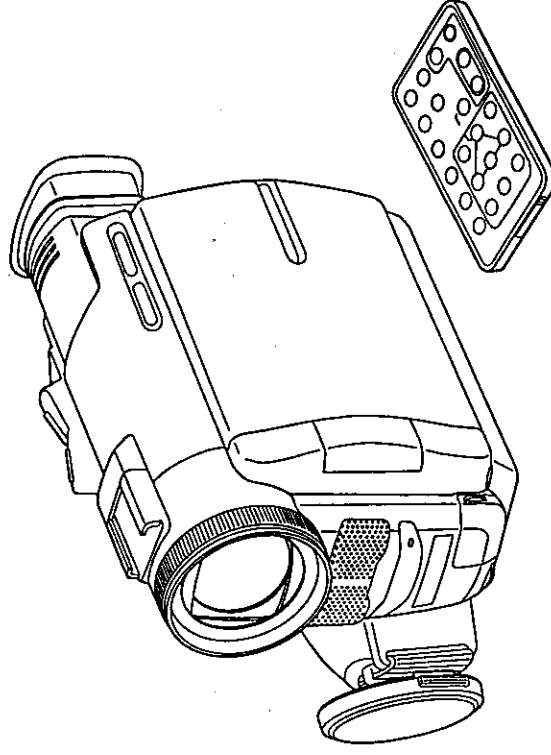


Panasonic®

— TENTATIVE —
Digital Palmcorder®

Camcorder
PalmSight™

Operating Instructions



Mini **DV**
DIGITAL 6
PV-DV910

EXHIBIT # 5
FCC ID: AGT5240033
MODEL NO. PV-DV910B
OUR REF: MKS98-FWC

Panasonic Consumer Electronics
Company, Division of Matsushita
Electric Corporation of America
3500 Regency Way Secaucus,
New Jersey 07094

Panasonic Sales Company,
Division of Matsushita Electric of
Puerto Rico, Inc. ("PSC")
Ave. 65 de Infantería, Km. 9.5
San Gabriel Industrial Park
Carolina, Puerto Rico 00985

Before attempting to connect, operate or adjust this product, please read these instructions thoroughly.
Spanish Quick Use Guide is included.

Guía para rápida consulta en español está incluida.

VQTW0734 (A)

Printed in Japan
VQTW0734 (A) 1998

Spanish Quick Use Guide/Guía Para Uso Rápido

Conectar la videocámara a una fuente de alimentación (batería, adaptador de CA o para batería de coche).
 Introducir una cinta de video en el compartimiento de cinta.

PRODUCCION USANDO EL VISOR

- 1 Fije el botón POWER hacia ON.
- 2 Oprima CAMERA/VCR. Se enciende la luz indicador de VCR.
- 3 Deslice todo el visor.
- 4 Oprima REW para rebobinar la cinta.
- 5 Oprima PLAY para iniciar la reproducción.
- 6 Oprima STOP para parar la reproducción.

PRODUCCION CON EFECTOS ESPECIALES



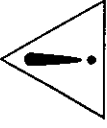
1 LOCALIZAR RAPIDAMENTE UNA ESCENA ESPECIFICA
 Presionar el botón de localización (SEARCH).
 2 CONGELAR UNA IMAGEN
 Presionar el botón de pausa/imagen fija (PAUSE/STILL).
 Presionar nuevamente el botón cuando se desea continuar reproduciendo.

Things You should Know

Safety Precautions

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

Your Mini DV Palmcorder is designed to record and play back in Standard Play (SP) mode only. This Palmcorder is equipped with the HQ System to provide excellent video pictures. It is recommended that only cassette tapes that have been tested and inspected for use in VCR machines with the Mini DV mark 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.

The above markings are located on the appliance bottom cover.

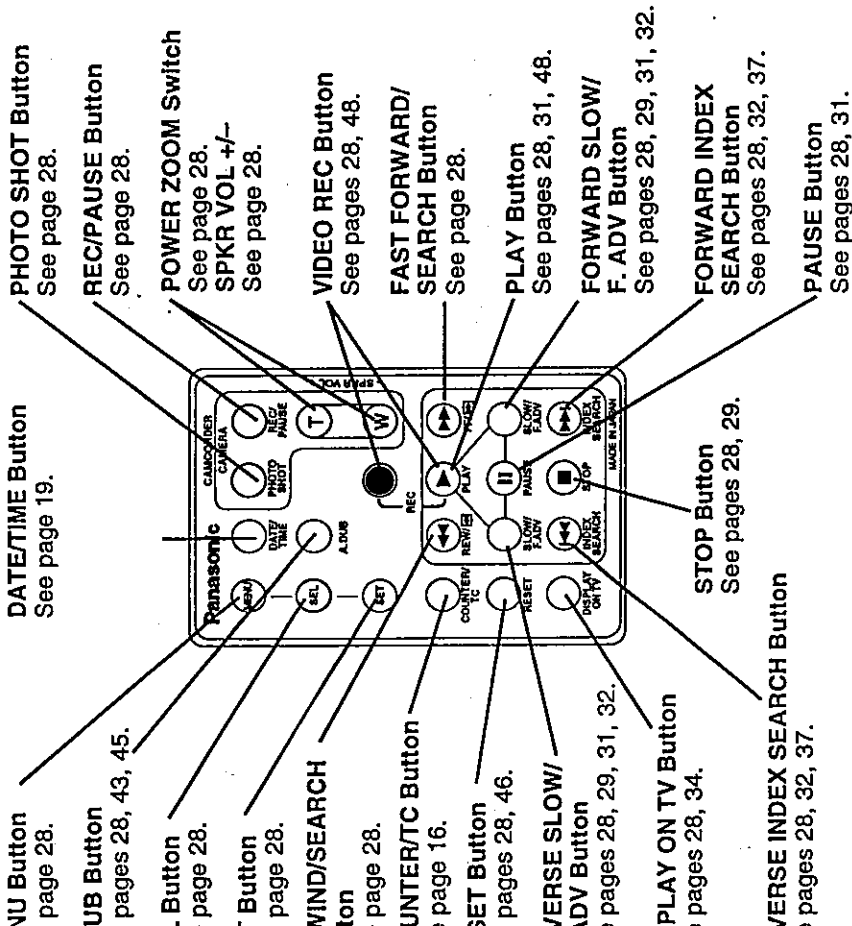
FCC Warning: To assure continued FCC compliance, use only the shielded interface cable with ferrite cores provided with Adaptec model AHA-8940 when connecting digital video camera and computer. Also, any unauthorized changes or modifications to this equipment would void the user's authority to operate.

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.

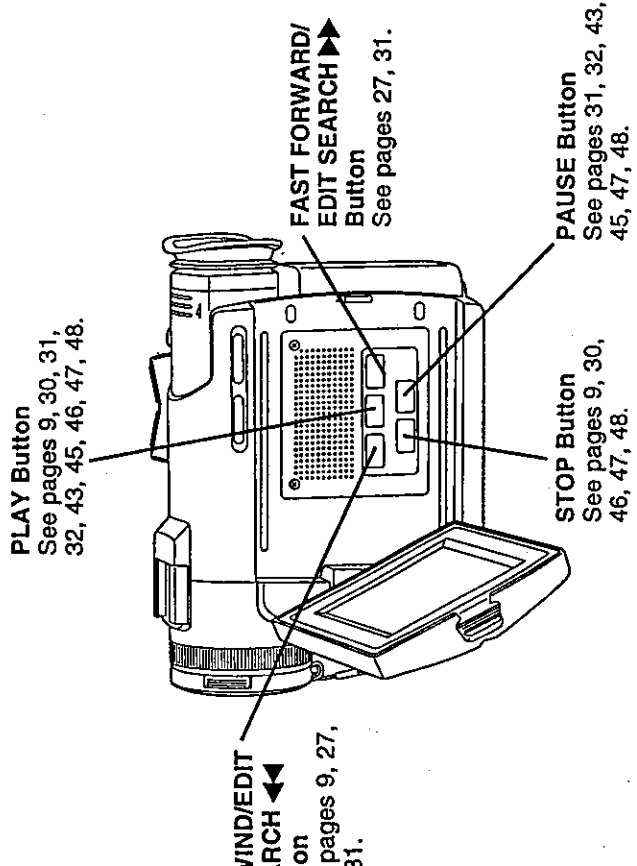
Note: This equipment has been tested and found to comply with Part 15 and part 18 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when operated in a residential environment.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, use the equipment in another location and/or utilize an electrical outlet different from that used by the receiver.

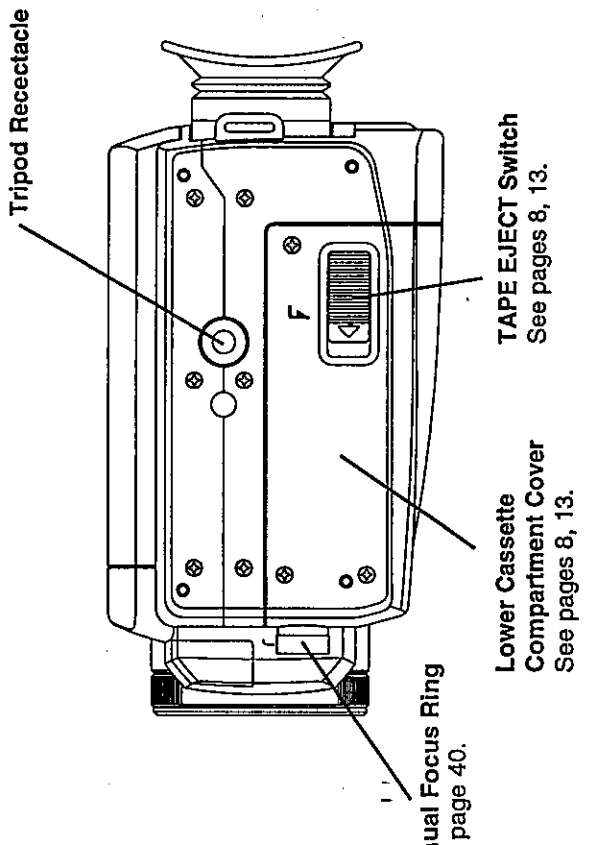
If necessary, consult the dealer or an experienced radio/TV technician for help. You may find the booklet, 'Something About Interference' available from FCC local regional offices helpful.



View

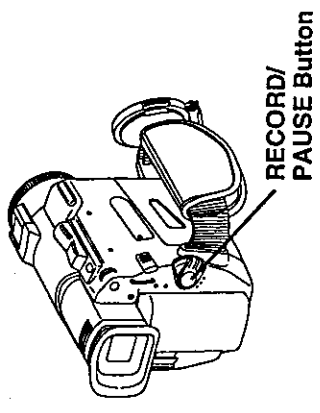


Back View



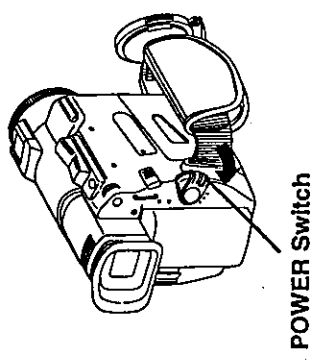
Getting Started

10 Press RECORD/PAUSE Button to start recording.
Press RECORD/PAUSE Button again to pause recording.

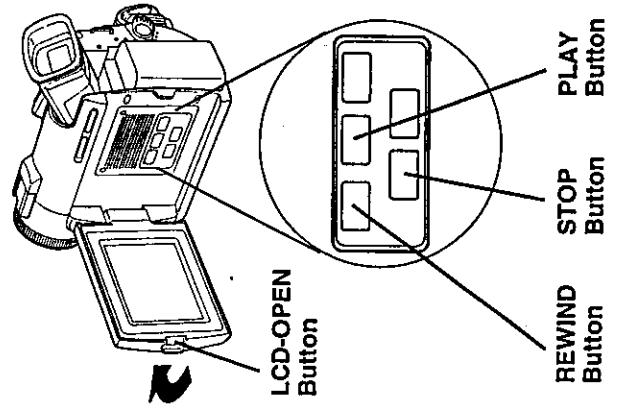


To Watch Playback in the LCD (Liquid Crystal Display)

1 Set the POWER switch to VCR.



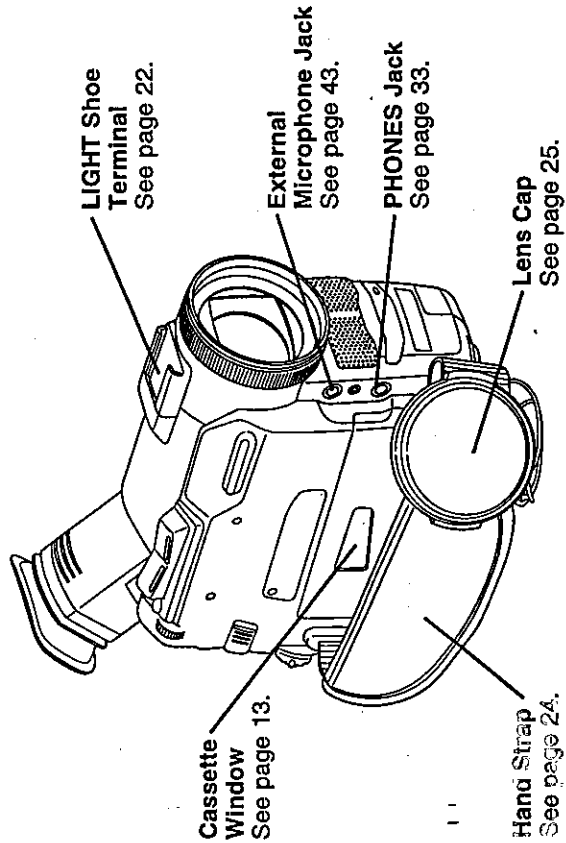
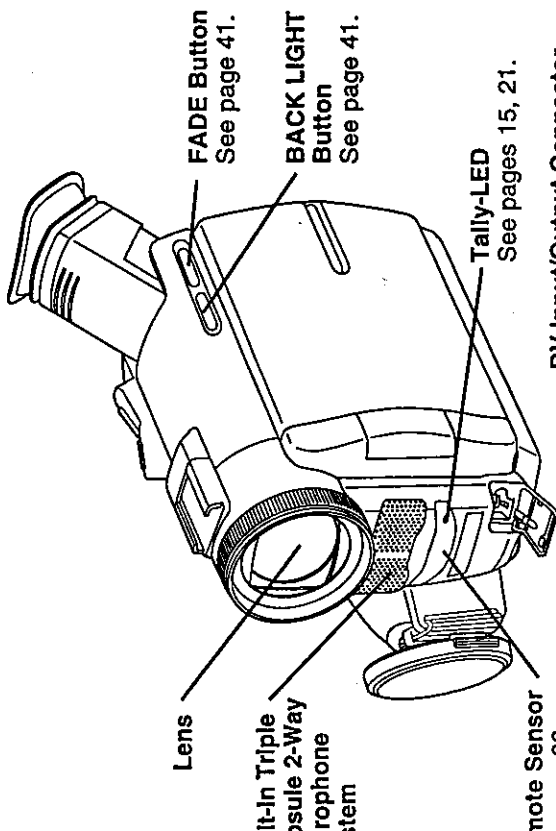
2 Press the LCD-OPEN Button to unlock the LCD monitor and swing open.



3 Press REW to rewind the tape.

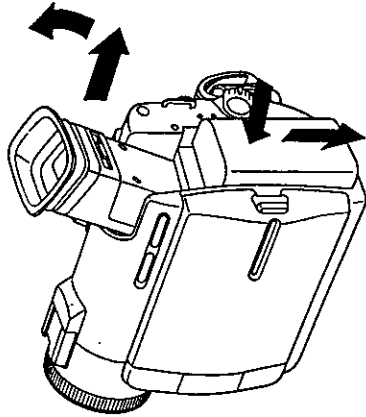
4 Press PLAY to start playback.

5 Press STOP to stop playback.

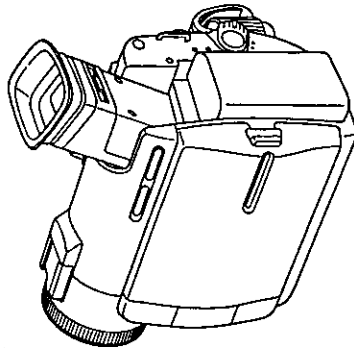


Insert/Remove the Battery Pack

- 1** Slide the Viewfinder backward to its fully extended position and then tilt it upward.
- 2** Insert the Battery and slide it down until it locks with a click.



To remove the Battery:
Slide the Battery upward while pressing the PUSH button.



Before Requesting Service

If you have a problem with your Palmcorder, it may be something you can correct yourself. The list below for symptoms and corrections.

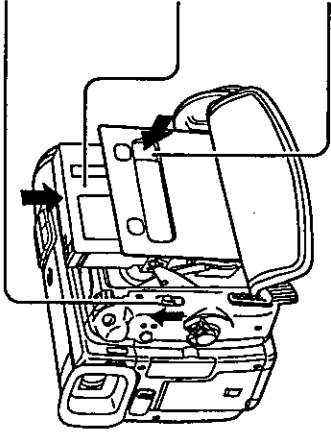
Problem	Correction
Image is blurry in the EVF or LCD Monitor ...	<ul style="list-style-type: none"> • Make sure the Power Source is connected. (pp. 8, 12) • Make sure the POWER switch is set to ON. (pp. 25, 30) • Check the Dew Indicator. (p. 21) • Make sure the battery is fully charged. (p. 10) • Make sure all necessary cables are connected correctly and firmly. (p. 12) • Make sure the Lens Cap is removed. (p. 25)
Cassette can't be inserted ...	<ul style="list-style-type: none"> • Make sure the Power Source is connected. (pp. 8, 12) • Insert the cassette with the window side facing out. (p. 13)
Cassette can't be removed ...	<ul style="list-style-type: none"> • Make sure the Power Source is connected. (pp. 8, 12) • Check the Dew Indicator. (p. 21)
Recording starts when operation buttons are pressed ...	<ul style="list-style-type: none"> • Make sure the record tab is closed. (p. 13) • Check the Battery Indicator. (p. 18) • Check the Dew Indicator. (p. 21)
Recording cannot be done ...	<ul style="list-style-type: none"> • Make sure the FOCUS is set to AUTO. (p. 40) • Make sure the unit is ON with CAMERA mode. (p. 25)
Focus does not operate ...	<ul style="list-style-type: none"> • Make sure the unit is set to REC or Record/Pause mode.
Sound from microphone can't be monitored	<ul style="list-style-type: none"> • Make sure the Audio on the VCR MENU is set to ST1. (p. 17)

Cassette Information

Cassette Insertion

Connect the Palmcorder to a power source.

- Slide the TAPE EJECT switch to open the Cassette Compartment.
 - The Cassette Holder slides out.
- Insert a cassette (supplied) with its window side facing up.
- Press on the PUSH CLOSE mark to close the upper Cassette Compartment Cover.
 - The Cassette Holder with the cassette slides back inside.
- Close the lower Cassette Compartment Cover.



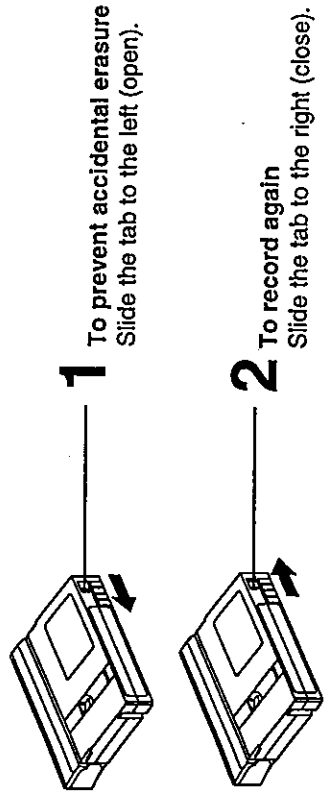
Record Speed/Playback Time

Use only those tapes having the **IX** logo indicating the 6.35mm digital standard.

Cassette type	Record Speed/Playback time	
	SP	LP
AY-DVM30EA	30 minutes	45 minutes
AY-DVM60EA	60 minutes	90 minutes
AY-DVM80EA	80 minutes	120 minutes

Erase Protection

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



- Source:** Digital Video Camera: 7.2V DC (Battery)
8.4V DC (AC Adaptor)
AC Adaptor: 110/120/220/240V AC, 50/60 Hz
Battery: Lithium-Ion Type DC 7.2V
- Consumption:** Digital Video Camera: 7.2V DC (Battery) 7.5W
8.4V DC (AC Adaptor) 7.5W
AC Adaptor: 19W
2W (when not in use.)
- Signal:** EIA Standard (525 lines, 60 fields) NTSC color signal
- Recording System:** 2 rotary heads, helical scanning system
12bit (32kHz) 4 tracks
16bit (48kHz) 2 tracks
- System and Device:** One integral color filter Charge Coupled Device (CCD) (RGB color filter)
18:1 zoom lens, F1:1.6 with auto iris control
Focal length: 3.9mm - 70.2mm
Power zoom function
Lens filter diameter: 43mm
0.45 inch (11.4mm) Liquid Crystal Color Electronic Viewfinder
3 inch (76.2mm) Liquid Crystal Display
7 lx (F1:1.4) 0.7 footcandles
32°F-104°F (0°C-40°C)
10%-75%
- Weight:** Digital Video Camera: 1.46 lbs.
0.66 kg
AC Adaptor: 0.39 lbs.
0.18 kg
- Dimensions:** Digital Video Camera: 3-1/16 (W) x 3-3/4 (H) x 5-3/16 (D) inch
73.5 (W) x 107.5 (H) x 145 (D) mm
AC Adaptor: 3-7/8 (W) x 1-5/8 (H) x 2-7/8 (D) inch
97 (W) x 43 (H) x 73 (D) mm

and dimensions shown are approximate. Specifications are subject to change without notice.

The Palmcorder features two menu displays: one for camera mode (recording) and the other for VCR mode (Playback).

- While the Menu screen is displayed, you cannot record or play the tape.
- While recording, the Menu screen will not be displayed.
- While playback, the Menu screen can be displayed.

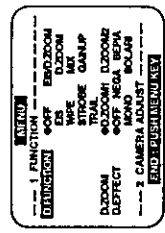
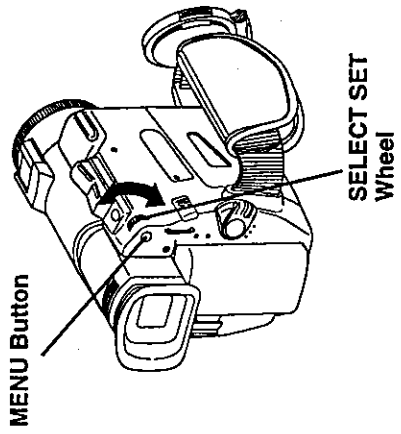
Displaying the MENU Before you begin...

- Connect the Palmcorder to a power source.
- Set the POWER switch to CAMERA.

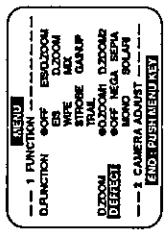
- 1 Press the MENU button to display the CAMERA menu.
- 2 Set the POWER switch to VCR to change to the VCR menu if desired.

Setting the MENU Items

- 1 Rotate the SELECT SET WHEEL to select a menu item.
 - Character color will change from white to green indicating your selection.



- 2 Press down on the SELECT SET WHEEL to set your selection.
 - The "●" mark will indicate your selection.



- 3 Press MENU to exit from the display.

Note:

- The EVF or LCD Monitor can only display seven MENU items at a time. Rotate the SELECT SET WHEEL to display additional lines.

Using the Digital Photo Printer

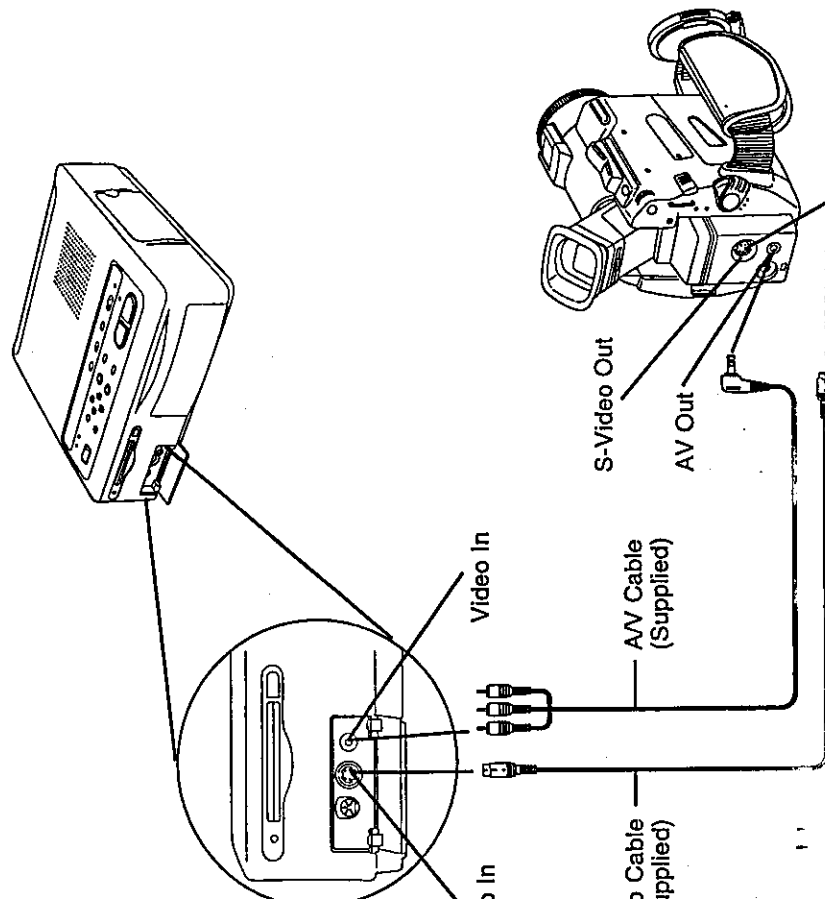
can be selected for print out on a digital photo printer (sold separately).

When you begin...

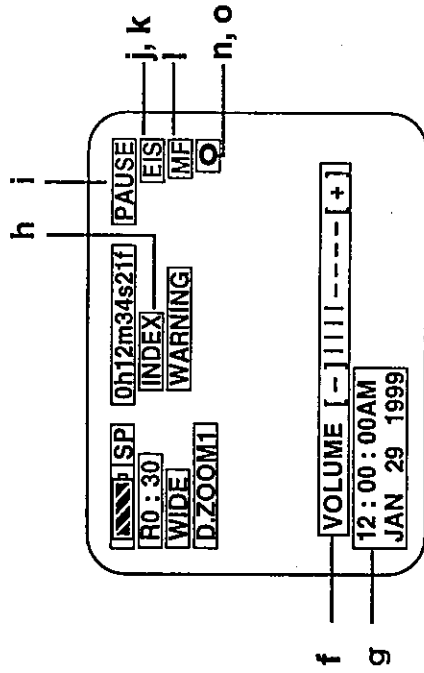
Connect both the Palmcorder and Digital Photo Printer to their power sources. Connect the Palmcorder and Digital Photo Printer using an AV cable (supplied) or S-Video cable (not supplied).

When different video sources are connected simultaneously to the S-VIDEO IN Socket and DEO IN Socket, the video for S-VIDEO IN Socket takes precedence.

When sound from the Palmcorder is connected directly to the television AUDIO IN Socket, refer to the printer's operating instructions for detail on printing.



Getting Started

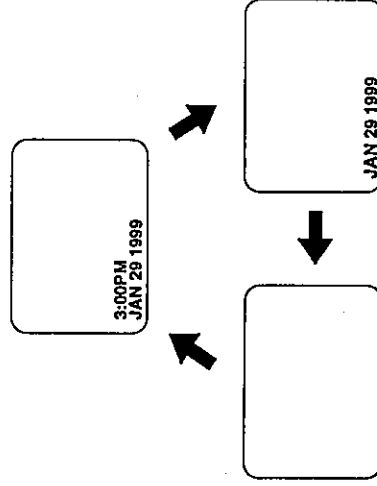


f Volume Display (see page 30)

The volume bar appears when the volume of the built-in speaker is adjusted.

g Date and Time Indication (see page 14)

As shown below, the date and time indication changes each time the DATE/TIME is selected from the Palmcorder's MENU (see page 16) or the DATE/TIME button is pressed on the remote.



h INDEX (see page 32)

This display appears when an index signal is being recorded.

i Tape Mode Indications

REC Recording.

PAUSE Paused during recording.

PLAY Playback.

R PLAY Repeat Playback.

FF Fast forward.

REW Rewind.

SEARCH Book Mark Search.

● Mirror feature recording.

|| Paused during Mirror feature recording.

j Digital EIS Indications (see page 35)

k Zoom Magnification Level (see page 36)

l Manual Focus Indication (see page 40)

m PROGRAM-AE indication (see page 38)

n Backlight indication (see page 41)

Copying from Digital Equipment (dubbing)

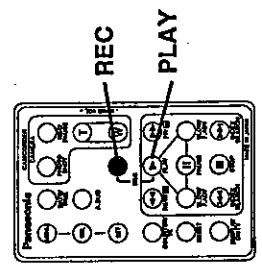
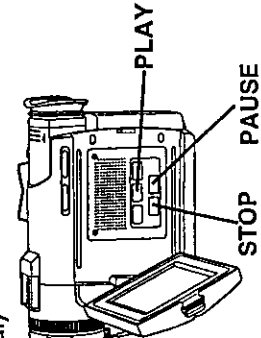
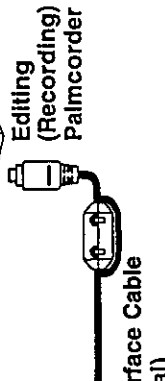
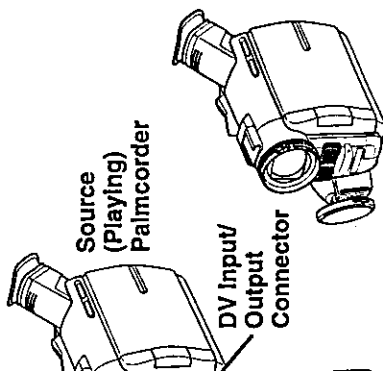
...ity digital-to-digital copying can be accomplished if both Palmcoders incorporate DV input IEEE1394 interface (DV cable is not supplied).

you begin...

...it both Palmcoders to their power

...at the two digital Palmcoders using supplied DV interface cable.

...th Palmcoders ON.



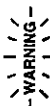
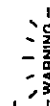

- 1** Insert a pre-recorded tape into the source (playing) Palmcorder, turn on, and set the **POWER Switch** to **VCR**.
- 2** Insert a blank tape with the record tab in place into the target (recorder) Palmcorder turn on, and set the **POWER Switch** to **VCR**.
- 3** Press **PLAY** on the source Palmcorder. When the tape reaches the point you want to start dubbing, press **PAUSE**.
- 4** On the remote control, hold down the **REC** button and press **PLAY**. Press **PAUSE** to pause the tape at the starting point of the dub.
- 5** Simultaneously, press the **PAUSE** buttons on both units to begin the copying.
- 6** Simultaneously, press the **STOP** buttons on both units to end the copying.

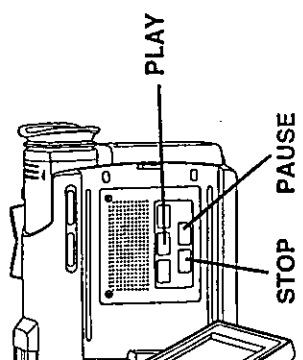
Notes:

- When two Palmcoders are used for dubbing, it is recommended that the remote control **VCR1** or **VCR2** setting be used to avoid mis-operation.
- When two Palmcoders are connected using the supplied DV interface cable, a Video Editing Controller cannot be used.

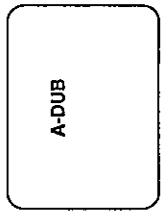
CAUTION: Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.

Getting Started

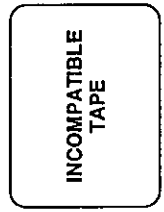
CANNOT REC COPY GUARD	— When an AUDIO DUB is attempted on a pre-recorded LP tape.
CHECK DV-INPUT	— When the DV connection is not securely connected. Check the connections.
 --WARNING-- DEW DETECTED	— If excessive moisture condenses in the unit, "WARNING" will flash, "DEW DETECTED" will appear, and the Palmcorder will automatically turn OFF in 15 seconds. In this case, wait until the indicator no longer flashes when your Palmcorder is turned on again.
 --WARNING-- LOW BATTERY	— When a battery recharge is necessary, "WARNING" will flash, "LOW BATTERY" will appear, and the Palmcorder will automatically turn OFF in 15 seconds. (see page 18).
CLOCK BATTERY	— When the built-in lithium clock battery is discharged. To re-charge the lithium clock battery, connect the AC Adaptor to the Palmcorder and turn ON. Recharging takes approx. 4 hours. Reset the clock after charging.
CANNOT REC COPY GUARD	— When you attempt to copy a protected copy-guarded tape.
	— When the LCD monitor is rotated 180° so that it faces the same direction as the lens, the "!" mark indicates that a warning message exists. To view the warning, return the LCD monitor to the original position.



- 5 Press **PLAY** on the playing Palmcorder.
- 6 Press **PAUSE** to start Audio Dubbing.



Only NTSC (National Television Standards Committee) recorded tapes can be audio dubbed. The following screen appears if the tape was not recorded in NTSC format.

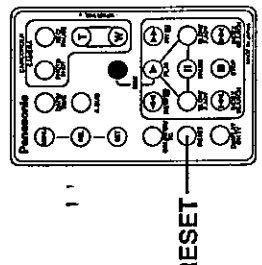


- 7 Press **STOP** to stop Audio Dubbing.

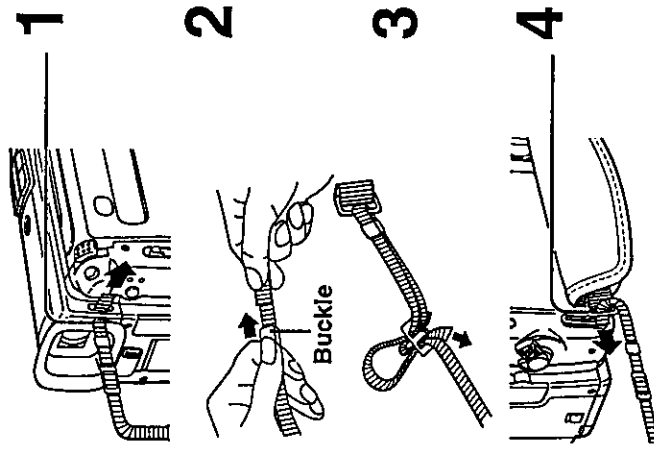
recorded in LP mode, you can not use the A-DUB feature. Palmcorders are used for dubbing, and the editing speed on both units must be the same. Palmcorders are used for dubbing, and the editing speed on both units must be the same. Palmcorders are used for dubbing, and the editing speed on both units must be the same.

Memory-Stop Editing

When set an automatic Edit stopping

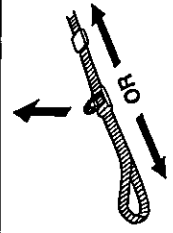


Before step 4, locate the point at which you want the dubbing to stop. Press **MENU** and set **COUNTER** to **MEMORY** (page 17). Then, press **RESET** on the remote control to reset the Counter Memory to **M 0:00:00**. Now, rewind to the editing start point, and continue with steps 3-6. The tape will now stop automatically at "M 0:00:00".



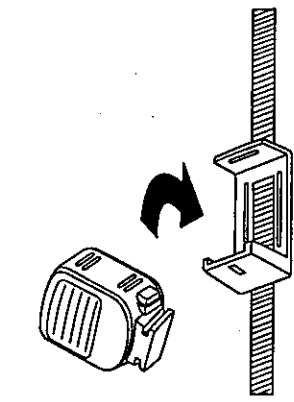
- 1 Thread one of the strap ends through the strap attachment slot on the Palmcorder.
 - You may need to jiggle the strap a little to get it to go through.
- 2 Fold the strap end over and slide the clasp over and up to the Palmcorder attachment slot.
- 3 Pull a large loop of the strap loose from the Buckle and thread the strap end through the Buckle as shown.
 - Make sure the strap is not twisted.
- 4 Attach the other strap end to the strap attachment ring located on the hand strap following steps 1-3.

Adjust the Length

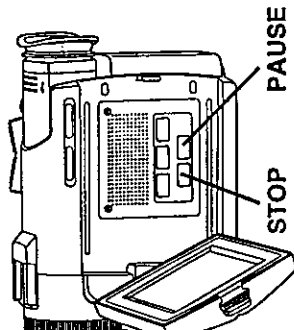


- 1 Loosen the strap from the Buckle and create a loop.
- 2 Pull the strap firmly through the Buckle to shorten or lengthen the strap.

Attach the Remote Control Holder



- 1 Attach the Remote Holder to shoulder strap as shown.
- 2 Attach the Remote Control when not in use.

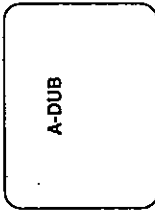


to the desired audio sound, set the AUDIO setting of the VCR mode MENU (page 17) as follows:

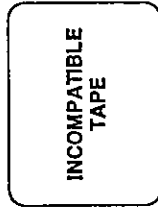
- (The following selections are available 12bit AUDIO dubbed recording only)
- Set this position to listen to the original sound.
- Set this position to listen to the audio dubbed sound.
- Set this position to listen to both the original sound and the audio dubbed sound.

Audio dubbed sound completely erases original 16bit recorded sound. To select 12bit AUDIO recording and the sound with the AUDIO-MIX feature, the sound will be stereo regardless of the AUDIO-OUT setting. When recorded in LP mode, you can not use the A-DUB feature.

5 Press PAUSE to start Audio Dubbing. Connect Palmcorder to TV in order to monitor the sound. (see page 33)



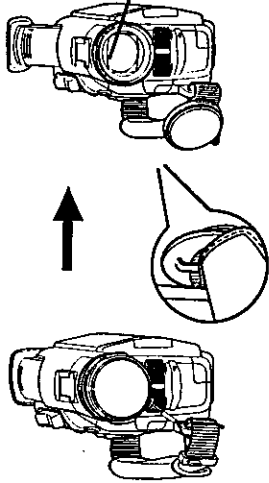
Only NTSC (National Television Standards Committee) recorded tapes can be audio dubbed. The following screen appears if the tape was not recorded in NTSC format.



6 Press STOP to stop Audio Dubbing.

Simple Recording

Remove the lens cap and clip it to the hook.

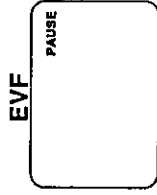
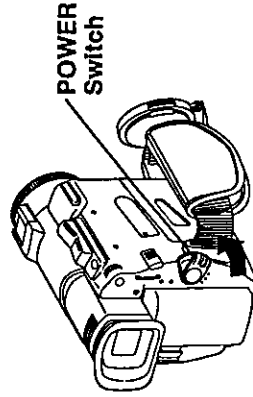


Tally Lamp
Flashes during Remote Control operation (see page 28).

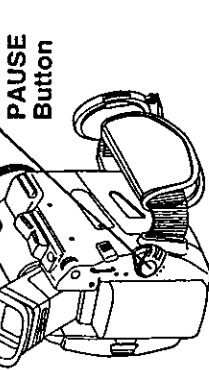
Before you begin...

- Connect the Palmcorder to a power source.
- Insert a cassette with record tab closed (see page 11).

1 Set POWER switch to CAMERA.
• The CAMERA lamp lights red.



2 With the Viewfinder Eye Cup up to your eye, adjust the Vision Adjustment Control to your eyesight.

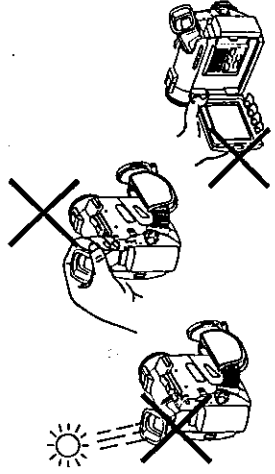


3 Press RECORD/PAUSE Button to start recording.
The Tally Lamp will be on. To turn the Tally Lamp off, see TALLY-LED on page 16. Press RECORD/PAUSE Button again to pause recording.

- To reduce microphone wind noise, set the WIND-CUT to ON (see WIND-CUT on page 16).

WARNING:

- Do not leave the Palmcorder with the EVF aimed directly at the sun as this may cause damage to the internal parts of the EVF.
- Do not lift or carry the Palmcorder by the EVF or by the LCD Monitor.



- When Palmcorder is aimed at excessively bright objects, or bright lights, a vertical bar may appear in the picture. This is a normal characteristic of the CCD pick-up device. Try to avoid this whenever possible.

To conserve power

After 5 minutes, the Record/Pause mode will automatically change to Standby mode. To resume recording, set POWER to OFF and then ON again.

Special Features

High Speed Shutter

Record high speed motion (e.g. a tennis stroke) for improved STILL or SLOW MOTION playback, when watching the tape on this Camcorder or a VHS 3 or 4 head VCR.

Before you begin...

- Connect the Camcorder to a power source.
- Set the POWER switch to CAMERA.
- Insert a cassette with record tab (see page 12).

Auto Shutter

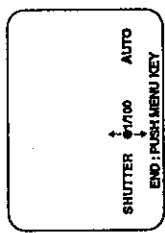
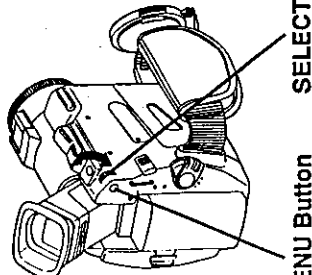
AUTO mode (no indication in the EVF), the Camcorder will automatically adjust the shutter speed (1/60).

AUTO mode is automatically selected whenever the POWER switch is set to CAMERA.

Manual Selection

High Speed Shutter indicator flashes when the light level is inadequate. Light should be provided to achieve better picture quality and color.

- 1 Press MENU to display the camera mode menu in the EVF or the LCD monitor.
- 2 Rotate the SELECT SET WHEEL to select SHUTTER, and then press down on the SELECT SET WHEEL to SET.
- 3 Rotate the SELECT SET WHEEL to obtain one of the following shutter speed.



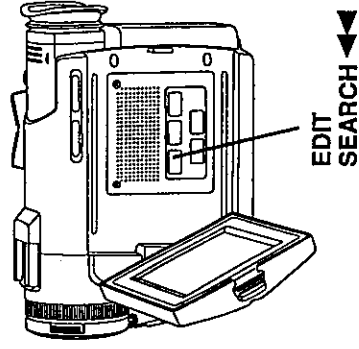
1/60	←	1/8000
↓		↑
1/100		1/4000
↓		↑
1/120		1/3000
↓		↑
1/180		1/2000
↓		↑
1/250		1/1500
↓		↑
1/350		1/1000
↓		↑
1/500	→	1/750

For proper color reproduction, it is recommended that you use this feature outdoors. For High Speed Shutter recording, additional tungsten light should be provided. Fluorescent light will degrade the picture quality. This feature requires ample light. More light is required for the fastest shutter speeds. Auto Focus system may not operate properly in insufficient light when using the High Speed Shutter.

Camera Recording

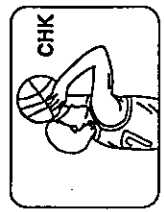
Recording Check

To play back the final few seconds of the last recorded scene in the Recording Pause Mode.



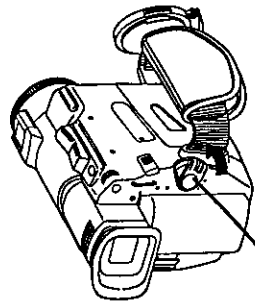
Press the EDIT SEARCH Button briefly in the recording Pause Mode. The [CHK] indication appears. After checking, the Movie Camera returns to the Recording Pause Mode.

- For Recording Check, the Movie Camera must be in the same mode (SP or LP) as used for recording, otherwise the playback picture is distorted.

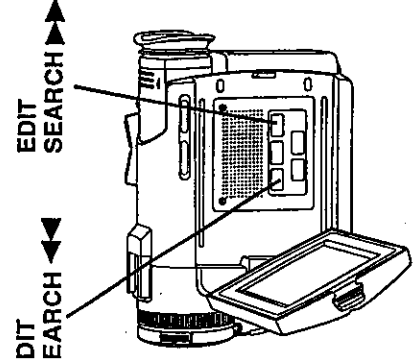


Edit Search

You can visually search for scenes during CAMERA mode to maintain proper continuity when taping.



RECORD/PAUSE Button



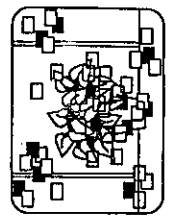
- 1 Set POWER switch to CAMERA.
- 2 In RECORD/PAUSE mode, hold down EDIT SEARCH to perform a forward visual search and EDIT SEARCH to perform a reverse visual search. Releasing the button stops the search.
- 3 Press RECORD/PAUSE to continue recording.

Record Review:

Press EDIT SEARCH once while in Record/Pause mode to review the last few seconds of your recording.

Note:

- During Edit Search, the picture will become mosaic and the sound will be muted.
- Make sure the SP/LP tape speed setting is the same as the recording to eliminate distortion during edit search.



Auto Focus

The Palmcorder automatically adjusts the focus over the entire zoom range.

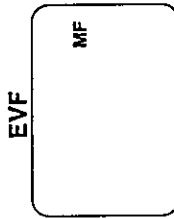
Manual Focus

Manual Focus (MF) when recording ...

- a bright, flat subject such as a white wall.
- in low light situations.
- a scene with fast motions, like a golf swing.
- **Re-focusing may be required** when your Palmcorder is aimed at a new scene.

When the subject is far from the Palmcorder and there are objects in the foreground, the subject with distinct horizontal stripes, or the subject is not centered in the Viewfinder, the subject with shiny surfaces, or the subject is a diagonally angled subject.

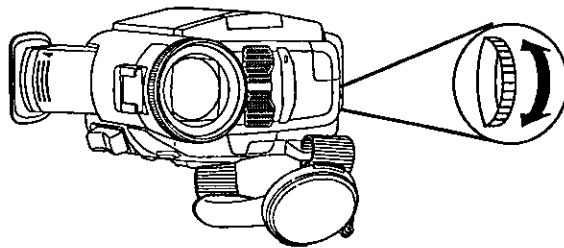
- 1 Press **MANUAL FOCUS** so that "MF" (Manual Focus) appears in the EVF.



- 2 Press and hold the **POWER ZOOM** switch to the "T" side (Full Telephoto) until the lens is zoomed in all the way (subject at maximum size).

- 3 Turn the **MANUAL FOCUS** control until the picture is in focus.
 - It may be necessary to back away from the subject to focus the image properly.

- 4 Press the **POWER ZOOM** switch to "W" or "T" as desired.
 - The subject will remain in focus over the entire zooming range.
 - It may be necessary to back away from the subject to focus the image properly.



Macro Focus (for close-ups)

The "W" side of the **POWER ZOOM** switch to the wide angle position. Focus will function with the subject as close as 1 inch (25mm) in front of the lens.

Remote Controlling Two Palmcorders

You can control any two PV-DV910's with one Remote control. In order for the remote to distinguish between the two units, it is necessary to set one of the Palmcorders to VCR 2. On the remote, press VCR 1 or VCR 2 to control the desired Palmcorder.

- 1 Display the menu and select **REMOTE VCR 2** on one Palmcorder (see pages 16 and 17). Leave the other Palmcorder set to VCR 1.

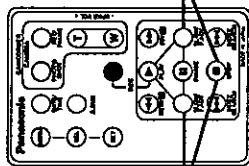
- 2 Set the **Remote Control to VCR 1** or **VCR 2** to correspond with the Palmcorder you wish to control. (See illustration at left.)

Note:

- When the Palmcorder and remote are not set to the same mode (VCR1 or VCR2).
- "CHECK REMOTE MODE" will also appear for 5 seconds when the Palmcorder is first turned on.

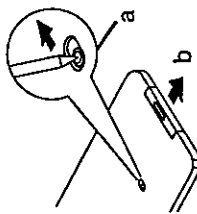
For VCR 2: Press these buttons at same time.

For VCR 1: Press these buttons at same time.



- After replacing the Remote Control Battery, the remote will default to VCR 1.

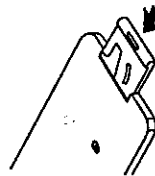
Replace the Battery



- 1 Insert a slender, pointed object, such as the tip of a ball-point pen into the slot so that it fits into the hole (as shown a). Then, while sliding to the right, pull the battery holder out with your fingernail.



- 2 Insert the battery into the Battery Tray with the ⊖ mark facing up. **Do not reverse the polarity.**



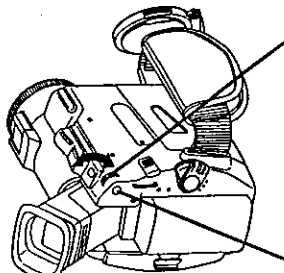
- 3 Replace the Battery Tray.

Replace battery with Panasonic PART NO. VSBW0004 (CR2025) only. Use of another battery may present a risk of fire or explosion. Caution-battery may explode if mistreated. Dispose of used battery promptly. Keep away from children. Do not recharge, disassemble or dispose of in fire.

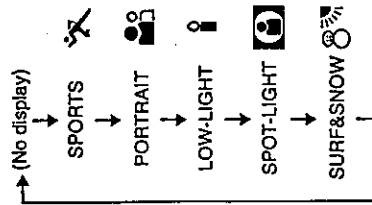
Special Features

Program AE

Program AE feature can be used to make quality recordings in a variety of scene conditions.



MENU Button SELECT SET Wheel



- 1 Press MENU to display the menu screen and rotate the SELECT SET Wheel to select one of the five modes shown below.
- 2 Press MENU to display the menu screen and rotate the SELECT SET Wheel to select no display to cancel this feature.

Sports mode
For recording fast actions scenes.

Portrait mode
For recording only subjects in the foreground, while ignoring subjects in the background.

Low-light mode
For recording in extreme low light conditions.

Spot-light mode
Recording in situations where subjects are under a spotlight(s).

Surf & Snow mode
For recording in locations with a high degree of "Dazzle", such as snow slopes and the seashore.

PORTRAIT mode
• The image may flicker if this mode is used indoors.

LOW-LIGHT mode
• Scenes recorded in extremely low light levels may not come out properly.

SPOT-LIGHT mode
• If the recorded subject is extremely bright, the picture may appear whitish.

SURF&SNOW mode
• If the recorded subject is extremely bright, the picture may appear whitish.

• If you selected GAIN UP in the Digital function camera menu, SPORTS mode and PORTRAIT mode can not be selected.

SPORTS mode
recorded images will not be so blurred when they are viewed later using slow or picture playback.

When playing back a sports mode recording, the movement may appear slightly

Do not use this mode when recording fluorescent, mercury or sodium lighting. These types of lights will affect color and brightness of the images. A vertical band of light might appear when recording objects that are brightly illuminated or which are highly reflective. A amount of light is insufficient, the SPORTS "A" indicator will flash in the or the LCD monitor.

When using this mode is used image may flicker if this mode is used outdoors.

Playback Your Recordings

Special Effect Features During Playback

(Sound is muted during all special effects)

Rapid Visual Search

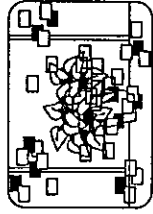
During playback, hold down FAST FORWARD/SEARCH or REWIND/SEARCH buttons.

The search will continue for as long as the button is held down.

OR
Press FAST FORWARD/SEARCH or REWIND/SEARCH buttons once for a continuous rapid visual search. Press PLAY to release.

Note:

- When executing a rapid visual search, the picture may become bluish for an instant or mosaic. This is normal during this mode.



STILL Picture

Press PAUSE during playback. Press PLAY or PAUSE to release.

Note:

- To protect the tape and video heads, your Palmcorder's operating modes will revert as follows:
STILL → STANDBY after 5 minutes when using a Battery Pack.

Slow Motion Playback

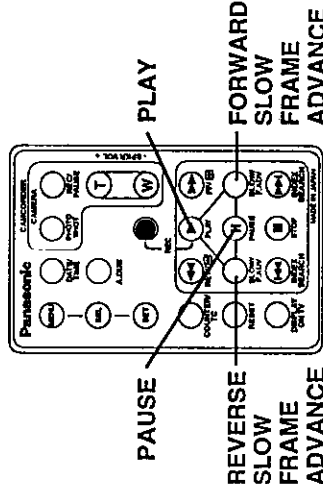
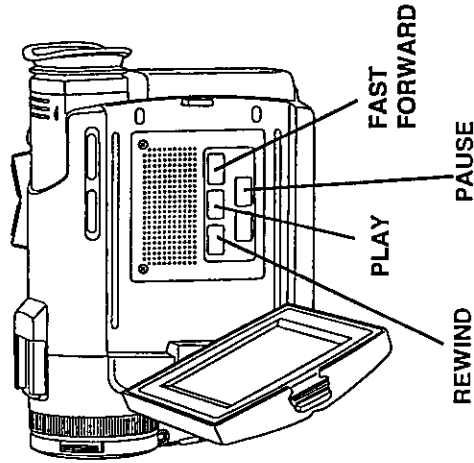
Forward Slow = Press ► SLOW/F.ADV during play.

Reverse Slow = Press ◀ SLOW/F.ADV during play.

Press PLAY to release. (During reverse slow motion playback, time code indication may not change regularly.)

Note:

- Palmcorder will automatically STOP when in slow motion for more than 10 minutes.
- During slow motion playback, picture may move up and down. This is normal.
- When you start or stop slow motion playback, the picture may become bluish for an instant.



Fast Forward/Rewind Check

Monitor normal picture playback during fast forward or rewind.

• Hold down the FAST FORWARD/SEARCH during fast forward.

• Hold down the REWIND/SEARCH during rewind.

• The picture will appear for as long as the button is held down.

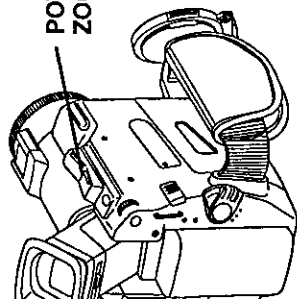
Basic Operation

Special Features

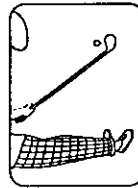
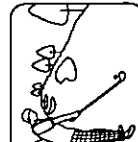
Zoom

can gradually zoom in for close ups or zoom out for wide angle shots.

zooming speed ranges from a slow 14 seconds to a fast 2 seconds according to amount of pressure applied to the zoom buttons.



Zoom In ("T")



Zoom Out ("W")

Zoom slowly by lightly moving the power zoom switch toward the "T" (Telephoto) or the "W" (Wide Angle).
Zoom quickly by applying more pressure.

Digital Zoom

To enable this feature:
Display the CAMERA mode menu (see page 14). Rotate the SELECT SET WHEEL to select D. ZOOM. Press down on the SELECT SET WHEEL to select 36x (D.ZOOM1) or 300x (D.ZOOM2).

D.ZOOM1

- The normal optical zoom functions from 1x to 18x.
- D.ZOOM1 functions from 18x to 36x.
- D.ZOOM2 functions from 18x to 300x.
- The magnification level is displayed in the EVF or the LCD monitor.
- Because the image is enlarged digitally, the picture may become distorted when higher magnification levels are used.
- When the level falls below 18x, the normal zooming function will resume.
- Focus length becomes 4 feet (1.2m) if the lens is in full telephoto.

Playback Your Recordings

Attach the Jack Box for TV Viewing

Your Palmcorder may be connected to a TV to play back tapes or to view what you are recording by connecting to the Jack Box.

Before you begin...

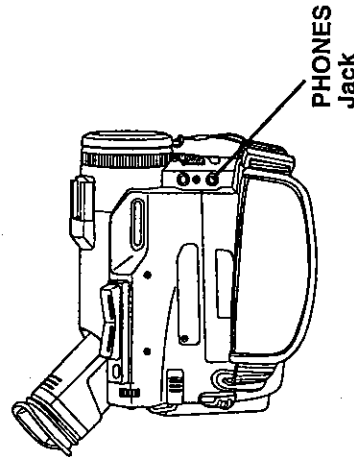
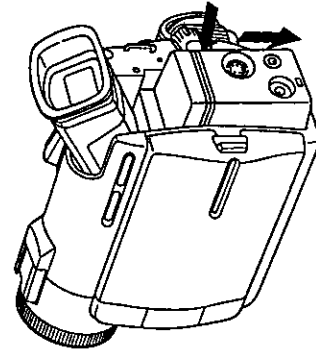
- Connect the Palmcorder to your TV as illustrated at next page.

IMPORTANT:

Turn off the Palmcorder before power connecting.

1 Slide the Viewfinder backward to its fully extended position and then tilt it upward.

2 Insert the Jack box and slide it down until it locks with a click.



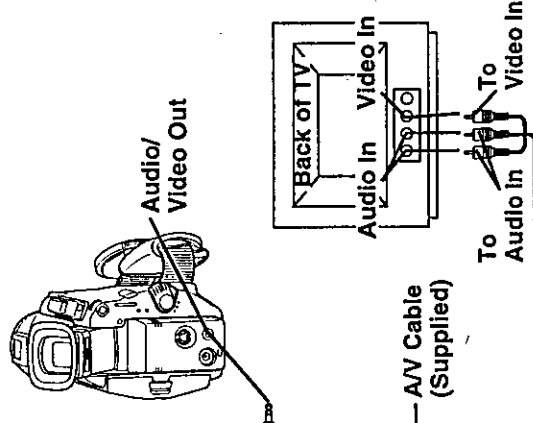
Note:

- Use an AC Adaptor PV-DAC9 (included) so that you do not have to worry about depleting the battery.
- Connect earphones (not supplied) to the PHONES jack.

Playback Your Recordings

Connections

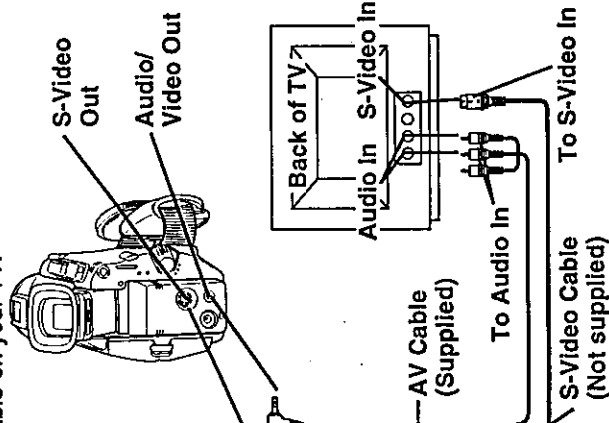
V with AUDIO/VIDEO IN Jacks.



AV Cable (Supplied)

V with S-VIDEO IN Jacks.

Best Chrominance and Luminance it is suggested to use the S-Video connection if available on your TV.



AV Cable (Supplied)

S-Video Cable (Not supplied)

1 Set the **POWER** switch to **CAMERA**. You can now view what the Palmcorder is recording on your TV. Or, to playback a tape, set the **POWER** switch to **VCR**. You can now playback a recorded tape on your TV.

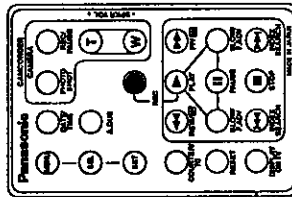
2 Turn your TV ON and set it to **LINE INPUT** or **S-VIDEO**. Check your TV operating instructions for further information.

3 Start playback or begin a recording.

Note:

- Make sure the Palmcorder and TV are turned off while connecting.

You can display the various EVF indications on your TV by pressing **DISPLAY** on remote control. Press again to remove the indications.



DISPLAY

CATV System Installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 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.

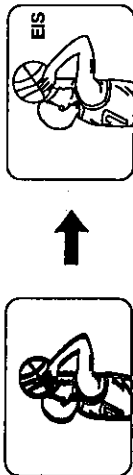
Special Features

Before you begin...

- Set the **POWER** switch to **CAMERA**.

Digital Electronic Image Stabilization System (D.E.I.S.)

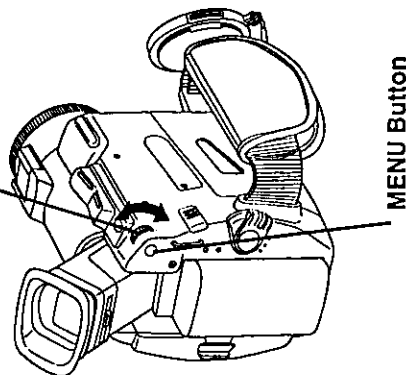
This feature helps stabilize the picture in situations such as walking or shooting from a moving vehicle.



NORMAL

EIS ON

SELECT SET WHEEL



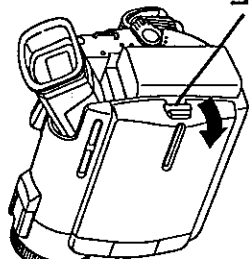
- 1** Press **MENU** button to display the menu screen.
 - 2** Rotate and press the **SELECT SET WHEEL** to select **EIS** and set **ON** (see page 14).
 - Picture flicker may be observed when taping under fluorescent lighting conditions.
 - Turn **D.E.I.S.** OFF during recording when using a tripod.
 - 3** Set **EIS** OFF to cancel.
 - Be sure that the **D.E.I.S.** is turned off when not needed.
- D.E.I.S. may not function when...**
- Palmcorder movement is too extreme.
 - Recording a subject with distinct horizontal or vertical stripes.
 - Recording in low light situations.
 - Recording a subject under a great amount of fluorescent light.
 - Recording a scene with very fast motions.

Special Features

Playback your Recordings

Playback using the LCD Monitor

also use the LCD monitor to view your recording.

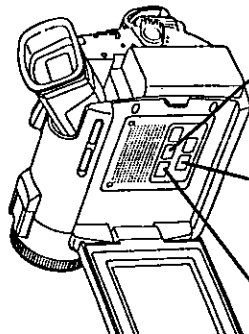


LCD-OPEN Button

Before you begin...

- Connect the Palmcorder to a power source.
- Insert a recorded cassette.
- Set the Power switch to VCR.

- 1 Press the LCD-OPEN button to unlock the LCD monitor and swing open.
- 2 Press REWIND/SEARCH to rewind the tape.
- 3 Press PLAY to start playback.
To adjust the volume: Hold down the VOLUME wheel until the volume setting screen appears. Then rotate the wheel to adjust the volume of the built-in speaker.



REWIND/SEARCH Button
STOP Button
PLAY Button

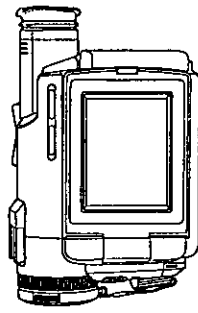
- 4 Press STOP to stop playback.
 - When the tape reaches its beginning during rewind or rewind search, it will stop automatically.
 - If you press PLAY for more than 5 seconds, the Palmcorder will start the Repeat Playback mode when the tape reaches its end. The letter "R" will appear in the EVF.



You can place the Palmcorder on a table, etc. for viewing. Rotate the LCD Monitor 180° and swing it up against the Palmcorder body as shown.

Note:

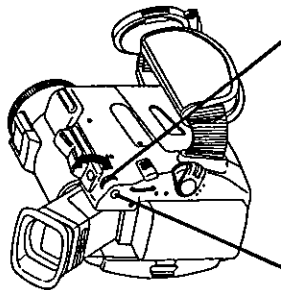
- When a tape recorded in LP mode on another digital video camera is played back on this unit, the picture may appear mosaic.
- Using the LCD monitor reduces battery operating time.



Digital Functions

Use the following features to add interest and professionalism to your recordings. Select from nine special effects.

- 1 In Camera mode, press MENU to display the menu screen.
- 2 Rotate the SELECT SET WHEEL to select D.FUNCTION. Then, press down on the SELECT SET WHEEL repeatedly to select one of the Digital Functions listed below.
- 3 To cancel the Digital Function, press down on the SELECT SET WHEEL to select OFF.



MENU Button SELECT SET Wheel

Note:

- The EIS and Digital Zoom features must be turned off in order to use Digital Functions.

Types of Digital Effects

WIPE

Successive scenes are separated in a way which simulates the drawing of a curtain.

MIX

The current scene is mixed in with the following scene during scene changes.

STROBE

The recording appears as a sequence of still frames.

GAIN UP

Picture sensitivity is increased.

- Only Manual Focus is available.

N/P (Neg/Pos)

The recorded picture is inverted to appear as a film negative.

SEPIA

The picture is recorded in sepia, brownish color, giving it an antique look.

MONO (Monotone)

The picture is recorded in black-and-white.

TRAIL

The subject being recorded creates a trail when in motion.

SOLARI (Solarization)

The scene takes on a appearance similar to an oil painting.

Special Features

Special Features

To use the WIPE:

- In Camera mode, set the "D.FUNCTION" item in the menu screen to "WIPE" (page 14).
- Press the RECORD/PAUSE to start recording.
- Press the RECORD/PAUSE to pause the recording. The last scene will be memorized.
- Press the RECORD/PAUSE to start recording again. The new scene will take the place of the memorized scene.

To use the MIX:

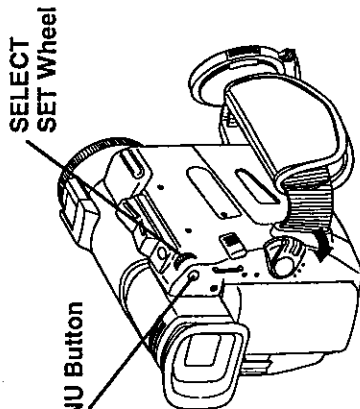
Perform steps a-d above. The memorized scene and the new scene will appear mixed as the scene changes from one to the other.

Camera Recording / Remote Control

Book Mark Search

You can go directly to a blank portion of tape and start recording exactly where you left off.

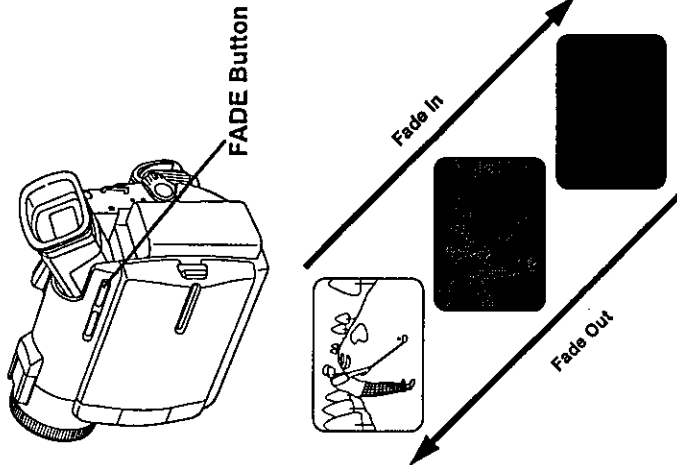
- 1** Set the **POWER** switch to **VCR**.
- 2** Press **MENU** to display the menu screen. Then rotate the **SELECT SET WHEEL** to select **B.SEARCH** (see page 17).
- 3** Press the **SELECT SET WHEEL** to select **ON**. The Palmcorder will start a forward Book Mark Search.



Special Features

Audio/Video Fade In/Out

This feature allows you to make smoother scene transitions for a more professional look.



Fade In:

Starting the first scene with "fade in" is very effective.

In Record/Pause mode, hold down **FADE** until the picture and sound fade out. Then, press **RECORD/PAUSE** to start recording.

Release **FADE** and the picture and sound will gradually fade in.

Fade Out:

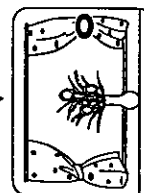
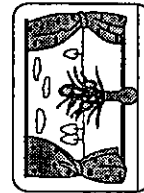
Use to create a soft ending or (together with fade in) for a soft transition from one scene to the next.

During recording, hold down **FADE** until the picture and sound fade out. Then, press **RECORD/PAUSE** to pause the recording.

Special Features

Backlight

Use when recording a subject that is darker than the surrounding scene, in a shadowed area, or when the light source is in the back of your subject.

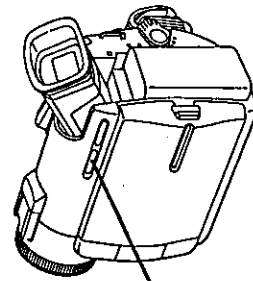


EVF or LCD monitor indication.

Hold down the **BACKLIGHT** button to activate the Backlight feature.

The Indicator "●" will appear in the EVF or LCD monitor.

When the **BACKLIGHT** button is released, this feature will be cancelled.



Note:

- The Indicator "●" will not appear in the EVF or LCD monitor when OFF is selected in the **COUNTER** menu.

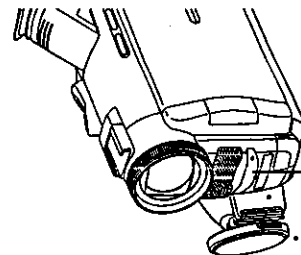
You can operate the major functions of your Palmcorder from up to approximately 16 feet (5 m) away (indoors). Aim the Remote Control toward the front of the Palmcorder and press the desired buttons (sensor is located under the lens).

Operate Camera functions:

Press the **POWER** switch to **CAMERA**.

Operate VCR functions:

Press the **POWER** switch to **VCR**.



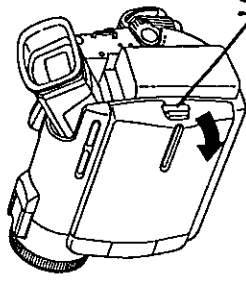
Controlled Functions

- Rec/Pause (see page 25)
- Tele (Zoom) (see page 36)
- Wide (Zoom) (see page 36)
- Date/Time (see page 19)
- Reset (see page 46)
- Photo Shot (see page 37)
- Display On TV (see page 34)
- Counter/Time Code (see pages 18, 46)
- Audio Dubbing (see page 43)
- Record (see page 47)
- Menu (see page 15)
- Select (see page 15)
- Set (see page 15)
- Play (see page 30)
- FF/Search (see page 30)
- REW/Search (see page 30)
- Pause (see page 31)
- Stop (see page 30)
- Slow/Frame Advance (Forward) (see page 31)
- Slow/Frame Advance (Backward) (see page 31)
- Index Search (Forward) (see page 32)
- Index Search (Backward) (see page 32)
- Speaker Volume (see page 30)

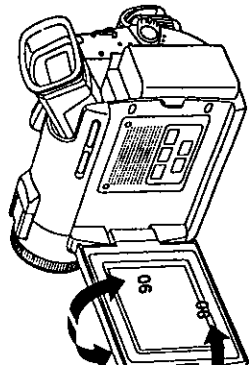
Camera Recording

Rotating the LCD Monitor

The LCD (Liquid Crystal Display) monitor is used while recording.



LCD-OPEN Button



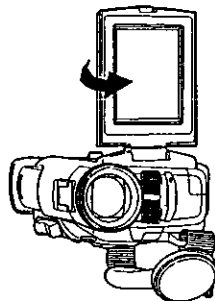
Press the MENU button, located on the back of the Palmcorder, to display the LCD screen.

Turn the SELECT SET WHEEL to the left to select LCD-PANEL from the menu screen (see pages 16, 17).

Turn the SELECT SET WHEEL to the right to select LCD monitor adjustment.

Turn the SELECT SET WHEEL to the left to select BRIGHT or COLOR, then rotate the SELECT SET WHEEL to adjust them. Press the MENU button twice to exit the menu.

Recording



Before you begin...

- Connect the Palmcorder to a power source.
- Insert a cassette with record tab closed (see page 13).

1 Press the LCD-OPEN button to unlock the LCD monitor.

2 Swing the LCD monitor fully open and adjust the angle.

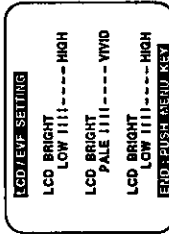
- The LCD monitor will automatically turn on.
- When the LCD monitor is completely closed, it will shut off automatically to save power.
- Adjust the LCD monitor if necessary according to at left.

3 Start recording (see page 25).

- Using the LCD monitor reduce battery operating time.

Note:

- Using the LCD monitor reduce battery operating time.
- Close the LCD monitor completely when not in use.



Rotate the LCD monitor 180 degrees so that it faces in the same direction as the lens, while in the CAMERA mode, to record yourself.

The picture in the LCD Viewfinder will appear reversed. Select SELF-REC MIRROR in the Camera mode screen to see the picture as it is actually being recorded.

Special Features

Audio Dubbing using the External or Built-in Microphone

The original sound can be replaced with new sound using the built-in Palmcorder microphone or an external microphone.

The AUDIO setting in CAMERA MENU mode should be as follows:

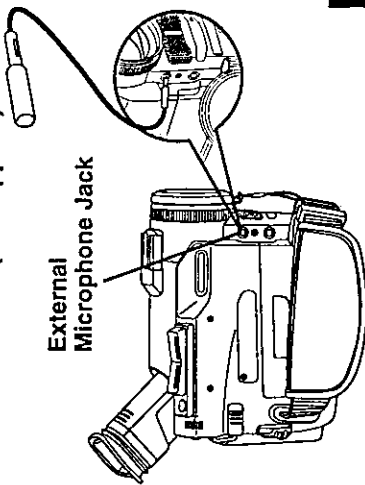
12bit The original sound is recorded on ST (Stereo) 1, and the new sound will be recorded on ST (Stereo) 2.

16bit The original sound is replaced with the new sound.

- Select 12bit if you do not want the original sound to be completely replaced during an audio dub.
- If you dub over a tape which has both 12bit and 16bit audio recordings on it, keep in mind that the original 16bit audio portion will be completely replaced.

- ### Before you begin...
- Connect the external Microphone (if used).
 - Turn On the Palmcorder.
 - Insert a pre-recorded tape to be dubbed.

External Microphone with M3 connector (not supplied)



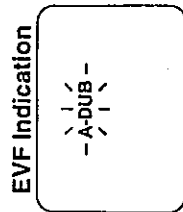
Special Features

1 Set the POWER switch to VCR.

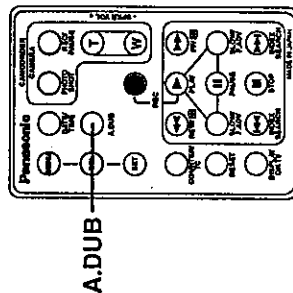
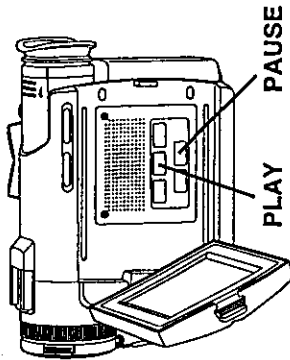
2 Press MENU and set the A-DUB item in the VCR mode menu (see page 17) to MIC.

3 Press PLAY. Then press PAUSE where you want dubbing to begin.

4 Press A.DUB on the remote control to put the Palmcorder in the Audio Dub mode.

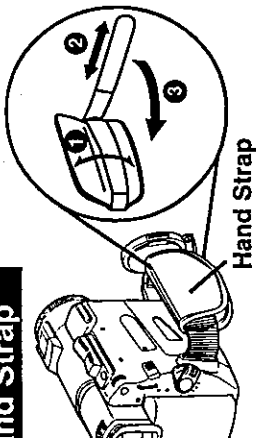


(Continued on next page.)



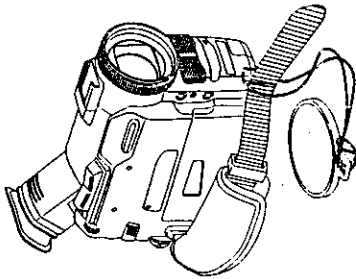
Attaching the Shoulder Strap

Hand Strap



Adjust the length of the Hand Strap to the size of your hand as illustrated.

Lens Cap



Attaching the Lens Cap Cord to the Hand Strap

Remove the Hand Strap from the front clasp and run the Strap through the Lens Cap Loop. Reattach the Hand Strap.

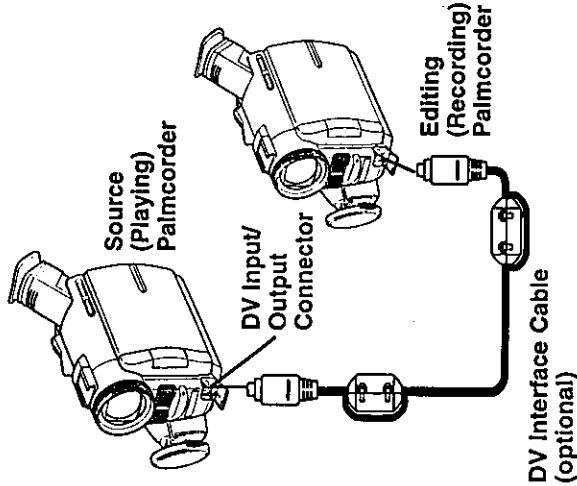
Special Features

Audio Dubbing using the DV Terminal

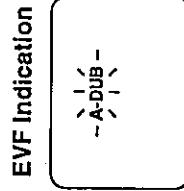
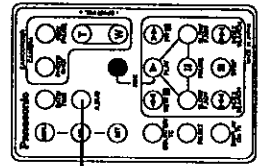
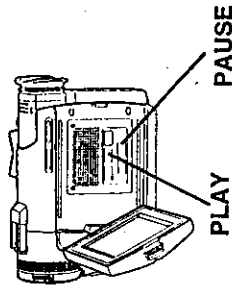
Your own sound track may be substituted onto a tape using a DV terminal. Connect the Palmcorder to Digital Equipment with the DV Output Terminal using DV cable (Not supplied).

Before you begin...

- Turn on both Palmcorders.
- Insert the pre-recorded tape in the recording Palmcorder.
- Uncover the DV Input/Output connectors on both Palmcorders and connect with the supplied DV cable.



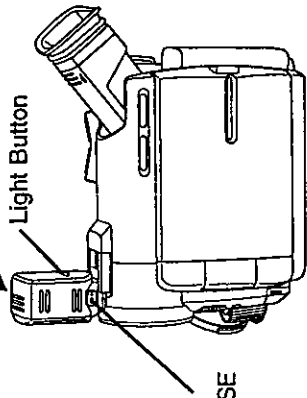
- 1** Set the **POWER** switch on both Palmcorders to **VCR**.
- 2** Press **MENU** and set the **A-DUB** item in the **VCR** mode menu (see page 17) to **DV**.
- 3** Press **PLAY** on the recording Palmcorder. Then press **PAUSE** where you want dubbing to begin.
- 4** Press **A.DUB** on the remote control to put the recording Palmcorder in the Audio Dub mode.



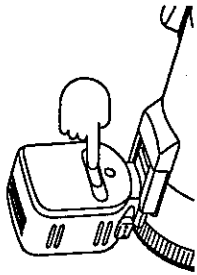
Color Enhancement Light

Attaching the Light

When the natural colors in a scene. Slide the Light into Built-in Light Mount. Be sure it locks into place.



2 Press LIGHT Button ON.



To remove the Light: Press LIGHT RELEASE Button and slide the Light out of the mount.

Caution: This light becomes hot during operation.

Replacing the Bulb

- 1 Turn screw counterclockwise on the underside of the Reflector Casing and remove.
- 2 Turn Reflector Casing counterclockwise only as far as shown in the diagram and pull it off the Bulb Housing.
- 3 Using a clean cloth or tissue, replace the bulb.
- 4 Replace the Reflector Casing turning it clockwise. Replace the screw.

Danger:

Use only replacement bulbs (PART NO. VLLW0023) supplied by Panasonic to reduce the risk of fire. Handle new bulb with cloth or tissue as skin oils will decrease bulb life. Remove lens cover and allow bulb to cool before replacing to avoid possible burn hazard.

Using the enhancement Light for an extended period of time, be sure to provide ventilation using an a hot environment. The Enhancement Light when the Palmcorder is powered by a car battery may drain the car battery. Do not attempt to lift or carry the Palmcorder by the Enhancement Light.

Special Features

Copying your Tapes to S-VHS or VHS Cassette Before you begin...

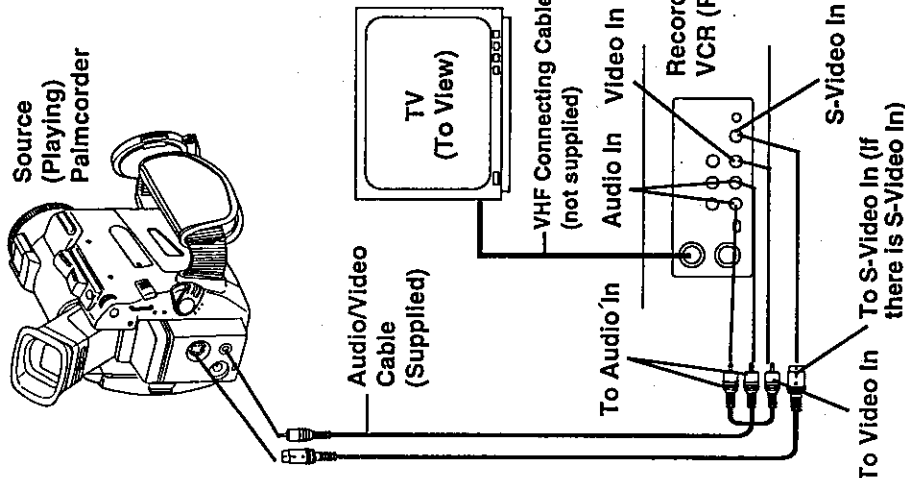
- Connect the Palmcorder and the Jack Box (see page 33).
- Connect the Palmcorder to a VCR as illustrated below.
- Turn ON both units.
- Set the recording VCR's Input Signal Selector to LINE.
- Set the Palmcorder POWER switch to VCR.

- 1 Insert a pre-recorded tape into the source (playing) Palmcorder and a blank tape with record tab in place into the target VCR (Recorder).
- 2 Press PLAY on the Palmcorder. When the tape reaches the point you want to start dubbing, press PAUSE.
- 3 Press REC or simultaneously REC and PLAY (depends on VCR) and then pause the recorder.



VCR Buttons

- 4 Simultaneously, press PAUSE on the both units to begin the copying.
- 5 Press STOP on both units when dubbing is complete.



Notes:

- For technical reasons, dubbing a tape may reduce its quality.
- Press DISPLAY on the Palmcorder remote control to eliminate EVF/LCD Monitor indications to be recorded on the tape. Eliminate all OSD functions on the VCR as well.
- If the Time Code is displayed in the EVF or LCD monitor, this display cannot be reset.

CAUTION:

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


Monitor with your TV

- Turn the TV ON and select its VCR channel (either CH3 or CH4).
- Set the VCR/TV Selector on the recording VCR to VCR.


Electronic Viewfinder/LCD Monitor Indications

Following warning displays appear in the EVF and the LCD monitor.


Warning Indications

- 


TAPE NOT INSERTED

If the Palmcorder is in CAMERA mode without a cassette inserted, "TAPE NOT INSERTED" will appear for 5 seconds. Recording will not start.
- 


CHECK REC TAB

If the Palmcorder is in CAMERA mode with the cassette sliding record tab opened, "CHECK REC TAB" will flash and "CHECK REC TAB" will appear for 5 seconds. Recording will not start.
- 


CANNOT REC

When Audio dub is performed and the sliding record tab is open, or a blank portion of tape is detected.
- 


TAPE END

When the tape is about to end in REC mode, "TAPE END" will flash and "TAPE END" will appear for 5 seconds.
- 

INCOMPATIBLE TAPE

When a pre-recorded tape other than NTSC format is inserted for play.
- 

NEED HEAD CLEANING

If the video heads require cleaning.
- 

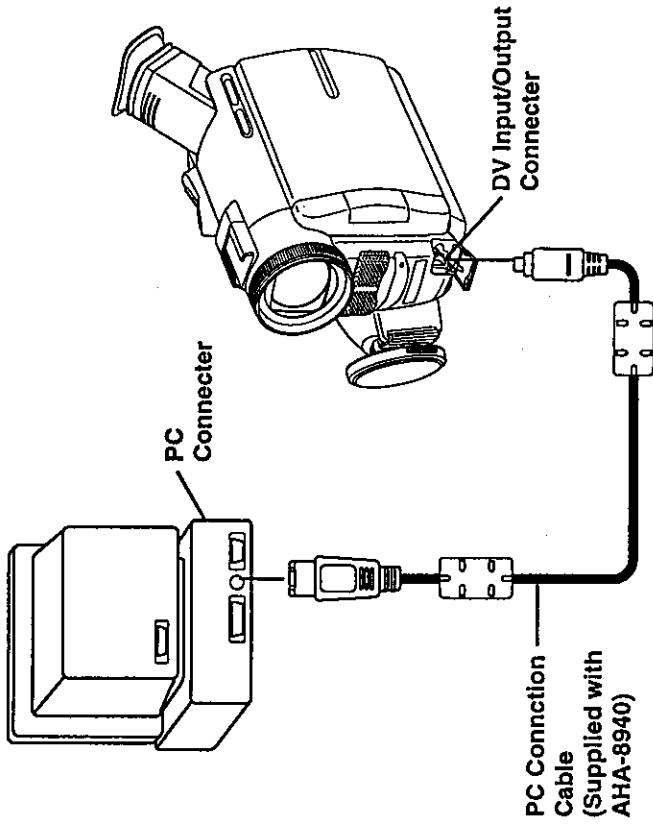
REMOTE

When the Palmcorder and remote are not set to the same mode (VCR1 or VCR2), "CHECK REMOTE MODE" will also appear for 5 seconds when the Palmcorder is first turned on.

Special Features

PC CONNECTION

A live image can be transferred directly to your PC (Personal Computer) via an PC Connection Cable using Adaptec model AHA-8940.

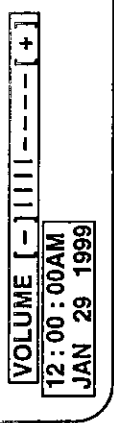
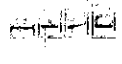


Note:

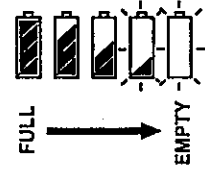
- For more detail information, please contact Adaptec, Inc.

Electronic Viewfinder/LCD Monitor Indications

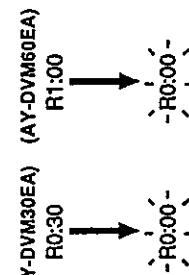
self
view



Battery Remaining



Tape Remaining



It'll take several seconds for the tape remaining indicator to operate after the tape starts moving.

Digital Zoom (see page 36)

This display appears when the digital zoom function has been activated.

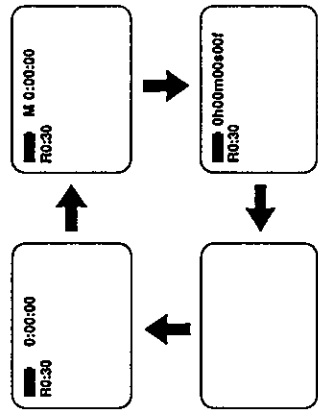
Tape Speed Indication (see page 16)

Indicates the tape speed (SP or LP).

e Counter/Time Code

The indication switches as shown below when the desired "COUNTER" mode is selected from the menu (see page 16) or the COUNTER/TC button on the remote is pressed.

- Even if display off is selected the Tape Mode and Date and Time indication can be displayed.



Memory Counter M 0:00.00

The Palmcorder will stop whenever it reaches the point where the counter was previously set to M 0:00.00 during audio or video dub, fast forward or rewind.

Time Code 0h00m00s00f

The Palmcorder calculates and displays exactly where you are on any tape in terms of hours, minutes, seconds, and frames (30 frames = 1 second).
• This display can not be reset.

Palmcorder Accessory System

For ordering instructions, see the Accessory Order Form.



CGR-D120A/1B (Same as PV-DBP9)		0.8Ah Battery Pack	\$
CGR-D220A/1B		1.6Ah Battery Pack	\$
CGR-D815A/1B		5.3Ah Battery Pack	\$
PV-DDC9		DV Interface Cable	\$

Camera Mode Menu Screen

- FUNCTION OFF ● ON
- ZOOM OFF ● 25x 100x
- WIDE MIX OFF ● ON
- STROBE GAINUP OFF ● ON
- N/P SEPIA MONO OFF ● ON
- TRAIL SOLARI OFF ● ON
- HUTTER OFF ● ON
- REC-SPEED ● SP LP
- AUDIO-REC ● 12bit 16bit
- WIND-CUT ● OFF ON
- SELF-REC ● NORMAL MIRROR
- LIGHT ● NORMAL BRIGHT
- CD-PANEL ● OFF ON
- COUNTER OFF ● LINEAR
- MEMORY T.CODE OFF ● ON
- .RESET OFF ● ON
- DATE/TIME OFF ● D/T DATE
- EMOTE OFF ● VCR1 VCR2
- INDEX ● DAY 2HOUR
- BALLY-LED OFF ● ON
- LOCK-SET ● OFF ON

- a EIS (page 35)
Set to ON to stabilize the picture when the camera cannot be held stable.
- b D. ZOOM (page 36)
OFF: Optical zoom from 1x to 18x.
D.ZOOM1: Digital zoom from 18x to 36x.
D.ZOOM2: Digital zoom from 18x to 300x.
- c D. FUNCTION (page 39)
Select from nine different digital effects while recording.
- d SHUTTER (page 37)
To hear a shutter sound effect when the digital photo shot is button is pressed.
- e REC-SPEED (page 13)
SP: Standard Play
LP: Long Play
- f AUDIO-REC (page 43)
12 bit: 12 bit (32kHz) Audio Recording.
16 bit: 16 bit (48kHz) Audio Recording.
- g WIND-CUT (page 25)
Set to ON to reduce the wind noise of the microphone during recording.
- h SELF-REC (page 26)
MIRROR: During Self-Recording, the picture on the LCD monitor will be horizontally reversed.
- i B.LIGHT (Back Light)
NORMAL: To set the Brightness of the LCD monitor to standard.
BRIGHT: To set the Brightness of the LCD monitor to bright.
- j LCD-PANEL (page 26)
Adjusts the Brightness and Color of the LCD monitor.
- k COUNTER (page 18)
Select the desired counter type indication.
- l C.RESET (Counter Reset) (page 46)
To set or reset the counter to 0:00:00.
- m DATE/TIME (page 19)
OFF: No date or time display.
D/T: Display date and time.
DATE: Display date only.

Notes Regarding Operations

Rough

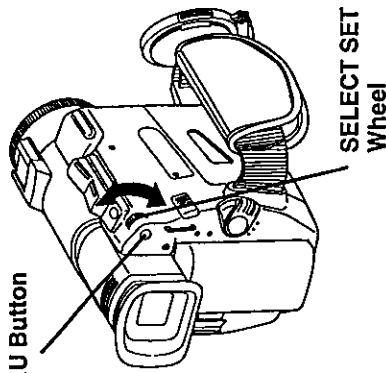
Your PalmOS camera will not work properly if you use the tool calibration.

The table below shows the color temperature of the light source.

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

Setting the Date and Time

date and time is calculated, including year, up to DEC 31 2089.



EXAMPLE:

YEAR : 1998



•(PUSH)• Rotate

YEAR : 1999



•(PUSH)• Push

MONTH : JAN

• You should pass the current year, continue pressing down on the SELECT SET WHEEL until year appears again.

Before you begin...

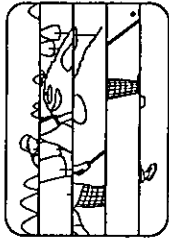
- Connect the Palmcorder to a power source.
- Set the POWER switch to CAMERA.

- 1 Press MENU to display the Camera Mode menu screen (see page 16).
- 2 Rotate the SELECT SET WHEEL to select CLOCK-SET.
- 3 Press SELECT SET WHEEL down to select CLOCK-SET ON. The DATE/TIME SETTING menu appears.
- 4 Rotate the SELECT SET WHEEL to select the desired numbers, then, press SELECT SET WHEEL down to fix that portion and move to the next. Adjust the shaded items for the Year, month, day, hour, and minute.



When time setting is completed, press the MENU button to start the clock.

Cleaning Care for Video Heads



Clogged Video Head

(a) **Video Head Cleaning:** Normally, your Palmcorder will not normally require head cleaning. However, it is possible that the heads may become clogged due to dust in the air, damaged tape, long term use, etc. If "CLOGGED HEAD" flashes and "NEED HEAD CLEANING" appears for 5 seconds in the EVF, the heads may require cleaning.

(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. Please use Panasonic cleaning cassette (AY-DVMCL). 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. Refer servicing to qualified service personnel.

Caution for Tape Operations

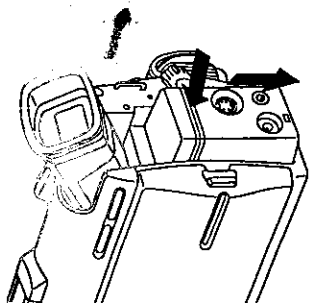
- When you go from function (PLAY, FF, REW etc.), please note that the unit will not accept a new function operation until the previous operation is complete.
- The CAMERAVCR Button, and all function buttons, (PLAY, FF, REW, etc.) are only operational after the tape has been completely loaded.

Lens Hood Area Operation Caution

- With a Wide or Telephoto Conversion Lens (optional) attached, the four corners of the screen may darken when zoom is set to maximum wide angle.
- Attaching the lens hood, a Wide or Telephoto conversion lens (optional), etc. after a filter (optional) has been attached, the four corners of the screen may darken when zoom is set to maximum wide angle.
- With two filters (optional) attached, the four corners of the screen may darken when zoom is set to maximum wide angle.

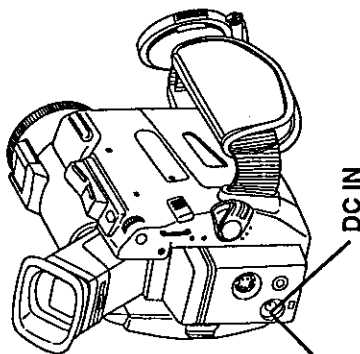
Applying Power

Adaptor



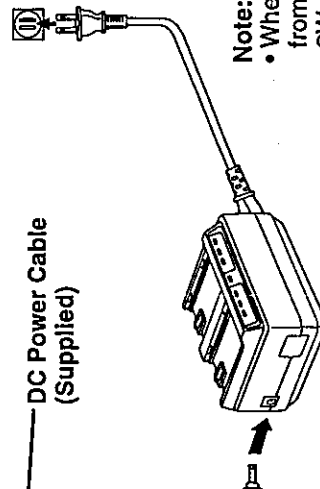
Slide the Jack Box and slide it down until it locks with a click.

3 Insert the DC Power Cable into the Jack Box.



4 Connect the other end of the DC Power Cable to the AC Adaptor as shown.

5 Plug in the AC Adaptor.
• The POWER Lamp lights up.



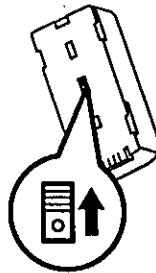
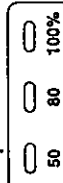
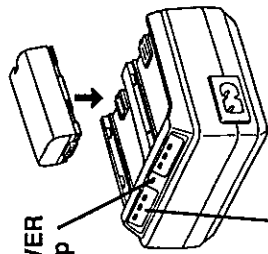
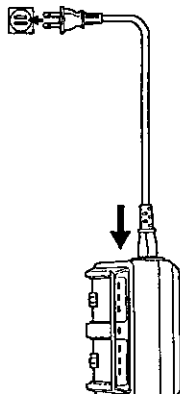
Note:
• When not in use, unplug the AC Adaptor from the AC outlet. (AC Adaptor consumes 2W of electric power when plugged into an AC outlet even when not in use.)

Request for Service Notice

Please provide your name and address and a description of what is wrong with the unit and any symptom it is exhibiting.

Mail this completed form and your Proof of Purchase along with your unit to:
Panasonic Services Company
1705 N. Randall Road
Elgin, IL 60123-7847
Attn: Camcorder Repair

Charge the Battery Pack on the AC Adaptor



- 1** Connect and plug in the Cords as shown.
 - POWER Lamp will light.
- 2** Attach the battery as shown to charge.
 - Charge lamps on the AC Adaptor will flash and then turn solid green to indicate current charge level. When all 3 lamps are constantly on, the battery is fully charged. (approx. 1 hour 20 minutes) Expect approx. 1 hour of operation when fully charged.
- 3** Remove the Battery.
 - Slide the Battery out and then lift up.

Battery Charging Confirmation Marker
Use this marker as a reminder to yourself when the battery is fully charged or in need of a charge. This marker performs no function and is for your reference only.

- The Battery is no longer serviceable if the operation time is very short, even after a sufficient charge.

To avoid damage to the Battery:

- Do not drop or jar the Battery.
- Use the Battery with specified models only.
- If the Battery is used in extremely high temperatures, a safety device will automatically prevent operation.

To insure longer battery life:

- While not in use, remove Battery from the Palmcorder and AC Adaptor and store in a cool, dark, dry place. If you leave the Battery in the Palmcorder or on AC Adaptor, the Battery will no longer be rechargeable.
- Keep the Battery terminals clean.

Battery Care

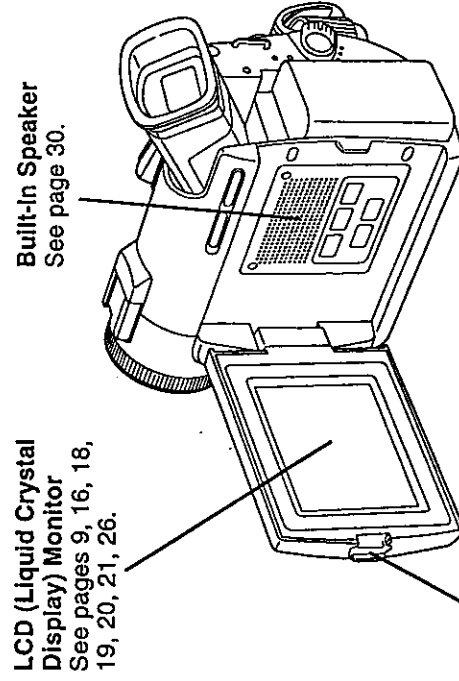
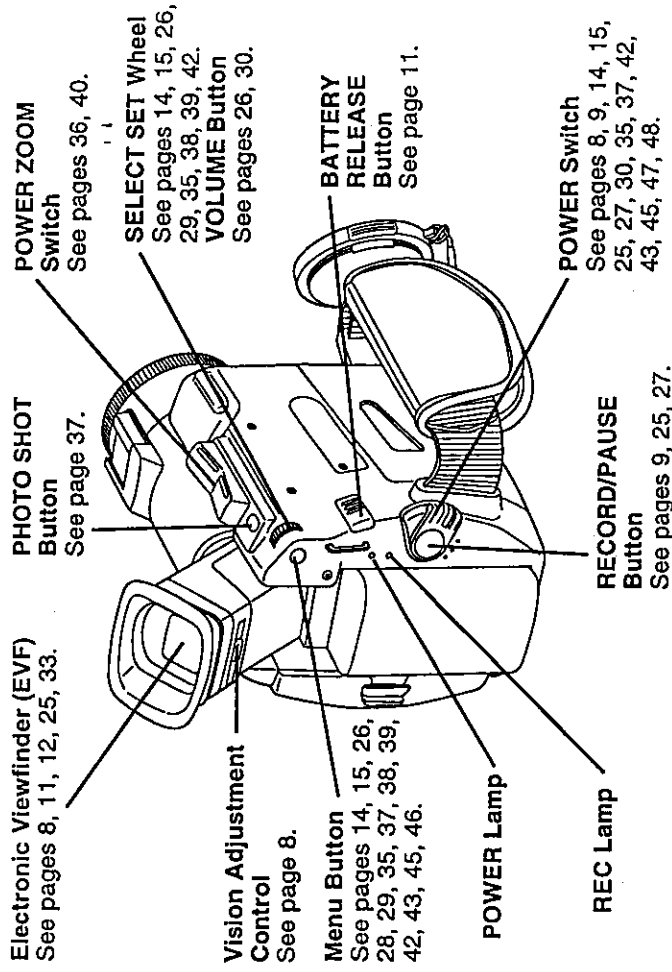
Attention:

- Charge only with specified charger.
- Battery can be charged within a temperature range of 32° F (0° C) and 104° F (40° C).
- Battery may be warm after charging or after use. This is normal.
- Do not use an insufficiently charged or worn Battery.
- In extreme cold surroundings, Battery charging time will increase.

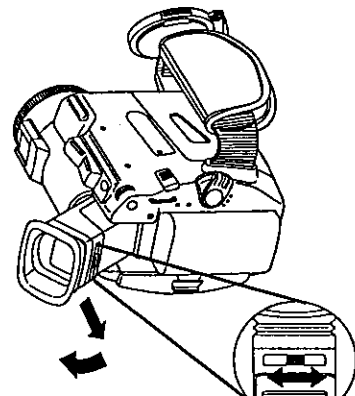
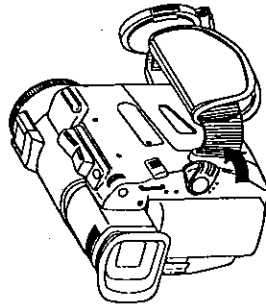
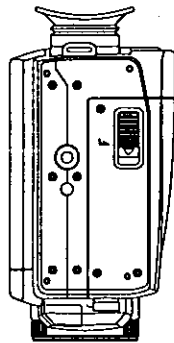
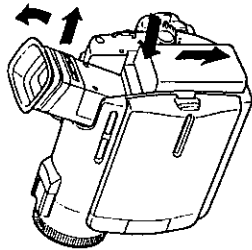
Safety precautions:

- Do not get the Battery near, or dispose of in
- Do not directly connect (short circuit) the
- Do not connect (+) and negative (-) terminals.
- Do not attempt to disassemble or reassemble Battery.

Rear View



Camera Recording



Before you begin...
• Charge the Battery (see page 10).

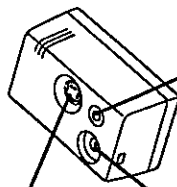
- 1** Slide the Viewfinder backward to its fully expanded position and then tilt it upward.
- 2** Insert the Battery and slide it down until it locks with a click.
- 3** Slide the TAPE EJECT switch to open the Cassette Compartment.
 - The cassette holder slides out.
- 4** Insert a cassette with its window side facing up.
 - Make sure record tab is closed. (see page 13).
- 5** Press on the PUSH CLOSE mark to close the upper Cassette Compartment Cover.
 - The Cassette Holder with the cassette slides back inside.
- 6** Close the lower cassette Compartment Cover.
- 7** Set the POWER switch to CAMERA.
- 8** Slide the Viewfinder to its fully extended position.
- 9** Adjust the Vision Adjustment Control to your eyesight.

(Continued on next page.)

Docking Station

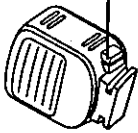
S-VIDEO Output Connector
See pages 34, 47, 50.

DC Input Connector
See page 12.

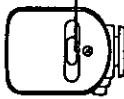


Video Output connector
See pages 34, 47, 50.
(This connector for use with supplied Audio/Video cable only.)

Color Enhancement Light



LIGHT Release Button
See page 22.

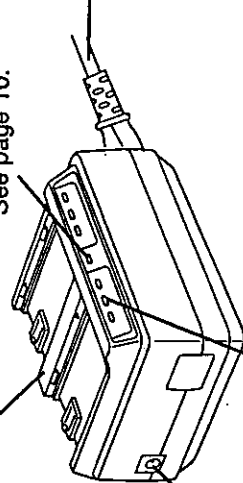


LIGHT Release Button
See page 22.

AC Adaptor

Battery Charging Compartment
See page 10.

POWER Lamp
See page 10.



VCR DC Output Connector
See page 12.

CHARGE Lamps
See page 10.

AC Power Cord
See page 10.

CAUTION:

This unit will operate on 110/120/220/240V AC. An AC plug adaptor may be required for voltages other than 120V AC. 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.

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Panasonic Sales Company, Division of Matsushita Electric of Puerto Rico, Inc.
 Ave. 65 de Infantería, Km. 9.5
 San Gabriel Industrial Park, Carolina, Puerto Rico 00985

PANASONIC/QUASAR Video Products Limited Warranty

Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as "the Warrantor") will repair this product with new or refurbished parts, free of charge, in the USA or Puerto Rico, in the event of a defect in materials or workmanship as follows (all time periods commence from the date of the original purchase):

PRODUCT	PARTS	LABOR
CAMCORDER	ONE (1) YEAR, EXCEPT CCD IMAGE SENSOR	NINETY (90) DAYS
	CCD IMAGE SENSOR - SIX (6) MONTHS	NINETY (90) DAYS
VCR	ONE (1) YEAR	NINETY (90) DAYS
AA MIXER	ONE (1) YEAR	NINETY (90) DAYS
MONITOR-VCR	ONE (1) YEAR, EXCEPT CRT	NINETY (90) DAYS
	CRT - TWO (2) YEARS	CRT - NINETY (90) DAYS
		CUSTOMER PAYS ALL LABOR CHARGES AFTER 90 DAYS

Monitor-VCR In-home or carry-in Service: 22" (diagonal) CRT / LCD and Larger
Monitor-VCR Carry-in Service: 21" (diagonal) CRT / LCD and smaller

Batteries (if included) - New rechargeable batteries in exchange for defective rechargeable batteries for ten (10) days. Non-rechargeable batteries are not warranted.
Tape (if included) - New video cassette tape in exchange for a defective video cassette tape for five (5) days.

In-home, carry-in or mail-in service, as applicable, in the USA can be obtained during the warranty period by contacting a Panasonic Services Company (PASC) Factory Servicenter listed in the Service Directory. Or call toll free 1-800-211-PANA(7262), to locate an authorized PASC Servicenter. Carry-in or mail-in service in Puerto Rico can be obtained during the warranty period by calling the Panasonic Sales Company telephone number listed in the Servicenter Directory. This warranty is extended only to the original purchaser. A purchase receipt or other proof of the date of the original purchase is required before warranty service is rendered.

This warranty only covers failures due to defects in materials and workmanship which occur during normal use and does not cover normal maintenance, including, but not limited to, video and audio head cleaning. The warranty does not cover damage which occurs in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, set-up adjustments, improper antenna, inadequate signal pickup, maladjustment of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, commercial use such as hotel, office, restaurant, or other business or rental use of the product, or service by anyone other than a PASC Factory Servicenter or a PASC authorized Servicenter, or damage that is attributable to acts of God.

LIMITS AND EXCLUSIONS

There are no express warranties except as listed above. THE WARRANTOR SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGE TO TAPES) RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THE WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the Customer Satisfaction Center at the Panasonic Consumer Electronics Company address above. SERVICE CALLS WHICH DO NOT INVOLVE DEFECTIVE MATERIALS OR WORKMANSHIP AS DETERMINED BY THE WARRANTOR, IN ITS SOLE DISCRETION, ARE NOT COVERED. COSTS OF SUCH SERVICE CALLS ARE THE RESPONSIBILITY OF THE PURCHASER.

warvid 10/20/97

Important Safeguards

11. Grounding or Polarization — All the safety and operating instructions should be read before the unit is used.

12. Power-Cord Protection — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords of plugs, convenience receptacles, and the point where they exit from the unit.

13. Outdoor Antenna Grounding — If an outside antenna or cable system is connected to the video unit, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Part 1 of the Canadian Electrical Code, in USA Section 810 of the National Electrical Code, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

14. Lightning — For added protection of this video unit receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video unit due to lightning and power-line surges.

15. Grounding or Polarization — This video unit may be equipped with either a polarized 2-wire AC (Alternating Current) line plug (a plug having one blade wider than the other) or 3-wire grounding type plug, a plug having a third (grounding) pin. The 2-wire polarized plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. The 3-wire grounding type plug will fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.

16. Power-Cord Protection — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords of plugs, convenience receptacles, and the point where they exit from the unit.

17. Outdoor Antenna Grounding — If an outside antenna or cable system is connected to the video unit, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Part 1 of the Canadian Electrical Code, in USA Section 810 of the National Electrical Code, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

18. Lightning — For added protection of this video unit receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video unit due to lightning and power-line surges.

19. Grounding or Polarization — This video unit may be equipped with either a polarized 2-wire AC (Alternating Current) line plug (a plug having one blade wider than the other) or 3-wire grounding type plug, a plug having a third (grounding) pin. The 2-wire polarized plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. The 3-wire grounding type plug will fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.

20. Power-Cord Protection — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords of plugs, convenience receptacles, and the point where they exit from the unit.

21. Outdoor Antenna Grounding — If an outside antenna or cable system is connected to the video unit, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Part 1 of the Canadian Electrical Code, in USA Section 810 of the National Electrical Code, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

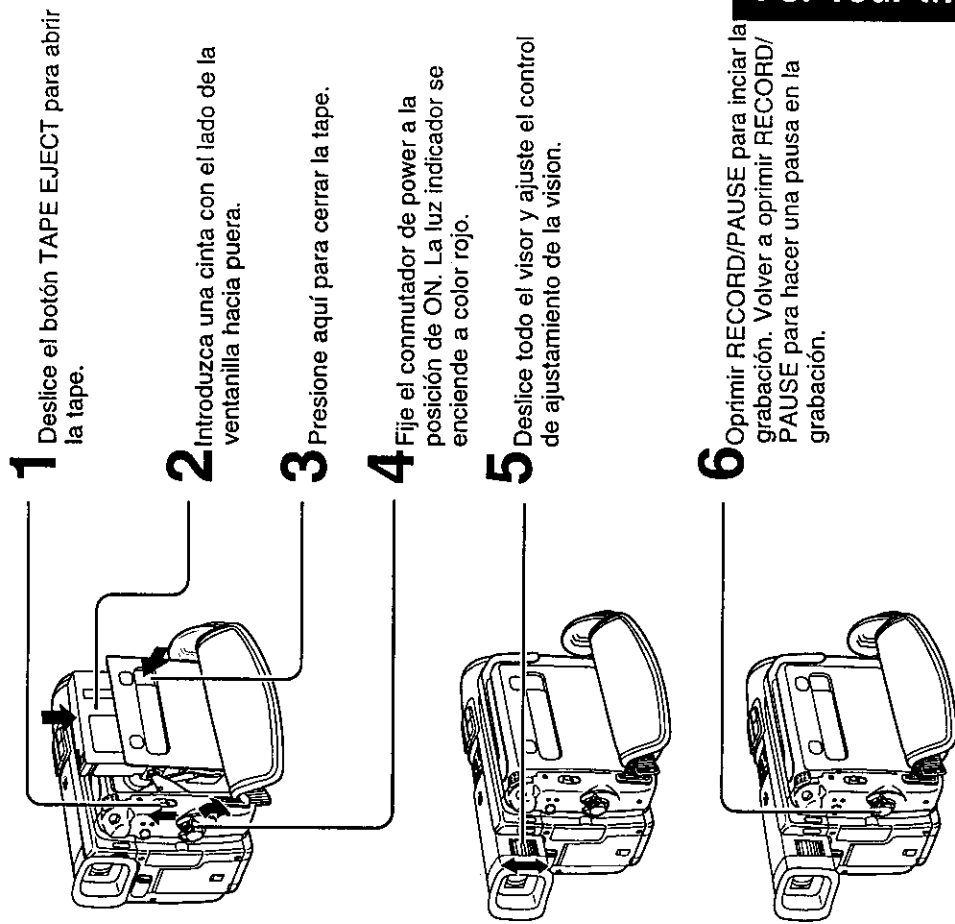
22. Lightning — For added protection of this video unit receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video unit due to lightning and power-line surges.

Spanish Quick Use Guide/Guía Para Uso Rápido

PREPARATIVOS

- Conectar la videocámara a una fuente de alimentación (batería, adaptador de CA o cable para batería de coche).

GRABACION A CAMARA



1 Deslice el botón TAPE EJECT para abrir la tape.

2 Introduzca una cinta con el lado de la ventanilla hacia fuera.

3 Presione aquí para cerrar la tape.

4 Fije el conmutador de power a la posición de ON. La luz indicador se enciende a color rojo.

5 Deslice todo el visor y ajuste el control de ajustamiento de la vision.

6 Oprimir RECORD/PAUSE para iniciar la grabación. Volver a oprimir RECORD/PAUSE para hacer una pausa en la grabación.


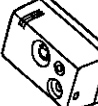


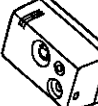

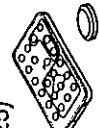




For Your Information

Check you for choosing Panasonic!

Have purchased one of the most sophisticated and reliable products on the market. Used properly, we're sure it will bring you and your family years of enjoyment. We take time to fill in the information at right. The serial number is on the tag located on the underside of your Palmcorder. Be sure to retain this manual as your convenient reference information source.

Date of Purchase	_____
Dealer Purchased From	_____
Dealer Address	_____
Dealer Phone No.	_____
Model No.	_____
Serial No.	_____

pack your Camcorder

- AC Adaptor (VJAC9)  1 pc. AV Jack Box (VJAW0042)  1 pc. AV Cable (VJAW0043) 
- AC Cord and Power Adapter (VJAC9)  1 pc. Battery Pack (PV-DBP8)  1 pc. Color Enhancement Light (VYKW3110) w/Holder 
- Remote Control (VW0044) with one Remote Control Battery (025)  1 pc. Digital Video Cassette Tape (AY-DVM30EA) 
- Remote Control has loaded with battery. See page 25.  1 pc. Lens Cap (VYFW0008) 
- 1 pc. Shoulder Strap (VYCW0214) 

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