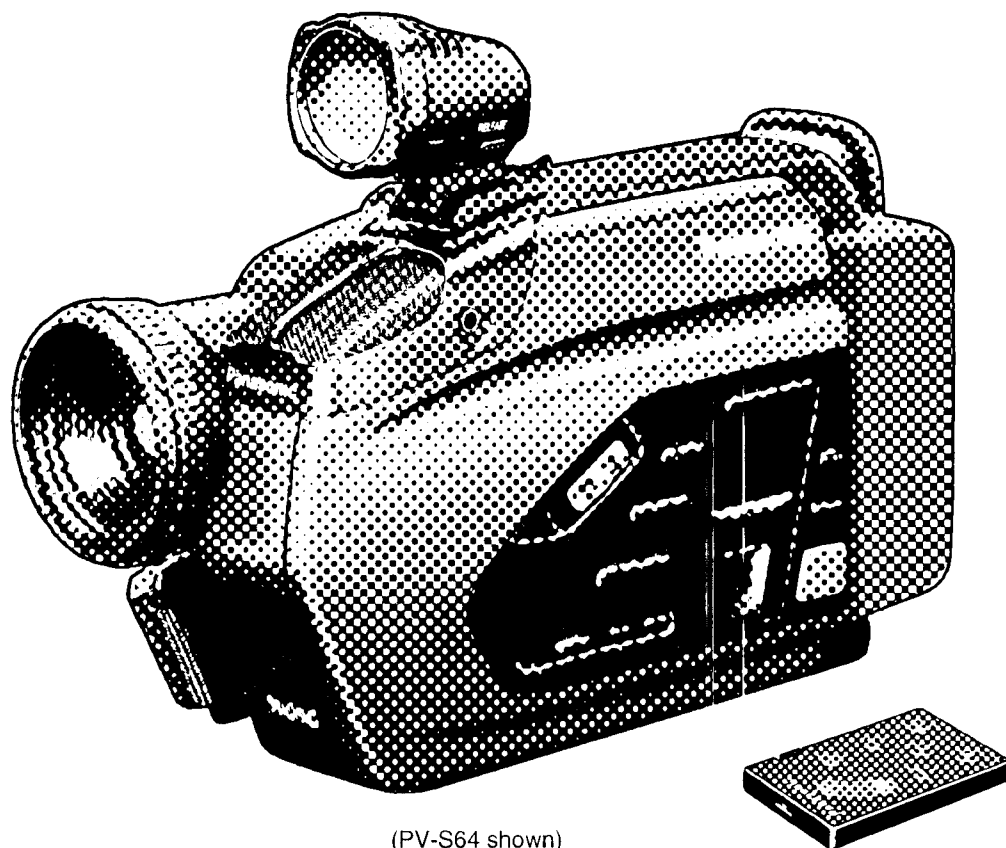


Panasonic

Palmcorder®

Camcorder

Operating Instructions



PV-54

Consists of PV-54D/PV-A16

PV-S64

Consists of PV-S64D/PV-A16

Before attempting to connect, operate or adjust this product, please read these instructions thoroughly.
Spanish Quick Use Guide is included. Guía para rápida consulta en español está incluida.

VQTW0466 (A)

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, we're sure it will bring you and your family years of enjoyment. Please take time to fill in the information at right. The serial number is on the tag located on the underside of your Palmcorder. Be sure to retain this manual as your convenient Palmcorder information source.

Date of Purchase _____

Dealer Purchased From _____

Dealer Address _____

Dealer Phone No. _____

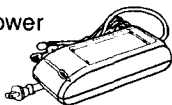
Model No. _____

Serial No. _____

Unpack your Palmcorder

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

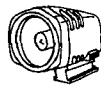
1 pc. AC Adaptor
(PV-A16)
with DC Power
Cable



1 pc. Battery Pack
(PV-BP17)



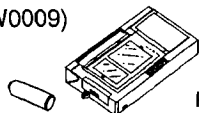
5W Color Enhancement
Light (VUAW0481)
(PV-L5)



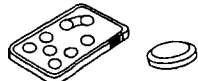
1 pc. Audio/Video
Cable (VJPS0272)



1 pc. VHS PlayPak
(PV-P1) and one "AA"
battery
(VYMW0009)



1 pc. 8-Function Remote
(VSQS1200) with one
CR2025 Battery



1 pc. CR2025 Clock
Battery (VSBW0004)



1 pc. Shoulder Strap
(VYCW0038)



Remote has been loaded with battery and comes stored in Palmcorder. See page 19.

1 pc. RF Adaptor
(with PV-S64)
(PV-RF15)



1 pc. FF Cable
(with PV-S64)
(VJAS0089)



1 pc. S-Video Cable
(with PV-S64)
(VJAW0023)



1 pc. Compact Video
Cassette Tape
(with PV-S64)
(NV-STC20ZXZ)



Safety Precautions

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

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

PV-54

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

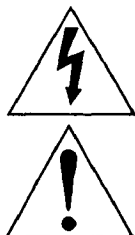
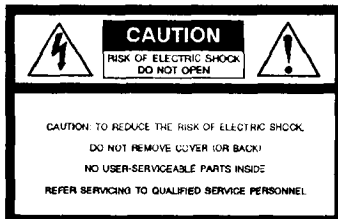
It is recommended that only cassette tapes that have been tested and inspected for use in VCR machines with the **VHS-C** and/or **VHS** mark be used.

PV-S64

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

It is recommended that only cassette tapes that have been tested and inspected for use in VCR machines with the **VHS-C** and/or **S-VHS** mark be used.

This S-VHS Palmcorder is equipped with recording functions for both conventional **VHS-C** and **S-VHS-C** systems to enable users to select either mode. An **S-VHS-C** cassette recorded in the **S-VHS-C** mode cannot be played back with **VHS-C** VCRs.



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

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

Important Safeguards and Precautions

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.



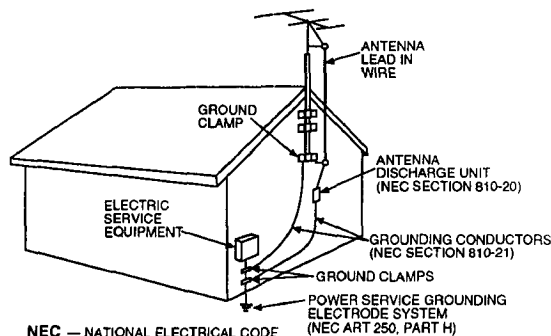
9. **Ventilation** — Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the video unit and to protect it from overheating. These openings must not be blocked or covered. Never place the video unit on a bed, sofa, rug, or other similar surface, or near or over a radiator or heat register. This video unit should not 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.



Important Safeguards and Precautions

14. **Lightning** — For added protection of this video unit receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video unit due to lightning and power-line surges.
15. **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 EXPOSE YOUR CAMCORDER TO EXTENDED HIGH TEMPERATURE ...** Such as, in direct sunlight, inside a closed car, next to 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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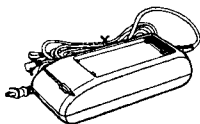
This operating instruction book is designed for use with models PV-54 and PV-S64. Illustrations in this manual show the PV-S64. Features may vary, so please read carefully.

Palmcorder Accessory System

For information and ordering instructions, see the separate Selection Guide and Accessory Order Form.

Power Supplies

Supplied Accessories



AC Adaptor
(PV-A16)



2.4Ah Battery Pack
(PV-BP17)

Optional Accessories



1.2Ah Battery Pack
(PV-BP15)



Car Battery Cord
(PV-C16)

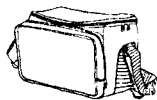
To Transport

Supplied Accessories



Shoulder Strap
(VYCW0038)

Optional Accessories



System Carrying Case
(PV-H18)

For Special Effects

Optional Accessories



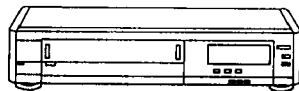
Video Corrector
(PV-CC50)

To Copy your Tapes (with Video/Audio)

Supplied Accessories



Audio/Video Cable
(VJPS0272)



VCR (not supplied)

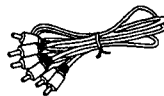
Optional Accessories



Synchro Edit Cord
(PV-EC1)

Connection

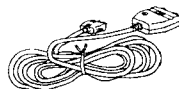
Supplied Accessories



Audio/Video Cable
(VJPS0272)



S-Video Cable
(with PV-S64)
(not supplied with PV-54)
(VJAW0023)



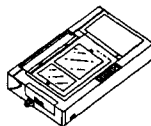
RF Adaptor
(with PV-S64)
(not supplied with PV-54)
(PV-RF15)



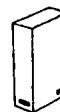
FF Cable
(with PV-S64)
(not supplied with PV-54)
(VJAS0089)

To Record and Playback

Supplied Accessories



VHS PlayPak
(PV-P1)



Compact Video Cassette
Tape
(with PV-S64)
(not supplied with PV-54)
(NV-STC20ZXZ)

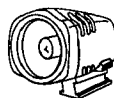
Optional Accessories



Compact Video
Cassette Tape
(NV-TC20P,
NV-TC30P)

To Enhance your Recording

Supplied Accessories



5W Color Enhancement
Light
(PV-L5)



Telephoto Lens
(PV-LT49)

Attaching the Shoulder Strap

Make sure the Battery Pack is not attached.

1

Pinch the tabs together on either side of the clasp and open the buckle.

2

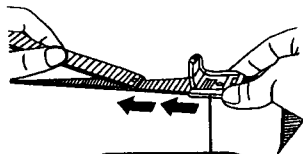
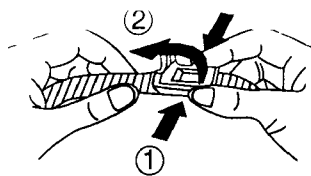
Unhook the strap from the Buckle Catch.

3

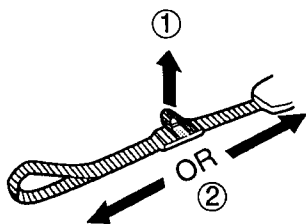
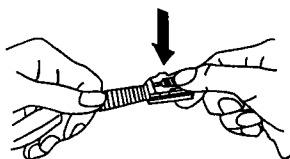
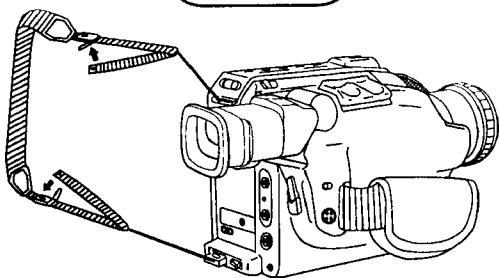
Thread the strap ends through the Strap Attachment Rings. Then re-hook them onto the Buckle Catch.

4

Snap the clasp shut to lock the strap in place.

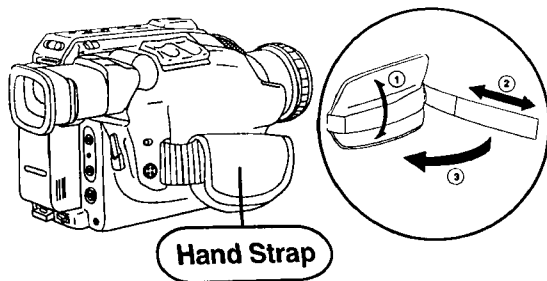


Buckle Catch



Adjust the Length

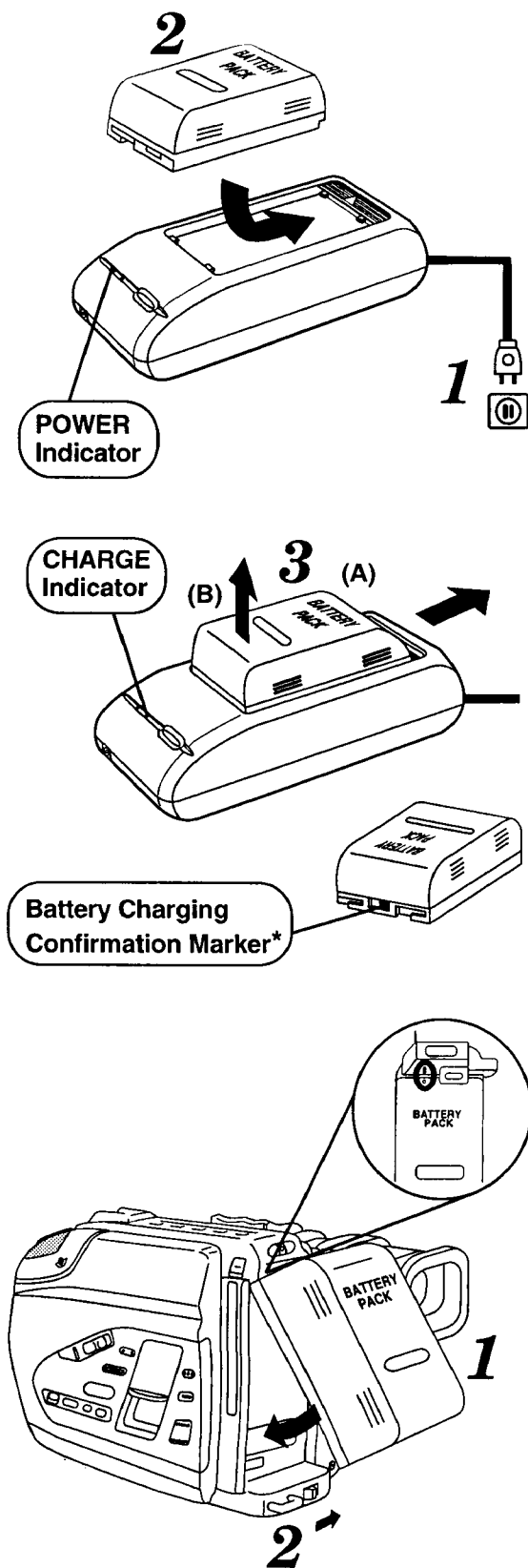
Pull a loop of the strap loose from the buckle, then pull the strap firmly through the buckle to adjust the length.



Hand Strap

Adjust the length to the size of your hand using the illustration at left as a guide.

Supplying Power

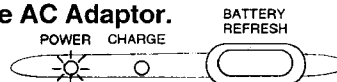


Charge the Battery Pack

Charge the Battery Pack fully before operation.

1

Plug in the AC Adaptor.



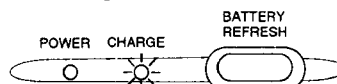
2

Power Indicator lights up.

Insert the Battery

Slide the top of the Battery forward then press down until it locks with a click.

• Battery Pack charges in about 2 hours.

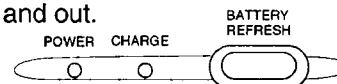


3

Remove the Battery

(A) Slide Battery forward.

(B) Lift up and out.



Charge Indicator goes out when charging is done. (About two hours.)

• With a fully charged Battery Pack, you will have about 1.5 hours of continuous use.

Use the Battery completely before recharging.

Note:

After recharging the Battery Pack about 5 times, use the BATTERY REFRESH feature as explained on page 10.

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

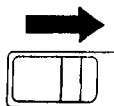
Use the Battery Pack

1

To Attach the Battery

Align the battery with the top of the mounting surface and press it firmly into place until it locks with a click.

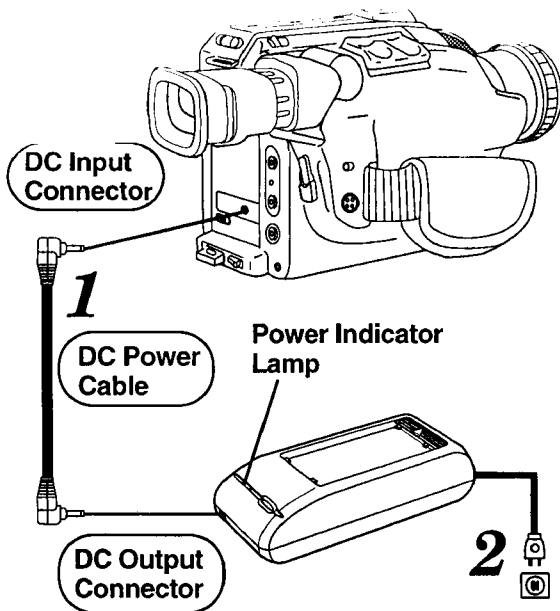
2



To Remove the Battery

While sliding the BATTERY RELEASE button, remove the Battery from the mounting surface.

Supplying Power



AC Adaptor (Supplied)

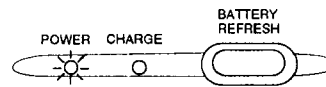
1

Connect the DC Output on the AC Adaptor to the DC Input on the Palmcorder with the DC Power Cable (supplied).

2

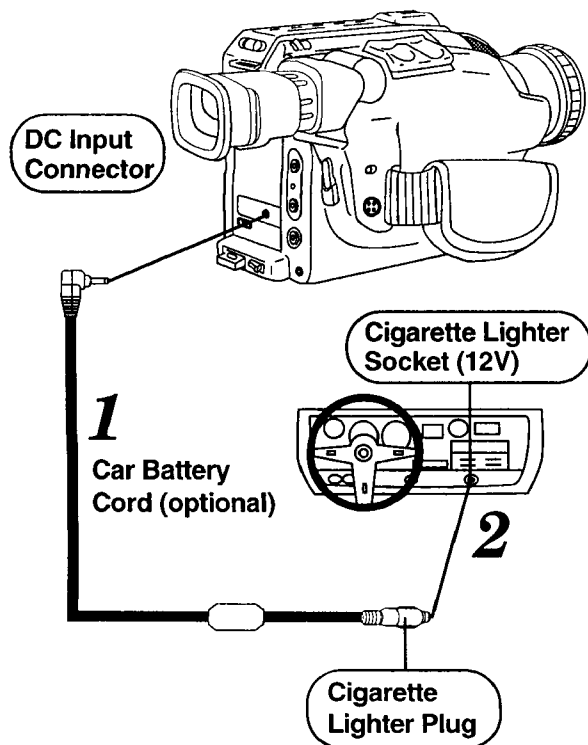
Plug in the AC Adaptor.

- The Power indicator will light up.



Note:

AC Adaptor does not function while charging the Battery.



Car Battery Cord (Optional)

1

Connect a PV-C16 Car Battery Cord to the DC Input of the Palmcorder.

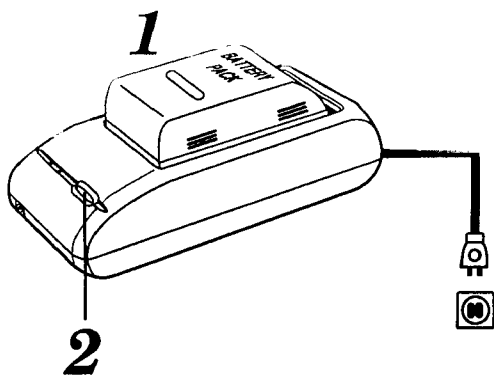
2

Start your car engine and then insert the Car Battery Cord plug into your cigarette lighter socket.

- There is a fuse located in the lighter plug end of the cord.
Should fuse replacement be necessary use the exact current rating (in amps).

Note:

This cord can only be used in vehicles equipped with DC 12V (negative ground) batteries.
Use only the specified car battery cord.



Ni-Cd

ATTENTION:

The product that you have purchased is powered by a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Caution:

- Charge only with specified charger.
- The battery pack can be charged within a temperature range of 32° F (0° C) and 104° F (40° C).
- The battery pack may be warm after charging or just after use. This is normal.
- Do not use an insufficiently charged or worn out battery pack.

Safety precautions:

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

Battery Refresh Feature

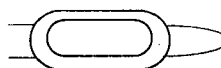
This feature completely discharges the Battery before recharging begins. To keep your Battery in top condition, use Refresh after about every 5 charges.

1

Place the Battery into the AC Adaptor.

BATTERY
REFRESH

2



Press the BATTERY REFRESH button.

The Charging indicator will flash when discharging begins and stop flashing when complete.

- Should you accidentally press the BATTERY REFRESH button, remove the battery pack and then re-insert it to begin charging.
- It takes about 10 hours when both Battery Refresh and charging are performed.

To avoid damage to the Battery Pack:

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

To insure longer battery life:

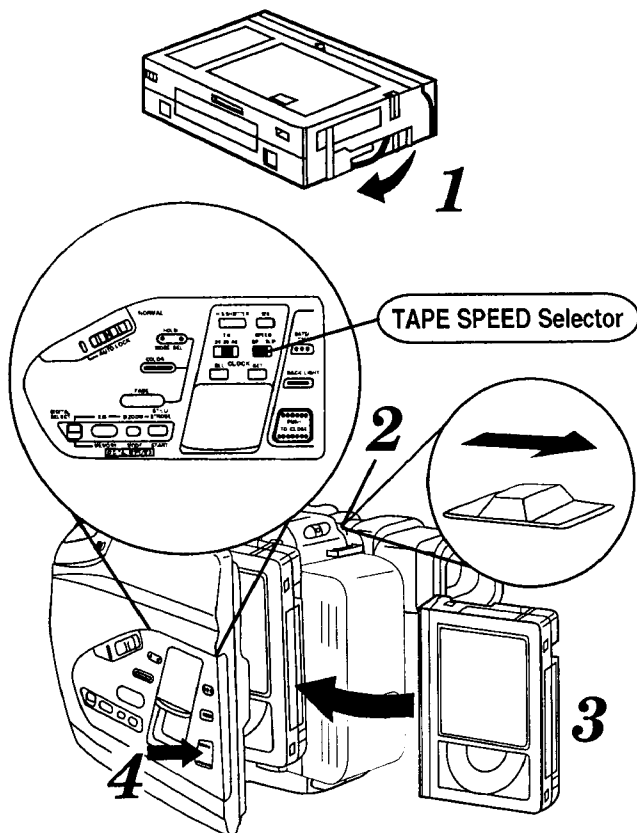
- While not in use, remove battery pack from the Palmcorder and AC Adaptor and store in a cool, dark, dry place.
- Keep the battery pack terminals clean.

Cassette Information

Record/Playback Time

Use tapes with the **VHSC** or **SVHSC** (only PV-S64) mark in this unit.

Tape Speed Selector Position	Cassette type		
	T-20	T-30	T-40
SP (Standard Play)	20 Minutes	30 Minutes	40 Minutes
SLP (Super Long Play)	One Hour	One Hour 30 Minutes	Two Hours



Cassette Insertion/Removal

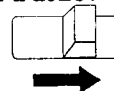
Connect the Palmcorder to a power source.

1

Turn the **Tape Wheel** in the direction of the arrow until there is no slack.

2

TAPE EJECT

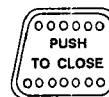


Slide the **TAPE EJECT** switch to open the door.

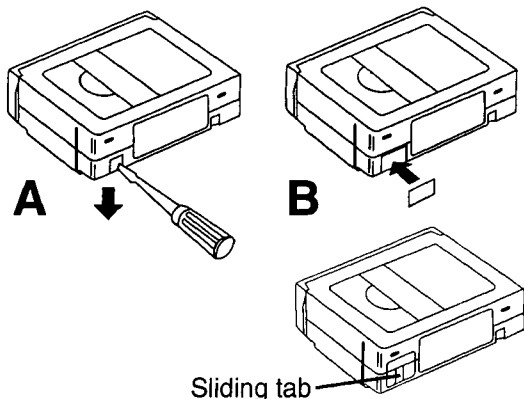
3

Insert the **cassette vertically** with the window facing away from the Palmcorder body.

4



Press **PUSH TO CLOSE** to close the door.



Erase Protection Tab

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

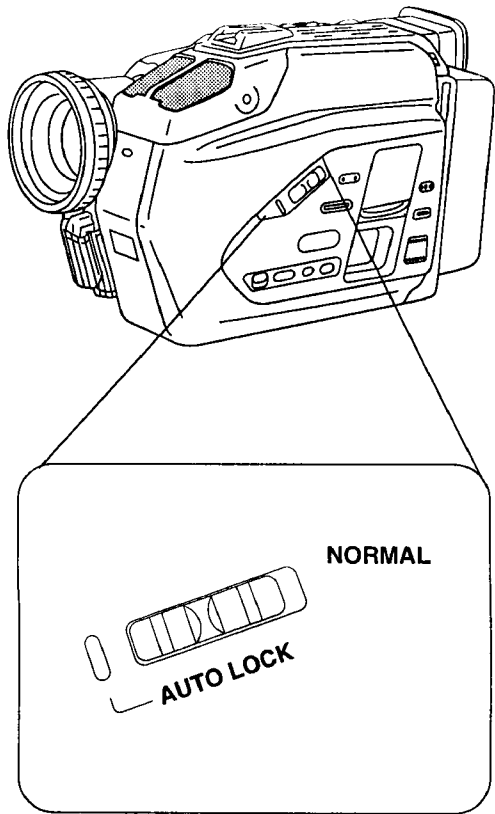
A To prevent accidental erasure
Break off the tab with a screwdriver.
(Some tapes have a sliding tab.)

B To record again
Cover the hole with cellophane tape.

Auto Lock Mode

When the AUTO LOCK switch is set to the AUTO LOCK position, the white balance and focus are automatically adjusted while the more advanced features listed below are locked.

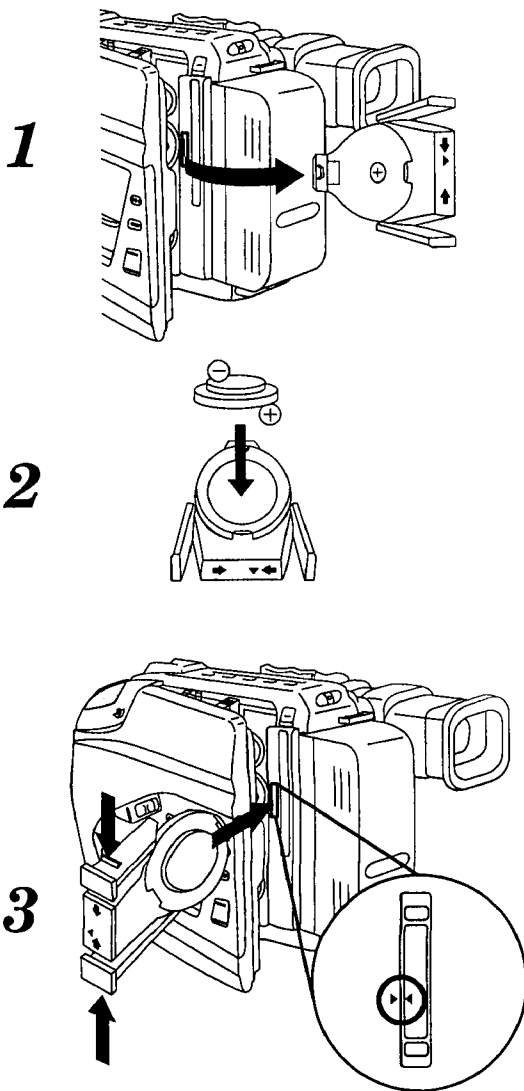
Auto Lock is especially helpful for the first time Palmcorder user and ensures "point and shoot" operation under most conditions.



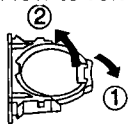
FEATURES	AUTO LOCK MODE
FOCUS	AUTO
AUTO WHITE BALANCE	AUTO
HIGH SPEED SHUTTER	AUTO
BACKLIGHT (LOCK)	NON FUNCTIONAL
FADE	NON FUNCTIONAL
EDIT SEARCH	NON FUNCTIONAL
CLOCK SET	NON FUNCTIONAL
DIGITAL COLOR FADE	NON FUNCTIONAL
DIGITAL WIPE/MIX	NON FUNCTIONAL
STILL/STROBE/WIDE	NON FUNCTIONAL
DIGITAL ZOOM	NON FUNCTIONAL
BOOK MARK SEARCH	NON FUNCTIONAL
DATE/TIME	FUNCTIONAL
REC REVIEW	FUNCTIONAL
DIGITAL ELECTRONIC IMAGE STABILIZATION SYSTEM	FUNCTIONAL

Setting the Date/Time

The date and time is calculated, including leap year, up to Dec. 31, 2089. This function operates on a miniature battery (supplied) even when the Palmcorder is OFF.



How to remove the Battery.



- ① Bend the lock tab outward.
- ② Remove the battery.

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.

To Load the Battery

1

While pinching the stopper tabs, pull the tray out of the Battery Compartment.

2

Insert the battery (supplied) into the Battery tray with the ⊕ mark facing down.

- Do not reverse the polarity.

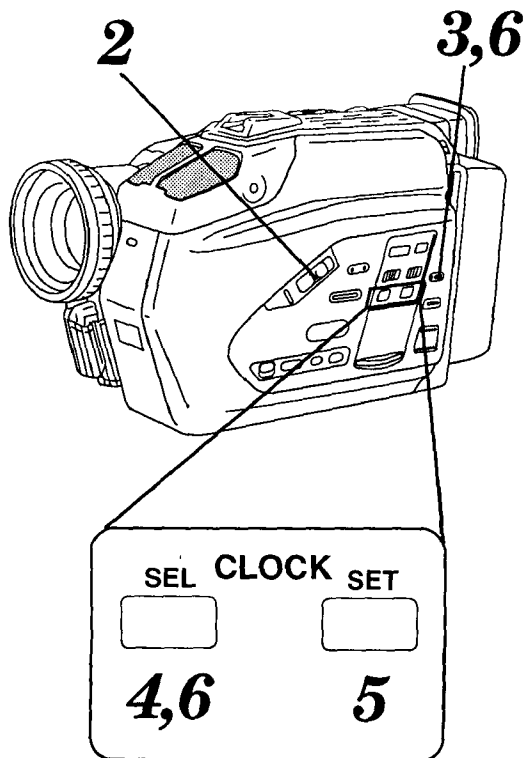
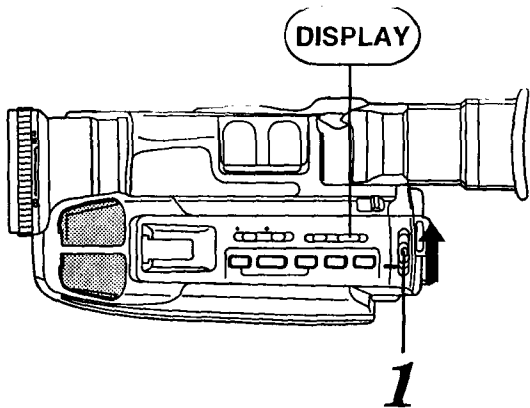
3

Replace the Battery tray so that the small triangle marks meet.

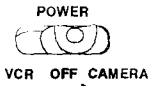
Note:

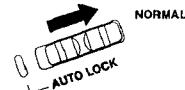
- Make sure your Palmcorder is off when replacing the battery.
- Keep the Battery out of the reach of children since swallowing it may be harmful.
- When the Battery is installed improperly, is discharged, or is missing, the words "CLOCK BATTERY" appears on the EVF.
- Battery life is approximately 5 years.


Setting the Date/Time





Set the Date and Time

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


2  Set the **AUTO LOCK** switch to **NORMAL**.

3  Press **DATE/TIME** in Record/Pause mode to display the date and time.

4  Press **SEL(ect)** to start the first portion flashing.

5  Press **SET** repeatedly (or hold down) to enter the desired numbers. Then press **SEL(ect)** to fix that portion and move to the next.

Repeat until the hour, minute, month, day and year have been entered.

6  Press **SEL(ect)** again to lock in all the settings and start the clock. Press **DATE/TIME** twice to remove display from EVF.

Note: Whenever "12:00AM JAN. 1 1994" appears, it indicates that the clock needs adjustment.

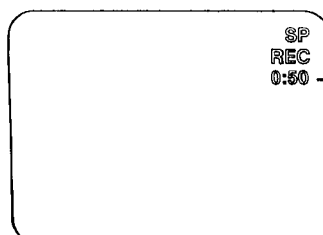
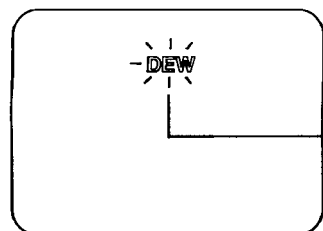
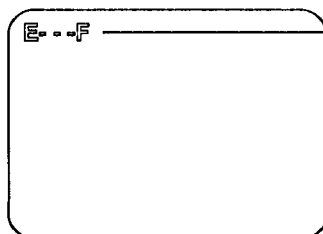
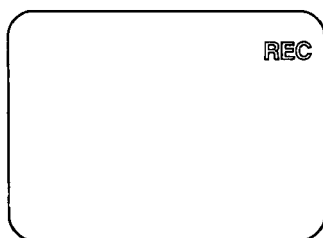
Record the Date and Time

Press **DATE/TIME** once in Record mode to display and record the date/time. Press twice to remove.

Press **DATE/TIME** twice in Record mode to display and record the time only. Press once more to remove.

Electronic Viewfinder Indications

Here are some of the basic indications which appear in the Palmcorder EVF. They will not be recorded on the tape.



Operating Mode Indications

REC (record)
 PAUSE
 FF (fast forward)
 PLAY
 REW (rewind)

Battery Remaining Indication

E --- F
 E -- F
 E - F
 E F - BATTERY
 ↓
 - E F - BATTERY -

"E --- F" appears when the Battery Pack is fully charged.

As the battery charge is consumed, the indicator changes: "E -- F", "E - F".

"BATTERY" and Power Indicator will flash for several minutes and then "E F" and "BATTERY" will flash prior to automatic power shut off.

A battery recharge is now necessary.

Tape Warning Indications

END

This indicator flashes when the tape is about to end in REC mode.

TAPE

If the record tab is missing or no tape is inserted, this indicator will flash for one minute and recording will not start.

DEW

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

10-Second Reminder

An elapsed time indicator appears for one second every 10 seconds that recording continues.

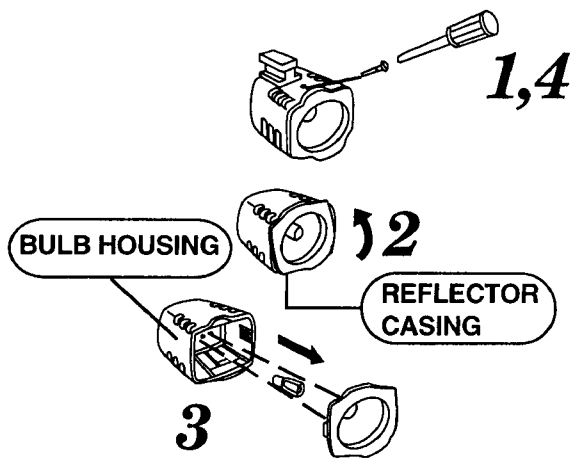
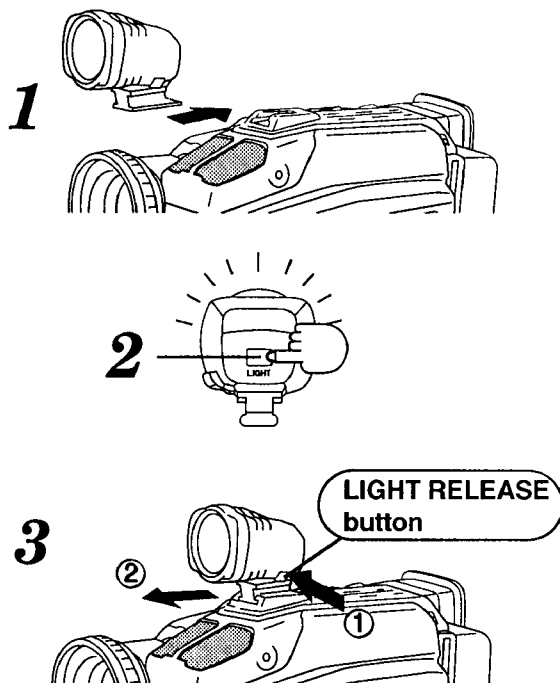
This is a reminder of how long you have been shooting a particular scene and can help keep your recordings fresh and interesting.

0:00 0:10 0:20 59:50

↑
 (return to 0:00 and continue)

- 10-Second Reminder will be reset whenever you press Record/Pause.

Color Enhancement Light



Danger:

- When replacing the bulb, use only lamp bulbs (PART NO. VLLW0003) supplied by Panasonic to reduce the risk of fire. Use a cloth or tissue when handling the bulb as finger oils will decrease the bulb life. To prevent possible burn hazard, disconnect the Color Enhancement Light Unit and allow the lamp to cool before replacing.
- Do not connect any light other than the standard light included. Use of a different light, modification to the light connector or light jack may cause severe battery drain and fire hazard.

Using the 5W Light

To brighten the natural colors in a scene.

1

Slide Light into built-in Light Mount. Be sure it locks into place.

2



LIGHT

Press LIGHT button ON.

To remove the Light:

3



RELEASE

- ① Press Light RELEASE button
- ② and slide the Light out of the mount.

CAUTION:

This light becomes hot during operation.

Replacing the Bulb

1

Turn screw counterclockwise on the underside of the reflector casing and remove.

2

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

3

Using a clean cloth or tissue, replace the bulb.

4

Replace the reflector casing turning it clockwise. Replace the screw.

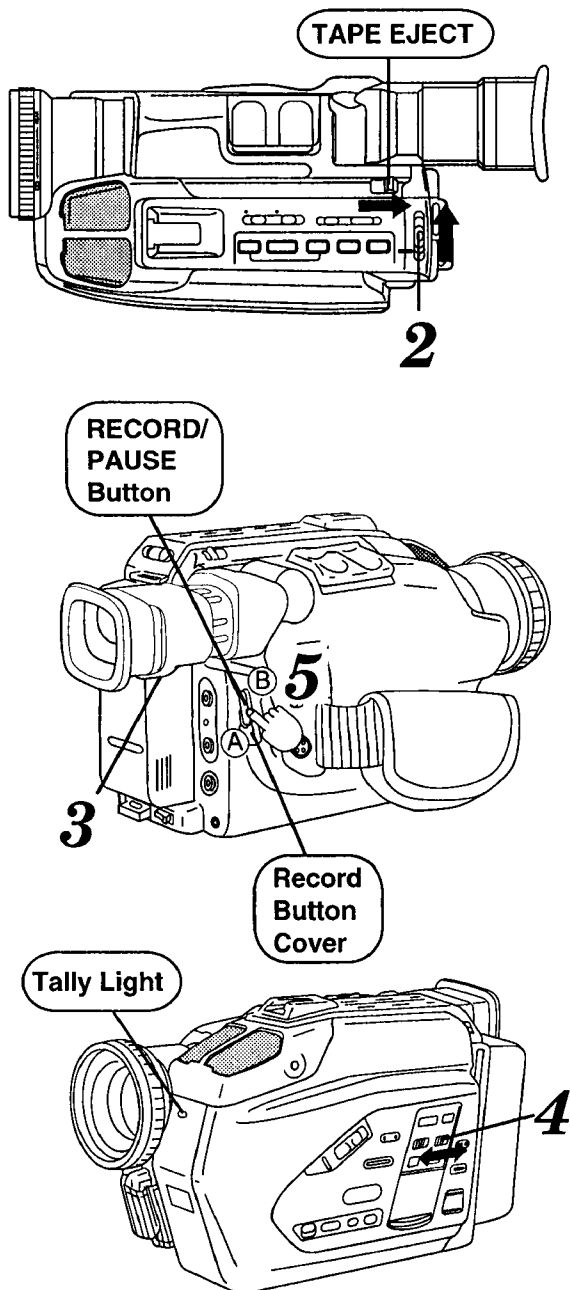
Note:

- If using the Enhancement Light for an extended period of time, be sure to provide ventilation when using in a hot environment.
- Using the Enhancement Light when the Palmcorder is powered by a car battery may shorten bulb life.
- Do not attempt to lift or carry the Palmcorder by holding the Enhancement Light.

Camera Recording

Before you begin...

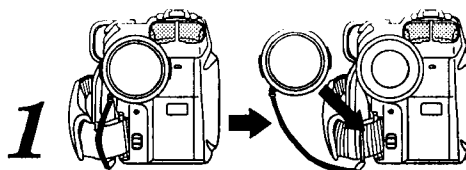
- Connect the Palmcorder to a power source (Battery Pack, AC Adaptor or Car Battery Cord.)
- Insert a cassette with record tab (see page 11).



Edit Search:

Besides recording, you can view or search scenes. Set the AUTO LOCK switch to NORMAL and hold down the PLAY, FF/SEARCH or REWIND/SEARCH button in Rec/Pause mode.

Simple Recording

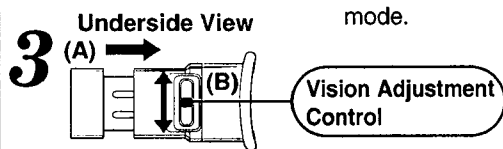


Remove the lens cap and clip it to the hand strap.



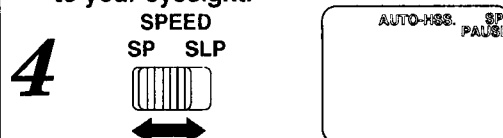
Set the POWER switch to CAMERA.

Record/Pause mode.

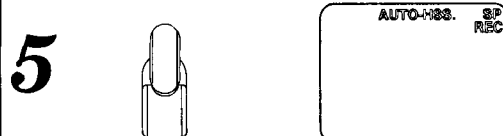


(A) Fully extend viewfinder.

(B) With the Eye Cup against your eye, adjust the Vision Adjustment Control to your eyesight.



Slide the TAPE SPEED Selector for (SP or SLP). (Refer to page 11.)



(A) Slide the Record Button Cover up or down to protect or access the Record button.

(B) Press RECORD/PAUSE to start recording. The Tally Light and Recording Indicator are lit during recording.

Press RECORD/PAUSE again to pause recording.

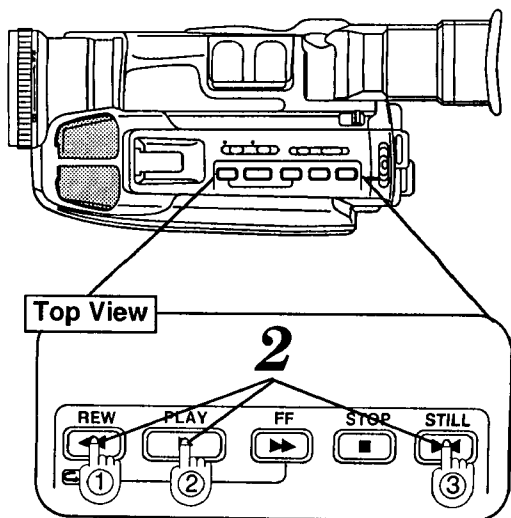
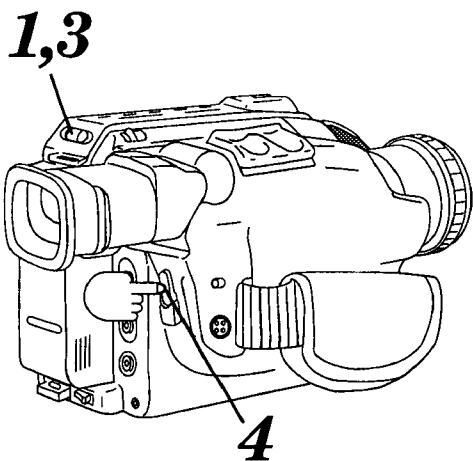
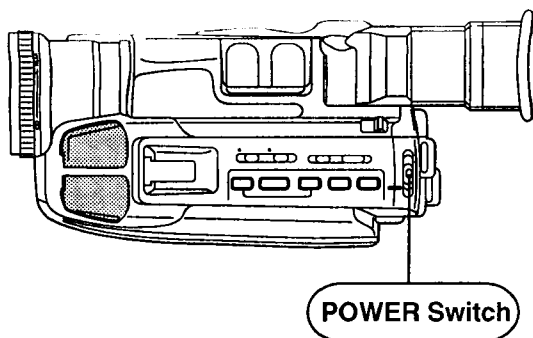
Helpful Notes:

- To remove the cassette
In Record/Pause mode, slide the TAPE EJECT switch.

To conserve power

After 5 minutes Record/Pause will automatically go into Standby mode. To resume recording, set the POWER switch to OFF and then CAMERA.

Camera Recording



Easy Edit Standby

If you stop recording but plan to resume within 24 hours, use the Edit Standby feature to make a smooth transition between scenes.

Set the **POWER** switch to **OFF** while in **Record/Pause** mode and leave the cassette in the Palmcorder.

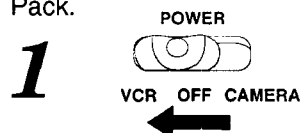
Set the **POWER** switch to **CAMERA** and press **RECORD/PAUSE** (within 24 hours) to continue recording.

Note:

- If it is longer than 24 hours before you resume recording, use the manual Easy Edit feature described below.

Manual Easy Editing

For proper continuity when taping from the Stop mode, or after charging the Battery Pack.

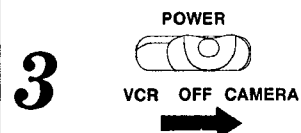


Set the **POWER** switch to **VCR**.

2 Press **REWIND** to go back a few seconds on the tape.

Then, press **PLAY** to review the picture on the Viewfinder.

Now, press **STILL** at the location you wish to continue your recording.



Set the **POWER** switch to **CAMERA**. Your Palmcorder will go into the Record/Pause mode.

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

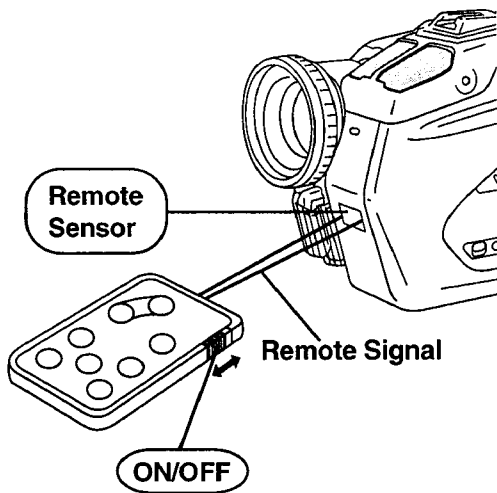
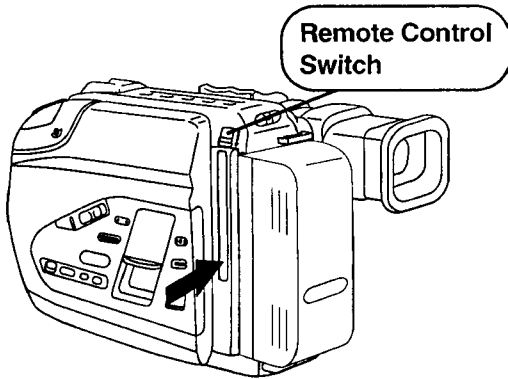
Record Review



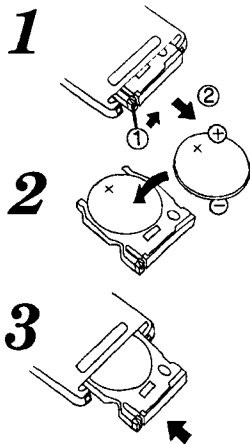
Press **REWIND** while in Record/Pause mode to review the last few seconds of your recording.

8-Function Remote Control

Operate the major functions of your Palmcorder from up to 16 feet (5 m) (approx.) away.



Remote Control



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.

Removing and Storing the Remote

To remove, slide the Remote Control switch to eject the Remote Control.

To store, insert the Remote into the slot until it locks into place.

Remote Control Operation

Select the REMOTE ON position on the Remote.

Aim at the Remote Sensor and press the desired buttons.

Controlled Functions	VCR MODE	CAMERA MODE
REC/PAUSE	-	0
T(telephoto) Zoom	-	0
W(wide angle) Zoom	-	0
PLAY	0	-
FF/SEARCH	0	-
REW/SEARCH	0	-
STOP	0	-
STILL	0	-

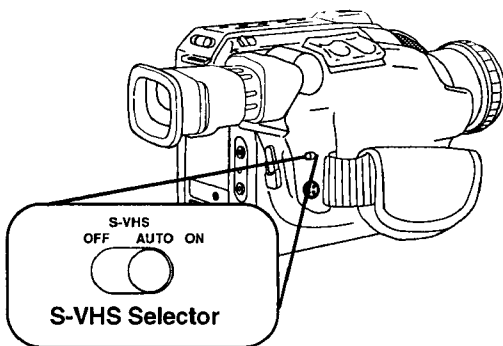
- After 5 minutes in the Rec/Pause mode, the Palmcorder will go into the Standby mode (power will shut off) to conserve battery life. In this case, press REC/PAUSE down for about one second, the Palmcorder comes back on and goes into the Record mode.
- Select the Remote OFF position on the Remote when not in use.

Replace the Battery

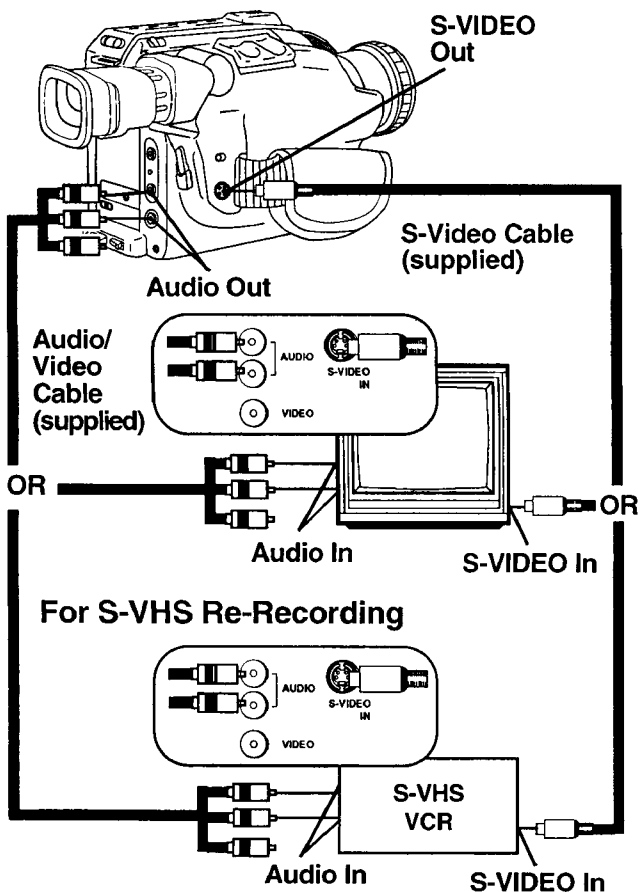
- ① While pinching the stopper tab, ② pull the Battery Tray out.
- Insert the battery (supplied) into the Battery Tray with the ⊕ mark facing up. Do not reverse the polarity.
- Replace the Battery Tray.

- For Battery replacement, set the Remote Power switch to OFF.

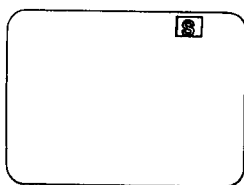
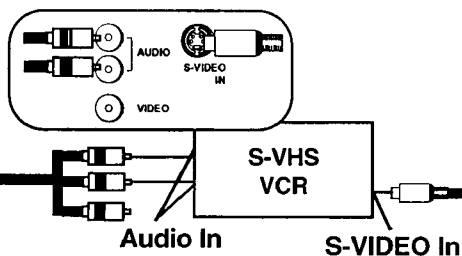
Super VHS System (S-VHS) (PV-S64)



For S-VHS Monitoring or Playback



For S-VHS Re-Recording



This advanced system produces dramatically sharper recordings. Your Palmcorder can record in either the S-VHS or conventional VHS format.

S-VHS Selector Switch

Select AUTO ON

when making a recording to be played back on your S-VHS Palmcorder or an S-VHS type VCR.

- Only tapes with the **S-VHS** mark will record in S-VHS format.

Select OFF

when making a recording to be played back on a conventional type VCR.

- Standard **VHS** tapes will record in VHS format in either the AUTO ON or OFF position.
- It is not necessary to use this selector switch when playing back tapes.
- Tapes recorded in S-VHS will not play back in a conventional VCR.

Note:

It is necessary to use the Audio/Video Output Cable for the audio connection.

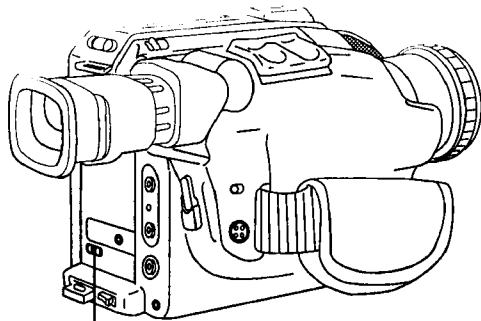
S-VHS Indication

This indicator appears under the following conditions:

1. S-VHS Selector is set to "AUTO ON" and the power is turned ON.
2. S-VHS Selector is set to "AUTO ON" and an S-VHS recording is in progress using an S-VHS type tape.

VHS Hi-Fi Stereo Sound System

Both Hi-Fi and normal audio sound are automatically recorded. To enjoy Hi-Fi Audio Stereo Sound playback, connect your Palmcorder to a stereo amp, or stereo TV.



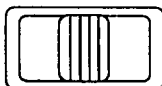
AUDIO OUT SELECTOR

Hi-Fi MIX NORMAL



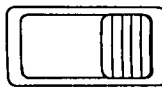
AUDIO
OUT

Hi-Fi MIX NORMAL



AUDIO
OUT

Hi-Fi MIX NORMAL



AUDIO
OUT

AUDIO OUT SELECTOR Switch

With this switch you can choose the type of audio track when playing back a tape.

- When non-Hi-Fi tapes are played back, the sound will be normal (mono) regardless of the AUDIO OUT SELECTOR position. When stereo sound is recorded and then played back on a conventional (non Hi-Fi) VHS VCR using the VHS PlayPak (provided), the playback sound will be monaural from the normal (linear) sound track.
- Only tapes recorded in VHS Hi-Fi stereo will play back in stereo. Standard (linear) stereo tapes will play back in monaural sound.

Hi-Fi (L/R) Position

Set to this position for normal use. Also when you want to listen to the Hi-Fi track only of an audio dubbed recording.

MIX Position

Set to this position to listen to both the original (Hi-Fi) track and the dubbed (NORMAL) track of an audio dubbed recording.

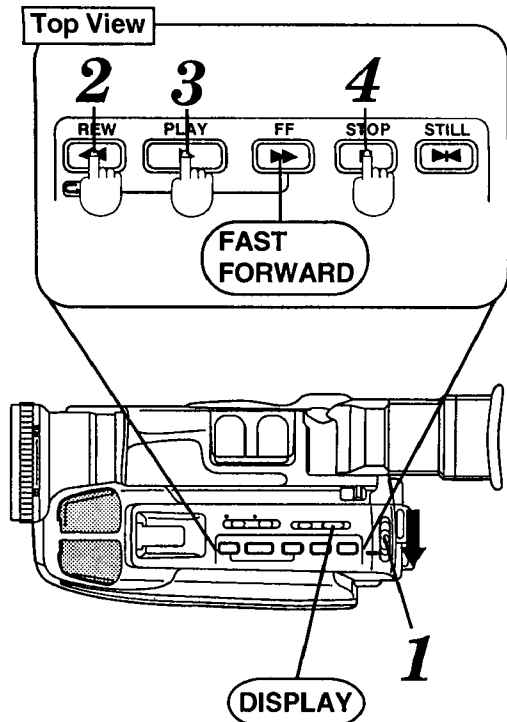
NORMAL (Mono) Position

Set to this position to listen to the normal track only of an audio dubbed recording.

Playback your Recordings

Before you begin...

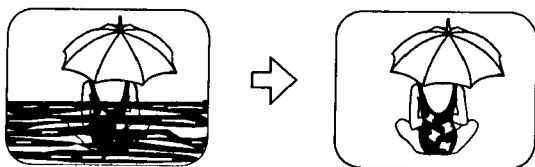
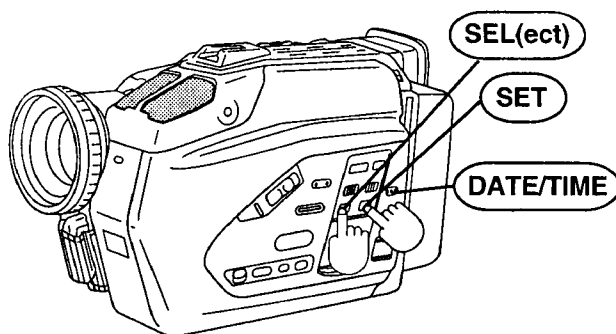
- Connect the Palmcorder to a power source.
- Insert a cassette.



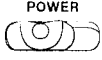







Helpful Note

Search Speed

Standard Play (SP) Search is about 3 times the normal speed, and Super Long Play (SLP) Search is about 9 times the normal speed.



Playback using the EVF

- 
1 
Set the **POWER** switch to VCR.
- 
2 
Press **REW/SEARCH** to rewind the tape.
- 
3 
Press **PLAY** to start playback.
- 
4 
Press **STOP** to stop playback.

Special Effect Playback Features During Playback

(Sound is Muted)

Rapidly Locate a Scene

Press **FF** or **REW** for a rapid visual search. Press **again**, or press **PLAY** to resume normal speed.

View a Still Picture

Press **STILL** to freeze the playback picture. Press **again** to resume normal playback.

Tracking Control

PLAY Mode

Auto Tracking

Continuously analyzes the signal of each recording for optimum picture quality.

Manual Tracking

To minimize the noise in some recordings, manual tracking may be necessary.

For Noise in Playback mode:

Press **SET** or **SEL(ect)** until picture clears.

Press **DATE/TIME** to return to Auto Tracking.

STILL Mode

For Noise in Still mode:

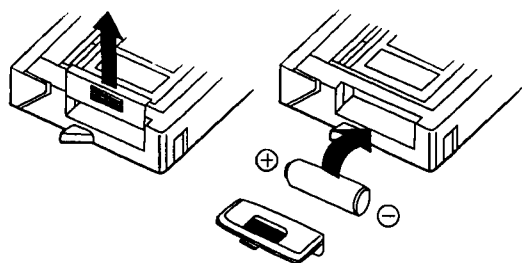
Press **SET** or **SEL(ect)** until picture clears.

V-Lock Control

Reduces jitter in Still mode.

Press **DATE/TIME** and **SET** or **SEL(ect)** until picture is stable.

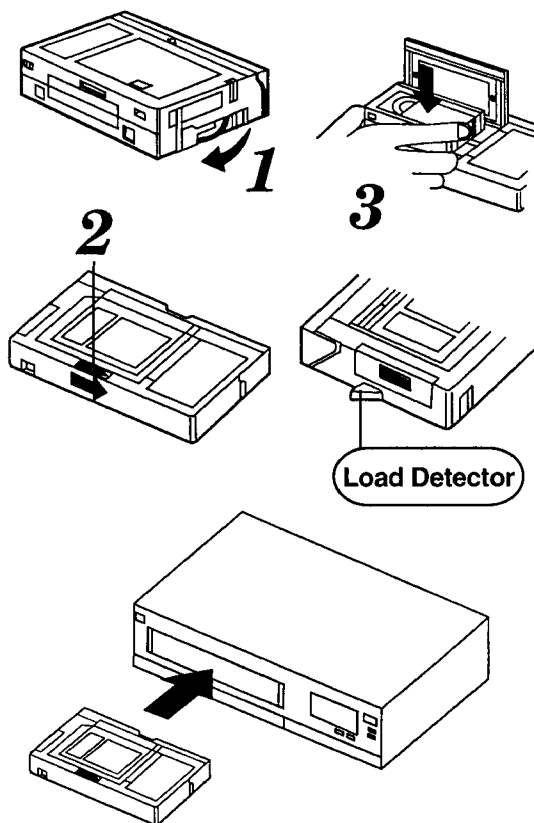
Playback your Recordings



Playback using the PlayPak

Remove the Battery Compartment lid and insert the AA size battery (supplied).

- Make sure polarities are aligned properly.
- When tape loading and unloading time becomes longer than normal, battery replacement is necessary.



Insert Cassette

1

Turn the Tape Wheel on the **VHS** or **S-VHS** (only PV-S64) cassette in the direction of the arrow to take up any slack before placing the cassette in the PlayPak.

2



Slide the **RELEASE** button to open the PlayPak door.

3

Insert the **VHS** or **S-VHS** (only PV-S64) cassette with the window facing up and to the left.

Then, snap the lid shut.

- Let the Load Detector fully retract before using the PlayPak in your standard VHS VCR.
- Be sure the cassette reel area under the PlayPak is free to turn while loading.

Remove Cassette



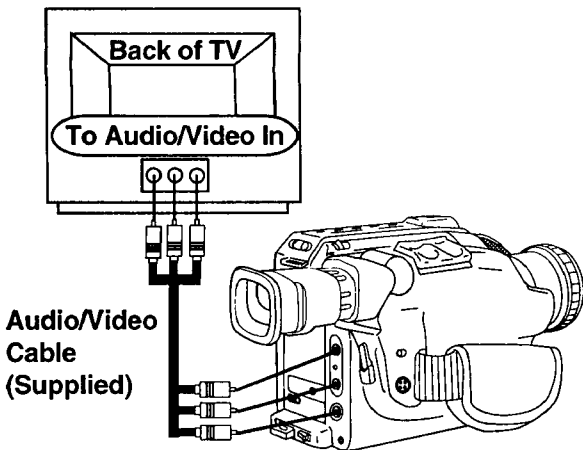
Slide the **RELEASE** button and wait for lid to open.

Hold the PlayPak securely in one hand. Then push the cassette out through the hole in the bottom of the PlayPak with your finger and remove.

Playback your Recordings

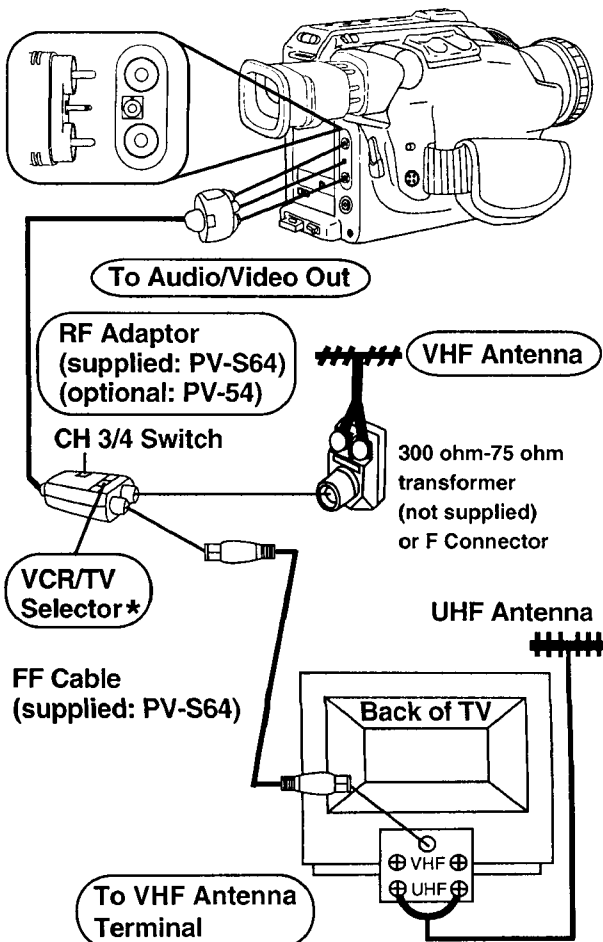
Your Palmcorder may be connected to a TV to play back tapes or to monitor what you are recording.

TV with AUDIO/VIDEO IN Jacks.



To Audio/Video Out

TV without AUDIO/VIDEO IN Jacks.



Playback or Monitor using a TV

1 Connect your Palmcorder to a power source (Battery Pack, AC Adaptor or Car Battery cord).

POWER



VCR OFF CAMERA

Set the **POWER** switch to **VCR** to playback a tape.

Or, set to **CAMERA** to monitor what your Palmcorder is recording.

3 Turn the TV ON and set it to **LINE INPUT**.

Check your TV operating instructions for further information.

Note:

If your TV has no VIDEO or AUDIO IN Jacks, select CH 3 or 4 on your TV to match the RF Adaptor CH 3/4 switch and set the VCR/TV selector on the RF Adaptor to VCR.

4 Start playback or begin a recording.

Display off Mode

This feature allows you to remove all Electronic Viewfinder Indications.

Before inserting a tape, press DISPLAY and STOP together for more than one second to remove the indications except time and date*.

To display the Electronic Viewfinder Indications again, **turn the Palmcorder Power off and then again on.**

* To remove the time and date, refer to page 14.

To watch TV only

If you have connected the Palmcorder to your TV using an RF Adaptor:

POWER



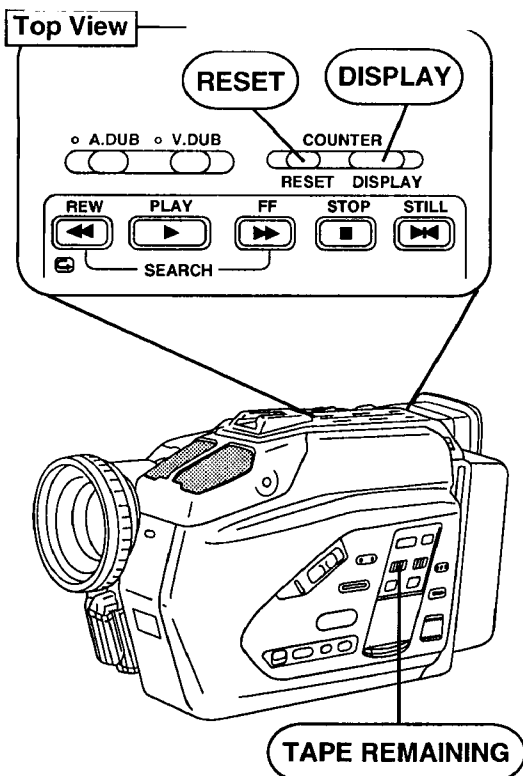
VCR OFF CAMERA

Set the **POWER** switch to **OFF** on the Palmcorder.

*Then, set the **VCR/TV Selector** on the RF Adaptor to **TV**.

Now, turn the TV ON and select a channel.

Special Features



Tape Counter/Counter Memory/Lap Time Counter/ Tape Remaining Functions

The Tape and Time Counter displays can be selected to track your current position, or find a desired tape location.

Press the **DISPLAY** button repeatedly to select the desired display.

Tape Counter: A reading is displayed for any position on the tape. Press the **RESET** button to reset display to "0000".

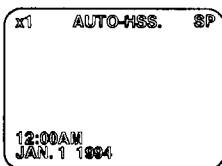
Memory Counter: The Palmcorder will stop during Rewind, Fast Forward, Video Dubbing, Audio Dubbing and A/V Dubbing whenever it reaches the point where the Tape Counter was previously set to "M0000".

Lap Time Counter: The elapsed time during a recording is displayed. Press the **RESET** button to reset the display to 0:00:00.

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

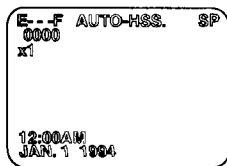
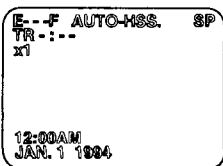
- Make sure the **TAPE REMAINING** switch is set to the proper position (T-20, T-30 or T-40 see page 11.) so that the tape remaining time will function properly.

EVF Indications



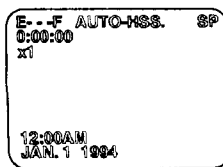
Fifth press

First press
DISPLAY

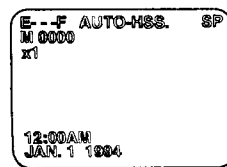


Fourth press

Second press

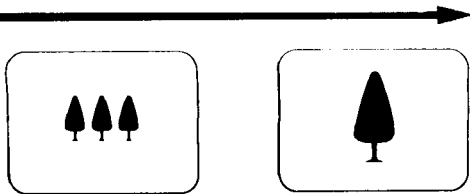


Third press



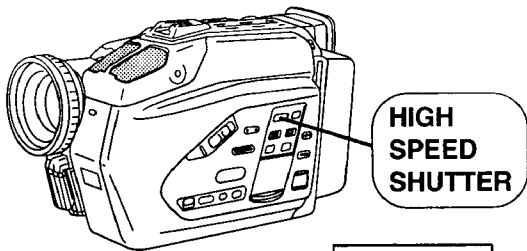
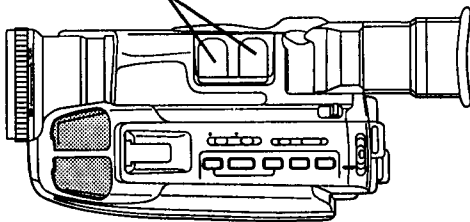
Special Features

Zoom In ("T")



Zoom Out ("W")

POWER ZOOM



HIGH SPEED SHUTTER

AUTO-H.S.S.

1/60 (Normal)

1/100

1/250

1/500

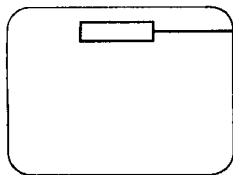
1/1000

1/2000

1/4000

1/10000

EVF Indications



Note:

The High Speed Shutter indicator flashes when the light level is inadequate. See page 40 for more information.

Four Speed Power Zoom

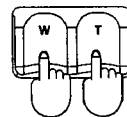
You can gradually zoom in for close ups or zoom out for wide angle shots.

The zooming speed ranges from a slow speed of 15 seconds to a fast 3 seconds according to the pressure applied to the zoom buttons.

Zoom slowly by lightly pressing the "T" (Telephoto) or the "W" (Wide Angle) side of the POWER ZOOM switch.

Zoom quickly by applying more pressure.

- The magnification level is displayed in the EVF.

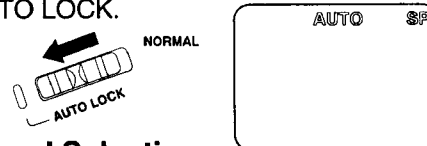


High Speed Shutter

Digital Auto Shutter

In AUTO H.S.S. mode (displayed in EVF), the Palmcorder automatically adjusts the shutter speed from 1/60 to 1/250 according to the brightness of the subject.

- The speed does not appear in the EVF.
- AUTO H.S.S. is automatically selected when the AUTO LOCK switch is set to AUTO LOCK.

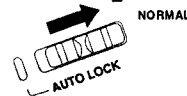


Manual Selection

Manual selection should be used when recording high speed action such as sporting events.

1

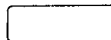
Set the AUTO LOCK switch to NORMAL.



2

Press HIGH SPEED SHUTTER to release the AUTO mode. The normal speed of 1/60 will appear in the EVF.

H.S.SHUTTER



3

Continue to press this button to select one of the shutter speeds shown at left.

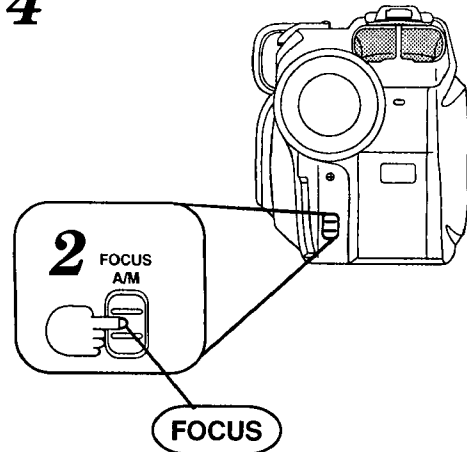
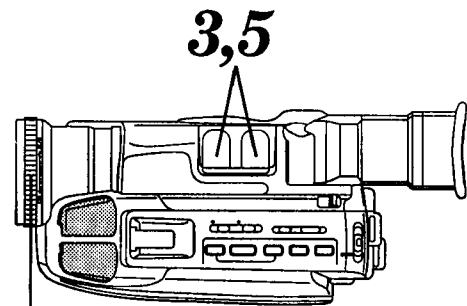
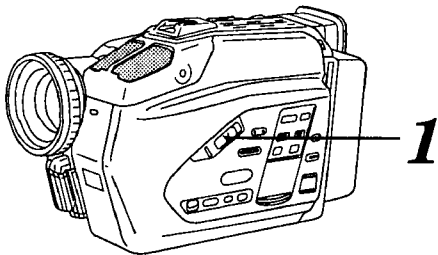
H.S.SHUTTER



Special Features

Use Manual Focus when recording ...

- a subject through glass.
- a scene where the subject is far from the Palmcorder and there are objects in the foreground.
- a subject with distinct horizontal stripes.
- a subject not centered in the Viewfinder.
- subjects with shiny surfaces.
- an obliquely angled subject.
- a bright, flat subject such as a white wall.
- in low light situations.
- a scene with fast motions, like a golf swing.
- **Re-focusing may be required** when your Palmcorder is aimed at a new scene.

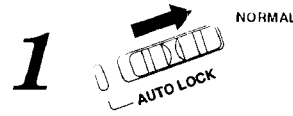


Auto Focus

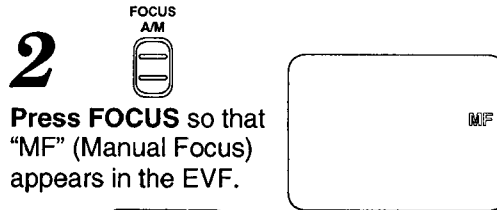
The Palmcorder will automatically bring the subject into focus even during zooming.

Press **FOCUS A/M** if necessary, so that the letters "MF" do not appear in the EVF.

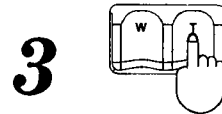
Manual Focus



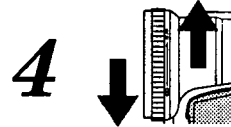
Set the **AUTO LOCK** switch to **NORMAL**.



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

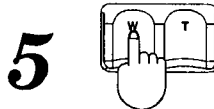


Press and hold the "T" side of the **POWER ZOOM** switch until the subject to be recorded is at maximum zoom-in.



Turn the ∞ (**FAR**)/**NEAR** dial until the picture is in focus.

- It may be necessary to back away from the subject to focus the image properly.



Press the "W" side of the **POWER ZOOM** switch to frame the picture as desired.

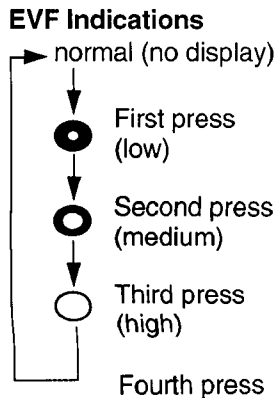
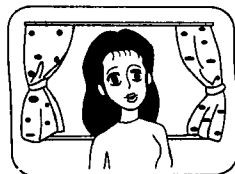
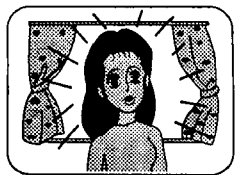
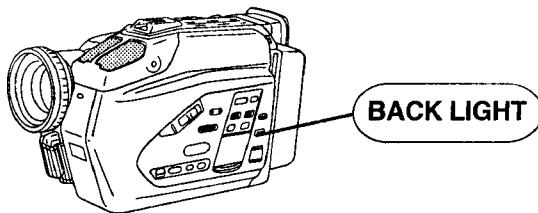
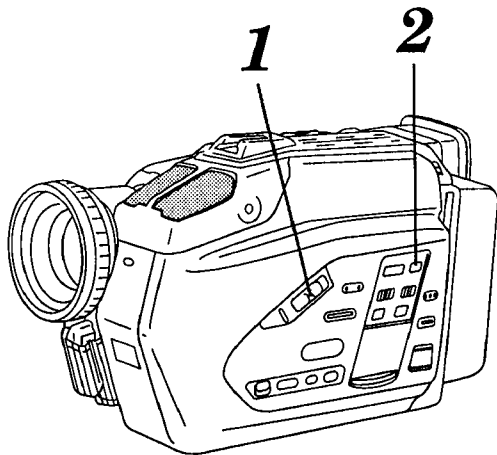
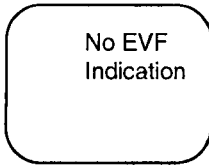
Macro Focus (for close-ups)

Auto Focus will function down to 1/2 inch (12.7mm) in front of the lens.

Press the "W" side of the **POWER ZOOM** switch to the wide angle position.

Then, bring the Palmcorder as close to the subject as necessary.

Special Features



Select one of these positions so that the subject can be seen clearly.

Auto White Balance

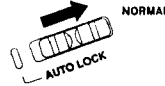
Use for continuous color balance in both indoor and outdoor lighting situations.

When the AUTO LOCK switch is to AUTO LOCK, or when there is no EVF indication, AUTO White Balance is selected.

Manual White Balance

Use under the conditions described below.

1



Set the AUTO LOCK switch to NORMAL.

2

WB

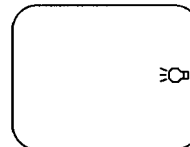
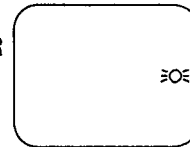


Press WHITE BALANCE repeatedly to select one of the following settings.

Select “☉☉” **OUTDOOR** when recording outdoor scenes from indoors, or outdoors with an amber filter.

Select “☉☉” **INDOOR** when recording indoor scenes from outside, or indoors with a blue filter.

EVF Indication



• White Balance is affected by Color Temperature. See the chart on page 41.

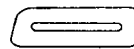
Backlight Button

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

Make sure the AUTO LOCK switch is set to NORMAL.

1

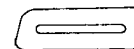
BACK LIGHT



Press BACKLIGHT to obtain the desired position while recording.

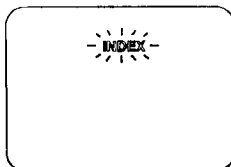
2

BACK LIGHT



Press until there is no display in the EVF when lighting conditions return to normal.

EVF Indication



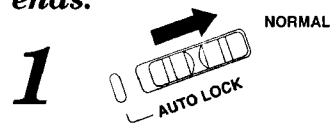
VHS Index Search System

An invisible index mark is automatically placed on the tape at the beginning of each recording (the Index indicator will flash). Then, you can enjoy automatic review and playback of indexed tapes using Panasonic VCR models which feature the VHS Index Search System.

- No mark is placed where a recording resumes after the Palmcorder has been put into Pause.

Book Mark Search

You can go directly to a blank portion of tape just where the recording you have done so far ends.



1 Set the **AUTO LOCK** switch to **NORMAL**.



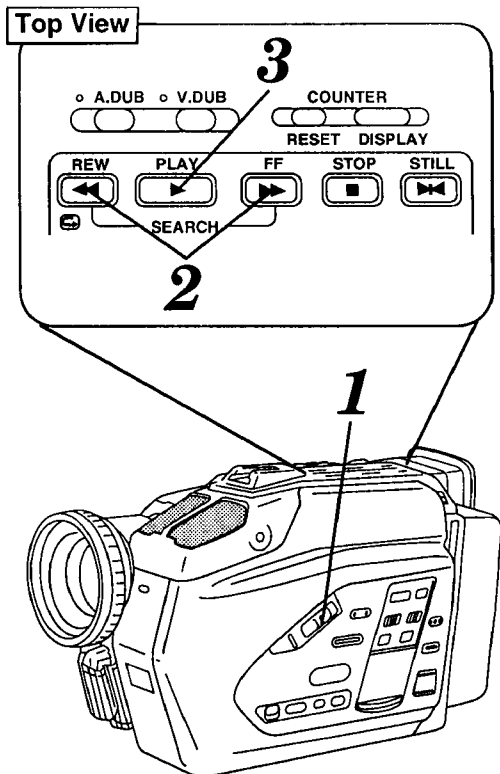
2 Press the **REW** and **FF** buttons at the same time in the "CAMERA" mode.

- The Palmcorder will advance or rewind and then stop at the beginning of a blank section of tape.

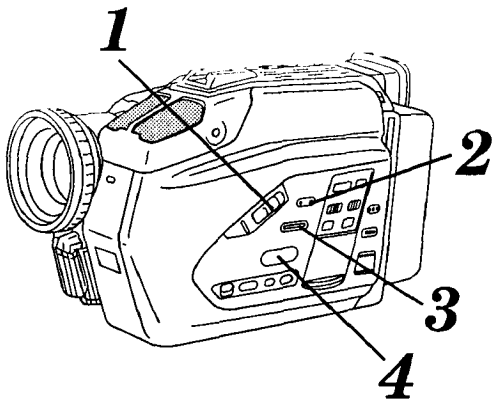


3 Press **PLAY** to cancel this function.

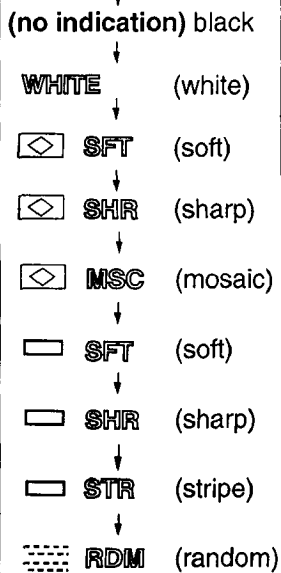
- A tape, once recorded, is not considered "blank" even if it has been erased.
- If the Book Mark Search feature is used directly after an Edit Search (see page 17) was performed, the Palmcorder will stop approximately where the Edit Search was begun, regardless of whether it begins a blank portion of tape or not.



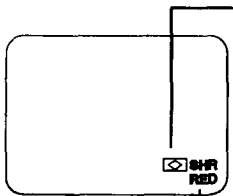
Special Features



FADE EFFECT



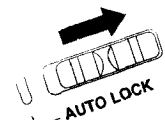
EVF Indications

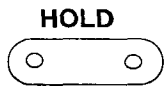


COLOR

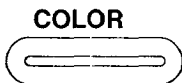
- WHT (white)
- YEL (yellow)
- RED (red)
- MAG (magenta)
- BLU (blue)
- CYN (cyan)
- GRN (green)
- BLK (black)

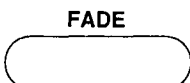
Digital Color Fade

1  **NOHMAL**
AUTO LOCK
 Set the **AUTO LOCK** switch to **NORMAL**.

2  **HOLD**
MODE SEL
 Press **HOLD/MODE SEL** repeatedly to select the desired fade effect.

- Other than "BLACK", the mode selected will appear in the EVF.

3  **COLOR**
 Press **COLOR** repeatedly to select the desired Color for Digital Fade effects other than Black and White.

4  **FADE**
 Hold the **FADE** button down while recording until the picture fades out. Release to fade back in.

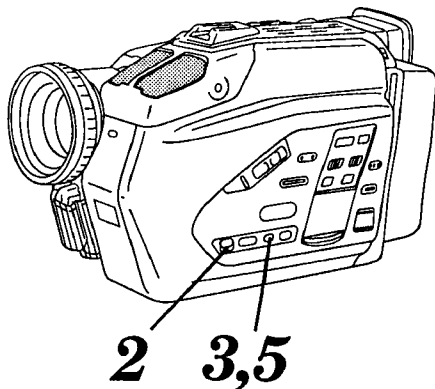
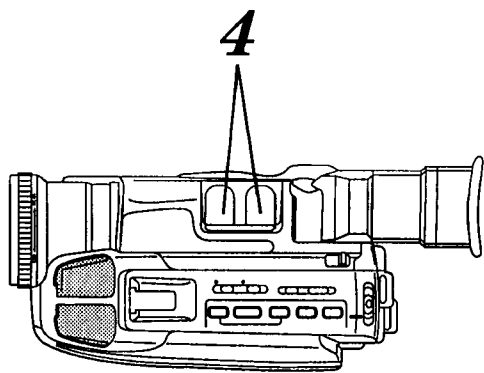
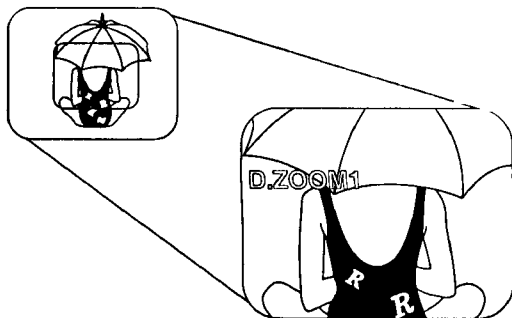
- To create even more special effects, (Other than the BLACK, WHITE and RANDOM modes), you may also partially fade the picture and, by pressing the MODE SEL/HOLD button, freeze the fade function. Press **FADE** again to resume, or press MODE SEL/HOLD to cancel.

Note:
 Other than BLACK and WHITE modes, the audio is not affected by the fade control.

Special Features

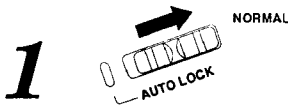
Before you begin...

- Set the POWER switch to CAMERA.



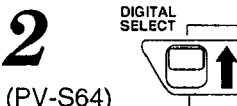
Digital Zoom

This feature allows you to increase the magnification of the Power Zoom.



1

Set the **AUTO LOCK** switch to **NORMAL**.



2

(PV-S64)
Slide the **DIGITAL SELECT** switch up.
D.ZOOM



3

Press **DIGITAL ZOOM** once to select **D.ZOOM 1** for partial increase (20X max.) or twice to select **D.ZOOM 2** (120X max.) for even greater increase.

Because the image is enlarged digitally, the picture may become distorted when the higher magnification levels are used.



4

Press and hold the **"T"** side of the **POWER ZOOM** switch.
Digital Zoom engages when the Power Zoom reaches its maximum position of x12.

- The zoom level is displayed in the EVF.
- Press the **"T"** or **"W"** side of the **POWER ZOOM** switch to control the digital zoom level.
- When the level falls below x12, the normal zooming function will resume.

D.ZOOM



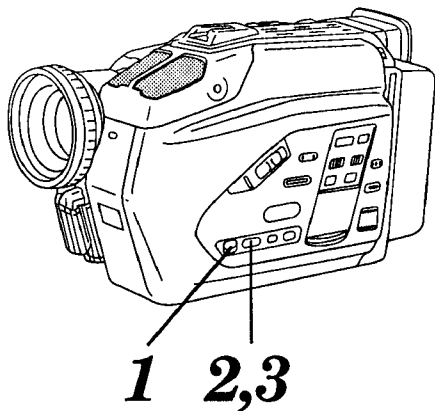
5

Press **DIGITAL ZOOM** until no indication appears in the EVF to turn the Digital Zoom feature off.
(Refer to page 26.)

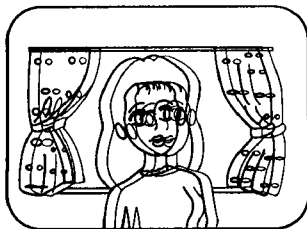
Special Features

Before you begin...

- Set the POWER switch to CAMERA.



NORMAL

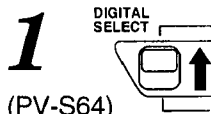


EIS ON



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

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



(PV-S64)

Slide the DIGITAL SELECT switch up.

EIS



Press **EIS** to activate the D.E.I.S. function. ("EIS" will appear in the EVF.)

- The image in the EVF will be enlarged slightly and the shutter speed will be automatically adjusted from 1/80 to 1/250 according to the brightness of the subject.

EIS



Press **EIS** again to cancel.

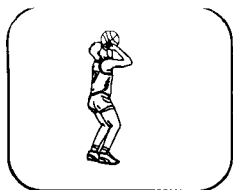
- You may also use the High Speed Shutter function (from 1/100 to 1/10000). The shutter speed you select remains active even after you cancel the D.E.I.S. function.
- Be sure that the D.E.I.S. is turned off when not needed..

D.E.I.S. may not function when ...

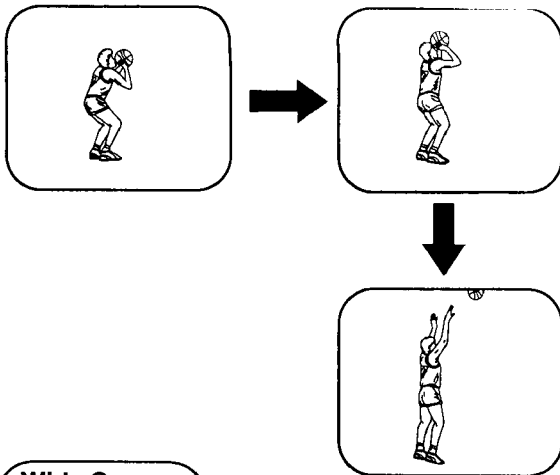
- Palmcorder movement is too extreme.
- recording a subject with distinct horizontal or vertical stripes.
- recording in low light situations.
- EIS indicator flashes when the light level is inadequate.
- recording a subject under a great amount of fluorescent light.
- recording a scene with very fast motions.

Special Features

Still

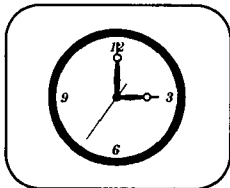


Strobe

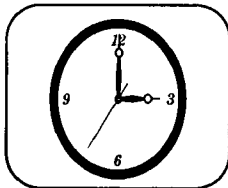


Wide Screen

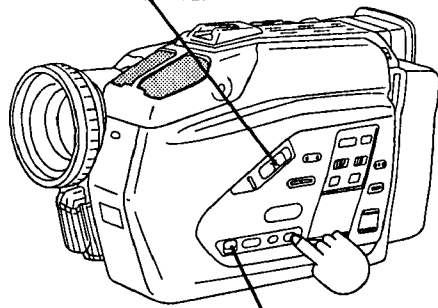
Normal



Wide



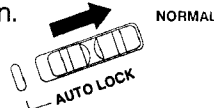
AUTO LOCK



DIGITAL SELECT

Still/Strobe/Wide

- The AUTO LOCK switch is in the NORMAL position.



- Slide the DIGITAL SELECT switch up. (PV-S64)



Still

Use this feature to record a still image from the current camera picture.

Press STILL/STROBE once.

Press twice more to return to normal recording.

Strobe

Use this feature to record a strobing progression of still images, (in 1/6 of a second intervals).

Press STILL/STROBE twice.

Press once more to return to normal recording.

Wide Screen

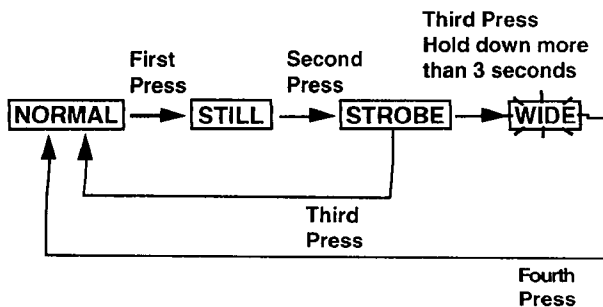
Use this feature to fill the entire screen of your Wide Screen TV.

Hold down STILL/STROBE more than 3 seconds while in Strobe mode.

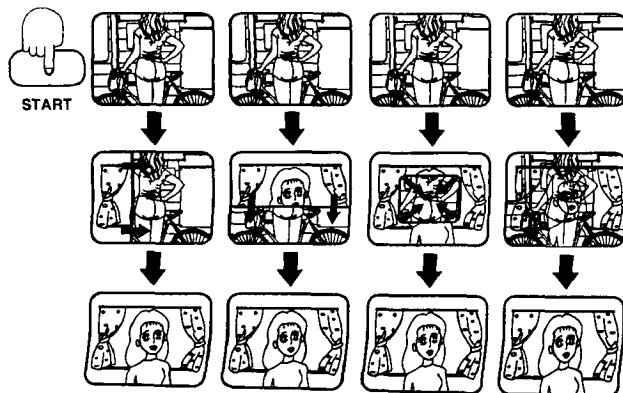
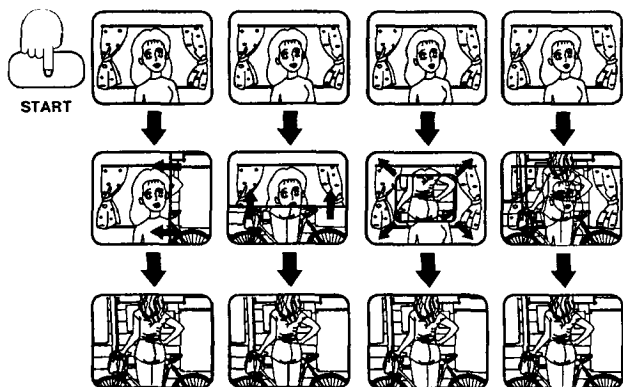
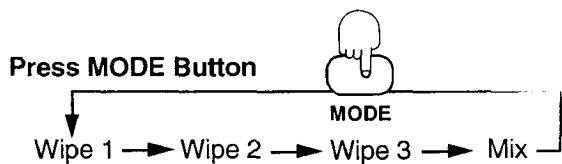
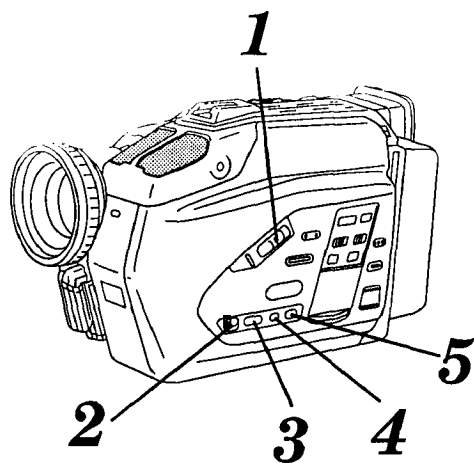
Press once again to return to the normal sized picture recording.

Note:

Playback must occur on a wide screen (16X9 aspect ratio) television or the picture will appear distorted.

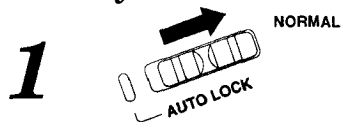


Special Features (PV-S64)

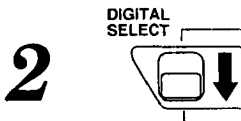


Digital Wipe/Mix

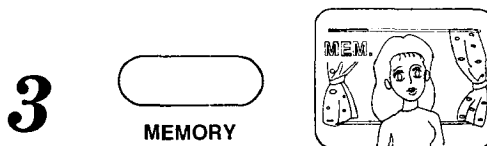
This feature makes it possible to replace a current recording scene by a memorized scene.



Set the **AUTO LOCK** switch to **NORMAL**.

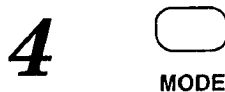


Slide the **DIGITAL SELECT** switch down.



Press **MEMORY** in Record/Pause mode to memorize the desired scene.

- The memorized scene is displayed in the EVF for one second and "MEM." is displayed while scene is memorized.
- **MEMORY** button does not function while recording or when a scene from memory is being displayed.



Press **MODE** repeatedly to select the desired effect for Wipe or Mix.



Press **START** to start the effect.

The memorized scene gradually replaces the current recording. If **START** is pressed one more time, current recording will gradually replace the memorized scene.

- While **WIPE** or **MIX** is in progress, you can hold the **WIPE** or **MIX** by pressing the **START**.

Press **START** again to continue **WIPE** or **MIX**.

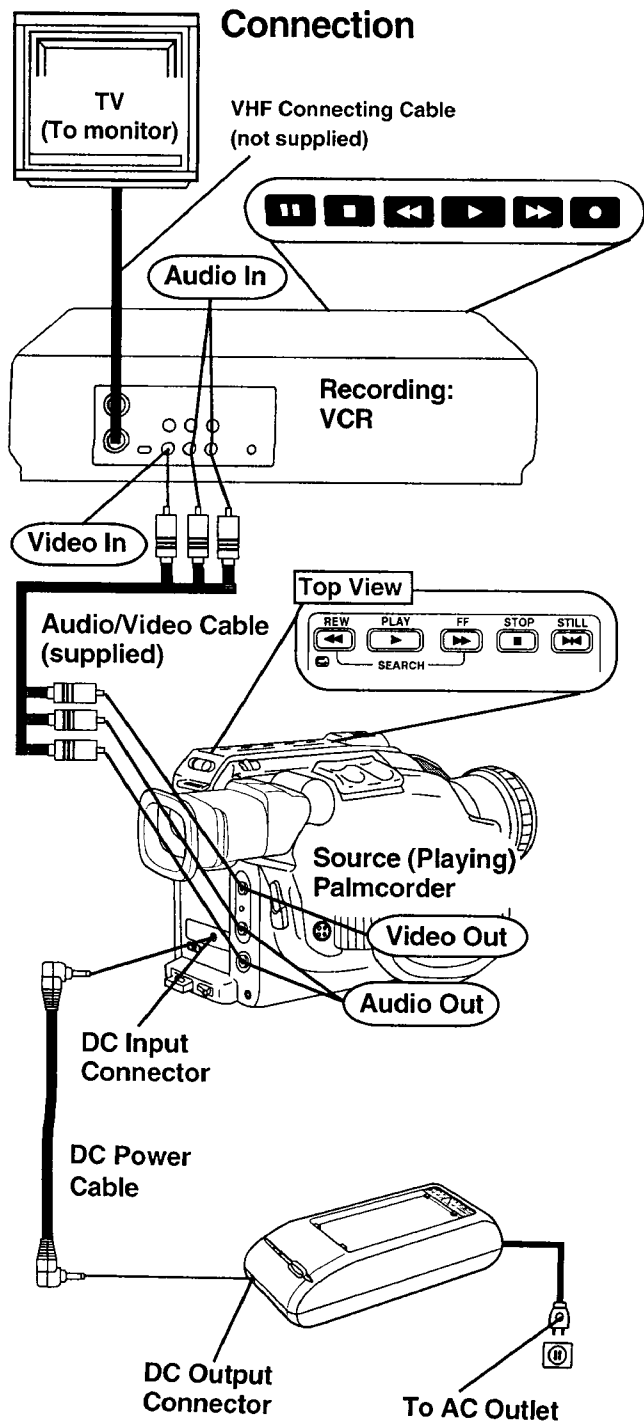
Note:

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

Copying your Tapes (dubbing)

Before you begin...

- Turn ON both units.
- Set the recording VCR's Input Signal Selector to **LINE**.
- Set the Palmcorder POWER switch to VCR.
- Please refer to page 20 for S-VHS connection.



Main Operation

1

Insert a pre-recorded tape into the source (playing) Palmcorder and a blank tape with record tab into the editing (recording) unit.

2

PLAY



Press **PLAY** on the (playing) Palmcorder.

3

STILL



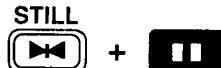
Press **STILL** when the tape reaches the point you want to start dubbing.

4



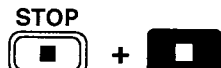
Press **PLAY** and **REC** together then immediately press **STILL** on the recording unit.

5



Press **STILL** on the playing Palmcorder and **PAUSE/STILL** on the recording unit to begin copying your tape.

6



Press **STOP** on both units when dubbing is complete.

Monitor with your TV

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

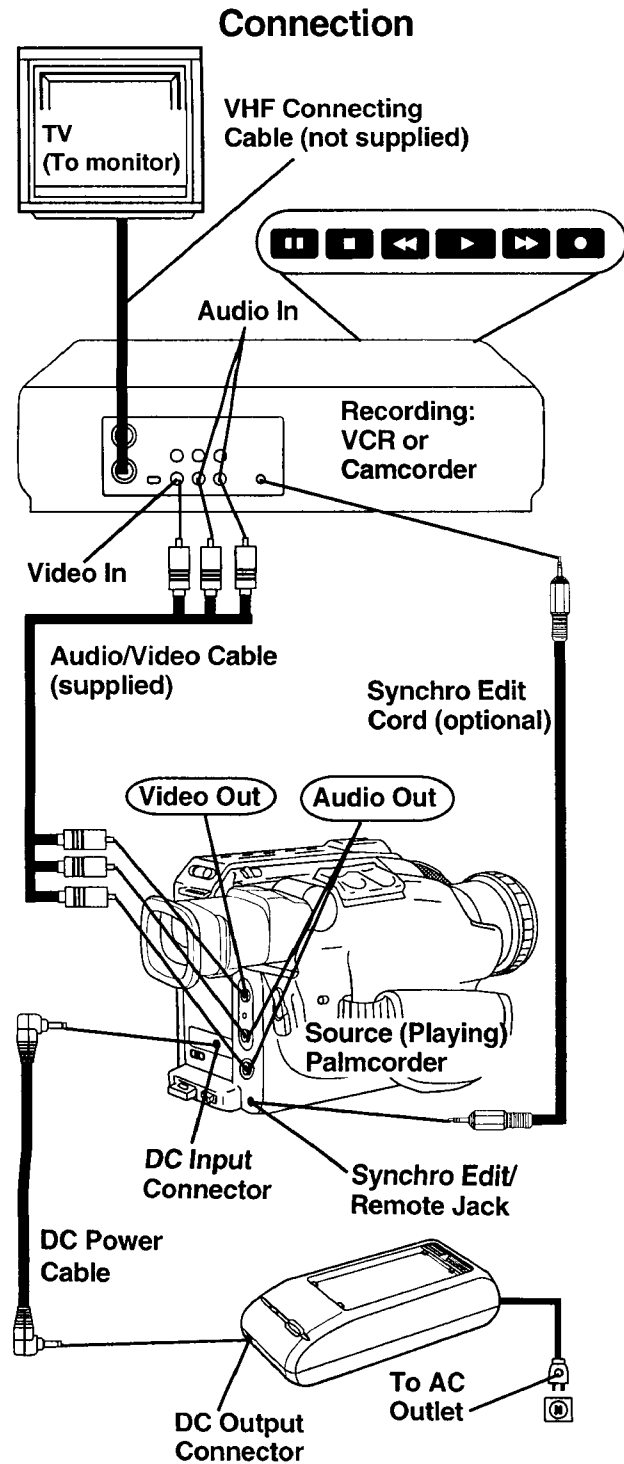
CAUTION:

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

Copying your Tapes (dubbing)

Before you begin...

- Connect the Synchro Edit Cord (optional) as shown below. If the recording unit has no synchro edit jack, use operations on page 35.



Synchro Edit Copying

The Synchro Edit feature simultaneously releases the Pause mode on both units, so copying is fast and easy.

1

Follow steps 1 to 4 on page 35.

2 

Press **PAUSE** on the recording unit to release the Pause mode on both units and start copying the tape.

3 

Press **PAUSE** again when copying is complete to put both units in Play/Pause mode.

4  + 

Press **STOP** on both units.

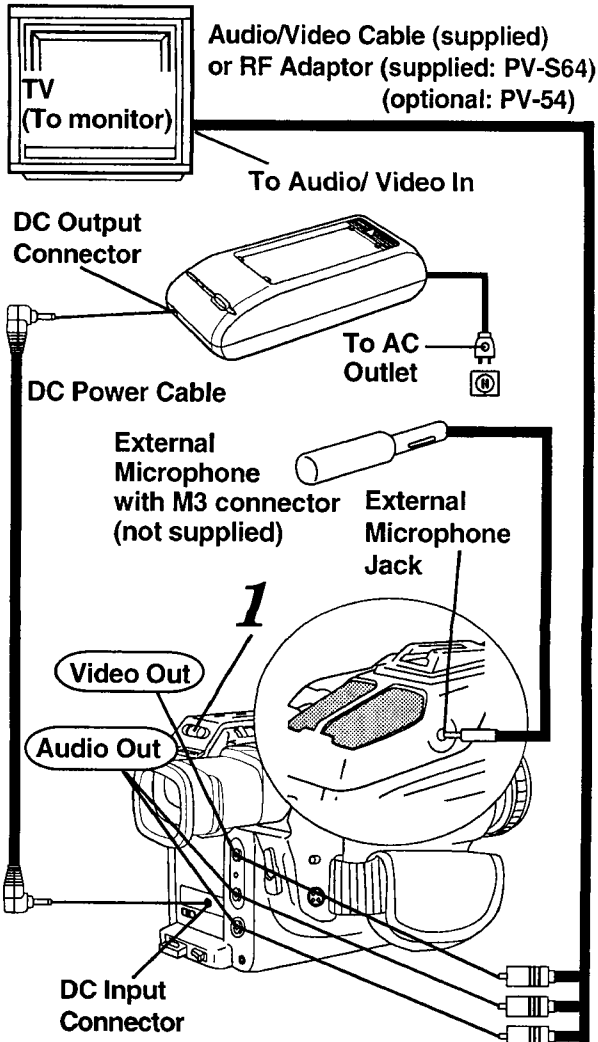
- For more information about monitoring the copying process, see page 35.

Dubbing over Recordings

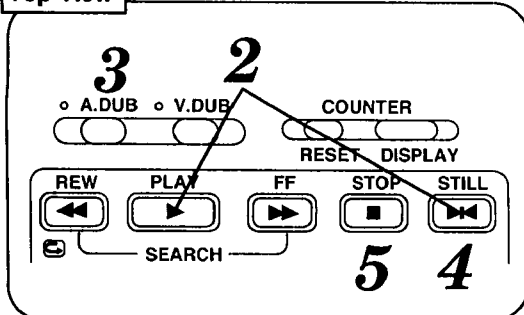
Before you begin...

- Connect the external Microphone (if used).
- Turn On the Palmcorder.
- Insert a cassette (with tab) to be recorded.
- When using the RF Adaptor to monitor, turn the TV ON and select CH 3 or 4 (see page 24).

Connection

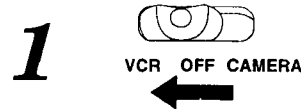


Top View



Dubbing over Audio

Your own sound track may be substituted onto a tape using an external microphone or the built-in microphone on your Palmcorder.



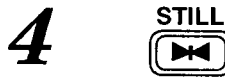
Set the POWER switch to VCR.



Press PLAY. Then press STILL where you want dubbing to begin.



Press AUDIO DUB to put the Palmcorder in the Audio Dub Pause mode.



Press STILL to start Audio Dubbing. Connect Palmcorder to TV in order to monitor sound. (Audio Out Selector must be set to MIX or NORMAL).



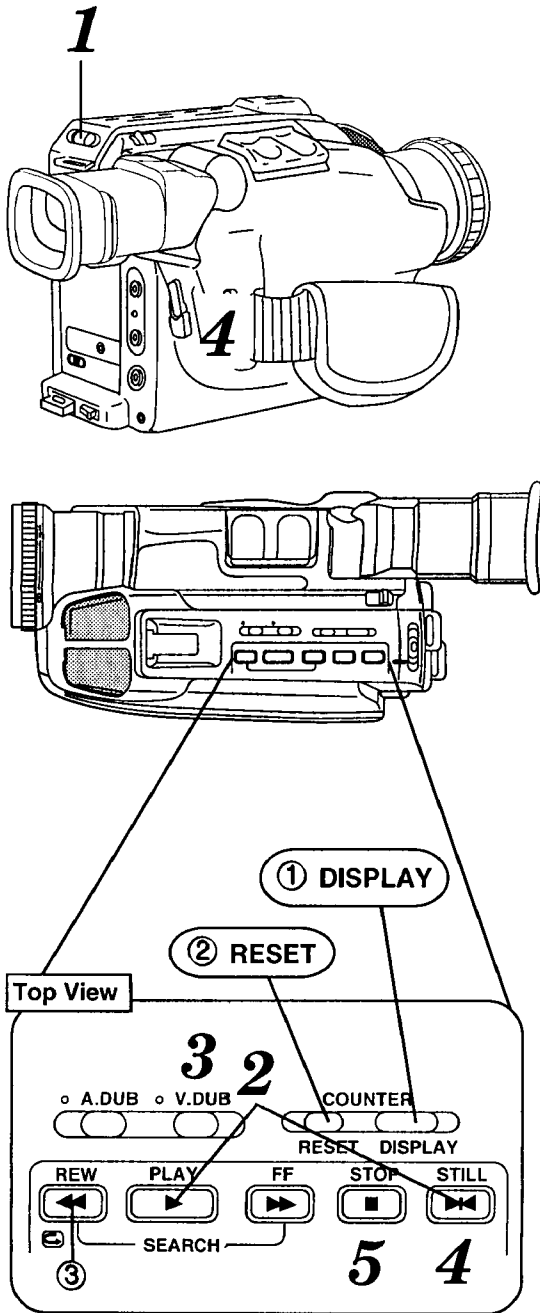
Press STOP to stop Audio Dubbing.

- Refer to page 38 for Memory-Stop Editing.
- If the microphone used for dubbing, gets too near the speaker of your TV, a howling noise (feedback) may occur.
- **The new audio portion is recorded on the Normal (mono) track.** When you playback the recording, you may listen to the original Hi-Fi sound, the audio dubbed Normal sound or both by using the AUDIO OUT SELECTOR switch. (See page 21.)

Dubbing over Recordings

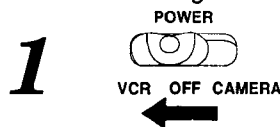
Before you begin...

- Turn ON the Palmcorder.
- Insert a cassette (with tab) to be dubbed.
- To monitor the dubbing, see connections on page 39.



Dubbing over Video

Your Palmcorder uses advanced Flying Erase Head technology to produce exceptionally clean edits. You can replace existing video segments with new ones such as a title etc. The original Hi-Fi sound is erased while the Normal (mono) sound remains unchanged.



Set the **POWER** switch to **VCR**.



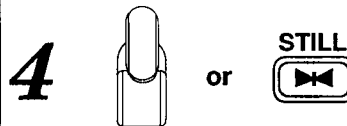
Press **PLAY** to locate the starting point for dubbing.

Then press **STILL** where dubbing is to begin.

- To preset the stopping point of your replacement segment, see the Memory-Stop Editing section below.



Press **VIDEO DUB** to put the Palmcorder in Video Dub Pause mode.



Press **RECORD/PAUSE** or **STILL** to start taping a replacement video segment.



Press **STOP** to stop dubbing.

Memory-Stop Editing

You can set an automatic Edit stopping point.

In **step 2**, locate the point at which you want the dubbing to stop.

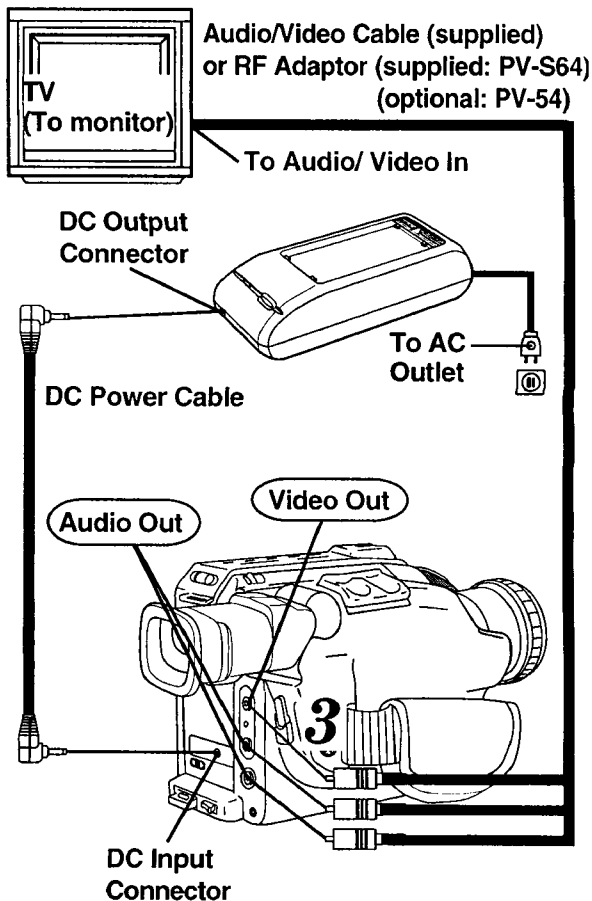
- ① Press **DISPLAY** twice.
- ② Then press **RESET** to reset the Counter Memory to M0000.
- ③ Now **rewind to the editing start point**, and continue with steps 2-4. The tape will now stop automatically at "M0000".

Dubbing over Recordings

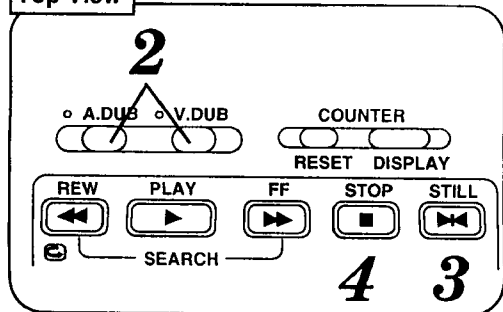
Before you begin...

- Turn On the Palmcorder.
- Insert a cassette (with tab) to be dubbed.
- When using the RF Adaptor to monitor, turn the TV ON and select CH3 or 4 (see page 24).

Connection



Top View



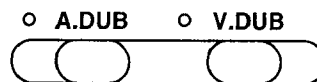
Dubbing over Audio/Video

Use this feature to replace existing audio and video segments with exceptionally clean and precise edits using Flying Erase Head technology.

1

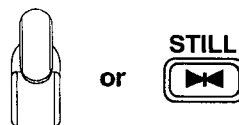
Follow steps 1 and 2 on page 38.

2



Press **AUDIO DUB** and **VIDEO DUB** together to put the Palmcorder in the Audio/Video Dub Pause mode.

3



Press **RECORD/PAUSE** or **STILL** to start taping an AUDIO/VIDEO replacement segment.

4



Press **STOP** when dubbing is complete.

Note:

Tapes to be dubbed may be prerecorded in SP or SLP mode. When Audio/Video dubbing, make sure the Palmcorder tape speed is the same as the prerecorded tape speed.

Notes on Operations

Car Battery Cord (P. 9)

- Be sure to start your car engine before inserting the cigarette lighter plug of the Car Battery Cord into the lighter socket; otherwise, the cigarette lighter plug fuse may burn out.
- Because the car is running while your Palmcorder is in operation, make sure you're in a ventilated area.
- Disconnect the cigarette lighter plug when your Palmcorder is not being used.

Note:

The Car Battery Cord can only be used in vehicles equipped with DC 12V (negative ground) batteries.

Charging the Battery Pack (P. 8)

- The useful operation time of the Battery will gradually decrease after repeated use and recharging. The Battery is no longer serviceable if the operation time is very short, even after a sufficient charge.

Special Effects Playback (P. 22)

- During search playback, horizontal noise bars will appear and there will be no audio.
- To protect the tape and video heads, your Palmcorder's operating modes will revert as follows:

STILL → STANDBY after 5 minutes.

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

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

High Speed Shutter (P. 26)

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

Copying your Tapes (P. 35)

- Tapes recorded on other VCRs for use with the Palmcorder must be recorded in SP or SLP mode.
- For technical reasons, dubbing a tape may reduce its quality.

CCD Warning

When your Palmcorder is aimed at excessively bright objects, such as the sun or other bright lighting, a vertical bar may appear in the picture. This is a normal characteristic of the CCD pick-up device. Try to avoid aiming the camera at extremely bright objects.

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.

Auto-Reset

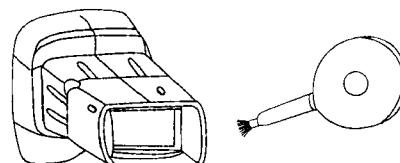
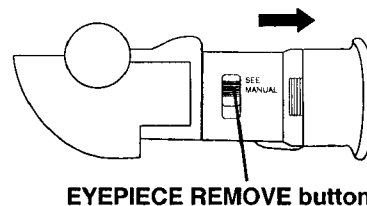
The Palmcorder, provided no tape is inserted, will reset the Backlight, High Speed Shutter and Focus to their AUTO or OFF modes if, after activation, none of these buttons are pressed within 5 minutes.

Cleaning the EVF

While sliding the EYEPIECE REMOVE button, remove the Eyepiece.

Remove any lint or dust particles with a commercially available blower. Then, replace the eyepiece.

To Remove



Notes on Operations

Rough Values of Brightness

Your Palmcorder has been designed for normal scene illumination of 150 footcandles (1500 lx). However, the Palmcorder may be used at F1:1.6, if illumination is more than 0.1 footcandles (1 lx) (PV-54), 0.2 footcandles (2 lx) (PV-S64).

The table below shows the color temperature for reference.

PALMCORDER SETTINGS	NATURAL LIGHT CONDITIONS	KELVIN COLOR TEMPERATURE	ARTIFICIAL LIGHT SOURCE	COLOR TINT MIXTURE
	<ul style="list-style-type: none"> Fair weather, blue sky 	— 10,000	<ul style="list-style-type: none"> Color television 	Bluish
	<ul style="list-style-type: none"> Slightly cloudy sky Cloudy or rainy sky 	— 8,000 — 7,000 — 6,500	<ul style="list-style-type: none"> Fluorescent lamp (Daylight) Camera flash bulb 	
	<ul style="list-style-type: none"> Sunlight in clear weather at midday Average sunlight in clear weather 	— 6,000 — 5,500	<ul style="list-style-type: none"> Blue lamp for photography 	
	<ul style="list-style-type: none"> Sunlight 2 hours after sunrise and before sunset 	— 4,500 — 4,000 — 3,500	<ul style="list-style-type: none"> Fluorescent lamp (White) Normal flash bulb Fluorescent lamp (Off-white) Tungsten lamp for photography 	Whitish
	<ul style="list-style-type: none"> Sunlight 40 min. after sunrise and before sunset 	— 3,200	<ul style="list-style-type: none"> Halogen lamp Iodine lamp 	
	<ul style="list-style-type: none"> Sunlight 30 min. after sunrise and before sunset Sunlight 20 min. after sunrise and before sunset 	— 2,800 — 2,000	<ul style="list-style-type: none"> Tungsten lamp Acetylene lamp Kerosene lamp Candlelight 	Yellowish Reddish

Attaching Optional Filters and Lenses

- Be careful not to touch the lens itself.

FCC Warning: Any unauthorized changes or modifications to this equipment would void the user's authority to operate.

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

Note: This equipment has been tested and found to comply with Part 15 and part 18 of the FCC Rules.

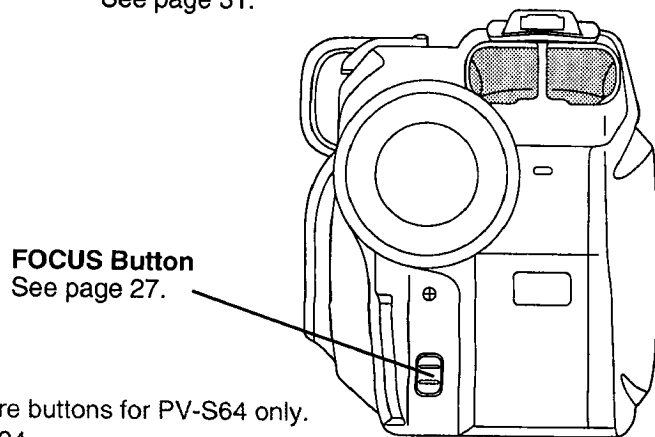
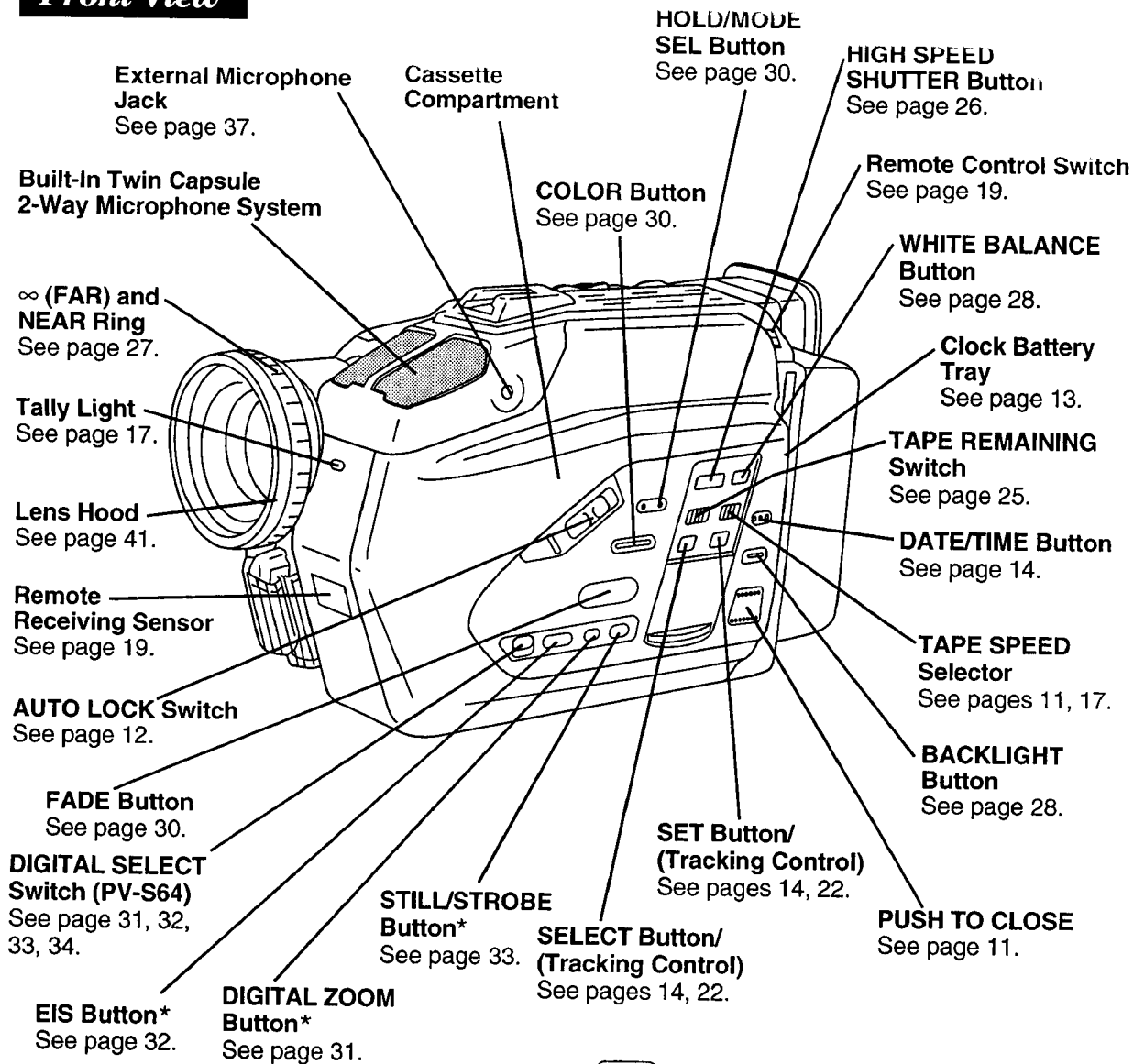
These limits are designed to provide reasonable protection against harmful interference when operated in a residential environment.

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

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

Index of Controls

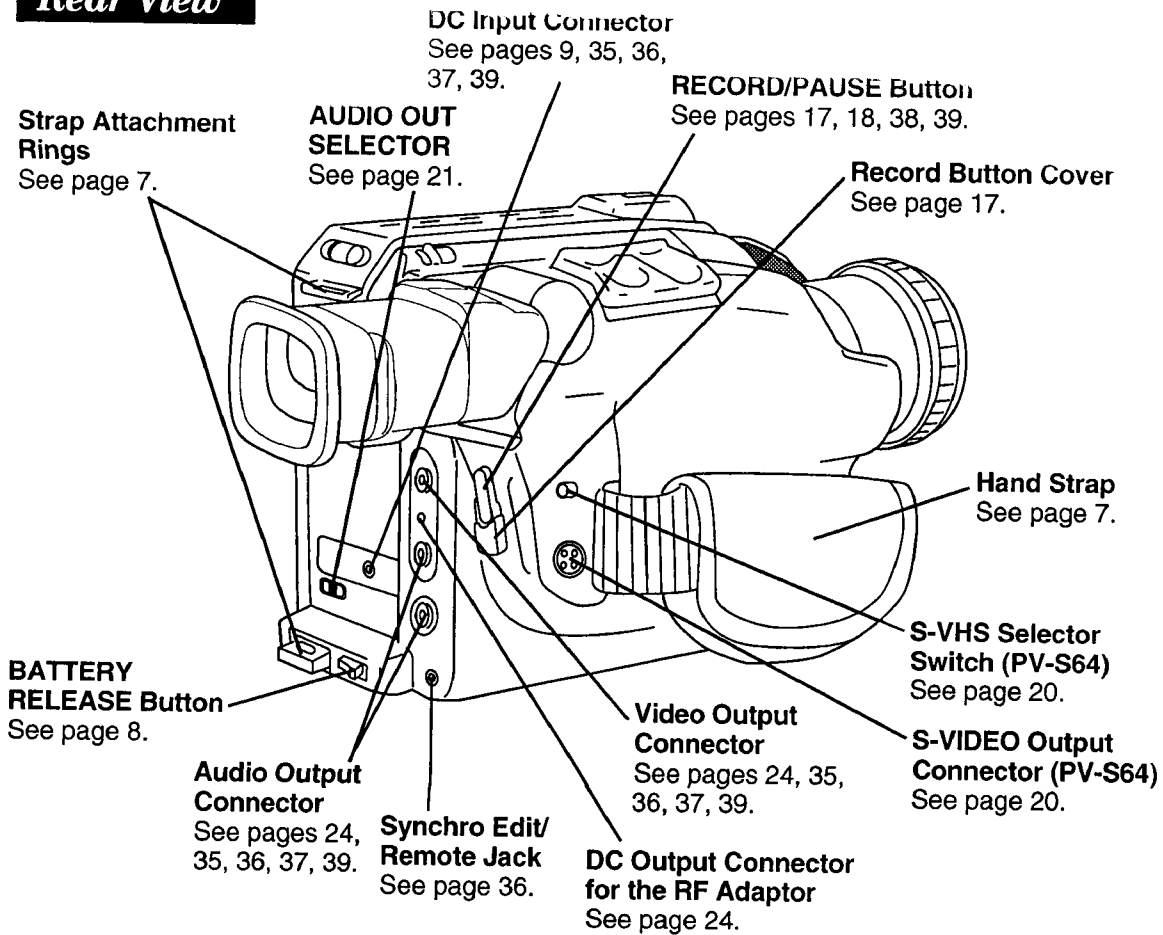
Front View



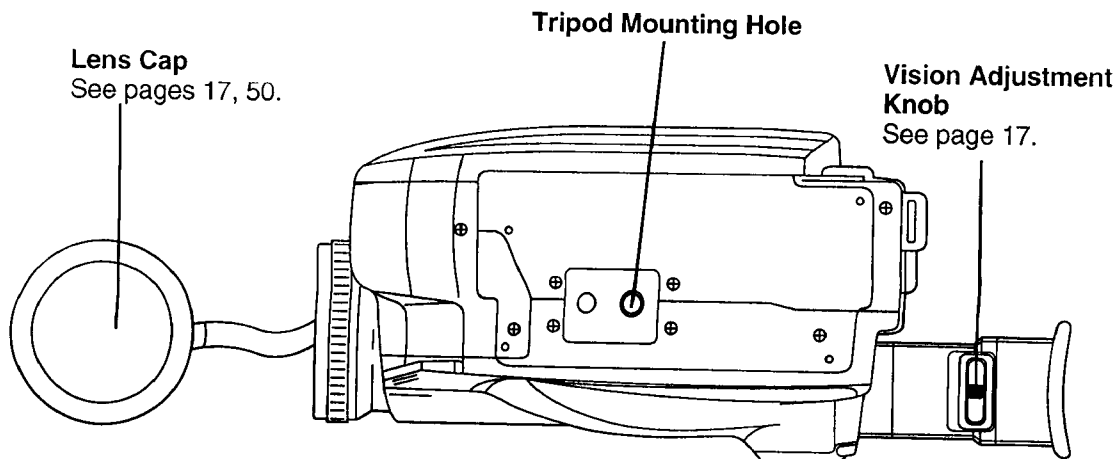
*Dual feature buttons for PV-S64 only.
See page 34.

Index of Controls

Rear View

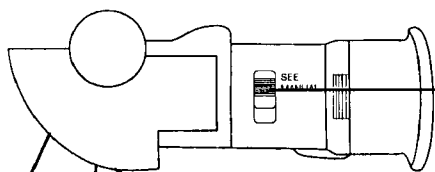
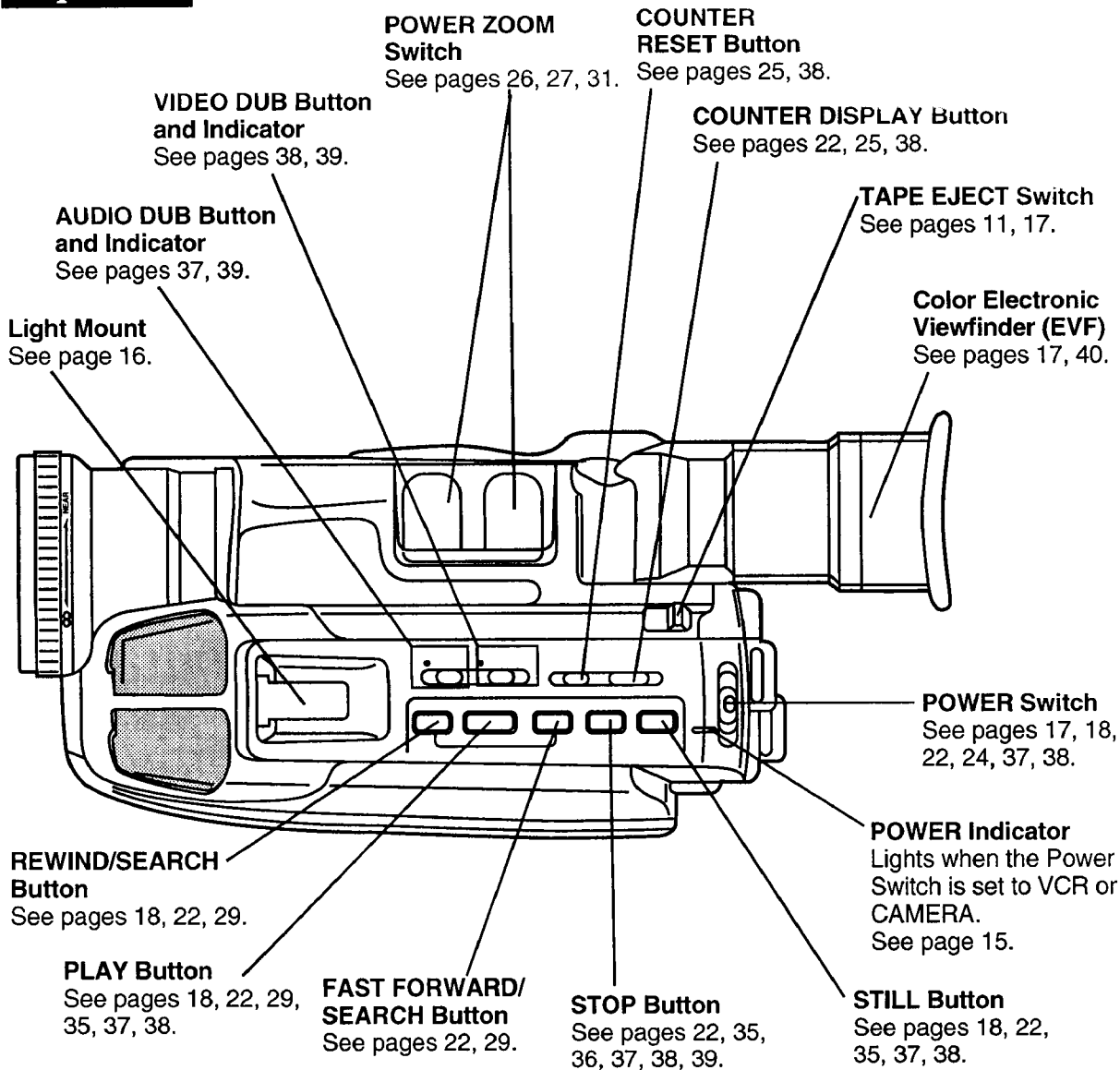


Underside View



Index of Controls

Top View



Bright Control
Adjust the brightness of the picture.

***Tint Control**
Adjusts the tint for natural fleshtones.

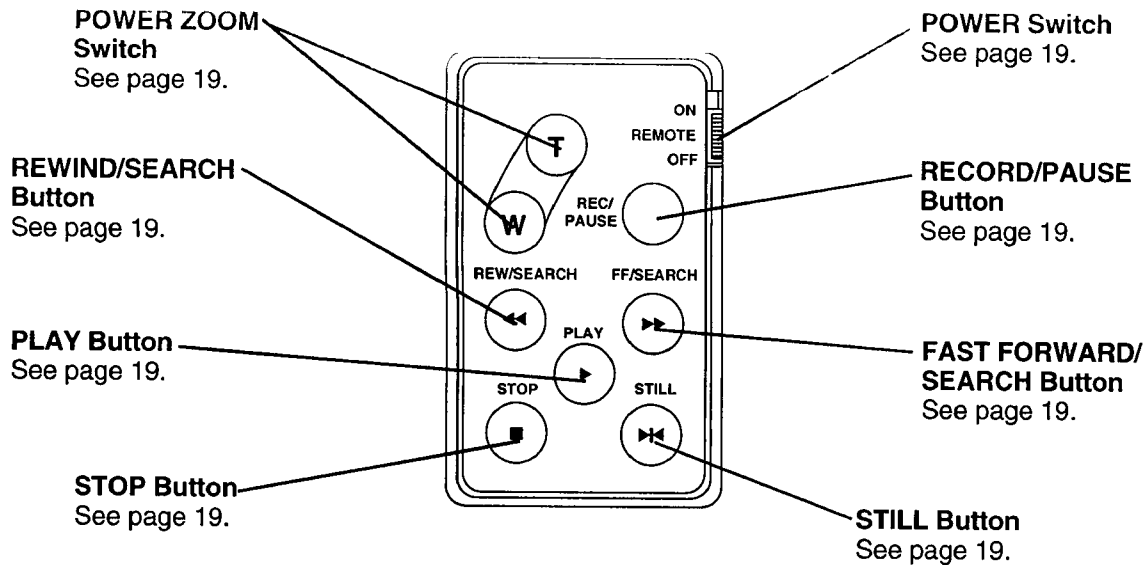
***Color Control**
Adjusts the color intensity.

EYEPIECE REMOVE button
See page 40.

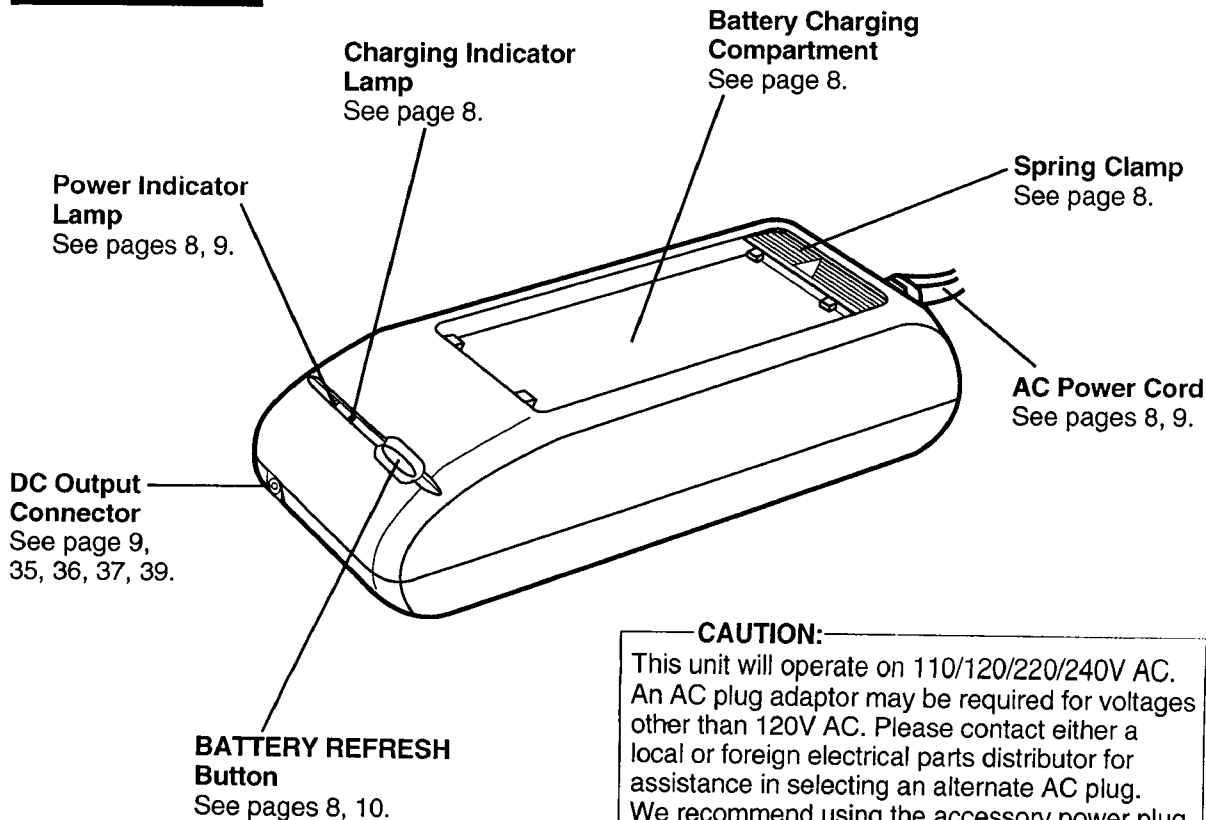
***Note:** These controls have been set at the factory. It is not necessary to adjust these controls under normal circumstances. But, should it become necessary, be careful to make the adjustment with a small, slender screwdriver so as not to damage the miniature control.

Index of Controls

8-Function Remote





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.

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Specifications

Power Source:	Compact VHS Palmcorder: DC 6V (PV-54) Compact S-VHS Palmcorder: DC 6V (PV-S64) AC Adaptor: 110/120/220/240V AC, 50/60 Hz Battery: Nickel-Cadmium Type DC 6V
Power Consumption:	Compact VHS Palmcorder: 6V DC 11W (Max. 16W) (PV-54) Compact S-VHS Palmcorder: 6V DC 11W (Max. 16W) (PV-S64) AC Adaptor: 24W
Video Signal:	EIA Standard (525 lines, 60 fields) NTSC color signal
Video Recording System:	4 rotary heads, helical scanning system
Audio:	1 track (NORMAL) 2 channels (Hi-Fi AUDIO SOUND)
Pick-Up System:	Sequential color difference field reverse system
Pick-Up Device:	One integral color filter Charge Coupled Device (CCD)
Lens:	12:1 zoom lens, F1:1.6 with auto iris control Focal length: 5.4mm - 64.8mm Power zoom function Lens filter diameter: 49mm
Viewfinder:	0.7 inch (17.8mm) Liquid Crystal Color Electronic Viewfinder
Minimum Illumination Required:	1 lx (F1:1.6) 0.1 footcandles (PV-54) 2 lx (F1:1.6) 0.2 footcandles (PV-S64)
External Microphone Input Level:	—70dB, 4.7K ohms unbalanced, M3 connector
S-VIDEO Input/Output Level (PV-S64 only):	S-VIDEO Connector: Y Connector 1.0 Vp-p, 75 ohm unbalanced (Separated YC Connector): C Connector 0.286Vp-p, 75 ohm unbalanced
Operating Temperature:	32°F~104°F (0°C~40°C)
Operating Humidity:	10%~75%
Weight:	Compact VHS Palmcorder: 2.1 lbs. 0.98kg (PV-54) Compact S-VHS Palmcorder: 2.1 lbs. 0.99kg (PV-S64) AC Adaptor: 0.77 lbs. 0.35kg
Dimensions:	Compact VHS (PV-54) Compact S-VHS (PV-S64) Palmcorder: 4 (W) × 4-3/4 (H) × 9-3/8 (D) inch 103 (W) × 122 (H) × 239 (D) mm AC Adaptor: 2-3/4 (W) × 1-5/8 (H) × 6-1/4 (D) inch 70 (W) × 41 (H) × 158 (D) mm

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

Before Requesting Service

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

Symptom	Correction
No picture in the EVF ...	<ul style="list-style-type: none"> • Make sure the Power Source is connected. (pp. 8, 9) • Make sure the POWER switch is set to VCR or CAMERA. (pp. 17, 22) • Check the Dew Indicator. (p. 15) • Make sure the battery is fully charged. (p. 8) • Make sure all necessary cables are connected correctly and firmly. (p. 24) • Make sure the Lens Cap is OFF. (p. 45)
Video cassette can't be inserted ...	<ul style="list-style-type: none"> • Make sure the Power Source is connected. (pp. 8, 9) • Insert the cassette with the window side facing out. (p. 11)
Video cassette can't be removed ...	<ul style="list-style-type: none"> • Make sure the Power Source is connected. (pp. 8, 9)
No operation starts when operation buttons are pressed ...	<ul style="list-style-type: none"> • Check the Dew Indicator. (p. 15)
Recording cannot be done ...	<ul style="list-style-type: none"> • Make sure the record tab is still intact. (p. 11) • Check the Battery Indicator. (p. 15) • Check the Dew Indicator. (p. 15)
Auto Focus does not operate ...	<ul style="list-style-type: none"> • Make sure the FOCUS button is set to AUTO. (p. 27) • Make sure the unit is ON, with the POWER switch set to CAMERA (p. 17).
Sound from microphone can't be monitored ...	<ul style="list-style-type: none"> • Make sure the unit is set to REC or Record/Pause mode.
Camera picture is too dark ...	<ul style="list-style-type: none"> • Make sure the HIGH SPEED SHUTTER button is OFF (p. 26).
No playback picture, or the playback picture is noisy or contains streaks ...	<ul style="list-style-type: none"> • Press the SET or SELECT button (Tracking Control) (p. 22).
During playback, the picture shows motion or blurred action ...	<ul style="list-style-type: none"> • Portions of the still picture where the normal speed motion was particularly rapid may produce this effect. This is normal.
"Panasonic Palmcorder IT'S VHS SO ITS TAPES PLAY IN YOUR VCR" appears in the EVF and Monitor ...	<ul style="list-style-type: none"> • Set the POWER switch to OFF and then CAMERA.
If the top of your playback picture waves back and forth excessively ...	<ul style="list-style-type: none"> • Because the playback signal is not as stable as an off the air TV signal, the top of your TV screen may be bent or unstable when the tape is played back. This symptom is more noticeable when a tape, recorded on another VCR, is played back. To solve this problem, locate the horizontal hold control on your TV. Turn it slowly to correct the wavy picture. If your TV does not have a horizontal hold control or adjusting the control does not help, some modifications may have to be made to the TV set. Technically this is called "Horizontal AFC time constant change." If such a problem exists, please contact your local TV service center. (Some nominal service charges are required.)

Before Requesting Service

Cleaning Care for Video Heads



Clogged Video Head

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

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

Refer servicing to qualified service personnel.

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