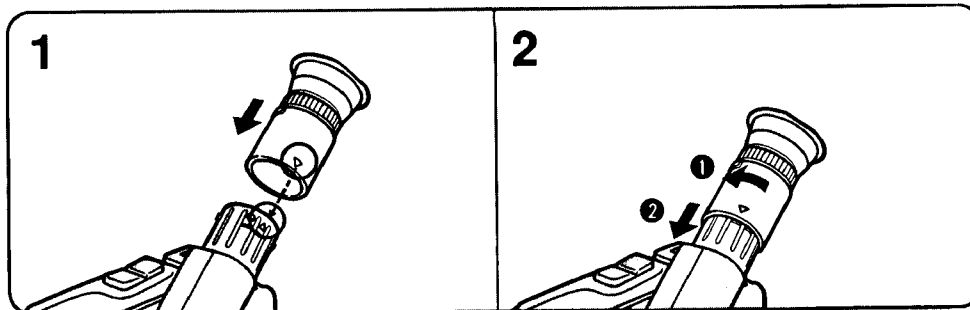
### When Using a Monochrome Viewfinder

(1) Pull out the viewfinder barrel until the illustrated mark appears. (2) Turn the viewfinder counterclockwise until it stops, and pull it out. (3) Clean the surface with a commercially available blower.



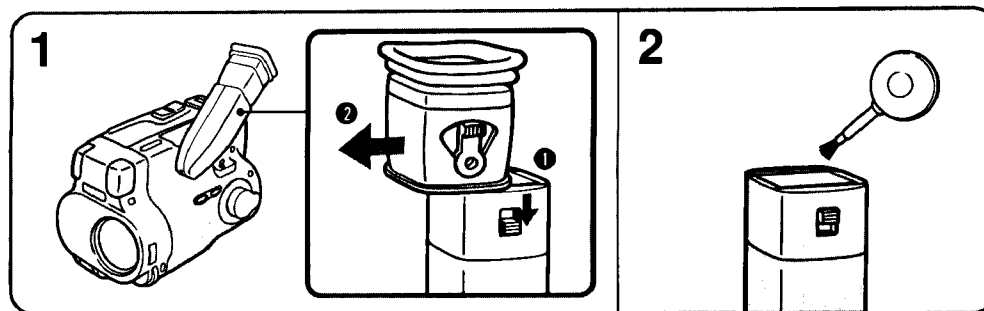
### To reattach the viewfinder barrel

(1) Align the mark on the viewfinder barrel with the mark on the viewfinder and push in the viewfinder barrel until it clicks. (2) Turn it clockwise until it stops and push it in.



### When Using a Color Viewfinder

(1) While pressing down the hook, slide the viewfinder barrel in the direction of the arrow and remove it from the viewfinder. (2) Clean the surface with a commercially available blower.



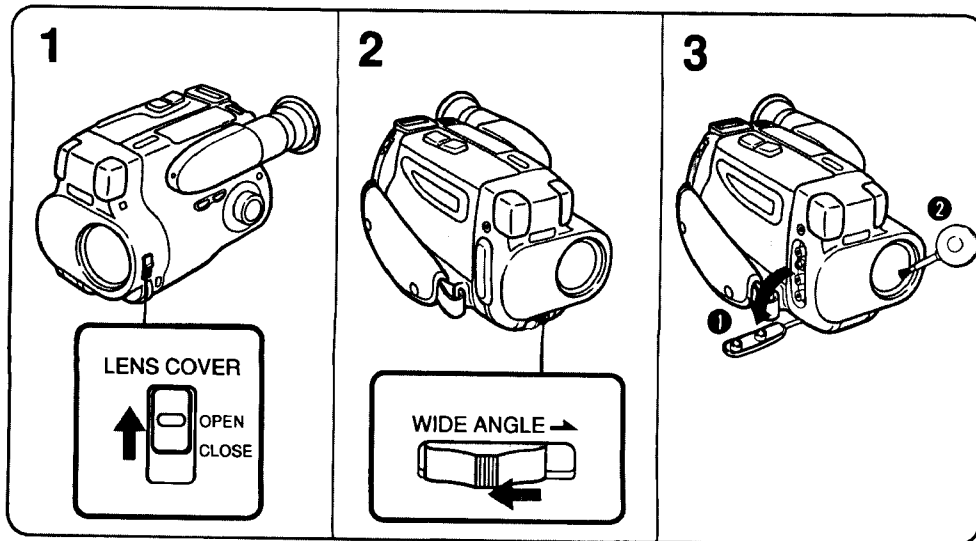
### To reattach the viewfinder barrel

Slide the viewfinder barrel in the opposite direction of the arrow in the above illustration.

## Maintenance Information and Precautions

### Removing Dust from Inside the WIDE ANGLE

(1) Slide the LENS COVER switch to OPEN. (2) Slide the WIDE ANGLE switch in the opposite direction of the arrow. (3) Detach the jack cover. Remove the dust by using a blower.



### Moisture Condensation

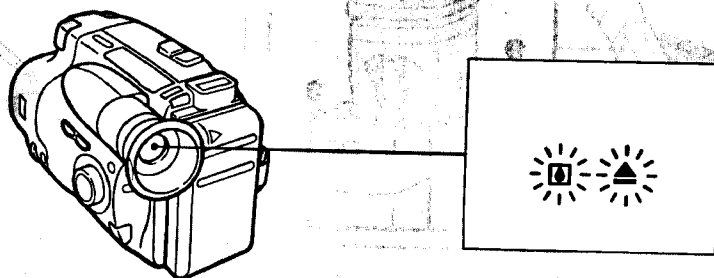
If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface of the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or the unit may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors. However, take the following precautions.

#### Inside the Camcorder

When the and indicators flash in the viewfinder, moisture has condensed inside the camcorder. If this happens, no other functions except for tape ejection will work.

**Eject the tape, turn off the camcorder and leave it with the cassette holder open for at least one hour in a dry place.**

The camcorder can be used again if the indicator does not appear when the power is turned on again.



### On the Surface of the Tape

If there is moisture on the surface of the tape, when the cassette is inserted and a tape transport button is pressed, the ▲ indicator in the viewfinder flashes.

In this case, no other functions except for tape ejection will work. **Eject the tape, turn off the camcorder and leave it with the cassette holder open for at least one hour in a dry place.** The camcorder can be used again if the ▲ indicator does not appear when you insert the cassette and press one of the tape transport buttons.

### On the Lens

If moisture condenses on the lens, no indicator appears, but the picture becomes dim. Turn off the power and do not use the camcorder for about one hour.

### How to Prevent Moisture Condensation

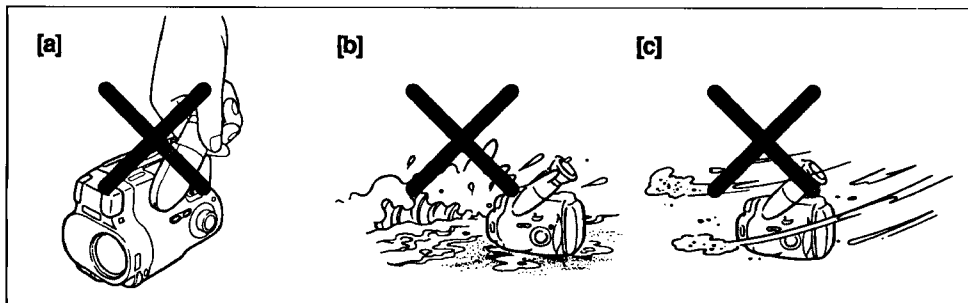
When bringing the camcorder from a cold place to a warm place, put the camcorder in a plastic bag and allow it to adapt to room conditions over a period of time.

- (1) Be sure to tightly seal the plastic bag containing the camcorder.
- (2) Remove the bag when the air temperature inside it has reached the temperature surrounding it (after about one hour).

## Precautions

### Camcorder Operation

- Operate the camcorder on 6.0 V (battery pack) or 7.5 V (AC power adaptor).
- For DC or AC operation, use the accessories recommended in this manual.
- Should any solid object or liquid fall into the casing, unplug the camcorder and have it checked by qualified personnel before operating it any further.
- Do not pick up the camcorder by the viewfinder [a].
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the LENS COVER switch set to CLOSE when not using the camera.
- Do not wrap up the camcorder and operate it since heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.
- Do not let sand get into the camcorder. When you use the camcorder on a sandy beach or dusty place, protect it from the sand or dust. Sand or dust may cause the unit to malfunction and sometimes the malfunction cannot be repaired [b].
- Do not let the camcorder get wet. Keep the camcorder away from rain or sea water. It may cause the unit to malfunction and sometimes the malfunction cannot be repaired [c].



## Maintenance Information and Precautions

### On Handling Tapes

Do not insert anything in the small holes on the rear of the cassette. These holes are used to sense the type, thickness of tape, or if the tab is out or in, etc.

### Camcorder Care

- When the camcorder is not to be used for a long time, disconnect the power source and remove the tape. Periodically turn on the power, operate the camera and player sections and play back a tape for about 3 minutes.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on it, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

### AC Power Adaptor

#### Charging

- **Repeated charging while some capacity remains causes a lowering of battery capacity. However, the original battery capacity can be recovered if you use the battery completely and charge it fully again.**
  - Charge the battery on a flat place without vibration.
  - The battery will get hot during charging. But this is normal.
- Do not continuously recharge a charged battery pack as that will cause the battery pack efficiency to deteriorate.**

#### Charging temperature

The temperature range for charging is 5°C to 35°C (41°F to 95°F). However, to provide maximum battery efficiency, the recommended temperature range when charging is 10°C to 30°C (50°F to 86°F).

#### Others

- The model for USA or Canada: One blade of the plug is wider than the other for the purpose of safety 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.
- Unplug the unit from the wall outlet when not in use for a long time. To disconnect the cord (mains lead), pull it out by the plug. Never pull the cord itself.
- Do not operate the unit with a damaged cord or if it has been dropped or damaged.
- Do not bend the AC power cord forcibly, or put a heavy object on it. This will damage the cord and may cause a fire or an electrical shock.
- Be sure that nothing metallic comes into contact with the metal parts of the connecting plate. If it does, a short may occur and the unit may be damaged.
- Always keep the metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.
- While the unit is in use, it gets hot. But this is normal.
- Do not place the unit in locations where it is;
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

If any difficulty should arise, unplug the unit and contact your nearest Sony dealer.

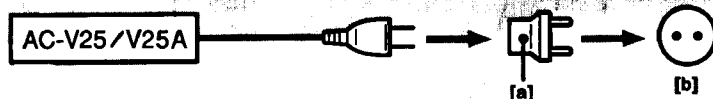
# Using Your Camcorder Abroad

Each country has its own electricity and TV color system. Before using your camcorder abroad, check the following points.

## Power Sources

You can use your camcorder in any country with the supplied AC power adaptor within 110 V to 240 V AC, 50/60 Hz.

Use a commercially available AC plug adaptor [a], if necessary, depending on the design of the wall outlet [b].



## To View the Playback Picture

This camcorder is an NTSC system based camcorder. If you want to view the playback picture on a TV, it must be an NTSC system based TV or a PAL-M system based TV with an NTSC/PAL-M transcoder.

Check the following list.

### NTSC system countries

Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

### PAL system countries

Australia, Austria, Belgium, China, Denmark, Finland, former West Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

### PAL-M system country

Brazil

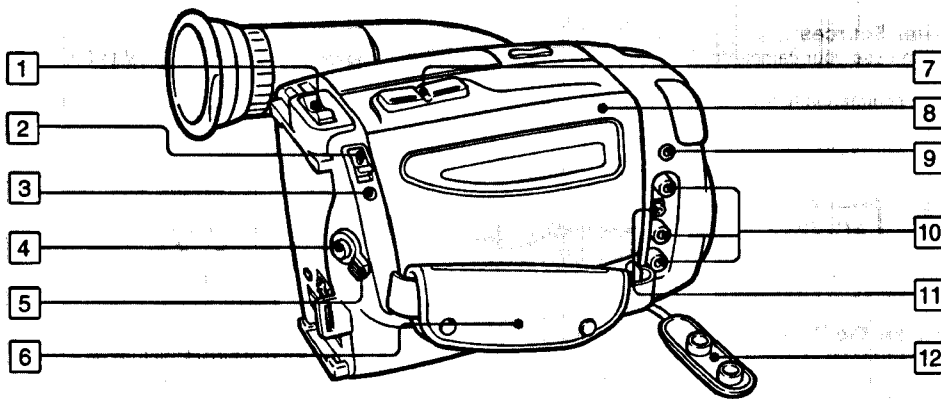
### PAL-N system countries

Argentina, Paraguay, Uruguay

### SECAM system countries

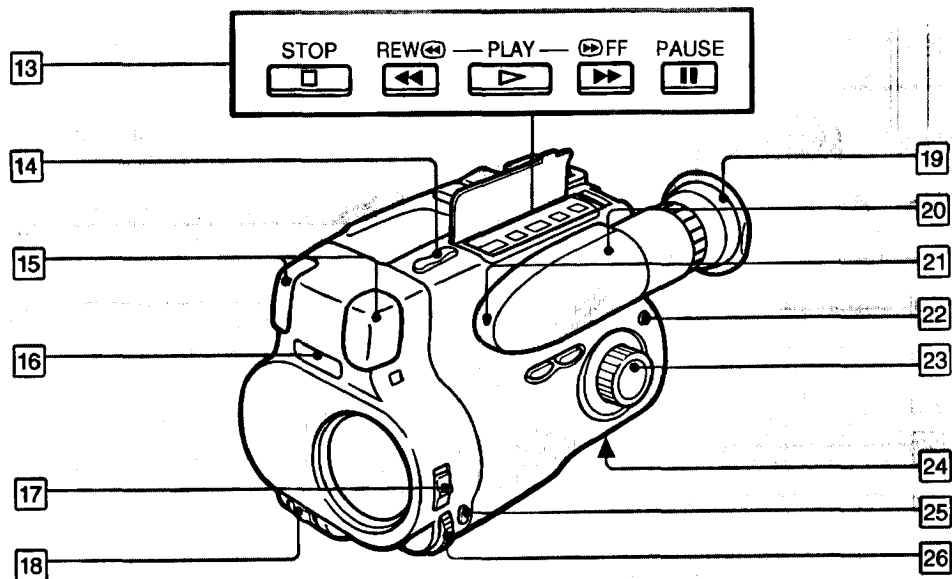
Bulgaria, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, former Soviet Union, etc.

## Identifying the Parts



- 1 POWER switch** (p. 16, 23)  
**CAMERA:** for camera recording  
**PLAYER:** for playing back or editing a tape  
**OFF:** power off
- 2 EJECT knob** (p. 13)  
 Slide it to insert a cassette into the cassette holder or to eject the cassette.
- 3 REMOTE (LANC) control jack**  
 Connect the LANC connecting cable to a wired remote control unit such as an editing controller. In this case, set the REMOTE COMMANDER switch to OFF.  
**stands for Local Application Control Bus System. The control jack is used for controlling the tape transport of video equipment and peripherals connected to it. This jack has the same function as the Jack indicated as CONTROL L or REMOTE.**
- 4 START/STOP button** (p. 16)  
 To start recording, press it after setting the POWER switch to CAMERA and turn the STANDBY switch to STANDBY. To stop recording momentarily, press it again.
- 5 STANDBY switch** (p. 16)  
**STANDBY:** To set the camcorder to recording standby mode.  
**LOCK:** To stop recording or to prevent from accidentally recording and wearing down the battery.
- 6 Grip strap** (p. 15)  
 Put your hand through the grip strap to hold the camcorder. Adjust the length of the strap so that your thumb can easily touch START/STOP.
- 7 Power zoom button** (p. 18)  
 Press it to change the size of the subject in the scene.  
**T side:** for telephoto (subject appears closer)  
**W side:** for wide-angle (subject appears further away)
- 8 Cassette holder** (p. 13)  
 When you slide the EJECT knob, this holder lifts up and opens automatically.
- 9 MIC jack (PLUG IN POWER)**  
 Connect an optional external microphone (stereo or monaural). This jack also accepts a "plug-in-power" microphone.
- 10 Audio/Video output jacks** (p. 22)  
 To view the recorded picture on the TV or to rerecord onto another tape, connect these jacks and the Audio/Video input jacks on the TV or VCR using the supplied A/V connecting cable.
- 11 RFU DC OUT (RFU adaptor DC output) jack** (p. 22)  
 To view the recorded picture on a TV that has only an antenna input, connect the RFU adaptor here.
- 12 Jack cover**





**13** **Tape transport buttons** (p. 23)

- STOP
- ◀◀ REW (rewind)
- ▶ PLAY (playback)
- ▶▶ FF (fastforward)
- || PAUSE

**14** **EDITSEARCH button** (p. 21)

Press it to check the recorded scene in the viewfinder in Standby mode.  
 + side: to view the forward playback picture  
 - side: to view the reverse playback picture

**15** **Built-in microphone (stereo)**

**16** **Remote sensor** (p. 44)

Aim the Remote Commander here for remote control.

**17** **LENS COVER switch**

Before recording, slide it to OPEN. When you finish recording, slide it to CLOSE to protect the lens.

**18** **WIDE ANGLE switch**

Slide it in the direction of the arrow to get the wide-angle picture.

**19** **Eyecup**

To achieve better camera recording, place your eye firmly against it. If you wear glasses, bend it back to get a better view of the viewfinder. (You cannot bend back the eyecup of a color viewfinder.)

**20** **Viewfinder** (p. 14, 21)

You can monitor the picture being recorded or played back. For details on the indicators in the viewfinder, see page 50.

**21** **Camera recording/battery lamp**

This red lamp lights up during camera recording. When it flashes, the battery is dead.

**22** **FADER button**

When fading-in, press this switch during Standby mode and then press START/STOP. When fading out, press this switch during recording and then press START/STOP.

**23** **PROGRAM AE dial** (p. 29)

Set it to select from four PROGRAM AE modes (Portrait/Sports/High-Speed Shutter-/Twilight mode) to fit the shooting situation.

**24** **Tripod receptacle** (p. 15)

Attach a tripod (not supplied) here. When attaching a non-SONY tripod, make sure that the length of the camera mounting screw is shorter than 6.5 mm (9/32 inches). Otherwise, the screw might damage the internal components of the camcorder.

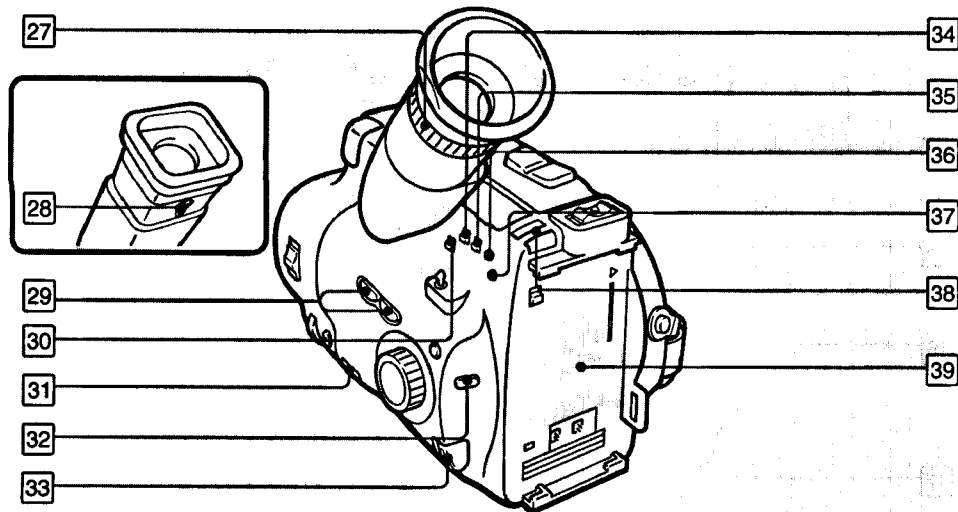
**25** **FOCUS button** (p. 27)

Press it to set the camcorder in manual focus.

**26** **Focus dial** (p. 27)

Turn it to adjust the focus manually and to achieve a sharp focus in manual focus.

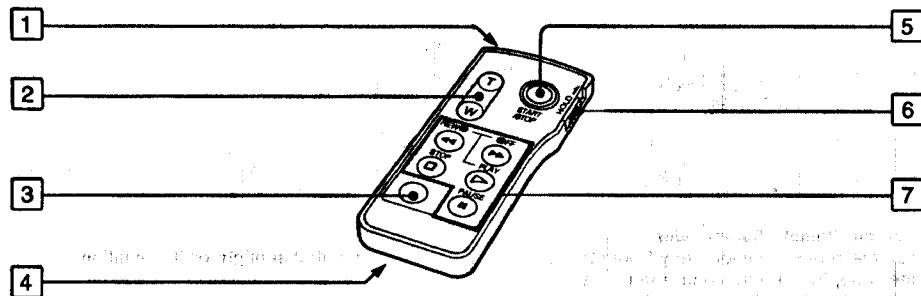
## Identifying the Parts



- 27 Viewfinder lens adjustment ring** (p. 14)  
To focus the viewfinder lens, turn this ring until the indicator in the viewfinder comes into sharp focus.
- 28 Viewfinder lens adjustment lever** (p. 14)  
To focus the viewfinder lens, move this lever until the indicator in the viewfinder comes into sharp focus.
- 29 DATE (+) and TIME (NEXT) buttons** (p. 12)  
Press them to set the clock or to display or turn off the date and time in the viewfinder. When setting the date and time, press DATE (+) button to advance numbers and press TIME (NEXT) button to set the next factor.
- 30 BEEP switch** (p. 15)  
To hear the beep sound, set this switch to ON.
- 31 Lithium battery compartment (bottom of the Camcorder)** (p. 10)  
Insert a lithium battery here to activate the clock.
- 32 COUNTER RESET button** (p. 17)  
Press it to reset the tape counter to zero.
- 33 BATT (battery eject) knob** (p. 7)  
While pressing this knob, eject the battery pack.
- 34 REMOTE COMMANDER switch** (p. 43)  
To use the Remote Commander, set this switch to ON.
- 35 EDIT switch** (p. 33)  
To edit the recorded picture onto another tape on VCR, set this switch in the direction of the arrow.
- 36 DST (Daylight Saving Time) button** (p. 12, 31)  
Press it to change the time to daylight saving time. To reset to standard time, press it again.
- 37 AREA button**  
Press it to reset the clock according to the required time zone.
- 38 Hooks for shoulder strap** (p. 44)
- 39 Battery mounting surface** (p. 7)

## Remote Commander

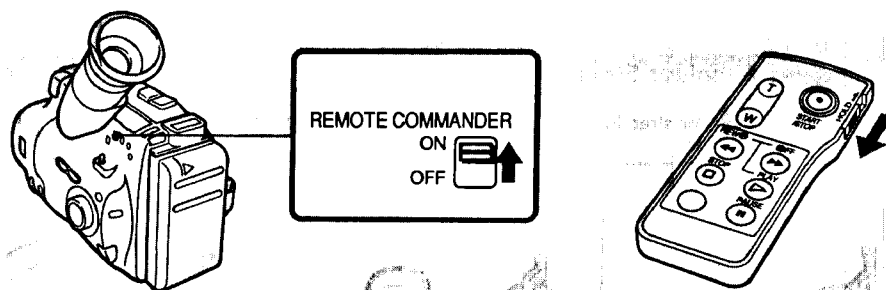
The buttons that have the same name on the Remote Commander and on the camcorder function identically.



- |  |  |
|--|--|
| <p><b>1 Transmitter</b><br/>Point toward the remote sensor to control the camcorder after turning on the POWER switch on the camcorder.</p> <p><b>2 Power zoom button</b><br/>The zooming speed is unchangeable in the Remote Commander.</p> <p><b>3 DATA SCREEN/DISPLAY</b><br/>Press to display the viewfinder screen indicators on the TV when you connect the camcorder to a TV. To erase the indicators, press again.</p> | <p><b>4 Lithium battery holder (p. 11)</b></p> <p><b>5 START/STOP button</b></p> <p><b>6 HOLD Switch</b><br/>Slide it in the direction of the arrow to prevent any misoperation. Before using this Remote Commander, slide it in the opposite direction of the arrow.</p> <p><b>7 Tape transport buttons</b></p> |
|--|--|

## Using the Remote Commander

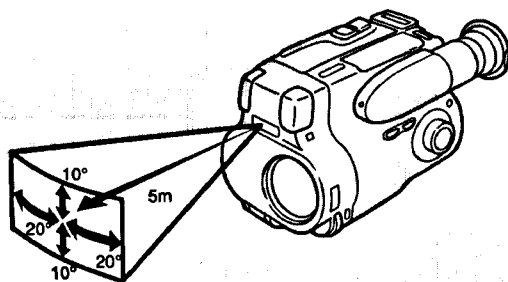
Make sure that the REMOTE COMMANDER switch on the camcorder is set to ON and that the HOLD switch on the Remote Commander is not working.



Identifying the Parts

## Identifying the Parts

### Remote Control Direction

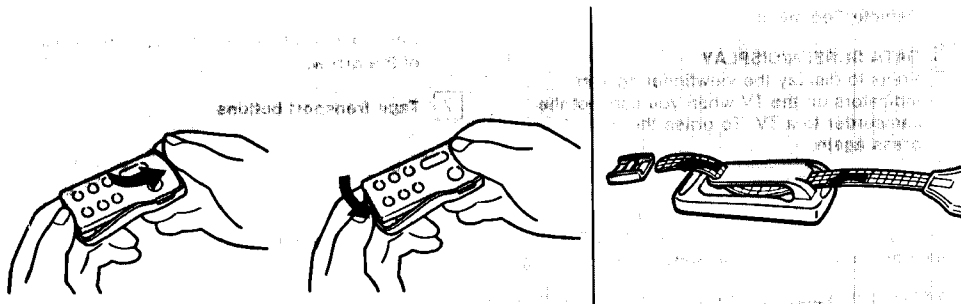


#### Note on the Remote Commander

- Keep the remote sensor away from strong light sources such as direct sunlight or illumination. Otherwise, the remote control may not be effective.
- Be sure that there is no obstacle between the remote sensor and the Remote Commander.
- This camcorder works at commander mode VTR 2. The commander modes (1, 2 and 3) are used to distinguish this camcorder from other Sony VCRs to avoid remote control misoperation. If you use another Sony VCR at commander mode VTR 2, we recommend you change the commander mode or cover the remote sensor of the VCR with black paper.

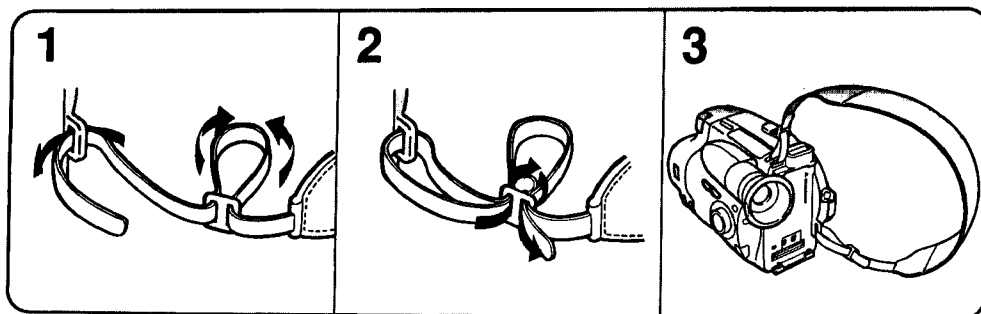
#### Using the Remote Commander Holder

You can clip the Remote Commander holder on your coat pocket or belt, or slide it onto the shoulder strap before attaching the Remote Commander to it.



### Attaching the Shoulder Strap

Attach the supplied shoulder strap to the hooks for the shoulder strap (p. 42).



# Specifications

## Video Camera Recorder

### System

Video recording system	Two rotary heads, Helical scanning FM system
Audio recording system	Two rotary heads, FM system
Video signal	NTSC color, EIA standards
Usable cassette	8 mm video format cassette (standard 8 mm)
Tape speed	SP mode: Approx. 1.43 cm (19/32 inches)/s LP mode: Approx. 0.72 cm (5/16 inches)/s (playback only)
Recording time	SP mode: 2 h (P6-120) SP mode: 2 h (P6-120) LP mode: 4 h (P6-120)
Playback time	SP mode: 2 h (P6-120) SP mode: 2 h (P6-120) LP mode: 4 h (P6-120)
Fastforward/rewind time	Approx. 6 min 30 s (P6-120)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electronic viewfinder: monochrome (CCD-TR61) color (CCD-TR65)
Lens	Combined 10 x Power zoom lens f = 6.2 to 62 mm (1/4 to 2 7/16 inches) F 1.6 to 2.9 (45 to 450 mm when converted to a 35 mm still camera) Attached 0.7 x Wide Angle lens f = 4.4 mm F 1.6 (32 mm when converted to a 35 mm still camera) TTL autofocus system inner focus wide macro system
Color temperature	Auto
Minimum illumination	1 lx (F 1.6)
Illumination range	1 lx to 100,000 lx
Recommended illumination	More than 100 lx
<b>Input and output connectors</b>	
Video output	Phono jack, 1 Vp-p, 75 $\Omega$ , unbalanced, sync negative
Audio output	Phono jacks -7.5 dBs (2:stereo L and R), (at load impedance 47 k $\Omega$ impedance less than 2.2 k $\Omega$ )
RFU DC OUT	Special minijack, DC 5 V
Remote jack	Stereo mini-minijack ( $\varnothing$ 2.5 mm)
MIC jack	Stereo minijack, -66 dBs low impedance with 2.5 to 3 V DC, output impedance 6.8 k $\Omega$ ( $\varnothing$ 3.5 mm)

### General

Power requirements	On battery mounting surface 6.0 V (battery pack) 7.5 V (AC power adaptor)
Average power consumption	6.0 W (CCD-TR61) 6.4 W (CCD-TR65) (camera recording) including the viewfinder
Installation	Vertically, Horizontally
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Dimensions	CCD-TR61: Approx. 109 x 109 x 188 mm (w/h/d) (4 3/8 x 4 3/8 x 7 1/2 inches) CCD-TR65: Approx. 109 x 109 x 197 mm (w/h/d) (4 3/8 x 4 3/8 x 7 7/8 inches)
Mass	About 790 g (1 lb 11 oz) excluding the battery pack, lithium battery, cassette, and shoulder strap About 1,010 g (2 lb 4 oz) including the battery pack NP-55, lithium battery CR2025, cassette P6-120, and shoulder strap
Microphone	Electric condenser microphone, stereo type
Supplied accessories	See page 5.

### AC power adaptor

Power requirements	110 — 240 V AC*, 50/60 Hz
Power consumption	15 W (AC-V25) 17 W (AC-V25A)
Output voltage	DC OUT: 7.5 V, 1.2 A (AC-V25) 7.5 V, 1.5 A (AC-V25A) in operating mode Battery charge terminal: 10 V, 1.1 A in charge mode
Application	Sony battery packs NP-55/55H, NP-66/66H, NP-77/77H/77HD
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Dimensions	Approx. 103 x 49 x 63 mm (w/h/d) (4 1/8 x 1 15/16 x 2 1/2 inches) including projecting parts and controls
Weight	Approx. 290 g (10 oz) (AC-V25) Approx. 320 g (11 oz) (AC-V25A)

\* Canadian Standard Association (CSA) certifies 120 V AC only.

Design and specifications are subject to change without notice.

# Trouble Check

If you run into any problem using the camcorder, use the following table to troubleshoot the problem. Should the difficulty persist, disconnect the power source and contact your Sony dealer or local authorized Sony service facility.

## Camcorder

	Symptom	Cause	Corrective Actions	page
Power	The power is not on.	The battery is not attached.	Attach the battery.	7
		The battery is dead.	Use a charged battery.	6
		The AC power adaptor is not connected to a wall outlet.	Connect the AC power adaptor to a wall outlet.	25
	The power goes off.	While being operated in CAMERA mode, the camcorder has been in the Standby mode for more than 5 minutes.	Turn the STANDBY switch to LOCK once and turn it to STANDBY again.	16
		The battery is dead.	Use a charged battery.	6
	The battery pack is quickly discharged.	The ambient temperature is too low.	—	8
		The battery pack has not been charged fully.	Charge the battery pack again.	6
		The battery pack is completely dead, and cannot be recharged.	Use another battery pack.	9
	Operation	START/STOP does not operate.	The tape is stuck to the drum.	Eject the tape.
The tape has run out.			Rewind the tape or use a new one.	23
The POWER switch is set to PLAYER.			Set it to CAMERA.	16
The tab on the cassette is out (red).			Use a new tape or slide the tab.	17
The cassette cannot be removed from the holder.		The battery is dead.	Use a charged battery or the AC power adaptor.	6, 25
No function except for cassette ejection works.		Moisture condensation has occurred.	Remove the cassette and leave the camcorder for at least an hour.	36
The tape does not move when a tape transport button is pressed.		The POWER switch is set to CAMERA or OFF.	Set it to PLAYER.	23
		The tape has run out.	Rewind the tape or use a new one.	23
The autofocus function does not work.		Shooting conditions are not suitable for autofocus operation.	Adjust the focus manually.	27
The power zoom button does not work.		WIDE ANGLE is working.	This is not the malfunction. Slide the WIDE ANGLE switch in the opposite direction of the arrow.	19

	Symptom	Cause	Corrective Actions	page
Picture	The image on the viewfinder screen is not clear.	The viewfinder lens is not adjusted.	Adjust the viewfinder lens.	14
	A vertical band appears when a subject such as lights or a candle flame is shot against a dark background.	The contrast between the subject and background is too high.	The camcorder is not malfunctioning. Change locations.	—
	The color of the playback picture is not appropriate.	A PROGRAM AE mode is selected.	Set PROGRAM AE to the green position.	29
	The playback picture is not clear.	The EDIT switch is set in the direction of the arrow.	Set it in the opposite direction of the arrow.	33
		The channel or input for the camcorder is not selected on the TV.	Make the correct.	22
	The picture is "noisy".	The video heads may be dirty.	Clean the heads using the Sony V8-25CLH cleaning cassette.	34
Others	When you adjust the clock while viewing the picture on the connected TV, the area name and area number do not appear on the screen.	The DATA SCREEN-/DISPLAY function is turned off.	Press DATA SCREEN/DISPLAY on the Remote Commander.	24
	The supplied Remote Commander does not work.	The REMOTE COMMANDER switch is set to OFF.	Set it to ON.	43
		Something interrupts the infrared rays.	Remove the obstacles.	—
		The lithium battery is not inserted with the correct polarity.	Insert the lithium battery with the correct polarity.	11
		The lithium battery is dead.	Insert a new one.	11
		The HOLD switch is working.	Set the switch in the opposite direction of the arrow.	43
	There is dust in the viewfinder.	—	Remove the viewfinder barrel and clean the viewfinder screen or viewfinder lens.	35
There is dust inside the WIDE ANGLE.	—	Remove the dust by using the blower.	35	

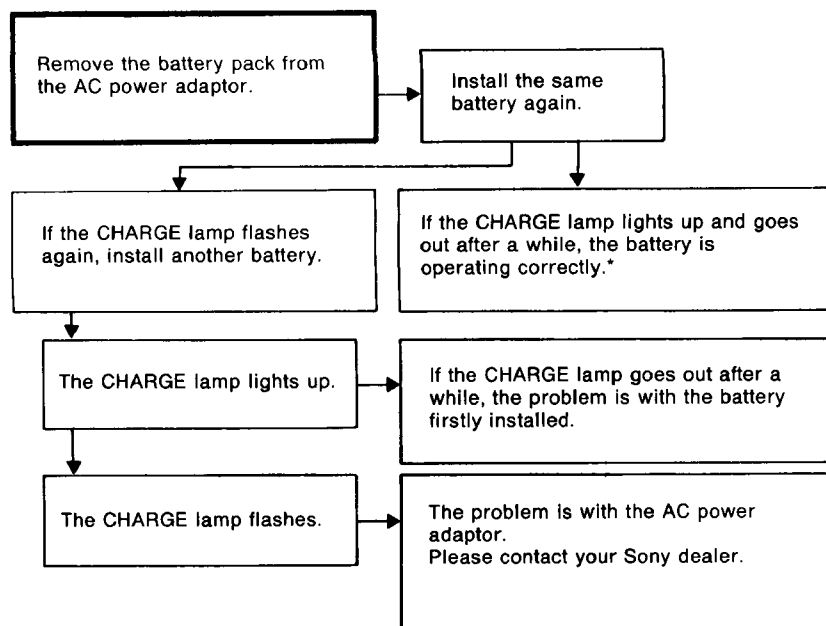
# Trouble Check

## AC Power Adaptor

	Symptom	Cause	Corrective Actions	page
AC power adaptor	The POWER lamp does not light.	—	Set the selector to OFF and disconnect the power cord. After about one minute, reconnect the power cord and set the selector to CHARGE again.	7
	The CHARGE lamp flashes.	See the following chart.		

### When the CHARGE Lamp Flashes

Check through the following chart.



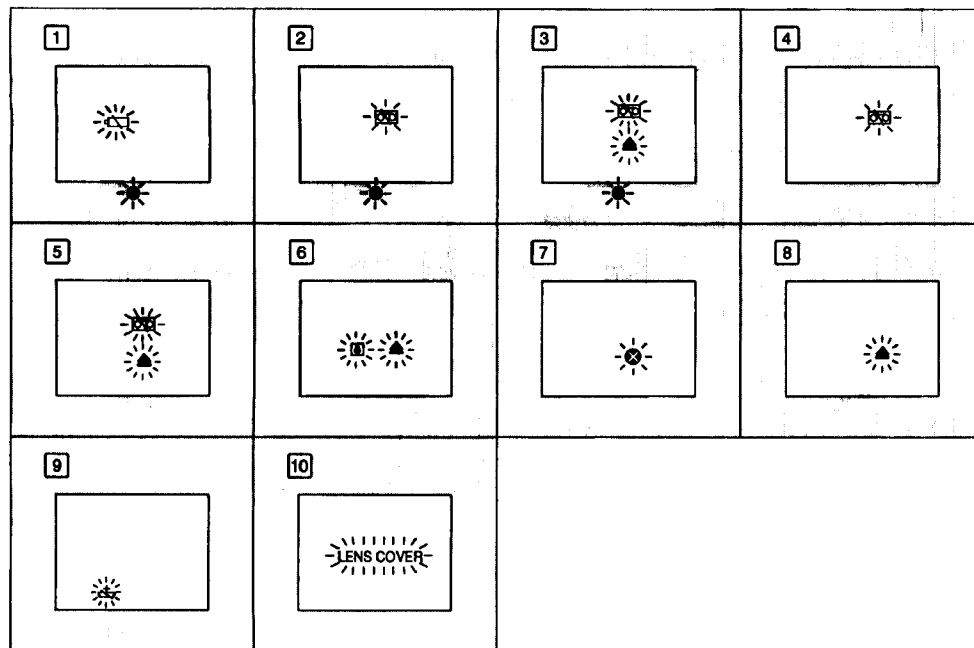
- \* If you use a battery pack which you have just bought or which has been left unused for a long time, the CHARGE lamp may flash at the first charging. But this is not a problem. Repeat again to charge with the same battery pack.



# Indicators In the Viewfinder

## Warning Indicators

If indicators flash in the viewfinder or a caution lamp on the camcorder flashes, check the following:

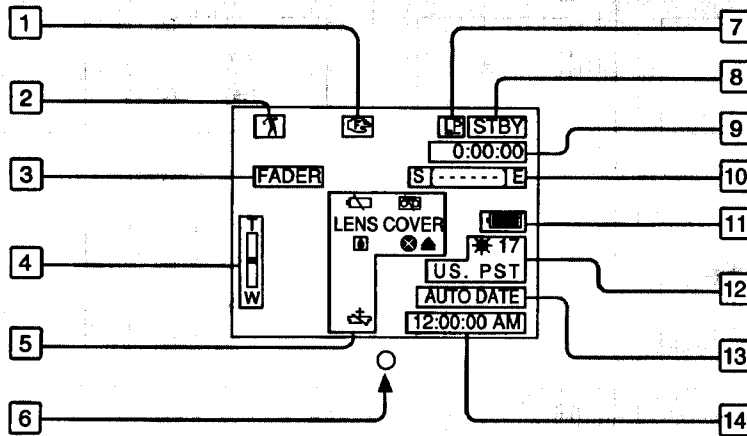


- |   |   |
|---|---|
| <p><b>1</b> The battery is weak or dead.<br/>Slow flashing: The battery is weak.<br/>Fast flashing: The battery is dead.</p> <p><b>2</b> The tape is near the end.<br/>The flashing is slow.</p> <p><b>3</b> The tape has run out.<br/>The flashing becomes rapid.</p> <p><b>4</b> No tape has been inserted.</p> <p><b>5</b> The tab on the tape is out (red).</p> | <p><b>6</b> Moisture condensation has occurred. (p. 36)</p> <p><b>7</b> The video heads may be contaminated. (p. 34)</p> <p><b>8</b> Some other trouble has occurred.<br/>Disconnect the power source and contact your Sony dealer or local authorized facility.</p> <p><b>9</b> The lithium battery is weak or is not installed. (p. 11)</p> <p><b>10</b> The LENS COVER switch is set to CLOSE.</p> |
|---|---|

Trouble Check / Indicators in the Viewfinder

## Operation Indicators

For details on each indicator, refer to the pages indicated in the parenthesis.



- 1 Manual focusing (p. 27)
- 2 PROGRAM AE indicator (p. 28)
- 3 FADER indicator (p. 30)
- 4 Power zoom indicator (p. 18)
- 5 Warning indicators (p. 49)
- 6 Recording lamp/Battery lamp
- 7 Lights up when playing back a tape recorded in LP mode
- 8 Tape transport mode (p. 16, 23)
- 9 Tape counter (p. 17)

- 10 Remaining tape length indicator  
S|.....|E ---> S|■■■■|E ---> S|■■■|E ---> S|■■|E ---> S|■|E ---> S| |E
- 11 Remaining battery indicator (p. 8)  
■■■■ → ■■■ → ■■■ → ■■■ → ■■■
- 12 World clock indicator (p. 31)
- 13 AUTO DATE indicator (p. 16)
- 14 Date or Time (p. 12)

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If you have any question about this product, call:

**Sony Customer Information Center**

East Coast: 201-930-7669 (SONY) NJ

Central: 708-250-7669 (SONY) IL

West Coast: 714-821-7669 (SONY) CA

or write to:

**Sony Customer Information Center**

Sony Drive, Mail Drop #T1-11,

Park Ridge, NJ 07656

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