

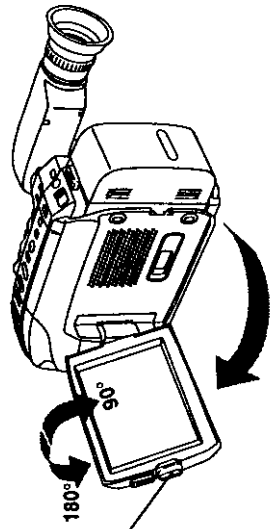
# Spanish Quick Use Guide/Guía Para Uso Rápido

es de comenzar...

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

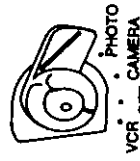
## produzca usando el monitor LCD

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



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

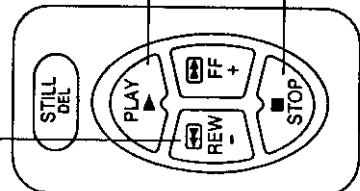
**Ajuste POWER a VCR.**



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

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

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



## producción con efectos especiales

ocalizar rápidamente una escena específica  
mirar el botón de localización (SEARCH).

ongelar una imagen  
mirar el botón de pausa/imagen fija (PAUSE/STILL).  
mir nuevamente el botón cuando se desea continuar reproduciendo.

onic Consumer Electronics  
ny, Division of Matsushita  
e Corporation of America  
asonic Way Secaucus,  
sey 07094

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

n Japan  
741A 1999

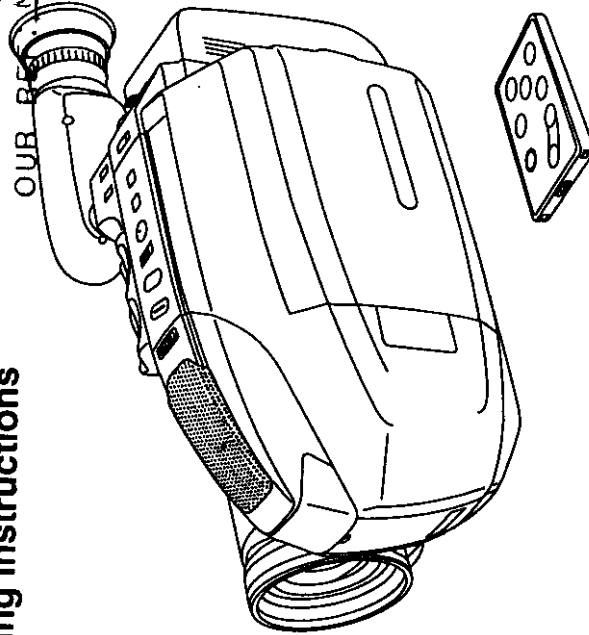
# Panasonic®

## Palmcorder® PalmSight™

Camcorder

EXHIBIT # \_\_\_\_\_  
FIG. NO. \_\_\_\_\_  
FCC ID: A235LUC036  
MODEL NO. PV-L759D  
OUR REF. MKES98-F101

## Operating Instructions



300x/26x  
DIGITAL  
HIDEF  
ZOOM

DIGITAL  
E15  
STABILIZATION

4.0" <sup>3</sup>  
COLOR LCD  
MONITOR

DIGITAL  
STILL  
CAMERA  
BUILT-IN

2hr  
BATTERY

BUILT-IN LIGHT

**VHS-C**

**PV-L759**

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)**

VQTW0745A

# Things You Should Know

## Thank you for choosing Panasonic!

You have purchased one of the most sophisticated and reliable products on the market today. 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 Camcorder. Be sure to retain this manual as your convenient Camcorder information source.

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

## Unpack your Camcorder

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

1 pc. AC Adaptor (PV-A17) with DC Power Cable (page 12)



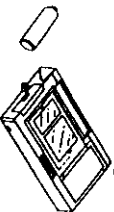
1 pc. Battery Pack (PV-BP18) (pages 10, 11)



1 pc. Audio/Video Cable (VJAW0027/VJAW0032/VJAW0039) (pages 29, 31)



1 pc. VHS PlayPak (PV-P1/VVYMW0009) and one "AA" battery (page 30)



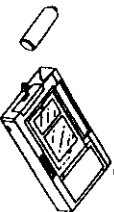
1 pc. Shoulder Strap (VYCW0225) (page 14)



1 pc. Remote Control Holder (VGD6893) (pages 14, 26)



1 pc. Driver Software Floppy Disk for Windows 95 (VFTW0013) (page 56)



1 pc. PC Connection cable (RS232C-3P) (LSJA0185/LSJA0190) (page 55)



1 pc. 8-Function Remote (VSGW0038) with one CR2025 Battery. (page 26)



1 pc. CompactFlash Card (2MB) (LSFA0005)



1 pc. CR2025 Clock Battery (VSBW0004) (installed in Camcorder) (page 50)



Remote has been loaded with battery. (page 50)

CompactFlash Card is a trademark of SanDisk Corporation.

Microsoft, Windows, and Windows 95 are registered trademarks of Microsoft in the United States and other countries.

All product/brand names are trademarks or registered trademarks of the respective holders.

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

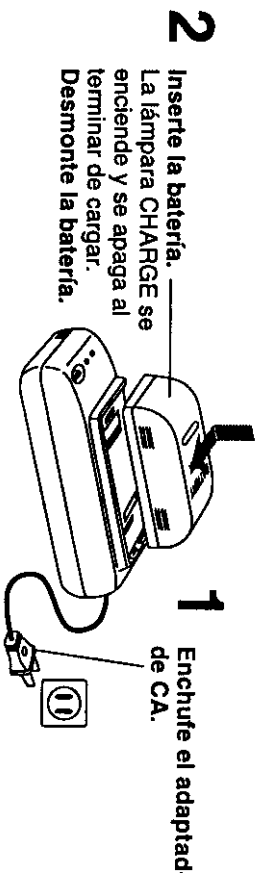
# Spanish Quick Use Guide/Guía Para Uso Rápido

## Antes de comenzar...

• Inserte un casete con lengüeta para prevención del grabado.

## Cargue la batería

Cargue completamente la batería antes de usarla.



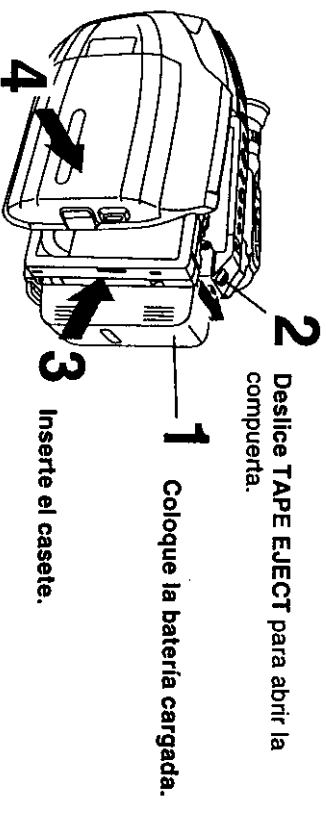
2

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

1

Enchufe el adaptador de CA.

## Inserte el casete



2

Deslice TAPE EJECT para abrir la compuerta.

1

Coloque la batería cargada.

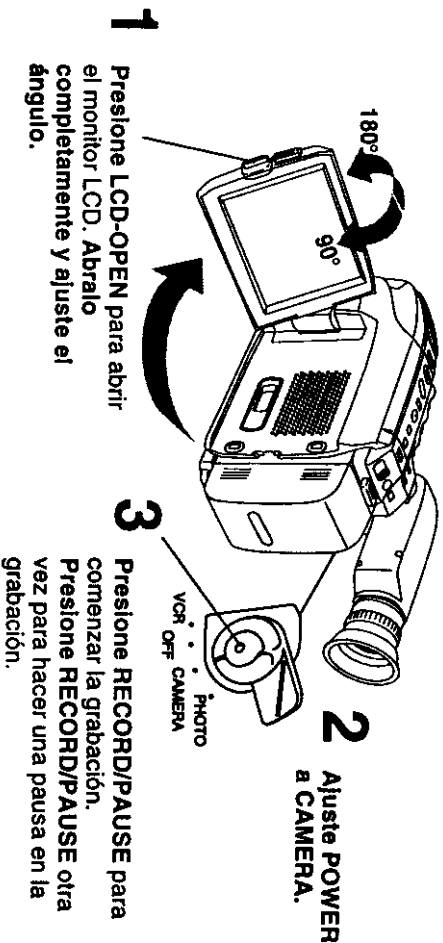
3

Inserte el casete.

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. Abrralo completamente y ajuste el ángulo.

3

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

2 Ajuste POWER a CAMERA.



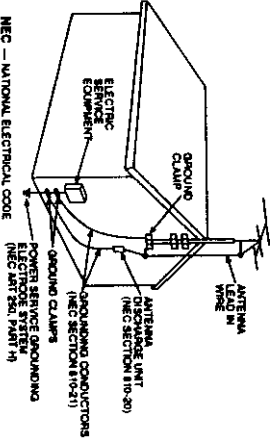
# Important Safeguards

# Warranty

1. Read instructions — All the safety and operating instructions should be read before the unit is operated.
2. Retain instructions — The safety and operating instructions should be retained for future reference.
3. Heed Warnings — All warnings on the unit and in the operating instructions should be adhered to.
4. Follow instructions — All operating and maintenance instructions should be followed.
5. Cleaning — Unplug this video unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a dry cloth for cleaning.
6. Attachments — Do not use attachments not recommended by the video product manufacturer as they may be hazardous.
7. Water and Moisture — Do not use this video unit near water — for example near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.
8. Accessories — Do not place this video unit on an unstable cart, stand, tripod, bracket, or table. The video unit may fall, causing serious injury to a child or adult, and serious damage to the unit. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the video unit. Any mounting of the unit should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



9. Ventilation — 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, sofa, rug, or other similar surface, or near or over a radiator or heat register. This video unit should be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
10. Power Sources — This video unit should be operated 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 appliance dealer or local power company. For video 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 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.



For Product Information, Operating Assistance, Literature Request, Dealer Locations, or all Customer Service inquiries please contact:  
**1-800-211-PANA(7262), Monday-Friday 9am-9pm Saturday-Sunday 9am-7am, EST.**

**Web Site:** <http://www.panasonic.com>  
 You can purchase parts, accessories or locate your nearest servicecenter by visiting our Web Site.

**Accessory Purchases:**

**1-800-332-6368 (Customer Orders Only)**  
 Panasonic Services Company 20421 84th Avenue South, Kent, WA 98032  
 (6 am to 5 pm Monday - Friday; 6 am to 10:30 am Saturday; PST)  
 (Visa, MasterCard, Discover Card, American Express, Check)

**Product Repairs**

**Centralized Factory Servicecenter**

**MAIL TO :**  
 Panasonic Services Company  
 1705 N. Randall Road,  
 Elgin, IL 60123-7847  
 Attention: Camcorder Repair

Please carefully pack and ship, prepaid and insured, to the Elgin centralized repair Factory Servicecenter. 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.  
 Customer's in Puerto Rico, please ship or carry in to location below ("Service in Puerto Rico").

Factory Servicecenters Locations	
<b>CALIFORNIA</b> 6550 Katiella Avenue Cypress, CA 90630 800 Dubuque Avenue S. San Francisco CA 94080 20201 Sherman Way Suite 102 Caroga Park, CA 91306 3878 Ruffin Road Suite A San Diego, CA 92123	<b>GEORGIA</b> 8655 Roswell Road Suite 100 Atlanta, GA 30350 <b>ILLINOIS</b> 9060 Golf Road Niles, IL 60714 1703 North Randall Road Elgin, IL 60123 (Pick-up/drop-off only)
<b>MICHIGAN</b> 37048 Van Dyke Avenue Sterling Heights, MI 48312 <b>MINNESOTA</b> 7850-12th Avenue South Airport Business Center Bloomington, MN 55425 <b>OHIO</b> 2236 Waycross Road Civic Center Plaza Forest Park, OH 45240	<b>TENNESSEE</b> 3800 Ezell Road Suite 806 Nashville, TN 37211 <b>TEXAS</b> 7482 Harwin Drive Houston, TX 77036 13615 Welch Road Suite 101 Farmers Branch, TX 75244
<b>MARYLAND</b> 62 Mountain Road Glen Burnie, MD 21061 <b>MASSACHUSETTS</b> 60 Glacier Drive Suite G Westwood, MA 02090	<b>WASHINGTON</b> 20425-84th Avenue South Kent, WA 98032
<b>FLORIDA</b> 3700 North 28th Avenue Suite 102 Hollywood, FL 33020	<b>HAWAII</b> 99-859 Iwaha Street Aiea, Hawaii 96701 Phone (808) 488-1996 Fax (808) 486-4369

**Service in Puerto Rico**

Matsushita Electric of Puerto Rico, Inc. Panasonic Sales Company/ Factory Servicecenter  
 Ave. 65 de Infanteria, Km. 9.5 San Gabriel Industrial Park Carolina, Puerto Rico 00985  
 Phone (787) 750-4300 Fax (787) 768-2910

Panasonic Consumer Electronics Company, Division of Matsushita Electric Corporation of America  
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 "Warrantor") will repair this product with new or refurbished parts, free of charge, in the USA 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
VIDEO CAMCORDER	ONE (1) YEAR, EXCEPT CCD IMAGE SENSOR	NINETY (90) DAYS
	CCD IMAGE SENSOR - SIX (6) MONTHS	NINETY (90) DAYS
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**

(if included) - New rechargeable batteries in exchange for defective rechargeable batteries for ten (10) days. Non-rechargeable batteries are not warranted.

(if included) - New video cassette tape in exchange for a defective video cassette tape for ten (10) days.

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

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 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, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, settings, improper antenna, inadequate signal pickup, maladjustment of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, commercial use in a hotel, office, restaurant, or other business or rental use of the product, or service by a person other than a PASC Factory Servicenter or a PASC authorized Servicenter, or damage that is not suitable to acts of God.

### WARRANTY EXCLUSIONS

Warrantor does not provide warranties except as listed above. THE WARRANTOR SHALL NOT BE RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGE TO TAPES) RESULTING FROM THE USE OF THIS PRODUCT, OR FROM THE USE 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.

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

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

10/20/97

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.

16. Overloading — Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

17. 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.

18. 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.

19. 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.

- b. If any liquid has been spilled onto, or objects have fallen into the video unit.
- c. If the video unit has been exposed to rain or water.

d. 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.

e. If the video unit has been dropped or the cabinet has been damaged.

f. When the video unit exhibits a distinct change in performance — this indicates a need for service.

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.

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

# 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"> <li>• Connect Power Source. (pp. 10, 12)</li> <li>• Set POWER to VCR or CAMERA. (pp. 21, 27)</li> <li>• Check for Dew Indication. (p. 48)</li> <li>• Use fully charged Battery. (p. 10)</li> <li>• Firmly connect all needed cables. (p. 29)</li> </ul>
Video cassette cannot be inserted ...	<ul style="list-style-type: none"> <li>• Connect Power Source. (pp. 10, 12)</li> <li>• Insert cassette, window side facing out. (p. 13)</li> </ul>
Video cassette cannot be removed ...	<ul style="list-style-type: none"> <li>• Connect Power Source. (pp. 10, 12)</li> </ul>
Operation buttons do not work ...	<ul style="list-style-type: none"> <li>• Check for Dew Indication. (p. 48)</li> </ul>
Recording cannot be done ...	<ul style="list-style-type: none"> <li>• Make sure record tab is intact. (p. 13)</li> <li>• Check Battery Indicator. (p. 46)</li> <li>• Check for Dew Indication. (p. 48)</li> </ul>
Auto Focus does not operate ...	<ul style="list-style-type: none"> <li>• Set FOCUS to AUTO. (p. 33)</li> <li>• Set POWER to CAMERA. (p. 21)</li> </ul>
The Message mode cannot be used ...	<ul style="list-style-type: none"> <li>• Make sure cassette is loaded.</li> <li>• Set MESSAGE to ON in Menu mode. (p. 42)</li> </ul>
Sound from microphone can't be monitored ...	<ul style="list-style-type: none"> <li>• Set unit to REC or Record/Pause mode.</li> </ul>
Camera picture is too dark ...	<ul style="list-style-type: none"> <li>• Turn HIGH SPEED SHUTTER off. (p. 34)</li> </ul>
No playback picture, or the playback picture is noisy or contains streaks ...	<ul style="list-style-type: none"> <li>• Press UP ▲/DOWN ▼ button during playback (Track Control). (p.28)</li> </ul>
Playback picture is fast, and there is no sound ...	<ul style="list-style-type: none"> <li>• Set TIME LAPSE to OFF in Menu mode. (p. 41)</li> </ul>
"Panasonic ITS TAPES PLAY IN YOUR VCR ..." appears in EVF and LCD Monitor ...	<ul style="list-style-type: none"> <li>• Set POWER to CAMERA, then hold down STOP o 5 seconds to exit Demo mode. (p. 7)</li> </ul>
Top of playback picture waves back and forth excessively ...	<ul style="list-style-type: none"> <li>• A playback signal is not as stable as an off the air signal, so the top of your TV screen may appear be unstable during playback. This is called, "Horizontal AFC time constant change." To correct, slowly turn TV horizontal hold control. If you TV does not have control, or adjusting it does not help, contact your service center. (Some nominal service charges may required.)</li> </ul>

## Video Head Cleaning



Clogged Video Head

While head cleaning is normally not needed, playing old 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.

# Specifications

**Power 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

**Power Consumption:**  
1.2W (when not in use.)  
EIA Standard (525 lines, 60 fields) NTSC color signal  
2 rotary heads plus flying erase head. Helical scanning system  
1 track

**Video Signal:**  
Sequential color difference field reverse system  
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  
4.0 inch (101.6mm) Liquid Crystal Display  
0.8 lx (F1:1.6) 0.08 footcandles  
7 lx (F1:1.6) 0.7 footcandles (EIA Standard)

**Monitor Illumination Required:**  
M3 Type  
M3 Type  
32°F-104°F (0°C-40°C)  
10%-75%  
Compact VHS Camcorder: 2.3 lbs.  
1.05 kg  
AC Adaptor: 0.77 lbs.  
0.35 kg

**Dimensions:**  
Compact VHS Camcorder: 4-1/4 (W) x 4-5/8 (H) x 7-1/8 (D) inch  
107 (W) x 118 (H) x 180 (D) mm  
AC Adaptor: 2-3/4 (W) x 1-5/8 (H) x 5-3/4 (D) inch  
70 (W) x 41 (H) x 145 (D) mm

Weight and dimensions shown are approximate. Signs and specifications are subject to change without notice.

# Request for Service Notice

Please 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.

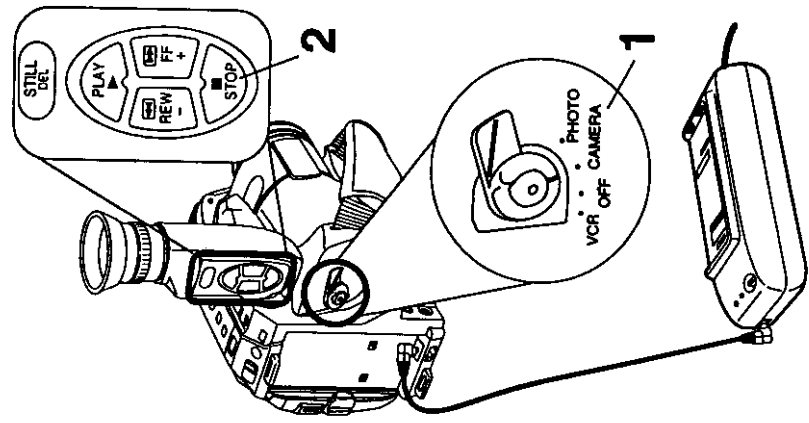
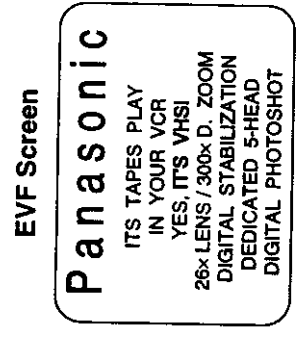
Mail this completed form and your Proof of Purchase along with your unit to:  
Panasonic Services Company  
1705 N. Randall Road  
Elgin, IL 60123-7847  
Attn: Camcorder Repair

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

# 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.



- 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.

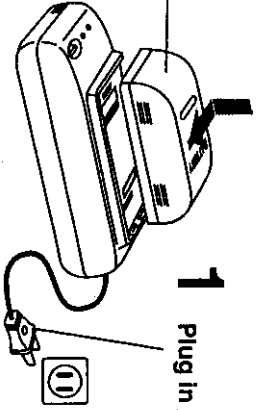
- With **DISPLAY** held down, slide **POWER** to **CAMERA** and wait for Self Demo to begin.

# Quick Operation Guide

## Charge the Battery Pack

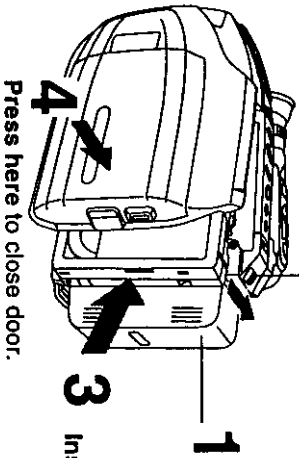
Charge Battery Pack fully before operation (page 10).

- 1 Plug In AC Adaptor.
- 2 Insert Battery. CHARGE Lamp lights and then goes out when charging is done.



## Insert Cassette

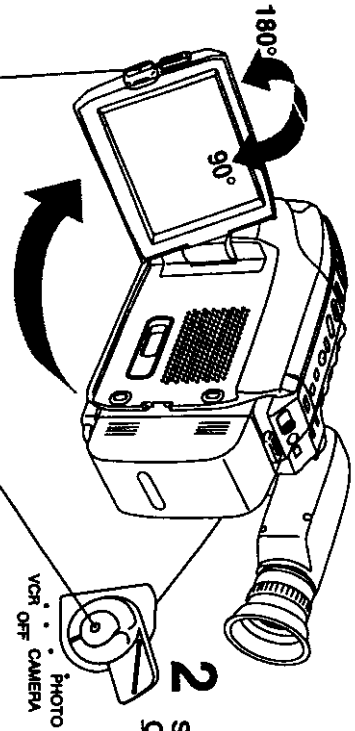
- 2 Slide TAPE EJECT to open door.



- 1 Attach fully charged Battery.
- 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 22).



- 1 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.

# Palmcorder Accessory Order Form

Please photocopy this form when placing an order.

1. Palmcorder Model # \_\_\_\_\_

2. Items Ordered

Accessory #	Description	Price Each	Quantity	Total Price

Subtotal

Your State & Local Sales Tax

Shipping & Handling

Total Enclosed

5.00

3. Method of payment (check one)

- Check or Money Order enclosed (NO C.O.D. SHIPMENTS)
- VISA      Credit Card # \_\_\_\_\_
- MasterCard      Expiration Date \_\_\_\_\_
- Discover      Customer Signature \_\_\_\_\_

Make Check or Money Order to: MATSUSHITA ACCESSORI

(Please do not send cash)

4. Shipping information (UPS delivery requires complete street address)

Ship To:

Mr.

Mrs.

Ms.

First \_\_\_\_\_ Last \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone #: \_\_\_\_\_

Day ( ) \_\_\_\_\_

Night ( ) \_\_\_\_\_

TO OBTAIN ANY OF OUR OMNIMOVIE/PALMORDER ACCESSORIES YOU CAN DO ANY OF THE FOLLOWING:

VISIT YOUR LOCAL PANASONIC DEALER

OR

CALL PANASONIC'S ACCESSORY ORDER LINE AT 1-800-332-5368

[6 AM-5 PM M-F, 6 AM-10:30 AM SAT, PACIFIC TIME]

OR

MAIL THIS ORDER TO: PANASONIC SERVICES COMPANY ACCESSORY

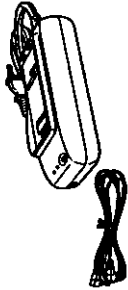
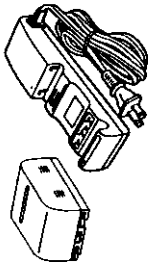

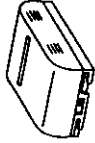

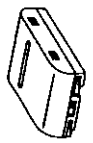
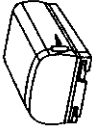




ORDER OFFICE

20421 84th Avenue South Kent, WA. 98032



# Palmcorder Accessory System

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

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

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

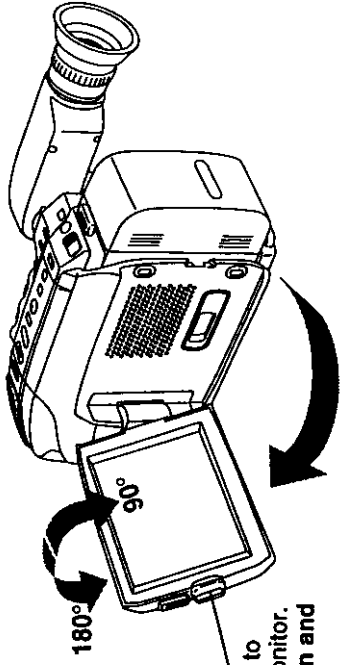
# Quick Operation Guide

Before you begin...

- Charge Battery Pack fully before operation (page 10).

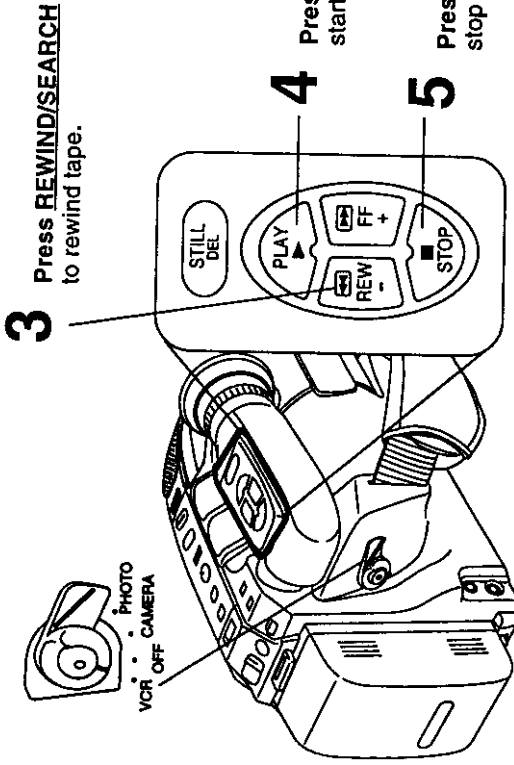
## Playback using the LCD Monitor

When the LCD monitor is fully open, the Viewfinder automatically turns OFF (page 27).



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

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

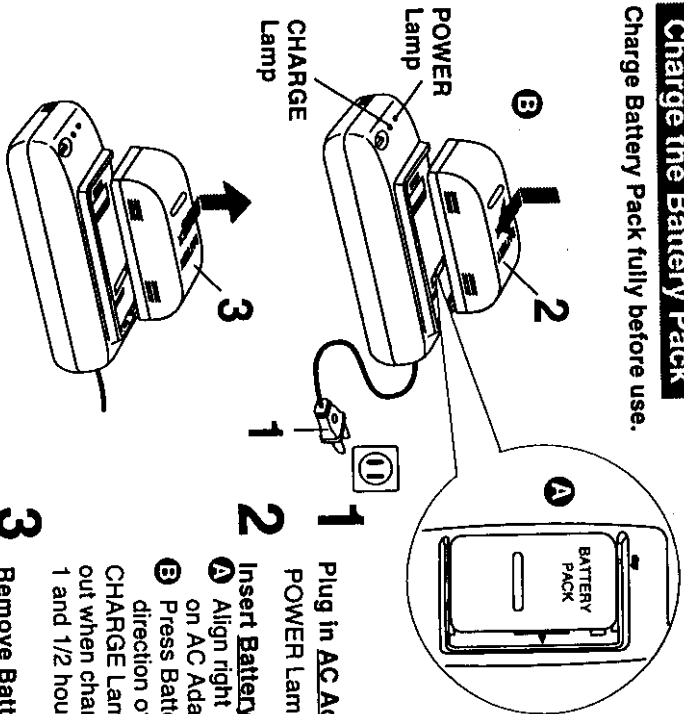


- 3 Press **REWIND/SEARCH** to rewind tape.
- 4 Press **PLAY** to start playback.
- 5 Press **STOP** to stop playback.

# Supplying Power

## Charge the Battery Pack

Charge Battery Pack fully before use.



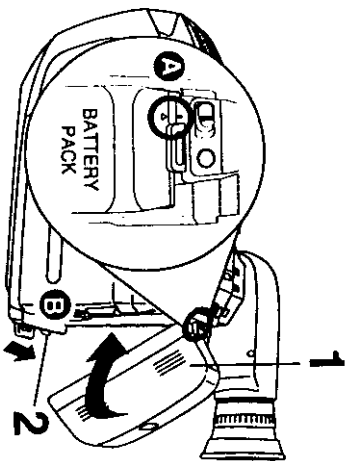
- 1 Plug in **AC Adaptor**.  
POWER Lamp lights.
- 2 **Insert Battery**.  
A Align right side of Battery with line on AC Adaptor.  
B Press Battery down and slide in direction of arrow.  
CHARGE Lamp lights and then goes out when charging is done (approx. 1 and 1/2 hours).
- 3 **Remove Battery**  
Slide Battery out and off.

**Note:**  
After recharging 5 times, use BATTERY REFRESH feature as explained on page 11.

- Battery life gradually decreases after repeated use and recharging. If operation time becomes very short even after a sufficient charge, discard Battery properly (page 11).

## Use the Battery Pack

A fully charged Battery provides a maximum of about 2 hours of continuous use (LCD monitor off) or about 1.5 hours (LCD monitor on). Actual time may vary due to operating conditions. Using the Built-in Light decreases operating time.



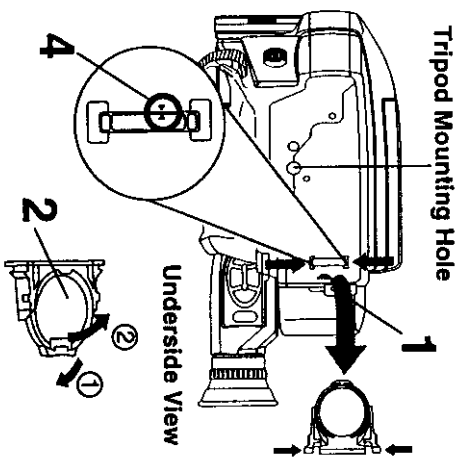
- 1 **Attach Battery**  
A Align Battery with top of mounting surface.  
B Press and snap into place.
- 2 **Remove Battery**  
While sliding **BATTERY RELEASE**, remove Battery.

# Replacing Clock/Remote Batter

The clock and remote batteries are 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.

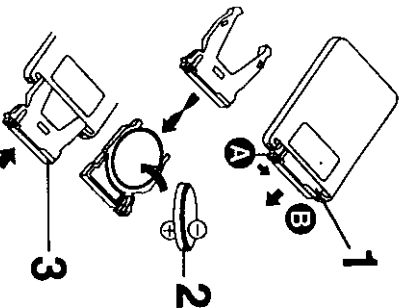
## Clock Battery



- 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 pressed.  
• Battery life is approximately 5 years.

## Remote Battery

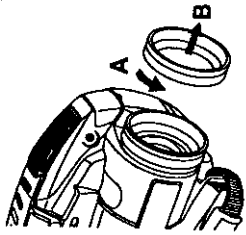


- 1 A While pressing stopper tab B pull Battery Tray out.
- 2 Insert battery into tray with ⊕ mark down.  
Do not reverse polarity.
- 3 Replace Battery Tray.

# Operation Notes

## Attaching Optional Filters and Lenses

Remove the Lens Hood by turning it counterclockwise. Then 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

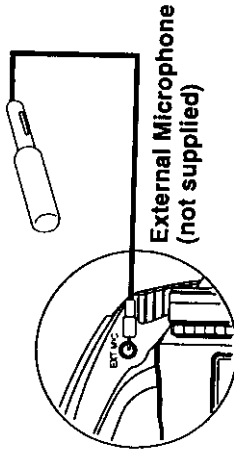
When a Wide or Telephoto conversion lens (optional) attached, the four corners of the lens hood may darken when zoom is set to maximum wide angle.

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

When two filters (optional) attached, the four corners of the screen may darken when zoom is set to maximum wide angle.

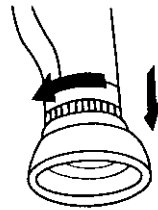
## External MIC IN

Connect an external microphone (optional) using an M3 connector if necessary. The built-in microphone is automatically disconnected when an external microphone is plugged in.



## Cleaning EVF (Electronic Viewfinder)

Remove



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

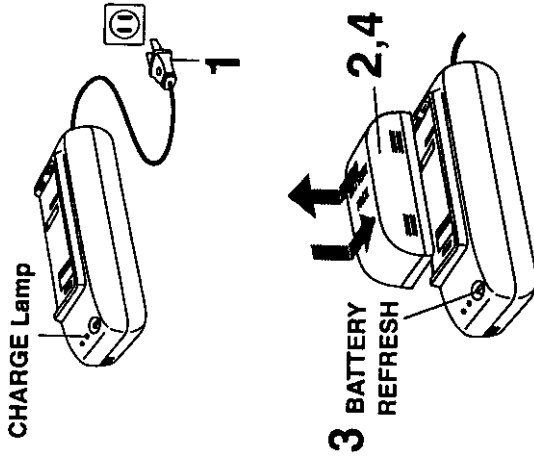
2 Pull free. Remove any lint or dust particles with a soft clean cloth being careful not to scratch the glass surfaces.

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.

# Supplying Power

## 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:

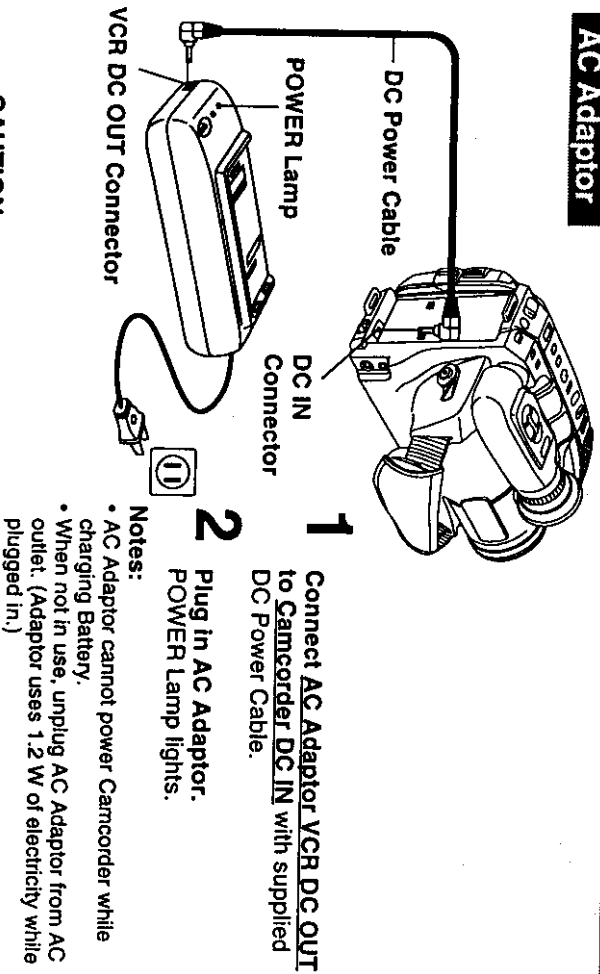
### ATTENTION:

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.



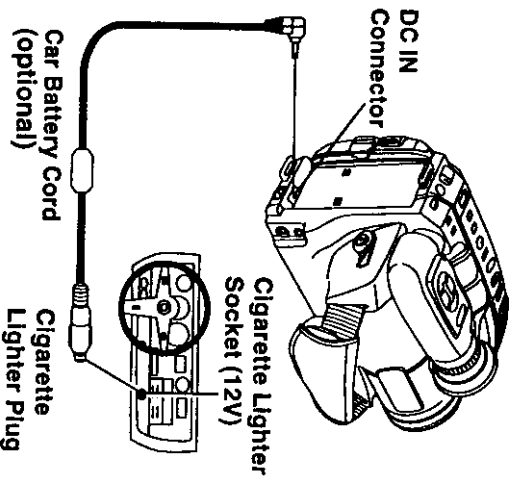
# Supplying Power

## AC Adaptor



**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.

## Car Battery Cord (Optional)



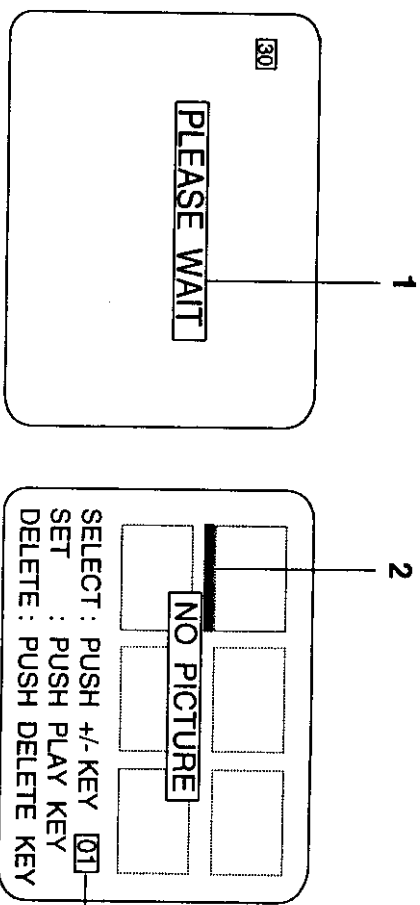
- 1 Connect PV-C16 Car Battery Cord (optional) to Camcorder DC IN.
- 2 Start engine first.  
 A Plug Car Battery Cord into Cigarette lighter socket.  
 B If Car Battery cord fuse needs replacing, use exact current rating (in amps).

**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.

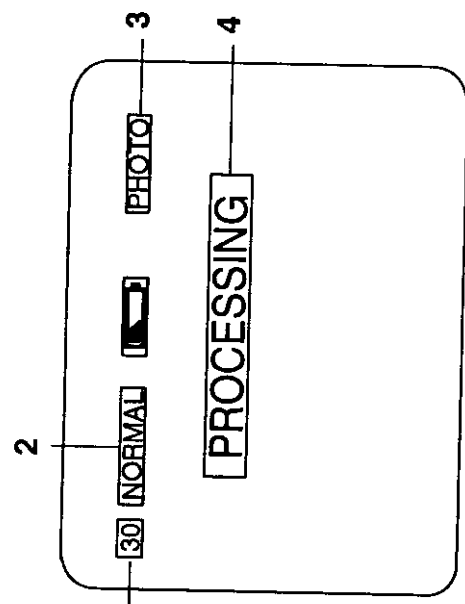
# Viewfinder/LCD Monitor Indication

## PHOTO mode



# Viewfinder/LCD Monitor Indications

## OTO mode



### Image Page Remaining Indication

Image pages left in selected mode.  
 "0" flashes when memory is full.  
 Memory capacity provided all pictures  
 are taken in the same mode:  
 "NORMAL" mode → Approx 30 images  
 "FINE" mode → Approx 15 images

### MODE Indication

"NORMAL" or "FINE" mode.  
 Image Size : 640 X 480 pixels.  
 Recording Mode Indication  
 POWER is set to PHOTO.

### Image Status Indication

Image status is displayed when captured.

### PROCESSING:

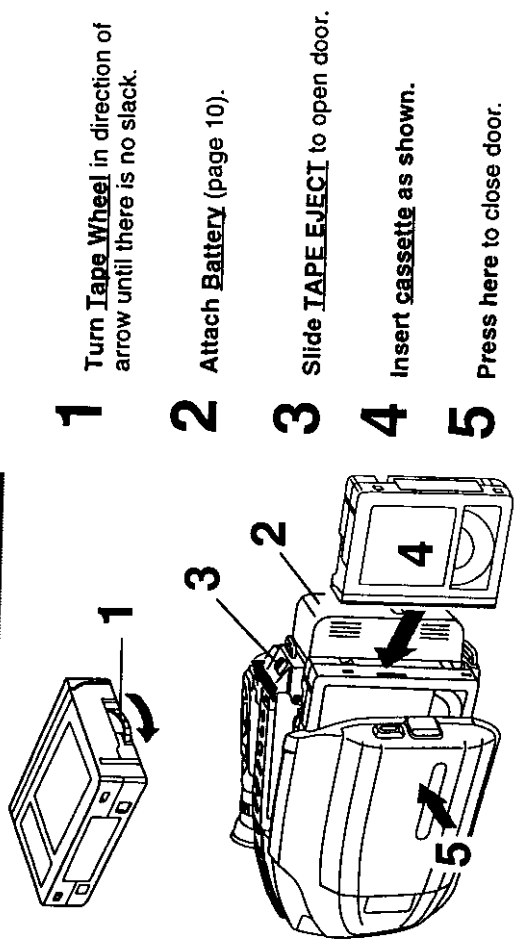
Image is being processed.  
 Note: Do not change setting to CAMERA or change recording mode while "PROCESSING" is displayed.

### COMPLETED:

Image processing is complete.  
 The next image may be captured when "COMPLETED" is no longer displayed.

# Cassette Information

## 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.

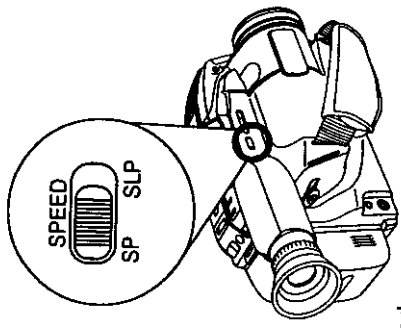
## Record/Playback Time

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

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

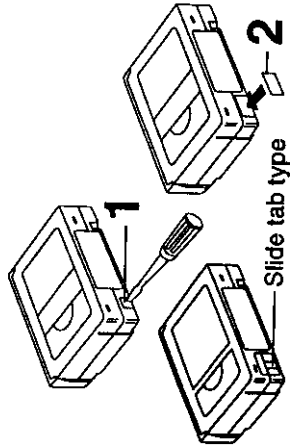
• SLP playback may contain more picture noise.

## TAPE SPEED Selector



## Erase Protection Tab

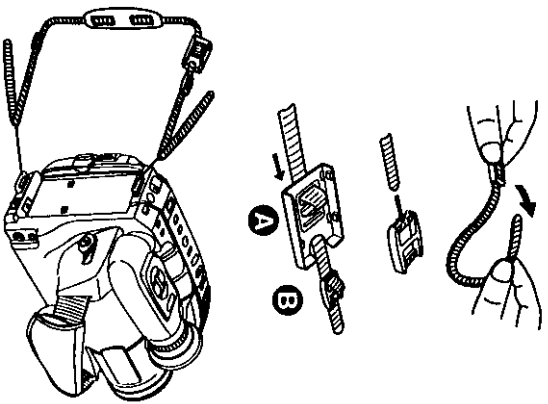
A record tab ensures recordings are not accidentally erased.



- 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.)

# Attaching Shoulder Strap/Remote Holder

Remove Battery Pack before doing steps.



**1** Undo strap ends from buckles.

**2** Remove one buckle.

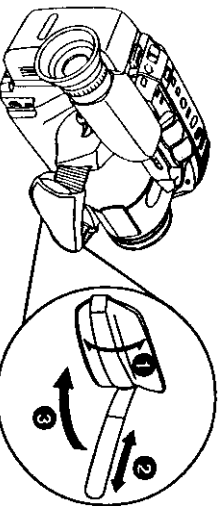
**3** **A** Thread strap (with no buckle) through Remote Holder so it faces outward.  
**B** Replace buckle.

**4** Thread strap ends through Strap Rings on Camcorder.

**5** Re-insert the strap ends into buckles.

**6** Insert Remote into Holder when not in use.

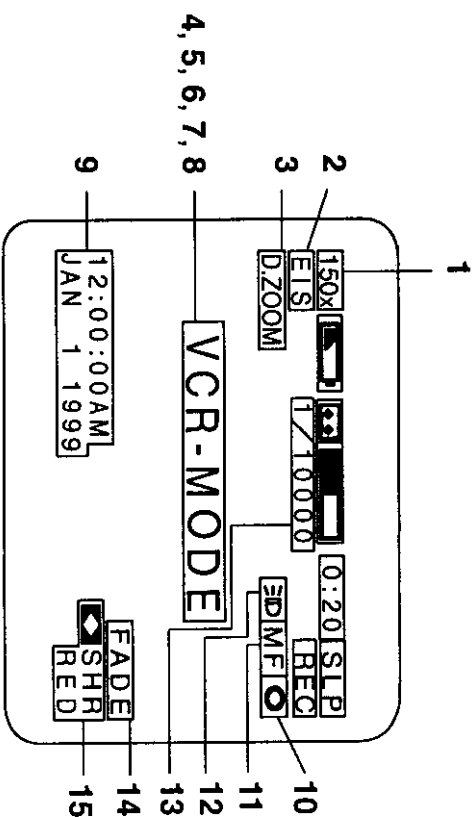
**1** Pull a loop of strap from buckle.  
**2** Pull strap tight to shorten or lengthen.



Adjust Hand Strap length to fit your hand as shown.

# Viewfinder/LCD Monitor Indications

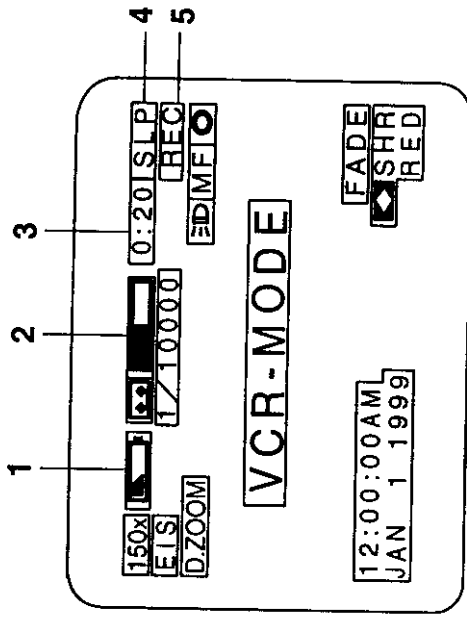
## CAMERA/VCR mode



- 1** Zoom Magnification level (page 32).
- 2** Digital E.I.S. (page 39).
- 3** Digital Zoom (page 38).
- 4** VCR-MODE  
Appears 1 minute when POWER is set to VCR or if RECORD/PAUSE is pressed in VCR mode.
- 5** DEW  
If moisture condensation occurs in unit, "WARNING DEW DETECTED" appears, Power Lamp flashes, and Camcorder will shut off in 15 seconds. Wait until lamp no longer flashes when Camcorder is turned on to use.
- 6** Time Lapse (page 41).
- 7** Security Mode (page 40).
- 8** Message Mode (page 42).
- 9** Date and Time (page 19).
- 10** Backlight (page 32).
- 11** Manual Focus (page 33).
- 12** Light ON/OFF (page 20).
- 13** High Speed Shutter (page 34).
- 14** Fade (page 36).
- 15** Color Digital Fade (page 37).

# Viewfinder/LCD Monitor Indications

## MEMERAVCR mode



**Battery Remaining** (page 46) 4 **TAPE SPEED** (pages 13, 21, 41)  
 (SP=standard play, SLP=super long play, T.LAPSE=time lapse).

5 **Operating Mode**  
 REC (record)  
 PAUSE  
 FF (fast forward)  
 PLAY  
 REW (rewind)

**Tape Remaining**  
 If a cassette is not inserted or has no record tab in Camera (RECORD) mode, "1" flashes 1 minute and "CHECK TAPE" appears 5 seconds before Camcorder shutoff.

If the end of tape is reached, "1" flashes and "TAPE END" appears 5 seconds before Camcorder shutoff.

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



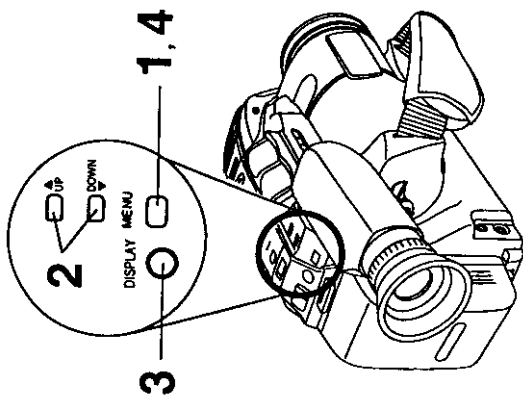
# MENU Mode

## 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.



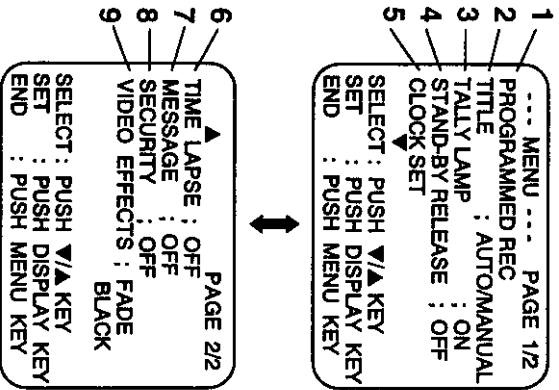
... MENU ... PAGE 1/2  
 PROGRAMMED REC. : MANUAL  
 TITLE LAMP : AUTOMANUAL  
 STAND-BY RELEASE : ON  
 CHECK-REEL  
 SELECT : PUSH  $\uparrow$ /A KEY  
 SET : PUSH DISPLAY KEY  
 END : PUSH MENU KEY

**Note:**

- The Menu mode is canceled if UP/DOWN( $\uparrow$ / $\downarrow$ ), DISPLAY, or MENU are not pressed within 5 minutes.

# MENU Mode

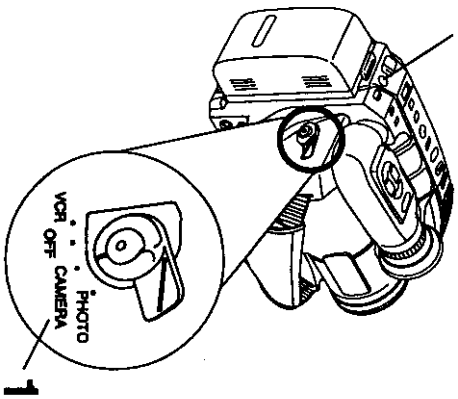
## MENU Mode Screen



- 1 **PROGRAMMED REC** (page 25). Camcorder starts and stops recording at a preset time.
- 2 **TITLE** (pages 43-45). AUTO/MANUAL : 16 items PHRASE : 10 items
- 3 **TALLY LAMP** (page 35). ON: lamp lights during recording.
- 4 **STAND-BY RELEASE** (page 23). ON: enables quick resumption of recording from Stand-by mode.
- 5 **CLOCK SET** (pages 17-19). Select to set clock.
- 6 **TIME LAPSE** (page 41). ON: enables TIME LAPSE recording.
- 7 **MESSAGE** (page 42). ON: enables MESSAGE recording.
- 8 **SECURITY** (page 40). MOTION: enables Motion Security recording.
- 9 **VIDEO EFFECTS** (pages 36, 37). AUTO FADE : BLACK or WHITE DIGITAL FADE : TYPE → 7 types COLOR → 8 colors DIGITAL FILTER: COLOR → 5 colors

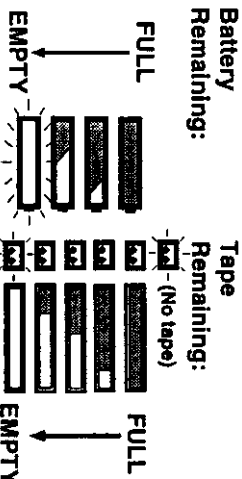
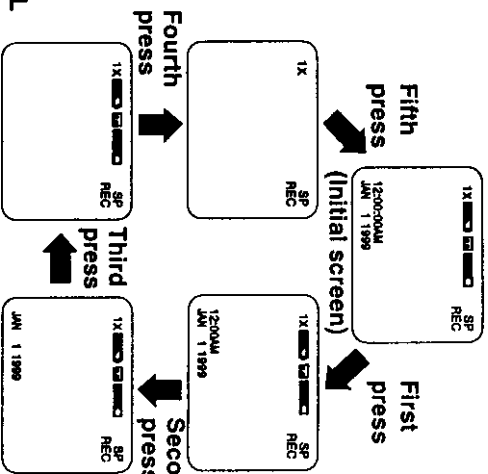
# Viewfinder/LCD Monitor Indications

Tape remaining and battery charge level can be displayed.



1 Set **POWER to CAMERA**.

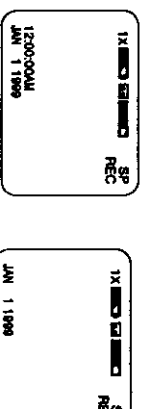
2 Press **DISPLAY** repeatedly to select the following displays.



## Recording the Date and Time

- 1 Do steps 1 and 2 above to select time/date, date only, or no display.
- 2 Start a recording (page 21).
  - Only the Date and/or Time are recorded.

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



## Display-Off Mode

No indication, except Intelligent Titrer (pages 43-45), will be displayed. Press **DISPLAY** and **STOP** together over 1 second. Press **DISPLAY** repeatedly to remove time/date. Indications are restored when Camcorder is turned off, and then on again.





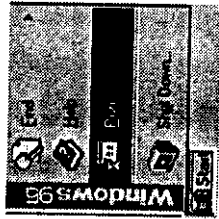
# C Connection

## Software Installation (Windows 95)

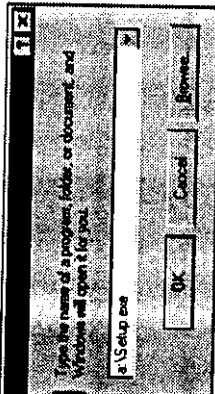
Turn on PC (personal computer) and start up Windows.

Insert Digital PhotoShot disk (Windows 95) into a floppy disk drive.

Click on Start, then "Run..."



Type in A:\setup.exe and click OK. If your 3.5 inch floppy disk drive is not "A", use appropriate letter.

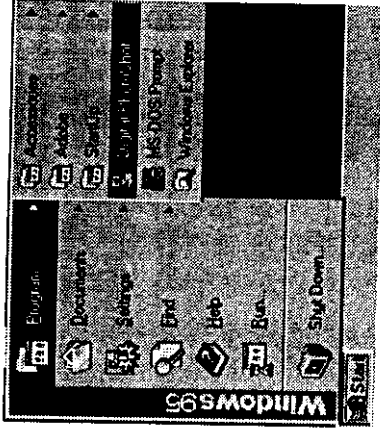


Follow instructions as they appear on PC screen.

The following message appears; Setup has finished installing the application on your computer. You may launch the application by selecting the icons installed. Click on Finish to complete setup.

## Running the Software (Windows 95)

7 Click on Start, then "Programs" then "Digital PhotoShot".



8 Refer to Help for information about application operation.

# Setting the Clock

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

## Setting the Time Zone

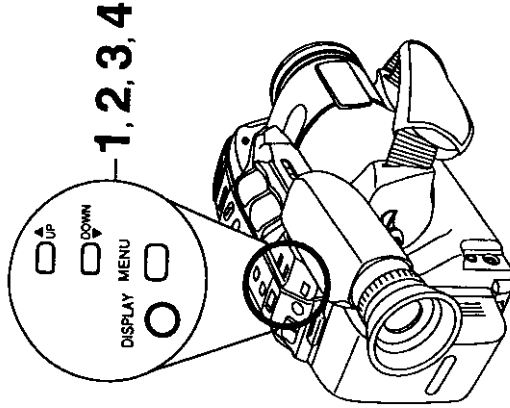
The Camcorder is preset to Eastern time. To change time zone, do steps at right.

### Before you begin...

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

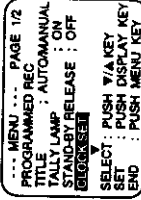
### Note:

- Setting POWER to VCR also displays CLOCK SET menu.
- Clock may lose or gain up to 2 minutes per month. To adjust, see page 19.

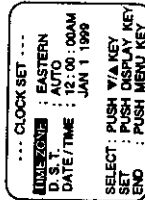


1, 2, 3, 4

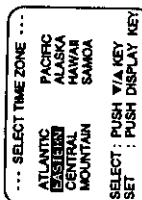
1 Press **MENU** for MENU mode. Press **UP** or **DOWN** to select **CLOCK SET**.



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



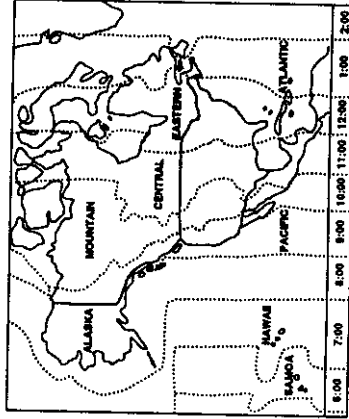
3 Press **DISPLAY** for SELECT TIME ZONE menu. Press **UP** or **DOWN** to select local time zone.



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.

Time Zone chart



### Note:

When traveling outside the listed time zones, set clock to local time manually (page 19).

# Setting the Clock

## Auto Daylight Saving Time

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

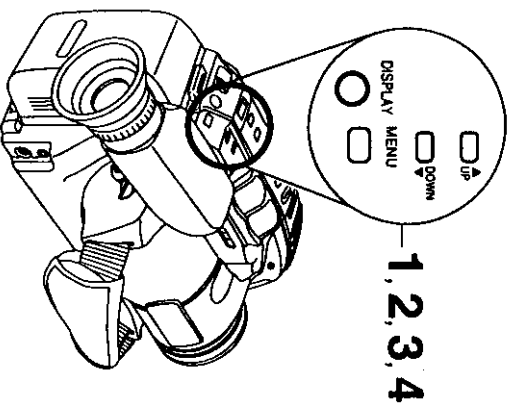
**The Camcorder is preset to DST: AUTO.** If DST is not observed in your area, set to **OFF** by doing the following steps.

## Before you begin...

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

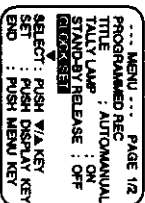
### Note:

- 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 17).



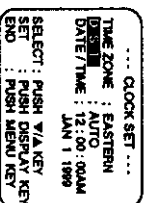
**1**

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



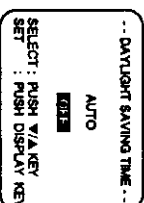
**2**

Press **DISPLAY** for **CLOCK SET** menu. Press **UP** ▲ or **DOWN** ▼ to select **DST**.



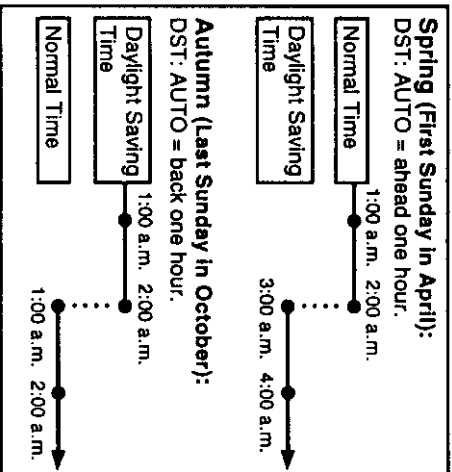
**3**

Press **DISPLAY** for **DAYLIGHT SAVING TIME** menu. Press **UP** ▲ or **DOWN** ▼ to select **OFF** or **AUTO**.



**4**

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



## Digital PhotoShot Software

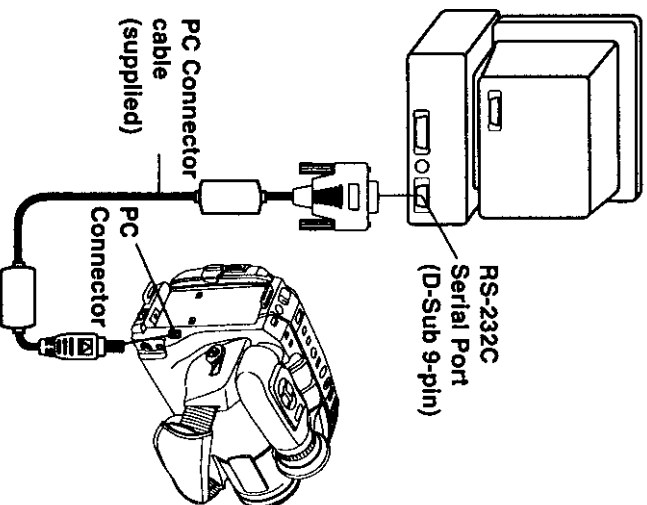
A live or memorized Camcorder image can be transferred to your PC (personal computer). Also, your PC screen can be transferred to the Camcorder. And, if you have Internet access, you can also download title images from Panasonic's web site ([www.panasonic.com/photoshot](http://www.panasonic.com/photoshot)).

# PC Connection

## System Requirements:

- IBM PC/AT or compatible.
- Windows 95.
- 486 CPU or higher. (Pentium® recommended.)
- RAM: 8 MB
- 2 MB minimum available hard disk space
- 256 color monitor (full color recommended).
- 3.5 inch 1.44 MB floppy disk drive (for installation).
- RS-232C serial port (D-Sub 9-pin). An adaptor (D-Sub 9-pin male to a D-Sub female) is required for a D-Sub 25-pin.
- Mouse or other pointing device.
- Microsoft, Windows, and Windows 95 are registered trademarks of Microsoft in the United States and other countries.
- All product/brand names are trademarks or registered trademarks of the respective holders.

## PC-Camcorder Connection



### Note:

Before connection, turn PC power off so images will transfer properly.

Connect Camcorder PC jack to the serial port on your PC using the supplied PC connector cable. Refer to PC manual to identify port to be used for connection.

### Note:

After Camcorder and PC are connected and software is opened, video recording is not possible.

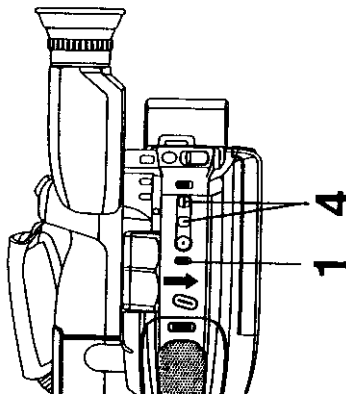
# Digital Still Camera

## Using Image as Wipe

Recorded images (page 50) can be used as Wipe screen for title memory.

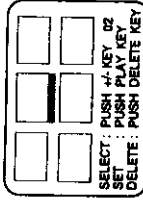
### Before you begin...

- Connect Camcorder to power source.
- Set POWER to PHOTO.
- Slide PHOTO MODE to PLAY.

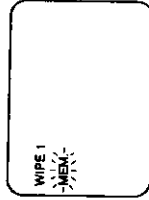


**1** Set **DIGITAL SELECT** to **DIGITAL WIPE**. (page 41.)

**2** Press **±(FF)** or **-(REW)** to select image to be used.

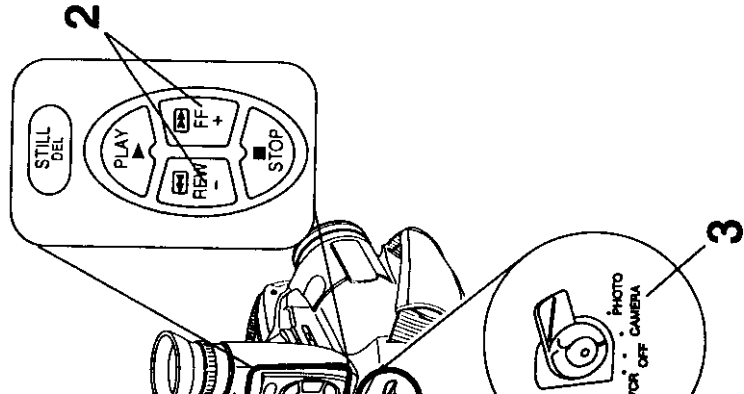


**3** Set **POWER** to **CAMERA**.  
• Image is displayed, then "MEM." is displayed while image is memorized.



**4** Set **MODE** to desired wipe effect (page 41), then press **START** to begin wipe.  
The memorized image gradually replaces the current recording.

**Note :**  
Selected image is cleared when Camcorder is turned off.



# Setting the Clock

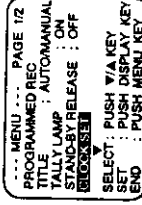
## Before you begin...

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

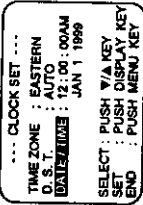
### Note:

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

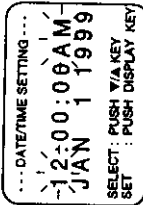
**1** Press **MENU** for MENU mode.  
Press **UP** or **DOWN** to select **CLOCK SET**.



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



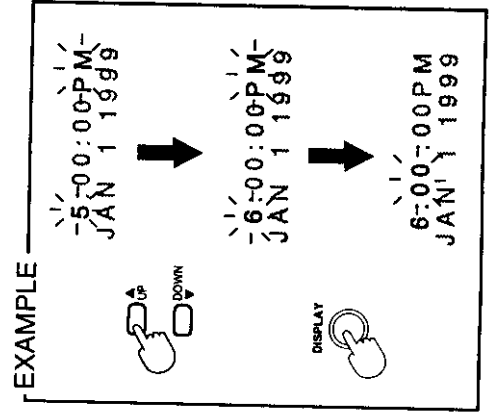
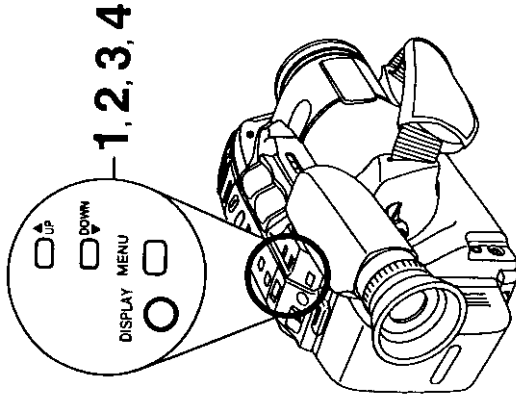
**3** Press **DISPLAY** for DATE/TIME menu.



**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.

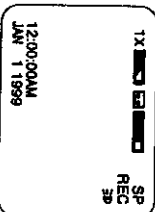
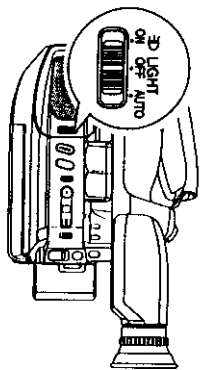
Press **MENU** twice to exit.



# Built-in Auto Light

## 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.

EVF appears in EVF when Light is on.

**Caution:**  
Light becomes hot. Never cover Light while on.

### Before you begin...

- Order Part No. VULS0001 (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.

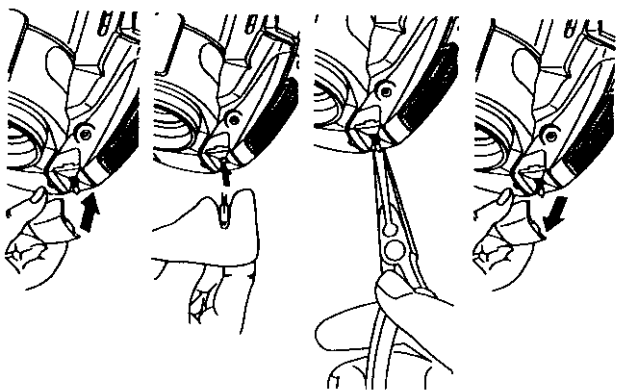
**2** Using Tweezers or needle-nose pliers, carefully remove bulb.  
• Take unit to service center if you need assistance.

**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.

# Digital Still Camera

## Deleting All Image Pages

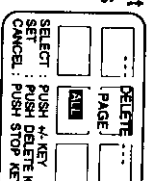
All image pages are deleted from memory.  
Important: Once deleted, images cannot be restored.

### Before you begin...

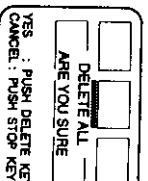
- Connect Camcorder to power source.
- Set POWER to PHOTO.
- Slide PHOTO MODE to PLAY.

**1** Press DEL(STILL) for DELETE menu.

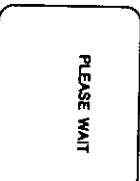
To exit menu at any time, press STOP.



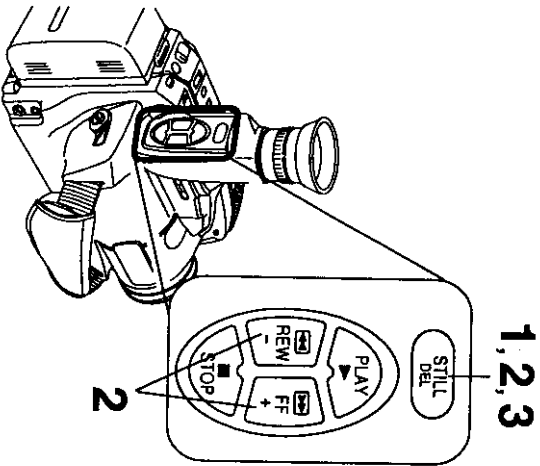
**2** Press + (FF) or - (REW) to select ALL, then press DEL(STILL). T message appear.



**3** Press DEL(STILL) to delete all pages.  
• "PLEASE WAIT" appears on-screen during deletion.



• "NO PICTURE" appears on-screen after deletion.



### Note:

While "PLEASE WAIT" is displayed, do not turn off Camcorder or unplug AC Adapter (if used).  
Otherwise, Camcorder cannot be used for about 30 seconds when turned back on because image deletion will be performed.

If it is impossible to record, playback, or delete image pages in PHOTO mode, please delete all image pages as follows.  
While holding down NEG/POS, STILL and BACKLIGHT at once, slide POWER from OFF to PHOTO. Deletion takes about 30 seconds. Then, slide POWER to OFF, then to PHOTO. You can now record, playback, and delete image pages normally.

# Digital Still Camera

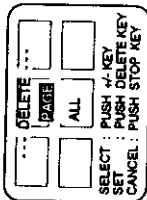
## Deleting Single Image Pages

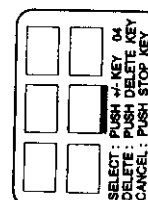
older images to make room for new ones.  
 Important: Once deleted, images cannot be restored.

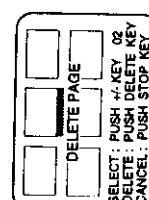
### Before you begin...

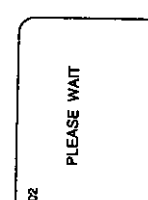
- Connect Camcorder to power source.
- Set POWER to PHOTO.  
 Slide PHOTO MODE to PLAY.

- 1 Press **DEL(STILL)** for DELETE menu.

  - To exit menu at any time, press **STOP**.
- 2 Press **+ (FF)** or **- (REW)** to select **PAGE**, then press **DEL(STILL)**.

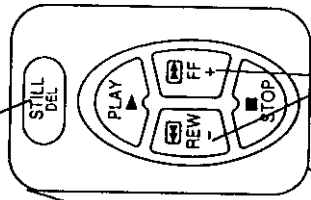

- 3 Press **+ (FF)** or **- (REW)** to select image page to be deleted.


- 4 Press **DEL(STILL)** to delete the page.

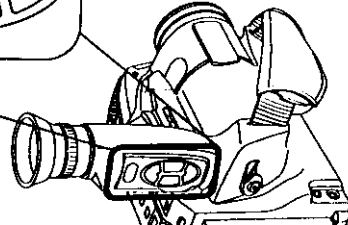


- "PLEASE WAIT" appears on-screen during deletion.
- As image pages are deleted, page numbers adjust automatically.
- Repeat steps 1 - 4 to delete other pages.

1, 2, 4



2, 3



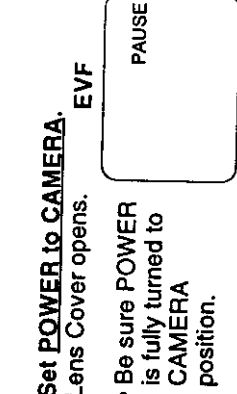
# Camera Recording

## Simple Recording

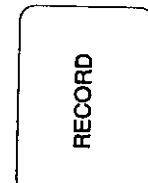
### Before you begin...

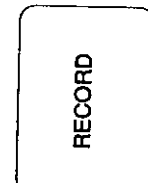
- Connect Camcorder to power source.
- Insert cassette with record tab (page 13).

- 1 Set **POWER to CAMERA**.  
 Lens Cover opens. EVF


  - Be sure POWER is fully turned to CAMERA position.

Record/Pause mode.
- 2 Look into Viewfinder and adjust **View Adjustment control** to your eyesight.
- 3 Slide **TAPE SPEED** to SP or SLP (page 13).

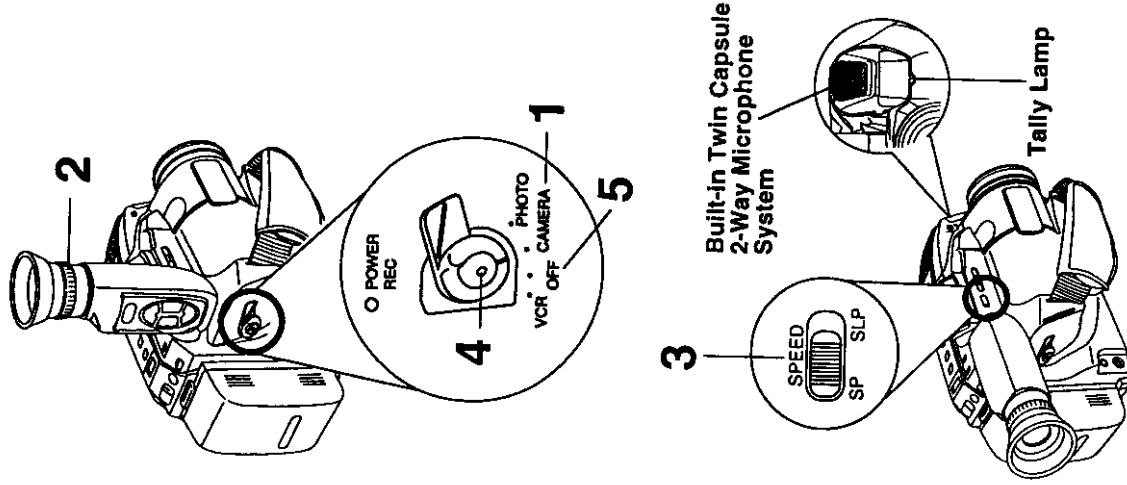

- 4 Press **RECORD/PAUSE** to start or pause recording.  
 REC lamp lights during recording. Tally lamp also lights if set to ON (page 35).


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

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

### Note:

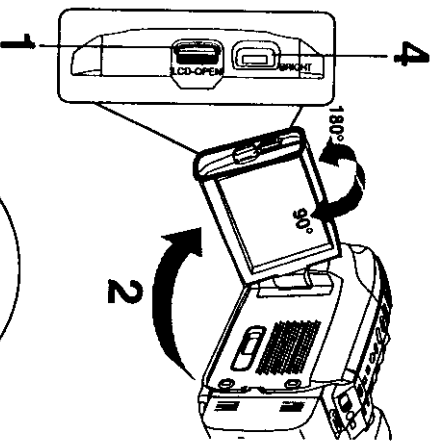
- When Camcorder is aimed at excessively bright objects, or bright lights, a vertical bar may appear in the picture. This is normal for the CCD pick-up. Try to avoid this when possible.



# Camera Recording

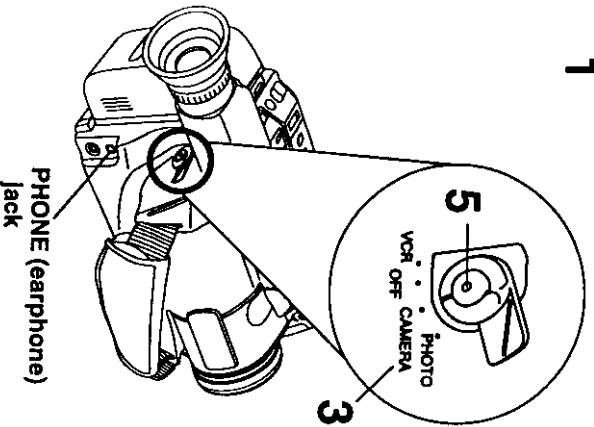
## Using the LCD Monitor

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



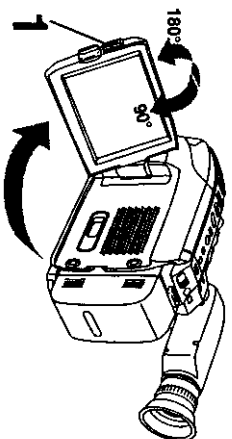
- Before you begin...**
- Connect Camcorder to power source.
  - Insert cassette with record tab (page 13).

- 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 21).



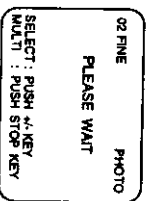
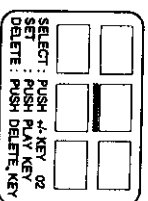
- Note:**
- Using LCD reduces battery operation time.
  - To hear sound while recording, connect earphone (M3 type: not supplied) to PHONE jack. Earphone volume cannot be changed while in CAMERA mode.
  - Lock LCD closed when not in use.

## Playback



- Before you begin...**
- Connect Camcorder to power source.
  - Set **POWER to PHOTO**.

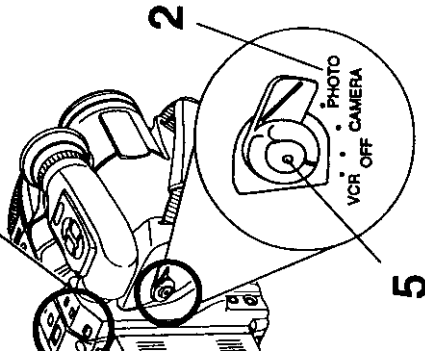
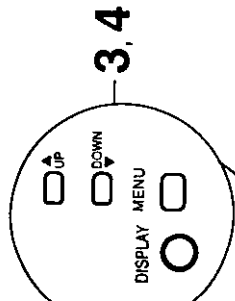
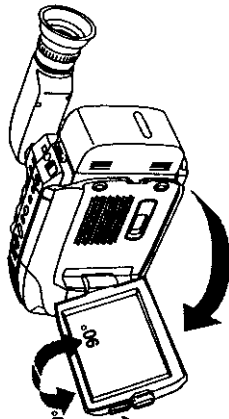
- 1 Press **LCD-OPEN** and swing LCD monitor fully open. Adjust viewing angle.
- 2 Slide **PHOTO MODE to PLAY**. Page 1 of Multi Image Playback screen appears.
- 3 Press **+(FF)** → next.  
Press **-(REW)** → previous.  
Selected image underlined in red.  
• Continue pressing **+(FF)** or **-(REW)** for next or previous page.
- 4 Press **PLAY** to display image. This screen appears followed by Image



- Press **DISPLAY** to remove or redisplay the image.
- Press **STOP** to redisplay Multi Image playback screen.

# Digital Still Camera

## Recording



1 will not be record.  
Features below are not available in PHOTO mode.

- Color Digital Filter
- Digital E.I.S.
- Strober/Wide
- Digital Wipe
- Priority Mode
- Audio Sensitivity
- Lapse
- Intelligent Titler
- Age Mode

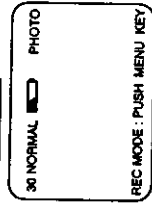
### Before you begin...

- Connect Camcorder to power source.

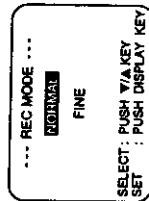
1 Press **LCD-OPEN** and swing LCD monitor fully open. Adjust viewing angle.

2 Set **POWER to PHOTO**.  
Built-in Lens Cover opens and POWER Lamp lights.  
• Be sure **POWER** is fully rotated to **PHOTO** position.

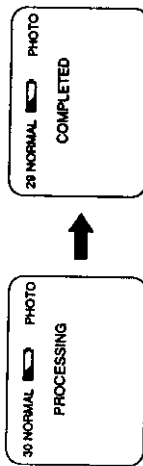
3 Slide **PHOTO MODE to REC**.



4 Press **MENU** for REC Mode.  
Press **UP** or **DOWN** to select **NORMAL** or **FINE** (page 61). Then, press **DISPLAY** to set.



5 Press **RECORD** to capture image.  
• As the image is processed, the status screens below appear.  
The next image may be captured after "COMPLETED" disappears.



- For sharper images, set electronic shutter to higher speed when shooting in bright conditions, such as outdoors.

# Camera Recording

## Stand-by Quick Release

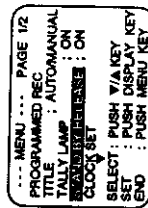
If left in **RECORD/PAUSE** mode for 5 minutes, Camcorder switches to Stand-by mode to conserve battery. When set to ON, Stand-by Quick Release lets you record again by simply pressing **RECORD/PAUSE**. New camcorders will default to OFF.

### Before you begin...

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

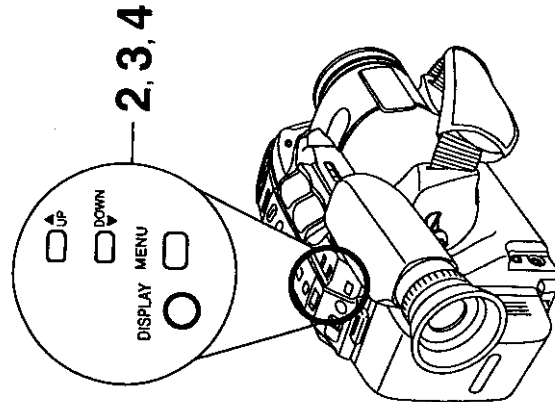
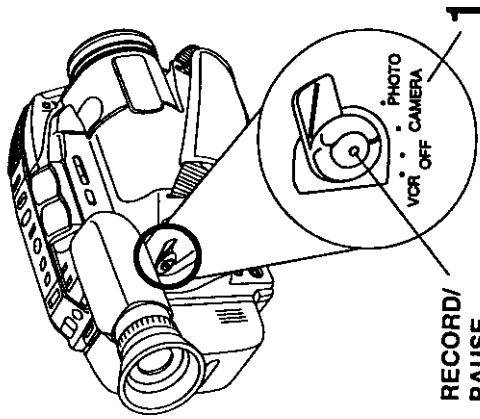
1 Set **POWER to CAMERA**.

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** to record.  
OFF: From Stand-by mode, set **POWER** to OFF, then to **CAMERA**. Press **RECORD/PAUSE** to record.

4 Press **MENU** to exit.



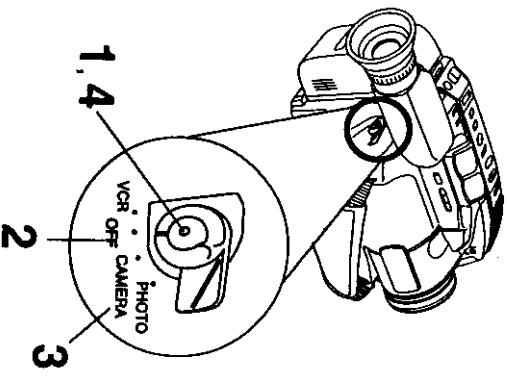
# Camera Recording

## Easy Edit Stand-by

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

### Before you begin...

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

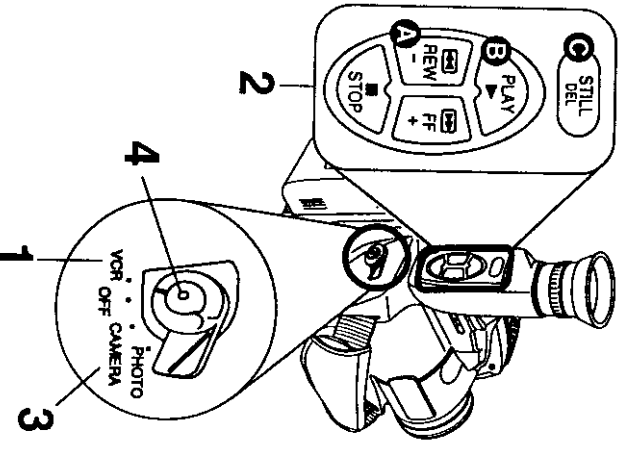


- 1 Press **RECORD/PAUSE** to stop recording.
- 2 Set **POWER to OFF** and leave cassette in Camcorder.
- 3 To resume recording, set **POWER to CAMERA**.
- 4 Press **RECORD/PAUSE** to resume recording.

**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.

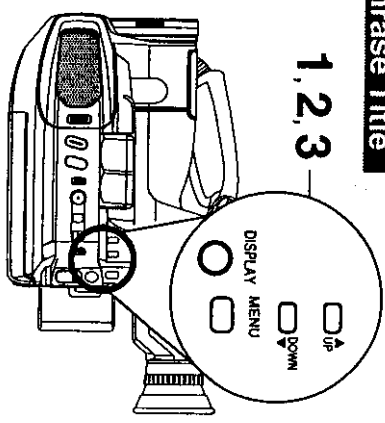


### Before you begin...

- 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.

## Phrase Title



1, 2, 3

H.S. SHUTTER TITLE  
4, 6

- (no indication)  
BEAUTIFUL  
BRAVO!  
CHEERS!  
CONGRATULATIONS  
GIMME A BREAK!  
GOOD LUCK  
I LOVE YOU  
OOPSI  
OUR LITTLE ANGEL  
WAY TO GO

### Before you begin...

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

... MENU ... PAGE 1/2  
PROGRAMMED REC  
ENDING TALLY LAMP : PHRASE ON  
STAND-BY RELEASE : OFF  
CLOCK SET  
SELECT : PUSH T/VA KEY  
SET : PUSH DISPLAY KEY  
END : PUSH MENU KEY

- 1 Press **MENU** for MENU mode. Press **UP** or **DOWN** to select **TITLE**.
- 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** Pause (Record mode).



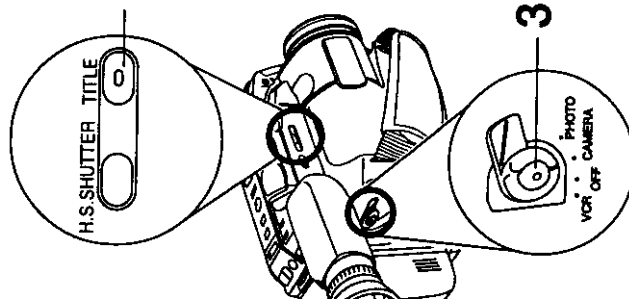
## Automatic/Manual Title Display List

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 / HOI HOI HOI
These Titles must be displayed manually.	
	HAPPY EASTER
	HAPPY ANNIVERSARY
	HAPPY BIRTHDAY
	VACATION
	WEDDING DAY
	A SPECIAL DAY

## Annual 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 43).

**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).

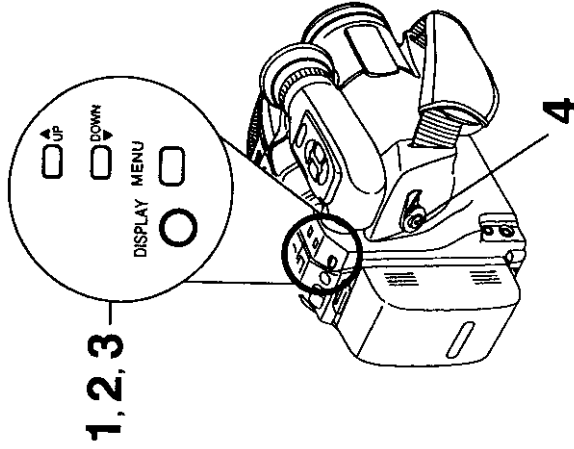
# Camera Recording

## Programmed Recording

Set a recording start and stop time. Or, set a 5 or 10 second interval recording to be done each minute.

## 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  
 (RECORDING) TITLE  
 TALLY LAMP : AUTO/MANUAL  
 STAND-BY RELEASE : ON  
 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/PAUSE  
 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 DISPLAY KEY  
 START : PUSH RECORD/PAUSE  
 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 1989

Recording will be done as scheduled.

10MIN. → 20MIN. → 30MIN. → TO TAPE END

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

\*1 Interval 5 SEC/MIN:  
 Record 5 second each minute.

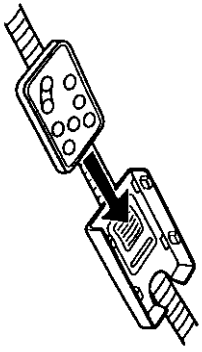
\*2 Interval 10 SEC/MIN:  
 Record 10 second each minute.

### Note:

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

# 8-Function Remote Control

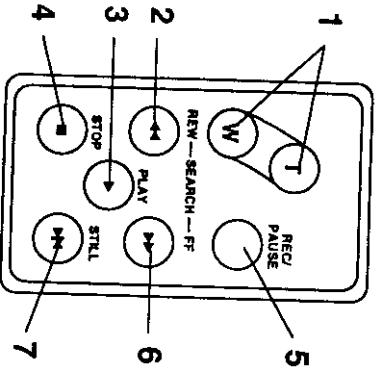
## Remote Control Holder



When not in use, slide remote into its holder on the shoulder strap (page 14).

## Remote Control Operation

Operate Camcorder's main function up to about 16 feet (5 m) away. Aim remote at sensor on Camcorder.

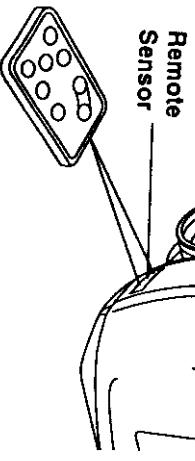


## Controlled Functions

- 1 **POWER ZOOM** page 32.
- 2 **REWIND/SEARCH** page 27.
- 3 **PLAY** page 27.
- 4 **STOP** See page 27.
- 5 **RECORD/PAUSE** page 21.
- 6 **FAST FORWARD/SEARCH** page 28.
- 7 **STILL** page 28.

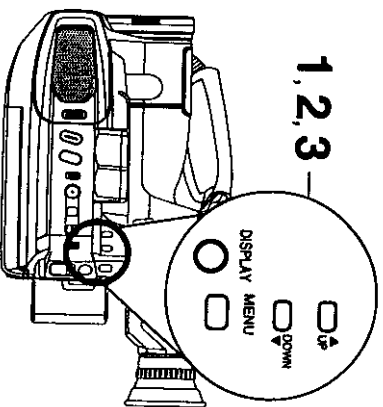
### Important Note:

• After 5 minutes in Rec/Pause mode, the camcorder will shut off to conserve battery power. If recording is resumed within 30 minutes, simply press REC/PAUSE more than 1 second. If over 30 minutes, set POWER to OFF, then CAMERA, then press REC/PAUSE.



## Automatic Title

Camcorder auto-displays title greeting on selected holidays when power is first turned on. See title list on page 44.

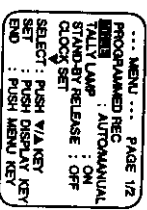


Before you begin...

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

## Intelligent Title

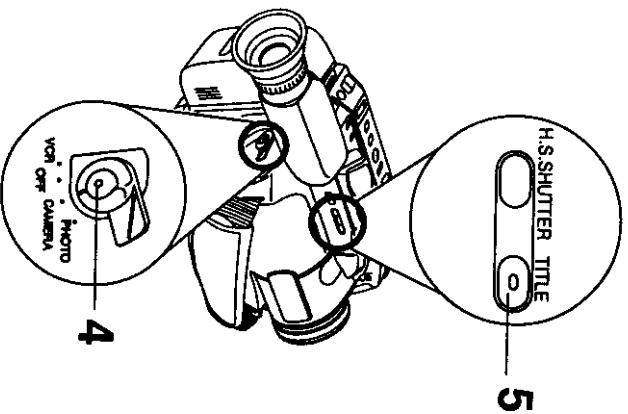
- 1 Press **MENU** for MENU mode. Press **UP** or **DOWN** to select **TITLE**.



- 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:

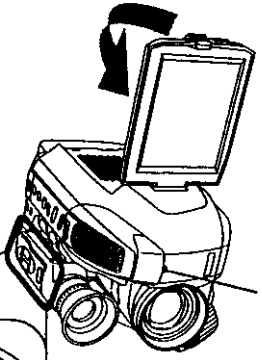
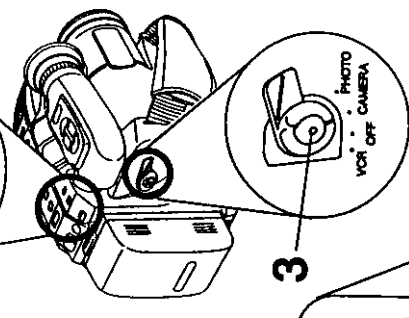
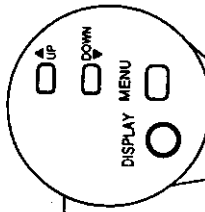
• Once removed, title will not be auto-displayed. To redisplay, or select from other titles use Manual Title (page 44).



# Message Mode

View audio/video messages for family or friends.

## 1.2



Tally Lamp

One message limit. If tape is ejected or battery (if used) is depleted while in Stand-by mode, the message mode is canceled. To playback message (tape is inserted and/or new power source is attached), set **POWER to VCR** and press **PLAY**. Title cannot be displayed in Message mode.

Message mode is selected, the following functions are not available: Time Lapse, Security.

Before you begin...

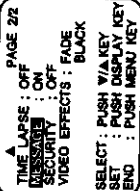
- Connect Camcorder to power source. Use AC Adaptor for extended use.
- Insert cassette with record tab (page 13).
- Set **POWER to CAMERA**.

## 1

Press **MENU** for MENU mode.

Press **UP** or **DOWN** to select

**MESSAGE**. Press **DISPLAY** to select ON.

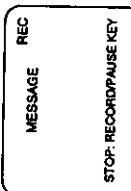


## 2

Press **MENU** for Message Stand-by Mode. (If cassette is not inserted, "E" will flash.) Flip LCD in direction of lens.

## 3

Press **RECORD/PAUSE** to start recording your message. Tally lamp flashes and a display alerts recipient. Press **RECORD/PAUSE** to end.



- For convenience, use remote control **REC/PAUSE** button.
- Camcorder auto-rewinds to the message start, then goes into Stand-by mode.



## 4

Press **PLAY** to playback message. LCD can be in any position for playback.

- To cancel feature, set **POWER to OFF**.

# Playing Back Recordings

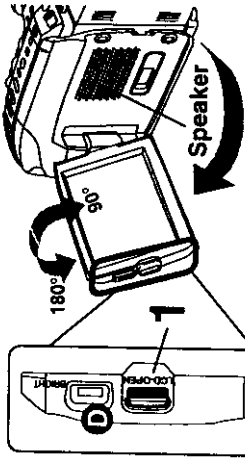
Playback on EVF or LCD Monitor

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

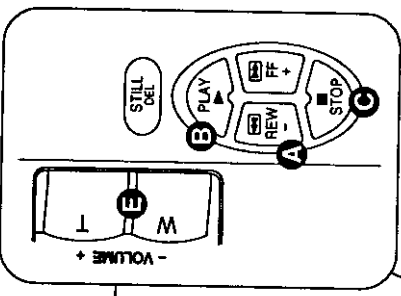
Set **POWER to VCR**. If tape has no record tab, auto playback begins. LCD monitor turns on/off by the **POWER** switch.

- Viewfinder shuts off when LCD is fully opened and turns back on when LCD is locked closed.
- 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, or earphone if connected.

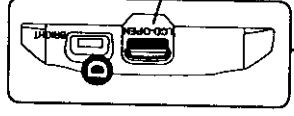


Press "T" : Volume up(+). Press "W" : Volume down(-).



Note:

- Using LCD reduces battery operating time.
- When earphone (M3 type: not supplied) is connected to **PHONE** jack, speaker is muted.



PHONE (earphone) jack

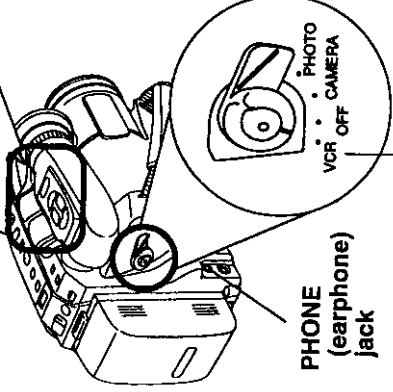


PHOTO CAMERA

VCR OFF CAMERA

# Playing Back Recordings

## Special Effects

### Before you begin...

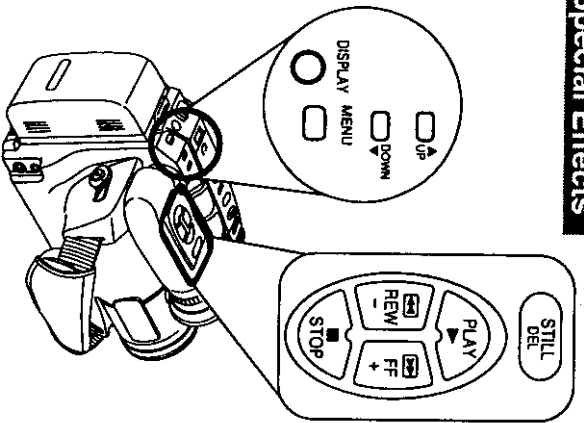
- Connect Camcorder to power source.
- Insert recorded tape.
- Set POWER to VCR.

### 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.  
This feature works best in SLP mode (pages 13, 21).

### Note:

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

## Tracking Control

### Auto Tracking

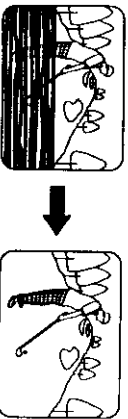
Continuously analyzes each recording for optimum picture quality.

### 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.



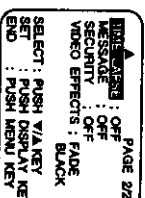
# Time Lapse

This feature reduces tape speed to 1/3 SLP for long term period recording (up to 6 hours with TC-40 tape).

### 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.
- Slide TAPE SPEED to SLP.

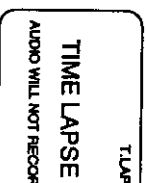
- 1 Press **MENU** for MENU mode.  
Press **UP ▲** or **DOWN ▼** to select **TIME LAPSE**.



- 2 Press **DISPLAY** to select ON.  
**TIME LAPSE: ON**  
Records at 1/3 SLP speed (up to 6 hours). Playback will be normal SLP speed. Sound is muted.

- 3 Press **MENU** to exit.

- 4 Start recording (page 21).



To cancel Time Lapse, select OFF in step 2 above.

### Note:

- If Time Lapse mode is selected, the following functions are not available: Message, Security.

**IMPORTANT:**

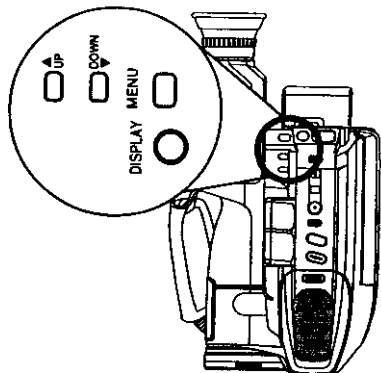
- Time Lapse recording system is not part of VHS standard. Therefore, time lapse recordings should be played back on Camcorder only.
- Recordings other than time lapse may be played back on any **VHS** camcorder or **VHS** VCR.

# Audio Sensitivity

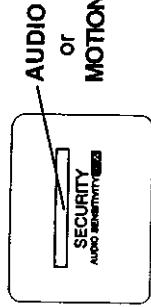
Choose HIGH or LOW Audio sensitivity for Audio or Motion•Audio Security.

## Before you begin...

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



In Audio or Motion•Audio Security stand-by (page 42), press **UP** or **DOWN** to select **HIGH** or **LOW**.



### HIGH

Picks up normal voices up to about 32.8 feet (10m) away.

### LOW

Picks up normal voices up to about 3.2 feet (1m) away.

- Screen will change back to Audio or Motion•Audio Security stand-by after 5 seconds.
- Setting reverts to **LOW** when Camcorder is turned off.

### Note:

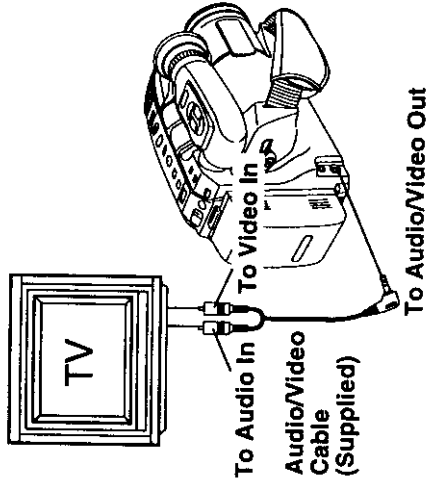
- Audio Security may false start due to normal noises. To avoid this, place in quiet area.
- Camcorder location should be considered when adjusting Audio sensitivity.
- Performance may vary due to spaciousness of area, noise reflection, and resonance.
- Do a test to confirm performance.

# 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.



**1**

Set **POWER** to:

**VCR** → view playback.  
**CAMERA** → view picture as it is recorded.

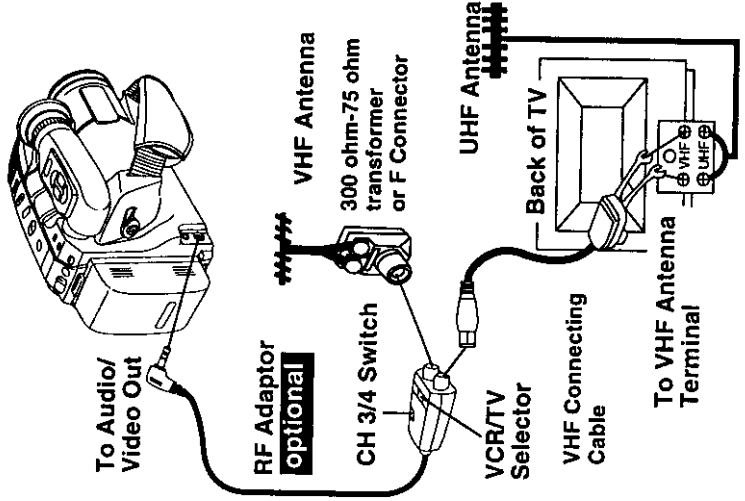
**2**

Turn **TV ON** and set to **LINE INPUT**.  
See TV owner's manual.

**3**

Begin playback or recording.

### TV without AUDIO/VIDEO IN Jacks.



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).

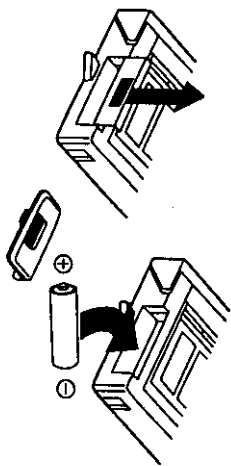
- Set Camcorder **POWER** to **OFF**.
- Set **RF Adaptor VCR/TV Selector** to **TV**.
- Turn **TV ON** and select channel.

### 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.

# Playing Back Recordings in a VCR

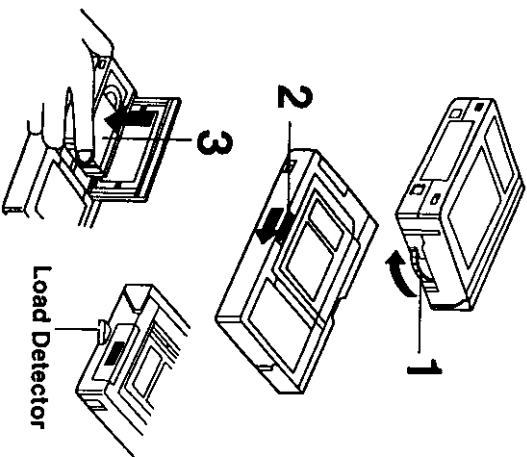
## Load Battery in PlayPak



Remove Battery lid and insert AA battery.

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

## Insert VHS-C Cassette in PlayPak

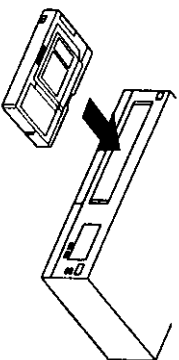


**1** Turn **VHS-C** cassette **Tape Wheel** in direction of arrow to take up any slack.

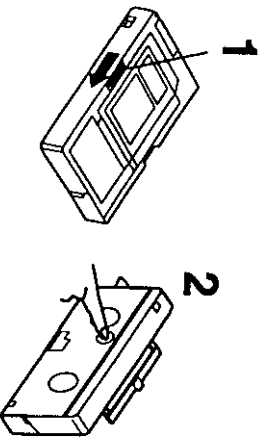
**2** Slide **RELEASE** to open cassette lid.

**3** Insert the **VHS-C** 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.



## Remove VHS-C Cassette



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

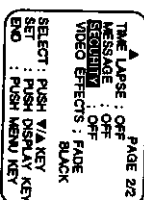
**2** Push cassette out through hole in bottom of PlayPak with your finger.

# Security Mod

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.

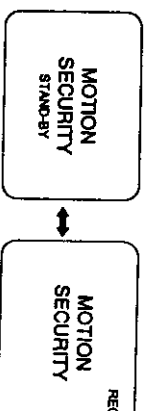
**1** Press **MENU** for **MENU** mode. Press **UP** or **DOWN** to select **SECURITY**.



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



**3** Press **MENU** for **Motion Security** stand-by mode. (If cassette is not inserted, "E" will flash.)



- Recording will start about 3 seconds after motion is detected.
- Date and time are recorded if displayed in EVF (page 19).
- Recording stops 30 seconds after motion ceases.

To cancel **Security Mode**, set **POWER** to **OFF**.

**Motion Security may mistakenly start when:**

- background is plain, like a white wall, or has distinct vertical, horizontal, or slanted stripes, like a venetian blind.
- brightness suddenly changes.

**Motion 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.
- in poor lighting (in this case, **MOTION SECURITY** flashes).
- background is plain, like a white wall, or has distinct horizontal or vertical stripes.

**Audio Security may start when:**

- mic picks up any wind noise.

**Audio Security recording may not start when:**

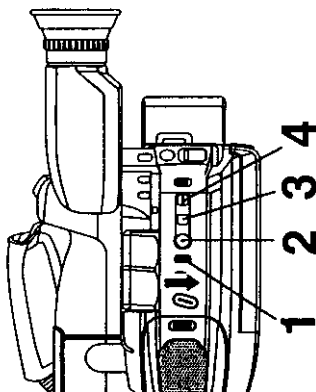
- sound is too brief.

**Note:**

- 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 E.I.S., Time Lapse, Message, Auto Fade, Digital Fade.

# Digital Wipe

Transfer a memorized scene into the current recording, or vice versa, in one of three wipe effects.



**Before you begin...**

- Set **POWER** to **CAMERA**.

**1** Slide **DIGITAL SELECT** to **DIGITAL WIPE**.

**2** Press **MEMORY** in **Record/Pause** mode to memorize a scene.

- The picture fades out, then back in. "MEM." is displayed as scene is memorized.

- **MEMORY** button does not function during recording, or while memorized scene is displayed.



**3** Press **MODE** repeatedly for Wipe effect 1, 2, or 3 (See left).

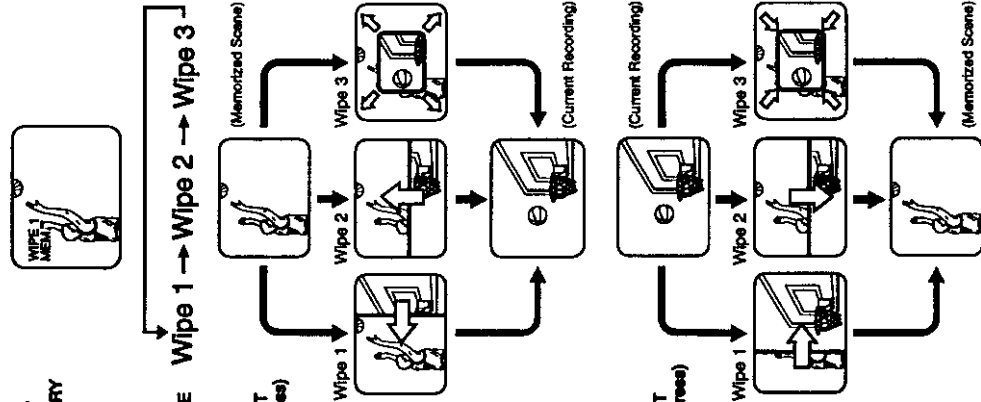
**4** Press **START**:

- once → inserts current recording picture.
- twice → inserts memorized scene.

- You can freeze the wipe in progress by pressing **START**. Press **START** again to resume wipe.

**Note:**

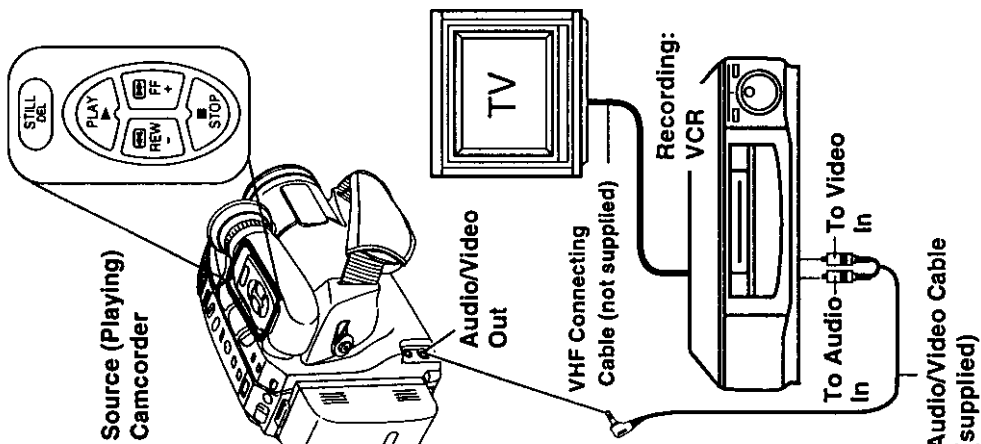
- The memorized scene will be cleared when the Camcorder is turned off.



# 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.

## CAUTION:

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

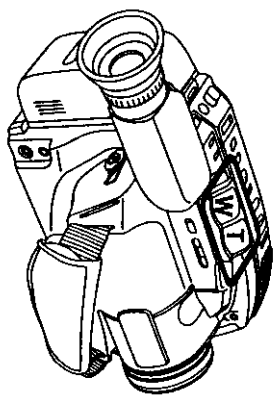
## Monitor with your TV

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

# Power Zoom / Backlight

## Four-Speed Power Zoom

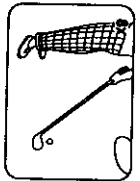
Zoom In (close up) and out (wide angle) in one of four speeds ranging from slow (16 sec.) to fast (2 sec.).



### Before you begin...

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

#### Zoom In ("T")



#### Zoom Out ("W")

#### Zoom slowly:

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

#### Zoom quickly:

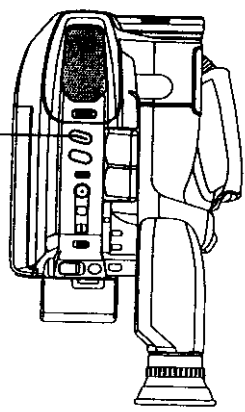
Apply more pressure to the button.

### Before you begin...

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

## Backlight

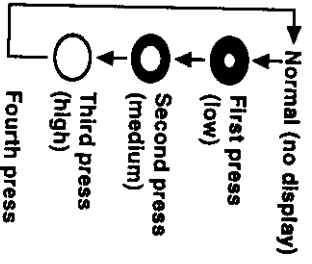
Use when subject is darker than surroundings, in shadowed area, or in front of the light source.



BACKLIGHT

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

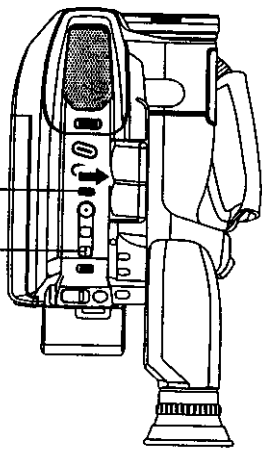
### EVF Indications



# Still/ Strobe/ Wide

### Before you begin...

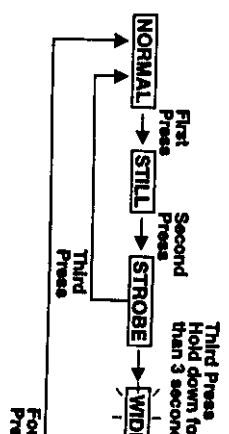
- Set POWER to CAMERA.



## 1 Slide DIGITAL SELECT to STILL STROBE.

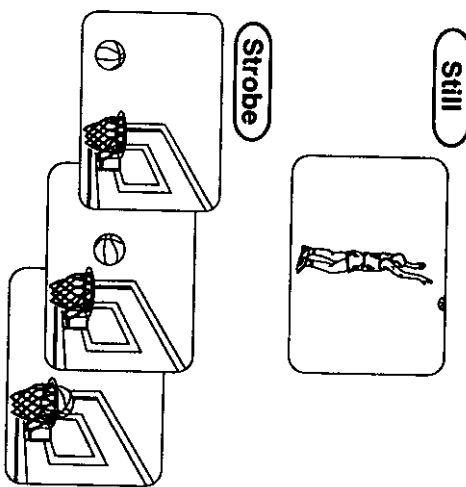
## 2 Press STILL/STROBE/WIDE repeatedly for desired function as described below.

### Selection order



## STILL

Records a still image from the current picture.



## STROBE

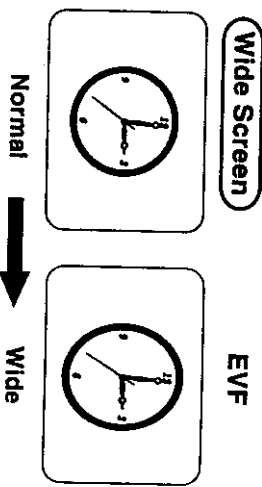
Records a progression of still images 1/6 of a sec. intervals.

## WIDE SCREEN

Records a picture that will fill entire screen of a wide screen (16x9 aspect ratio) TV.

### Note:

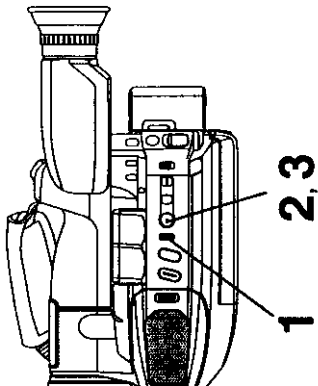
- Wide screen recordings must be played back on a wide screen TV (16x9 aspect ratio) or picture will be distorted.
- If title is added (pages 46-48) during W mode, it will be distorted when played back on a wide screen TV.





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

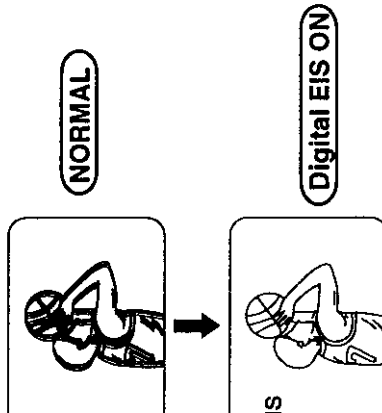
stabilize picture when recording in shakable situations.



### Before you begin...

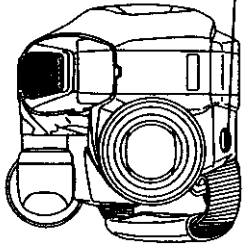
- Connect Camcorder to power source.
- Set POWER to CAMERA.

- 1 Slide **DIGITAL SELECT** to **EIS**.
- 2 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 34) if needed. Shutter speed setting remains after EIS is canceled.
- 3 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.

## Auto Focus



### Before you begin...

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

Camcorder automatically focuses on subject even during zooming.

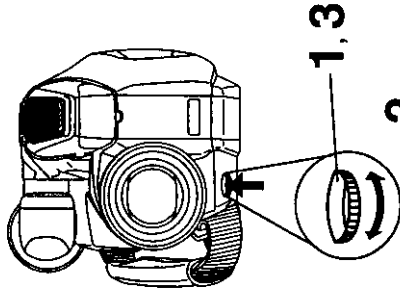
Auto Focus is on when "MF" is not displayed in EVF. Press **MANUAL FOCUS** to remove "MF" in EVF if necessary.

- subject is not centered in Viewfinder.
- subject has shiny surface.
- subject is slanted.
- subject is bright and flat, like a white wall.
- subject has fast motion, like a golf swing.

## Manual Focus

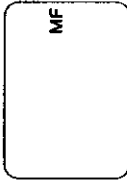
Use **Manual Focus (MF)** when :

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



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

EVF Indication



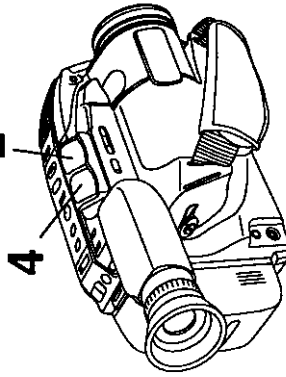
- 2 Hold down "**T**" (telephoto) on **POWER ZOOM** to maximum zoom in.

- 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.



## 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.

# High Speed Shutter

Improves Still or Slow Motion playback picture of high speed subjects (e.g. a tennis stroke), 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).

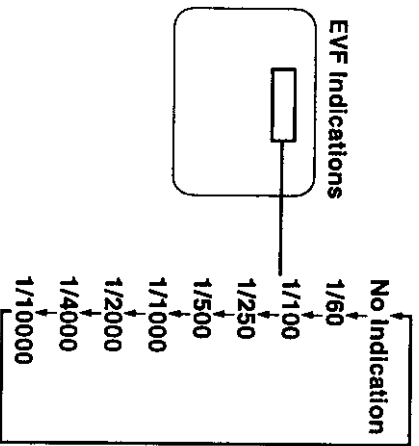
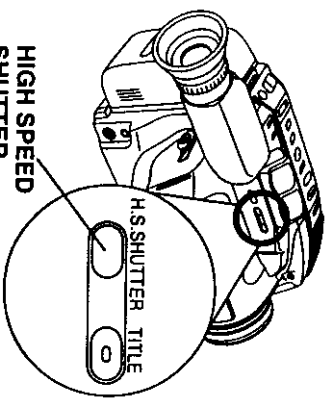
## Auto Shutter

In **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

The 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.



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

### Note:

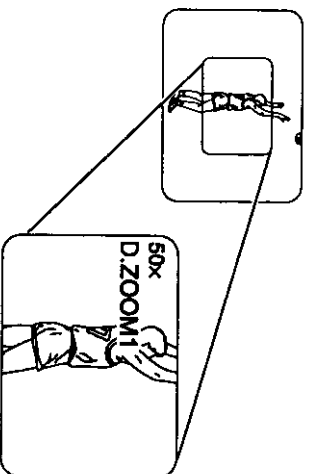
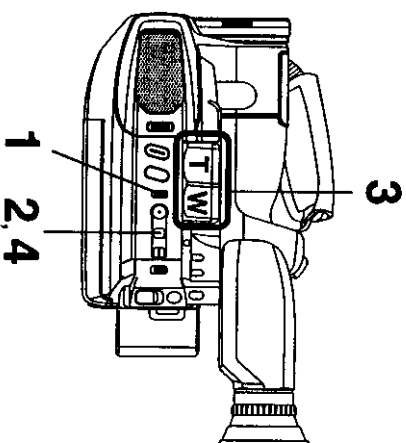
- Provide additional halogen or tungsten light for use indoors or in poor light. Fluorescent light degrades picture.
- Auto Focus may not function properly if high speed shutter is used in inadequate light.
- Setting reverts to **AUTO** each time **POWER** is set to **CAMERA**.

# Digital Zoom

Power Zoom magnification is digitally increased.

## Before you begin...

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



- 1 Slide **DIGITAL SELECT** to **D.ZOOM**
- 2 Press **DIGITAL ZOOM**.  
once → D.ZOOM 1 (150x)  
twice → D.ZOOM 2 (300x)  
Higher digital magnification levels may cause picture distortion.
- 3 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.
- 4 Press **DIGITAL ZOOM** to turn off Digital Zoom so no indication appears.

# Color Digital Filter

## Before you begin...

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

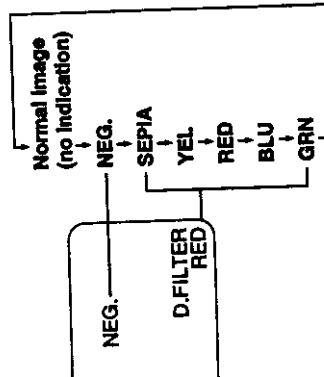
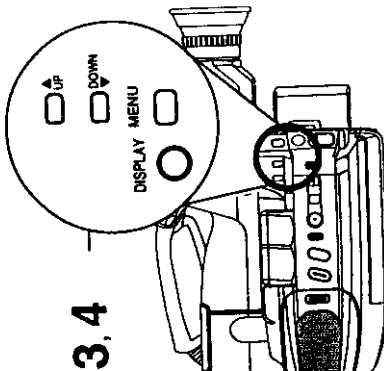
- 1 Press **MENU** for **MENU** mode.

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

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

Press **DISPLAY** for **DIGITAL FILTER** menu. Press **UP** or **DOWN** to select **COLOR**. Press **UP** or **DOWN** to select from 5 colors.

- 2 Press **DISPLAY** to confirm entry.
- 3 Press **MENU** to exit.



- 3 Press **MENU** for **MENU** mode.
- 4 Press **UP** or **DOWN** to select **TALLY LAMP**.

Press **DISPLAY** to select:

ON → lamp lights during recording.

OFF → lamp stays off.



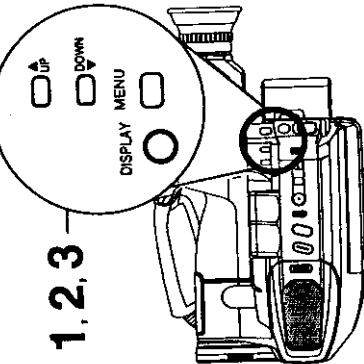
# Tally Lamp

## Before you begin...

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

## Tally Lamp

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



- 1 Press **MENU** for **MENU** mode.
- 2 Press **UP** or **DOWN** to select **TALLY LAMP**.
- 3 Press **DISPLAY** to select:

ON → lamp lights during recording.

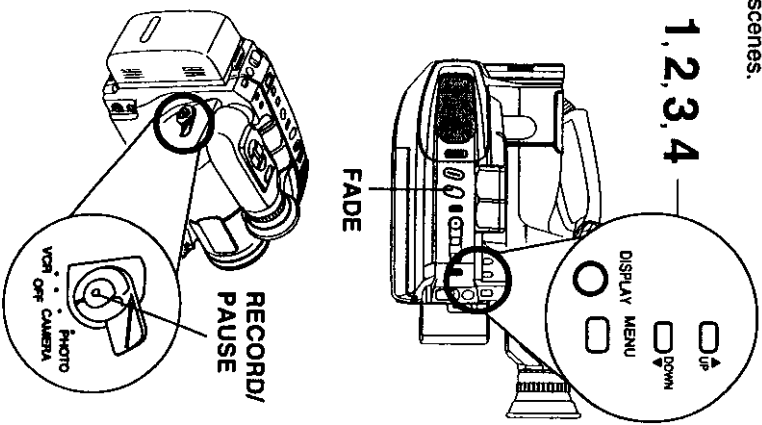
OFF → lamp stays off.

- 3 Press **MENU** to exit.

# Fade In/Out

## Auto Fade

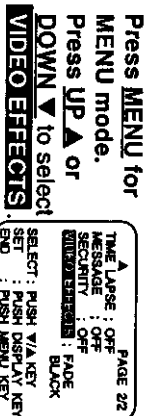
An interesting way to open and close scenes.



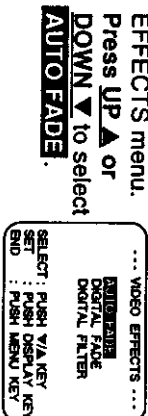
### Before you begin...

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

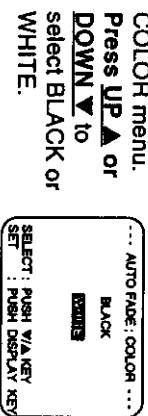
### 1 Press MENU for MENU mode.



### 2 Press DISPLAY for VIDEO EFFECTS menu.



### 3 Press DISPLAY for AUTO FADE:



### 4 Press DISPLAY to confirm entry.

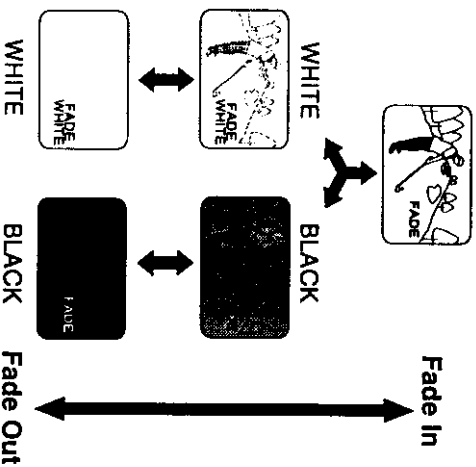
#### Fade In:

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:

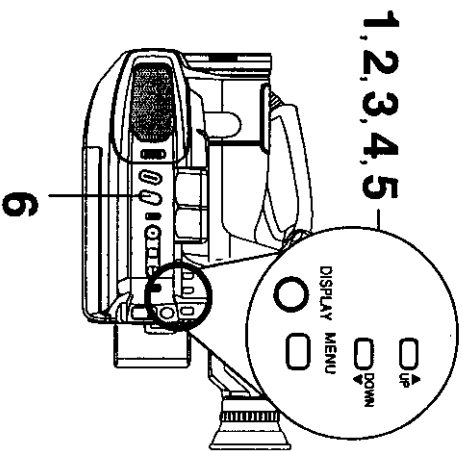
While recording, press **FADE** so "FADE" flashes in EVF. Press **RECORD/PAUSE**. Picture and sound gradually fade out, and recording is paused.

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



## Color Digital Fade

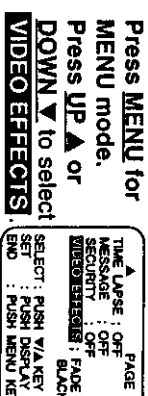
Choose from 7 fade effects in 8 different colors.



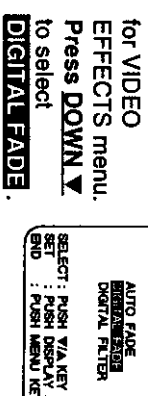
### Before you begin...

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

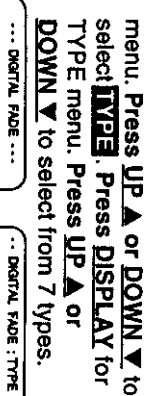
### 1 Press MENU for MENU mode.



### 2 Press DISPLAY for VIDEO EFFECTS menu.

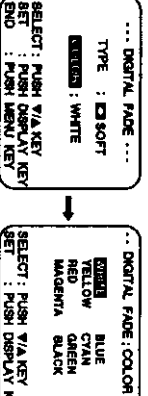


### 3 Press DISPLAY for DIGITAL FADE menu.



### 4 Press DISPLAY for DIGITAL FADE menu.

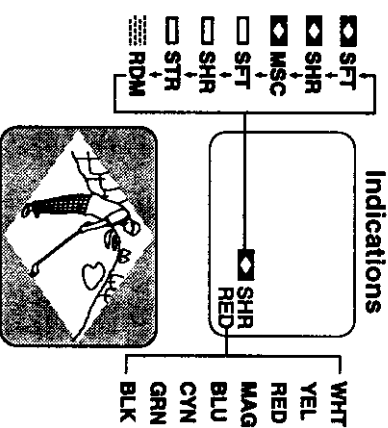
Press **DOWN** to select **COLOR**. Press **DISPLAY** for **COLOR** menu. Press **UP** or **DOWN** to select from 8 colors.



### 5 Press DISPLAY to confirm entry.

### 6 Press FADE 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**.