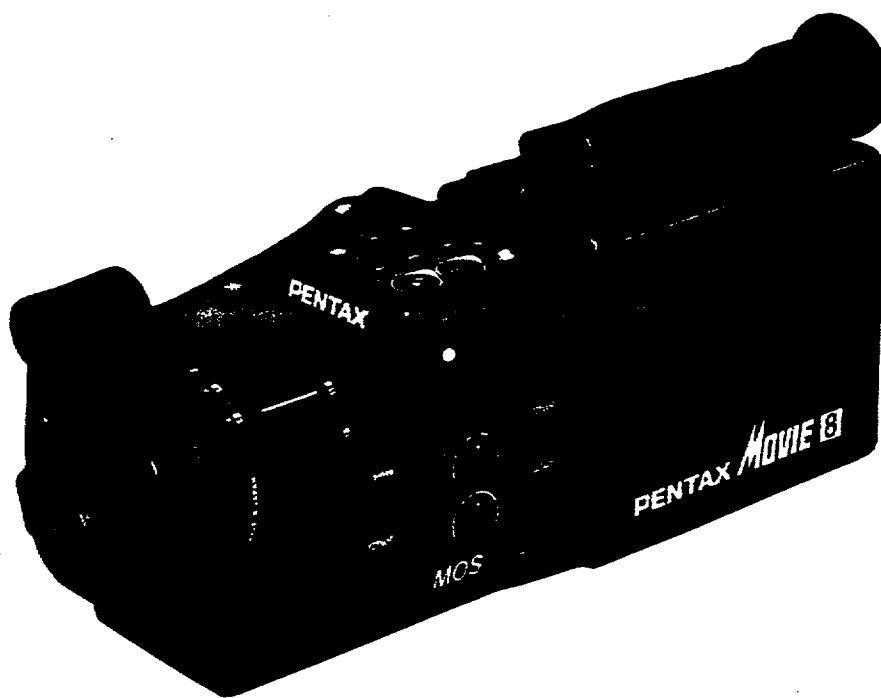


PENTAX

8mm VIDEO CAMERA/RECORDER

MODEL **PV-C800A**

INSTRUCTION MANUAL



PENTAX MOVIE 8

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



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



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.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER – SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

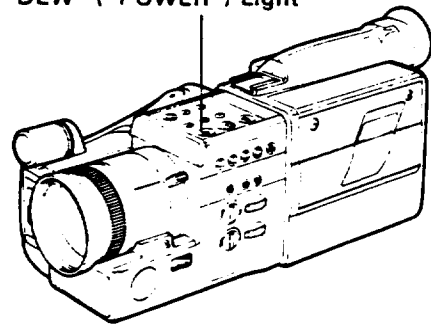


This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

DEW (MOISTURE CONDENSATION)

Moisture condensation may occur if the video camera/recorder is moved from a cold area to a warm humid area. A flashing "POWER" light indicates that moisture is on the recorder mechanism, which could result in damage to the tape. When the "POWER" light is flashing the unit will not operate. In this condition, slide the "EJECT" button, remove the tape, and wait for the moisture to dry (until the "POWER" indicator stops flashing).

"DEW" ("POWER") Light



Read the Important Safety Instructions for AC Adaptor/Battery Charge Adaptor before use.

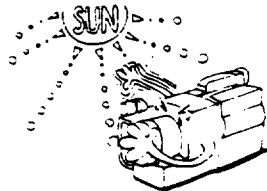
PRECAUTION

■ No water, dust or sand

Be careful that no water, dust or sand enters the Camera/Recorder because it may cause trouble and accidents.

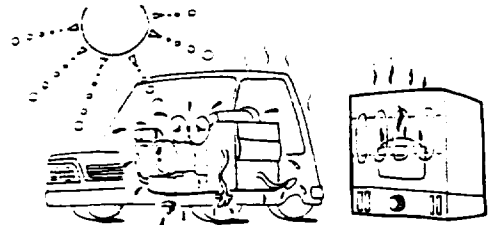
■ Never point the lens at the sun or any other strong light.

Do not shoot excessively bright objects for a long time to prevent damage to the pickup device. When you are not using the Camera/Recorder, switch off its power and attach the lens cap.



■ Do not leave the unit where temperatures may exceed 120°F, or the pickup device may be damaged.

- Inside a car with the window closed and in direct sunshine.
- Near heating appliances.
- In direct sunshine in summer.



- When a strong light source (a lamp, the sun, a powerful reflection, etc.) is being shot, a vertical green line can be seen in the picture. This is not due to a malfunction; avoid allowing this to enter pictures as far as possible.

Congratulations on buying the Video Camera/Recorder. For maximum pleasure and convenience please read these simple instructions before operating your Camera/Recorder.

- RECORDING AND PLAYBACK**
- This is an 8 mm VTR. Use 8 mm video cassettes only.
 - Recording speed in SP mode is 1.43 cm/second.
 - When a cassette tape is played, the unit will automatically select the correct playing speed no matter whether the tape was recorded in SP mode (1.43 cm/second) or LP mode (0.72 cm/second).
 - You may not be able to play certain foreign-made video cassettes on this Video Camera/Recorder because of different TV broadcasting systems. Check to make sure that the cassette tape was recorded on an NTSC system.

WARNING: Many television programs are copyrighted. One court has held that private, non-commercial, in-home video taping of copyrighted televised programs constitutes copyright infringement. Purchasers are advised not to copy such programs.

Check to make sure you have the following components and accessories (besides the Camera/Recorder Unit itself) before disposing of the packing material.

1. Carrying Handle
2. RF Converter Unit
3. 75-ohm Coaxial Cable
4. Antenna Adaptor (300-ohm to 75-ohm)
5. Battery Pack (1 hour type)
6. AC Adaptor
7. Battery Charge Adaptor
8. Battery for clock/date
9. Earphone
10. Shoulder Strap
11. Antenna Adaptor (75-ohm to 300-ohm)

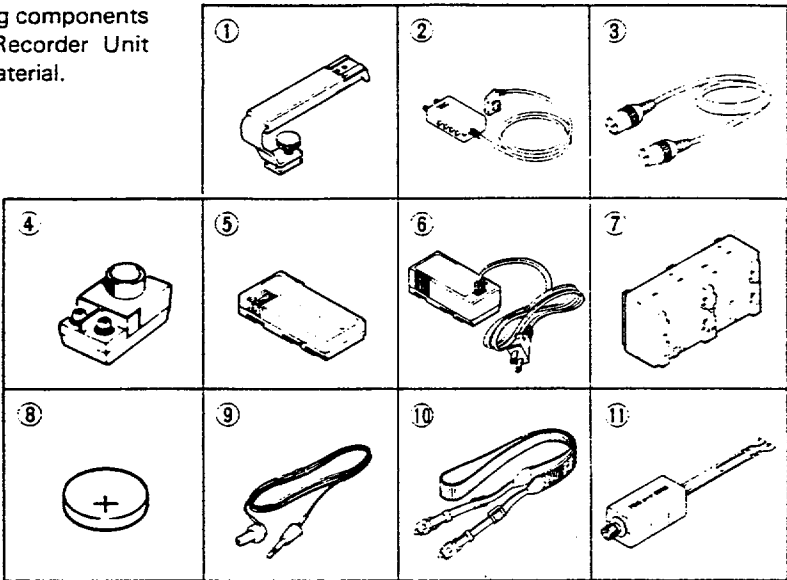


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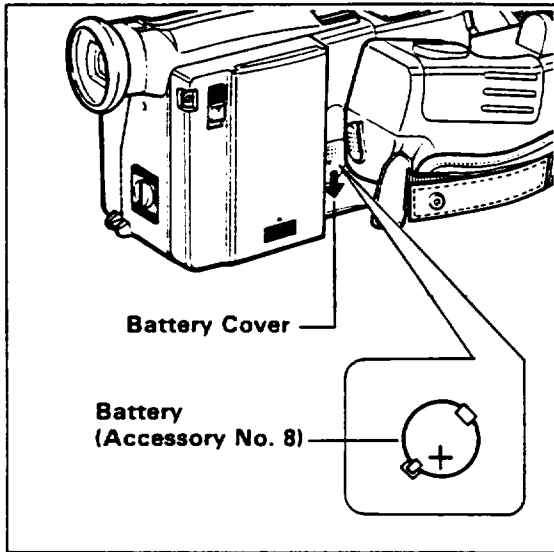
How to install accessories to video camera/recorder	3	Producing best color program	20
8 mm video cassette	3	Connections and operations for viewing the picture played back on your TV	21
Power sources	4	Connections and operations for recording TV program	23
Checking the battery pack	6	Using the F-search and R-search features	24
Charging the battery pack	6	Using the pause feature	25
Identification and operation of controls	7	Using the memory feature	25
Making a sample camera recording	13	Using the time remaining feature	26
Using the auto-white balance feature	15	Tape dubbing	26
Using the auto iris feature	15	Troubleshooting	27
Using the auto focus feature	16	Head cleaning	29
Using the power zoom feature	18	Periodic maintenance	29
Using the macro feature	18	Specifications	29
Using the instant review feature	18	Optional accessories	30
Using the calendar display feature	19		
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HOW TO INSTALL ACCESSORIES TO VIDEO CAMERA/RECORDER

■ LOADING THE BATTERY FOR DATE/CLOCK

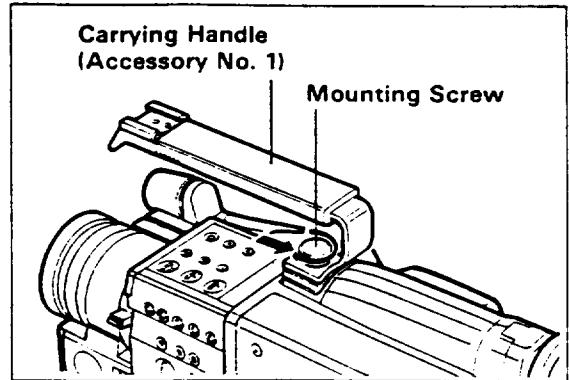
Slide the Battery Cover downward to expose the Battery Compartment. Insert the clock battery (Accessory No. 8) with the "+" terminal facing out. See page 19 for instructions on setting the clock.

NOTE: When replacing the battery, use 3-Volt Lithium Battery (CR2025 or equivalent).



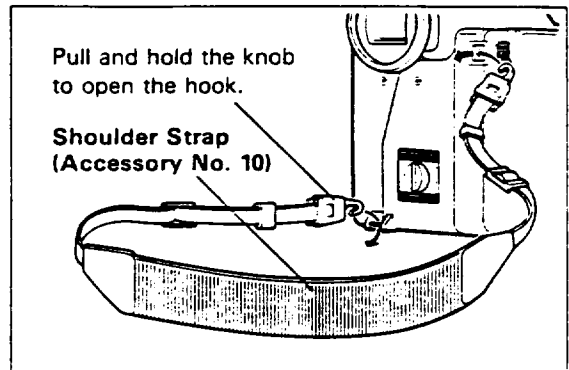
■ MOUNTING THE CARRYING HANDLE

1. Slide the Carrying Handle (Accessory No. 1) into the Shoe on the top of Video Camera/Recorder.
2. Fasten the Mounting Screw.



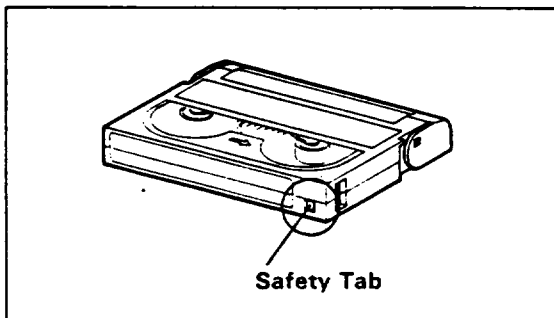
■ INSTALLING THE SHOULDER STRAP

Attach the Shoulder Strap (Accessory No. 10) as illustrated below.

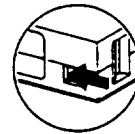


8 MM VIDEO CASSETTE

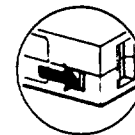
The 8 mm Video Cassette has a Safety Tab on the bottom of the cassette that can be adjusted to prevent accidental erasure of recorded material.



To prevent accidental erasure, slide the Safety Tab in the direction of arrow until the red Safety Tab is completely visible.



To record again on the cassette, slide the Safety Tab in the direction of arrow. The red Safety Tab will disappear behind the cassette case.



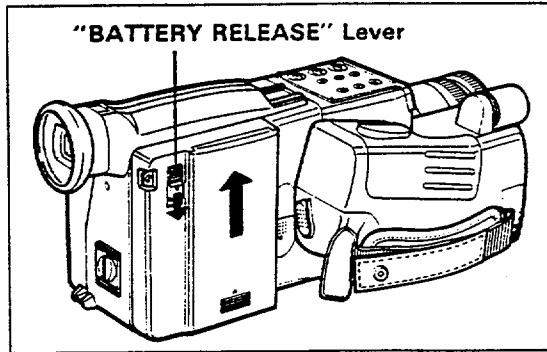
POWER SOURCES

■ WHEN USING THE BATTERY PACK (Accessory No. 5)

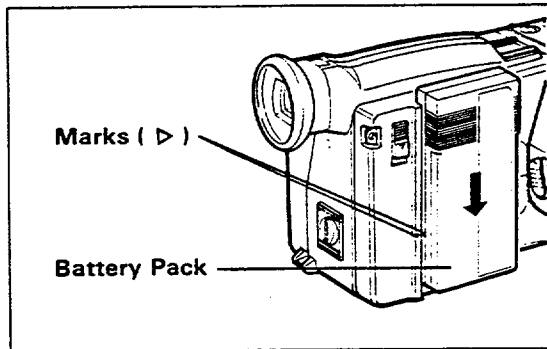
The Battery Pack can be installed on the side of Video Camera/Recorder or in the Battery Compartment on the grip, as your preference.

■ To install the Battery Pack on the side of Video Camera/Recorder

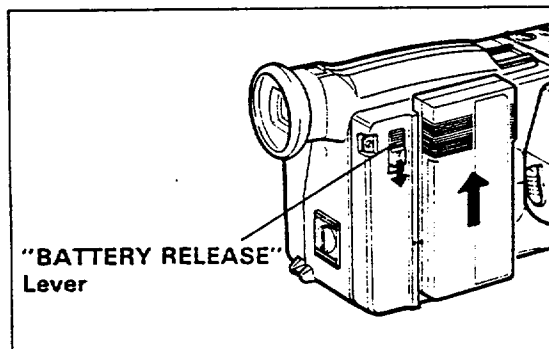
1. Remove the Power Connector Cover. Power Connector Cover is removed by sliding the cover upward while holding the "BATTERY RELEASE" Lever downward.



2. For attachment align the mark ▷ on the side of the Battery Pack with that on the side of the Video Camera/Recorder so that they are joined together in the grooves, and slide the Battery Pack downward, as illustrated.

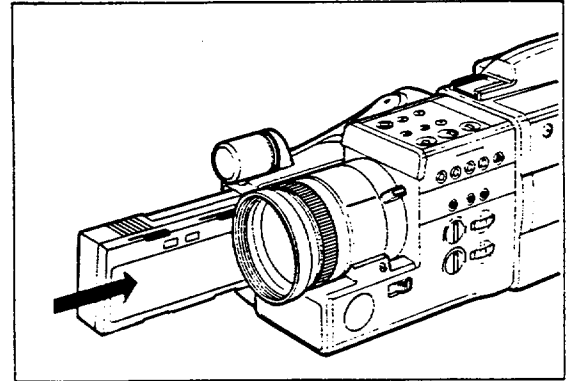


3. For removal, slide the Battery Pack upward while holding the "BATTERY RELEASE" Lever downward.

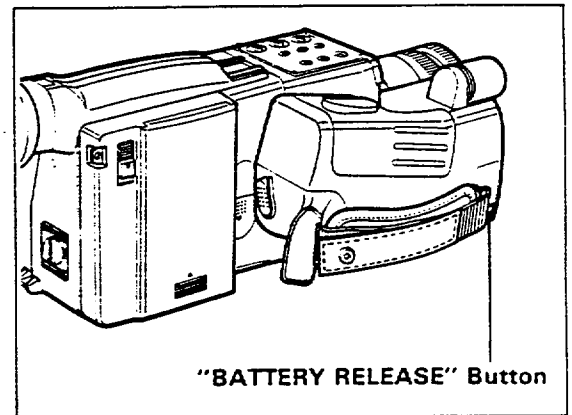


■ To install the Battery Pack in the Battery Compartment

1. Insert Battery Pack into the Battery Compartment of the grip.



2. For removal, press the "BATTERY RELEASE" Button while pushing the battery.



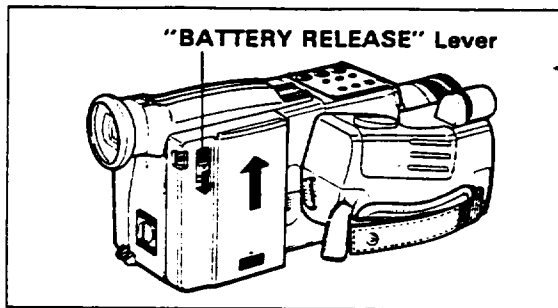
NOTE:

1. Connecting a Battery Pack, Car Battery Adaptor or AC Adaptor to the camera/recorder automatically shuts power off from the battery in the grip.
2. The optional 2-hour type Battery Pack PV-BT820 should be installed on the side of Video Camera/Recorder.

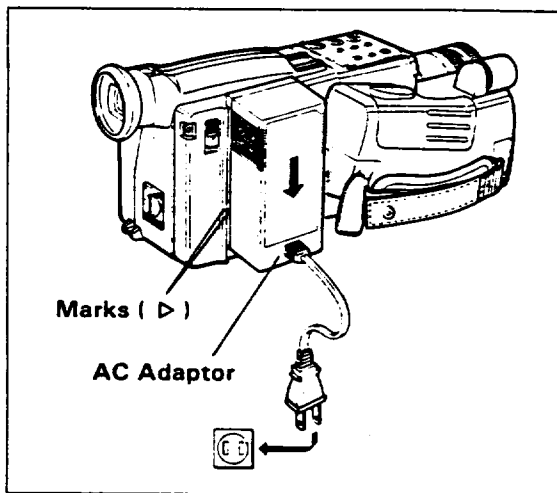
■ **WHEN USING WITH THE AC ADAPTOR (Accessory No. 6)**

1. Remove the Power Connector Cover.

Power Connector Cover is removed by sliding the cover upward while holding the "BATTERY RELEASE" Lever downward.



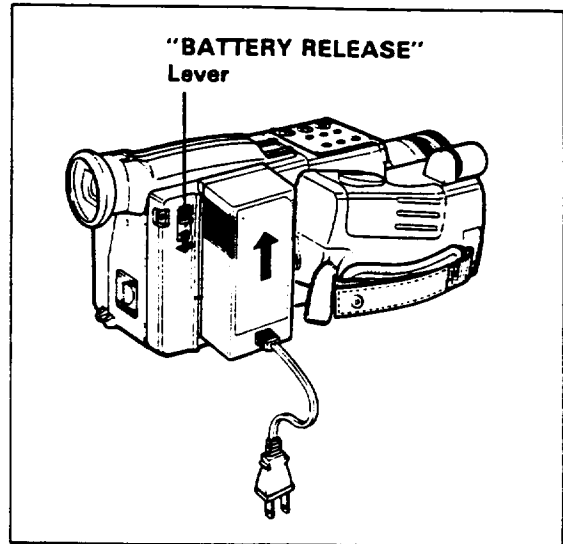
2. For attachment align the mark ▷ on the side of the AC Adaptor with that on the side of the Video Camera/Recorder so that they are joined together in the grooves, and slide the AC Adaptor downward as illustrated.



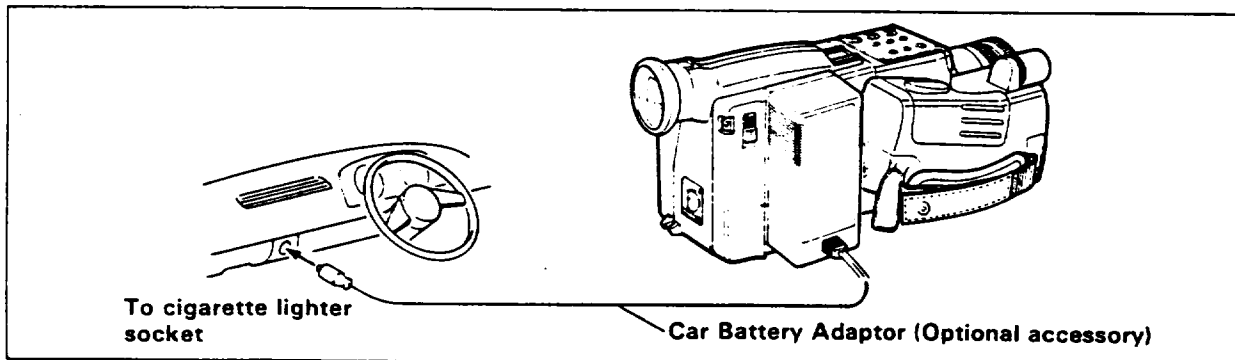
3. Plug the AC Adaptor power cord into AC-electrical outlet.

NOTE: This Adaptor is universal for use with AC 100 ~ 240V around the world.

4. For removal, slide the AC Adaptor upward while holding the "BATTERY RELEASE" Lever downward.



■ **WHEN USING WITH THE CAR BATTERY (By using optional Car Battery Adaptor PV-YC800A manufactured by PENTAX Corporation.)**



Connect the optional Car Battery Adaptor to the Video Camera/Recorder and its cord to the car's cigarette lighter socket. See "WHEN USING WITH THE AC ADAPTOR" for Car Battery Adaptor installation and

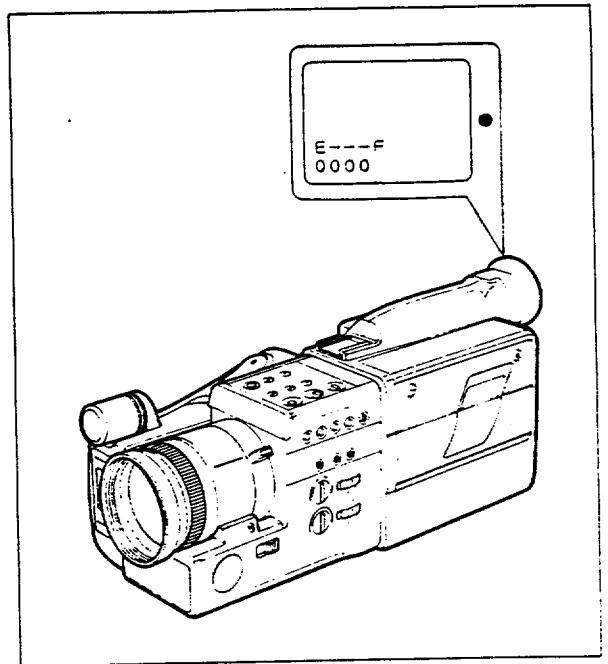
removal.

NOTE: The Car Battery Adaptor is designed to be used only with automobiles having a 12/24-volt negative ground system.

CHECKING THE BATTERY PACK

When the Indicator Lamp (RED) in the Electronic Viewfinder flashes while the Video Camera/Recorder is operated with a Battery Pack (Accessory No. 5), it indicates that the battery capacity is insufficient. Then, charge it or replace it with a charged battery pack.

NOTE: Whenever the tape counter or time remaining display is present in the viewfinder, it appears with a 3-dash read-out indicating the approximate status of Camera/Recorder battery power. When the battery is fully charged, the display reads "E---F". When the battery is very near empty, only one dash remains. When the last dash starts blinking, you should find an alternative power source or recharge the battery before continuing to use your Camera/Recorder.



CHARGING THE BATTERY PACK

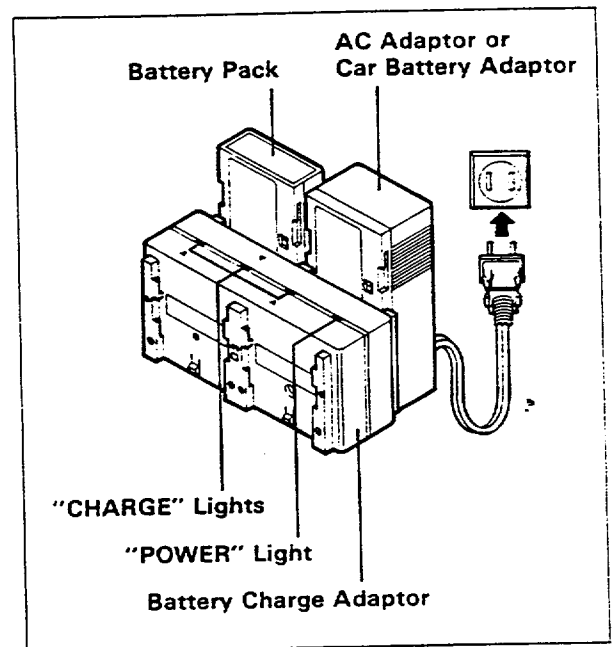
1. Attach the Battery Pack and AC Adaptor to the Battery Charge Adaptor (Accessory No. 7).

NOTE: For attachment align the marks ▷ on the Battery Pack and AC Adaptor with them on the Battery Charge Adaptor so that they are joined together in the grooves, and slide them downward.

2. Plug the AC Adaptor power cord into AC outlet. The Charge Indicator Light will flash while the Battery is accepting a charge, and will light steady when the Battery is fully charged.

NOTES:

1. The Battery Charge Adaptor permits connection up to three batteries at the same time. If the two or three batteries are connected, the batteries are charged in the numerical order.
2. The time for one Battery charging is approx. 70 minutes.
3. An optional 2-hour playback Battery may also be charged. The time for charging is approx. 140 minutes.
4. Battery Pack can also be charged by using the Car Battery Adaptor PV-YC800A.



IDENTIFICATION AND OPERATION OF CONTROLS

"DATE" Button

Operate this button to record the date superimposed on the picture being shot.

"EXT MIC" Jack

Manual White Balance Control

Use this control to adjust the color balance manually. Set the "WHITE BAL" Switch to "MANUAL", and while viewing color monitor, adjust this control for a natural picture.

Zoom Lever

The picture size can be magnified 6 times with the use of the zoom feature. Just rotate the Zoom Lever for a close up (T) or wide angle (W) picture. Macro close-up, as close as 1 cm from object, is feasible.

Focus Ring

Do not attempt to manually turn the Focus Ring when the Camera/Recorder is in the AUTO FOCUS mode.

Battery Compartment

Used to house the Battery Pack (Accessory No. 5).

Lens

F1.2 (11.5-69 mm) 6:1 power zoom lens features auto focus and auto iris functions.

Auto Focus Window

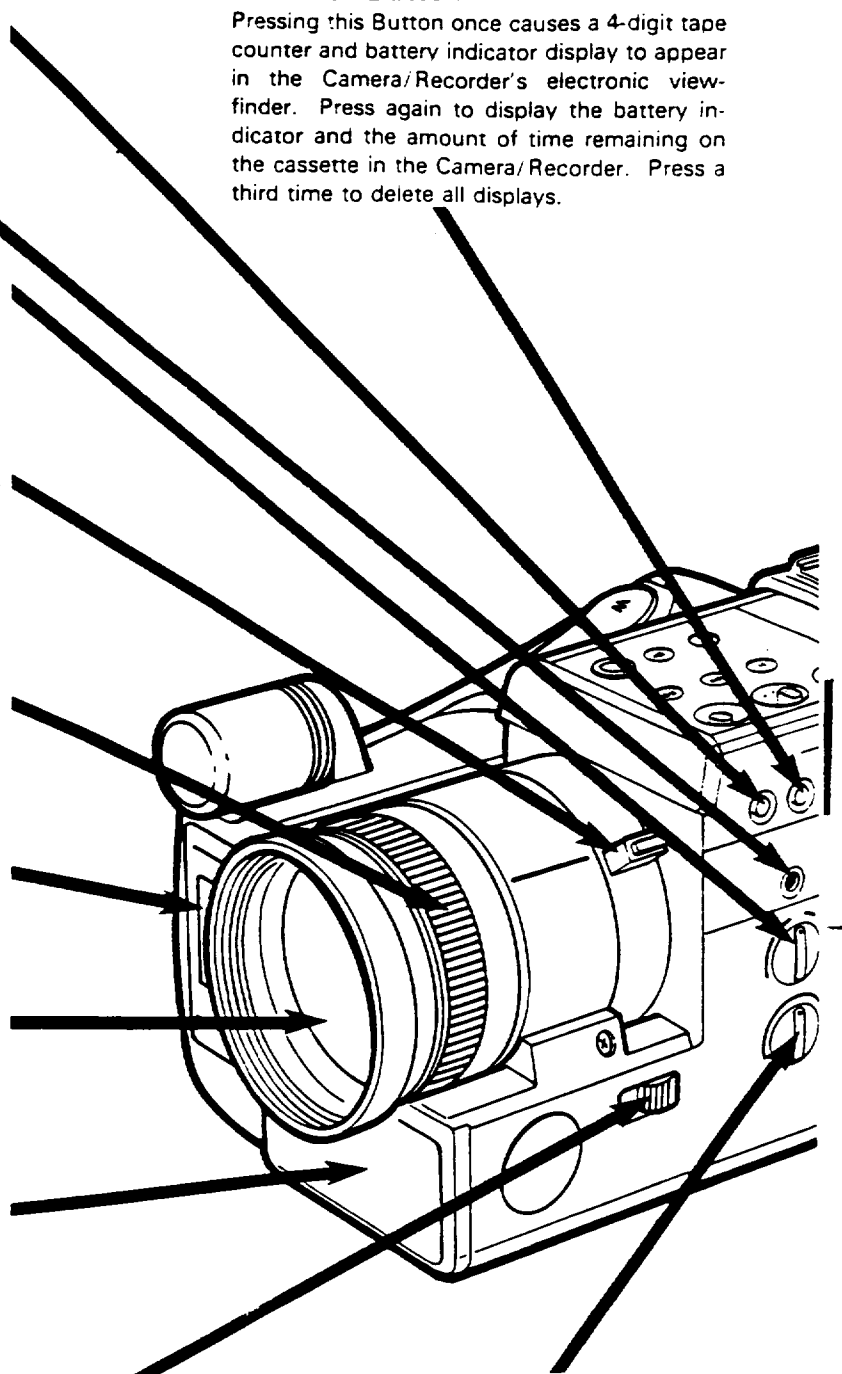
To automatically focus the camera lens, this window transmits and receives infrared light which is reflected off the subject. Make sure you don't obstruct this window when recording.

"FOCUS AUTO/MANUAL" Switch

Set this Switch to the "AUTO" position for automatic focusing, and to the "MANUAL" position for focusing with the Focus Ring. When the Switch is pushed inwards while in the "MANUAL" position, automatic focusing is performed until the Switch is released.

"MODE" Button

Pressing this Button once causes a 4-digit tape counter and battery indicator display to appear in the Camera/Recorder's electronic viewfinder. Press again to display the battery indicator and the amount of time remaining on the cassette in the Camera/Recorder. Press a third time to delete all displays.



"Manual Iris" Control

Set "IRIS AUTO/MANUAL" Switch to "MANUAL" position and then rotate this control to the right or left for manual iris control.

"MEMORY" Button

This Button lets you index any place on a tape so that the Camera/Recorder will stop at that point during fast forward or rewind. When this Button is activated, the letter "M" will appear next to the counter display in the viewfinder. With the memory function active, the Camera/Recorder will stop rewind or fast forward operation when the tape counter reaches 0000.

"RESET" Button

Pressing this Button resets the counter to 0000.

"REVIEW" Button

Used to review the last few seconds of recorded segment in the record/pause mode.

Cassette Holder

Slide "EJECT" Button on the top panel to open the Cassette Holder. Be aware of the Cassette direction when inserting.

"CAMERA/REMOTE" Jack

Recording and pausing may be remotely controlled by a wired Remote Pause Cable with switch (Optional accessory).

"EAR"phone Jack

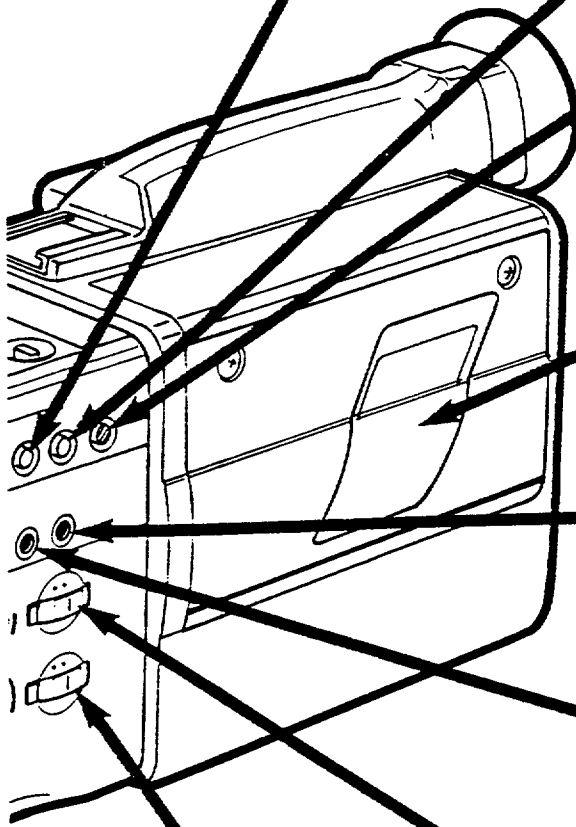
Sound being recorded by the microphone or played back may be monitored by attaching earphone to this jack.

"IRIS AUTO/MANUAL" Switch

When this Switch is in the "AUTO" position, the iris is controlled automatically. Set the Switch to "MANUAL" position to control the iris manually by moving Manual Iris Control.

"WHITE BAL"ance Switch

When this Switch is in the "AUTO" position, the color balance is set automatically. Place the Switch in "MANUAL" position to adjust the color balance to suit your personal preference. (See page 15.)



"F.FWD" Button

Press this Button during Stop or Rewind mode, and fast-forwarding starts.

Press the Button during playback of tape, and the tape is played back approximately 5 times faster than the normal speed to confirm the recorded content.

Press "PLAY" Button to return to normal playback mode or press "STOP" Button to stop tape movement.

"REC"ord Button

Used when recording from "A/V" jack on the back Camera/Recorder. This Button has no effect during camera recording operation.

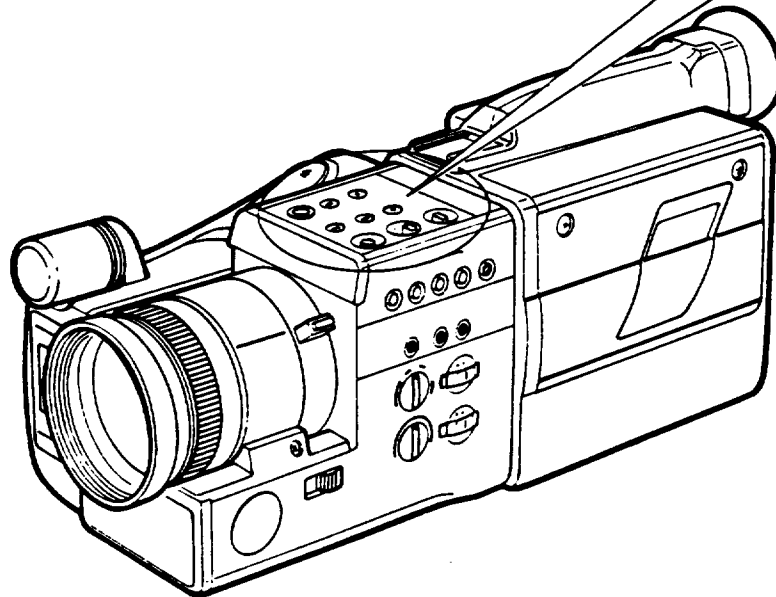
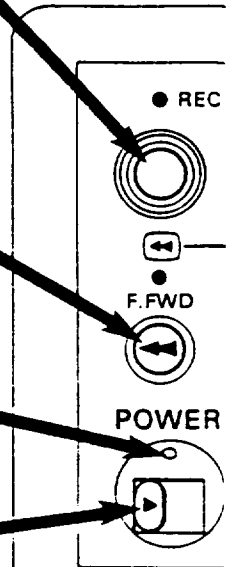
"POWER"/Dew Indicator Light

Flashing of the Light indicates dew condensation on Camera/Recorder mechanism. While this Light is flashing, the unit will not operate. If this occurs, eject the tape and leave the power on. When the Light stops flashing, the unit can be operated.

"POWER" ON/OFF Switch

Slide "POWER" ON/OFF Switch to turn Camera/Recorder on. Slide again to turn Camera/Recorder off.

"POWER" Light illuminates when the Camera/Recorder is on.

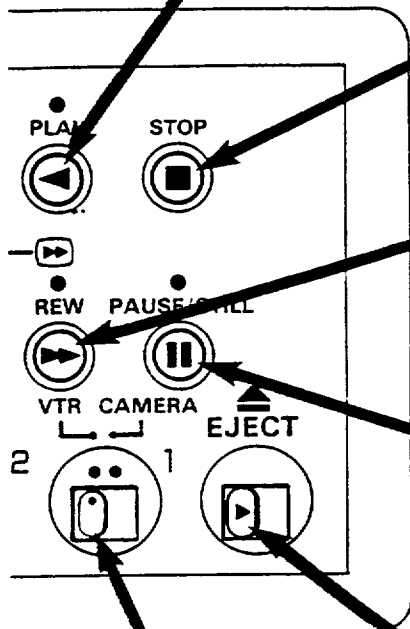


"PLAY" Button

Press to play back a tape.

"STOP" Button

The "STOP" Button is effective when the "VTR/CAMERA" Switch is in the "VTR" position and used to stop playback, record, rewind and fast forwarding. This Button has no effect during camera recording operation.



"REW"ind Button

Press this Button during Stop or Fast forward mode, and fast-rewinding starts. Press the Button during playback of tape, and the tape is played backwards approximately 5 times faster than the normal speed to confirm the recorded contents.

Press "PLAY" Button to return to normal playback mode or press "STOP" Button to stop tape movement.

"PAUSE/STILL" Button

Press this Button to stop recording temporarily when recording from A/V jack. Press again to resume recording.

This Button also allows you to view still frame during playback. This Button has no effect during camera recording.

"EJECT" Button

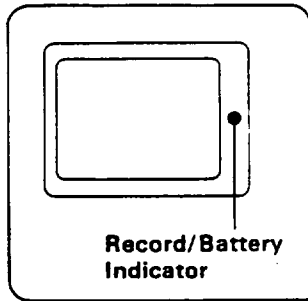
Operates with "POWER" either on or off but a power source must be connected to the camera.

"VTR/CAMERA" Select Switch

Set "VTR/CAMERA" Select Switch to the "CAMERA" position to record from camera. The "VTR" position is used to play back a tape or to record from A/V jack on the back of Camera/Recorder.

Electronic Viewfinder (EVF)

Displays what the Camera/Recorder lens sees. The electronic viewfinder also functions as a convenient black-and-white monitor during playback of recorded material.



Record/Battery Indicator

"BATTERY RELEASE" Lever

Releases the Battery, the AC Adaptor or Car Battery Adaptor attached to the Video Camera/Recorder.

"A/V" Jack

Connecting the RF Converter Unit (Accessory No. 2) to this jack allows you to play back a recording through your TV receiver or to record a TV program from your TV.

Power Connector Cover

Remove this cover when connecting the Battery, AC Adaptor or Car Battery Adaptor.

Accessory Shoe

Used to attach the Carrying Handle (Accessory No. 1).

Power Zoom Switch

This switch performs zooming electrically.
"W": Picture becomes wider gradually.
"T": Picture becomes telescopic gradually.

Microphone

Sensitive to sounds coming from the direction in which the camera is pointed.

Record Start/Stop Button

This Button is used to control the Camera/Recorder. When this Button is pressed with the Camera/Recorder set to the camera recording mode, the tape runs to start recording. When this Button is pressed again, the tape stops and the Camera/Recorder enters the record/pause (stand-by) mode. This Button has no effect when the "VTR/CAMERA" Select Switch on top panel is in the VTR position.

"BATTERY RELEASE" Button

Press to remove the Battery Pack housed in the compartment of the grip.

Hand Strap

Adjust to best fit to your hand.

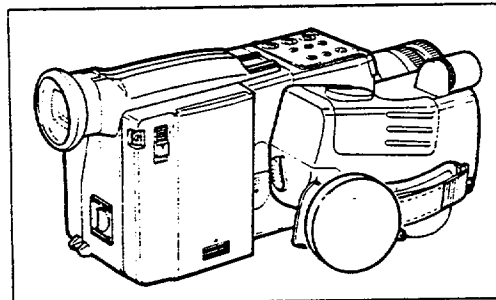
Lens Cap Holding Tab

Place the Lens Cap on this tab when you are ready to record a scene. The tab also prevents the Lens Cap from swinging around on its cord.

Time/Date Set Buttons

(behind cover)

The Buttons behind the cover let you set the Camera/Recorder's internal calendar for the correct date.

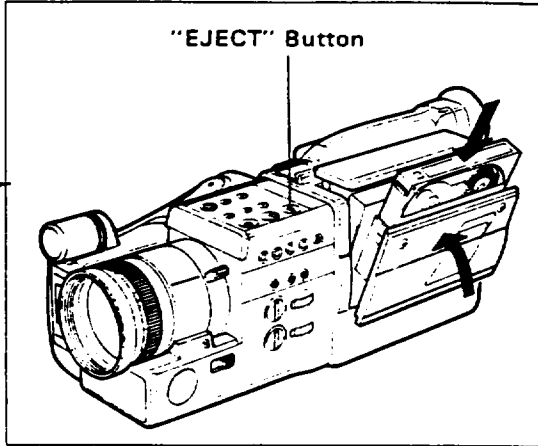


MAKING A SAMPLE CAMERA RECORDING

1. Connect either one of the "POWER SOURCES".
(See pages 4 and 5.)
2. Slide "EJECT" Button and insert the cassette so the transparent window is toward you and the arrow toward the Cassette Holder. Slide the Cassette into Cassette Holder as far as it will go.

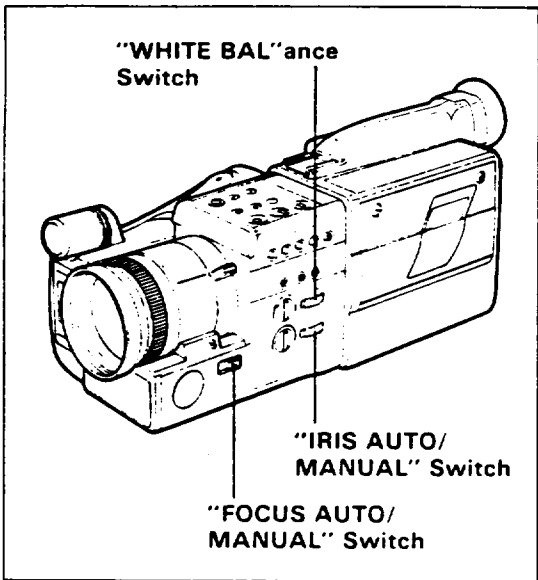
NOTE: If the power source is not connected, the Cassette Holder will not open.

3. Push and close the Cassette Holder.

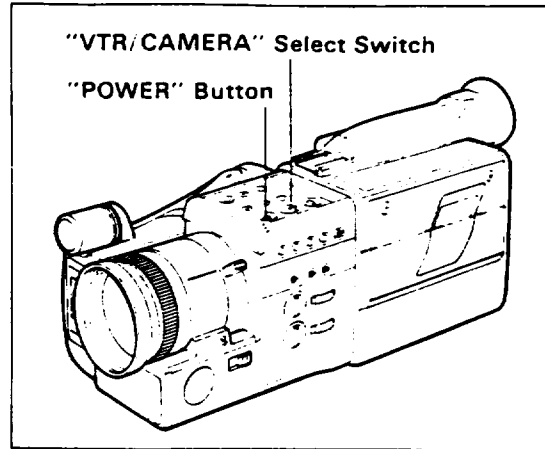


4. Set "WHITE BAL"ance switch to "AUTO" position.
5. Set "IRIS AUTO/MANUAL" Switch to "AUTO".
6. Set "FOCUS AUTO/MANUAL" Switch to "AUTO".

NOTE: See page 20 for "EYEPIECE ADJUSTMENT".



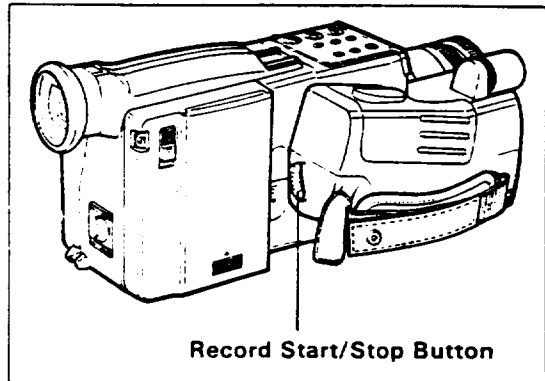
7. Set "VTR/CAMERA" Select Switch to "CAMERA" position.
Camera/Recorder will enter record/pause mode automatically.
8. Slide "POWER" Button to turn on power.



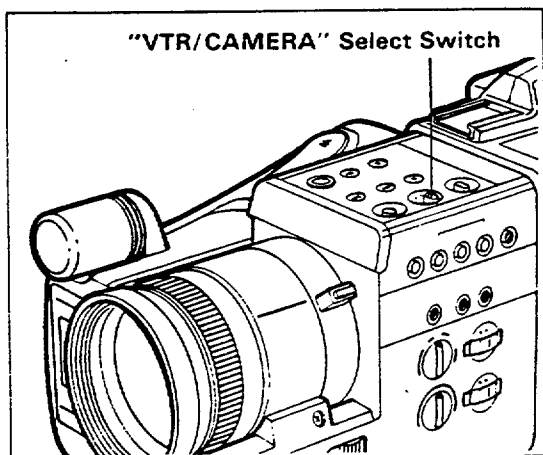
9. Now, press Record Start/Stop Button to start shooting the picture. You are now recording the picture you see through the Electronic Viewfinder. The Record/Battery Indicator in the Electronic Viewfinder will light.

NOTE: If the Camera/Recorder does not enter record mode, check the Tab on the bottom of cassette. See page 3 for detail.

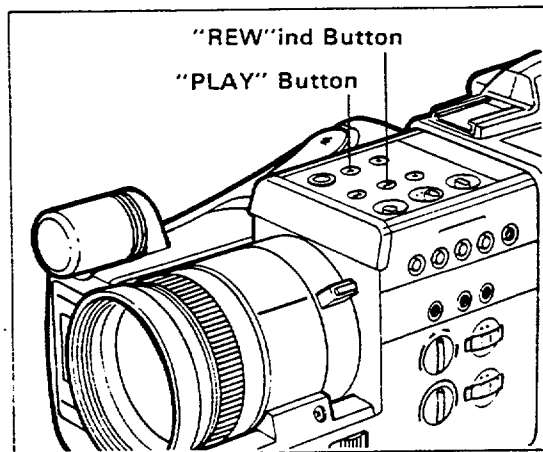
10. Press Record Start/Stop Button to stop recording. Press the Button again to resume recording. The Record/Battery Indicator in the Electronic Viewfinder goes off in the record/pause (stand-by) mode.



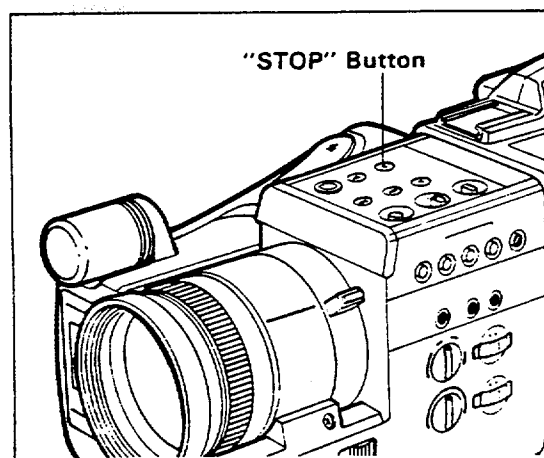
11. After recording, set "VTR/CAMERA" Select Switch to "VTR", and the Camera/Recorder will be now in the stop mode.



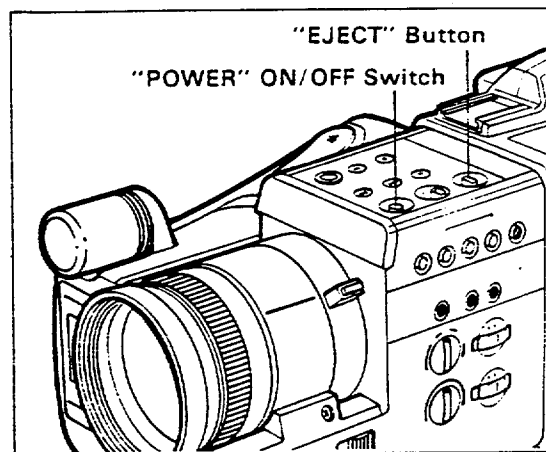
12. Press "REW"ind Button. The tape will be rewound to the beginning.
13. Press "PLAY" Button. The picture you just recorded will be seen through the Viewfinder and sound will be heard by earphone (Accessory No.9).
- NOTE:** If you connect the Video Camera/Recorder to your TV, you can see the picture played back on your TV. Refer to "CONNECTIONS AND OPERATIONS FOR VIEWING THE PICTURE PLAYED BACK ON YOUR TV" on pages 21 and 22.



14. After playing, press "STOP" Button.



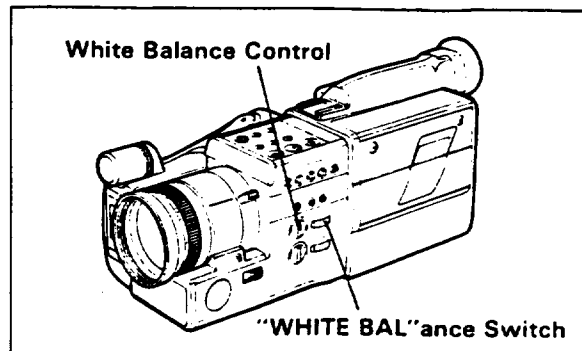
15. Slide "EJECT" Button to remove cassette and then set "POWER" ON/OFF Switch off.



16. Always remove the power source from the Video Camera/Recorder after use.

USING THE AUTO-WHITE BALANCE FEATURE

Your Video Camera/Recorder is equipped with a constant automatic white balance system which will continuously maintain proper color balance when the "WHITE BAL"ance Switch is in the "AUTO" position.



■ To manually adjust the white balance

This Video Camera/Recorder can adjust white balance automatically when the color temperature of light source is in the range of 2800°K — 7000°K. However, when the color temperature is more than 7000°K (snow scene, etc.) or less than 2800°K (in candle light, etc.), white balance cannot be adjusted automatically. In this case, set the "WHITE BAL"ance Switch to the "MANUAL" position and adjust the White Balance Control for the light condition.

Indications of white balance control	Applicable location	Conditions	Approx. color temperature
	Indoors	When using halogen or tungsten lighting.	2700°K } 3200°K
	Indoors	When using fluorescent lighting. Set to between and when using a mixture of halogen/tungsten and white fluorescent lights.	4500°K
	Outdoors	Fine weather.	5100°K
	Outdoors	In cloudy or rainy weather.	6000°K } 7000°K

Note: • These settings are only approximation.

- To adjust the color balance more correctly, adjust the White Balance Control for a natural picture while viewing the picture on a color monitor.

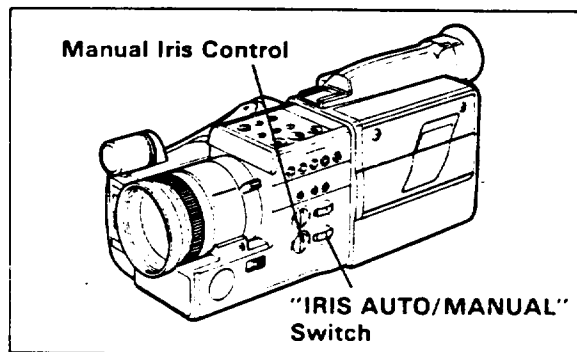
USING THE AUTO IRIS FEATURE

This Camera/Recorder is provided with an auto iris mechanism which automatically adjusts the lens aperture in accordance with the incident light when the "IRIS AUTO/MANUAL" Switch is placed in "AUTO" position. When the object is dark, the iris opens automatically, and it closes when the object is bright. When the power is switched off, the iris is automatically set to the fully closed position.

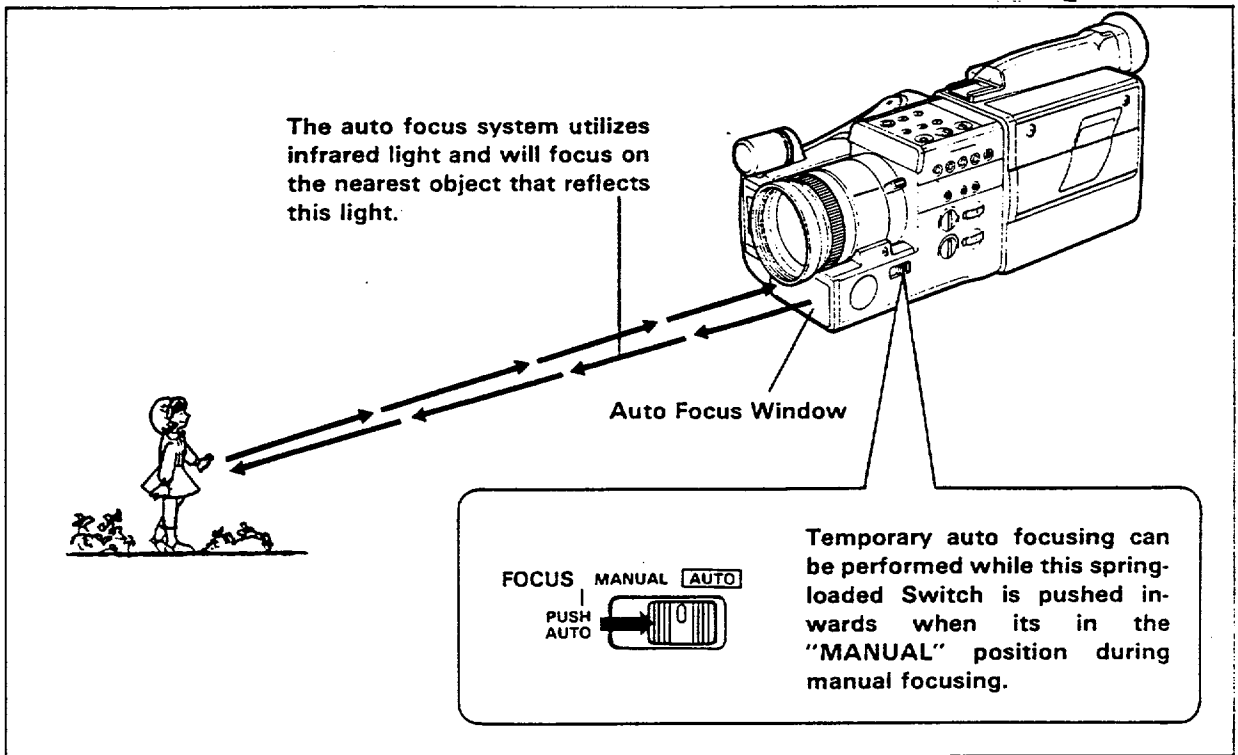
■ To manually adjust the iris

You can also adjust the iris manually.

- When the object is bright and the background is dark, set "IRIS AUTO/MANUAL" Switch to "MANUAL" and then rotate Manual Iris Control to the "CLOSE" position to reduce the iris opening.
- When the background is bright and the object appears to be too dark, set "IRIS AUTO/MANUAL" Switch to "MANUAL" and then rotate Manual Iris Control to the "OPEN" position to increase the iris opening.



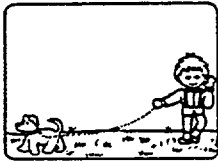
USING THE AUTO FOCUS FEATURE



With the "FOCUS AUTO/MANUAL" Switch set to "AUTO" position, the normal subjects are automatically in optimum focus.

■ DIFFICULT AUTO FOCUS

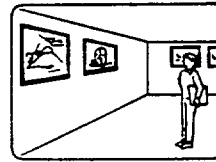
The distance between the Auto Focus Window and the subject is measured by infrared light, and the Focus Ring is automatically turned for focusing. However, with scenes like those shown below, the auto focusing may not operate properly. In these case, use the manual focus. See next page.



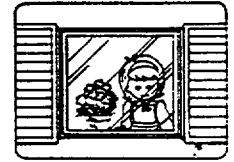
1. Subject is not in the center.



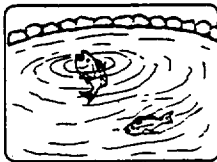
2. Subject in far and near positions at the same time.



3. Subject with continuous variation from far to near positions.



4. Subject behind glass.



5. Black subject or water which reflects infrared light poorly.



6. Subject always moving such as a crowd.

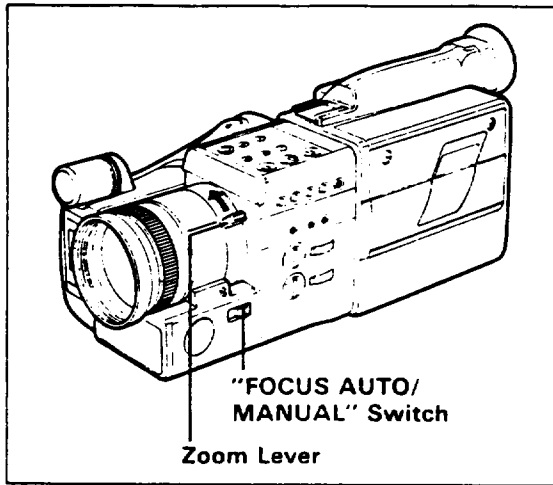


7. Subject in snow or fog.

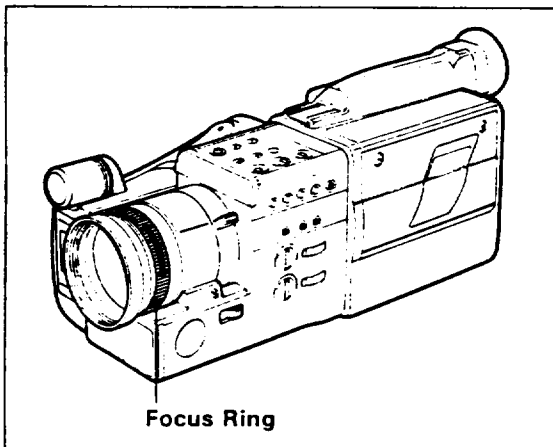
■ **MANUAL FOCUSING**

1. Set "FOCUS AUTO/MANUAL" Switch to "MANUAL" position.
2. Zoom up to the subject by turning the Zoom Lever.

NOTE: See page 18 for "USING THE POWER ZOOM FEATURE".



3. Focus on the subject by turning the Focus Ring.
- NOTE:** If focusing is performed without zooming up first, the picture may become out of focus when the zoom-up is done during actual picture taking.
4. Then, zoom back from the subject as desired.



Far Subject



Zoom Up



Focused



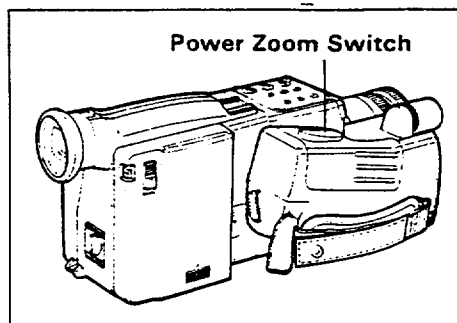
Zoom Back

USING THE POWER ZOOM FEATURE

- Press Power Zoom Switch on the "W" side, and the picture gradually widens.



- Press Power Zoom Switch on the "T" side, and the picture gradually becomes telescopic.

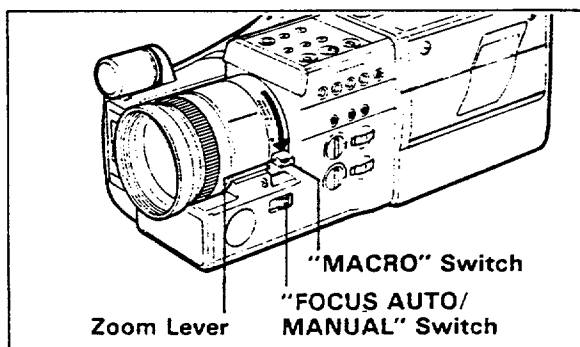


NOTE: Do not touch the Zoom Lever or Zoom Ring during power zooming.

USING THE MACRO FEATURE

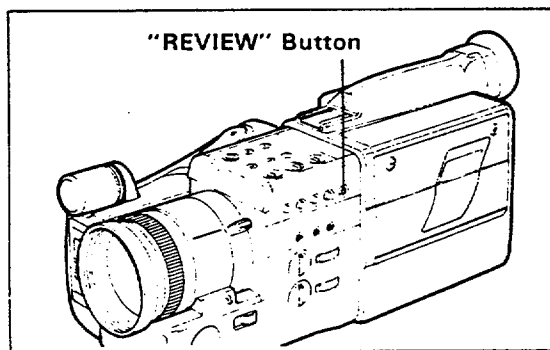
It permits you to shoot objects as close as 1 cm from the lens tip.

1. Set "FOCUS AUTO/MANUAL" Switch to "MANUAL" position.
2. Turn the Zoom Lever to "MACRO" while pressing "MACRO" Switch.
3. Turn the Zoom Ring within the "MACRO" range (green line on the Zoom Ring) for focusing.

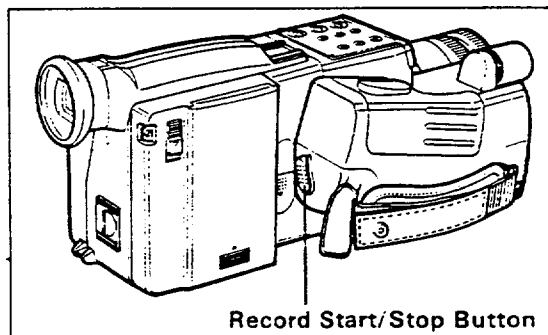


USING THE INSTANT REVIEW FEATURE

1. In record/pause (stand-by) mode, press "REVIEW" Button, and the recorded scene of the last few seconds is played back in the reverse direction and then played back in the forward direction.

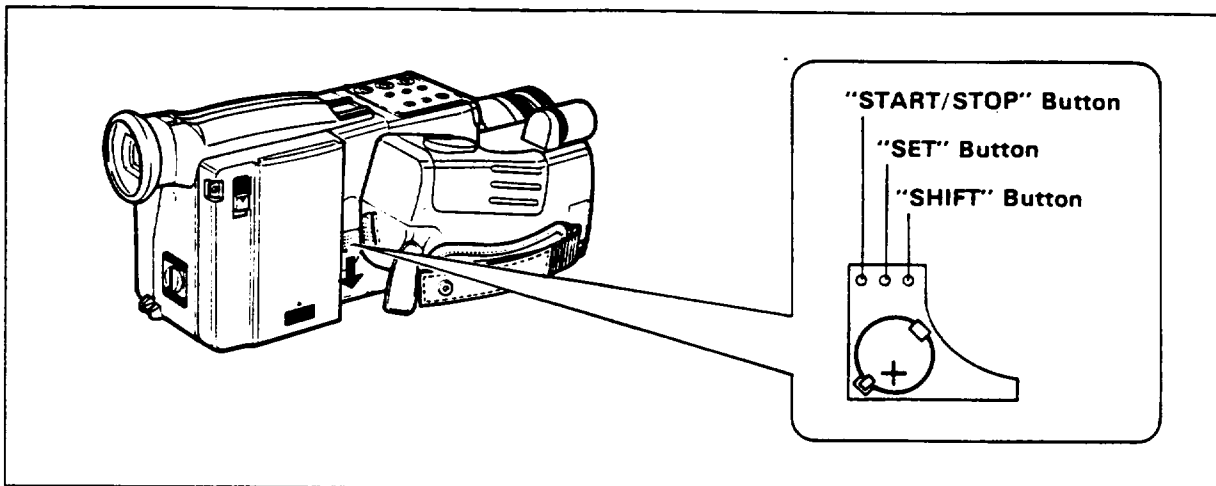


2. When the tape reaches the end of the scene you have just recorded, the Video Camera/Recorder returns to the record/pause (stand-by) mode. Recording starts again when the Record Start/Stop Button is pressed again.

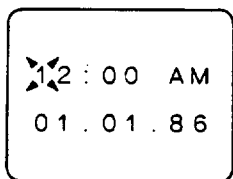


USING THE CALENDAR DISPLAY FEATURE

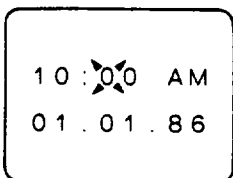
The calendar can be recorded on your tapes to act as a handy reference when viewing them at a later time. Use the following procedure to set up this display for the current date and time.



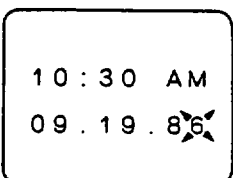
1. Load the Camera/Recorder's date/clock battery (Accessory No. 8) as described on page 3.
2. Turn on Power of Camera/Recorder.
The clock and date graphics appear in the Viewfinder and the first "1" flashes.



3. Press "SET" Button to select correct hour. When the correct hour appears, press "SHIFT" Button.



4. Repeat Step 3 to select minute, AM/PM, month, day and year.



5. Press "START/STOP" Button to activate the date/clock.
The clock graphics disappear and the date graphics remain.

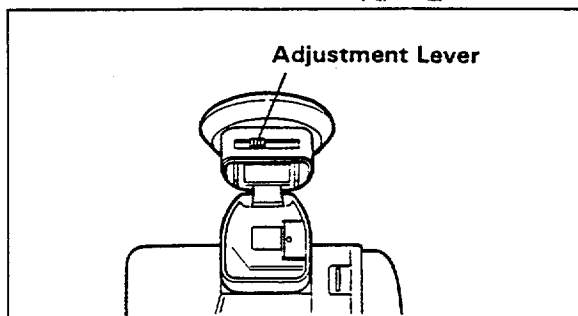
6. Press "DATE" Button on the side of Camera Recorder to remove the date display from the viewfinder. The date/clock will continue to keep the correct time in memory.

NOTE: To correct date/clock information during programming, press "START/STOP" Button twice and press "SHIFT" Button until the incorrect digit is flashing. Then use "SET" Button to enter the correct digit. If you wish to correct information after starting the date/clock, first press the "DATE" Button to display the date graphics, then press "START/STOP" and repeat Steps 3 through 6 at left.

The date graphics will be recorded whenever they appear in the viewfinder. To display date press "DATE". Pressing "DATE" again removes graphics.

EYEPIECE ADJUSTMENT

To use the electronic viewfinder without eyeglasses on, move the Lever for your optimum focus adjustment.



PRODUCING BEST COLOR PROGRAM

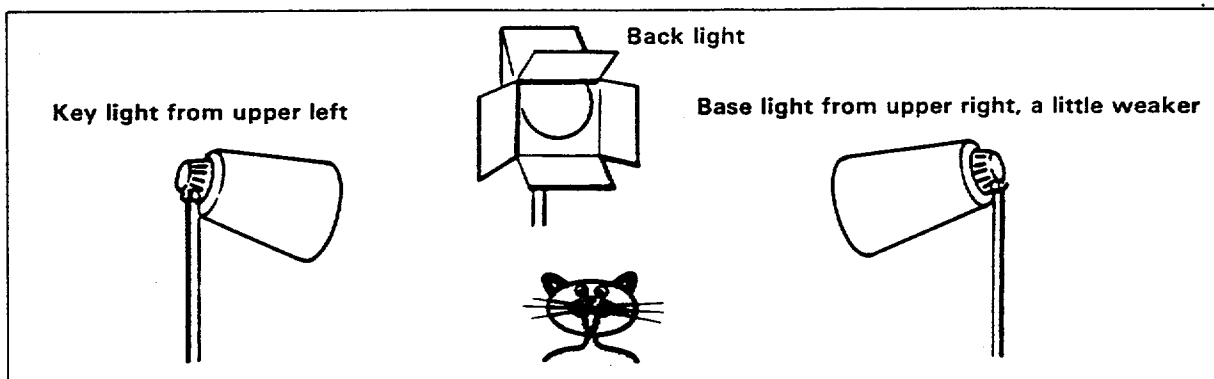
LIGHTING — Lighting should be uniform from the top —

Essential points on lighting people

1. A key light should be provided at the upper left in front of the person.
2. A weaker base light (spot) should be provided at the upper right and balanced with the key light. (Adjusting so that the left:right ratio is 2 : 1.5 by moving the lights backwards and forwards.)

3. Use one more light behind the subject. This emphasizes the person's head and shoulders and separates the subject from the background.

Caution: Do not place lighting equipment near the Video Camera/Recorder as heat from the lighting equipment can cause the Video Camera/Recorder to malfunction.



Approximate brightness value (for reference only)

Unit: lux

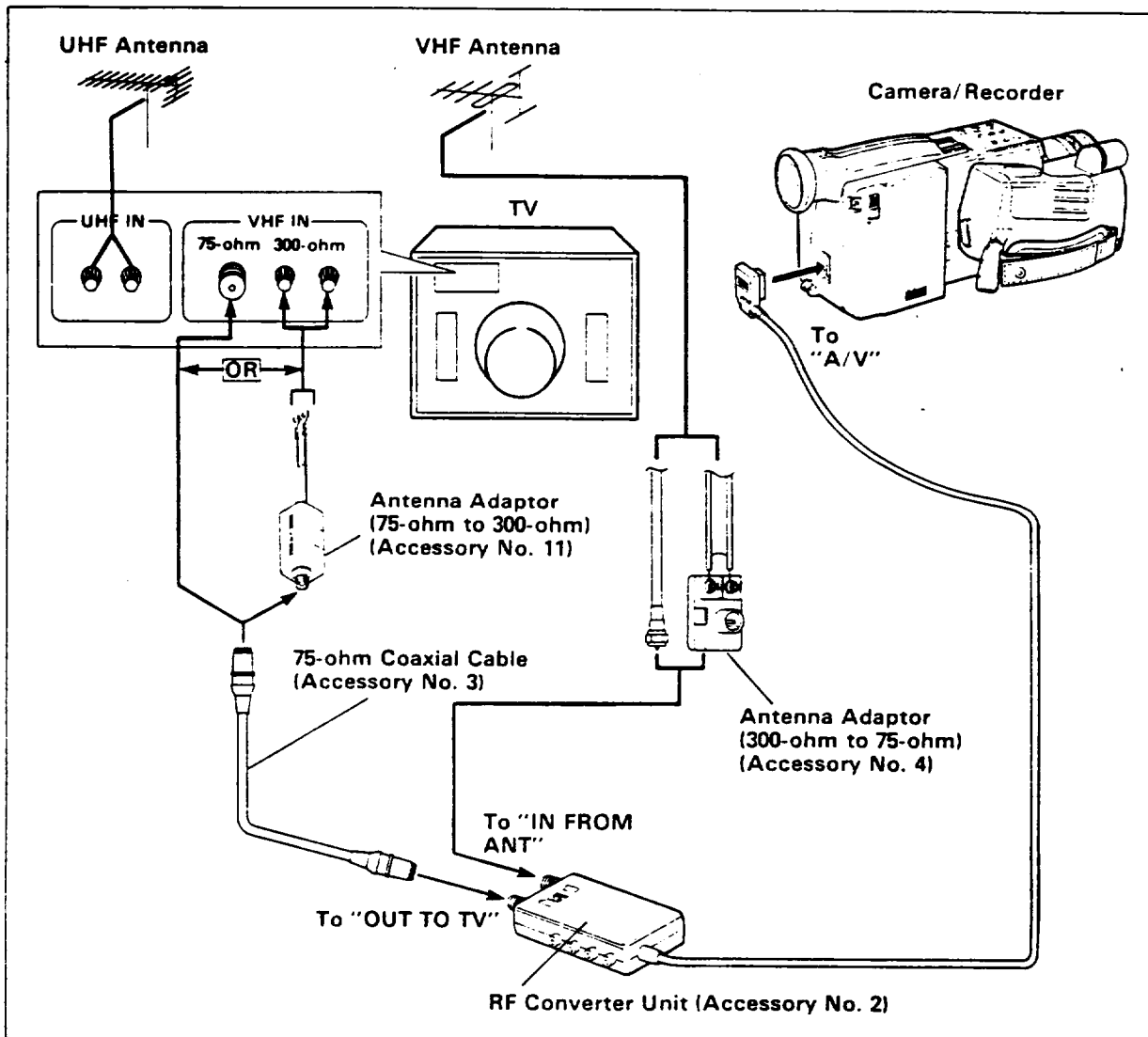
Illumination of 500 to 100,000 lux is required for clearest pictures, though the camera can shoot an object in illumination of 10 to 100,000 lux. Increase illumination when object illumination is less than 500 lux. Install an ND (Neutral Density) filter (52 mm dia. and 0.75 mm pitch) on the lens if an object's illumination exceeds 100,000 lux.

10	<ul style="list-style-type: none"> • Candle at 20 cm (10—15) • Cigarette lighter at 30 cm (15)
100	<ul style="list-style-type: none"> • During intermission at a movie theater (15—35) • Workshop in a machinery factory (150—200) • Arcade at night (150—200) • Flashlight at 1 meter (250) • Study desk with fluorescent lighting (400) • Office with fluorescent lighting (400—500) • Library reading room (400—500) • Bowling alley (500)
1,000	<ul style="list-style-type: none"> • Sales floor of a department store (500—700) • Clear day one hour before sunset (1,000) • Cloudy day one hour after sunrise (2,000)
10,000	<ul style="list-style-type: none"> • Cloudy day at 10 AM (25,000) • Cloudy day at noon (32,000) • Clear day at 3 PM (35,000) • Clear day at 10 AM (65,000)
100,000	<ul style="list-style-type: none"> • Clear day at noon (100,000)

CONNECTIONS AND OPERATIONS FOR VIEWING THE PICTURE PLAYED BACK ON YOUR TV

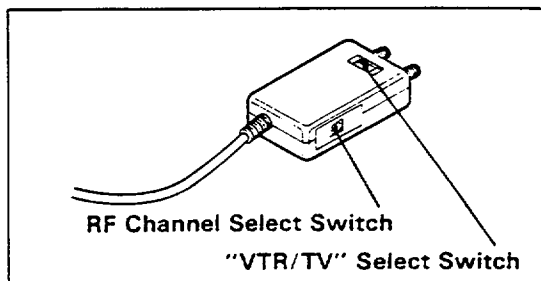
To play back a tape recorded on your Video Camera/Recorder and view it on your TV receiver, you must connect the Video Camera/Recorder to the TV receiver using RF Converter Unit (Accessory No. 2) or Audio/Video Output Cable (Optional).

Example 1: If your TV is a regular TV, use RF Converter Unit (Accessory No. 2)



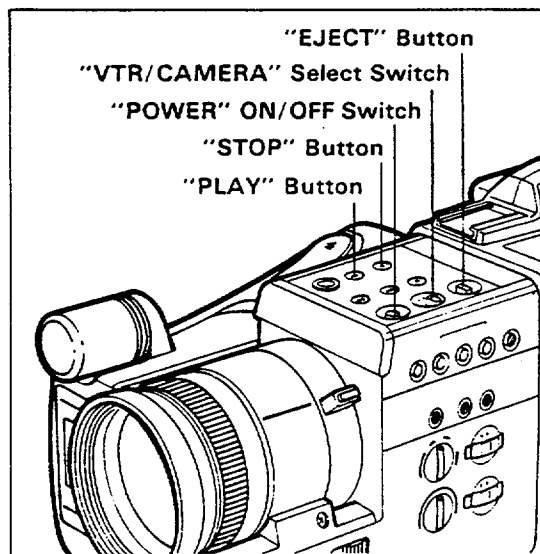
1. Disconnect the VHF antenna leads from the rear of the TV receiver.
NOTE: Leave the UHF antenna leads connected to the TV.
2. Connect the VHF antenna lead to "IN FROM ANT" on the RF Converter Unit. If the cable is round (75-ohm), it will connect directly to the "IN FROM ANT". If it is the flat type (300-ohm), connect it to the Antenna Adaptor (300-ohm to 75-ohm) and slip the Adaptor on to the "VHF IN FROM ANT" terminal.
3. Connect the 75-ohm Coaxial Cable to "OUT TO TV" on the RF Converter Unit.
4. Connect the other end to the VHF antenna terminal on the TV, as illustrated above.
If the VHF antenna terminal on the TV is the flat type (300-ohm), connect the end of coaxial cable to the Antenna Adaptor (75-ohm to 300-ohm, Accessory No. 11) and connect the Adaptor to the VHF antenna terminal on the TV.
5. Connect the Connector Cable from RF Converter Unit to "A/V" jack on the Video Camera Recorder.
6. Turn on the TV and set to Channel 3 unless Channel 3 is one of the TV stations used in your area. If Channel 3 is used in your area, set your TV to Channel 4.

7. Set the RF Channel Select Switch on the RF Converter Unit to "CH3" or "CH4" to match the channel selector on your TV. This is the Video Camera/Recorder channel on your TV set. Your TV receiver must be tuned to this channel any time a video cassette is played back on the Video Camera/Recorder.



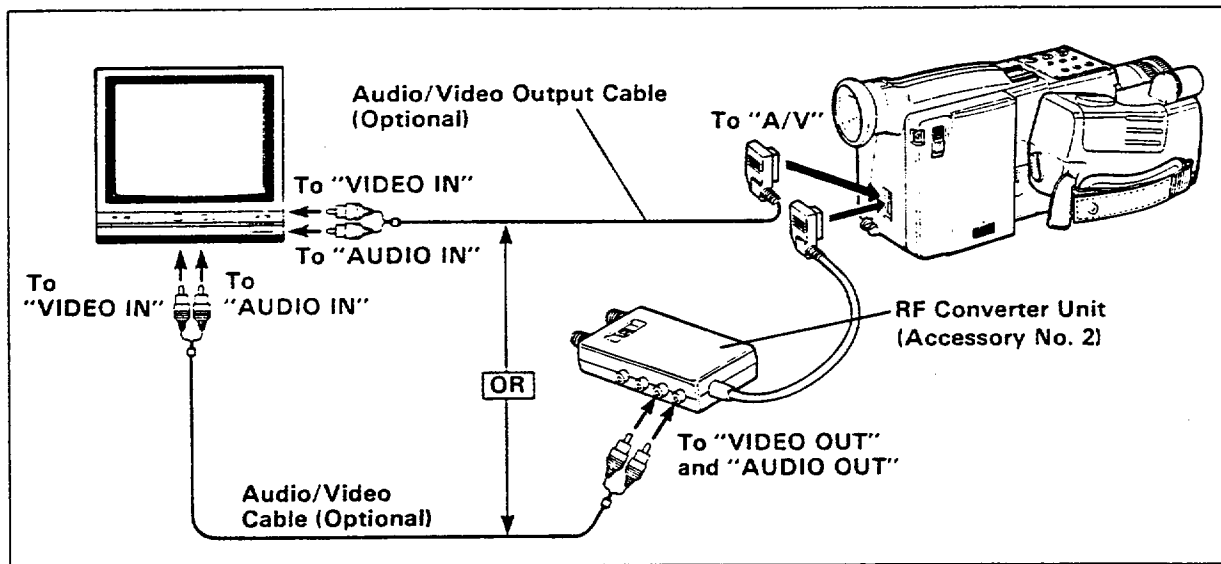
8. Set "VTR/TV" Select Switch on the RF Converter Unit to "VTR".
9. Slide "EJECT" Button on the Video Camera/Recorder and then insert the cassette.
10. Set "VTR/CAMERA" Select Switch to "VTR" position.

11. Set "POWER" ON/OFF Switch on.
12. Press "PLAY" Button.
13. After playing press "STOP" Button.



NOTE: If you want to watch a TV program with Video Camera/Recorder connected as illustrated in example 1 on page 21, set "VTR/TV" Select Switch on the RF Converter Unit to "TV" position.

Example 2: If your TV has "VIDEO IN" and "AUDIO IN" jacks, you may use either RF Converter Unit (Accessory No. 2) or Audio/Video Output Cable (Optional).



Using RF Converter unit

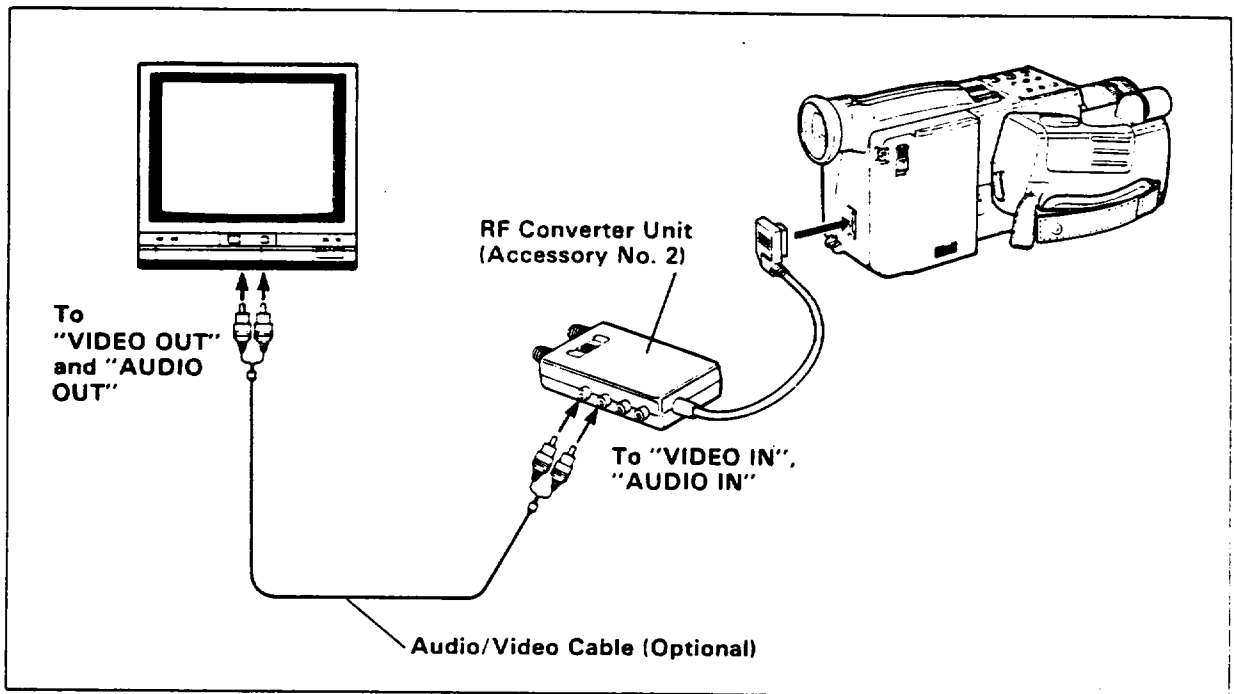
1. Connect "VIDEO OUT" and "AUDIO OUT" of RF Converter Unit to "VIDEO IN" and "AUDIO IN" of TV using the optional cables.
2. Connect the Connector Cable from RF Converter Unit to "A/V" jack on the Video Camera/Recorder.
3. Perform same procedures in Steps 9 through 13 of "Example 1" above.

Using Audio/Video Output Cable

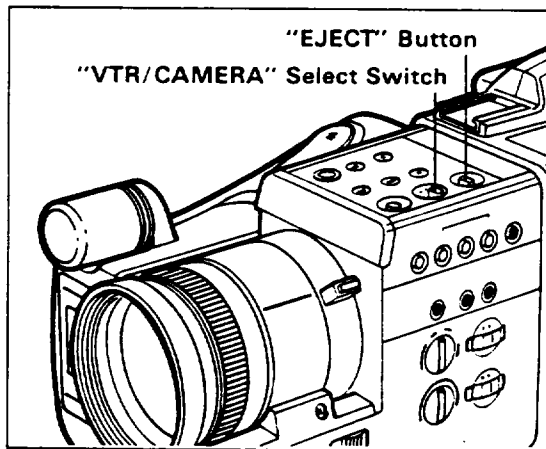
1. Connect the Audio/Video Output Cable (Optional) to "AUDIO IN" and "VIDEO IN" of your TV.
2. Connect the other end of the Audio/Video Output Cable to "A/V" of your Video Camera/Recorder.
3. Perform same procedures in Steps 9 through 13 of "Example 1" above.

CONNECTIONS AND OPERATIONS FOR RECORDING TV PROGRAM

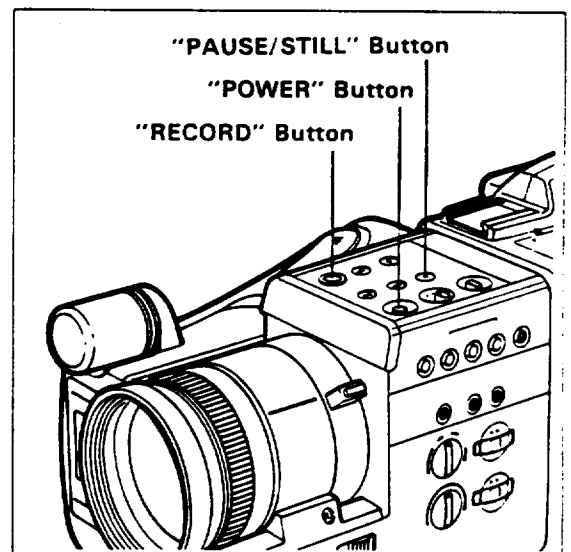
If your TV has audio/video out jacks, you can record the TV program with Camera/Recorder.



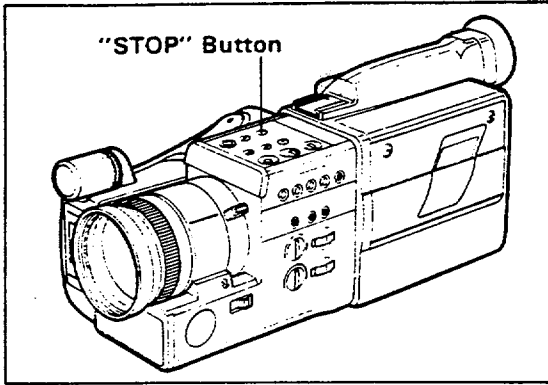
1. Connect the Connector Cable from RF Converter Unit to "A/V" jack on the Video Camera/Recorder.
2. Connect the Audio/Video Cable (Optional) to "AUDIO IN" and "VIDEO IN" of the RF Converter Unit. Connect the other ends to "AUDIO OUT" and "VIDEO OUT" of your TV respectively.
3. Slide "EJECT" Button and insert the cassette.
6. Press "RECORD" Button to start recording. You are now recording the program you see on your TV screen. To stop recording temporarily press "PAUSE/STILL". Press again to resume recording.



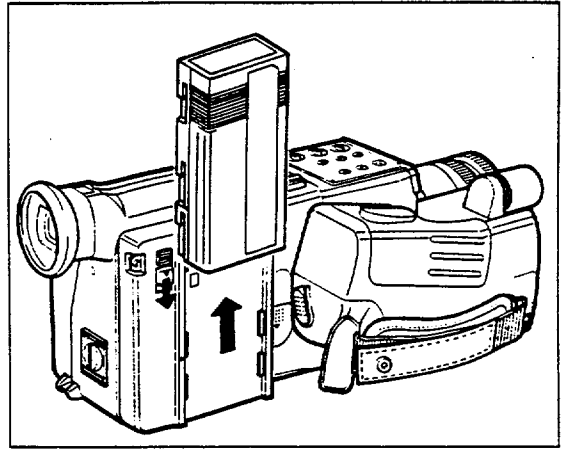
4. Set "VTR/CAMERA" Select Switch to "VTR".
5. Turn "POWER" Button on.



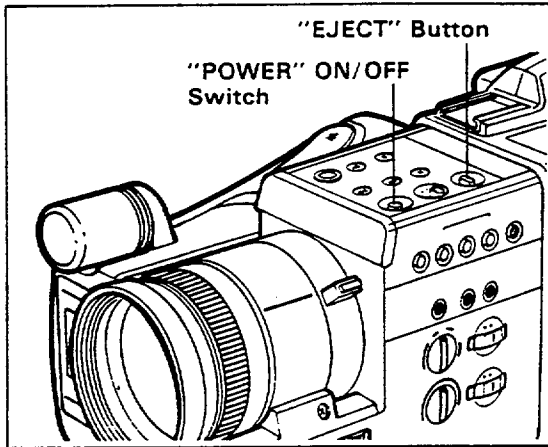
7. Press "STOP" Button to stop recording.



9. Remove the Power Source from the Video Camera/Recorder.



8. Slide "EJECT" Button to remove the cassette then set "POWER" ON/OFF Switch off.

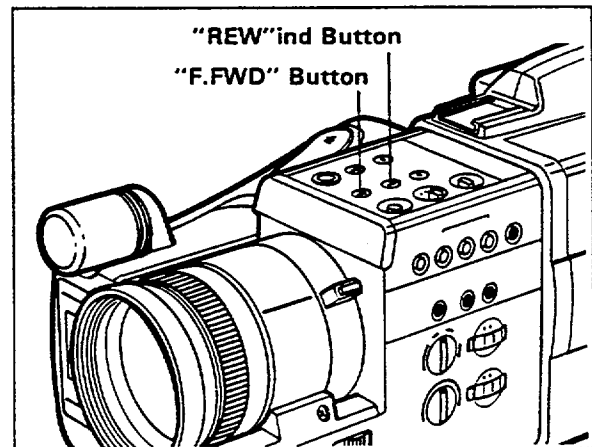


NOTE: Be sure to remove the Power Source after using the camera.

USING THE F-SEARCH AND R-SEARCH FEATURES

When you press "F.FWD" or "REW"ind Button during playback, the tape will be played back at a speed about 5 times faster than the normal playback speed, and you can easily locate a certain spot on the tape.

NOTE: There will be some noise (interference) in the F-search or R-search pictures. (It may be used on tapes recorded at LP, but the picture quality will not be as good as that at SP.)



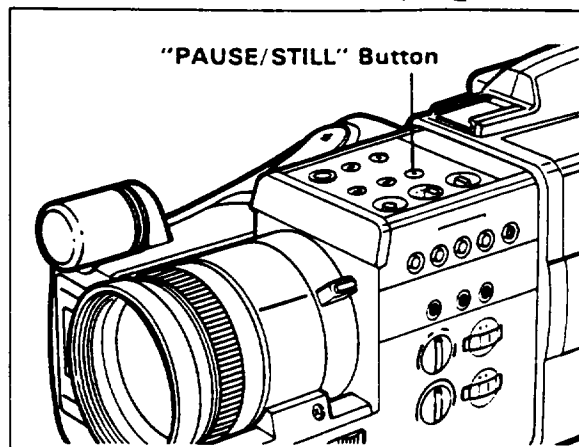
USING THE PAUSE FEATURE

When "PAUSE/STILL" Button is pressed during playback, "PAUSE/STILL" Light will come on and a still picture can be seen. To start again press "PAUSE/STILL" Button and "PAUSE/STILL" Light will go off and playback will be resumed.

NOTE: There will be some noise (interference) in the still picture. (It may be used on tapes recorded at LP, but the picture quality will not be as good as that at SP.)



Pressing "PAUSE/STILL" during recording from "A/V" jack of Camera/Recorder (for example, during recording TV program) stops recording temporarily. Pressing the Button again re-starts recording.

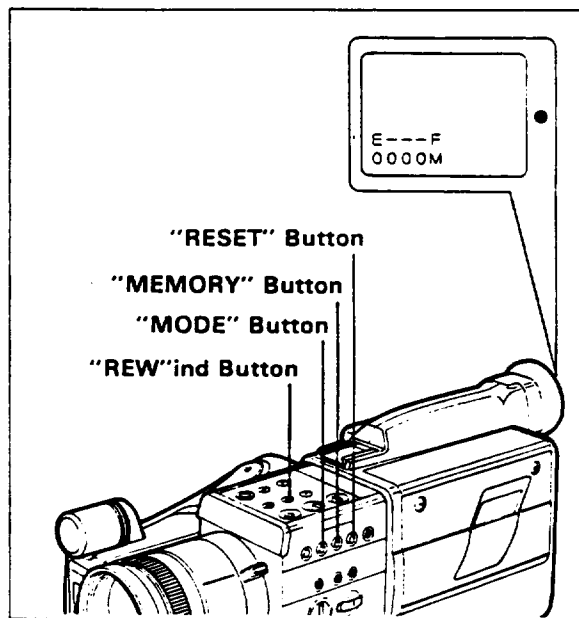


USING THE MEMORY FEATURE

Pressing "MODE" Button causes a 4-digit counter display to appear in the viewfinder (along with the battery level graphic). The tape counter acts as a handy reference to help you locate taped segments. Press "RESET" Button to set the counter to "0000" before starting to record or play. Note the number on the tape counter at the beginning and end of each program you want to record. This will allow you to use the counter to locate desired programs.

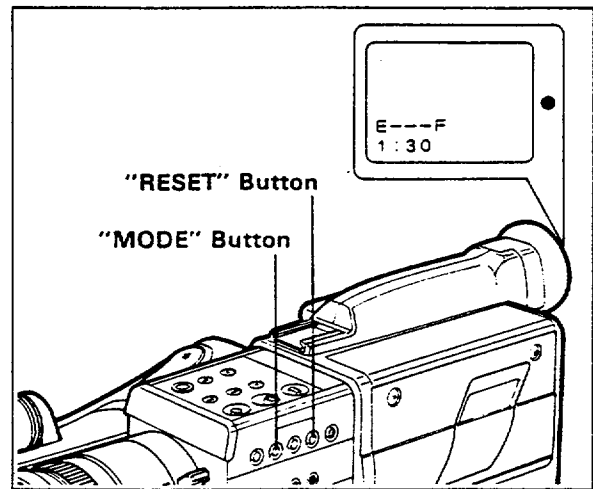
The tape counter also includes a switchable "memory" feature. When the memory is on, the tape automatically stops when the counter reads "0000" during Fast Forward and Rewind. This is useful if there is a section of tape you want to review immediately after recording, or if you want to return to the same point several times in a row.

To use the counter memory, reset the counter to "0000" when you reach the point on a tape you wish to index. Then press the "MEMORY" Button. The letter "M" will appear with the counter display. Continue to play or record the tape, and when you wish to return to the index point, simply press "REW"ind.



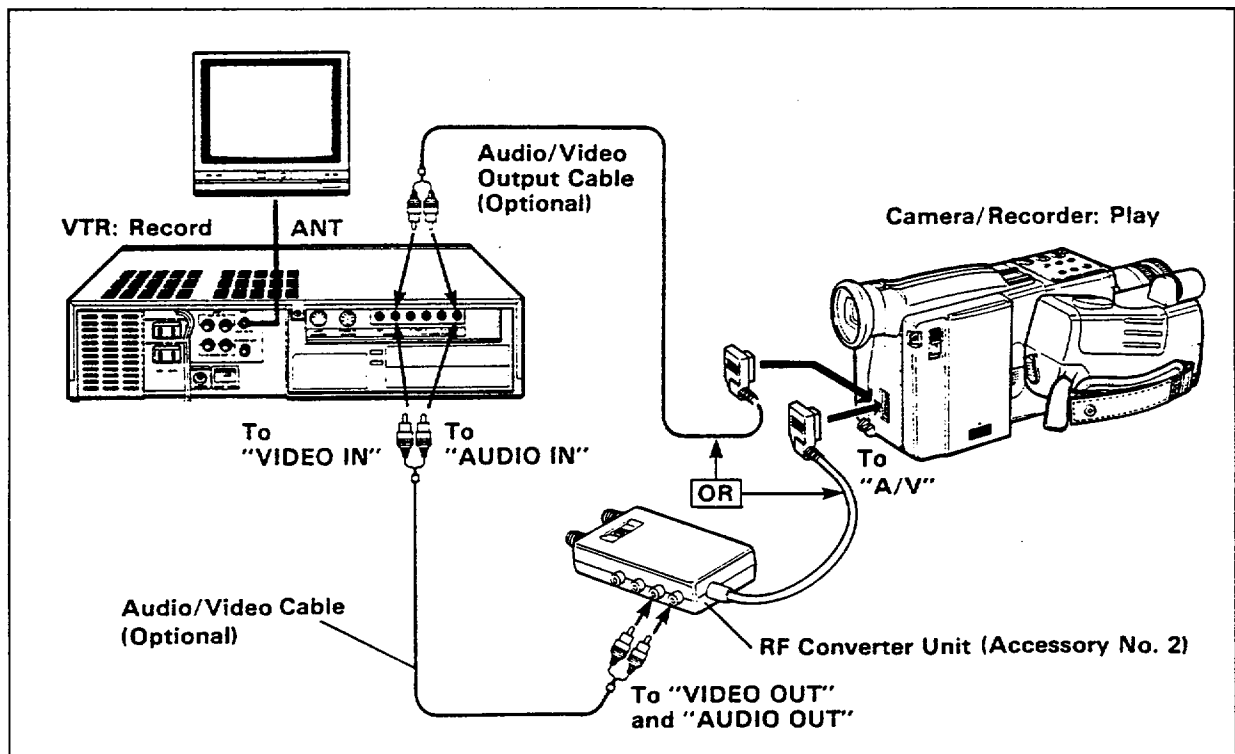
USING THE TIME REMAINING FEATURE

When the tape counter is present in the viewfinder, pressing "MODE" Button will change the display to a read-out showing the amount of recording time left on the tape. Pressing "MODE" Button again clears all graphics from the viewfinder.



TAPE DUBBING

If you wish to exchange or copy some of your friend's favorite home recordings, the following instructions can be used to connect one VTR to another for this purpose.



1. Connect the Audio/Video Connector Cable (Optional) to "VIDEO OUT" and "AUDIO OUT" on the RF Converter Unit.
2. Connect the other ends to "AUDIO IN", "VIDEO IN" on other VTR respectively.
3. Connect the Connector Cable from RF Converter to "A/V" on Camera/Recorder.

4. Play the tape on Camera/Recorder and record it on VTR.

NOTE: If you play a tape with a VTR and record it with your Camera/Recorder, Connect the "VIDEO IN"/"AUDIO IN" of RF Converter Unit to "VIDEO OUT"/"AUDIO OUT" of VTR.

TROUBLESHOOTING

Your Video Camera/Recorder is a highly sophisticated instrument. It has been carefully checked and adjusted at the factory under the most rigid quality control and inspection systems. However, should problems develop, check the following points and take necessary corrective measures.

INSERTING OR REMOVING THE CASSETTE

Symptom	Check Point & Correction
Cassette Holder cannot be opened when you slide "EJECT" Button.	<ul style="list-style-type: none"> • Connect the Power Source.
Cassette cannot be inserted into Cassette Compartment.	<ul style="list-style-type: none"> • Load cassette in direction indicated by arrow on cassette.
The camera/recorder does not function if any button is operated.	<ul style="list-style-type: none"> • Disconnect the power source from the camera/recorder, and re-connect it. Then operate the camera/recorder.

CAMERA RECORDING

Symptom	Check Point & Correction
Picture does not appear in the Viewfinder.	<ul style="list-style-type: none"> • Remove the Lens Cap.
	<ul style="list-style-type: none"> • Set "POWER" ON/OFF Switch on.
	<ul style="list-style-type: none"> • Set "VTR/CAMERA" Switch to "CAMERA" position.
The Camera/Recorder will not go into the recording mode, even when Record Start/ Stop Button is pressed.	<ul style="list-style-type: none"> • Check Safety Tab on the back of cassette. See page 3 for detail.
	<ul style="list-style-type: none"> • Set "VTR/CAMERA" Switch to "CAMERA" position.
	<ul style="list-style-type: none"> • The Indicator Lamp in the Electronic Viewfinder flashes to indicate Battery is discharged. Try another Battery or charge the Battery.

RECORDING TV PROGRAMS OFF THE AIR

Symptom	Check Point & Correction
The Camera/Recorder will not go into the recording mode, even when "RECORD" Button is pressed.	<ul style="list-style-type: none"> • Check Safety Tab on the back of cassette. See page 3 for detail.
	<ul style="list-style-type: none"> • Set "VTR/CAMERA" Switch to "VTR" position.
	<ul style="list-style-type: none"> • The Indicator Lamp in the Electronic Viewfinder flashes to indicate Battery is discharged. Try another Battery or charge the Battery.

PLAYBACK OF PRE-RECORDED CASSETTE

Symptom	Check Point & Correction
"PLAY" Button cannot be engaged.	* Set "VTR/CAMERA" Switch to "VTR" position.
No picture appears on television screen when "PLAY" Button is pressed. (TV is connected to the Camera/Recorder by using RF Converter Unit.)	* Set the television to the Camera/Recorder channel (3 or 4) depending upon the selected channel on the RF Channel Select Switch of RF Converter Unit.
Interference on playback picture.	* When you see the playback picture on your TV, adjust fine tuning knob on television set to obtain best picture.
Picture bends at the top of TV screen.	* Tape is damaged. Try another cassette.
Color of your TV screen is too bright, too faint or changes frequently.	* TV set has VIR circuit. Turn it off during playback.

DEW LIGHT

Symptom	Check Point & Correction
"DEW (POWER)" Light flashes.	* Condensation on the Camera/Recorder mechanism — wait until the Unit has reached normal room temperature, and condensation has dried. "DEW (POWER)" Light will then stop flashing.

HEAD CLEANING

- Picture playback may become blurred or be interrupted. This does not mean that the recorded program has been erased.
- Dirt accumulated on the head after long periods of use causes this problem. In this case, head cleaning requiring highly technical care is necessary.
- For head cleaning, consult the nearest dealer or VTR Service Center for recommendations.



PERIODIC MAINTENANCE

The Video Camera/Recorder is a precision electromechanical device which will require periodic maintenance after a period of normal use. We expect that no maintenance other than head cleaning will be required during the warranty period by most users, unless the Video Camera/Recorder is heavily used or seldom used. Normal maintenance is the responsibility of the user, although defective parts are covered during the warranty period. Consult your VTR Service Center to determine recommendations for normal maintenance based on your location, hours of use and age of Video Camera/Recorder.

SPECIFICATIONS

■ General

Power requirements	7.2V DC
Power consumption	6.5 watts (nominal)
Dimensions	4-15/16"(W) x 5-3/8"(H) x 12-1/16"(D) 126(W) x 136(H) x 306(D) mm
Weight	3.2 lbs (1.45 kg)

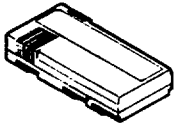
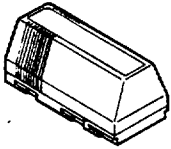
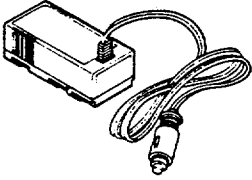
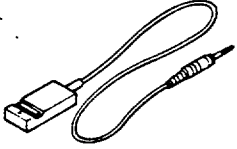
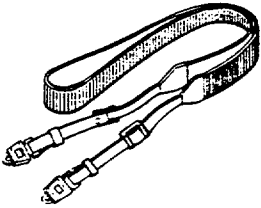
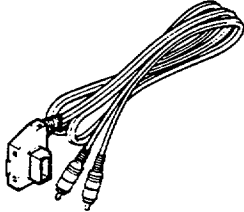
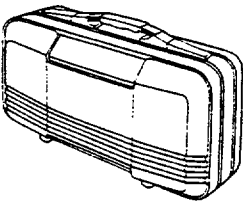
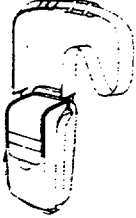
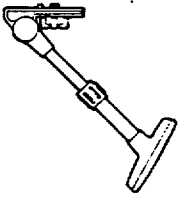
■ Video Recorder Section

Format	8 mm
Heads	Two video record/playback heads; one flying erase head
Video signal	EIA standard NTSC color
Tape speed	SP mode: 14.3 mm/sec.; LP mode: 7.2 mm/sec. (playback only)
Video input	1.0 V _{p-p} , 75 ohm
Video output	1.0 V _{p-p} , 75 ohm
Audio input	-7.8 dBs (316 m V _{rms}), more than 47K ohms
Audio output:	-7.8 dBs (316 m V _{rms}), less than 1.5K ohms
Fast forward/rewind time	Approx. 6 minutes with P6-120 cassette

■ Camera Section

Scanning	525 lines/60 fields/30 frames
Required minimum illumination	7 lux
Image Sensor	2/3" solid state MOS Imager
Lens diameter	52 mm

OPTIONAL ACCESSORIES

<p>Battery Pack (1 hour type) PV-BT810</p>	<p>Battery Pack (2 hour type) PV-BT820</p>	<p>Car Battery Adaptor PV-YC800A</p>	<p>Remote Pause Switch PV-RM800</p>
			
<p>Shoulder Strap PV-ZS800</p>	<p>Audio/Video Output Cable PV-YK800</p>	<p>Carrying Case PV-Z800</p>	<p>Soft Case PV-Z810</p>
			
<p>Camera Holder PC-Y800</p>			
			

PENTAX

PENTAX CORPORATION. 35 Inverness Drive East Englewood, CO 80112
Service information : (303) 799-8000

PENTAX CORPORATION. 1101 Stewart Ave. Garden City, NY 11530
Service information : (516) 222-0830

PENTAX CORPORATION. 350 East Devon Ave. Itasca, IL 60143
Service information : (312) 250-9000

PENTAX CORPORATION. 8363 Reseda Blvd. Northridge, CA 91324
Service information : (818) 701-5080