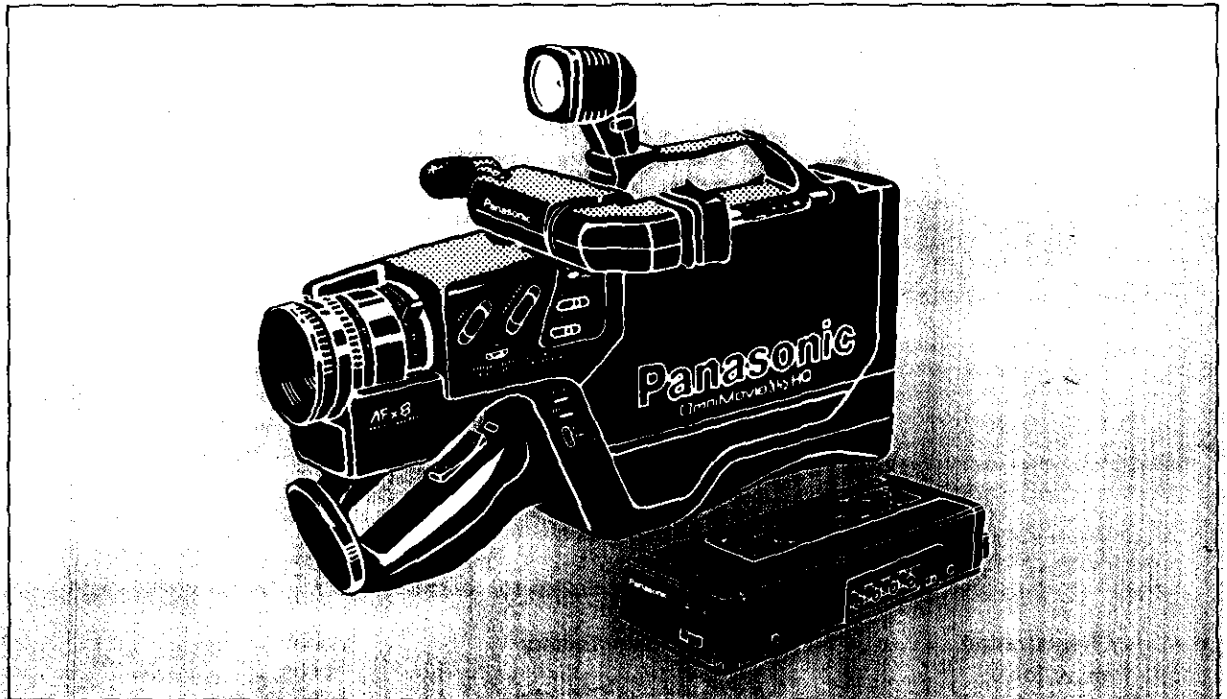# Panasonic VHS
OmniMovie

PV-615S

Consists of
PV-615SD/PV-A23

Operating Instructions

VHS OmniMovie

Features

- 10W Color Enhancement Light
- High Speed Shutter
- Power Zoom and Macro Function
- Flying Erase Head
- Self Timer Recording
- Time Lapse Recording
- Audio/Video Dubbing
- Record A TV Program
- Video Playback
- Auto Tracking

- Auto Playback
- VHS Index Search System
- Book Mark Search
- Automatic/Manual Focusing
- Record Review
- Automatic White Balance
- Auto Rechargeable Timer Back-up Battery
- CCD Image Sensor
- HQ (High Quality) System
- 3 Ways to Supply Power

Before attempting to connect, operate or adjust this product, please read these instructions completely.

Warranty Registration

The serial number of these products may be found on the bottom of the Movie and on the surface of the AC Adaptor. No other has the same serial number as yours. You should record the number and other vital information here and retain this book as a permanent record of your purchase to aid identification in case of theft.

Safety Precautions

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

Your Movie is designed to record and play back in Standard Play (SP) mode only. Your Movie will not perform normal playback for programs pre-recorded in Long Play (LP) or Super Long Play (SLP) mode.

CAUTION: TO PREVENT FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

This Movie is equipped with the HQ System to provide excellent video pictures, and is compatible with standard VHS equipment.

Only use those tapes with the VHS mark. It is recommended that only cassette tapes that have been tested and inspected for use in 2, 4, 6 and 8 hour VCR machines be used.
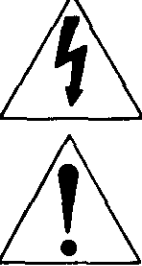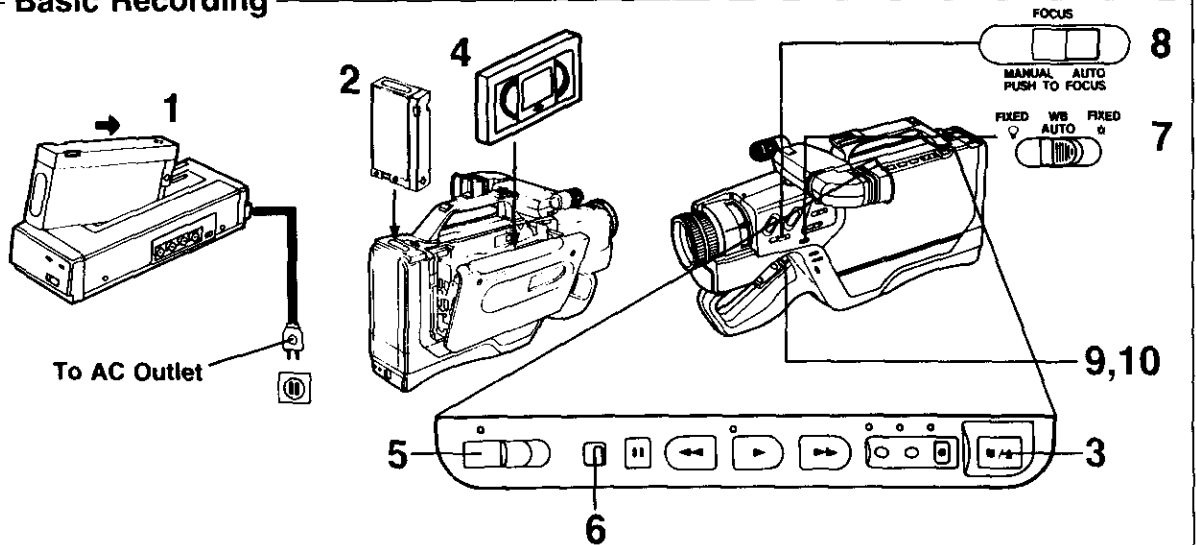
CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

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 warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

Table of Contents

Basic Steps

Basic Recording

To AC Outlet

1 Charge the Battery Pack fully before operation.

2 Slide the Battery Pack into the battery compartment.

3 Press the Stop/Eject button to open the cassette door.

4 Insert a cassette with record tab.

5 Slide the Power switch to ON.

6 Set the VCR/Camera Selector switch to "CAMERA".
• The Movie will go into the Record/Pause mode.

7 Select "AUTO" with the White Balance switch.

8 Set the Focus switch to "AUTO".

9 Press the Record/Pause button to start recording.

10 Press the Record/Pause button again to pause recording.

To Watch Playback in the EVF (Electronic Viewfinder)
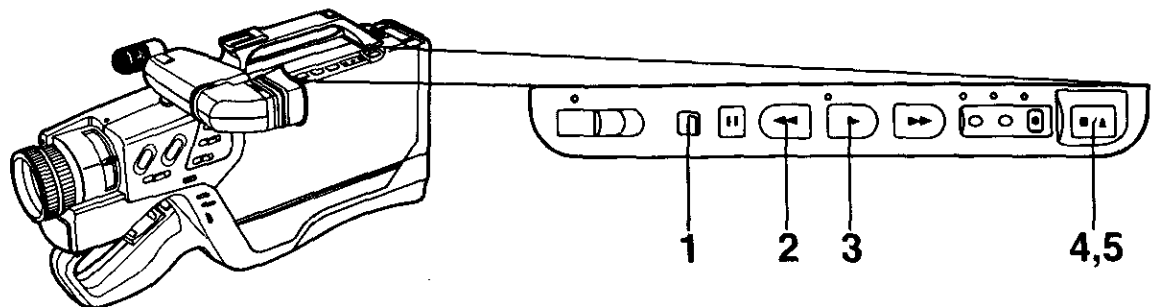
1 Set the VCR/Camera Selector switch to "VCR".

2 Press the Rewind button.

3 Press the Play button.

4 Press the Stop/Eject button when playback is finished.

5 Press the Stop/Eject button in stop mode to remove the tape.

Movie System

Accessories to suit your every need!

Power Supplies
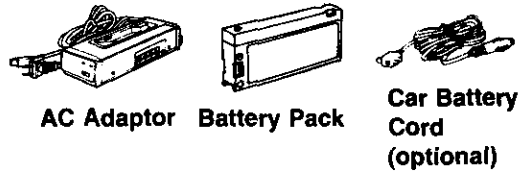
AC Adaptor   Battery Pack   Car Battery Cord (optional)

To Connect

300ohm-75ohm Transformer   VHF Connecting Cable

Audio/Video Output Adaptor   Audio/Video Cable

To Transport

System Carrying Case   Shoulder Strap

For Professional Special Effects

Wide Angle Lens   Telephoto Lens   Filter Kit (optional)

For Audio Dubbing

AC Adaptor   +   OR   Super Directional Microphone (optional)

Tape Recorder or Component Audio System
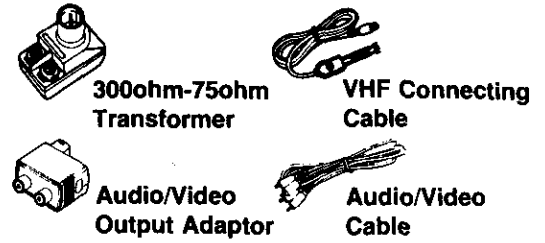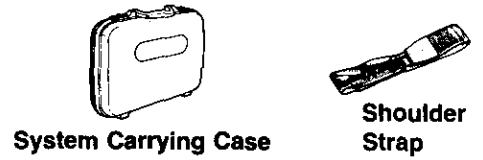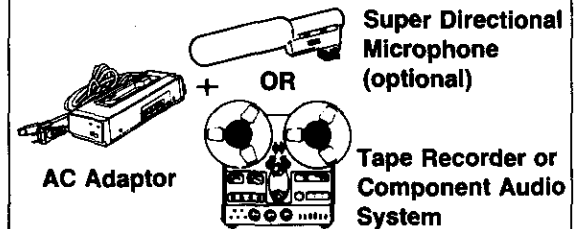
For Video Dubbing, Re-Recording and Audio/Video Dubbing

AC Adaptor   +   Audio/Video Cable   +   Movie   OR   VCR
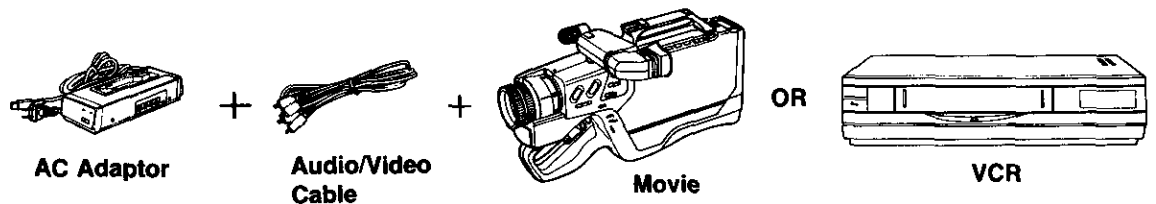
Description of Controls

Front View
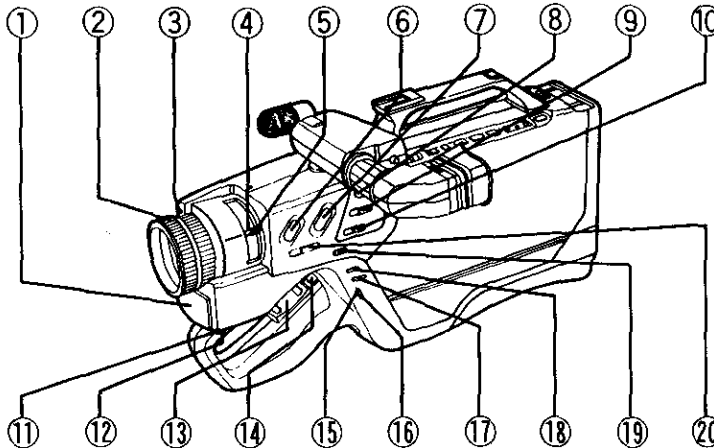
① **Distance Detection Window**
This window is used to detect subject-to-camera distance for Auto Focus.

② **Lens Hood**
Shields the camera lens and accepts the lens cap. Remove this hood to attach optic filters.

③ **Tally Light**
The red Tally Light alerts those being recorded that a recording is in progress.

④ **Zoom Lever**
Use this lever to zoom in and out on your subject.

⑤ **Macro Button (on zoom lever)**
Used to unlock the zoom lever so it moves into the far right macro position to get close-up images.

⑥ **Fade Button**
When this button is pressed, the picture in the viewfinder and on the tape will fade out. When the button is released, the picture will automatically fade in.

⑦ **Backlight Button**
Press this button while recording your subject and the lens opening will automatically compensate for high contrast lighting conditions.

⑧ **Light Switch**
Used to turn the Color Enhancement Light on or off.

⑨ **High Speed Shutter Switch**
Capable of recording action at 1/500 or 1/1000 of a second for still or slow motion playback.

⑩ **Self Timer/Time Lapse Switch**
Selects a time delay before recording or selects a time lapse recording. See page 23 for details.

⑪ **Select Button/(Tracking Control)***
Used to select the date or time when the clock mode is selected.

⑫ **Set Button/(Tracking Control)***
Used to set the date or time when the clock mode is selected.

⑬ **Power Zoom Switch**
Used to "zoom-in" with telephoto ("T") or "zoom-out" with wide angle ("W").

⑭ **Record/Pause Button**
Used to start or pause camera recording.

⑮ **Reset Button**
Resets the Tape or Lap Time Counter.

⑯ **Counter Display/Memory/Lap Time/Tape Remaining (D/M/L/TR) Button**
Used to display the battery charge status, tape counter, lap time counter, remaining tape time and to clear these displays from the EVF.

⑰ **Record Review Button**
Press this button to review the last few seconds of your recording.

⑱ **Date/Time Button**
Used to display the date and time or the date only.

⑲ **White Balance Switch**
The White Balance Switch in "AUTO" will automatically maintain the optimum color balance in either indoor or outdoor lighting conditions.

⑳ **Focus Switch (with Push-to-focus button)**
Use the "AUTO" position for constant auto focus. In the "MANUAL" position the focus remains fixed until you manually adjust the Focus Ring, or use the Push-to-focus button.

* Refer to Page 17 for details.

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Description of Controls (continued)

Rear View
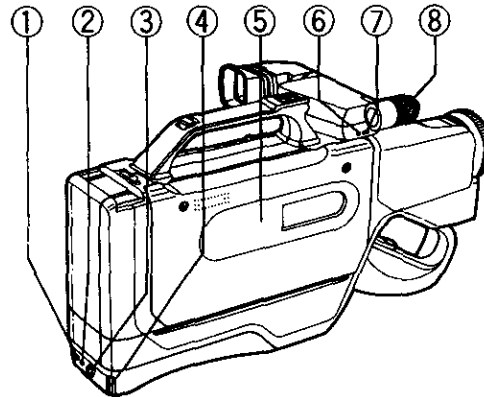
① **Synchro Edit/Remote Jack**
Connect this mini jack to the synchro edit jack on another VCR or Movie with a mini-plug cable in order to use the synchronized editing feature. Also used to connect the wired remote control.

② **Earphone Jack**
An earphone (not supplied) plugs in here to monitor the sound being recorded or played back.

③ **Adaptor Connector**

④ **Strap Attachment Rings**

⑤ **Cassette Compartment**
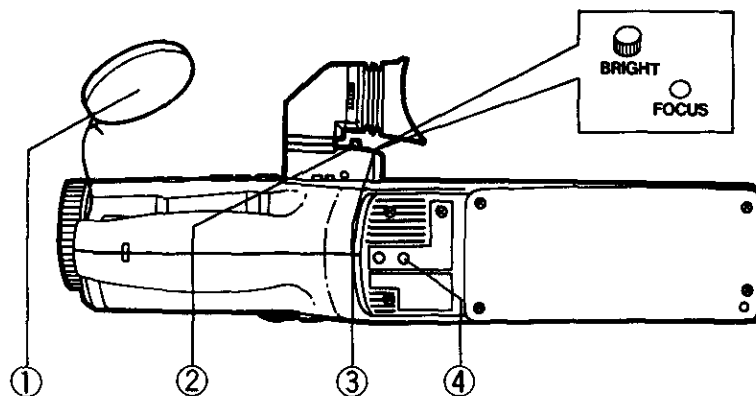
⑥ **External Microphone Jack**
To connect an external microphone. The built-in microphone is automatically disconnected when an external microphone is plugged in.

⑦ **Wind Buffer Switch**
Usually set to "NORMAL". Set to "WIND BUFFER" to reduce wind noise.

⑧ **Built-In Microphone**

Underside

① **Lens Cap**
Can be attached to the front of the hand grip with the built-in clip.

② **Brightness Control**
This control adjusts the brightness of the viewfinder picture. If the picture is too dark or too bright, adjust this control to accommodate the brightness of the EVF to the surrounding light conditions.

③ **Focus Control**
This control adjusts the focus of the image on the viewfinder screen.
Note: ● This control has been set at the factory. It is not necessary to adjust this control under normal circumstances. But, should it become necessary, be careful to make the focus adjustment with a small, slender screwdriver so as not to damage the miniature control.

④ **Tripod Mounting Hole**

Description of Controls (continued)

Top View
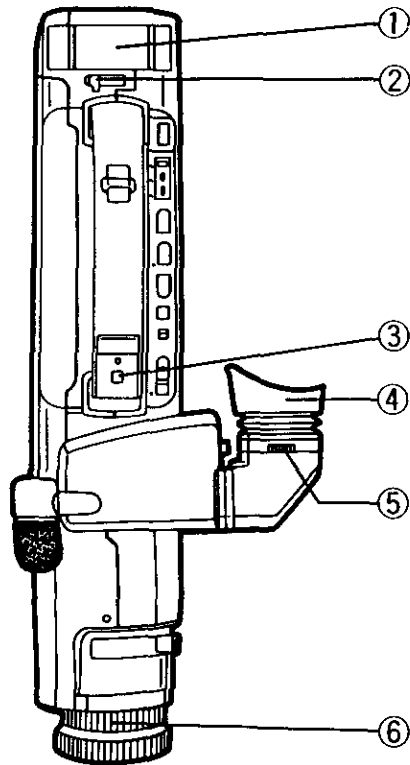
① **Battery Compartment**
Insert a battery pack to use as the power supply.

② **Battery Eject Button**
To eject the battery pack.

③ **Accessory Mount**
A convenient mounting for the supplied Color Enhancement Light or for an optional light.

④ **Electronic Viewfinder (EVF)**

⑤ **Vision Adjustment Ring**
Adjust the EVF image ring to your eyesight to assure good focus.
Be sure to adjust when shooting for the first time or after another person has used your Movie.

⑥ **Lens Focus Ring**
Rotate this ring to focus the picture manually.
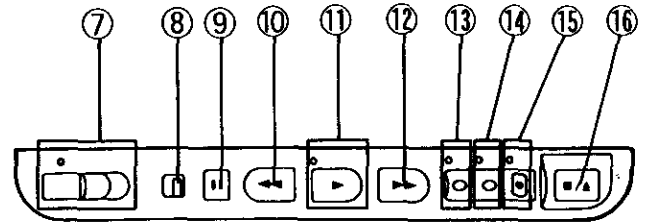
⑦ **Power Switch and Indicator**

⑧ **VCR/Camera Selector Switch**
Positions:
VCR
    Play/Rec: Select this position to use the VCR functions.
CAMERA
    Record: Only the buttons for camera recording can be used here.
    Edit: In this position you can hold down the play and search buttons to view scenes.

⑨ **Pause/Still Button**
Use this button to pause in Play or VCR Recording mode.

⑩ **Rewind/Search Button**

⑪ **Play Button and Indicator**

⑫ **Fast Forward/Search Button**

⑬ **Audio Dub Button and Indicator**
Use this button when doing audio dubbing with the Movie. (See page 29.)

⑭ **Video Dub Button and Indicator**
Use this button when doing video dubbing with the Movie. (See page 27.)

⑮ **Record Button and Indicator**
Use to record TV programs through the AC adaptor video-in and audio-in terminals.
Press the Record and Play buttons simultaneously on your Movie. See page 26 for details.

⑯ **Stop/Eject Button**
Use this button to stop the tape and to remove a cassette in the stop mode.

Description of Controls (continued)

AC Adaptor
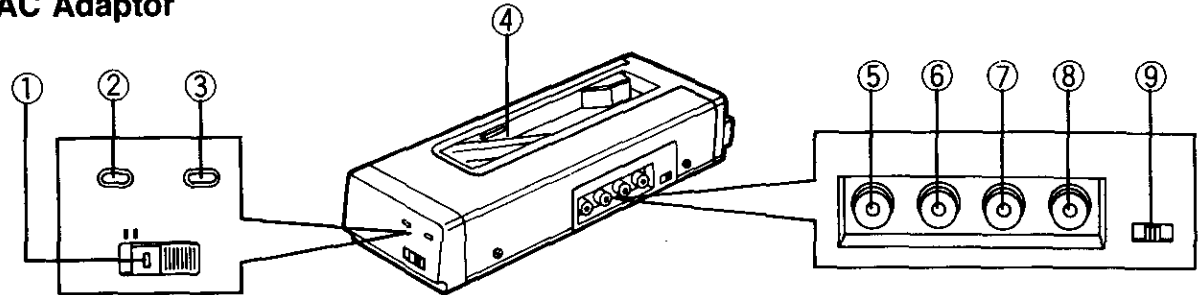
① Input Signal Selector

INPUT SIGNAL SELECTOR / VCR/CAMERA SELECTOR	SET TO LINE POSITION	SET TO CAMERA POSITION
IN VCR POSITION TO RECORD: VIDEO IMAGE	VIDEO-IN CONNECTION	NOT RECORDED
AUDIO SOUND	AUDIO-IN CONNECTION	CAMERA MICROPHONE
IN CAMERA POSITION TO RECORD	FOR BOTH INPUT SIGNAL SELECTOR POSITIONS Camera lens image and Camera Microphone Audio	

② Power Indicator Lamp
This indicator lights up when the AC power plug of the AC adaptor is connected to an AC outlet.

③ Charging Indicator Lamp
Lights while the Battery Pack is charging. After charging, this light will go off.

④ Battery Charging Compartment
For charging a Battery Pack.

⑤ Video Output Connector
For connection to a video input connector on a TV Monitor or VCR.

⑥ Audio Output Connector
For connection to an audio input connector on a TV Monitor, VCR or an audio tape recorder.

⑦ Video Input Connector
For connection from a video output connector on another VCR, or TV, to record a TV program.

⑧ Audio Input Connector
For connection from an audio output connector on another VCR, TV, or other audio source.

⑨ RF Converter Switch
Set to channel 3 or 4, whichever is not used for TV broadcasting in your area, or provides the best picture during playback. Set to OFF to view TV channels if the Movie is left ON.
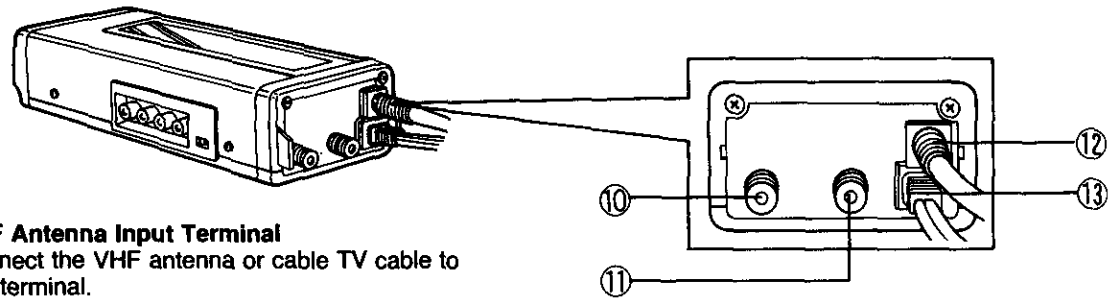
⑩ VHF Antenna Input Terminal
Connect the VHF antenna or cable TV cable to this terminal.

⑪ VHF Antenna Output Terminal
Connect this terminal to the VHF antenna terminal on the TV using the supplied VHF connecting cable.

⑫ Adaptor Cable
### ⑬ AC Power Cord

---

CAUTION:

Operating at a voltage setting of 110/120/220/240V AC may require the use of a different AC plug. Please contact either a local or foreign electrical parts distributor for assistance in selecting an alternate AC plug. We recommend using the accessory power plug adaptor (VJSS0070) in an area which has special AC outlets.

Adjustments for Easy Handling

How to Adjust the Electronic Viewfinder (EVF) for use with the Right or Left Eye
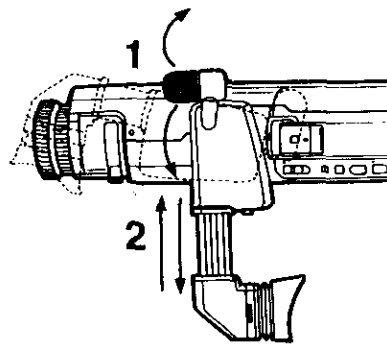
1 Swing the EVF to the left or right for comfortable viewing with either eye.

2 In the locked position you may extend or contract the EVF for comfortable left or right eye viewing.
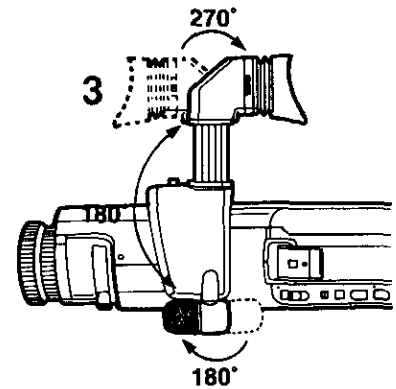
3 The eyepiece can be moved up or down (to about 270 degrees) to adjust for height. The microphone can be moved (to about 180 degrees) for the left or right hand position. When adjusting the eyepiece make sure to move the microphone to the forward position or the picture in the viewfinder will appear upside down.
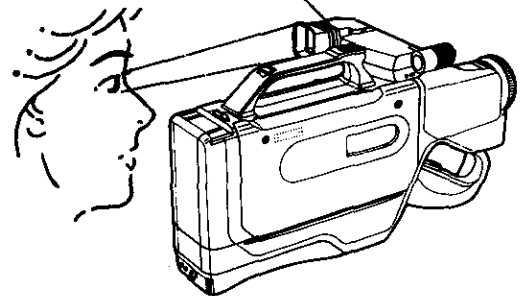
To Store
Reverse the steps to return the EVF to its compact storage position.

Vision Adjustment Ring

1 When Power is ON, look into the EVF eyepiece.
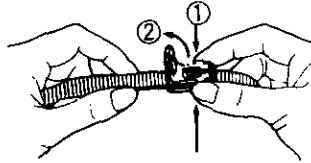
2 Rotate the Vision Adjustment Ring while looking through the viewfinder so that you can clearly see the EVF screen display.

9

Adjustments for Easy Handling (continued)

To Use the Shoulder Strap

1 Pinch the tabs together on either side of clasp and raise it to expose the buckle's catch.

2 Unhook strap from buckle catch.
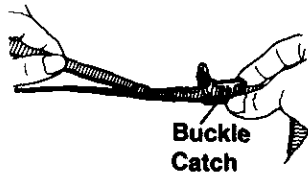
Buckle Catch

3 Thread the shoulder strap through the Strap Attachment Ring on the Movie.
Then re-hook it onto the buckle catch.
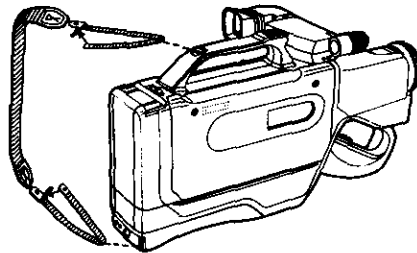
4 Press the clasp down on buckle to lock.

How to Adjust the Length of Shoulder Strap

Pull a loop of the strap loose from its buckle, and then pull the strap firmly through the buckle to adjust its length.

10

Preparations

Power Supplies

A. Battery Pack - Outdoor Use

How to Insert the Battery Pack

● Be sure to fully charge the Battery Pack before operation. Even a fully charged Battery Pack will discharge if left for a long time without a recharge.

■ Slide the Battery Pack downward, as illustrated.

How to Remove the Battery Pack

Battery Eject Button

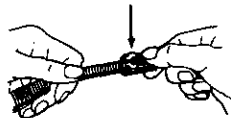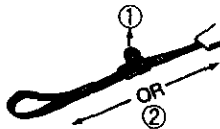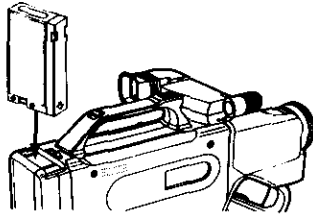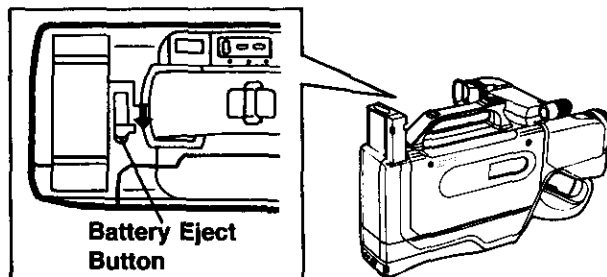● Be sure that the Power switch is set to "OFF" before ejecting the Battery Pack.

■ Slide the Battery Eject button to eject the Battery Pack.

B. AC Adaptor (Supplied)
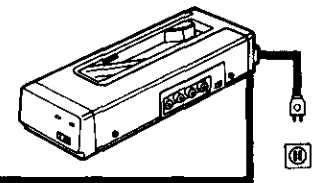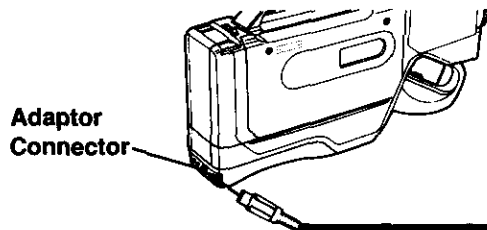
Adaptor Connector

1 Before connecting, turn the Movie Power OFF.
2 Plug the AC Adaptor Cable into the Adaptor Connector on your Movie.

3 Connect the Plug to an AC outlet. The Power indicator will light up.

C. Car Battery Cord (Optional)

Adaptor Connector

Cigarette Lighter Socket

Cigarette Lighter Plug
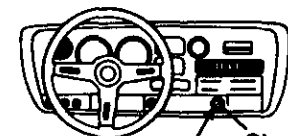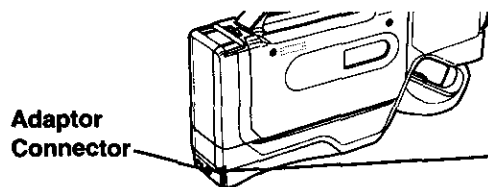
1 Before connecting, turn the Movie Power OFF.
2 Plug the Car Battery Cord into the Adaptor Connector on your Movie.
3 Take the lighter out of its socket.

4 Start the car engine and insert the cigarette lighter plug of the Car Battery Cord into the socket. To replace the fuse in the plug, use the exact current rating (Amps).

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Preparations (continued)

How to charge the Battery Pack

Your AC Adaptor can be used to charge one Battery Pack in either of the two ways shown below, or both methods can be used together to charge two Battery Packs at the same time.

Charging Directly on the AC Adaptor

1 Connect the AC Adaptor Power Plug to an AC outlet. Power Indicator lights up.

2 Place the Battery Pack in the AC Adaptor as illustrated at right.

Power Indicator Lamp

Charging Indicator Lamp
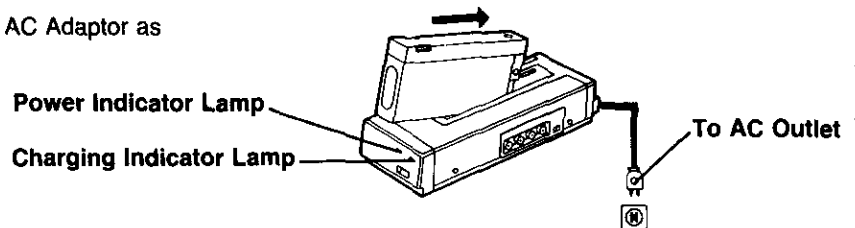
To AC Outlet

Charging Directly in the Movie

Adaptor Connector
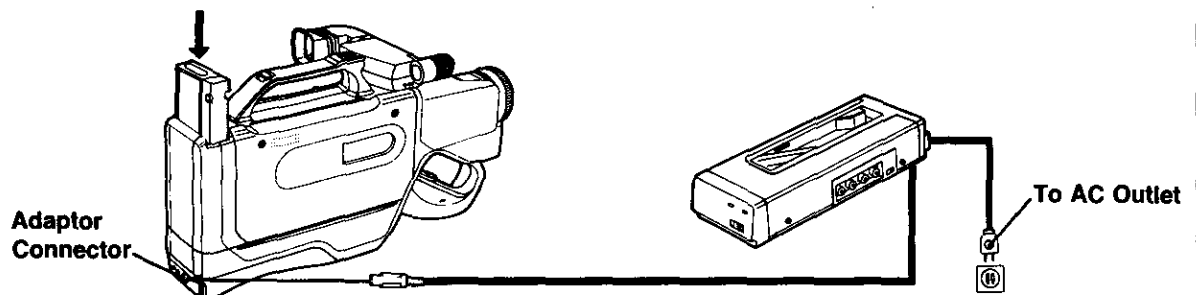
To AC Outlet

1 Be sure to turn your Movie OFF. Battery Charging will not take place if your Movie is ON.

2 Plug the AC Adaptor Cable into the Adaptor Connector on your Movie.

3 Connect the AC Adaptor Power Plug to an AC outlet. Power Indicator lights up.

4 Insert the Battery Pack as illustrated above.

• The Charging Indicator will light during charging. When charging is finished, the Charging Indicator light will go out.

• One Battery Pack should charge in about 1 hour and 40 minutes.

• If you charge two Battery Packs at the same time, they should both charge in about 3 hours and 20 minutes.

Preparations (continued)

A Word about Cassettes

A. Types of Video Cassette

Tape Speed	Maximum Record/Playback Time		
	T160	T120	T60
SP (Standard Play)	2 Hours 40 Minutes	2 Hours	1 Hour

Use tapes with the [VHS] mark in this unit.

B. Erase Protection

Cassettes have a record tab to ensure that recordings are not accidentally erased.

● **To prevent accidental erasure**
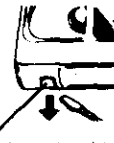
Break off the tab with a screwdriver

● **To record again**

Cover the hole with cellophane tape

To Insert or Remove a Cassette

The Movie may be ON or OFF when you insert or remove a cassette.

Stop/Eject button
Press the Stop/Eject button to open the door.

Press here gently to close.
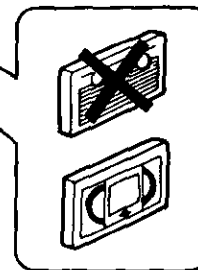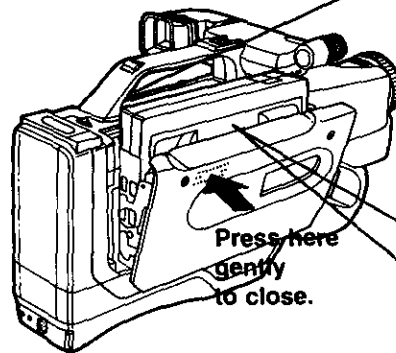
Video Cassettes can only be inserted with the window side of cassette facing the cassette door, and the arrow pointing down. Do not attempt to insert a cassette which is upside down or backwards.

NOTE: ● If the EVF is positioned for left eye use, be sure it is fully extended before ejecting or loading a tape.

13

Preparations (continued)

10W Color Enhancement Light (Supplied)
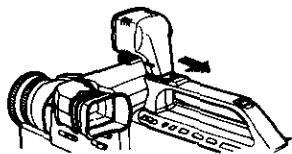
LIGHT SWITCH **LOCK RELEASE BUTTON**
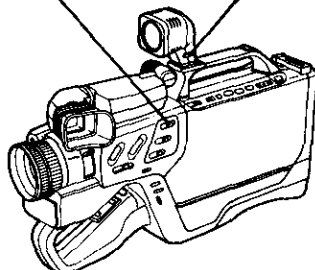
Using the Color Enhancement Light, you can provide additional light to brighten the natural colors in a scene.

1 Mount the Light on the Accessory Mount on the Movie.
Be sure to mount the Color Enhancement Light until it locks into place.

2 Using the Light switch on your Movie, turn the Light ON.

CAUTION:
This Light becomes hot during operation.

To release
To remove the Color Enhancement Light from the Movie, hold down the Lock Release button and slide off the Color Enhancement Light.

Replacement of the Lamp Bulb
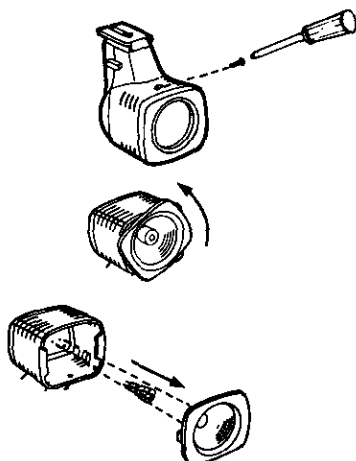
1 Turn the screw on the underside of the reflector casing counterclockwise to loosen it.

2 Turn the reflector casing counterclockwise only as far as shown in the diagram and pull it completely off the bulb housing.

3 Pull the old bulb off the base and replace it.

4 Reposition the reflector casing on the bulb housing as in step 2, and turn it clockwise to reattach. Replace and tighten the screw.

Danger:
●When replacing the bulb use only lamp bulbs (PART NO. VLLW0002) supplied by Panasonic to reduce the risk of fire.
Use a cloth or tissue when handling the bulb as finger oils will decrease the bulb life. To prevent possible burn hazard disconnect Movie Light Unit and allow lamp to cool before replacing.
●Do not connect any light other than the standard light included. Use of a different light, modification to the light connector or light jack may cause severe battery drain and fire hazard.

Note:
●If using the Enhancement Light for an extended period of time, take note of the surrounding temperature. As a safety feature, if the surrounding temperature exceeds 104°F (40°C), the light will temporarily go out. It will resume normal operation when the temperature drops. Be sure to provide ventilation when using the light in a hot environment.
●Using the Enhancement Light when the Movie is powered by a car battery may shorten bulb life.

14

Preparations (continued)

Electronic Viewfinder (EVF) Indications
These indications will not be recorded on the tape.

Operating Mode Indications

REC

- These indications will appear in the Camera and VCR mode.

Recording in progress

Camera Recording

FF
REW
V-DUB
A-DUB
A/V-DUB

- These indications will appear in the VCR mode.

Fast Forward

Rewind

Video Dub mode

Audio Dub mode

Audio/Video Dub mode
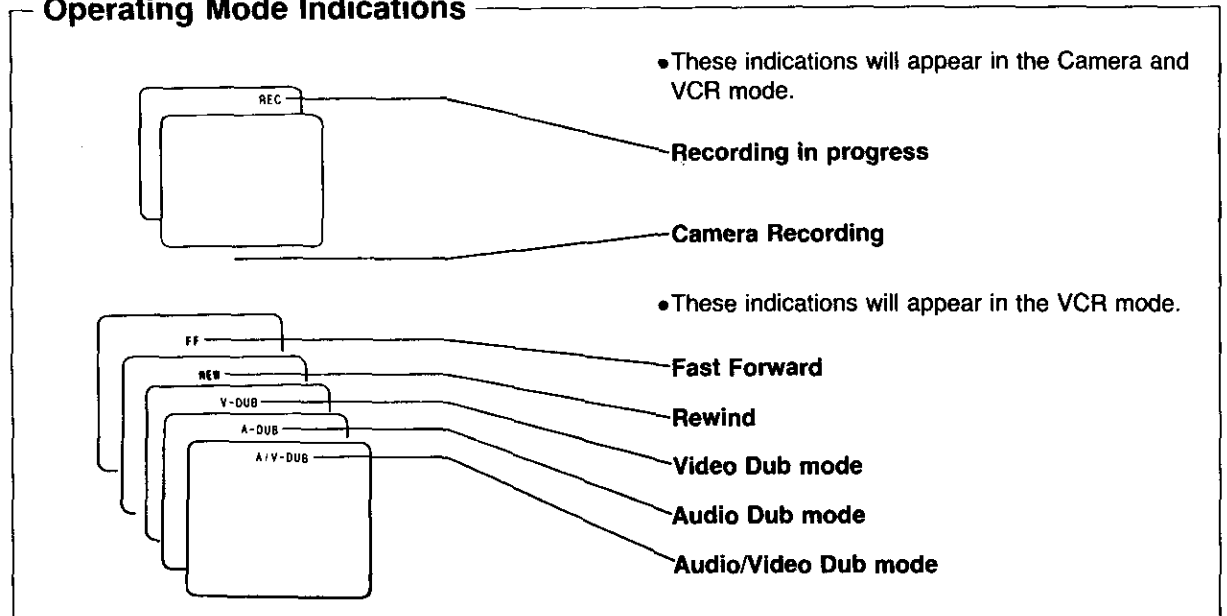
Battery Remaining Indication

E----F

E - - - - F
E - - - F
E - - F
-E- F-

-E F-

- BATTERY -

- When the Battery Pack is fully charged, "E - - - - F" appears.
- As the battery charge is consumed, the indicator changes: "E - - - F", "E - - F", "E - F".
- "E - F" will flash for several minutes and then "E F" and "BATTERY" will flash for several seconds prior to automatic power shut off. When this happens, a battery recharge is necessary.
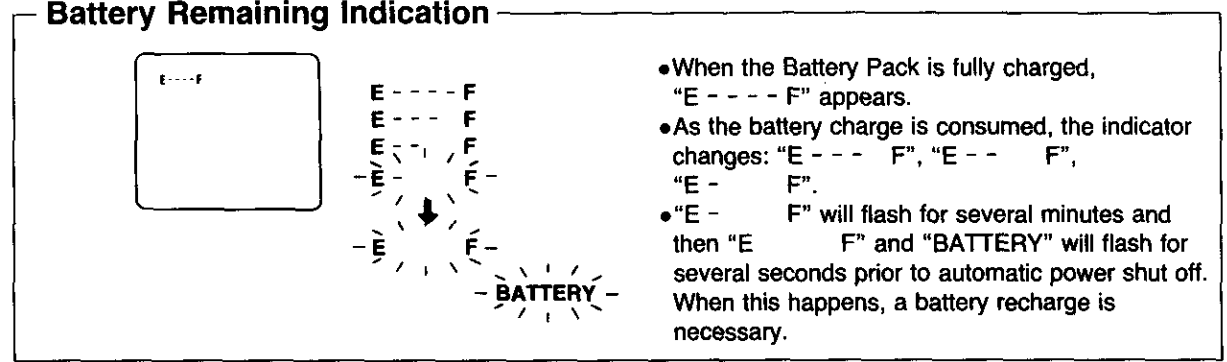
Tape Warning Indication

-TAPE-

- If the record tab is missing, this indicator will flash and recording will not start.

Dew Indication

-DEW-

- If excessive moisture condenses in the unit, it will not operate. This indicator will flash for several seconds and the Movie will automatically turn OFF. In this case, wait until the indicator no longer flashes when your Movie is turned on again.

15
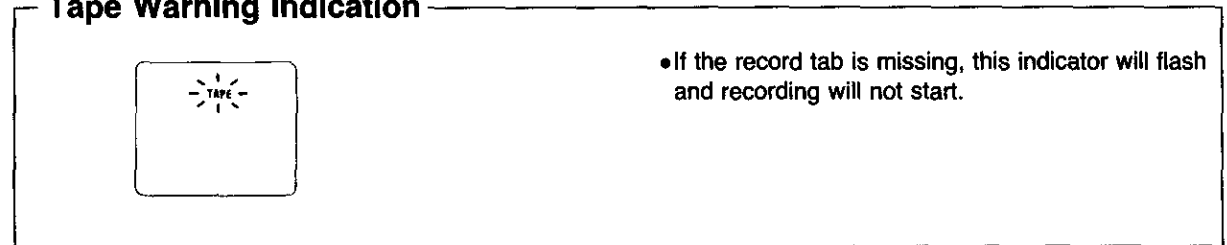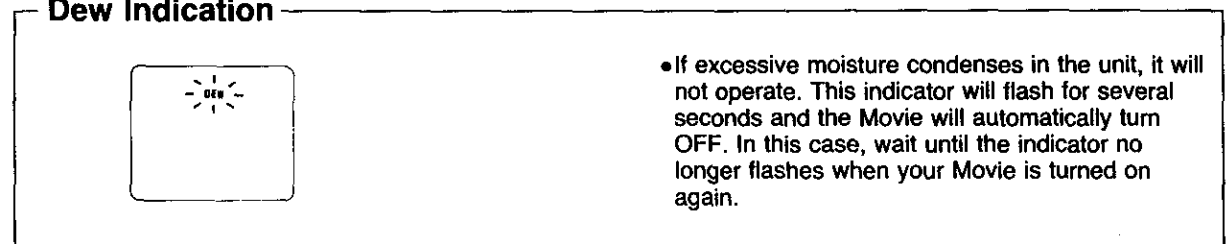
Camera Recording

EVF

When your Movie is turned on, the image from the lens appears.

REC Indicator

EARPHONE Jack
Connect the earphone (not supplied) to the earphone jack for monitoring the sound track as it is being recorded or played back.

Follow these simple steps to become familiar with the operation of your Movie.

Preparations:
- Your Movie is connected to a power source (Battery Pack, AC Adaptor, or Car Battery Cord).
- The Power is ON.
- A cassette with a record tab is inserted.

Operation

1 Set the VCR/CAMERA Selector Switch to the "CAMERA" position.
This is the camera record only position.
Edit Search:
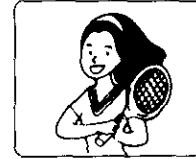Besides recording, you can view or search scenes by holding down the Play, FF/Search or Rewind/Search button.

2 Set the White Balance switch to "AUTO" for normal indoor or outdoor lighting.
"INDOOR" or "OUTDOOR" are for special color conditions (page 21).

3 Set the Focus Switch to "AUTO".
When powered ON and in the Camera mode, the Auto Focus system will function continuously.

4 Press the Record/Pause button to start recording.
The REC Indicator will appear and the Tally Light will flash while recording is in progress. Index marks will be placed on the tape automatically (page 25).

5 Press the Record/Pause button again to pause. In Record/Pause, press the Eject button if you need to remove the cassette.
After 5 minutes, pause mode will automatically go into standby mode, to conserve battery power.
Slide the Power switch ON to return to the Record/Pause mode.

Automatic Easy Edit Standby

If you stop recording, but plan to resume within 24 hours, you can leave the cassette in the Movie. Simply shut the Movie off at the Movie's Power switch after your recording is completed. This allows the Easy Edit feature to make a smooth transition between one scene and the next. After 24 hours, the tape will retract into the cassette, making automatic editing impossible. For manual editing, see page 25 under "EASY EDITING".

Record Review

Press the Record Review button in the Record/Pause mode.
When you press the Record Review button in the Record/Pause mode, the last few seconds of your recording will play back on the viewfinder or monitor screen for review. Then you can start your recording from the Record/Pause mode in synchronization with the last segment recorded.

16

Playback

You can play back your Movie recordings immediately on the viewfinder by following the steps given below. You may also play back your Movie recordings directly to a monitor or TV.

Preparations:
- Your Movie is connected to a power source (Battery Pack, AC Adaptor, or Car Battery Cord).
- The Power is ON.
- A cassette is inserted.

Operation

1 Set the VCR/Camera Selector Switch to the "VCR" position.

2 Press the Rewind button to rewind the tape to the desired location.

3 Press the Play button to view the recorded picture.

4 Press the Stop button when playback is finished.
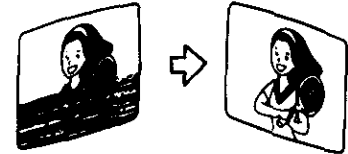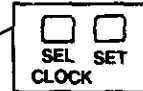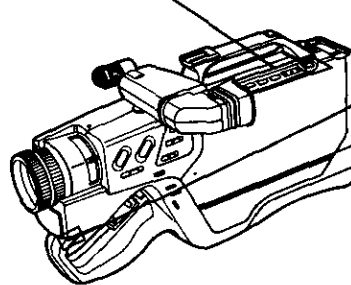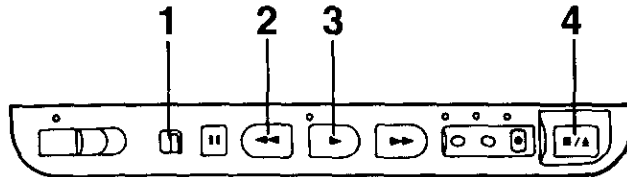
Auto Tracking

With Auto Tracking there is usually no need for manual adjustments to minimize noise in playback for most tapes. Auto Tracking continuously analyzes the signal to adjust for optimum picture quality for each recording.
However, with some recordings you may get a better result using Manual Tracking.

Tracking Control

Press the Set or Select button which is usually used for the Date/Time setting. Manual Tracking adjustment is intended for use during playback to minimize noise in the picture.

Auto Playback

When the Movie is in the VCR mode and a tape without a record safety tab is inserted, the Movie will begin to play automatically.

Special Effects in Playback Mode (Sound is Muted)

To Rapidly Locate A Particular Segment

- Press the Search button.
  A rapid forward or reverse picture search will continue.
  Press the Search button or Play button to resume normal speed.

Search Speed

Standard Play (SP) Search is about 3 times normal speed.
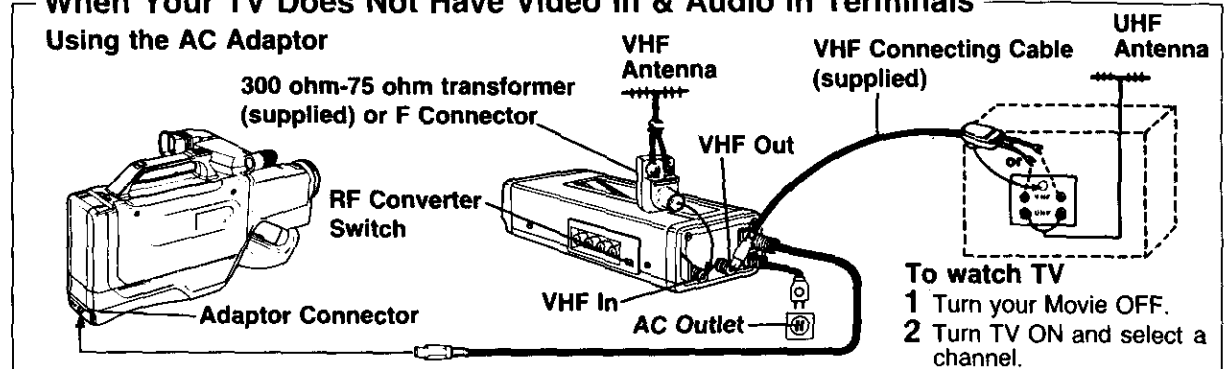
To View A Still Picture

- Press the Pause/Still button.
  A freeze frame picture from the current playback appears.

- Press the button once more.
  This releases the still and playback continues.

17

To Monitor Your Recording

Your Movie may be connected to a TV to play back tapes or to monitor what you are recording. Follow the illustration below for hook-up.
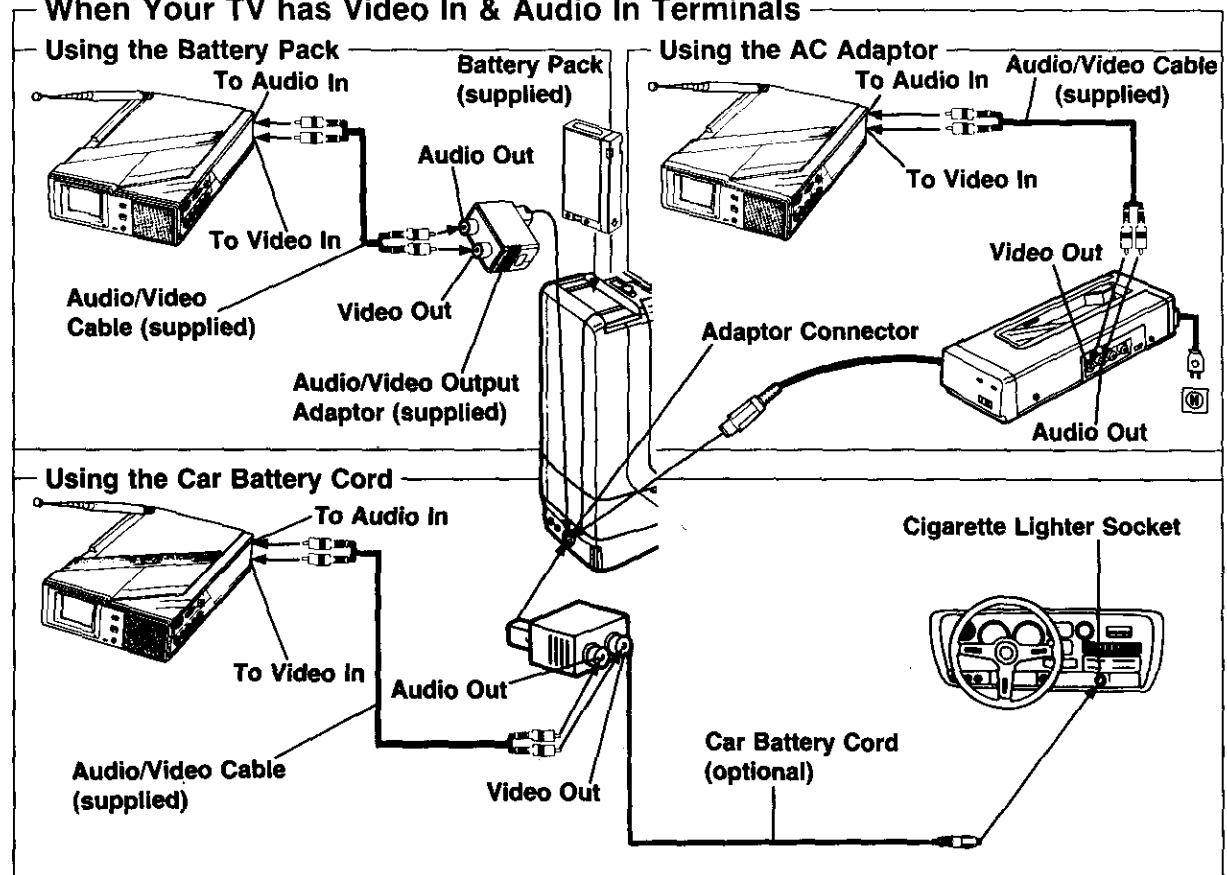
When Your TV Does Not Have Video In & Audio In Terminals
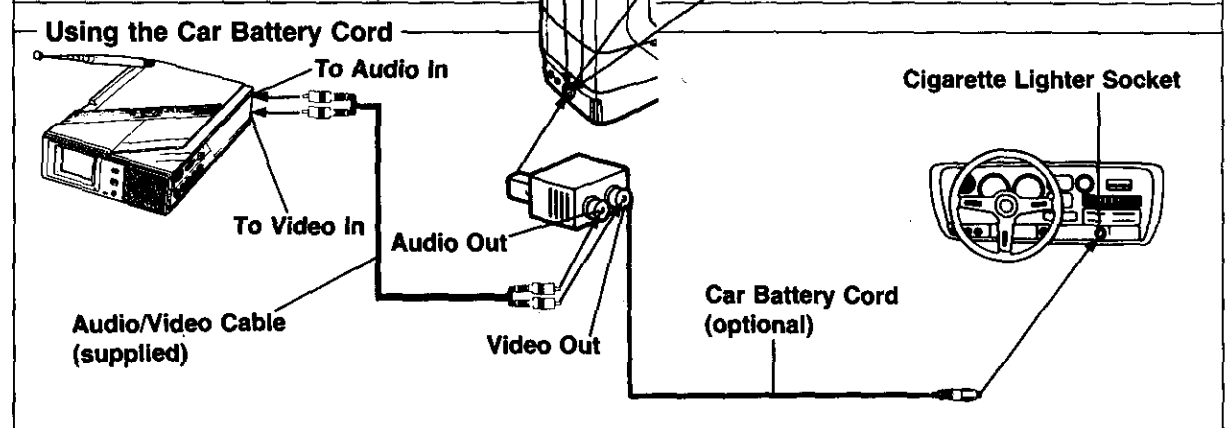
Using the AC Adaptor

300 ohm-75 ohm transformer (supplied) or F Connector

RF Converter Switch

Adaptor Connector

VHF Antenna

VHF Out

VHF In

AC Outlet

VHF Connecting Cable (supplied)

UHF Antenna

To watch TV
1 Turn your Movie OFF.
2 Turn TV ON and select a channel.

When Your TV has Video In & Audio In Terminals

Using the Battery Pack

To Audio In

To Video In

Audio/Video Cable (supplied)

Battery Pack (supplied)

Audio Out

Video Out

Audio/Video Output Adaptor (supplied)

Using the AC Adaptor

To Audio In

To Video In

Adaptor Connector

Audio/Video Cable (supplied)

Video Out

Audio Out

Using the Car Battery Cord

To Audio In

To Video In

Audio/Video Cable (supplied)

Audio Out

Video Out

Car Battery Cord (optional)

Cigarette Lighter Socket

To Monitor

1 Connect the AC Adaptor to an AC Outlet.
   • When you use the supplied Audio/Video Output Adaptor instead of the AC Adaptor, be sure to connect your Movie to a Battery Pack.

2 Turn your Movie and the TV ON.
   • If your TV has no Video In or Audio In terminals, select CH 3 or 4 on TV to match the RF Converter Switch on the AC Adaptor, when using the VHF Connecting Cable (see top diagram above).
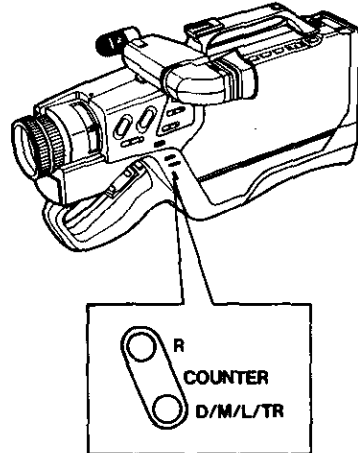
18

Useful Features

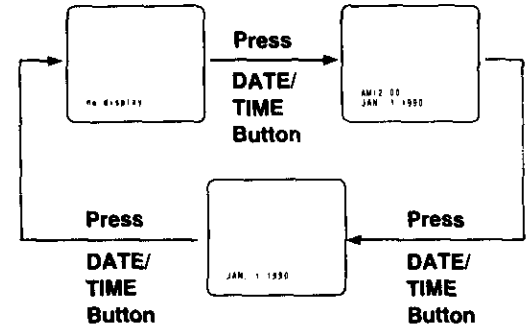## Date/Time Display and Setting

Your Movie is equipped with an automatic date function which operates by a built-in lithium battery. It calculates the date and time, including leap year, up to Dec. 31, 2086 even when the Movie is off. Before setting the date and time it is necessary to charge the lithium battery for 48 hours.

To Display the Date and Time

R
COUNTER
D/M/L/TR

Date/Time Setting

Date/Time
Button

SEL   SET
CLOCK

1 Press the Date/Time button in Record/Pause mode or Stop mode.
"AM 12:00 JAN. 1 1990" appears.
Whenever "AM 12:00 JAN. 1 1990" appears, it indicates that the clock needs adjustment.

2 Press the Select button.
The first portion of the Date and Time display will flash.

To do this simply insert the Battery Pack or attach the AC Adaptor. This will automatically charge the battery. Through normal use the battery will stay charged. If after initial charging the Movie is not used, the automatic date function will continue for about a year.
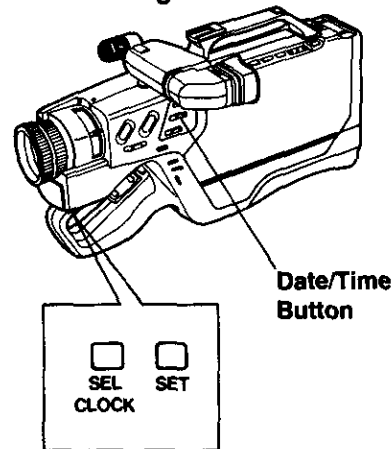
Turn your Movie ON and look into the EVF. Pressing the Date/Time button will provide the following displays in order.

Press
DATE/
TIME
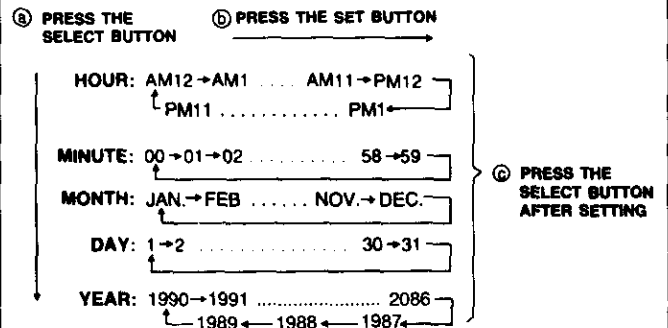Button

Press
DATE/
TIME
Button

Press
DATE/
TIME
Button

The selected Date and Time mode will be saved when the power is turned OFF.

To Set the Clock

ⓐ PRESS THE SELECT BUTTON   ⓑ PRESS THE SET BUTTON

HOUR: AM12→AM1 .... AM11→PM12
PM11 .... PM1

MINUTE: 00→01→02 .... 58→59

MONTH: JAN.→FEB ...... NOV.→DEC.

DAY: 1→2 .... 30→31

YEAR: 1990→1991 2086
1989←1988←1987

ⓒ PRESS THE SELECT BUTTON AFTER SETTING

3 Press the Set button until the desired number(s) appear in the space you selected. Then press the Select button to fix that portion of the date and time.

4 Press the Select button again.
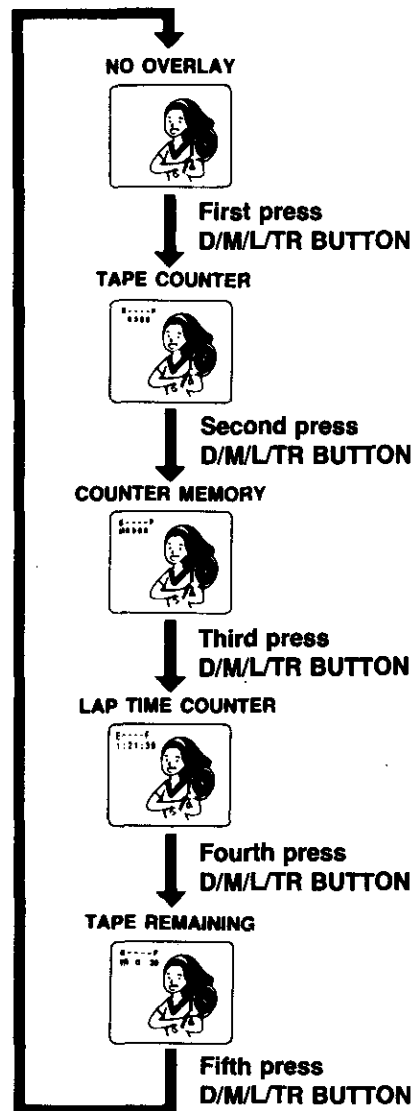This locks in all the settings you have made.

Note:
• If the Set button is held down, the numbers will advance rapidly.

19

Useful Features (continued)
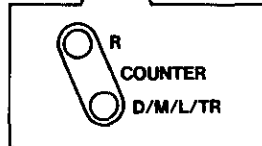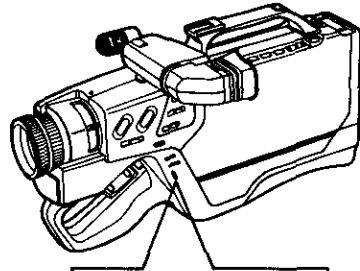
The following displays for each Tape and Time Counter function can be selected to track your current position, or find a desired tape location. Press the D/M/L/TR button repeatedly to get the desired display.

NO OVERLAY

First press
D/M/L/TR BUTTON

TAPE COUNTER

Second press
D/M/L/TR BUTTON

COUNTER MEMORY

Third press
D/M/L/TR BUTTON

LAP TIME COUNTER

Fourth press
D/M/L/TR BUTTON

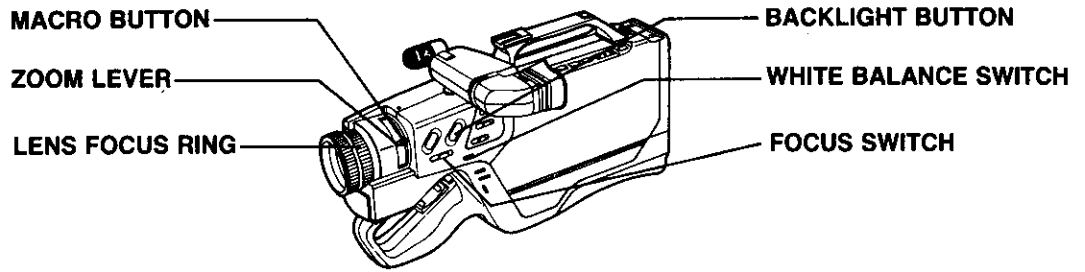**TAPE REMAINING**

Fifth press
D/M/L/TR BUTTON

Tape Counter: Displays a reading for any position on the tape.
Press the Reset button to reset display to "0000".

Memory Counter: When the Memory function is selected the Movie will stop during Rewind, Fast Forward, Video Dubbing, Audio Dubbing and A/V Dubbing whenever it reaches the point where the tape counter was previously set to "0000".
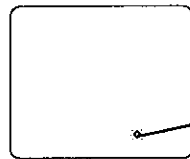
Lap Time Counter: The elapsed time during a recording is displayed by the Lap Time Counter.
Press the Reset button to reset display to 0:00:00.

Tape Remaining: This display shows the time remaining on the tape in 1 minute segments, during playback or recording.

20

Useful Features (continued)

MACRO BUTTON ——
ZOOM LEVER ——
LENS FOCUS RING ——

—— BACKLIGHT BUTTON
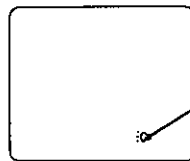—— WHITE BALANCE SWITCH
—— FOCUS SWITCH

Auto White Balance

With the White Balance switch, select "AUTO" for continuous color balance in both indoor and outdoor lighting situations. Under the following conditions set the White Balance Switch to "☼" or "♀" as recommended, for better color reproduction in your recordings.

OUTDOOR "☼": When recording an outdoor scene from indoors, or recording an outdoor scene using an amber filter.

INDOOR "♀": When recording an indoor scene from outside, or recording an indoor scene using a blue filter.

White Balance is affected by Color Temperature. See the chart on page 33.

Backlight Button

This button may be used to adjust the light level on a recording subject that is darker than the surrounding scene.
You will find this backlight adjustment useful for recording a subject in a shadowed area or in front of strong backlight.
Press the Backlight button while recording a high contrast scene, then release it when the lighting condition changes.

Macro Focus (for close-up)

Focusing on objects as close as 1 inch from the lens in "Macro" lets you fill your screen with enlarged details of the miniature world.

1 Set the Focus switch to "MANUAL".
2 Turn the Zoom Ring Lever to the extreme right position.
3 Press the Macro (green) button on the Zoom Ring Lever and use the Zoom Ring Lever for Macro Focusing.

●When using the Macro function, it may be helpful to steady your Movie by mounting it on a tripod.
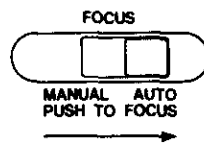
Useful Features (continued)

Zoom
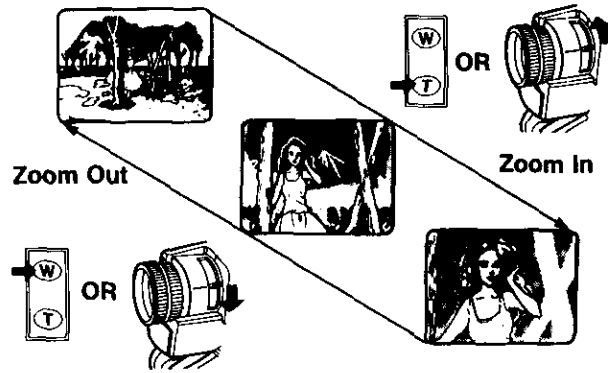
Your Movie has a power zoom lens that gently changes the viewing angle. Zooming is possible by lightly pressing the "T" or "W" side of the Power Zoom switch. You can also manually zoom with the zoom ring which has a handy lever for steady turning.
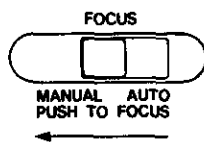
Zoom Out
Zoom In

Focus

A. Auto Focus

FOCUS

MANUAL AUTO
PUSH TO FOCUS

Set the Focus Switch to "AUTO" for normal use, and the lens will be automatically focused on the subject in the center of the EVF, even during a zoom.

B. Manual Focus (by hand)

FOCUS

MANUAL AUTO
PUSH TO FOCUS

Set the Focus switch to "MANUAL", and then adjust the focus with the Lens Focus Ring.

1 Aim your Movie at the scene to be recorded.

2 Press and hold the "T" side of the Power Zoom switch until the lens zooms to the maximum close-up setting.

3 Rotate the Lens Focus Ring for the sharpest picture at this setting.
(It may be necessary to back away from the subject to focus the image properly.)

Under the following scene conditions, manual focusing is recommended.

● Scene with both close and distant objects in view.
● Scene with enhanced perspective.
● Scene with dominant non-reflective object, such as a black curtain.

4 Press the "W" side of the Power Zoom switch. The picture should stay in focus over the entire zoom range.
Re-focusing may be required when your Movie is aimed at a new scene.

● When you want to adjust the focus quickly in the "MANUAL" position, you can activate the Auto Focus. Leave the Focus switch in "MANUAL", and then press and hold the Focus switch. The picture automatically adjusts for focus as long as you continue pressing.

● Focusing on small objects. The Auto Focus system needs a reflecting area of a certain minimum size in order to operate. Objects more than 10 feet away should have a reflecting surface of approximately 4 inches in diameter.
● Distant objects. The Auto Focus system may not always focus clearly on objects that are over 40 feet away.

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Useful Features (continued)

FADE BUTTON

HIGH SPEED SHUTTER
SWITCH

SELF TIMER/TIME LAPSE
SWITCH
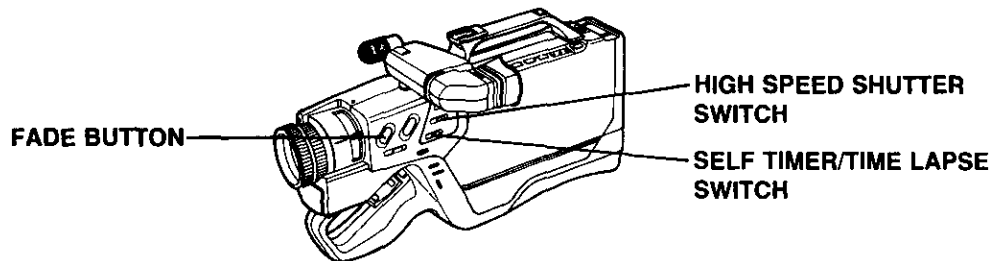
Fade In/Out - Video Only; Audio Is Not Affected By Fade Control
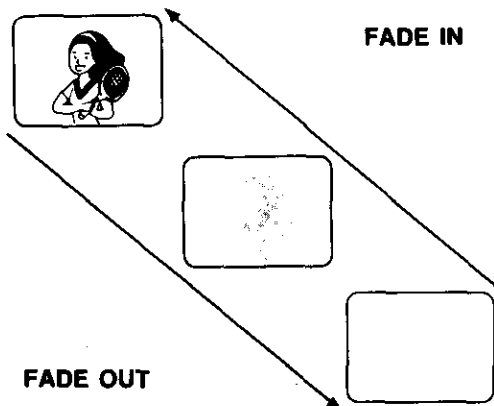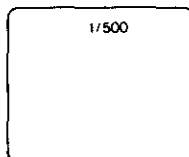
FADE IN

FADE OUT

Use the Fade button to activate the fade feature. The picture will fade out when the Fade button is held down. When the button is released, the picture will fade in, eliminating sudden scene changes.

Fade In: Before starting a recording segment, hold down the Fade button until the picture fades out. Then press the Record/Pause button to start the recording, as you release the Fade button. The new scene will fade in.
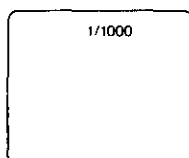
Fade Out: To fade out at the end of a recording segment, hold down the Fade button. When the picture has faded out, press the Record/Pause button to pause the recording.

High Speed Shutter

This switch may be used to record a clear, sharp image of high speed motion for fine point replay in still or slow mode, when watching the tape on Panasonic TECH 3 or TECH 4 VCR (3 or 4 head VCR). There are 2 Shutter speeds available.

Select The 1/500th Shutter

1/500

Slide the switch to the right once to activate the High Speed Shutter during recording. This mode should be used for subjects moving fast enough to cause blurs.

Select The 1/1000th Shutter

1/1000

Slide this switch to the right once more to select the 1/1000 shutter speed.
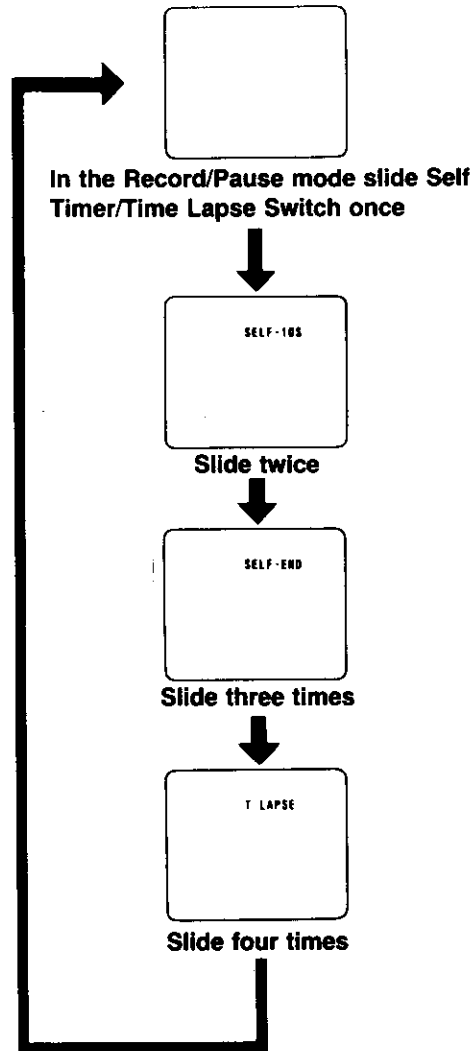This mode should be used for extremely fast motions, like a golf swing.

Note:
• The High Speed Shutter indicator flashes when the light level is inadequate. More light should be provided to achieve better picture quality and color. See page 32 for more information.

Useful Features (continued)

Self Timer/Time Lapse Recording

In the Record/Pause mode slide Self Timer/Time Lapse Switch once

↓

SELF-10S

Slide twice

↓

SELF-END

Slide three times
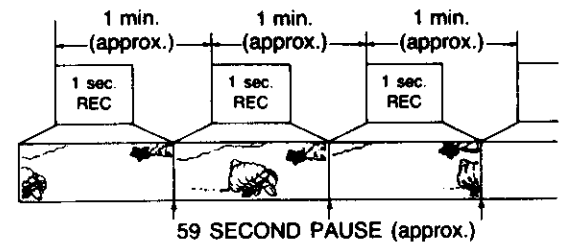
↓

T LAPSE

Slide four times

The Self Timer/Time Lapse switch slides to the right to select one of three recording overlays. Pressing the Record/Pause button activates the selected mode. When recording stops, the Movie will return to the Record/Pause mode.

Self Timer Recording

● Select "Self-10S"
Indicates that a 10 second recording will begin 10 seconds after you press the Record/Pause button. Press the Record/Pause button again to cancel the recording in progress.

● Select "Self-End"
Indicates that a continuous recording to the end of the tape will begin 10 seconds after you press the Record/Pause button. Press the Record/Pause button again to cancel the recording in progress.

Time Lapse Recording

● Select "T.LAPSE"
Press the Record/Pause button.
Your Movie will start to record at once. A one second frame of the scene will be recorded each minute. As shown in the diagram below, your recording will have continuous Time Lapse images of the scene. Press the Record/Pause button again to cancel the recording in progress.

1 min. (approx.) — 1 min. (approx.) — 1 min. (approx.)

1 sec. REC   1 sec. REC   1 sec. REC

59 SECOND PAUSE (approx.)

Note:
This camera is not designed for industrial use of the Time Lapse Feature. Please keep the following points in mind.

● Avoid using the unit solely for Time Lapse recording. A ten hour duration of Time Lapse recording will record 10 minutes of the Time Lapse special effect.
After this period, the unit will automatically turn itself off.

● The battery pack is not designed for continuous Time Lapse use. For extended periods of time lapse recording it is recommended that an alternate power source be used.

● The Self Timer/Time Lapse switch has no effect if pressed during normal recording.

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Useful Features (continued)

VHS Index Search System
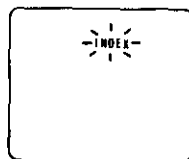
An index mark is automatically placed on the tape at the beginning of each recording (the Index indicator will flash), but not where a recording resumes after the Movie has been put into pause. You can enjoy automatic review and playback of indexed tapes using VCR models which feature the VHS Index Search System.

Book Mark Search

You can return directly to the blank portion of the tape (a tape, once recorded, is not considered "blank" even if it has been erased) just where the recording you have done so far ends. In camera mode, just press both the Rew and FF buttons together at the same time, wherever you are on the tape. The Movie will advance or rewind and then stop at the point where recording can be continued. Press the Play button should you desire to discontinue this function.

Note:
- When you initiate an edit search, you are in effect, placing a marker at that point. No matter where on the tape you initiate the edit search, if you then use the book mark search, the Movie will locate and stop at the approximate point that the edit search was initiated.

Easy Editing
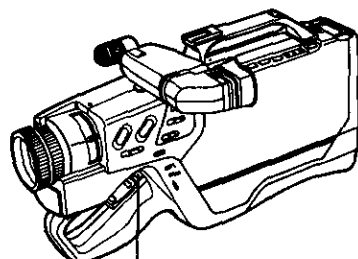
RECORD/PAUSE BUTTON

To obtain proper continuity when taping from the Stop mode, or after charging the Battery Pack.
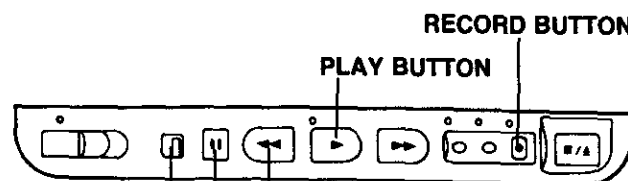
RECORD BUTTON

PLAY BUTTON

REWIND/SEARCH BUTTON

PAUSE/STILL BUTTON

VCR/CAMERA SELECTOR SWITCH

1 Set the VCR/Camera Selector switch to the "VCR" position.
Rewind the tape for a short distance (about 5 digits on the Tape Counter) by pressing the Rewind button. Then press the Play button and view the picture on the Viewfinder.

2 At the location where you wish to continue recording, press the Pause/Still button.

3 A. For Camera recording:
Set the VCR/Camera Selector switch to the "CAMERA" position; your Movie will go into the Record/Pause mode. Then press the Record/Pause button to continue recording.

B. For VCR recording (of TV programs, etc.).
Press the Record button and the Play button together. Press the Pause/Still button again to begin recording.
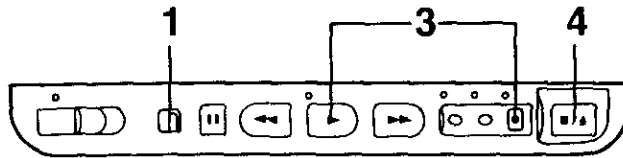
25

To Record A TV Program

Your Movie enables you to record a TV program through the AC Adaptor from a tuner source unit. Connect the AC Adaptor with the Audio/Video Cable to one of these tuner sources: 1) a TV which has Video Out and Audio Out Terminals, 2) the optional Tuner Adaptor, 3) another VCR.
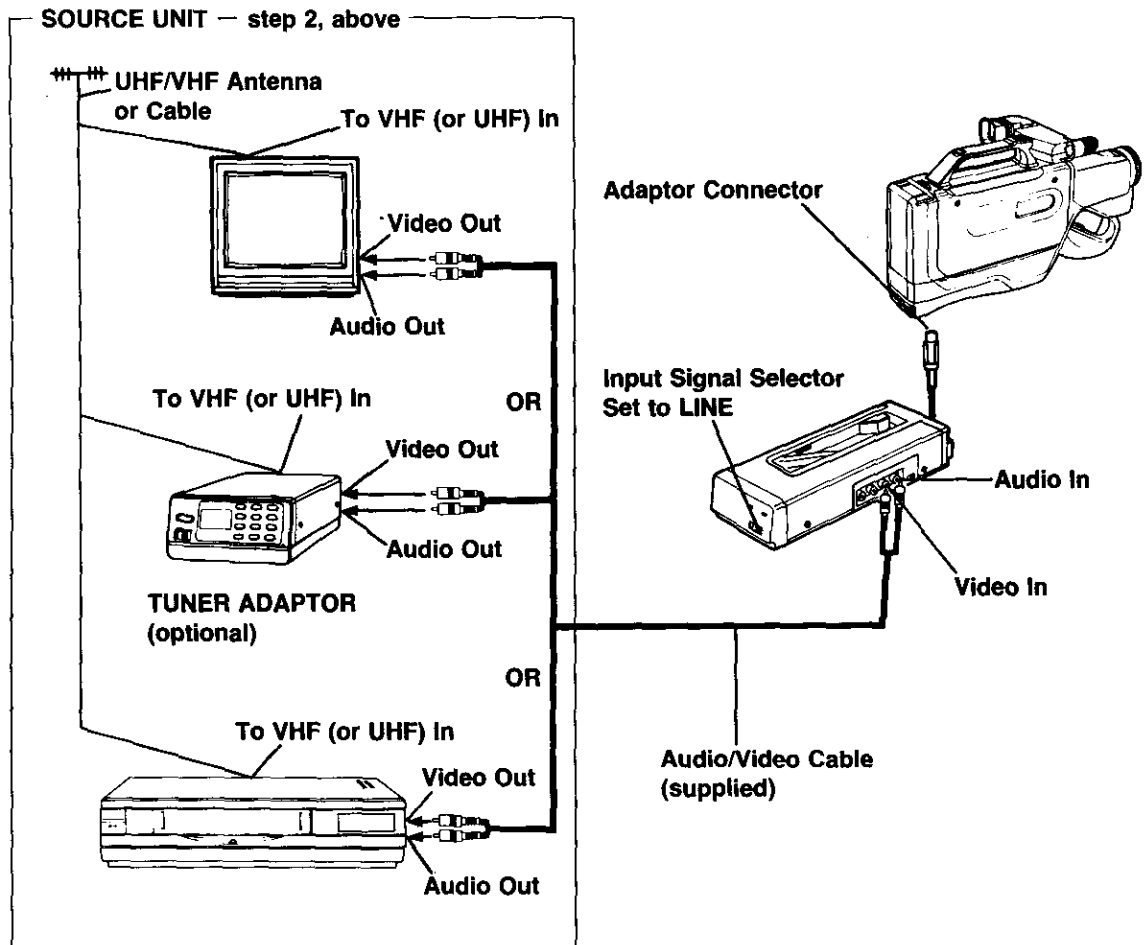
Preparations:
- Connect your Movie to the AC Adaptor.
- Turn the Power ON.
- Insert a cassette with a Record Tab.
- Slide the Input Signal Selector on the AC Adaptor to "LINE".

Operation

1 Set the VCR/Camera Selector Switch to the "VCR" position.

2 Turn the source unit on; select the channel to be recorded.
The selected channel will appear on the TV and in the EVF of your Movie.

3 Press the Record button and Play button together on your Movie.
During recording, be sure the source unit power is on.

4 Press the Stop button.
This ends the recording session. Use the Pause/ Still button to pause recording.

Connections

SOURCE UNIT — step 2, above

UHF/VHF Antenna or Cable

To VHF (or UHF) In

Video Out

Audio Out

To VHF (or UHF) In   OR

Video Out

Audio Out

TUNER ADAPTOR (optional)

OR

To VHF (or UHF) In

Video Out

Audio Out

Adaptor Connector

Input Signal Selector Set to LINE

Audio In

Video In

Audio/Video Cable (supplied)

Video Dubbing

Your Movie uses advanced Flying Erase Head technology to produce exceptionally clean edits. With your Movie you can replace existing video segments with new ones (the original audio segments will remain). Use two Movies, or use a VCR for the source and your Movie for the editing unit, as described below.

●Set up and connect the Movie (or VCR) as illustrated on the next page.
(Be sure to connect the AC Power Plug of the AC Adaptor to an AC outlet).

Preparations:
●Press Power ON on both units.

At the Source VCR (or Movie):
●Insert the master cassette to be played. Put the source VCR (or Movie) in Play/Pause mode at the desired starting point.

At the Editing Movie:
●Insert a cassette (with tab) to be recorded. Set the AC Adaptor Input Signal Selector to "LINE".
●Turn the TV ON, and select CH 3 or 4, to monitor the dubbing, if desired.

Operation

1 Set the VCR/Camera Selector Switch to the "VCR" position on the Editing Movie.

2 Press the Play button on the Editing Movie to locate the starting point for dubbing. Press the Pause/Still button where you want dubbing to begin. To use the Memory-Stop feature for Editing, see step 5.

3 Press the Video Dub button on the Editing Movie only. This puts the Movie in the Video Dub Pause mode.

4 If Neither Unit Has a Synchro Edit Jack
Release the Pause buttons on both units simultaneously. This may require some practice beforehand.
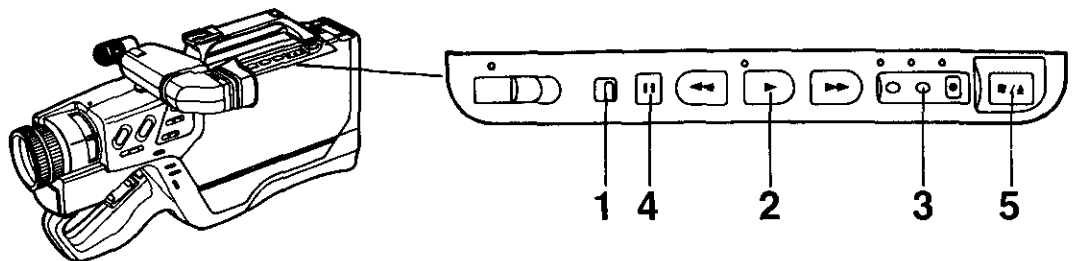
4 Using the Synchro Edit Feature
On the Editing Unit, press Pause to begin video dubbing (both units begin operation). Press Pause on the Editing Unit at the end of the recorded sequence (both units go into Pause). For the use of the Synchro Edit Feature refer to page 30.

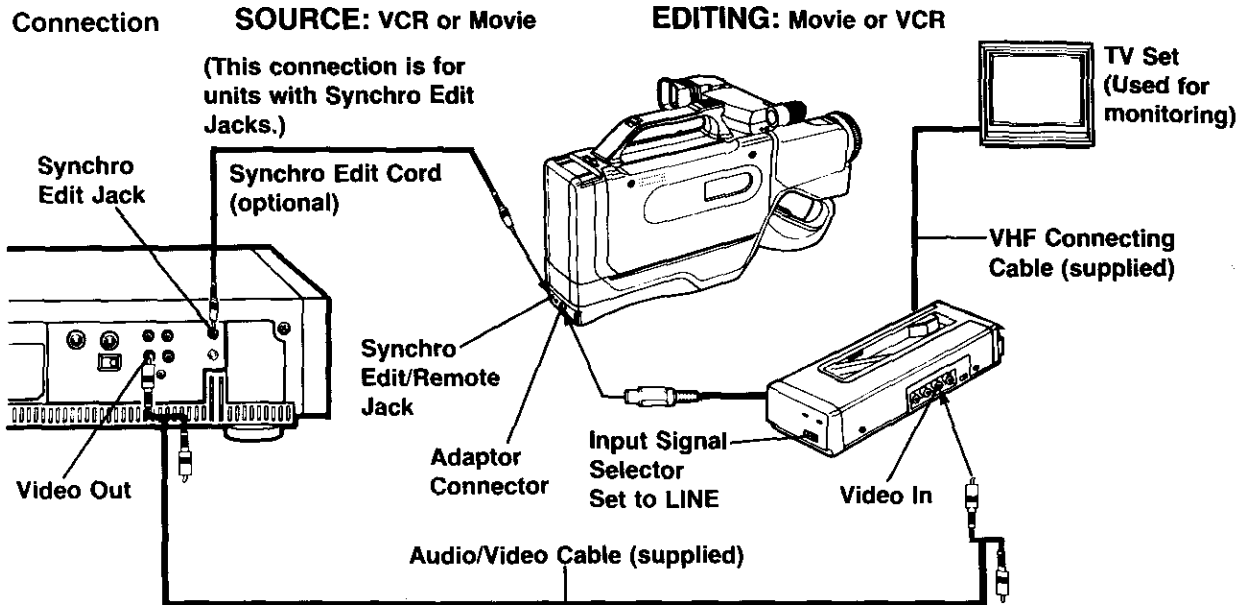**5** Press the Stop button on both units to stop Video Dubbing.

* Memory-Stop Editing:
Use the Display/Memory/Lap Time/Tape Remaining button to automatically stop Editing with the following preparations.
(a) In step 2 on the Editing unit tape, locate the end of portion to be edited, then press the Memory Button and reset the tape counter to 0000.
(b) Rewind to the editing start point, and continue steps 2-4.
(c) The Editing Movie tape will stop when it reaches "0000".

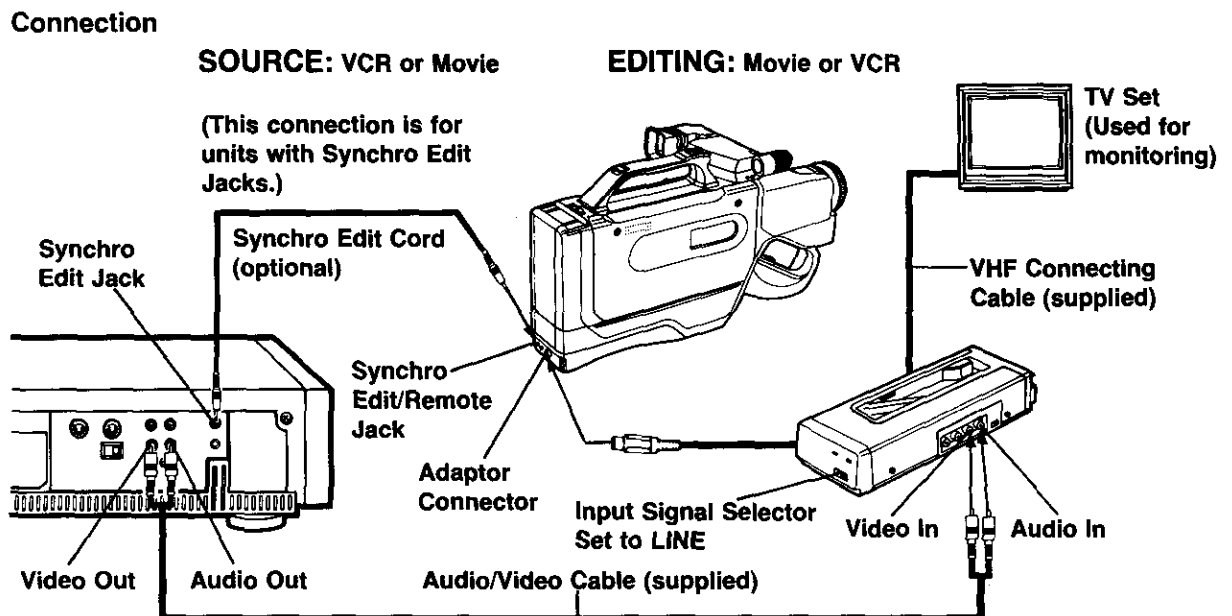1 4   2   3   5

Video Dubbing (continued)

Connection   SOURCE: VCR or Movie   EDITING: Movie or VCR

(This connection is for
units with Synchro Edit
Jacks.)

Synchro
Edit Jack

Synchro Edit Cord
(optional)

TV Set
(Used for
monitoring)

VHF Connecting
Cable (supplied)

Synchro
Edit/Remote
Jack

Adaptor
Connector

Input Signal
Selector
Set to LINE

Video In

Video Out

Audio/Video Cable (supplied)

Audio/Video Dubbing

You can use the Audio/Video Dubbing feature to copy a tape using the Flying Erase Head technology to produce exceptionally clean edits at the end of the recording on a tape. Be sure to connect the Audio out terminal on source unit to the Audio In terminal on editing unit as illustrated below.

■ Follow steps 1 and 2 on page 27.

■ Press the Audio Dub button and Video Dub button together on the Editing Movie only. This puts the Movie in the Audio/Video Dub Pause mode. Then follow steps 4 and 5 to start and stop the Audio/Video Dubbing.

NOTE: Tapes to be dubbed must be prerecorded in SP mode for Audio/Video Dubbing.

Connection

SOURCE: VCR or Movie   EDITING: Movie or VCR

(This connection is for
units with Synchro Edit
Jacks.)

Synchro
Edit Jack

Synchro Edit Cord
(optional)

TV Set
(Used for
monitoring)

VHF Connecting
Cable (supplied)

Synchro
Edit/Remote
Jack

Adaptor
Connector

Input Signal Selector
Set to LINE

Video In   Audio In

Video Out   Audio Out

Audio/Video Cable (supplied)

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Audio Dubbing

Your own soundtrack may be substituted onto a tape which is recorded in SP mode using a microphone, tape recorder, or your own component audio system.

• Set up and connect the Movie and the other audio equipment as illustrated.
(Be sure to connect the AC Power Plug of the AC Adaptor to an AC Outlet.)

Preparations:
• Turn ON the Movie.
At the Editing Movie:
• Insert a cassette (with tab) to be recorded.
• Set the AC Adaptor Input Signal Selector to the desired position:
Select
CAMERA: The sound from the microphone will be recorded.
LINE: The sound from whatever is connected to the AC Adaptor, through the Audio Input Connector will be recorded.
• Turn the TV ON, and select CH 3 or 4.

Operation

1 Set the VCR/Camera Selector Switch to the "VCR" position.
The Movie automatically goes into the stop mode.

2 Press the Play button on the Editing Movie. Press the Pause/Still button where you want dubbing to begin.

3 Press the Audio Dub button to put the Movie in the Audio Dub Pause mode. The sound can be heard through the TV if it is connected to the Movie.
• Prepare the audio source to start playback at the desired point.

4 Start playback at the audio source, and press the Pause/Still button on the Movie at the same time, to start Audio Dubbing.
• Press the Stop button to stop Audio Dubbing.

* **Memory-Stop Editing:**
Refer to page 27 for Memory-Stop Editing.

AUDIO DUB BUTTON

PLAY BUTTON

STOP BUTTON

REWIND/SEARCH BUTTON

PAUSE/STILL BUTTON

VCR/CAMERA SELECTOR SWITCH

Connection

External Microphone Jack

VHF Connecting Cable (supplied)

Input Signal Selector

Adaptor Connector

or

(Used for monitoring)
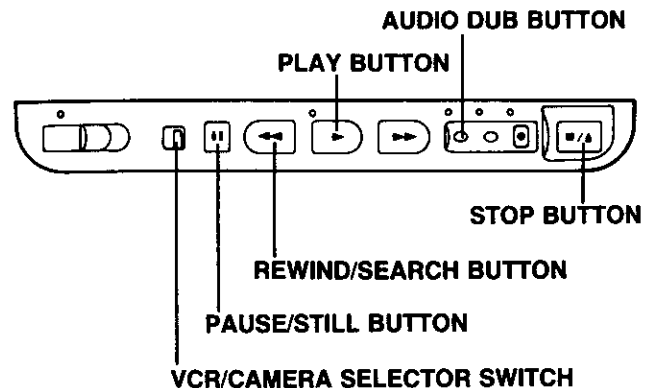
Audio In
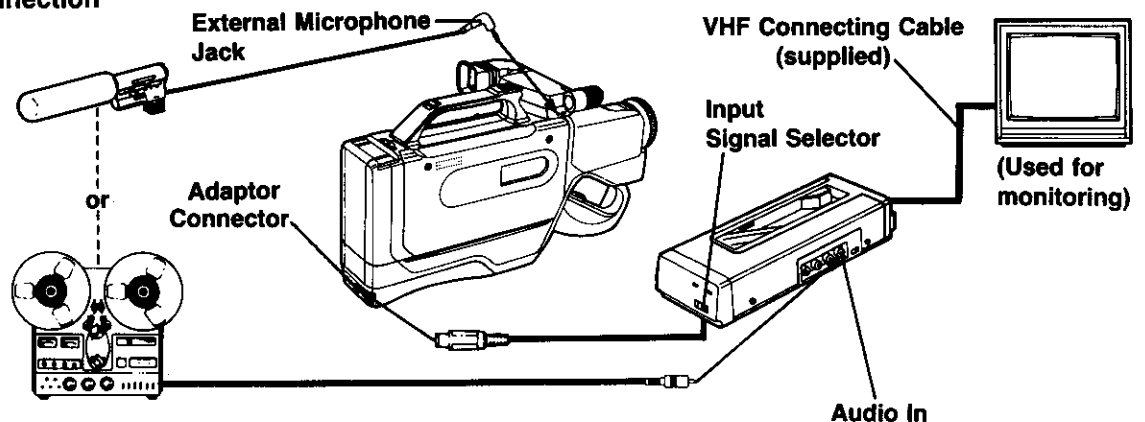
NOTE:
• A rolling white pattern may appear if you have made a Display/Memory/Lap Time/Tape Remaining button selection without a video input to the unit. (See page 32.)

• When a microphone is used for dubbing, do not place it near the speaker of your TV while dubbing is being done. A howling noise (feedback) may occur.

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Re-Recording (Video/Audio Dubbing)

With only the Pause button on the editing unit, you can control two Movies or a Movie and one table-type VCR when you use their Synchro Edit jacks to copy a tape. The Synchro Edit feature starts and stops both the source and editing units together with the press of one button.

• Set up and connect the units as illustrated. (Be sure to connect the AC adaptor to an AC Outlet.)

Preparations:
• Turn ON both units.

• Set the AC Adaptor Input Signal Selector on the Editing Movie to "LINE".
(Or set the editing VCR's Input Signal Selector to "LINE".)

• Set the VCR/Camera Selector switch on the Movie to the "VCR" position.

If Both Units have Synchro Edit Jacks

┌ Operation ─

On the Source Unit
1 Insert the master tape into the unit.
2 Press Play to review the tape.
  Press Pause/Still where you want to start the playback of the master recording to copy it. The source unit is now in Play/Pause.

On the Editing Unit
3 Insert the blank tape (or one you want to record over) into the unit.
4 Press Play to review the tape.
  Press Pause/Still where you want recording to begin to make the copy of the master tape. The editing unit is now in Play/Pause.
5 Press the Play and Rec buttons together.
  The unit is now in Record/Pause.

To Synchro Edit
The Synchro Edit feature simultaneously releases the Pause mode on both units, so playback and recording begin at the same time.
6 On the editing unit, press Pause to begin the re-recording (both units begin operation).
7 Press Pause at the end of the recorded sequence (the source unit goes into Play/Pause).
8 Press the Stop button on both units to stop dubbing after completion.

Connection

Source: VCR or Movie   **Editing: Movie or VCR**   TV Set (Used for monitoring)

Synchro Edit Cord (optional)

Synchro Edit Jack

(This connection is for units with Synchro Edit Jacks.)

Synchro Edit/Remote Jack

VHF Connecting Cable (supplied)

Adaptor Connector

Video Out   Audio Out

Input Signal Selector Set to LINE   Video In   Audio In

Audio/Video Cable (supplied)
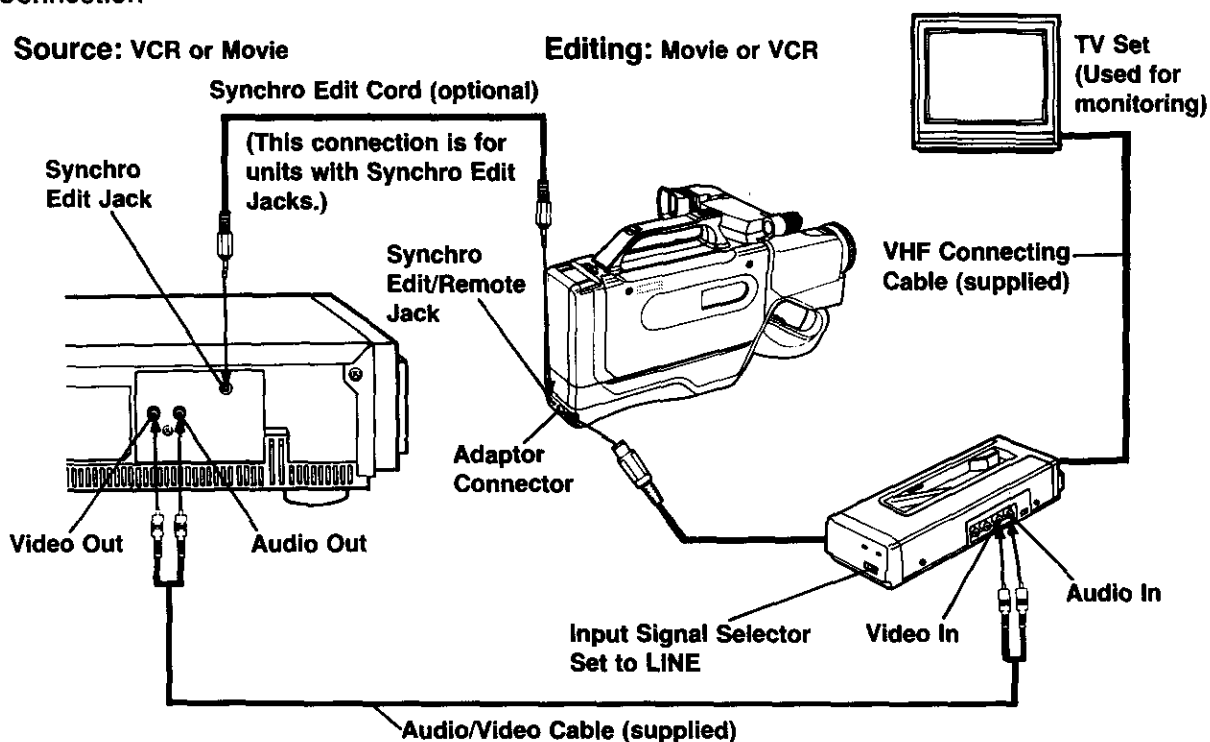
Re-Recording (continued)

If Either Unit Does Not Have A Synchro Edit Jack

- Set up and connect the units as illustrated (Be sure to connect the AC Adaptor to an AC Outlet).

Preparations:
- Turn ON both units.

- Set the editing VCR's Input Signal Selector to "LINE".
  (Or set the AC Adaptor Input Signal Selector on the Editing Movie to "LINE".)

- Set the VCR/Camera Selector switch on the Movie to the "VCR" position.

Operation

1 Insert a pre-recorded tape.

2 Insert a blank tape, or one you want to record over.

3 Press the Play button on the source unit
  AND
  The Record and Play buttons on the editing unit all at the same time.
  - To finish dubbing, press the Stop button on both units.

Connection

Source: Movie or VCR

Editing: VCR or Movie

Audio/Video Cable (supplied)

Video Out   Audio Out

Video In   Audio In

Adaptor Connector

TV Set (Used for monitoring)

VHF Connecting Cable (supplied)
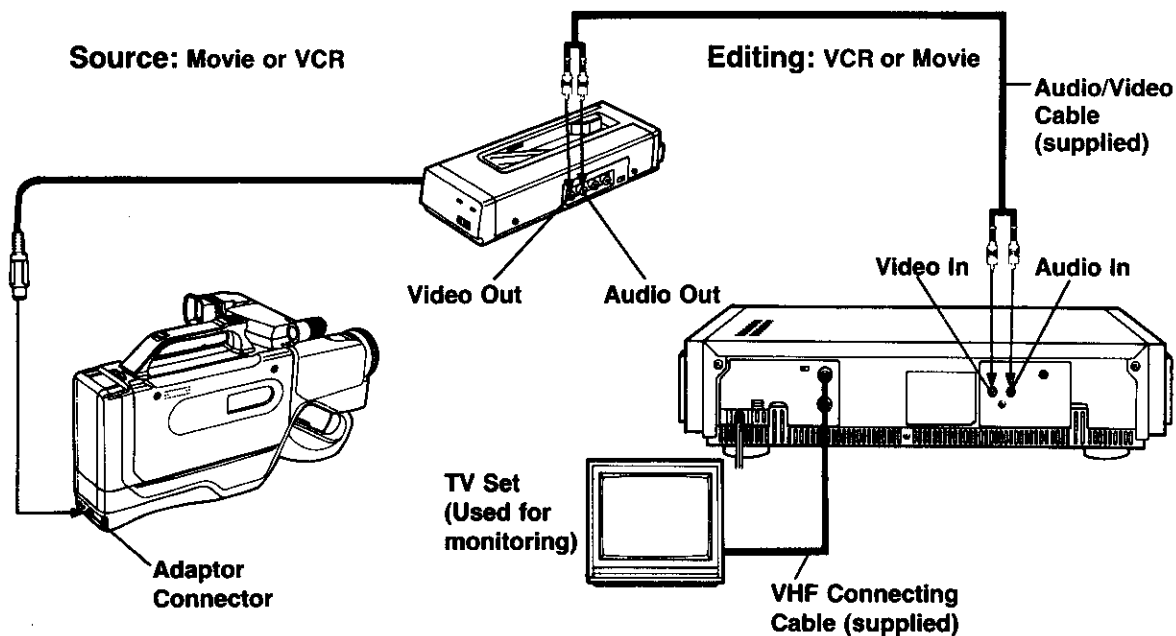
To Monitor the Re-Recording Process on Your TV

- Turn TV ON and select its VCR channel (either CH3 or CH4).

- Set the VCR/TV Selector on the editing VCR to "VCR".

CAUTION:

Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.

Notes on Operations

Battery Pack (P.11)
- Store the Battery Pack in a cool, dry, dark place.
- Do not drop it or subject it to strong jolts.
- Always charge the Battery Pack soon after full use. Discharging for a long time may make its life shorter and recharging impossible.
- Be careful not to put the Battery Pack near fire because this may cause a short-circuit.
- Batteries should never be disposed of in fire.
- Do not use any other chargers than specified.
- Do not use the Battery Pack for appliances other than specified.
- Do not use it below 32°F (0°C) or above 104°F (40°C).
- Do not use an insufficiently charged or worn out Battery Pack.

Car Battery Cord (P.11)
- Be sure to start the car engine before inserting the cigarette lighter plug of the Car Battery Cord into the cigarette lighter socket; otherwise, the cigarette lighter plug fuse may burn out when you start the engine.
- The car engine should be running while your Movie is in operation. Make sure your car is in an open, well ventilated area.
- Disconnect the cigarette lighter plug when your Movie is not being used.

Charging the Battery Pack (P.12)
- The useful operation time of the Battery will gradually decrease after repeated use and recharging. The Battery is no longer serviceable if the operation time is too short even after a sufficient charge.
- To preserve the life of your Battery, please be sure to remove the Battery Pack from the Movie for storage after every use, storing it fully recharged. When recharging, should the charging indicator on the AC Adaptor go out in a short time and the Battery cannot be fully charged, please leave the Battery on the AC Adaptor for approx. 24 hours even after the charging indicator goes off. Use this battery in the Movie, then repeat this procedure one more time. This procedure should restore the Battery to normal operation.

Special Effects Playback (P.17)
- During search playback, horizontal noise bars will appear and there will be no audio.
- To protect the tape and Video Heads, your Movie's operating modes will automatically revert as follows:

STILL ———→ STOP after 5 minutes.

STOP ———→ POWER OFF after 5 minutes when using a Battery Pack.

- When the tape reaches its end during playback, or fast forward, the tape will rewind automatically.

Tape Remaining (P.20)
- The lap time counter only functions in the REC mode.
- The remaining tape indicator "0:00" will continue flashing during the last 5 minutes as a final warning that the tape is about to end.
- The remaining tape time is being calculated when the indicator "-:--" flashes (up to 30 seconds) in the EVF.

High Speed Shutter (P.23)
- For proper color reproduction it is recommended that you use this feature outdoors. For indoor High Speed Shutter recording, the supplied COLOR ENHANCEMENT LIGHT, or additional halogen or tungsten light should be provided. Fluorescent light will degrade the picture quality.
- For effective operation, this feature requires ample light. More light is required for the fastest shutter speed.
- The Auto Focus system may not operate properly under insufficient light when you are using the High Speed Shutter.

To Record a TV Program (P.26)
- To pause recording, press the PAUSE/STILL Button. Press the PAUSE/STILL Button again to return to recording within 5 minutes. After 5 minutes, Pause mode will automatically go into Stop mode.
- When you place the VCR/CAMERA Selector Switch to the "VCR" position, a rolling white pattern may appear if the Tape Counter, Time Counter and Battery Display have not been cleared while in VCR mode with the AC Adaptor in "LINE" and the VIDEO IN Terminal disconnected.

Re-Recording (P.30)
- Source tapes recorded on other VCRs must be pre-recorded in SP mode for Movie playback.
- For technical reasons, dubbing a tape may reduce its quality.

CCD Warning
When your Movie is aimed at a scene which contains an excessively bright object such as the sun or other bright lighting, a vertical bar may appear in the picture. This is a characteristic of the CCD pick-up device and is normal when using your Movie. Try to avoid aiming the camera directly at extremely bright objects.

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

Notes on Operations (continued)

Rough Values of Brightness

Your Movie has been designed for normal scene illumination of 150 footcandles (1500 lux). However, the Movie may be used at F1.2, if illumination is more than 0.2 footcandles (2 lux). The table below shows the approximate values of brightness for reference.

MOVIE SETTINGS	NATURAL LIGHT CONDITIONS	KELVIN COLOR TEMPERATURE	ARTIFICIAL LIGHT SOURCE	COLOR TINT MIXTURE
(Amber Filter Range)	•Fair weather, blue sky	10,000	•Color television	Bluish
	•Slightly cloudy sky	8,000		
	•Cloudy or rainy sky	7,000		
		6,500	•Fluorescent lamp (Daylight)	
	•Sunlight in clear weather at midday	6,000	•Camera flash bulb	
-"OUTDOOR"		5,500		
	•Average sunlight in clear weather	5,000	•Blue lamp for photography	
"AUTO"	•Sunlight 2 hours after sunrise and before sunset	4,500	•Fluorescent lamp (White)	Whitish
		4,000	•Normal flash bulb	
		3,500	•Fluorescent lamp (Off-white) •Tungsten lamp for photography	
-"INDOOR"	•Sunlight 40 min. after sunrise and before sunset	3,200	•Halogen lamp •Iodine lamp	
(Blue Filter Range)	•Sunlight 30 min. after sunrise and before sunset	2,800	•Tungsten lamp •Acetylene lamp •Kerosene lamp	Yellowish
	•Sunlight 20 min. after sunrise and before sunset			
		2,000	•Candlelight	Reddish

Special Effects Photography

You can fit the Movie Lens Hood with any compensator, or "special effects"photographic lens or filter, that is 49 mm in diameter.

Wide Angle Lens (Supplied)
Expands the Movie's field of view to permit wide panoramas without panning.

Telephoto Lens (Supplied)
Increases the Movie's magnification throughout its zoom range.

Filter Kit
Helps you create professional special effects with star, clear, neutral density and polarizing filters.

Refer to the Accessory section on the back cover for an illustration of the accessories below.

To Remove the Lens Hood:
Facing the Lens, turn the Lens Hood counterclockwise to its limit. Cover the Lens Hood with the palm of your hand, and lightly press and squeeze the Lens Hood Ring, supplying equal pressure around the ring. Turn the Ring counterclockwise a little more, to loosen and remove it.

This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications set forth in Subpart J of Part 15 of the FCC Rules. If this equipment does cause interference to radio or television reception which can be determined by turning the equipment on and off, use the equipment in another location and/or utilize an electrical outlet different from that used by the receiver.

Before Requesting Service

If you have a problem with your Movie, it may be a minor one that you can correct yourself. Use the chart below in case your problem is listed, and then follow the recommendations.

Troubles	Corrections
No power ...	●Make sure the Power Source is connected. (P.11) ●Make sure the POWER Switch is ON. (P.16) ●Check the Dew Indicator. (P.15) ●Make sure the battery is fully charged. (P.12) ●Make sure all necessary cables are connected correctly and firmly. (P.18) ●Make sure the Lens Cap is OFF. (P.6)
Video cassette can't be inserted ...	●Make sure the Power Source is connected. (P.11) ●Insert the cassette with the window side facing out and the record tab facing up. (P.13)
Video cassette can't be removed ...	●Make sure the Power Source is connected. (P.11)
No operation starts when operation buttons are pressed ...	●Check the Dew Indicator. (P.15)
Recording does not operate ...	●Make sure the record tab is still intact. (P.13) ●Check the Battery Indicator. (P.15) ●Check the Dew Indicator. (P.15)
Auto Focus does not operate ...	●Make sure the Focus Switch is set to "AUTO". (P.22) ●Make sure the unit is ON, with the VCR/CAMERA Selector Switch set to "CAMERA". (P.16)
The sound from microphone can't be monitored ...	●Make sure the unit is set to REC or Record/Pause mode.
Camera picture is too dark ...	●Make sure the High Speed Shutter Switch is OFF. (P.23)
No playback picture, or the playback picture is noisy or contains streaks ...	●Press the Tracking Control Button. (P.17)
During playback, the picture indicates motion or blurred action ...	●Portions of the still picture where the normal speed motion was particularly rapid may produce this effect. This is normal.
If the top of your playback picture waves back and forth excessively ...	●Because the playback signal is not as stable as an off the air TV signal, the top of your TV screen may be bent or unstable when the tape is played back. This symptom is more noticeable when a pre-recorded tape, recorded on another VCR, is played back. To solve this problem, locate the horizontal hold control on your TV. Turn it slowly to correct the wavy picture. If your TV does not have the horizontal hold control or adjusting the control does not help, some modifications may have to be made to the TV set. Technically this is called "Horizontal AFC time constant change." If such a problem is noticed, please contact your local TV service center. (Some nominal service charges are required.)

Cleaning Care for Video Heads

Clogged Video Head

(a) Video Head Cleaning: Your Movie will not normally require head cleaning; however, it is possible that the heads may become clogged when playing an old or damaged tape. If the image on your screen resembles the photograph on the left, while playing back a tape, the heads may require cleaning.

Refer servicing to qualified service personnel.

(b) Cleaning the Heads: It is recommended that head cleaning be performed by a qualified service technician. Please contact your nearest Panasonic Service Center. An alternate solution is to obtain a head cleaning cassette. There are many types of cleaning cassettes, so be sure to follow the cleaning instructions carefully. Excessive use of the cleaning cassette could shorten head life. Use this cassette only when a head clogging symptom occurs.

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System Carrying Case

For organizing, carrying and storing the Movie system and optional accessories.

System Carrying Case

To Open the Case

Tab
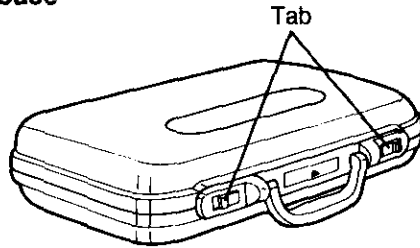
Be sure that the triangle in the center of the case is facing up; press raised tabs to open.
Raise lid.

Accessory Storage Suggestion

Color Enhancement Light

Battery Pack

Movie

Audio/Video Output Adaptor,
Shoulder Strap for Movie,
Car Battery Cord etc...

AC Adaptor

Tab
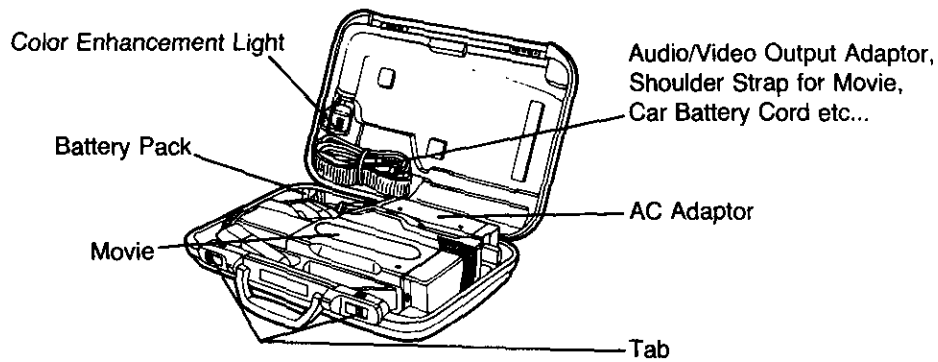
Handling Precautions

• This case will not withstand strong impact, nor protect your Movie from strong vibrations or shocks.

• This case has been designed for comfortable carriage and easy access; sitting, stepping or placing heavy objects on the case may cause permanent damage to its structure or contents.

Specifications

Power Source:	VHS Movie: DC 12V
	AC Adaptor: 110/120/220/240V AC, 50/60 Hz
Power Consumption:	VHS Movie: 12V DC 11W (Max. 21W)
	AC Adaptor: 42 W
Video Signal:	EIA Standard (525 lines, 60 fields) NTSC color signal
Video Recording System:	4 rotary heads, helical scanning system
Audio Track:	1 track
Pick-Up System:	Sequential color difference field reverse system
Pick-Up Device:	One integral color filter, Charge Coupled Device (CCD)
Lens:	8:1 zoom lens, f1.2 with auto iris control
	Focal length: 8.5mm - 68mm
	Power zoom and macro functions
	Lens filter diameter: 49mm
Viewfinder:	2/3 inch Electronic Viewfinder
Minimum Illumination Required:	2 Lux (F1.2) 0.2 footcandles
External Microphone Input Level:	−70dB, 4.7K ohms unbalanced, M3 connector
Operating Temperature:	32°F~104°F (0°C~40°C)
Operating Humidity:	10%~75%
Weight:	VHS Movie: 4.4 lbs.
	AC Adaptor: 1.5 lbs.
Dimensions:	VHS Movie: 3" (W) × 8-3/16" (H) × 15-1/2" (D)
	76 (W) × 208 (H) × 394 (D) mm
	AC Adaptor: 3" (W) × 1-11/16" (H) × 8-5/16" (D)
	76 (W) × 43 (H) × 210 (D) mm
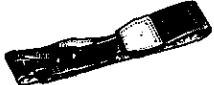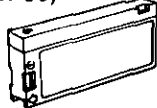
Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

Index

Accessories

Accessories packed with your Movie

1 pc. AC Adaptor (PV-A23)	1 pc. Shoulder Strap (VYCS0786)
1 pc. Audio/Video Cable (VJPS0216 or VJPS0337)	1 pc. 300ohm-75ohm Transformer (VSQS0496)
1 pc. System Carrying Case (VYCS0761)	1 pc. Audio/Video Output Adaptor (VSQS0507)
1 pc. Battery Pack (PV-BP50)	Wide Angle Lens (PV-LW49)
1 pc. Color Enhancement Light (VUAW0415)	Telephoto Lens (PV-LT49)
1 pc. VHF Connecting Cable (VSQS0217)	

Optional Accessories

1/2" Video Cassette Tape (NV-T160 NV-T120 NV-T60)	Car Battery Cord (PV-C20M)
Tuner Adaptor (PV-TA42)	Video Corrector (PV-CC50)
AC Adaptor (PV-A23)	Wide Angle Lens (PV-LW49)
Synchro Edit Cord (PV-EC1)	Telephoto Lens (PV-LT49)
Battery Pack (PV-BP50)	Filter Kit (PV-F49)
Super Directional Microphone (PV-MK40)	System Carrying Case (PV-H60M)

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