

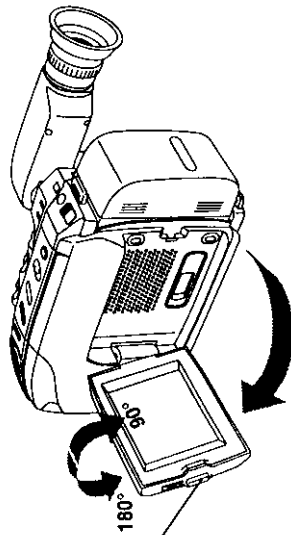
Spanish Quick Use Guide/Guía Para Uso Rápido

es de comenzar...

ecte la fuente de alimentación de la videocámara (batería o adaptador de CA) arte un casete con lengüeta para prevención del grabado.

produzca usando el monitor LCD

ndo el monitor LCD está completamente abierto, el visor se desconecta máticamente.



Presione LCD-OPEN para abrir el monitor LCD. **Abra**lo completamente y ajuste el ángulo.

Ajuste POWER a VCR.

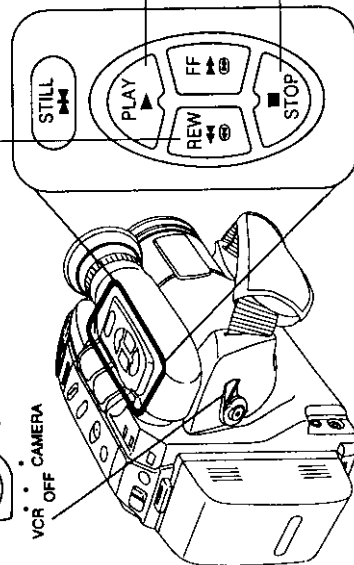


VCR OFF CAMERA

3 Presione **REWIND/SEARCH** para rebobinar la cinta.

4 Presione **PLAY** para comenzar la reproducción.

5 Presione **STOP** para finalizar la reproducción.



reproducción con efectos especiales

a localizar rápidamente una escena específica

primir el botón de localización (SEARCH).

a congelar una imagen

primir el botón de pausa/imagen fija (PAUSE/STILL).

primir nuevamente el botón cuando se desea continuar reproduciendo.

asonic Consumer Electronics
pany, Division of Matsushita
-tric Corporation of America
Panasonic Way Secaucus,
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



Palmcorder®
WITH PalmSight™

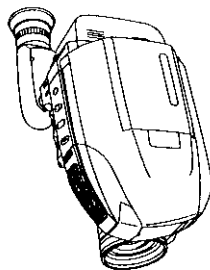
Panasonic®

Camcorder Operating Instructions

MODEL **PV-L550**

— TENTATIVE —

EXHIBIT # 6
FIG. NO. _____
FCC ID: ACJ927125L
MODEL NO. PV-L550-D
OUR REF: MKES99-ECLL



Please read these instructions carefully before attempting to operate this product. Please save this manual.
Guía para rápida consulta en español está incluida.



For assistance, call 1-800-211-PANA(7262)

VQTW0739B

Things You Should Know

Safety Precautions

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

Your Compact VHS Camcorder is designed to record and play back in Standard Play (SP) and Super Long Play (SLP) modes. You can also play a Compact VHS Camcorder recording on your VHS VCR using the VHS PlayPak supplied.

This Camcorder is equipped with the HQ System to provide excellent video pictures, and is compatible with standard VHS equipment. It is recommended that only cassette tapes that have been tested and inspected for use in VCR machines with the **VHS** and/or **VHS** mark be used.

The above markings are located on the appliance bottom cover.

FCC Warning: 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.

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arranty

Product Information, Operating Assistance, Literature Request, Dealer Locations, and Customer Service Inquiries please contact:

1-800-211-PANA(7262), Monday-Friday 9am-9pm Saturday-Sunday 9am-7am, EST.

Site: <http://www.panasonic.com>

For an purchase parts, accessories or locate your nearest service center by visiting our Web Site.

Essory Purchases:

332-5368 (Customer Orders Only)
 onic Services Company 20421 84th Avenue South, Kent, WA 98032
 to 5 pm Monday - Friday; 6 am to 10:30 am Saturday; PST)
 MasterCard, Discover Card, American Express, Check)

uct Repairs

Centralized Factory Servicenter

Panasonic Services Company
 1705 N. Randall Road,
 Elgin, IL 60123-7847

Attention: Camcorder Repair

carefully pack and ship, prepaid and insured, to the Elgin centralized repair Factory center. While there will be added handling delays, you may bring your unit to one of the following locations who will then forward the unit to Elgin for repair.

ner's in Puerto Rico, please ship or carry in to location below ("Service in Puerto Rico").

MAIL TO :

ny Servicenters Locations

GEORGIA 8655 Roswell Road Suite 100 Atlanta, GA 30350	MICHIGAN 37048 Van Dyke Avenue Sterling Heights, MI 48312	TENNESSEE 3800 Ezell Road Suite 806 Nashville, TN 37211
ILLINOIS 9060 Golf Road Niles, IL 60714	MINNESOTA 7850-12th Avenue South Airport Business Center Bloomington, MN 55425	TEXAS 7482 Harwin Drive Houston, TX 77036
MARYLAND 62 Mountain Road Glen Burnie, MD 21061	OHIO 2236 Waycross Road Civic Center Plaza ForestPark, OH 45240	WASHINGTON 13615 Welch Road Suite 101 Farmers Branch, TX 75244
MASSACHUSETTS 60 Glacier Drive Suite G Westwood, MA 02090	PENNSYLVANIA 2221 Cabot Blvd. West Suite B Langhorne, PA 19047	WASHINGTON 20425-84th Avenue South Kent, WA 98032
MARYLAND 1703 North Randall Road Elgin, IL 60123 (Pick-up/drop-off only)	OHIO 2236 Waycross Road Civic Center Plaza ForestPark, OH 45240	WASHINGTON 13615 Welch Road Suite 101 Farmers Branch, TX 75244
MARYLAND 62 Mountain Road Glen Burnie, MD 21061	PENNSYLVANIA 2221 Cabot Blvd. West Suite B Langhorne, PA 19047	WASHINGTON 20425-84th Avenue South Kent, WA 98032
MASSACHUSETTS 60 Glacier Drive Suite G Westwood, MA 02090	HAWAII 99-859 Iwaiwa Street Aiea, Hawaii 96701 Phone (808) 488-1996 Fax (808) 486-4369	

Service in Puerto Rico

Service in Puerto Rico
 ushikita Electric of Puerto Rico, Inc. Panasonic Sales Company/ Factory Servicenter:
 Km. 9.5 San Gabriel Industrial Park Carolina, Puerto Rico 00985
 Phone (787) 750-4300 Fax (787) 768-2910

For assistance, call 1-800-211-PANA(7262)

Important Safeguards

15. Power Lines — An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
 - a. Overloading — Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
 - b. Objects and Liquids — Never push objects of any kind into this video unit through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind onto the video unit.
 - c. Servicing — Do not attempt to service this video unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
 - d. Damage Requiring Service — Unplug this video unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power-supply cord or plug is damaged.
16. If any liquid has been spilled onto, or objects have fallen into the video unit.
17. If the video unit has been exposed to rain or water.
18. If the video unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video unit to its normal operation.
19. If the video unit has been dropped or the cabinet has been damaged.
20. Replacement Parts — When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
21. Safety Check — Upon completion of any service or repairs to this video unit, ask the service technician to perform safety checks to determine that the video unit is in safe operating order.

Precautions

USE & LOCATION

- **TO AVOID SHOCK HAZARD ...** Your Camcorder and power supply should not be exposed to rain or moisture. Do not connect the power supply or operate your Camcorder if it gets wet. Your Camcorder has been designed for outdoor use, however it is not designed to sustain direct exposure to water, rain, sleet, snow, sand, dust, or a direct splashing from a pool or even a cup of coffee. This action could permanently damage the internal parts of your Camcorder. Do not attempt to disassemble this unit. There are no user serviceable parts inside. Unplug your Camcorder from the power supply before cleaning.
 - **DO NOT AIM YOUR CAMCORDER AT THE SUN OR OTHER BRIGHT OBJECTS.**
 - **DO NOT LEAVE THE CAMCORDER WITH THE EVF AIMED DIRECTLY AT THE SUN AS THIS MAY CAUSE DAMAGE TO THE INTERNAL PARTS OF THE EVF.**
 - **DO NOT EXPOSE YOUR CAMCORDER TO EXTENDED HIGH TEMPERATURE ...** Such as, in direct sunlight, inside a closed car, next to a heater, etc.... This action could permanently damage the internal parts of your Camcorder.
 - **AVOID SUDDEN CHANGES IN TEMPERATURE ...** If the unit is suddenly moved from a cold place to a warm place, moisture may form on the tape and inside the unit.
 - **DO NOT LEAVE YOUR CAMCORDER OR THE POWER SUPPLY TURNED ON WHEN NOT IN USE.**
 - **STORAGE OF YOUR CAMCORDER ...** Store and handle your Camcorder in a manner that will not subject it to unnecessary movement (avoid shaking and striking). Your Camcorder contains a sensitive pick-up device which could be damaged by improper handling or storage.
- CARE**
- **TO CLEAN YOUR CAMCORDER ...** Do not use strong or abrasive detergents when cleaning your Camcorder body.
 - **TO PROTECT THE LENS ...** Do not touch the surface of the lens with your hand. Use a commercial camcorder lens solution and lens paper when cleaning the lens. Improper cleaning can scratch the lens coating.
 - **TO PROTECT THE FINISH OF YOUR CAMCORDER ...** Before handling your Camcorder, make sure your hands and face are free from any chemical products, such as suntan lotion, as it may damage the finish.

Request for Service Notice

• photocopy this form when making a request for service notice.

In the unlikely event this product needs service.

- Please include your **proof of purchase**. (Failure to do so will delay your repair.)
- To further speed your repair please provide an explanation 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

Self Demo Mode

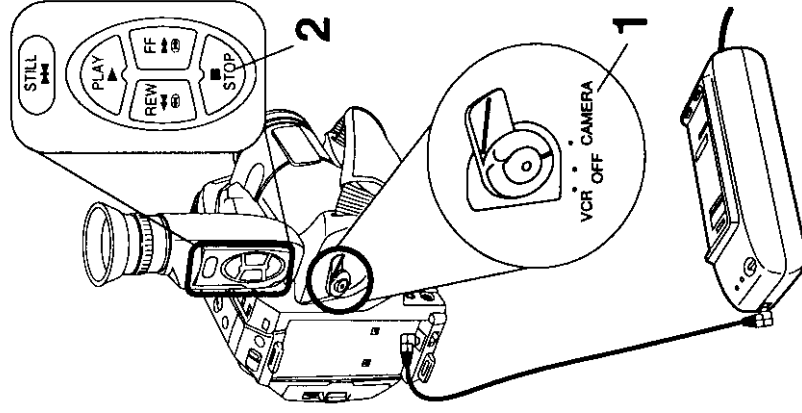
Self Demo mode is on when the screen at the right appears. Follow the steps below to turn it off.

- Before you begin...**
- Connect Camcorder to power source.

EVF Screen

Panasonic

ITS TAPES PLAY
 IN YOUR VCR
 YES, IT'S VHS!
 26x LENS / 150x D. ZOOM
 DIGITAL STABILIZATION
 FULL-SIZE HEAD SYSTEM
 AUTO/PHRASE TITLER



- 1** Set **POWER** to **CAMERA**.
- 2** Hold down **STOP** over 5 seconds.

Note:

- Self Demo stops automatically if battery is attached (page 10) and cassette tape is inserted (page 13).
- Inserting a tape alone (or attaching a partially charged battery) only temporarily stops Self Demo.
- Self Demo stops for 30 seconds when a function key other than Power, Tape Speed Selector, and Light is pressed.

To turn Self Demo back on.

- With **DISPLAY** held down, slide **POWER** to **CAMERA** and wait for Self Demo to begin.

Source:
 Compact VHS Camcorder: DC 6V
 AC Adaptor: 110/120/220/240V AC, 50/60 Hz
 Battery: Nickel-Cadmium Type DC 6V
 Compact VHS Camcorder: 6V DC 8.5 W (Max. 11.5 W)
 AC Adaptor: 24W
 1.2W (when not in use.)

Signal:
 EIA Standard (525 lines, 60 fields) NTSC color signal
Recording System:
 2 rotary heads plus flying erase head. Helical scanning system
 1 track

System:
 Sequential color difference field reverse system
Device:
 One integral color filter Charge Coupled Device (CCD)
 26:1 zoom lens, F1:1.6 with auto iris control
 Focal length: 3.8mm - 98.8mm
 4 speed power zoom function
 Lens filter diameter: 49mm
 0.5 inch (12.7mm) Electronic Viewfinder
 3.0 inch (76.2mm) Liquid Crystal Display
 2.0 lx (F1:1.6) 0.20 footcandles
 10 lx (F1:1.6) 1.0 footcandles (EIA Standard)
 32°F - 104°F (0°C - 40°C)
 10% - 75%

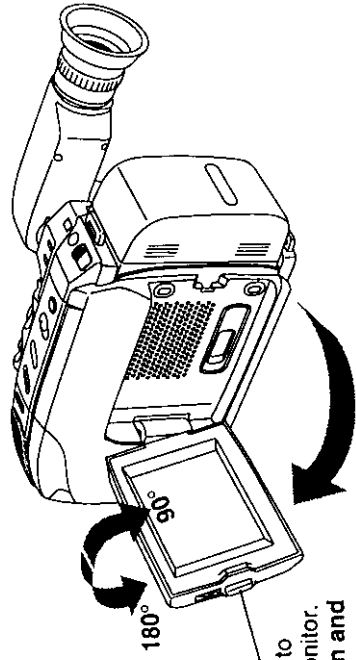
Illumination Required:
 Compact VHS Camcorder: lbs.
 kg.
 AC Adaptor: lbs.
 kg.

Dimensions:
 Compact VHS Camcorder:
 (W) x (H) x (D) inch
 (W) x (H) x (D) mm
 AC Adaptor:
 (W) x (H) x (D) inch
 (W) x (H) x (D) mm

Dimensions shown are approximate. Specifications are subject to change without notice.

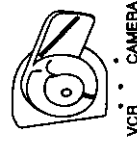
Playback using the LCD Monitor

When the LCD monitor is fully open, the Viewfinder automatically turns OFF (page 25).



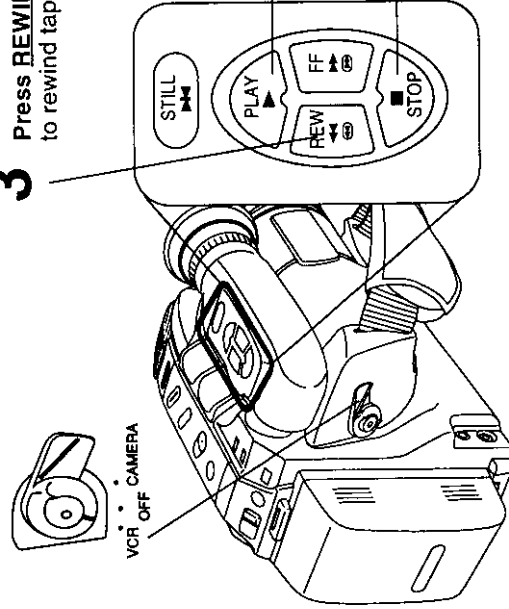
1 Press **LCD-OPEN** to unlock the LCD monitor. Swing it fully open and adjust the angle.

2 Set **POWER** to **VCR**.



VCR OFF CAMERA

3 Press **REWIND/SEARCH** to rewind tape.



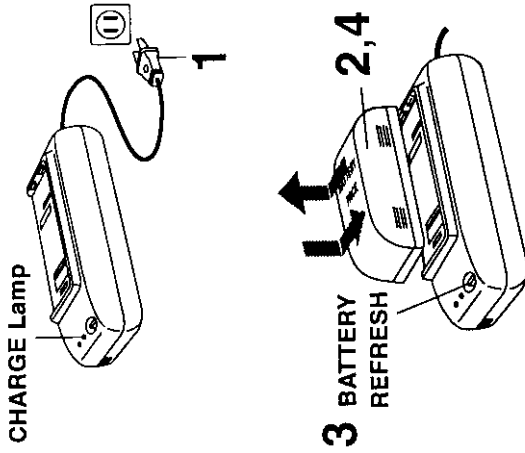
4 Press **PLAY** to start playback.

5 Press **STOP** to stop playback.

Battery Refresh

This feature completely discharges Battery before recharging begins. Use after about every 5 charges for optimum Battery performance.

- 1 Plug in AC Adaptor.**
 - POWER Lamp stays on as long as Adaptor is plugged in.
- 2 Place Battery into Adaptor.**
- 3 Press BATTERY REFRESH.** The CHARGE Lamp flashes during discharge then stays lit until charging is complete. If BATTERY REFRESH is pressed by mistake, remove Battery from Adaptor and reinsert it for normal charging.
- 4 Remove Battery.**
 - Charging takes about 7 and 1/2 hours when Battery Refresh is used.
 - Battery will not operate in extremely high temperatures.



Battery Care

Caution:

- Charge only with specified charger.
- Battery can be charged within a temperature range of 50° F (10° C) and 95° F (35° C).
- Battery is normally warm after charging or just after use.
- Do not use an insufficiently charged or worn-out Battery.

Safety precautions:

- Do not get Battery near, or dispose of in fire.
- Do not directly connect (short circuit) the positive (+) and negative (-) terminals.
- Never attempt to disassemble or reassemble Battery.

To avoid Battery damage:

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

To prolong Battery life:

- While not in use, remove Battery from the Camcorder and AC Adaptor and store in a cool, dark, dry place.
- Keep Battery terminals clean.

U.S.A. CONSUMERS:

ATTENTION:

The product you have purchased is powered by a nickel cadmium battery which is recyclable. At the end of its useful life, under various state and local laws, it is illegal to dispose of this battery into your municipal waste stream. Please call 1-800-8-BATTERY for information on how to recycle this battery.

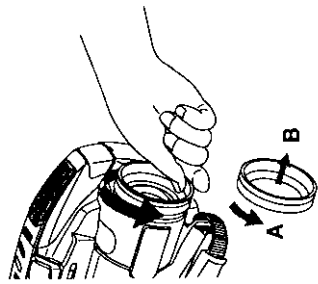


For ordering instructions, see the Accessory Order Form page. The listed standard battery use times are based on continuous recording using this Palmcorder.

Accessory #	Figure	Description	Price
PV-A17		AC Adaptor with DC Power Cable	\$130.00
HR-V214A/K		6.0Ah / 6 hr Battery Pack with Universal Battery Charger	\$200.00
P-V215		3.0Ah / 3 hr Battery Pack	\$60.00
PV-BP17/V214		2.4Ah / 2 hr 30 min Battery Pack	\$50.00
PV-BP18/V611		1.8Ah / 2 hr Battery Pack	\$45.00
PV-BP15/V213		1.2Ah / 1 hr 10 min Battery Pack	\$45.00
PV-AA6		"AA" Battery Case	\$20.00
PV-C16		Car Battery Cord	\$70.00
PV-RF16		RF Adaptor	\$40.00
PV-P1		VHS PlayPak	\$35.00
PV-H18		Soft Sided Carrying Case	\$49.00

Attaching Optional Filters and Lenses

When you remove the Lens Hood, pinch the Lens Hood and turn it counterclockwise as illustrated at right. You can attach an optional filter or lens. Be careful not to touch the lens itself. Replace the Lens Hood after removing the accessory.

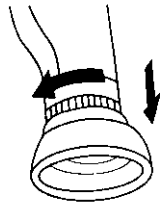


Lens Hood Area Operation Caution

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

Cleaning EVF (Electronic Viewfinder)

Remove

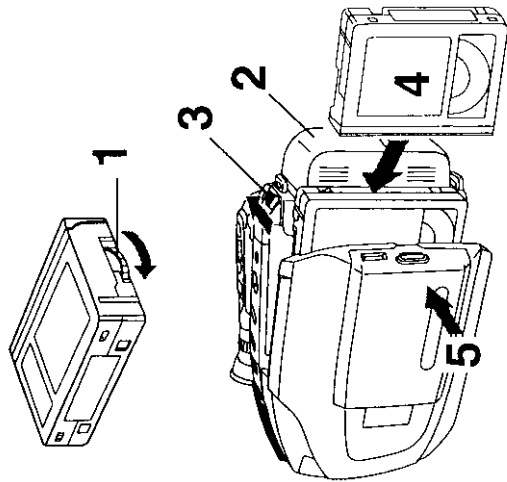


1 Turn the EVF Eyepiece counterclockwise 1/8 of a turn.

2 Pull free. Remove any lint or dust particles with a soft clean cloth being careful not to scratch the glass surfaces.

3 To re-install EVF Line up the marks on the Eyepiece with the grooves inside the EVF shaft and attach. Turn the EVF clockwise 1/8 of a turn to lock in place.

Cassette Insertion/Removal



- 1** Turn **Tape Wheel** in direction of arrow until there is no slack.
 - 2** Attach **Battery** (page 10).
 - 3** Slide **TAPE EJECT** to open door.
 - 4** Insert **cassette** as shown.
 - 5** Press here to close door.
- To remove the cassette, slide the **TAPE EJECT** switch.

Record/Playback Time

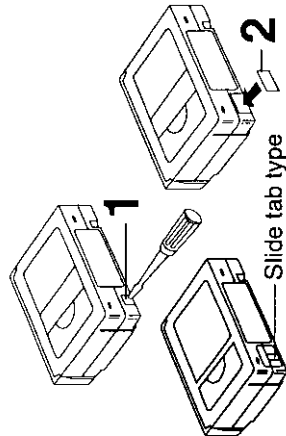
Use tapes with the **VHS** mark in this unit.

Tape Speed Selector Position	Cassette type	TC-20	TC-30	TC-40
SP (Standard Play)		20 minutes	30 minutes	40 minutes
SLP (Super Long Play)		1 hour	1 hour 30 minutes	2 hours

• SLP playback may contain more picture noise.

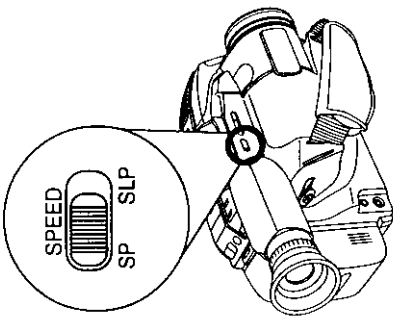
Erase Protection Tab

A record tab ensures recordings are not accidentally erased.



- 1** To prevent erasure, **break off tab** with screwdriver. (Or, slide tab open.)
- 2** To record again, cover hole with adhesive tape. (Or, slide tab closed.)

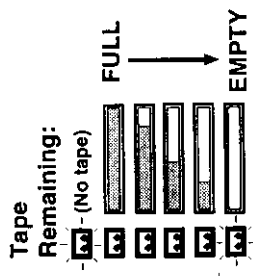
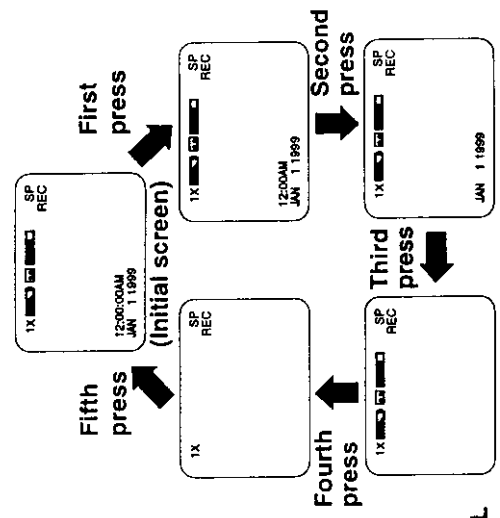
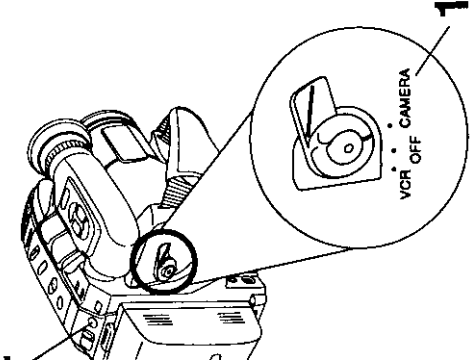
TAPE SPEED Selector



remaining and battery charge level can be displayed.

1 Set **POWER** to **CAMERA**.

2 Press **DISPLAY** repeatedly to select the following displays.



• Tape remaining indicator operates a few seconds after tape starts moving.

Recording the Date and Time

Do steps 1 and 2 above to select time/date, date only, or no display.

Start a recording (page 20).

- Only the Date and/or Time are recorded.

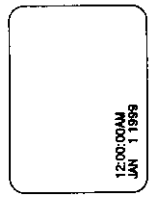
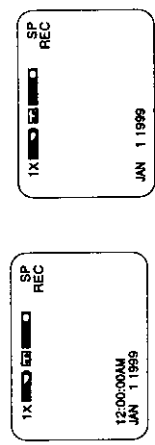
Play-Off Mode

Indication, except Intelligent Titler (pages 39-41), will be displayed.

Press **DISPLAY** and **STOP** together over 1 second.

DISPLAY repeatedly to remove time/date.

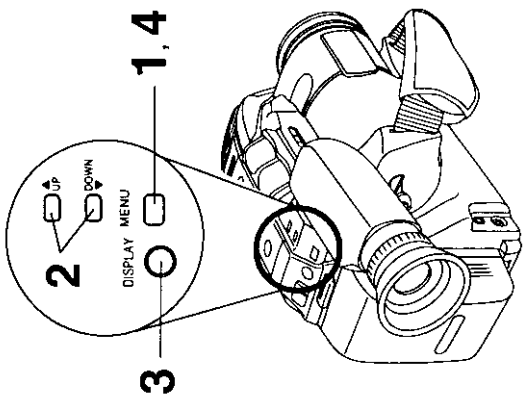
Indications are restored when Camcorder is turned off, and then again.



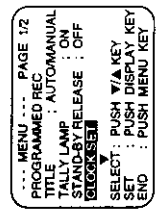
Using MENU Mode

Before you begin...

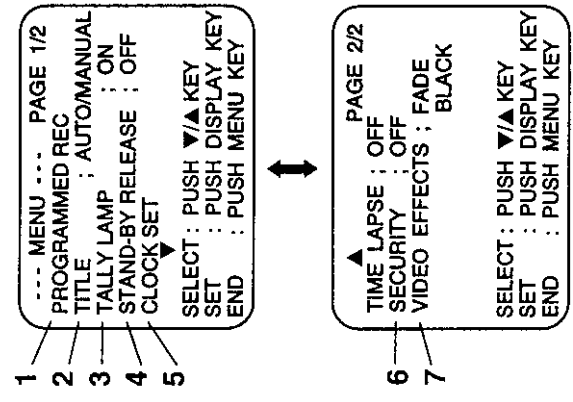
- Connect Camcorder to power source.
- Set **POWER** to **CAMERA**.



- 1** Press **MENU** for **MENU** mode.
- 2** Press **UP** or **DOWN** to highlight menu item.
- 3** Press **DISPLAY** to set selection.
- 4** Press **MENU** to exit.



MENU Mode Screen



- 1 PROGRAMMED REC** (page 24).
Camcorder starts and stops recording at a preset time.
- 2 TITLE** (pages 39-41).
AUTO/MANUAL : 16 items
PHRASE : 10 items
- 3 TALLY LAMP** (page 33).
ON: lamp lights during recording.
- 4 STAND-BY RELEASE** (page 22).
ON: enables quick resumption of recording from Stand-by mode.
- 5 CLOCK SET** (pages 16-18).
Select to set clock.
- 6 SECURITY** (page 38).
MOTION: enables Motion Security recording.
- 7 VIDEO EFFECTS** (pages 34, 35).
AUTO FADE : BLACK or WHITE
DIGITAL FADE : TYPE → 7 types
COLOR → 8 colors

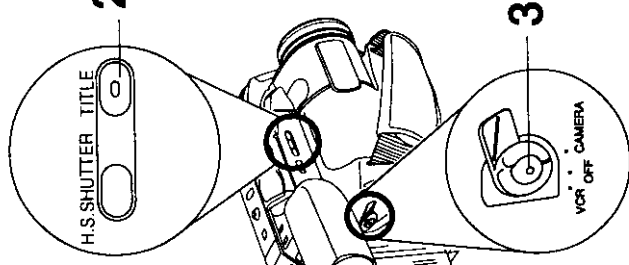
Intelligent Titler Manual Title Display List

Dec. 31-Jan. 1	HAPPY NEW YEAR! / CHEERS!
Feb. 14	VALENTINE'S DAY / BE MY VALENTINE
2nd Sunday in May	HAPPY MOTHER'S DAY / WE LOVE YOU!
Last Monday in May	MEMORIAL DAY
3rd Sunday in Jun.	HAPPY FATHER'S DAY / WE LOVE YOU!
Jul. 4	INDEPENDENCE DAY
1st Monday in Sep.	LABOR DAY
Oct. 31	HAPPY HALLOWEEN
4th Thursday in Nov.	HAPPY THANKSGIVING
Dec. 24-25	MERRY CHRISTMAS / HO! HO! HO!
These Titles must be displayed manually.	HAPPY EASTER HAPPY ANNIVERSARY HAPPY BIRTHDAY VACATION WEDDING DAY A SPECIAL DAY

Manual Title

Before you begin...

- Connect Camcorder to power source.
- Set **POWER** to **CAMERA**.
- Insert cassette with record tab (page 13).



- 1 Confirm that **TITLE: AUTO/MANUAL** is set in Menu mode (steps 1-3, page 39).
- 2 In Pause (Record mode), press **TITLE** repeatedly to display titles from list above.
- 3 To record the title, Press **RECORD/PAUSE**.
- 4 Press **TITLE** while recording to remove title.

Note:

- To redisplay title, press **TITLE** in Pause (Record mode).

Before you begin...

- Connect Camcorder to power source.
- Set **POWER** to **CAMERA**.

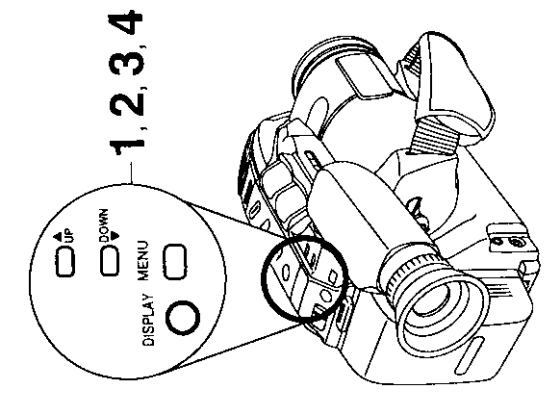
Note:

- When **POWER** is set to **VCR**, **CLOCK SET** menu appears.
- Auto DST does not function if time zone is set to Hawaii or Samoa (page 16).

Auto Daylight Saving Time

Clock will auto-adjust to daylight-saving time (DST).

The Camcorder is preset to **DST: AUTO**. If **DST** is not observed in your area, set to **OFF** by doing the following steps.

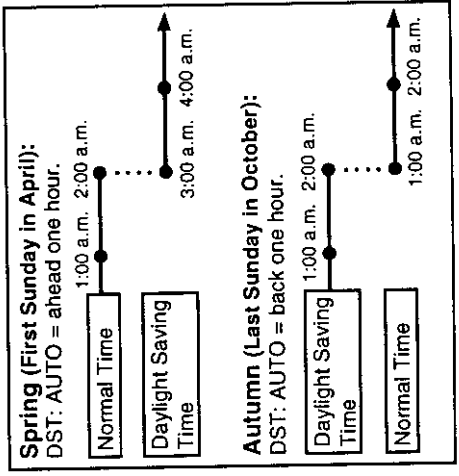


- 1 Press **MENU** for **MENU** mode. Press **UP** or **DOWN** to select **CLOCK SET**.

... MENU ... PAGE 1/2
 PROGRAMMED REC : AUTO/MANUAL
 TITLE LAMP : ON
 STANDBY RELEASE : OFF
CLOCK SET
 SELECT : PUSH **UP** KEY
 SET : PUSH **DOWN** KEY
 END : PUSH **MENU** KEY
- 2 Press **DISPLAY** for **CLOCK SET** menu. Press **UP** or **DOWN** to select **D.S.T.**.

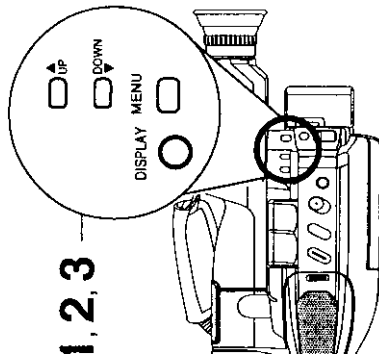
... CLOCK SET ...
 TIME ZONE : EASTERN
 PROGRAMMED REC : AUTO
 DATE/TIME : 12:00:00AM
 JAN 1 1999
 SELECT : PUSH **UP** KEY
 SET : PUSH **DOWN** KEY
 END : PUSH **MENU** KEY
- 3 Press **DISPLAY** for **DAYLIGHT SAVING TIME** menu. Press **UP** or **DOWN** to select **OFF** or **AUTO**.

... DAYLIGHT SAVING TIME ...
 AUTO
OFF
 SELECT : PUSH **UP** KEY
 SET : PUSH **DOWN** KEY
- 4 Press **DISPLAY** to confirm entry. Press **MENU** twice to exit.



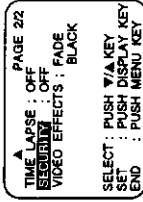
Before you begin...

- Connect Camcorder to power source.
- Use AC Adaptor for longer recordings.
- Insert cassette with record tab (page 13).
- Set POWER to CAMERA.
- Securely position and aim Camcorder.



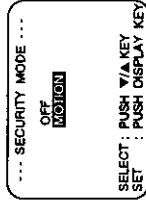
1

- Press **MENU** for MENU mode.
- Press **UP** or **DOWN** to select **SECURITY**.



2

- Press **DISPLAY** for SECURITY menu.
- Press **DOWN** to select **MOTION**.
- Press **DISPLAY** to confirm entry.



Security may mistakenly start

Background is plain, like a white wall, or is distinct vertical, horizontal, or slanted stripes, like a venetian blind.

Brightness suddenly changes.

Security may not start when:

- Motion is very slow or fast.
- Moving object is very small.
- Motion occurs only in 1 corner of viewing area.

• Poor lighting (in this case, MOTION SECURITY flashes).

• Background is plain, like a white wall, or is distinct horizontal or vertical stripes.

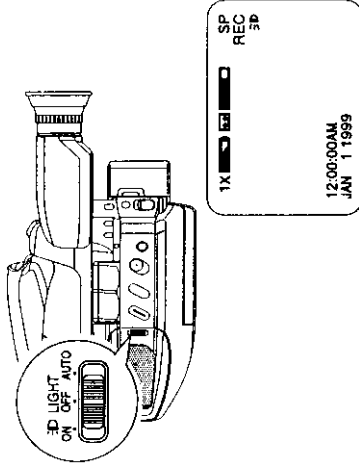
• Security recording starts if Camcorder is bumped or repositioned.

• This feature is not available during normal recording.

• While in Security stand-by, the following functions are not available: Record/Pause, Stand-by mode, Digital S.S., Time Lapse, Auto Fade, Digital Fade.

Using the Light

For recording in dim lighting.



Before you begin...

- Connect Camcorder to power source.
- Set POWER to CAMERA.

Set LIGHT to AUTO.

Light turns on/off automatically according to lighting conditions.

Or, set LIGHT to ON/OFF manually.

Light appears in EVF when Light is on.

Caution:

Light becomes hot. Never cover Light while on.

Replacing the Bulb

Before you begin...

- Order Part No. VLLW0001 (VLLW0015 and cushions) for replacement bulb unit.
- Set POWER to OFF.

1

Press in on both sides of lens cover and pull straight out and off.

2

Using Tweezers or needle-nose pliers, carefully remove bulb.

- Take unit to service center if you need assistance.

3

Replace bulb using a clean cloth or tissue.

4

Replace lens cover.

Note:

- Using Light reduces battery operating time.
- Provide proper ventilation when using Light extensively in hot environment.
- Using Light when the Camcorder is powered by a car battery may shorten bulb life.
- Set Light to OFF when not in use.
- Handle bulb gently. Excessive force may cause bulb to crack.

DANGER:

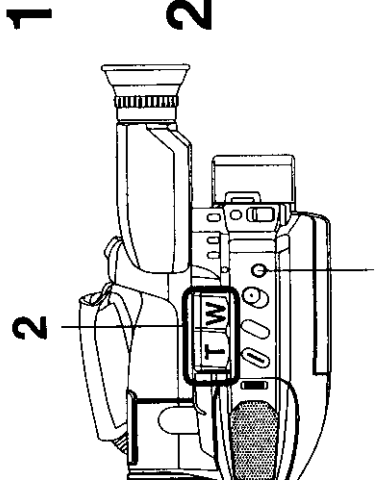
Use only replacement bulb (PART NO. VLLW0015) supplied by Panasonic to reduce risk of fire. Handle new bulb with cloth or tissue as skin oils will decrease bulb life. Remove lens cover and allow bulb to cool before replacing to avoid possible burn hazard.

To cancel Security Mode, set POWER to OFF.

Digital Zoom magnification is digitally increased.

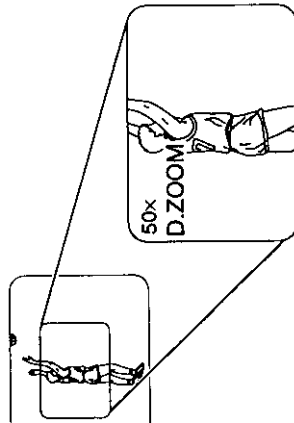
Before you begin...

- Connect Camcorder to power source.
- Set **POWER to CAMERA**.



- 1 Press **DIGITAL ZOOM**.
D.ZOOM mode (150x maximum).
Higher digital magnification levels may cause picture distortion.
- 2 Hold down **"T" on POWER ZOOM**.
Digital Zoom starts when normal zoom reaches maximum (26x).
 - Zoom level appears in EVF.
 - **POWER ZOOM** switch controls digital zoom level.
 - Normal zoom resumes when level falls to 26x.

- 3 Press **DIGITAL ZOOM** to turn off Digital Zoom so no indication appears.

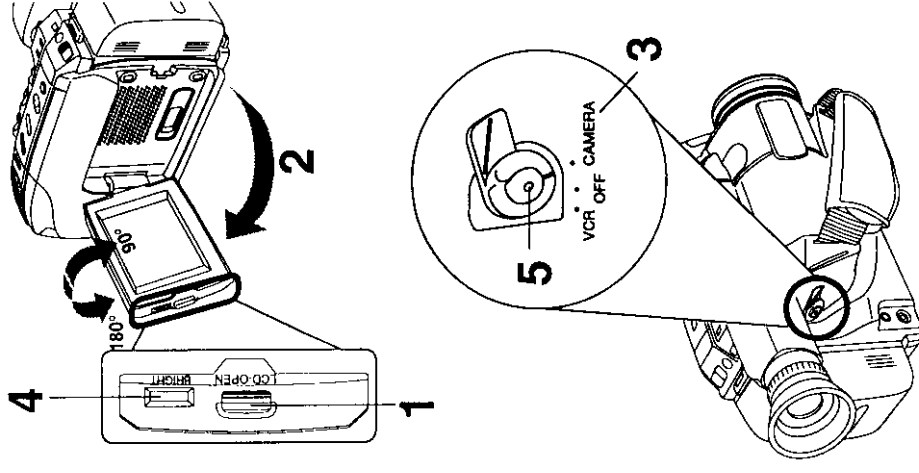


Before you begin...

- Connect Camcorder to power source.
- Insert cassette with record tab (page 13).

Using the LCD Monitor

View recording scene on the LCD (Liquid Crystal Display).



- 1 Press **LCD-OPEN** to unlock LCD.
- 2 Swing **LCD fully open** and adjust viewing angle.
Caution:
Rotating partially open LCD monitor may block cassette door and damage Camcorder body.
- 3 Set **POWER to CAMERA**.
 - LCD monitor turns off/on by the **POWER** switch.
 - Viewfinder shuts off when LCD is fully opened and turns back on when LCD is closed completely.
 - Both Viewfinder and LCD monitor turn on when LCD is at 180° (see below left).
This allows both you and the subject to view the recording.
- 4 Turn **BRIGHT** control to adjust LCD brightness level.
- 5 Press **RECORD/PAUSE** to start recording (page 20).

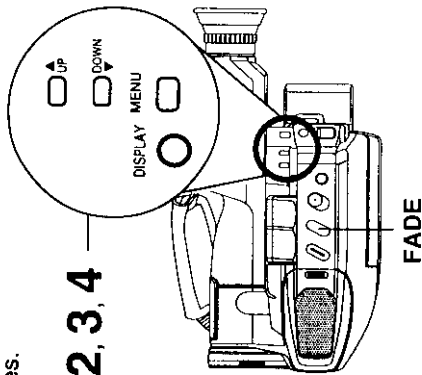
Note:

- Using LCD reduces battery operation time.
- Lock LCD closed when not in use.

to Fade

interesting way to open and close scenes.

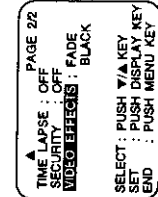
2, 3, 4



Before you begin...

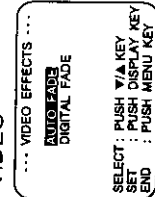
- Connect Camcorder to power source.
- Set **POWER** to **CAMERA**.

1 Press **MENU** for **MENU** mode.



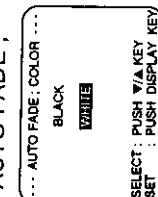
Press **UP** or **DOWN** to select **VIDEO EFFECTS**.

2 Press **DISPLAY** for **VIDEO EFFECTS** menu.



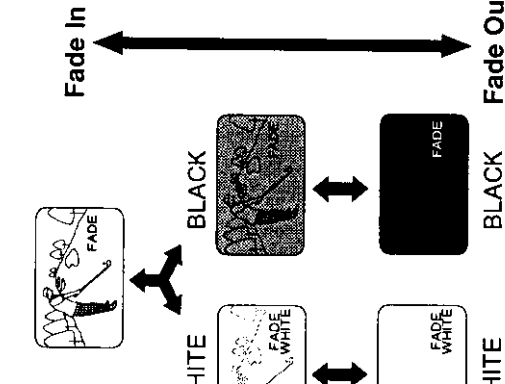
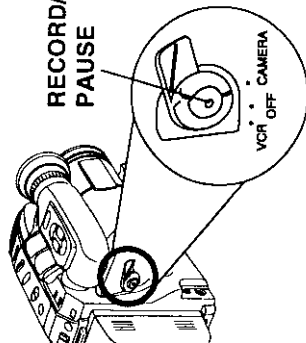
Press **UP** or **DOWN** to select **AUTO FADE**.

3 Press **DISPLAY** for **AUTO FADE** COLOR menu.



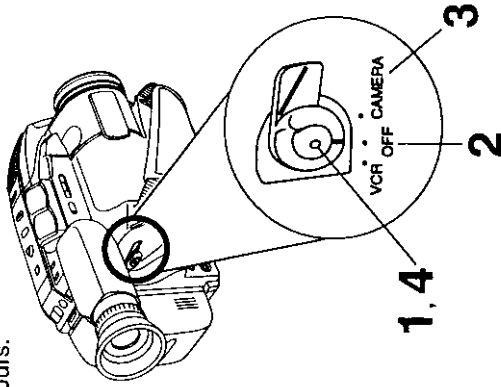
Press **UP** or **DOWN** to select **BLACK** or **WHITE**.

4 Press **DISPLAY** to confirm entry. Press **MENU** to exit.



Easy Edit Stand-by

For a smooth transition between scenes if recording is stopped, and then started within 24 hours.



1 Press **RECORD/PAUSE** to stop recording.

2 Set **POWER** to **OFF** and leave cassette in Camcorder.

3 To resume recording, set **POWER** to **CAMERA**.

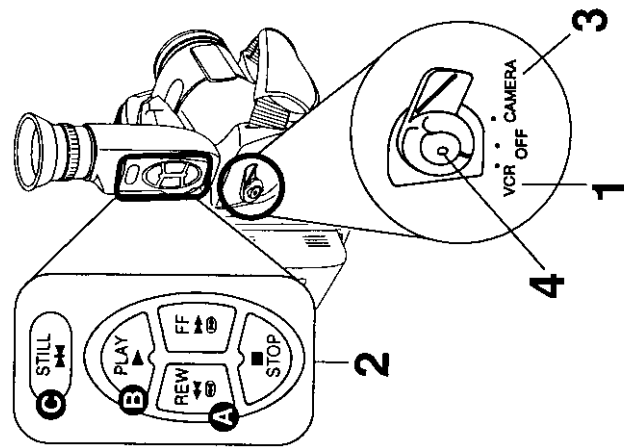
4 Press **RECORD/PAUSE** to resume recording.

Note:

- Use **Manual Easy Edit** (below) if more than 24 hours before recording is resumed.

Manual Easy Editing

For proper continuity when taping from Stop mode or after attaching a new Battery.



Before you begin...

- Connect Camcorder to power source.
- Insert cassette with record tab (page 13).

1 Set **POWER** to **VCR**.

2 **A** Press **REWIND/SEARCH** to rewind a few seconds of tape.

B Press **PLAY** to review recording.

C Press **STILL** where you want to continue recording.

3 Set **POWER** to **CAMERA**.

4 Press **RECORD/PAUSE** to resume recording.

Fade In:

In **RECORD/PAUSE** mode, press **FADE** so "FADE" flashes in EVF.

Press **RECORD/PAUSE**. Recording starts as picture and sound gradually fade in.

Fade Out:

While recording, press **FADE** so "FADE" flashes in EVF.

Press **RECORD/PAUSE**. Picture and sound gradually fade out, and recording is paused.

If **FADE** is pressed accidentally, press again so "FADE" disappears in EVF.

High Speed Shutter

proves Still or Slow Motion playback picture of high speed subjects (e.g. a tennis ball), when viewed on Camcorder or 3 or 4 head VCR.

Before you begin...

- Connect Camcorder to power source.
- Set **POWER** to **CAMERA**.
- Insert cassette with record tab (page 13).

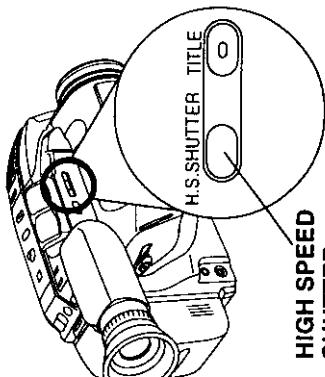
Auto Shutter

AUTO mode (no indication in EVF), shutter speed is auto-adjusted from 1/60 to 1/350 according to subject brightness.

AUTO mode is selected each time **POWER** is set to **CAMERA**.

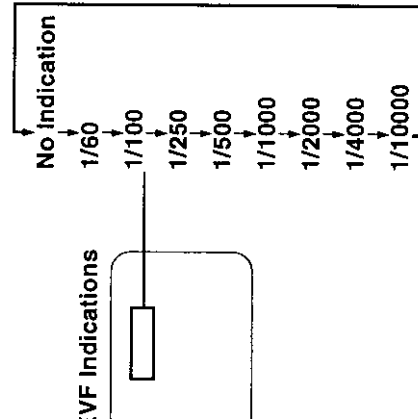
Manual Selection

For a faster the shutter speed, the more light is needed for proper picture and color quality. High Speed Shutter indication flashes if light is inadequate. Provide additional light.



HIGH SPEED SHUTTER

- 1 Press **HIGH SPEED SHUTTER** while recording.
- 2 Press repeatedly to change shutter speed. (See below, left.)



Note:

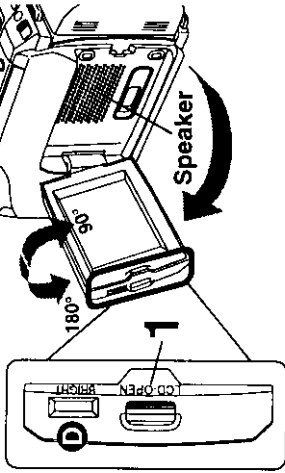
- Provide additional halogen or tungsten light for use indoors or in poor light. Fluorescent light degrades picture.
- Auto Focus may not function properly if high speed shutter is used in inadequate light.
- Setting reverts to **AUTO** each time **POWER** is set to **CAMERA**.

Playing Back Recordings

Playback on EVF or LCD Monitor

Before you begin...

- Connect Camcorder to power source.
- Insert recorded tape.



1

- Press **LCD-OPEN** and swing LCD monitor fully open.
- If you want to playback on EVF, close and lock LCD completely.

2

Set **POWER** to **VCR**.

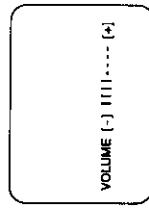
- If tape has no record tab, auto playback begins.
- LCD monitor turns on/off by the **POWER** switch.
- Viewfinder shuts off when LCD is fully opened and turns back on when LCD is locked shut.
- Return LCD monitor to locked position when not in use.

3

Playback function buttons.

- A** **REW(ind)** : rewind tape.
- B** **PLAY** : play tape.
- C** **STOP** : stop tape.
- D** **BRIGHT** : adjust LCD brightness.
- E** **VOLUME** : Adjust volume of speaker.

- Press "T" : Volume up(+).
- Press "W" : Volume down(-).

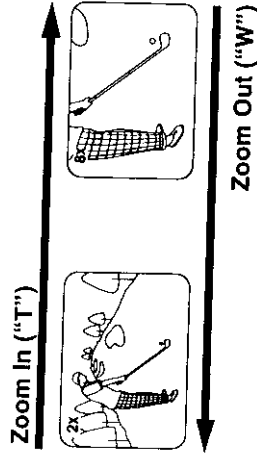
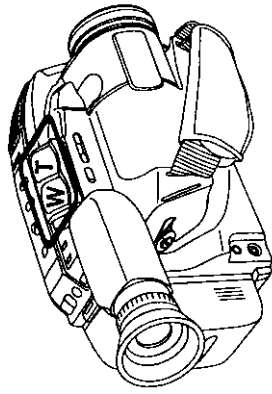


Note:

- Using LCD reduces battery operating time.

Four-Speed Power Zoom

om in (close up) and out (wide angle) one of four speeds ranging from slow (3 sec.) to fast (2 sec.).

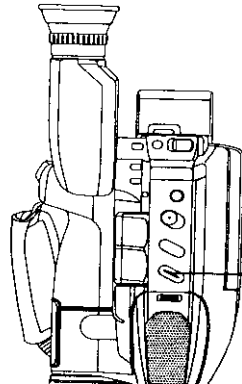


Zoom slowly:
Lightly press "T" (telephoto) or "W" (wide angle) POWER ZOOM button.

Zoom quickly:
Apply more pressure to the button.

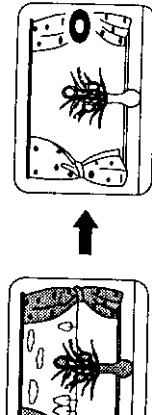
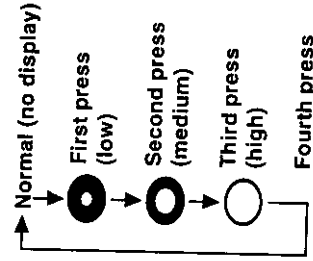
Backlight

when subject is darker than surroundings, in shadowed area, or in front of light source.



Press **BACKLIGHT** while recording to select the level of backlight compensation. In normal lighting, press **BACKLIGHT** repeatedly until no indicator displayed.

EVF Indications



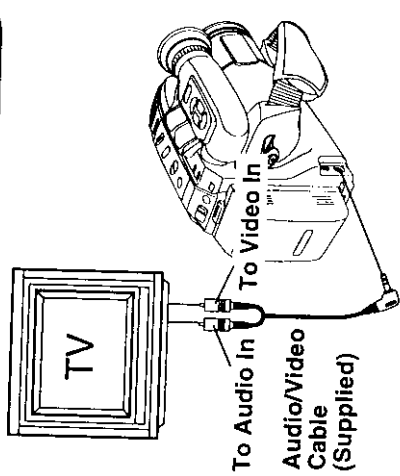
For assistance, call 1-800-211-PANA(7262)

Playing Back Recordings

TV Playback or Viewing

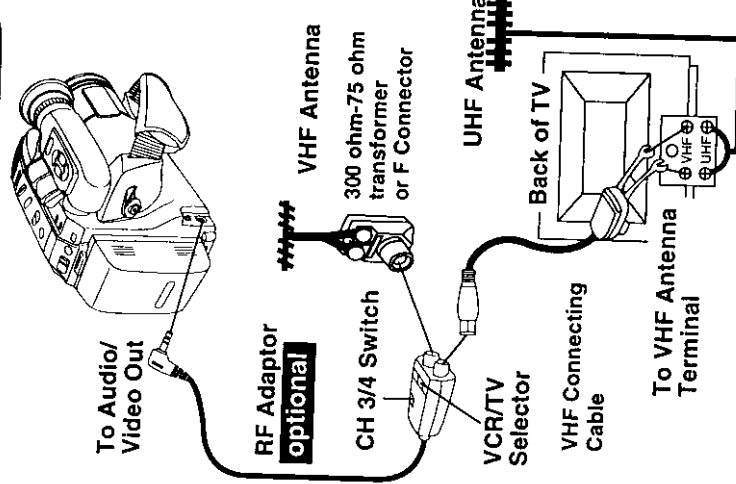
Connect Camcorder to a TV to view playback or recordings in progress.

TV with AUDIO/VIDEO IN Jacks.



To Audio/Video Out

TV without AUDIO/VIDEO IN Jacks.



Before you begin...

- Connect Camcorder to power source.
- Make all TV-Camcorder connections.

1

Set POWER to:

VCR → view playback.

CAMERA → view picture as it is recorded.

2

Turn TV ON and set to LINE INPUT.

See TV owner's manual.

3

Begin playback or recording.

If TV has no VIDEO/AUDIO IN jacks, connect PV-RF16 RF Adaptor (optional). Tune TV to CH 3 or 4 to match RF Adaptor 3/4 switch. Set Adaptor's TV/VCR switch to VCR for playback.

To watch TV only, turn TV on without AUDIO/VIDEO IN Jacks connected (left).

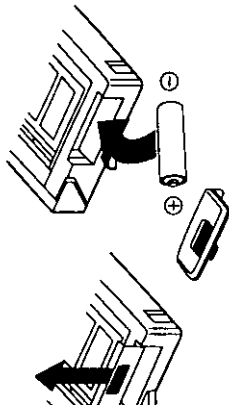
- Set Camcorder POWER to OFF.
- Set RF Adaptor VCR/TV Selector to TV.
- Turn TV ON and select channel.

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.

Copying Back Recordings in a VCR

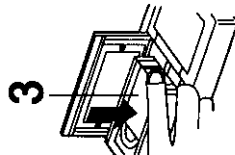
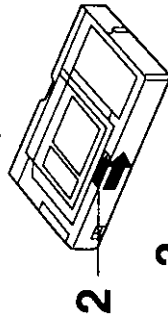
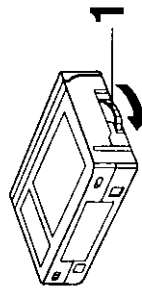
Load Battery in PlayPak



Remove Battery lid and insert AA battery.

- Do not reverse polarity.
- Replace battery when tape loading/unloading takes longer than usual.

Insert VHS Cassette in PlayPak

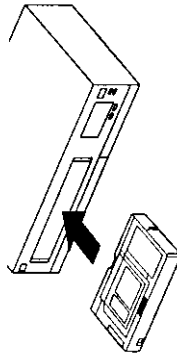


1 Turn **VHS** cassette Tape Wheel in direction of arrow to take up any slack.

2 Slide **RELEASE** to open cassette lid.

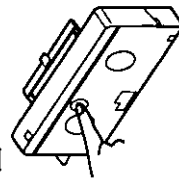
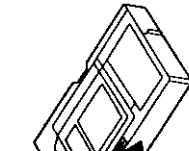
3 Insert the **VHS** cassette with the window up and on the left, then snap lid shut.

- Do not obstruct cassette reel while loading.
- Allow PlayPak Load Detector to fully retract before using in VHS VCR.



Load Detector

Load VHS Cassette



1 Slide **RELEASE** and wait for lid to open.

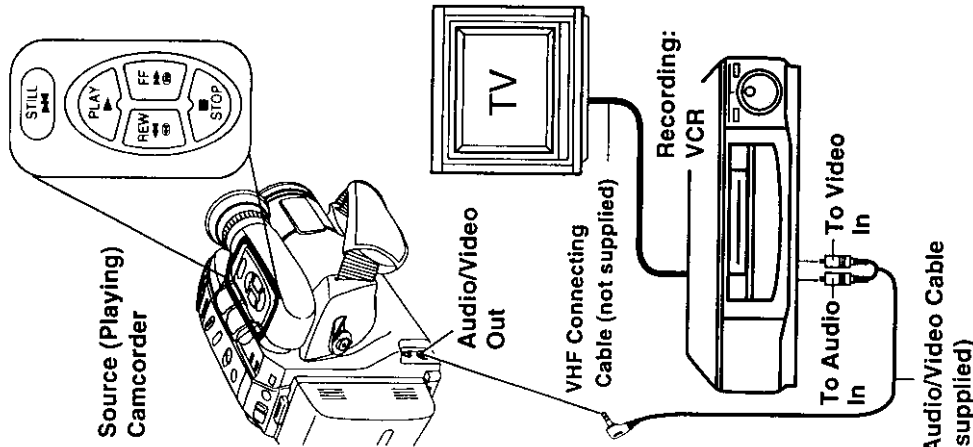
2 Push cassette out through hole in bottom of PlayPak with your finger.

Copying your Tapes (dubbing)

Connections

Before you begin...

- Make Camcorder-VCR connections (see left).
- Turn both units on.
- Set VCR input signal to **LINE**. Please see VCR owner's manual.
- Set Camcorder **POWER** to **VCR**.



1 Insert a **pre-recorded tape** into Camcorder and a blank tape with record tab into VCR.

2 Press **PLAY** on Camcorder, then press **STILL** at starting point.

3 Press **REC**, then **STILL/PAUSE** on VCR.

4 Press **STILL** on Camcorder and **STILL/PAUSE** on VCR again to start copying.

5 Press **STOP** on both units to stop copying.

Note:

- Camcorder will only playback tapes recorded in SP or SLP mode.
- Dubbing may reduce picture quality.

Monitor with your TV

- Turn TV on and tune to VCR channel (CH3 or CH4).
- Set VCR/TV Selector on VCR to VCR.

CAUTION:

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

Special Effects

Before you begin...

- Connect Palmcorder to power source.
- Insert recorded tape.
- Set POWER to VCR.

Quick Visual Search

Search Speed

SP (Standard Play) : 3 times normal.

SLP (Super Long Play) : 9 times normal.

During playback, press:

FF : fast forward search

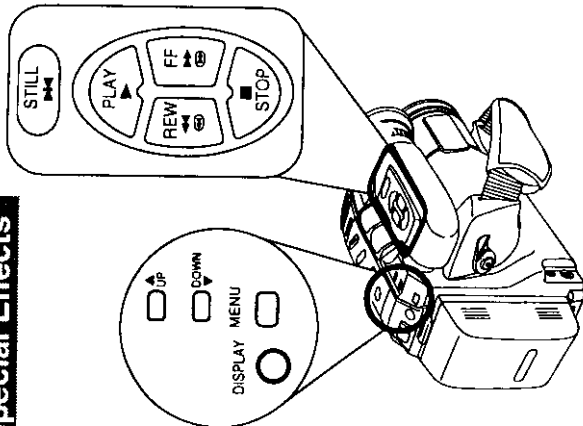
REW : rewind search

Press again or PLAY for normal play.

Still Picture

Press **STILL** to freeze picture.

Press again for normal play.



- During search, horizontal noise bars will appear. Audio is muted. protect video heads and tape, operating modes will revert as follows after 5 minutes:
- Stand-by → Power off (when Battery Pack is used).
- Power auto-rewinds if played or fast forwarded to end.

Tracking Control

Auto Tracking

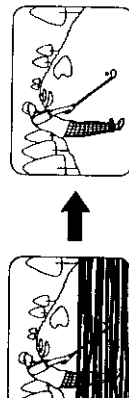
Continuously analyzes each recording for optimum picture quality.

Manual Tracking

Some recordings require manual adjustment to reduce noise.

Press **UP ▲** or **DOWN ▼** until Playback picture clears up.

Press **DISPLAY** to return to Auto Tracking.



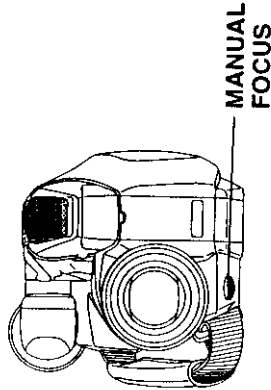
Auto Focus

Before you begin...

- Connect Camcorder to power source.
- Set POWER to CAMERA.

Camcorder automatically focuses on subject even during zooming.

Auto Focus is on when "MF" is not displayed in EVF. Push **MANUAL FOCUS** to remove "MF" in EVF if necessary.



Manual Focus

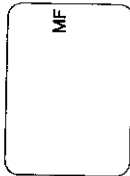
Use Manual Focus (MF) when :

- recording through glass.
- lighting is poor.
- subject is far away with objects in foreground.
- subject has distinct horizontal lines.

1

Push **MANUAL FOCUS** so "MF" (Manual Focus) appears in EVF.

EVF Indication



2

Hold down "T" (telephoto) on POWER ZOOM to maximum zoom in.

3

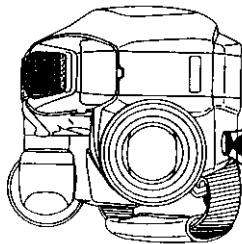
Turn **MANUAL FOCUS** until subject is in focus.

- Back away from subject if necessary.

4

Hold down "W" (wide angle) on POWER ZOOM as desired.

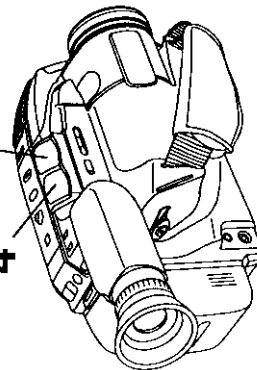
- Refocus as needed when aiming at new scenes.



1, 3

2

4



Macro Focus (close-ups)

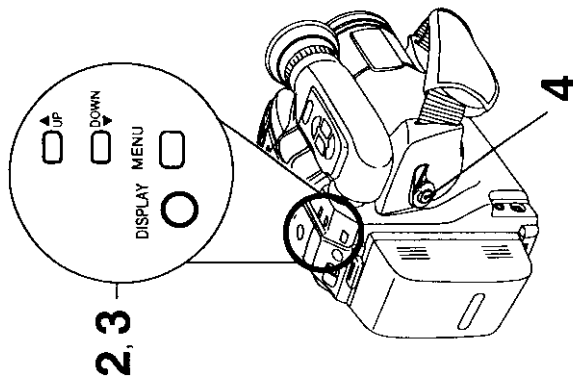
Auto Focus functions up to 1/2 inch (12.7mm) from subject. Hold down "W" on POWER ZOOM to maximum wide angle. Bring Camcorder up close to the subject.

Camera Recording

Programmed Recording

Before you begin...

- Connect Camcorder to power source.
- Use AC Adaptor for longer recordings.
- Insert cassette with record tab (page 13).
- Set POWER to CAMERA.



1 Press **MENU** for MENU mode.
Press **UP** or **DOWN** to select **PROGRAMMED REC.**

```

--- MENU --- PAGE 1/2
PROGRAMMED REC
TITLE : AUTOMANUAL
TALLY LAMP : ON
STANDBY RELEASE : OFF
CLOCK SET
SELECT : PUSH  $\uparrow$ /A KEY
SET : PUSH DISPLAY KEY
END : PUSH MENU KEY
    
```

2 Press **DISPLAY.** (Current time is displayed.)
Each additional press of **DISPLAY** increases start time by 30 minutes.

```

START : 10:30PM
REC TIME : 10MIN.
SELECT : PUSH  $\uparrow$ /A KEY
SET : PUSH DISPLAY KEY
START : PUSH RECORD KEY
CANCEL : PUSH MENU KEY
10:20:00PM
    
```

3 Press **DOWN** to select **REC TIME.** Press **DISPLAY** repeatedly to select one of the options shown at the left.

```

START : 10:30PM
REC TIME : 10MIN.
SELECT : PUSH  $\uparrow$ /A KEY
SET : PUSH RECORD KEY
START : PUSH RECORD KEY
CANCEL : PUSH MENU KEY
10:20:00PM
    
```

To cancel the setup, press **MENU** twice.

4 Press **RECORD/PAUSE** to place Camcorder in stand-by mode.

```

STAND-BY
START : 10:30PM
REC TIME : 10MIN.
10:20:00PM
JUN 1 1999
    
```

Recording will be done as scheduled.

20MIN. → 20MIN. → 30MIN. → TO TAPE END

INTERVAL *2 10 SEC/MIN. — 5 SEC/MIN. — INTERVAL *1

Interval 5 SEC/MIN:
Record 5 seconds each minute.

Interval 10 SEC/MIN:
Record 10 seconds each minute.

Start time may not be set over 24 hours in current time.
Camcorder shuts off at tape end, or 12 hours after Interval Recording starts.
cancel, set POWER to OFF.

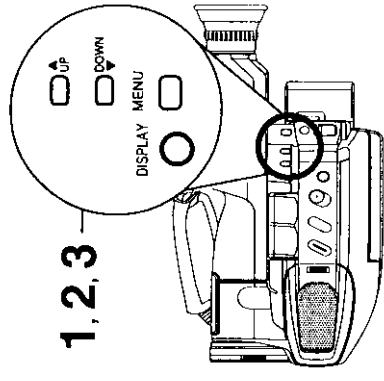
Tally Lamp

Tally Lamp

The tally lamp can be set to come on or stay off during recording.
New camcorder's default setting is ON.

Before you begin...

- Connect Camcorder to power source.
- Set POWER to CAMERA.
- Insert cassette with record tab (page 13).

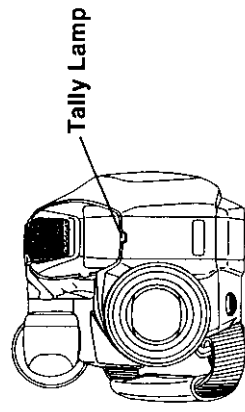


1 Press **MENU** for MENU mode.
Press **UP** or **DOWN** to select **TALLY LAMP.**

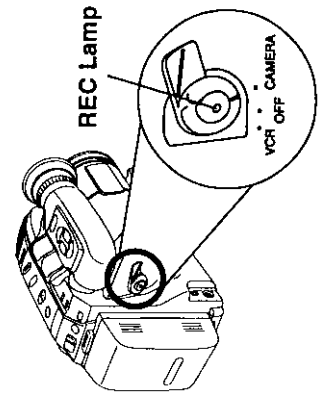
```

--- MENU --- PAGE 1/2
PROGRAMMED REC
TITLE : AUTOMANUAL
TALLY LAMP : ON
STANDBY RELEASE : OFF
CLOCK SET
SELECT : PUSH  $\uparrow$ /A KEY
SET : PUSH DISPLAY KEY
END : PUSH MENU KEY
    
```

2 Press **DISPLAY** to select:
ON → Tally lamp lights during recording.
OFF → Tally lamp and REC lamp stay off.



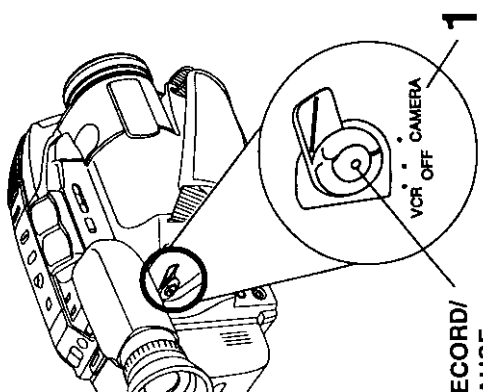
3 Press **MENU** to exit.



Camera Recording

Stand-by Quick Release

When RECORD/PAUSE mode for 5 minutes, Camcorder switches to Stand-by mode to save battery. When set to ON, Stand-by Quick Release lets you resume recording by pressing RECORD/PAUSE two times. New camcorders will default to OFF.

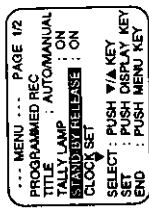


Before you begin...

- Connect Camcorder to power source.
- Insert cassette with record tab (page 13).

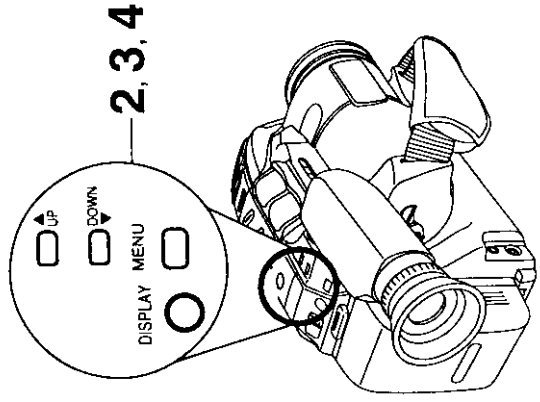
1 Set POWER to CAMERA.

2 Press MENU for MENU mode. Press UP or DOWN to select STAND-BY RELEASE.



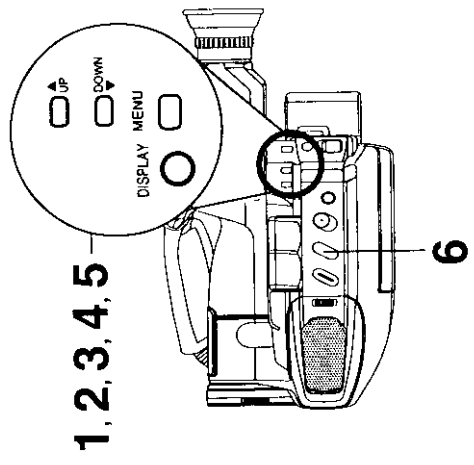
3 Press DISPLAY to select ON/OFF.
ON: From Stand-by mode, press RECORD/PAUSE two times to resume recording.
OFF: From Stand-by mode, set POWER to OFF, then to CAMERA. Press RECORD/PAUSE to record.

4 Press MENU to exit.



Color Digital Fade

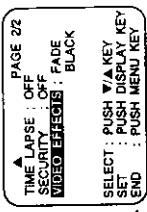
Choose from 7 fade effects in 8 different colors.



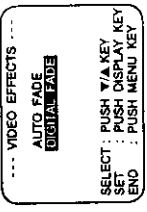
Before you begin...

- Connect Camcorder to power source.
- Set POWER to CAMERA.

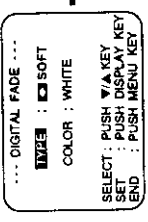
1 Press MENU for MENU mode. Press UP or DOWN to select VIDEO EFFECTS.



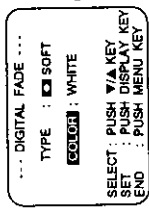
2 Press DISPLAY for VIDEO EFFECTS menu. Press DOWN to select DIGITAL FADE.



3 Press DISPLAY for DIGITAL FADE menu. Press UP or DOWN to select TYPE. Press DISPLAY for TYPE menu. Press UP or DOWN to select from 7 types.

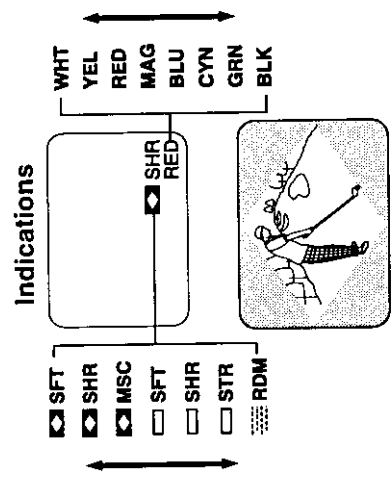


4 Press DISPLAY for DIGITAL FADE menu. Press DOWN to select COLOR. Press DISPLAY for COLOR menu. Press UP or DOWN to select from 8 colors.



5 Press DISPLAY to confirm entry. Press MENU twice to exit.

6 Press FADE for about 2 seconds to fade out during recording (selected fade type flashes). Press FADE again to fade in.



For more effects, stop fade in or fade out at any time (except RANDOM mode) by pressing FADE. Then, press FADE to resume fade.

Note:

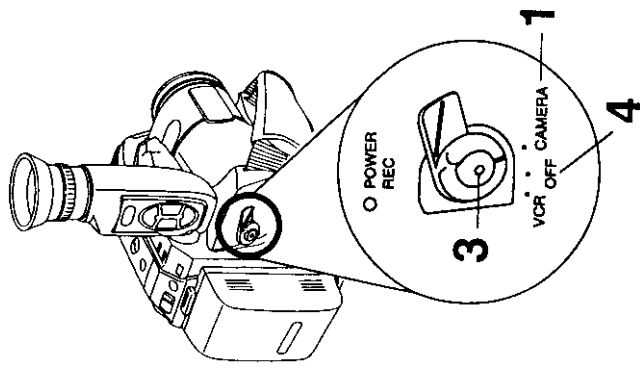
- Audio is not affected by fade.
- To cancel Digital Fade, do steps 1, 2, and 5. In step 2, select AUTO FADE.

Camera Recording

Simple Recording

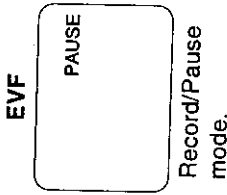
Before you begin...

- Connect Camcorder to power source.
- Insert cassette with record tab (page 13).



1

Set **POWER** to **CAMERA**.
Lens Cover opens.



- Be sure **POWER** is fully turned to **CAMERA** position.

2

Slide **TAPE SPEED** to **SP** or **SLP** (page 13).

3

Press **RECORD/PAUSE** to start or pause recording.
REC lamp lights during recording.
Tally lamp also lights if set to **ON** (page 33).



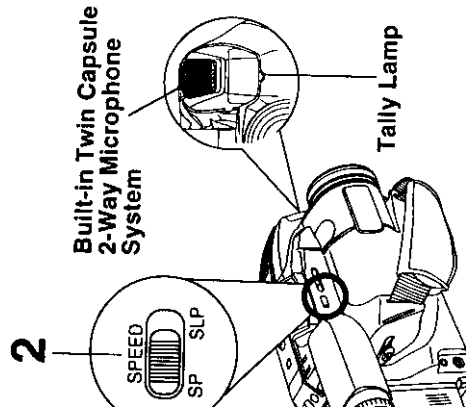
4

Set **Power** to **OFF** when finished.

- To remove cassette, slide **TAPE EJECT** in Record/Pause mode. (page 13).

Note:

- When Camcorder is aimed at excessively bright objects, or bright lights, a vertical bar may appear in the picture. This is normal for the CCD pick-up. Try to avoid this when possible.



Digital E.I.S.

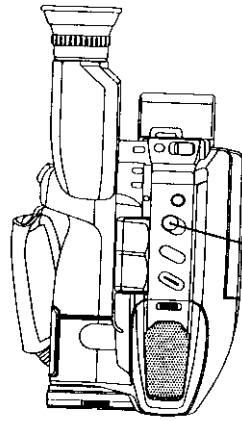
Digital Electronic Image Stabilization (E.I.S.)

Before you begin...

- Connect Camcorder to power source.
- Set **POWER** to **CAMERA**.

Helps stabilize picture when recording in unstable situations.

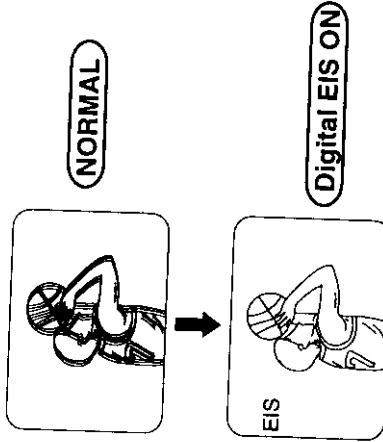
1



- Press **EIS** to display "EIS" in the EVF.
- Image becomes slightly enlarged and shutter speed auto-adjusts from 1/80 to 1/350 according to brightness.
- Use High Speed Shutter (page 32) if needed. Shutter speed setting remains after EIS is canceled.

2

Press **EIS** again to cancel when not in use.

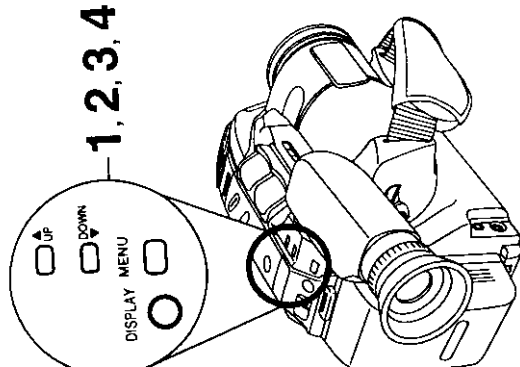


- E.I.S. may not function during...
- extreme Camcorder movement.
 - recording of subject with distinct horizontal or vertical stripes.
 - low light situations (EIS indicator flashes).
 - intense fluorescent lighting situations.
 - recording of very fast motion.


Setting the Clock

Setting Date and Time


and time including leap year are dated up to DEC 31, 2097.




EXAMPLE



 5:00:00 PM
 JAN 1 1999



 6:00:00 PM
 JAN 1 1999



 6:00:00 PM
 JAN 1 1999

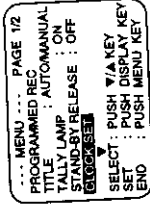
Before you begin...

- Connect Camcorder to power source.
- Set POWER to CAMERA.

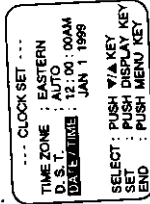
Note:

- When POWER is set to VCR, CLOCK SET menu appears.

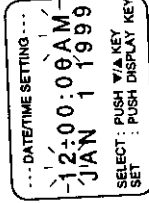
- 1 Press **MENU** for MENU mode. Press **UP** or **DOWN** to select **CLOCK SET**.



- 2 Press **DISPLAY** for CLOCK SET menu. Press **UP** or **DOWN** to select **DATE/TIME**.



- 3 Press **DISPLAY** for DATE/TIME menu.



- 4 Press or hold down **UP** or **DOWN** to select hour, then press **DISPLAY** to fix.

Repeat for minute, month, day, and year. Clock starts when year is entered.

Press **MENU** twice to exit.

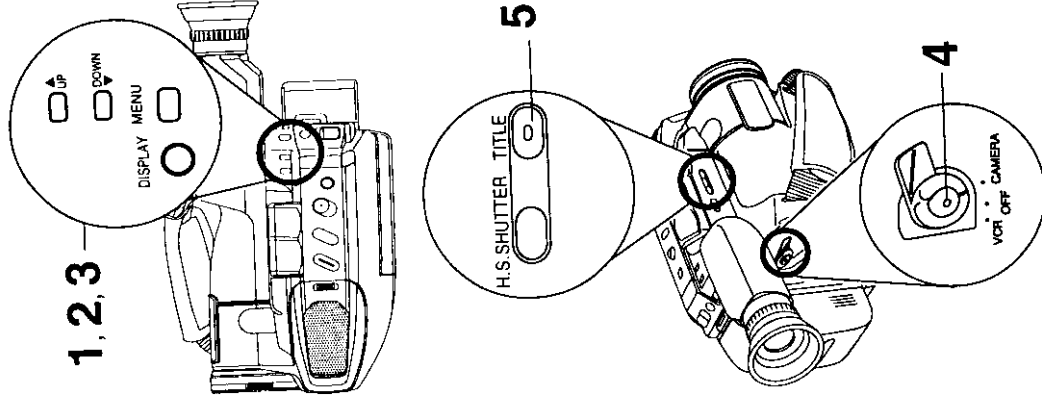
Intelligent Titler

Before you begin...

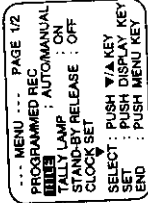
- Connect Camcorder to power source.
- Set POWER to CAMERA.
- Insert cassette with record tab (page 13).

Automatic Title

Camcorder auto-displays title greeting on selected holidays when power is first turned on. See title list on page 40.



- 1 Press **MENU** for MENU mode. Press **UP** or **DOWN** to select **TITLE**.



- 2 Press **DISPLAY** to select AUTO/MANUAL.

- 3 Press **MENU** to exit.

- 4 To record the title, press **RECORD/PAUSE**.

- 5 Press **TITLE** to remove title during recording.

Note:

- Once removed, title will not be auto-displayed. To redisplay, or select from other titles use Manual Title (page 40).

Setting the Clock

the following items in order: Time Zone, Daylight Saving Time, Date and Time.

Setting the Time Zone

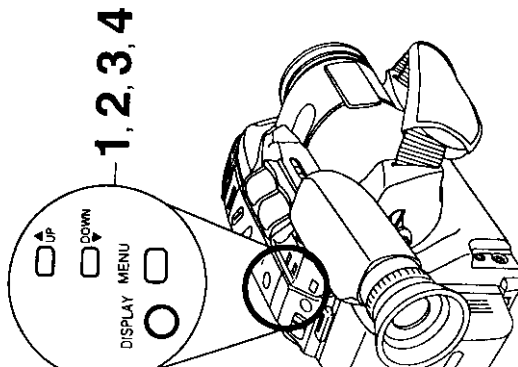
Camcorder is preset to Eastern time. Change time zone, do steps at right.

Before you begin...

- Connect Camcorder to power source.
- Set POWER to CAMERA.

Note:

- Setting POWER to VCR also displays CLOCK SET menu.
- Clock may lose or gain up to 2 minutes per month. To adjust, see page 18.



1 Press **MENU** for MENU mode. Press **UP** or **DOWN** to select **CLOCK SET**.

... MENU ... PAGE 12
PROGRAMMED REC
TITLE
TALLY LAMP : AUTOMANUAL
STAND-BY/RELEASE : ON
CLOCK SET
SELECT : PUSH ∇ /A KEY
SET : PUSH DISPLAY KEY
END : PUSH MENU KEY

2 Press **DISPLAY** for CLOCK SET menu. Press **UP** or **DOWN** to select **TIMEZONE**.

... CLOCK SET ...
TIMEZONE : EASTERN
DATE/TIME : JAN 1 1999
SELECT : PUSH ∇ /A KEY
SET : PUSH DISPLAY KEY
END : PUSH MENU KEY

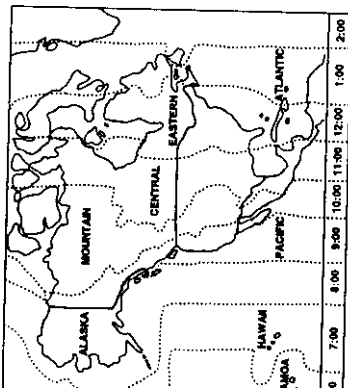
3 Press **DISPLAY** for SELECT TIME ZONE menu. Press **UP** or **DOWN** to select local time zone.

... SELECT TIME ZONE ...
ATLANTIC
PACIFIC
EASTERN
CENTRAL
MOUNTAIN
HAWAII
SAMOA
SELECT : PUSH ∇ /A KEY
SET : PUSH DISPLAY KEY

4 Press **DISPLAY** to confirm entry. Press **MENU** twice to exit.

- When traveling, repeat these steps and select one of the 8 listed time zones to set the clock to local time.

Zone chart



When traveling outside the listed time zones, set the clock to local time manually (page 18).

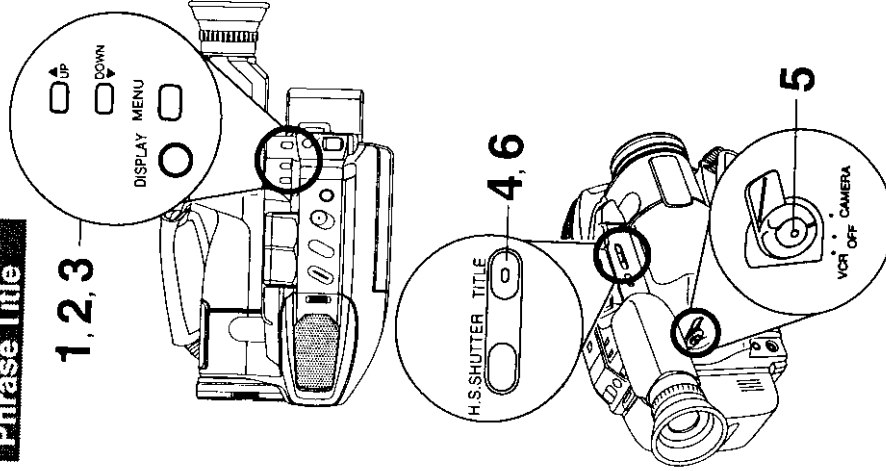
Intelligent Titler

Phrase Title

Before you begin...

- Connect Camcorder to power source.
- Set POWER to CAMERA.
- Insert cassette with record tab (page 13).

1, 2, 3



1 Press **MENU** for MENU mode. Press **UP** or **DOWN** to select **TITLE**.

... MENU ... PAGE 12
PROGRAMMED REC
TITLE
TALLY LAMP : PHRASE ON
STAND-BY/RELEASE : OFF
CLOCK SET
SELECT : PUSH ∇ /A KEY
SET : PUSH DISPLAY KEY
END : PUSH MENU KEY

2 Press **DISPLAY** to select PHRASE.

3 Press **MENU** to exit.

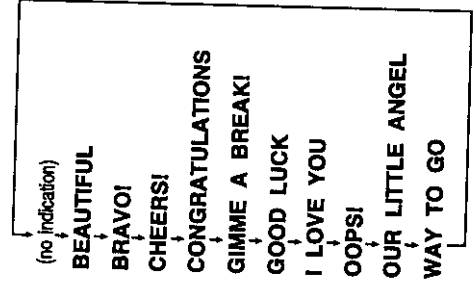
4 In Pause (Record mode), press **TITLE** repeatedly to display phrases from list below, left.

5 To record the phrases, Press **RECORD/PAUSE**.

6 Press **TITLE** while recording to remove phrase.

Note:

- To redisplay phrase, press **TITLE** in Pause (Record mode).

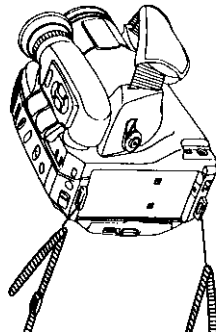


Attaching Shoulder Strap

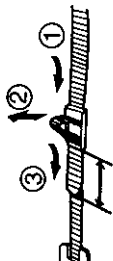
Remove Battery Pack before doing steps.



1 Undo strap ends from buckles.



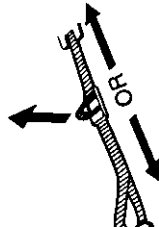
2 Thread strap ends through Strap Rings on Camcorder.



3 Re-insert the strap ends into buckles.

min. 1 inch (25.4mm)

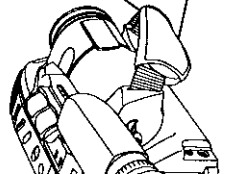
Adjusting the Length



1 Pull a loop of strap from buckle.

2 Pull strap tight to shorten or lengthen.

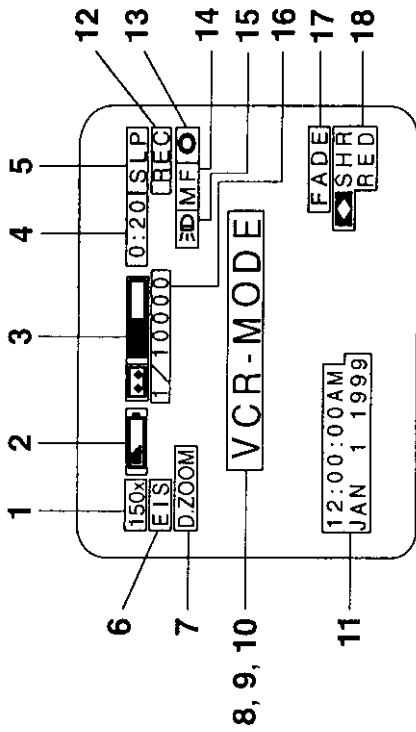
Strap



Adjust Hand Strap length to fit your hand as shown.

Viewfinder/LCD Monitor Indications

CAMERA/VCR mode



1 Zoom Magnification level (page 30).

2 Battery Remaining (page 42)
"WARNING LOW BATTERY" appears and External Power Lamp starts flashing 15 seconds before Camcorder shutoff.

3 Tape Remaining

- If cassette is not inserted or has no record tab in Camera (RECORD) mode, "CHECK TAPE" appears 5 seconds.
- As end of tape is reached, "TAPE END" appears 5 seconds.

4 10-Second Reminder
Each time a recording is started, a 10 second incremental display (up to 59:50) lets you monitor how long one scene is recorded.

0:00 0:10 0:20 59:50
↑
(return to 0:00 and continue)

5 TAPE SPEED (pages 13, 20)
(SP=standard play, SLP=super long play).

6 Digital E.I.S. (page 37).

7 Digital Zoom (page 36).

8 VCR-MODE

Appears 1 minute when POWER is set to VCR or if RECORD/PAUSE is pressed in VCR mode.

9 DEW

If moisture condensation occurs in unit, "WARNING DEW DETECTED" appears, Power Lamp flashes, and Camcorder will shutoff in 15 seconds. Wait until lamp no longer flashes when Camcorder is turned on to use.

10 Security Mode (page 38).

11 Date and Time (page 18).

12 Operating Mode

REC (record)

PAUSE

FF (fast forward)

PLAY

REW (rewind)

13 Backlight (page 30).

14 Manual Focus (page 31).

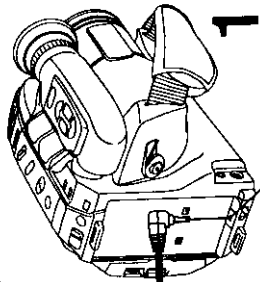
15 Light ON/OFF (page 19).

16 High Speed Shutter (page 32).

17 Fade (page 34).

18 Color Digital Fade (page 35).

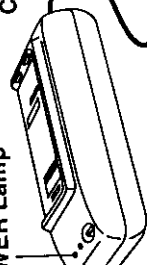
Supplying Power



Power Cable

DC IN Connector

POWER LAMP



AC ADAPTOR

1 Connect **AC Adaptor VCR DC OUT** to **Camcorder DC IN** with supplied DC Power Cable.

2 Plug in **AC Adaptor**. POWER Lamp lights.

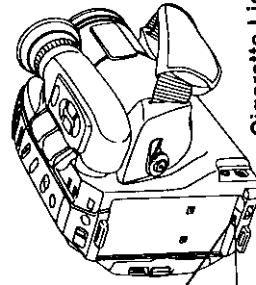
Notes:

- AC Adaptor cannot power Camcorder while charging Battery.
- When not in use, unplug AC Adaptor from AC outlet. (Adaptor uses 1.2 W of electricity while plugged in.)

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.

Battery Cord (Optional)



Cigarette Lighter Socket (12V)

Battery Cord (Optional)

Cigarette Lighter Plug

1 Connect **PV-C16 Car Battery Cord** (optional) to **Camcorder DC IN**.

2 Start engine first. Plug Car Battery Cord into Cigarette lighter socket.

- If Car Battery cord fuse needs replacing, use exact current rating (in amps).

Notes:

- This cord only works in vehicles equipped with DC 12V (negative ground) battery. Check with your car/truck dealer. Use only specified car battery cord.
- To avoid blowing the car battery cord fuse, do step 2 in the proper order.
- Running vehicles must be well ventilated.
- When not in use, disconnect cigarette lighter plug.

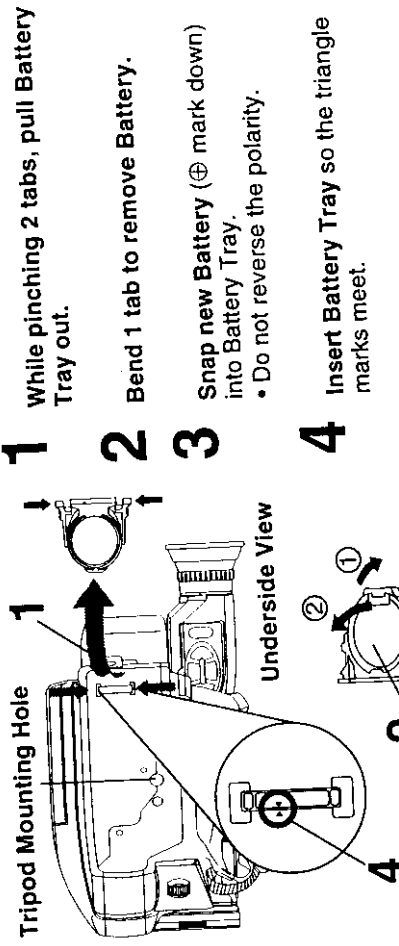
For assistance, call 1-800-211-PANA(7262)

Replacing Clock Battery

The clock battery is pre-installed. Follow the steps below if replacement becomes necessary.

WARNING: 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.

Clock Battery



- 1** While pinching 2 tabs, pull Battery Tray out.
- 2** Bend 1 tab to remove Battery.
- 3** Snap new Battery (⊕ mark down) into Battery Tray.
 - Do not reverse the polarity.
- 4** Insert Battery Tray so the triangle marks meet.

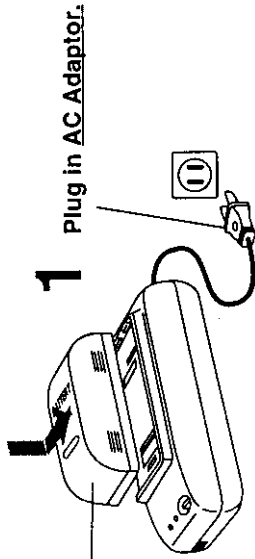
Note:

- Keep Battery out of children's reach. Swallowing it may be harmful.
- Improperly installed, discharged, or missing battery causes "CLOCK BATTERY" to appear when DISPLAY is pressed.
- Battery life is approximately 5 years.

Quick Operation Guide

Charge the Battery Pack

Charge Battery Pack fully before operation (page 10).

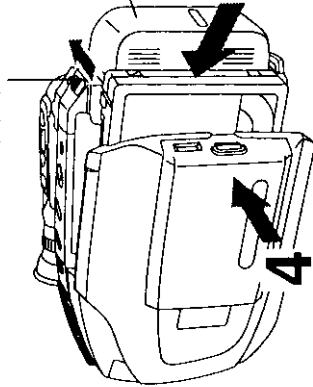


1 **Insert Battery.**
CHARGE Lamp
lights and then goes
out when charging is
done.

1 **Plug in AC Adaptor.**

Insert Cassette

2 **Slide TAPE EJECT** to open door.



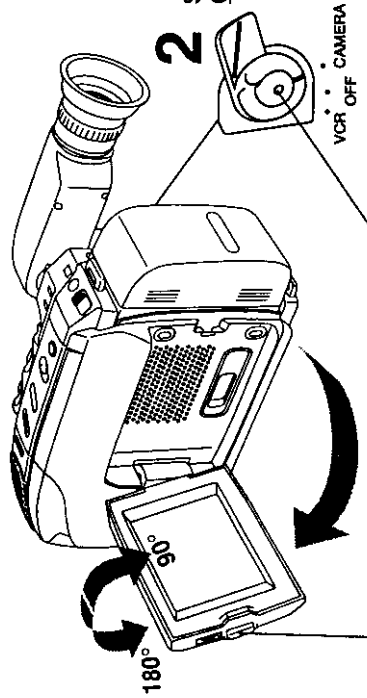
1 **Attach fully charged Battery**
(page 10).

3 **Insert cassette** (page 13).

4 **Press here to close door.**

Camera Recording

When the LCD monitor is fully open, the Viewfinder automatically turns OFF (page 21).



3 **Press LCD-OPEN** to unlock the
LCD monitor. Swing it fully open
and adjust the angle.

2 **Set POWER to
CAMERA.**

3 **Press RECORD/PAUSE** to start
recording.
Press **RECORD/PAUSE** again to
pause recording.

Before Requesting Service

If a problem arises, you may be able to correct it yourself.
See Symptom and Correction list below.

Symptom	Correction
No picture in EVF ...	<ul style="list-style-type: none"> • Connect Power Source. (pp. 10, 12) • Set POWER to VCR or CAMERA. (pp. 20, 25) • Check for Dew Indication. (p. 43) • Use fully charged Battery. (p. 10) • Firmly connect all needed cables. (p. 27)
Video cassette cannot be inserted ...	<ul style="list-style-type: none"> • Connect Power Source. (pp. 10, 12) • Insert cassette, window side facing out. (p. 13)
Video cassette cannot be removed ...	<ul style="list-style-type: none"> • Connect Power Source. (pp. 10, 12)
Operation buttons do not work ...	<ul style="list-style-type: none"> • Check for Dew Indication. (p. 43)
Recording cannot be done ...	<ul style="list-style-type: none"> • Make sure record tab is intact. (p. 13) • Check Battery Indicator. (p. 42) • Check for Dew Indication. (p. 43)
Auto Focus does not operate ...	<ul style="list-style-type: none"> • Set FOCUS to AUTO. (p. 31) • Set POWER to CAMERA. (p. 20)
Sound from microphone can't be monitored ...	<ul style="list-style-type: none"> • Set unit to REC or Record/Pause mode.
Camera picture is too dark ...	<ul style="list-style-type: none"> • Turn HIGH SPEED SHUTTER off. (p. 32)
No playback picture, or the playback picture is noisy or contains streaks ...	<ul style="list-style-type: none"> • Press UP ▲/DOWN ▼ button during playback (Tracking Control). (p.26)
"Panasonic ITS TAPES PLAY IN YOUR VCR ..." appears in EVF and LCD Monitor ...	<ul style="list-style-type: none"> • Set POWER to CAMERA, then hold down STOP over 5 seconds to exit Demo mode. (p. 7)
Top of playback picture waves back and forth excessively ...	<ul style="list-style-type: none"> • A playback signal is not as stable as an off the air TV signal, so the top of your TV screen may appear bent or unstable during playback. This is called, "Horizontal AFC time constant change." To correct, slowly turn the TV horizontal hold control, if you TV does not have this control, or adjusting it does not help, contact your TV service center. (Some nominal service charges may be required.)

Video Head Cleaning



While head cleaning is normally not needed, playing old or damaged tapes may clog the heads. When playback picture resembles example at the left, head cleaning is required.

Ideally, head cleaning should be performed by a qualified service technician. When this is not possible, purchase a head cleaning cassette. Be sure to follow cleaning cassette instructions exactly and only use when symptoms occur.

Clogged Video Head

Table of Contents

Getting Started

- Things You Should Know 2
- Important Safeguards 4
- Precautions 5
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Warranty

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

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
VCR	CCD IMAGE SENSOR - SIX (6) MONTHS	NINETY (90) DAYS
AV 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 Service 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, improper operation, improper antenna, inadequate signal pickup, maladjustment of consumer controls, 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.

Instructions — All the safety and operating instructions should be read before the unit is used.

Warnings — The safety and operating instructions should be retained for future reference. All warnings on the unit and in the accompanying instructions should be adhered to.

Precautions — All operating and maintenance instructions should be followed. Do not use the video unit for cleaning. Do not use liquid or aerosol cleaners. Use a dry cloth for cleaning.

Attachments — Do not use attachments not recommended by the video product manufacturer. The use of attachments may be hazardous.

Water and Moisture — Do not use this video unit near water. For example, do not use it in a bath tub, wash tub, kitchen sink, or laundry tub, in a wet or damp location, or near a swimming pool, and the like.

Stability — Do not place this video unit on an unstable surface. Do not place it on a child's bed, table, or chair, or on a soft surface. The unit may fall, causing serious injury to a child or damage to the unit. Use only on a flat, level surface.



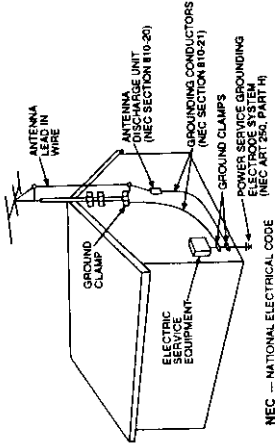
Overheating — Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the video unit and to protect it from overheating. These openings must not be blocked or covered. Never place the video unit on a bed, rug, or other similar surface, or near or over a lamp, or other heat register. This video unit should not be placed in a built-in installation such as a cabinet or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

Power Sources — This video unit should be connected only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your local power company. For units intended to be operated from battery power, or other sources, refer to the operating instructions.

11. 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.

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 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.

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Things You Should Know

Check you for choosing Panasonic!

Have purchased one of the most sophisticated and reliable products on the market. Used properly, it will bring you years of enjoyment. Please take time to fill in the information below. The serial number is on the tag located on the underside of your order. Be sure to retain this manual as your convenient Camcorder information

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

Check back your Camcorder

accessories are provided in order to set up or use your Camcorder.

AC Adaptor

1 pc. Battery Pack
(PV-BP18) (pages 10, 11)

1 pc. Audio/Video Cable
(VJAW0027/VJAW0032/
VJAW0039) (pages 27, 29)

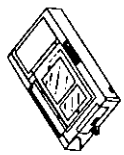
AC Power Cable



VHS PlayPak

1 pc. Shoulder Strap
(VYC0225) (page 14)

1 pc. CR2025 Clock Battery
(VSBW0004)
(installed in Camcorder)
(page 45)



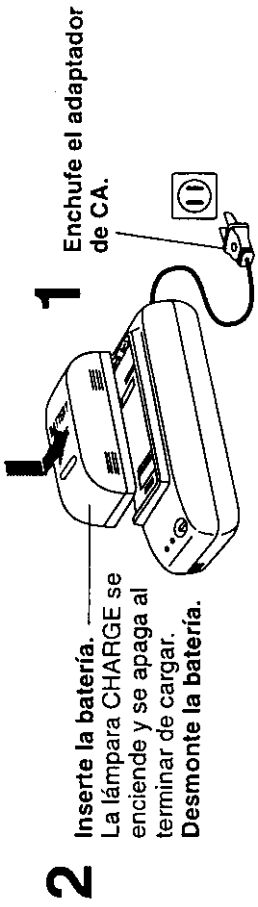
Spanish Quick Use Guide/Guía Para Uso Rápido

Antes de comenzar...

• Inserte un casete con lengüeta para prevención del grabado.

Cargue la batería

Cargue completamente la batería antes de usarla.



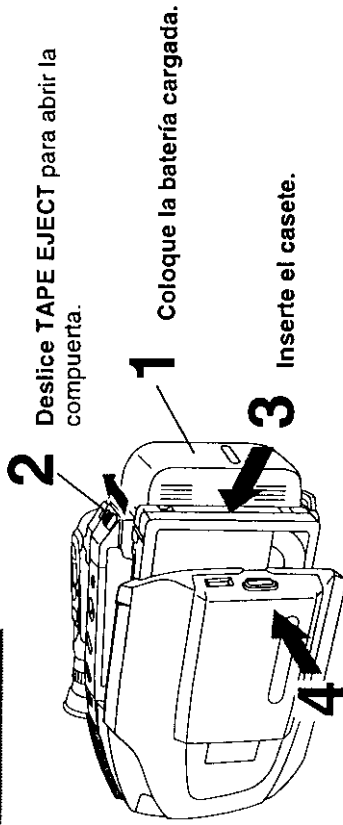
2

1 Inserte la batería.
La lámpara CHARGE se enciende y se apaga al terminar de cargar. Desmonte la batería.

1

Enchufe el adaptador de C.A.

Inserte el casete



2

Deslice TAPE EJECT para abrir la compuerta.

1

Coloque la batería cargada.

3

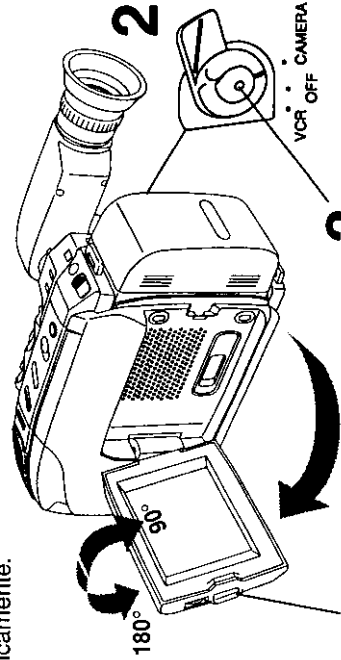
Inserte el casete.

4

Presione aquí para cerrar la compuerta.

Grabación con la videocámara

Cuando el monitor LCD está completamente abierto, el visor se desconecta automáticamente.



1

Presione LCD-OPEN para abrir el monitor LCD. Abra lo completamente y ajuste el ángulo.

2

Ajuste POWER a CAMERA.

3

Presione RECORD/PAUSE para comenzar la grabación. Presione RECORD/PAUSE otra vez para hacer una pausa en la grabación.