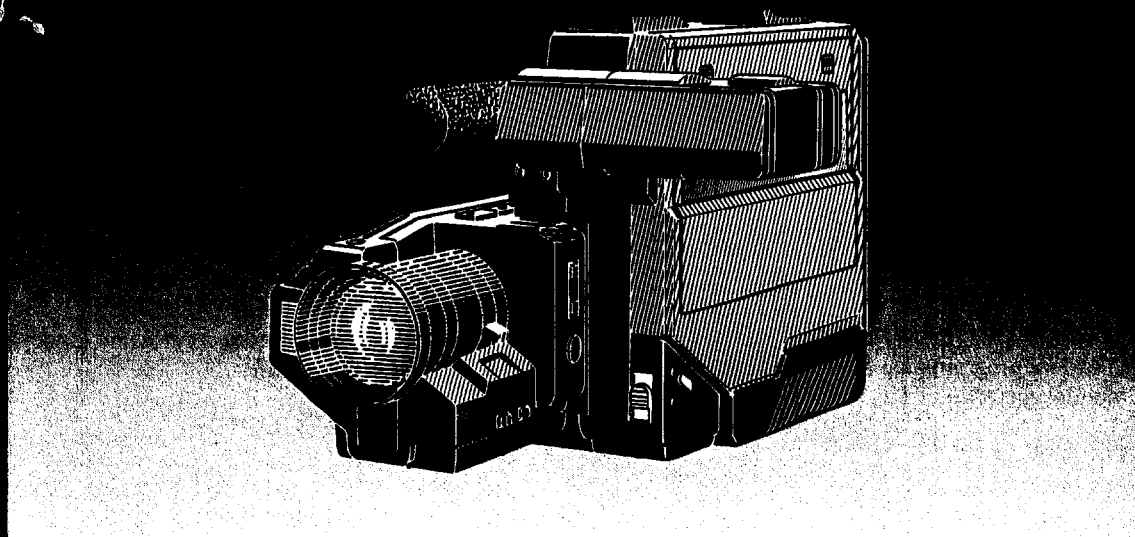


Operating Instructions

Bedienungsanleitung
Mode d'emploi



Panasonic

ENGLISH

DEUTSCH

FRANÇAIS

CONTROLS AND COMPONENTS

1 Electronic Viewfinder

This electronic viewfinder (EVF) is a small 1/2-inch black-and-white TV monitor that shows the actual picture being recorded or played back. (See pages 6 and 28.)

2 Earphone Socket (EAR)

(See page 33.)

3 Microphone Socket (MIC)

(See page 33.)

4 Built-in Microphone

(See page 33.)

5 Macro Button (MACRO)

This button is used for macro close-up shooting. (see page 32), to be able to move the Zoom Ring to the Macro position.

6 Focus Ring

Use this ring to adjust the lens focus. (See page 27.)

7 White Balance Sensor Window

The sensor in this window measures the colour of the light and adjusts the white balance.

8 White Cap

Use this cap when adjusting the white balance in the Auto mode.

9 Distance Measuring Window

In the Auto Focus mode, an infra-red beam is emitted through the lens and received by this window to measure the distance between a subject and the VHS Movie.

10 Lens Hood

This blocks out unwanted external light to the lens.

11 Manual Zoom Lever

Use this lever for manual zooming and macro close-up shooting. (See page 30.)

12 Focus Mode Selector (AUTO/MANUAL)

This selector is used for programming the VHS Movie for automatic or manual focusing.

13 Focus Adjusting Button (PUSH AUTO)

When the Focus Mode Selector is in the "MANUAL" position, this button can be pressed to obtain temporary automatic focusing for as long as this button is being pressed.

14 White Balance Mode Selector (FULL AUTO/AUTO)

This switch is used to select the desired white balance adjustment mode.

15 White Balance Set Button (SET)

When the White Balance Mode Selector is in the "AUTO" position, press this button to adjust the white balance. (See page 24.)

16 Iris Close/Open Adjustment Control (IRIS)

This control can be used for manually adjusting the lens iris opening to compensate for unusual lighting conditions. (See page 35.)

17 Operation On/Off Switch with Lamp (OPERATE)

This switch must be slide upward both for turning the VHS Movie on and off.

- The lamp lights up when the VHS Movie is turned on.

- When condensation has formed inside the VHS Movie, this lamp flashes for a few seconds and the VHS Movie will then automatically switch itself off. (See pages 9 and 37.)

18 Standby Button (STAND BY)

This switch is used during longer stops in shooting to save battery power. (See page 18.)

19 Eyepiece Corrector Control

This control can be used for correcting the eyepiece to your eyesight. (See page 28.)

20 Cassette Compartment

Press the cassette compartment cover to close it after inserting or removing a video cassette tape. (See page 10.)

21 Accessory Shoe

The Accessory Shoe is used for attaching a carrying handle. (See page 28.)

22 Eject Button (EJECT)

(See page 9.)

23 Battery Eject Button (BATT EJECT)

(See page 14.)

24 Metal Fitting for Shoulder Strap

Attach the shoulder strap (optional) to this fitting.

25 Battery Holder

It holds the battery pack. (See page 9.)

26 Remote Control Socket (REMOTE)

Connect the pause remote control unit (optional) to this socket. (See page 33.)

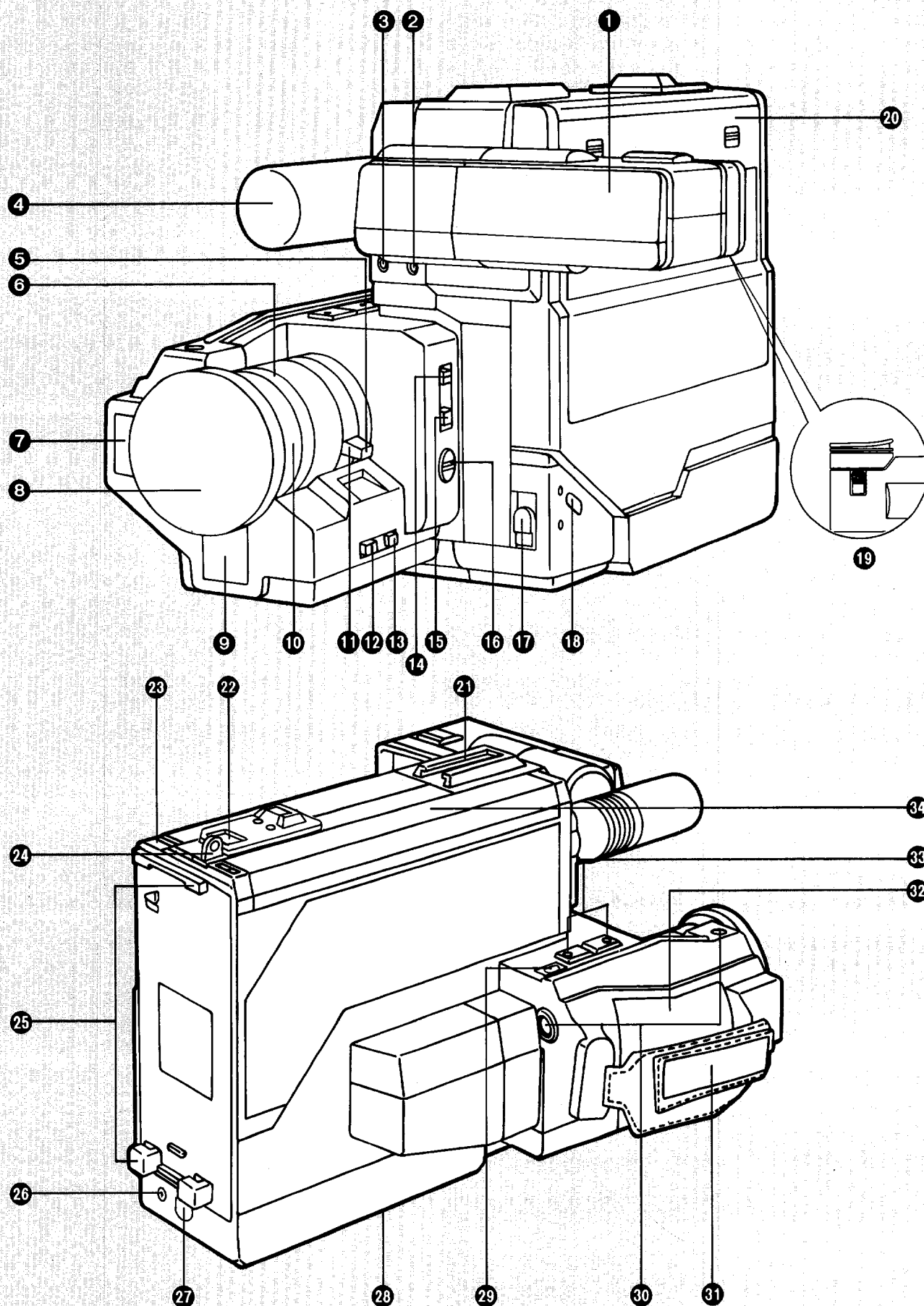
27 Adaptor Socket (ADAPTOR)

This socket is used to connect an AC adaptor (optional), line adaptor for TV broadcast recording (optional) (see page 17), or a car battery cord (optional). (See page 16.)

28 Tripod Receptacle

This receptacle is used for mounting the VHS Movie on a tripod. (See page 28.)

CONTROLS AND COMPONENTS **BEDIENUNGSELEMENTE UND ANZEIGEN** **COMMANDES ET COMPOSANTS**



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3, 4	CONTROLS AND COMPONENTS
7	FEATURES
8	VHS MOVIE SYSTEM (OPTIONAL)
9	CAMERA RECORDING
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16	PLAYBACK VIA A TV SET
17	RECORDING FROM A TV BROADCAST
18	OTHER CONVENIENT FUNCTIONS
22	POWER SUPPLIES
23	FOR OPTIMUM PROTECTION OF THE VHS MOVIE
24	TECHNIQUES FOR SHOOTING
32	MACRO CLOSE-UP SHOOTING
33	SOUND RECORDING
34	LIGHTING
36	DUBBING (COPYING)
37	CAUTIONS
40	BEFORE REQUESTING SERVICE
41	SPECIFICATIONS

IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

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

- This apparatus was produced to BS 800:1977.
- The rating plate is on the rear panel of the unit.

FOR YOUR SAFETY

■ DO NOT REMOVE OUTER COVER.

To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

29 Rec Review Button (REC REVIEW)

Press this button after shooting a scene for automatic playback of the last few seconds of the recording to confirm that the recording is satisfactory. (See page 11.)

30 Start/Stop Buttons

Press either of these two buttons once to start recording, and press it again to stop recording. (See page 11.)

31 Grip Belt

This belt can be adjusted to the size of your hand. (See page 11.)

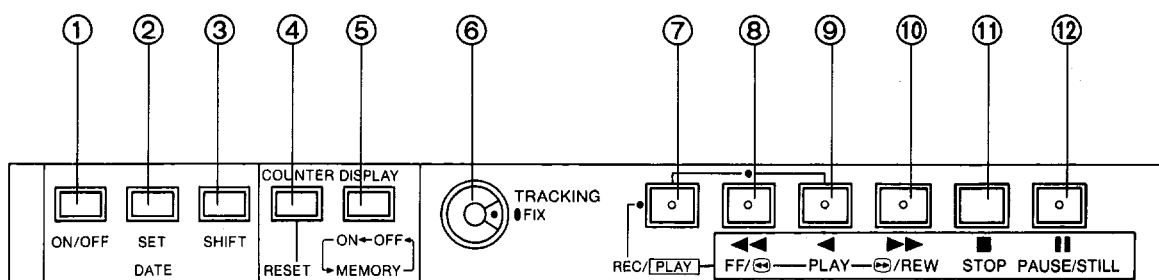
32 Handgrip

(See page 11.)

33 Power Zoom Control

- Press the "W" side of the Power Zoom Control to widen the picture angle.
- Press the "T" side of the Power Zoom Control to make the picture angle narrower (telephoto shot). (See page 30.)

34 Operating Controls



① Date On/Off Button (ON/OFF)
(See page 21.)

② Date Set Button (SET)
(See page 21.)

③ Date Cursor Shift Button (SHIFT)
(See page 21.)

④ Reset Button (RESET)
(See page 20.)

⑤ Memory Button (MEMORY)
(See page 20.)

⑥ Tracking Control (TRACKING)
(See page 13.)

⑦ Rec/Play Button (REC/PLAY)
(See page 15.)



⑧ Fast Forward ◀◀/Cue ◀◀ Button
(See page 13.)

⑨ Play Button (PLAY)
(See page 12.)

⑩ Rewind ▶▶/Review ▶▶ Button
(See page 13.)

⑪ Stop Button (STOP)
(See page 12.)

⑫ Pause/Still Button (PAUSE/STILL)
(See page 13.)

Remaining Battery Power Indication		Tape Counter Indication	
<p>The “” indications begin to disappear from right to left as the power of the battery pack weakens. When three “” marks have disappeared, the warning indication “BATTERY” will be displayed.</p> <p>●This indication will not be recorded.</p>		<p>The displayed number changes according to the tape movement.</p> <p>The tape counter operates even when the figures are not displayed in the EVF. The Tape Counter indication is memorized for at least 5 hours after the VHS Movie is turned off.</p> <p>●This indication will not be recorded.</p>	
<div><div><div>E ---- F</div></div><div>E=empty F=full</div></div>		<div><div>0000</div></div>	
Recording Indication Lamp		Date Indication	
<p>This lamp is lit during recording. Make sure that this lamp lights up when pressing the Start/Stop Button to start a recording.</p> <div><div></div><div><div></div><div>←</div></div></div>		<p>The date, month and year are displayed. It is possible to record this indication. (See page 21.)</p> <p>These indications are memorized for at least 5 hours after the VHS Movie is turned off.</p> <div><div>for example: 23. 5.86</div></div>	
Warning/Alarm Indications			
<p>The white balance needs to be adjusted. (See page 24.)</p> <div><div><div>—WHITE—</div></div></div>	<p>The light level is insufficient. Additional lighting is required or the recording should be made in a brighter place.</p> <div><div>LIGHT</div></div>	<p>It is impossible to record because the erasure prevention tab of the cassette is not intact.</p> <div><div><div>—TAPE—</div></div></div>	
<p>There is little battery power left. The VHS Movie will turn itself off in a few minutes. Replace the battery pack.</p> <p>Remaining Battery Power Indication</p> <div><div><div><div>E ↓ F</div><div>—BATTERY—</div></div></div></div>	<p>There is no battery power left. The VHS Movie will turn itself off in a few seconds.</p> <div><div><div>E F</div><div>—BATTERY—</div></div></div>	<p>When condensation has formed inside the VHS Movie, the “DEW” indication will flash and a few seconds later, the unit will turn itself off.</p> <div><div><div>—DEW—</div></div></div>	

•Some warning indications may blink alternately to warn you of each of the conditions they indicate.

FEATURES

The VHS Movie Uses Standard VHS Video Cassettes

The VHS Movie uses the same video cassette tapes as any VHS-system video recorder, thus assuring complete compatibility and allowing up to 4 hours recording on a single cassette (NV-E240).

VHS Movie Camera

The VHS Movie is a tremendously versatile video system for both camera recording and playback in a single unit.

Auto Focus Function

In the Auto Focus mode, an infra-red beam is emitted continuously through the lens of the VHS Movie, and the Auto Focus system determines the distance and immediately adjusts the lens focus based on the angle at which the beam is reflected back to the Distance Measuring Window. For special effects and special shooting conditions, focusing in the manual mode is also possible.

Recording of TV Programmes is Possible via a Line Adaptor (Optional)

By connecting a TV set equipped with separate video and audio output Sockets via the Line Adaptor (VW-KM3, optional) to the VHS Movie, you can record a programme that is being received (and watched) on the TV set.

Playback of Tapes

The VHS Movie offers not only camera recording but a range of different playback functions as well: normal playback, Cue & Review and Still. Playback is possible on the built-in viewfinder or on a connected TV monitor or a TV set.

Full Auto White Balance Adjustment Function

This function automatically and continuously adjusts the white balance according to the illumination of the scene that is being shot.

Compact, Lightweight and Superportable

Weighting only 2.8 kg (without battery pack), the VHS Movie is extremely lightweight and handy to use.

3-Way Power Supply

The VHS Movie can be operated on three different power sources: rechargeable battery pack, AC adaptor or car battery cord (all optional).

Operation Information Centre in the Electronic Viewfinder (EVF)

Easy-to-see indications in the viewfinder inform you of the camera operating conditions during shooting, so you don't have to remove the eye from the viewfinder. The indications include: Date, Memory, Tape Counter, Recording and various warnings.

Rec Review Function

After you finish shooting a scene and stopping in the pause mode, press the Rec Review Button. The tape will automatically rewind for a few seconds, and the end of the recorded scene will then be played back to let you confirm that the recording conditions are satisfactory.

6XPower Zoom Lens and Macro Function

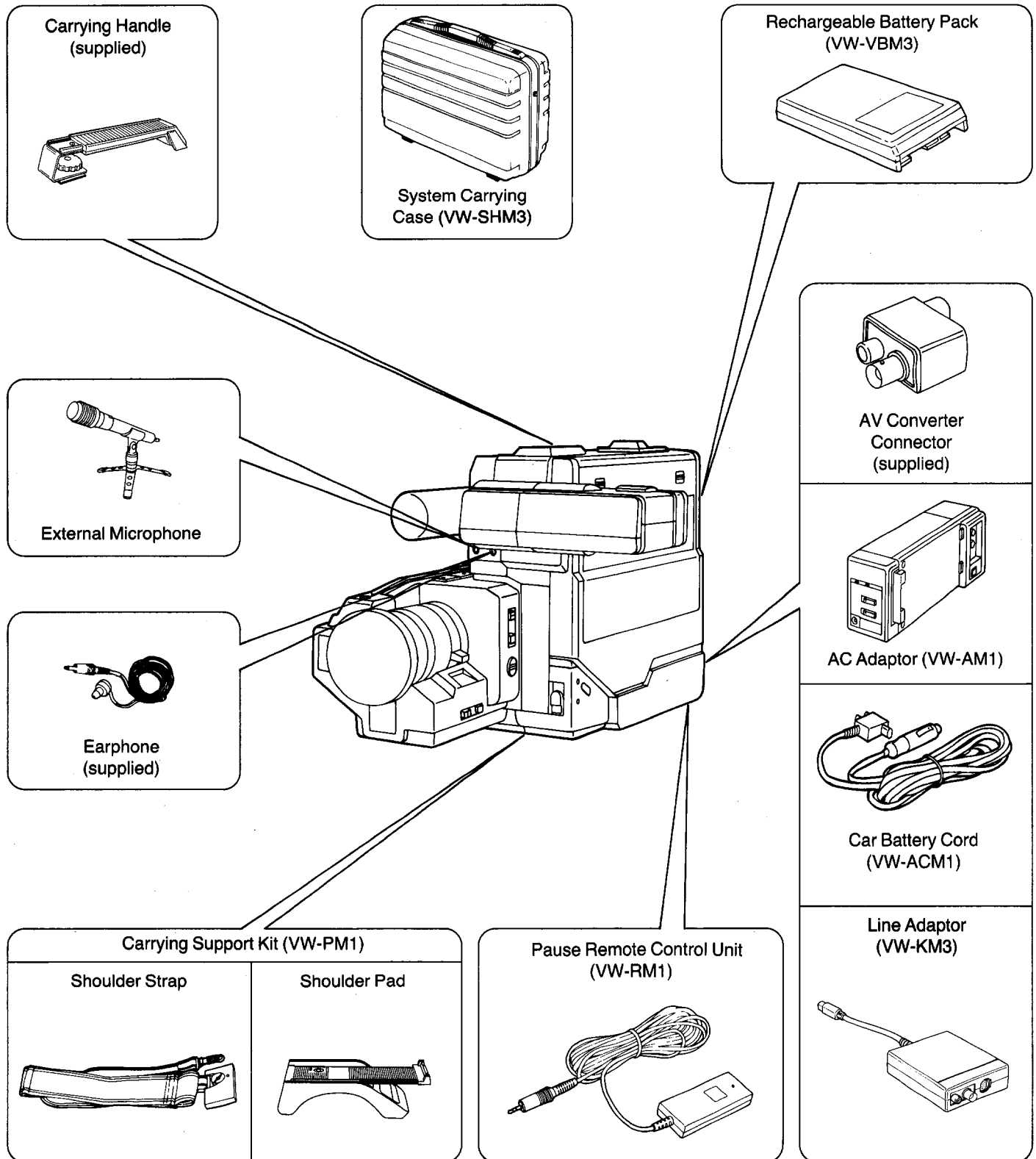
The power zoom lens allows smooth zoom-in and zoom-out shots and quick adjustment of the picture angle to anywhere from wide to telephoto.

Standby Function

Pushing the Standby Button during every stop in shooting lasting more than a few minutes saves power and makes your battery pack last longer.

VHS MOVIE SYSTEM (OPTIONAL)

CAUTION: TO PREVENT FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

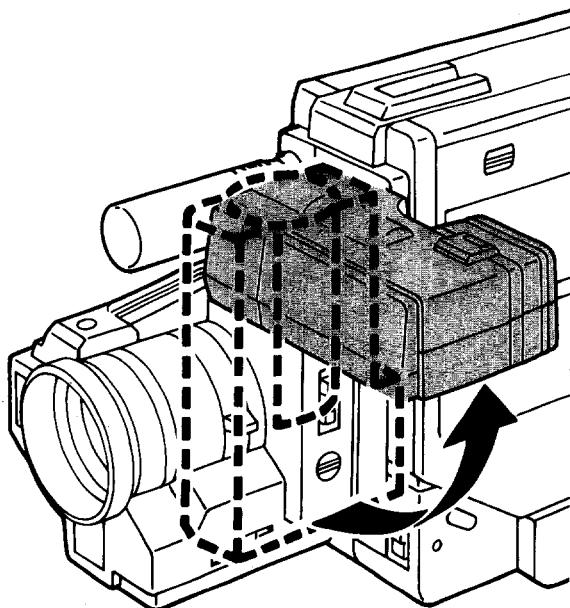


CAMERA RECORDING

ENGLISH

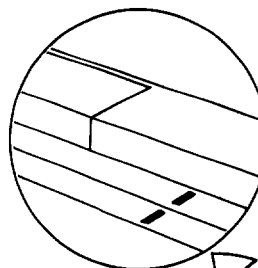
1

Swing the Electronic Viewfinder (EVF) up to the horizontal position.



2

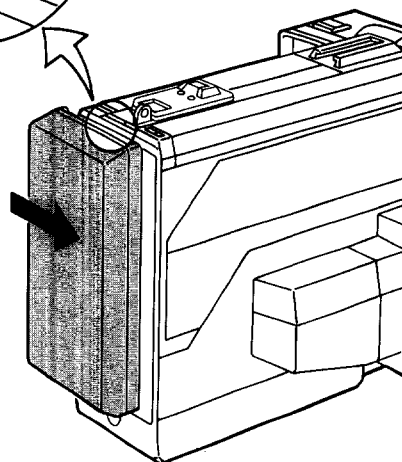
Attach a fully charged battery pack (optional).



① Align the two "I" marks.

② Move the battery pack to the right until it locks with a click.

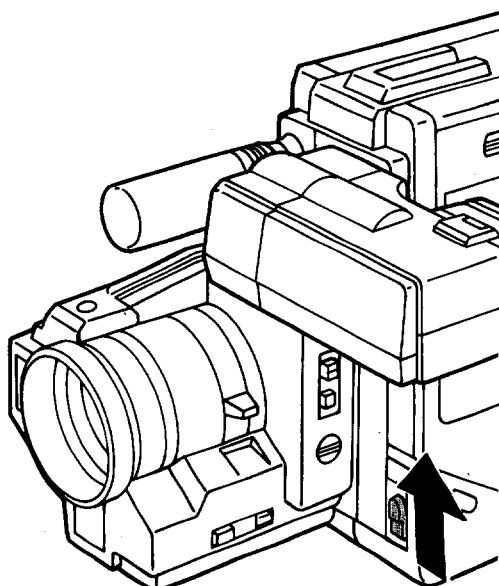
Caution:
Do not use force!



3

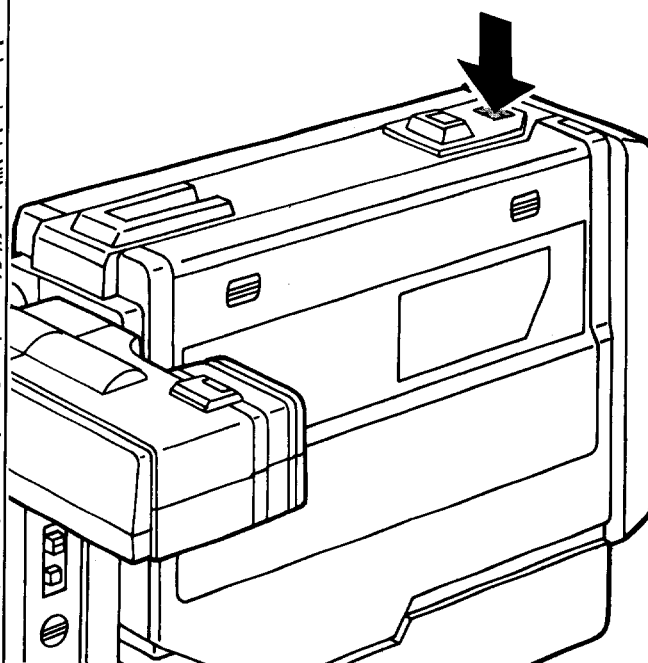
Slide the Operation On/Off Switch upward to turn the VHS Movie on.

- The corresponding lamp lights up.
- To turn the VHS Movie off, slide the Operation On/Off Switch upward again.



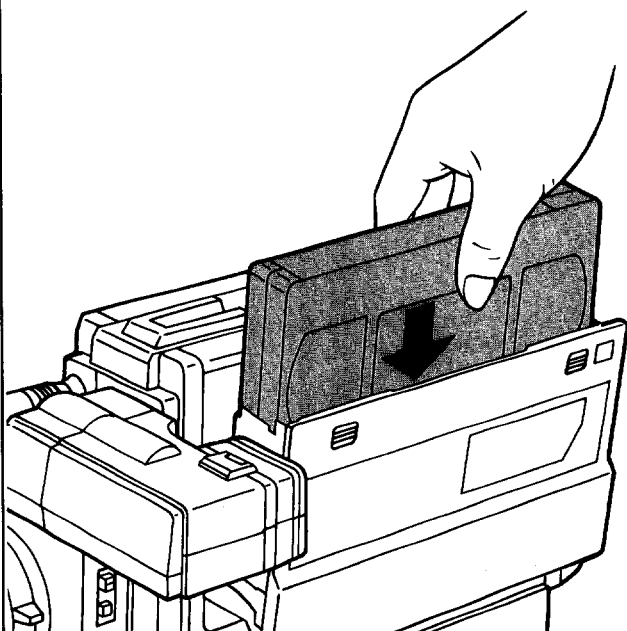
4

Press the Eject Button to open the cassette compartment.



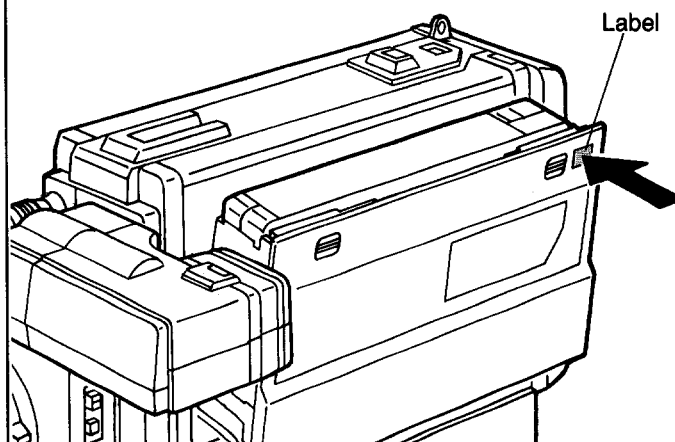
5

Insert a video cassette with the erasure prevention tab intact.
 ●The window side of the cassette should face outside and the arrow mark point downward.



6

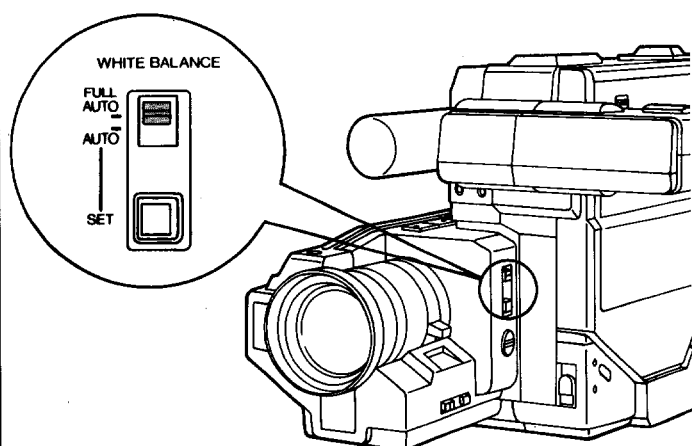
Press the cassette compartment cover until it locks with a click.
 ●A few seconds later, the VHS Movie will change over to the recording pause mode.



If the VHS Movie is left in the pause mode for more than 6 minutes, the VHS Movie will automatically switch over to the standby mode (viewfinder is off) to protect the tape and save battery power. To switch over to the recording pause mode (viewfinder is on) again, press the Standby Button.

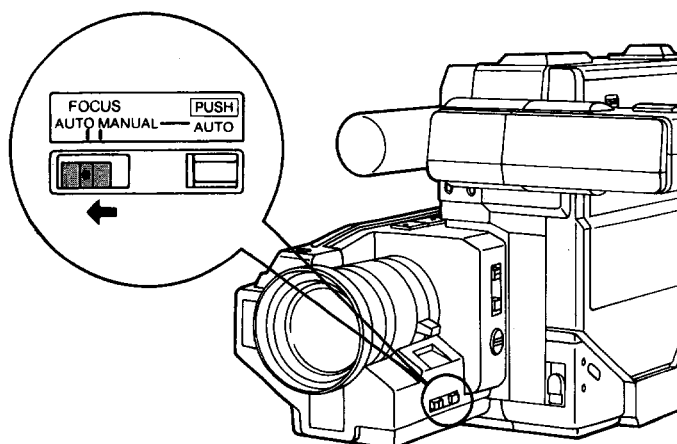
7

Set the White Balance Mode Selector to the "FULL AUTO" position.



8

Set the Focus Mode Selector to the "AUTO" position.

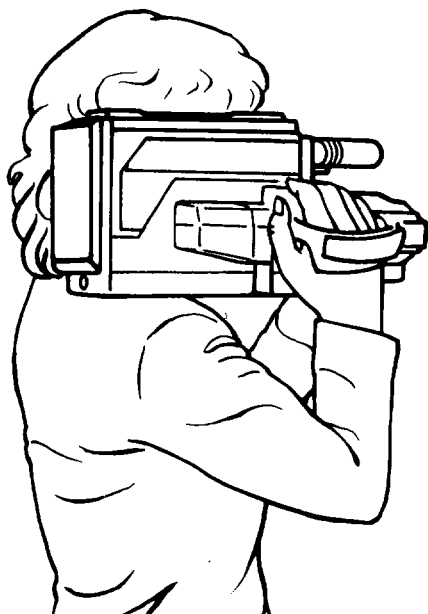


Under special lighting conditions as described on page 25, the Full Auto mode may not be able to provide correct white balance adjustment. To obtain exact white balance in such cases, adjust as described in "Adjusting the White Balance in the AUTO Mode" on page 24.

The Auto Focus system will not be able to provide exact focus adjustment under some shooting conditions as described on page 26. In such cases, adjust the focus in the Manual Mode as described in "Focusing in the MANUAL Mode" on page 27.

9

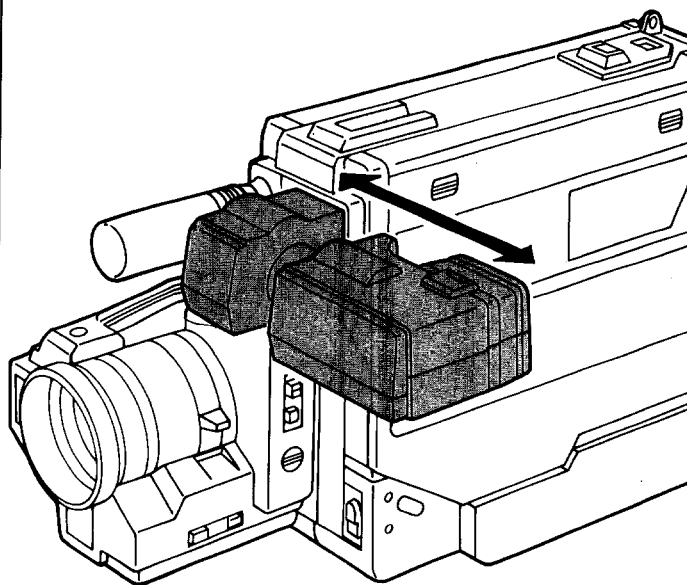
Place the VHS Movie on the shoulder to get ready for shooting.



- Grasp the Handgrip and adjust the length of the Grip-Belt (Velcro tape closure) to the size of your hand.

10

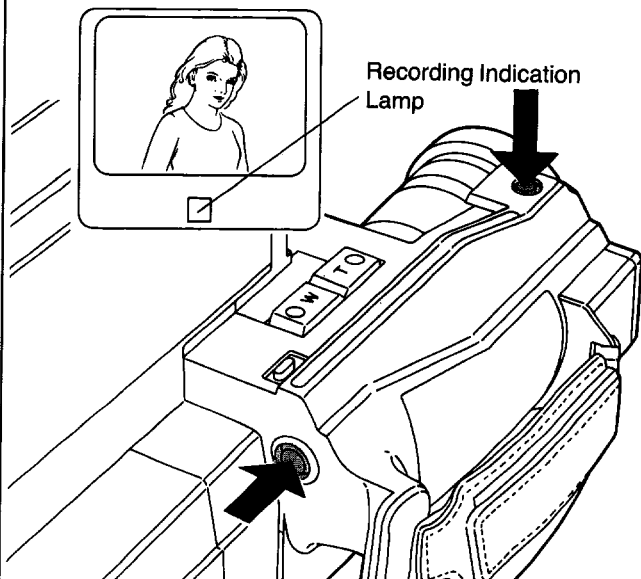
Pull the EVF outward and adjust for most comfortable viewing.



11

Press the Start/Stop Button.

- The Recording Indication Lamp in the EVF lights up and the recording starts.
- When the Start/Stop Button is pressed again, the lamp goes out, the recording is stopped and the VHS Movie is in the recording pause mode.

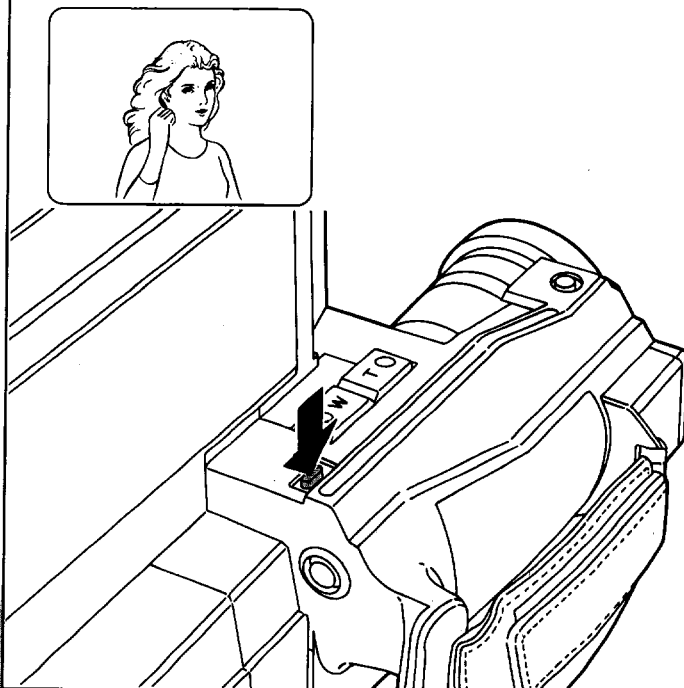


- When the tape reaches its end during recording, the VHS Movie will automatically switch over to the stop mode.

To Check a Recording

Press the Rec Review Button while the VHS Movie is in the recording pause mode.

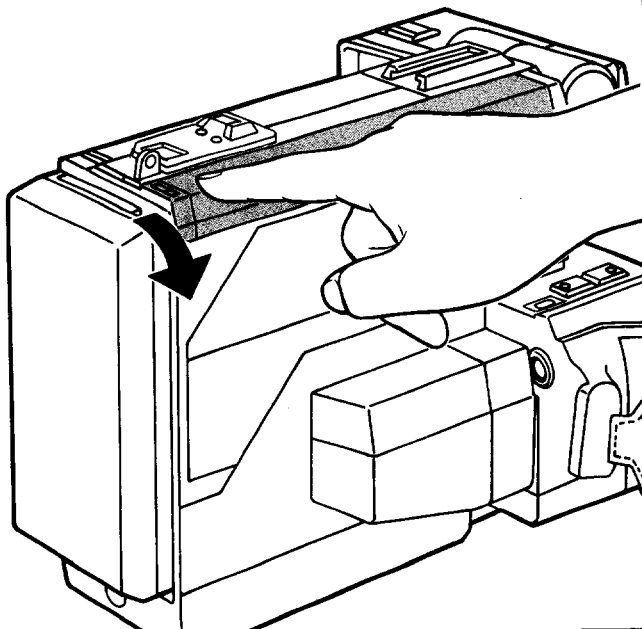
- The last 2 seconds of the recorded scene are played back and the VHS Movie will again stop in the recording pause mode.



PLAYBACK VIA THE EVF

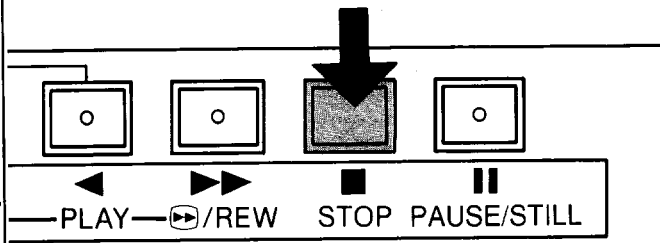
1

Open the cover of the operating control compartment on top of the VHS Movie.



2

Press the Stop Button.

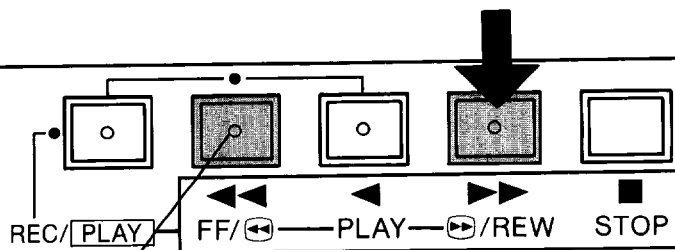


- When the VHS Movie is in the stop mode during use with the AC adaptor (optional) as power source, it will remain on as long as the AC adaptor is on.
- When the VHS Movie is in the stop mode for more than 6 minutes when the rechargeable battery pack or the car battery cord (both optional) is used as power source, it will automatically switch over to the standby mode to save battery power.

3

Press the Rewind/Review Button to rewind the tape.

- The tape will stop automatically at the beginning of the tape.



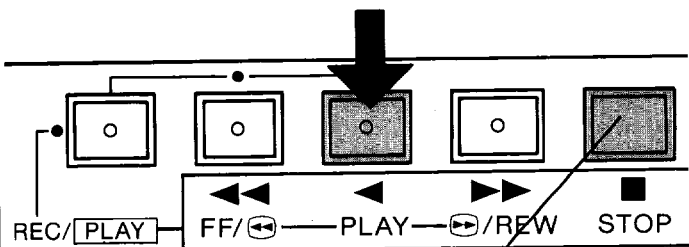
To wind the tape forward rapidly, press the Fast Forward/Cue button.

- The tape will rewind automatically when it reaches its end.

4

Press the Play Button.

- The playback starts.
- The tape will rewind automatically when it reaches its end.



To stop the playback, press the Stop Button.

Special Playback Functions

Cue Playback

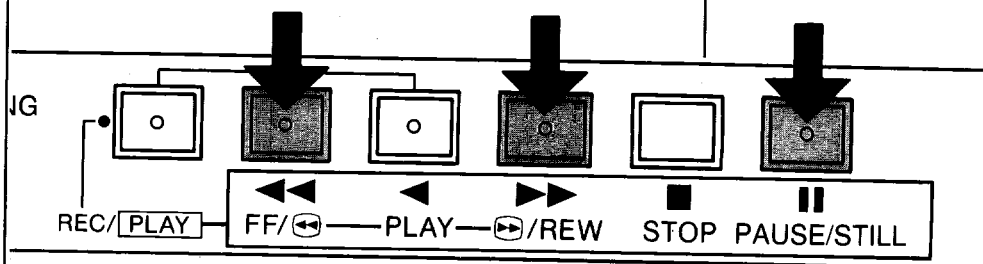
When the Fast Forward/Cue Button is kept pressed while the VHS Movie is in the playback mode, the tape will be played back in forward direction at about 3 times normal playback speed.

Review Playback

When the Rewind/Review Button is kept pressed while the VHS Movie is in the playback mode, the tape will be played back in reverse direction at about 3 times normal playback speed.

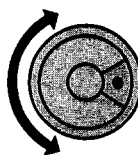
Pause/Still Playback

When the VHS Movie is in the playback mode, press the Pause/Still Button to view a still picture. To continue the normal playback, press this button again.



Tracking Adjustment Control

- It is possible to watch the picture in the Electronic Viewfinder (EVF).
- It is also possible to listen to the sound by using the earphone (supplied).



TRACKING
● FIX



- When the playback picture contains distortions as shown in the picture above, they can be eliminated by turning this control.
- When playing back a tape recorded on another video recorder, it may not be possible to completely eliminate these distortions.

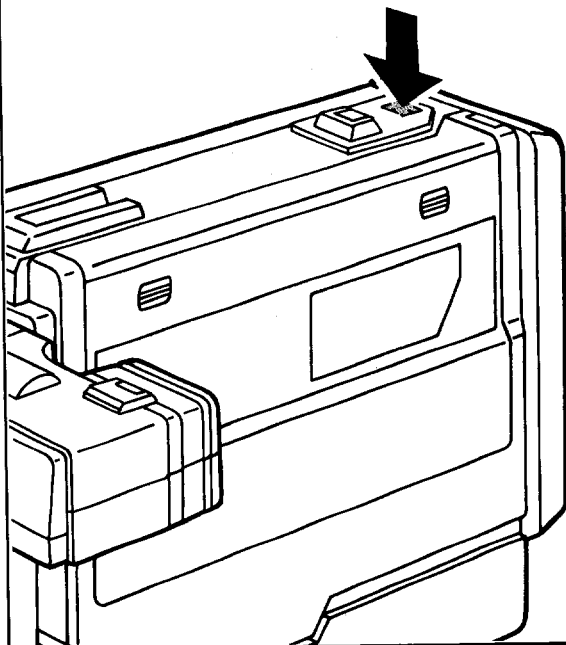
A tape recorded on a VTR in the LP mode cannot be played back on the VHS Movie.

After Finishing Playback

1

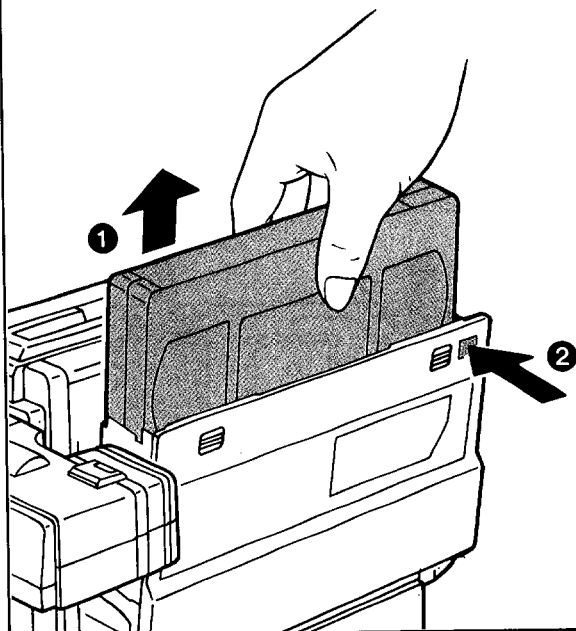
Press the Eject Button.

- The Cassette Compartment Cover will open in about 10 seconds after the tape has been retracted into the cassette.



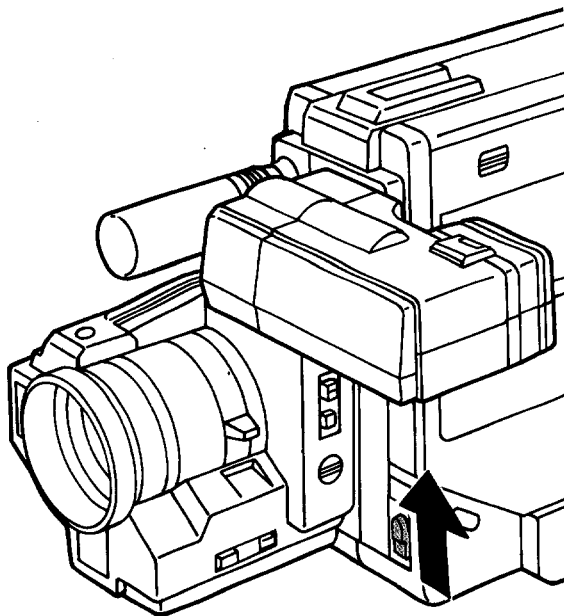
2

Take out the video cassette and press the cassette compartment cover to close it.



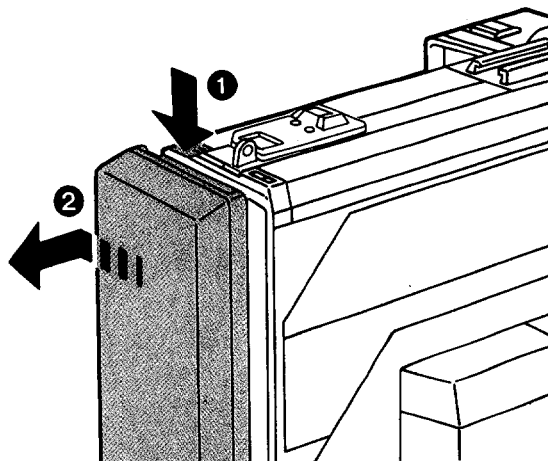
3

Slide the Operation On/Off Switch upward to turn the VHS Movie off.



How to Remove the Battery Pack

Keep the Battery Eject Button pressed and move the battery pack to the left.



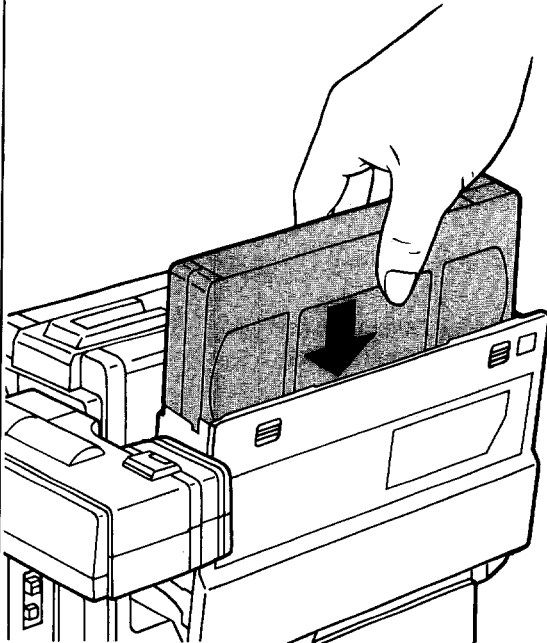
- When the battery pack is removed during recording or playback, the tape remains wound around the head cylinder in contact with the video heads and may become damaged. Therefore, be sure to turn the VHS Movie off before removing the battery pack.
- Be sure to recharge the battery pack before storing it.

•Some playback functions have already been explained on pages 12 and 13.

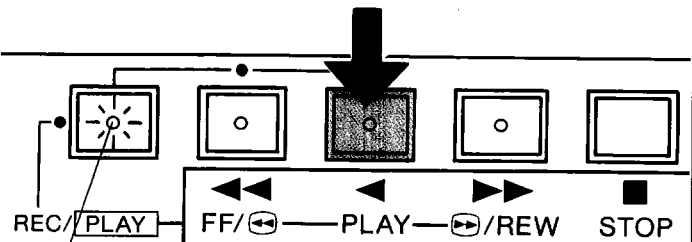
•To start the playback of a tape immediately, follow the operations steps below.

Playback of a Video Cassette without Erasure Prevention Tab

Slide the Operation On/Off Switch upward to turn the VHS Movie on. Then, press the Eject Button to open the cassette compartment cover.



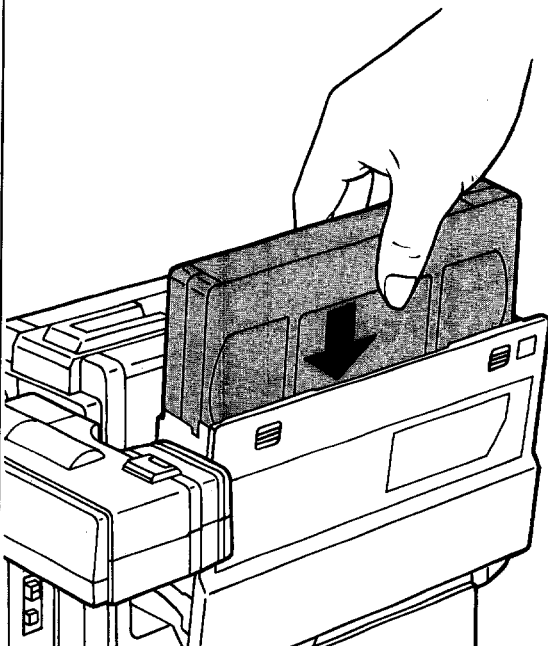
Press the Play Button to start the playback.



•The REC/PLAY indicator flashes until the Play Button is pressed.

Playback of a Video Cassette with the Erasure Prevention Tab Intact

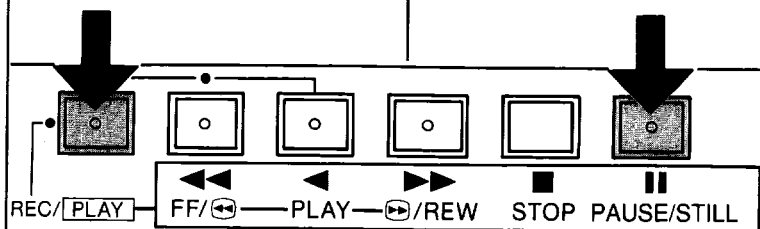
Slide the Operation On/Off Switch upward to turn the VHS Movie on. Then, press the Eject Button to open the cassette compartment cover.



Press the REC/PLAY Button.

•The VHS Movie is now in the still playback mode.

Press the Pause/Still Button to start the playback.

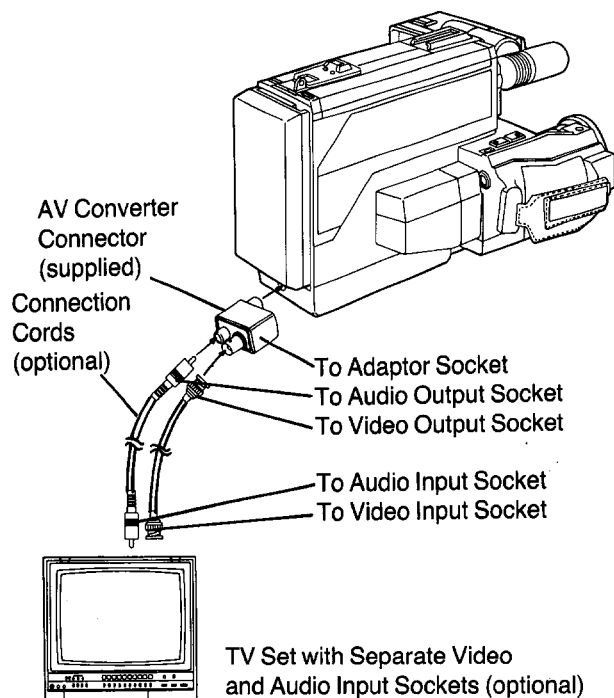


PLAYBACK VIA A TV SET

For the necessary operations for playback see pages 12-15.

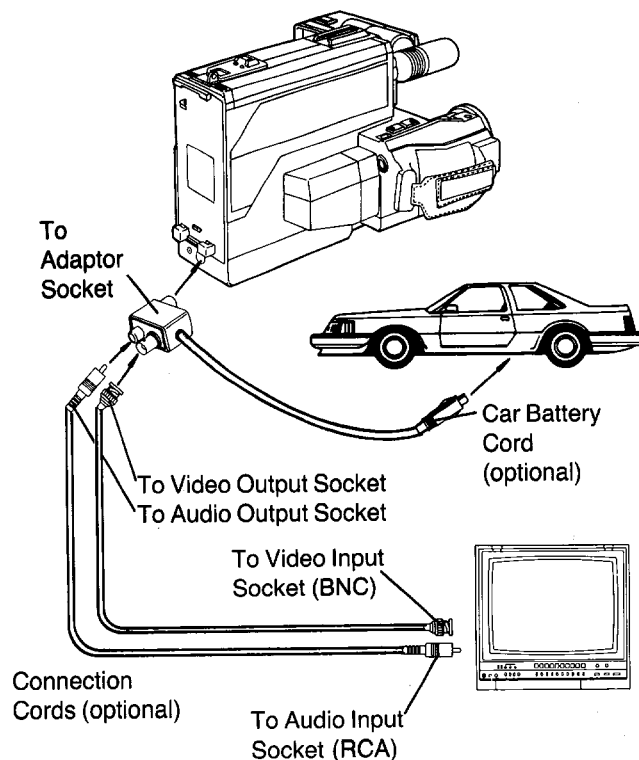
Connection to a TV Set with Video and Audio Input Sockets

When using the battery pack as power source:



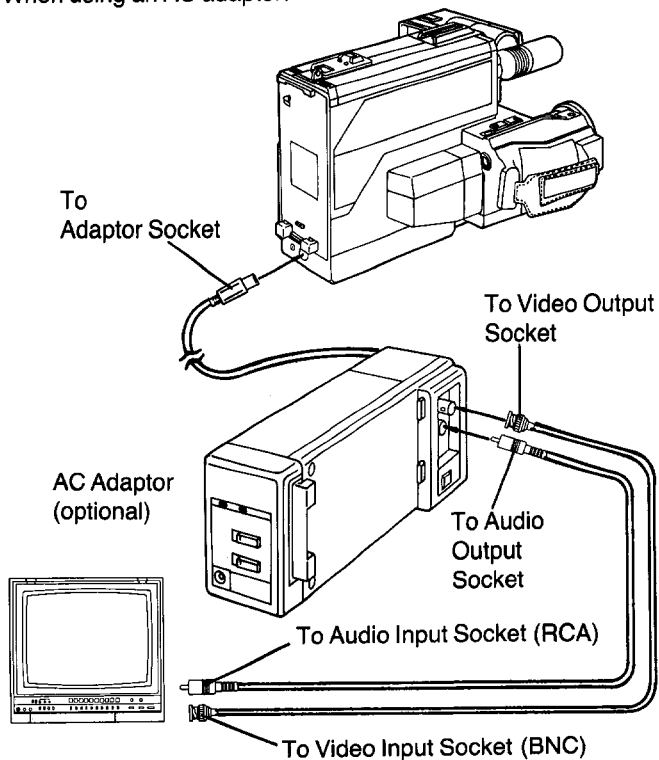
For Scart connector, use adaptor for BNC/RCA!

When using a car battery cord as power source:



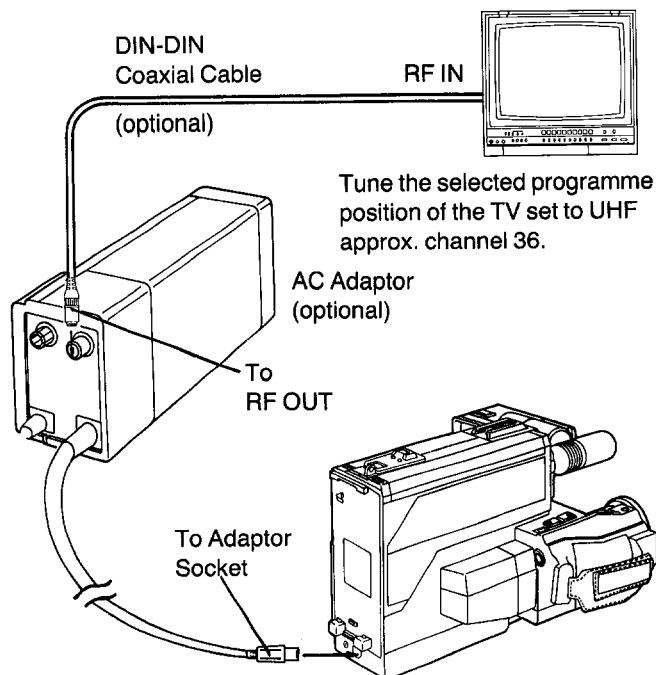
Connection to a TV Set without Video and Audio Input Sockets

When using an AC adaptor:



An AC adaptor is required.

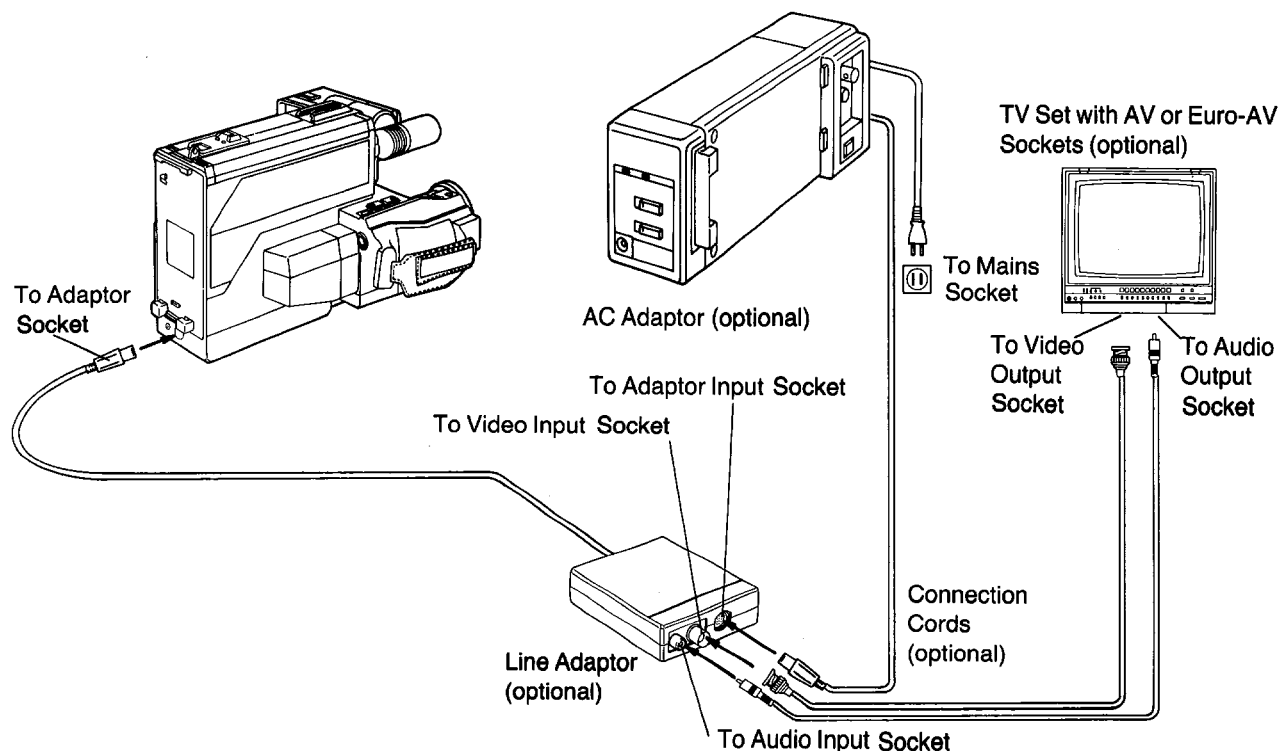
•Refer to the Operating Instructions of the AC adaptor for detailed information.



RECORDING FROM A TV BROADCAST

Recording of TV Programmes Is Possible via a Line Adaptor (Optional)

- By connecting a TV set equipped with separate video and audio output Sockets via the Line Adaptor (VW-KM3, optional) to the VHS Movie, you can record a programme that is being received (and watched) on the TV set.



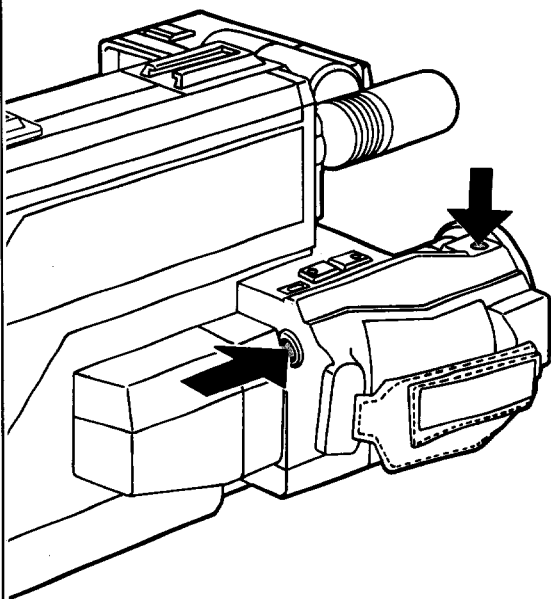
Preparation

- Make the VHS Movie system connections as shown above.
 - Turn the TV set on.
 - Turn the AC adaptor on and set its operation switch to "OPERATE".
 - Turn the VHS Movie on.
 - Insert a video cassette with the erasure prevention tab intact.
- 1 Use the TV channel selector on the TV set to select the programme that you want to record.
 - 2 Press the Play Button while keeping the Rec/Play Button pressed.
 - The Recording Indication Lamp in the EVF lights up and the recording starts. (Tape moves.)
 - To release the Standby mode and to put the VHS Movie back in the recording pause mode, press the Standby Button.
 - 3 Press the Pause/Still Button to stop the tapé temporarily.
 - Press the Pause/Still Button again to continue the recording.
 - If you leave the VHS Movie in the pause mode for more than 5 minutes, the VTR will automatically switch over to the Standby mode to protect the tape and the video heads.
 - 4 Press the Stop Button to finish the recording.
 - Do not turn off the TV set while recording a TV programme, if it is turned off, nothing will be recorded from that moment on.
 - When the line adaptor is being used, it is not possible to record sound via an external microphone.
 - It is possible to record TV programmes for a maximum of about 2 hours when using the battery pack (VW-VBM3) as power source. However, it is better to use the AC adaptor (VW-AM1) for long recordings.

OTHER CONVENIENT FUNCTIONS

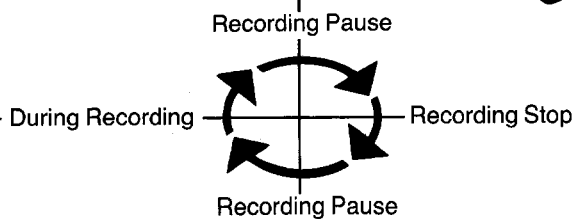
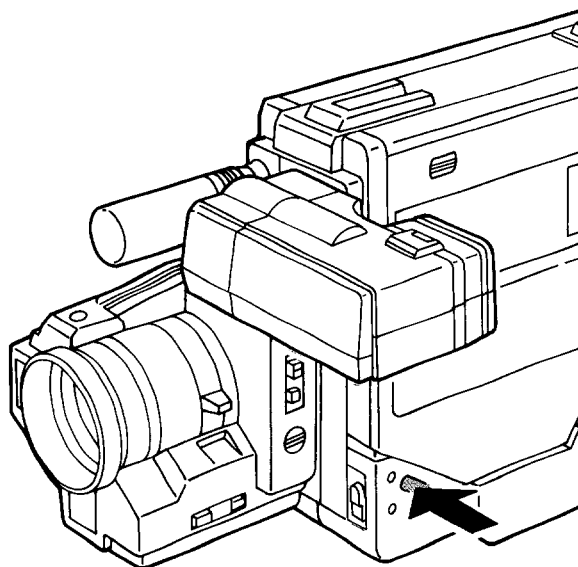
Standby Function (To save power and extend the life of the battery pack)

- Press the Start/Stop Button to stop the recording.

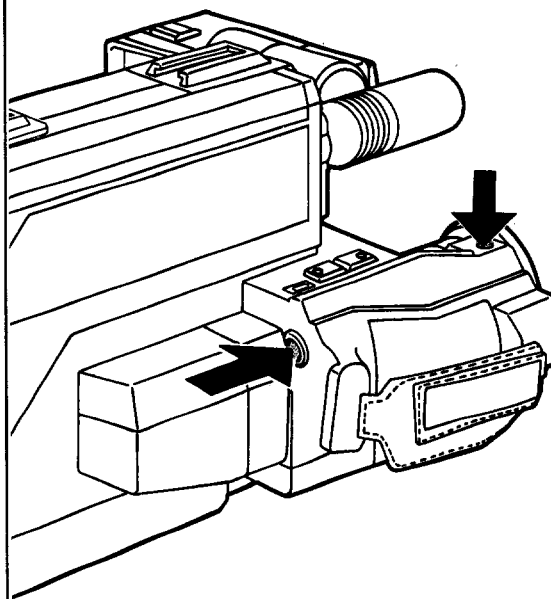


Press the Standby Button.

- The corresponding lamp lights up.
- The VHS Movie is now in the standby condition.
- No picture can be seen in the EVF.

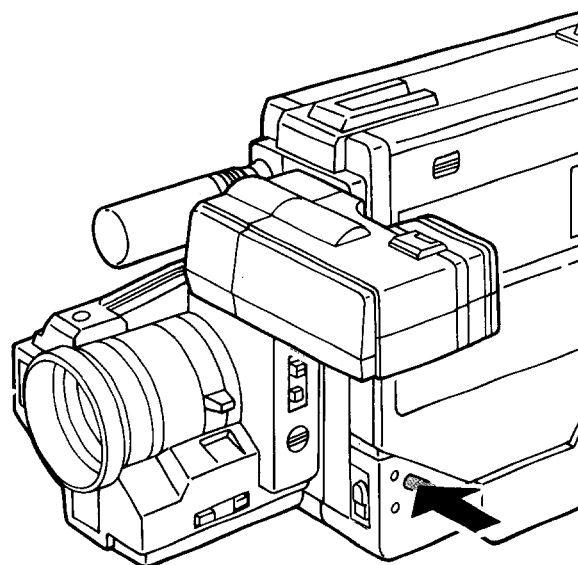


Press the Start/Stop Button to start recording again.



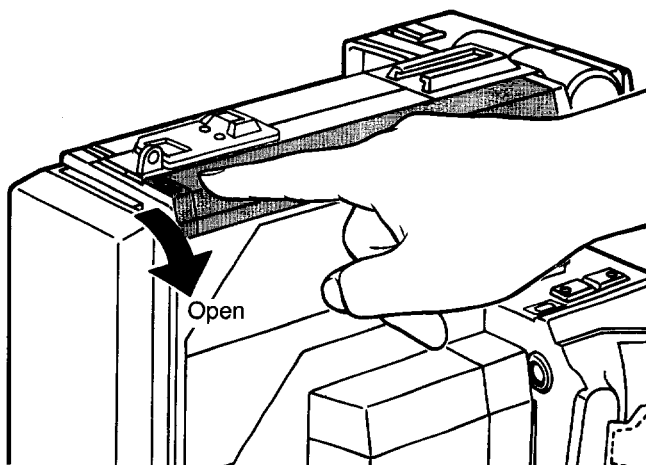
Press the Standby Button again to make the VHS Movie ready for the next shot.

- It takes about five seconds for the picture in the EVF to become stable.



1

- Assemble editing makes it possible to join a new recording to a previously recorded scene with smooth joints, by proceeding as explained in the following operation steps 2-4.
- If the recording is started after playback, after taking out and reinserting a video cassette or after turning the VHS Movie off and on again, a maximum of 20 seconds of the previous recording will be cut off. To prevent this, follow the operation steps 2-4.

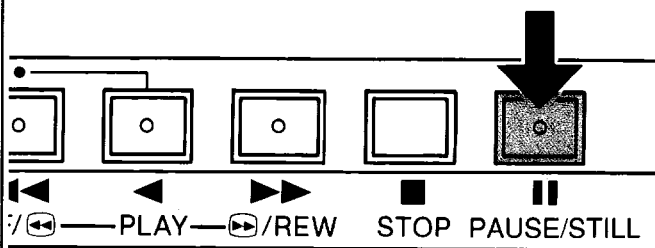


• Be sure to adjust the white balance when the VHS Movie is turned on again.

2

Play back the previously recorded scene and press the Pause/Still Button at the end or any other point where you want the new recording to continue.

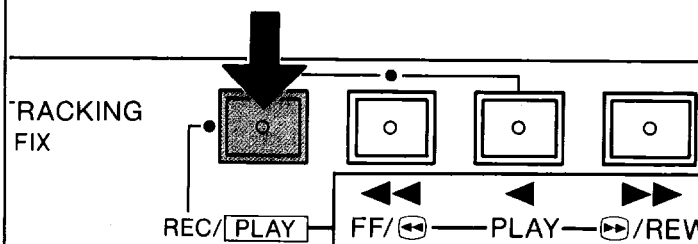
- The VHS Movie is now in the still playback mode.



3

Press the Rec/Play Button.

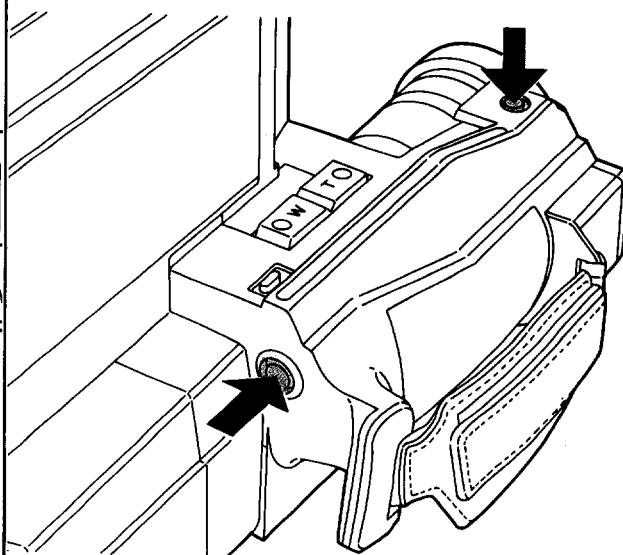
- The VHS Movie is in the recording pause mode, but ready for recording.



4

Press the Start/Stop Button.

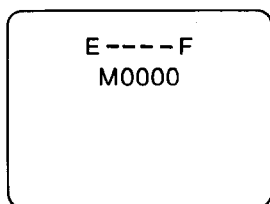
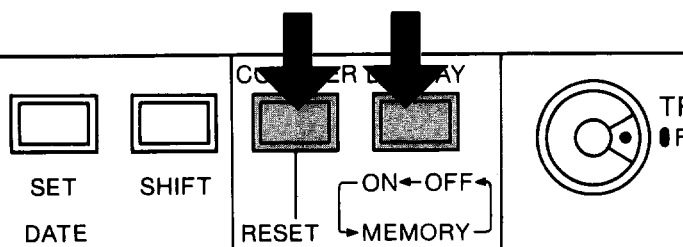
- The newly recorded scene will now be smoothly joined to the previously made recording.



Tape Counter and Memory Function

1

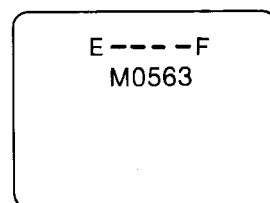
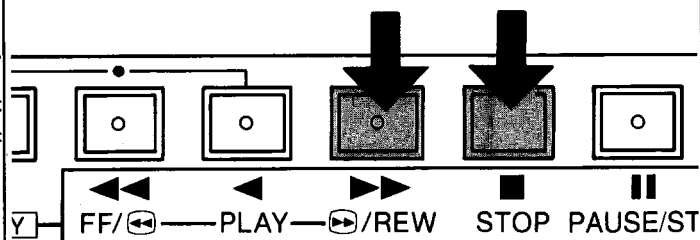
If you want to play back the tape repeatedly from a certain position, press the Reset Button at that point and then press the Memory Button during playback.



- The tape counter is reset to "0000" and the Memory Indication "M" appears.

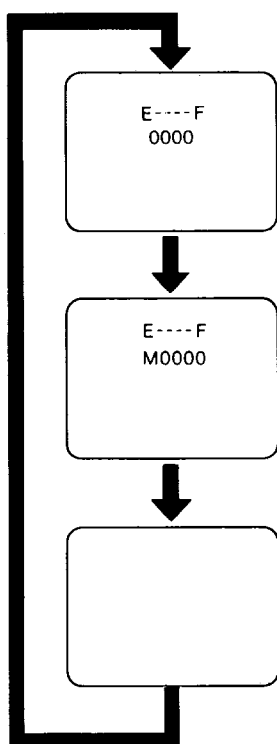
2

After pressing the Stop Button to end the playback, press the Rewind/Review Button.



- When the Rewind or Fast Forward Button is pressed, the tape will automatically stop at about the point where the Tape Counter reads "0000".

Memory Button



- Press this button once to activate the Memory function, and the "M" mark will be displayed in the EVF.

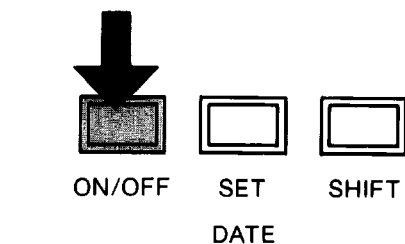
- If you press this button a second time, the Tape Counter Indication and the Remaining Battery Power Indication in the EVF will disappear. The Memory function will not operate.

- If you press this button a third time, only the Battery Level and the Tape Counter Indications will be displayed again. The Memory function will not operate.

1

Press the Date On/Off Button to activate the date function.

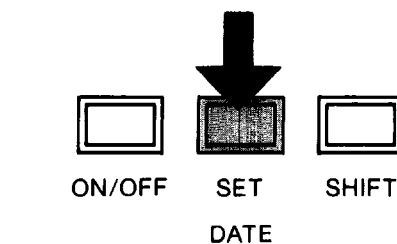
- The "00.00.00" indication will appear in the EVF.




- The cursor mark "—" disappears when the recording starts.

2

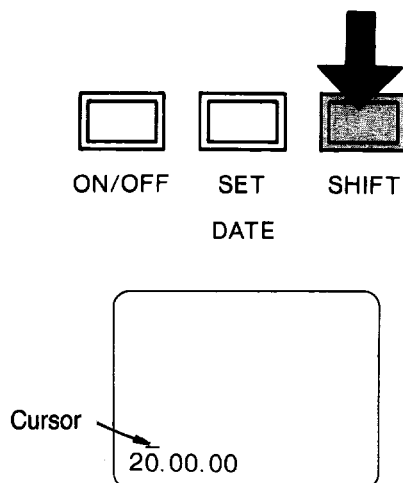
Press the Set Button and set the figure under the cursor "—" according to the day of the present date.



- How the indication changes
0→1→2→3...→8→9→→0
blank

3

Press the Shift Button to move the cursor to the right.



- Repeat steps 2 and 3 to set the date.
- When the cursor is over the last digit in the date indication (00.00.00), it can be eliminated by pressing the Shift Button one more time.

Press the Date On/Off Button again to turn the indication off.

- It is not possible to cancel or superimpose the Date Indication during recording. To delete the date indication, switch the VHS Movie over to the recording pause mode and press the Date On/Off Button.
- The day, month and year can be set in any order, e.g. year, month, day
day, month, year
... etc.

POWER SUPPLIES

Battery Pack (Optional)

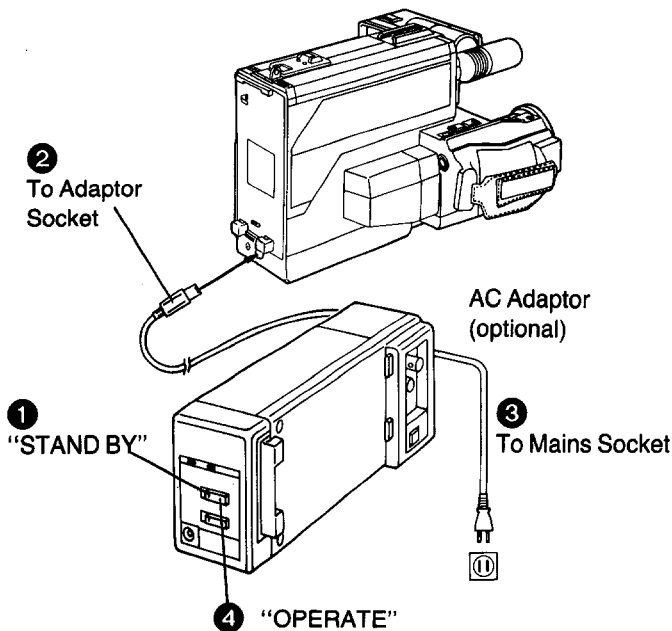
Operating Time with the Battery Pack

- This VHS Movie can record continuously for approx. two hours at normal temperatures (25°C) with a fully charged battery pack (optional).
If the VHS Movie is used for recording intermittently or at low temperatures, the total possible recording time will be reduced. It is recommended to turn off the VHS Movie or switch over to the standby mode when not actually recording.
- Never use an insufficiently charged or exhausted battery pack. If you use such a battery pack, voltage drops during recording or playback will cause the VHS Movie to be switched off to protect the battery pack and the VHS Movie itself.
- The battery pack can become exhausted not only during recording and playback, but also when it is in the standby mode for long periods of time. It is recommended to carry battery packs along which will last two or three times the intended recording duration.

To Extend the Battery Life

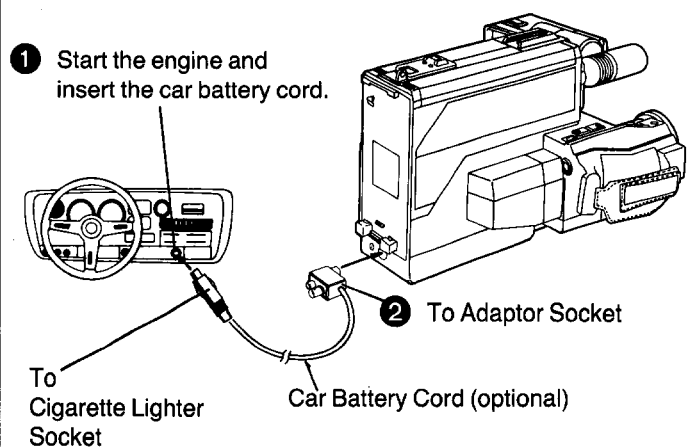
1. Be sure to recharge the battery pack soon after use. If the battery pack is left in discharged condition for a long period of time, it cannot be recharged any more.
2. Be sure to recharge the battery pack before use. If the battery pack was stored for a long time after recharging it, the battery level may be reduced and the possible operation time could be shortened.
3. Be sure to recharge the battery pack once every six months even if it is not used.
4. To protect the battery pack, do avoid recharging it for more than 24 hours.
 - Do not overcharge nor completely discharge it. It is not possible to recharge a battery pack which was left in discharged condition for a long time.
5. Store it in a dry and cool place.

AC Adaptor (optional)



- It is possible to recharge one or even two battery packs simultaneously by using the AC adaptor (optional). For more details about charging, refer to the Operating Instructions of the AC adaptor.

Car Battery Cord (optional)

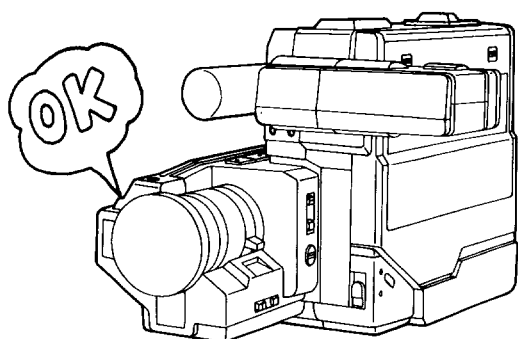


- The car battery cord can only be used with 12 V DC negative-grounded vehicles. No 24 V DC or positive-grounded vehicles can be used.
- The car engine must be kept running while the VHS Movie is powered by the car battery.
- If the battery voltage drops, the VHS Movie will turn off automatically to prevent any malfunctioning. When this happens, wait about 10 seconds before switching the VHS Movie on again.

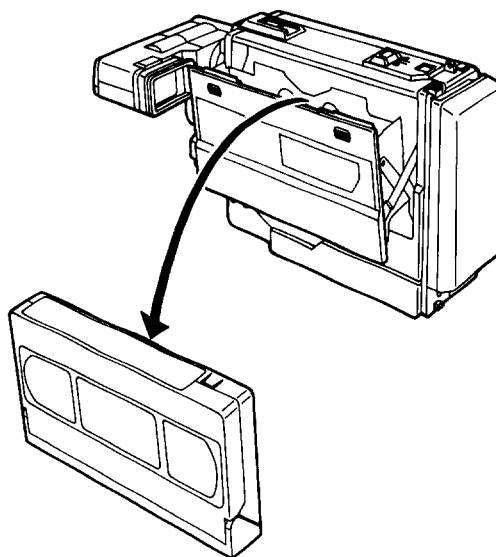
FOR OPTIMUM PROTECTION OF THE VHS MOVIE

If the VHS Movie Is not Going to Be used for a Long time, Follow the Precautions Below:

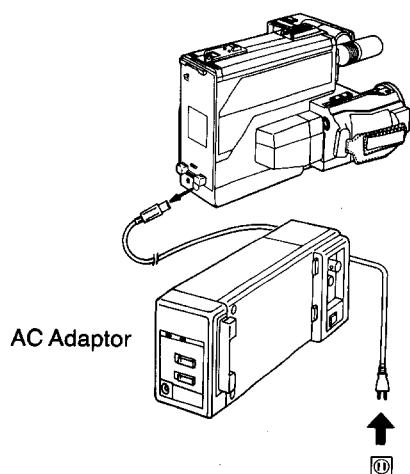
- When not actually shooting, always cover the optimum protection. If you leave the VHS Movie on for a period of long time, the tape and internal parts of the unit may be damaged.



- Always remove the video cassette, when the VHS Movie is not to be used for some considerable length of time.

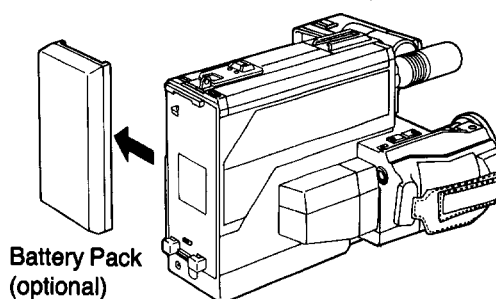


- Disconnect the Mains lead from the mains outlet.



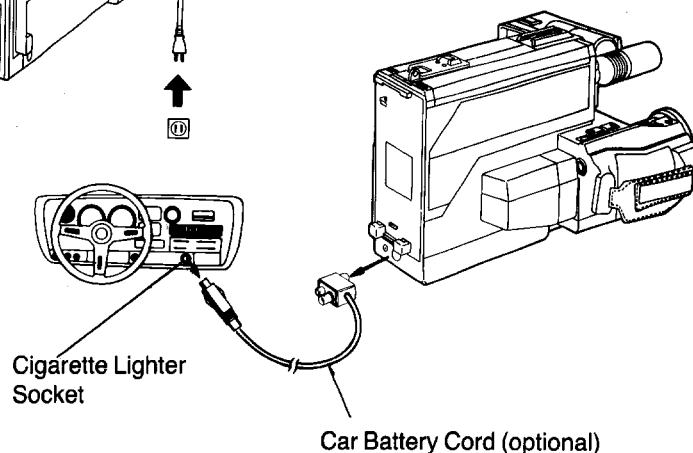
AC Adaptor

- Remove the Battery Pack.



Battery Pack
(optional)

- Disconnect the Car Battery Cord.



Cigarette Lighter
Socket

Car Battery Cord (optional)

Auto Focus Function •To focus the lens, zoom in on the subject.

Auto Focus Function

An infra-red beam is emitted continuously through the lens of the VHS Movie, and the Auto Focus system determines the distance and immediately adjusts the lens focus based on the angle at which the beam is reflected back to the Distance Measuring Window. For special effects and special shooting conditions, focusing in the manual mode is also possible.

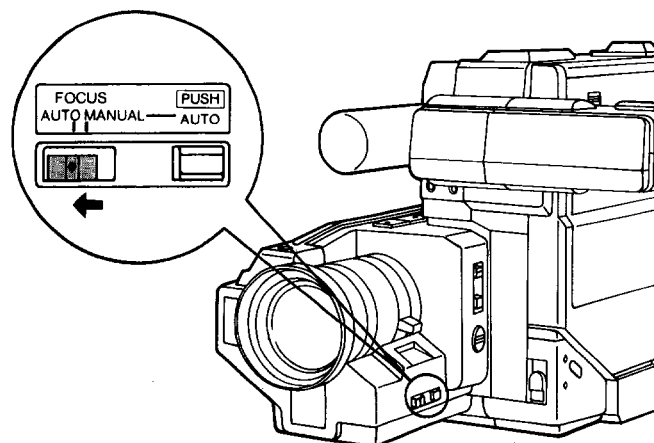
Auto Focus Operating Mode

- When the Battery Pack or the Car Battery Cord is used as power source, the Auto Focus will operate only in the recording and recording pause modes, in order to save battery power.
- When the AC Adaptor is used as power source, the Auto Focus function will also operate in the stop mode even without a cassette inserted.

Focusing in the Auto Mode

Set the Focus Mode Selector to "AUTO".

- While watching the picture in the EVF, aim the VHS Movie at the subject on which you want to focus.



Cautions for Use of the Auto Focus Mode

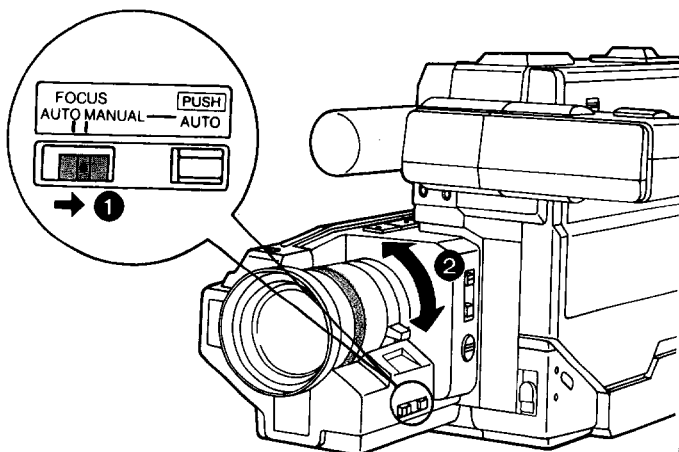
1. When the Auto Focus mode is used during shooting, do not turn the Focus Ring and take care not to cover the Distance Measuring Window.
2. When strong light enters the Distance Measuring Window, the Auto Focus system will not be able to function precisely.
3. The focus will be adjusted on the subject in the centre of the EVF.
4. When using the Macro function, the focus must be adjusted manually, because the Auto Focus does not operate correctly in the extreme close-up range.
5. To save battery power, keep the Focus Mode Selector in the "MANUAL" position except during actual shooting.
6. The Auto Focus system will not be able to function precisely when special-effect lenses or filters are used, therefore, adjust the focus manually in such a case.
7. To obtain correct Auto Focus adjustment, the diameter (reflection surface) of the aimed at subject must be larger than 6 cm when shooting from a distance of 3 meters.
8. If some infra-red wireless remote control unit is directed at the Distance Measuring Window during Auto Focus operation, inexact focus adjustment may result.

In the following shooting conditions, the Auto Focus system will not be able to provide stable and exact focus adjustment. In such a case, set the Focus Mode Selector to "MANUAL" and adjust by hand with the Focus Ring.

1. Shooting a subject through glass.
2. Shooting a subject with a part of it near and another part far from the VHS Movie.
3. Shooting under adverse environmental conditions such as dense fog, snow, rain, cigarette smoke, etc.
4. Shooting a flat subject such as a wall or poster at an angle.
5. Shooting a continuously moving subject such as a crowd of walking people.
6. Shooting subjects that do not easily reflect infra-red rays, such as black surfaces or water.
7. Shooting subjects with shiny surfaces.
8. Shooting subjects where the border line between upper and lower halves that have strong dark/bright contrast runs horizontally through the EVF.

Adjusting the Focus with the Focus Ring

- 1 Set the Focus Mode Selector to "MANUAL".
 - Zoom in on the subject until it fills the entire picture.
 - Turn the Zoom Ring all the way to the "TELE" position. It is possible to zoom in on the subject by pressing the T-side of the Power Zoom Control.



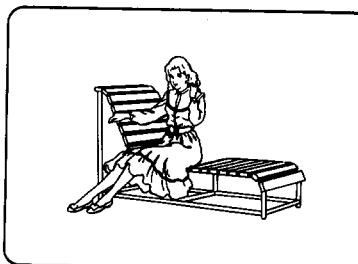
- 2 Turn the Focus Ring to adjust the focus.

When the Push Auto Button is kept depressed while the Focus Mode Selector is in the "MANUAL" position, the focus will be adjusted automatically as long as this button is pressed.

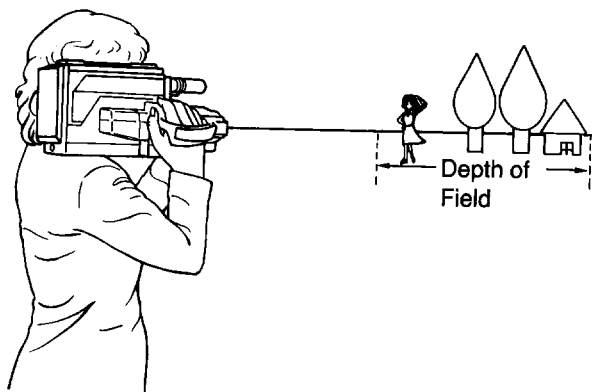
- Be sure to zoom in on the subject to adjust the focus.



- The subject remains in focus even when you zoom all the way to the "WIDE" position.



Depth of Field



Depth of field is the range of distances within which objects are in focus i.e. are sharp.

- The depth of field depends on the focus distance setting of the lens, the distance to the subject and the iris value. When the lens is set to "TELE" position, the depth of field is small and only a small distance range is in focus. On the other hand, when the lens is set to the "WIDE" position, the depth of field is greater and a large distance range is in focus.



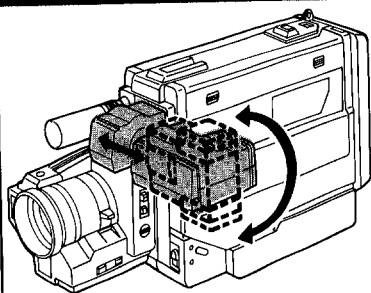
Picture with large depth of field.



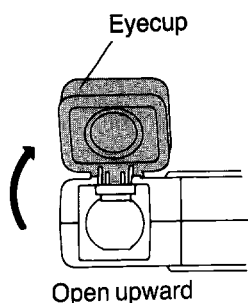
Picture with little depth of field.

•Never use the VHS Movie with the cassette compartment cover facing down.

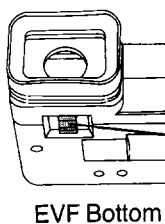
Electronic Viewfinder



- The eyepiece block can be turned vertically 180° to allow for any shooting position.
- Pull the EVF outward and adjust for most comfortable viewing.



- To watch the picture in the viewfinder from some distance, swing up the eyecup.



Eyepiece Corrector Control

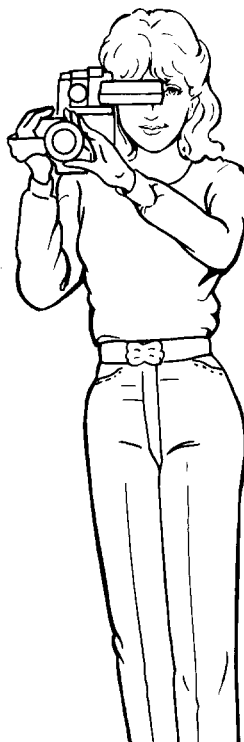
EVF Bottom

This control allows correcting the eyepiece to your eyesight. This assures more convenient focusing and reduces the possibility of recordings that are blurred because the focus was not properly adjusted.

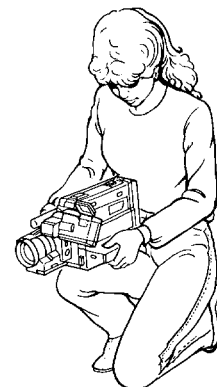
To correct the eyepiece to your eyesight, bring the eyecup of the viewfinder close to the eye, press the start/stop Button and slide the Eyepiece Corrector Control forward or backward, until the Recording Indication Lamp or the viewfinder frame can be seen most clearly.

Hand-held Operating Positions

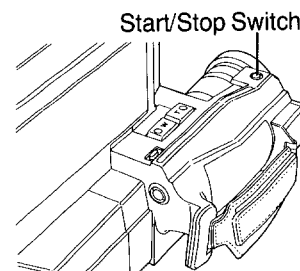
Basic Hand-held Shooting Positions



Shoulder-supported

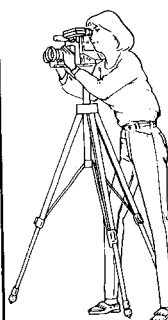


Low-angle Shot

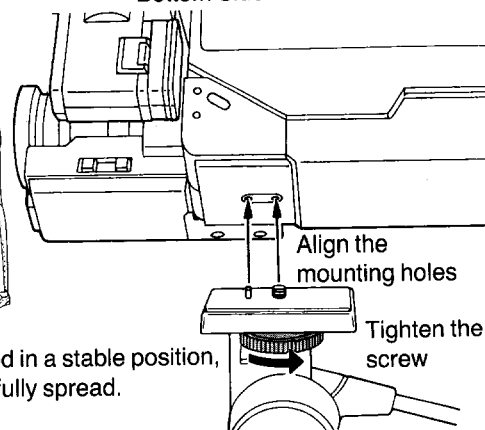


Start/Stop Switch

How to Connect the VHS Movie on a Tripod (optional)



Bottom Side of the VHS Movie



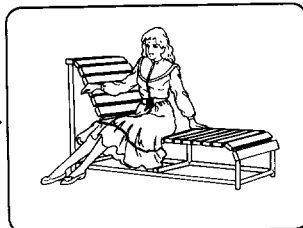
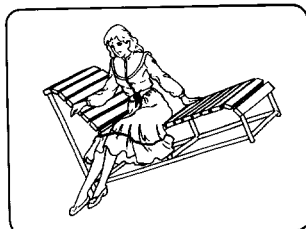
- Use the tripod in a stable position, with its legs fully spread.

Align the mounting holes

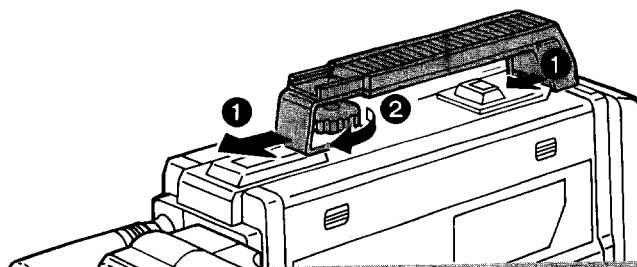
Tighten the screw

Keep the Horizontal Plane Level

Be sure to keep the camera angle horizontal except in special cases.



How to Attach the Carrying Handle



- Insert the Carrying Handle (supplied) into the Accessory Shoe and secure it with the screw.

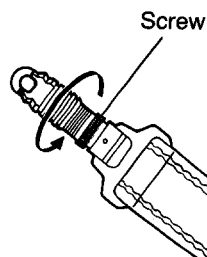
Carrying Support Kit (Shoulder Strap and Shoulder Pad) — optional

ENGLISH

How to Attach the Shoulder Strap

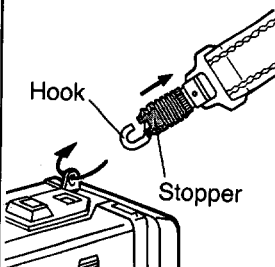
1

Turn the screw to unlock the stopper.



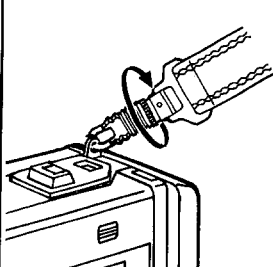
2

Pull back the stopper and attach the hook to the shoulder strap holder.



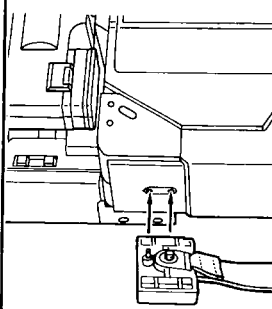
3

Release the stopper and turn the screw to lock the stopper.



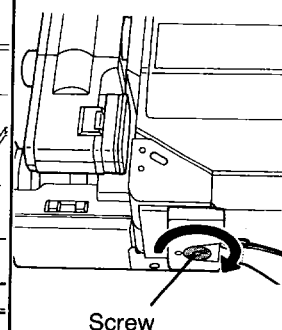
4

Align the lug and the screw with the 2 holes.

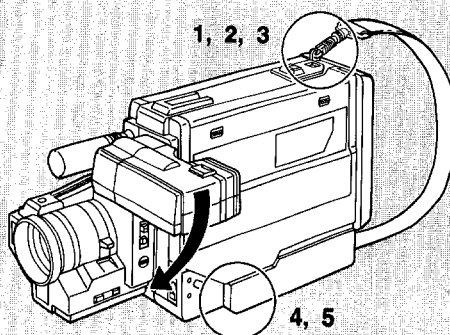


5

Firmly tighten the screw.



To carry the VHS Movie, turn down the EVF in the direction of the arrow.



• It is possible to mount the VHS Movie on a tripod with the shoulder strap attached to it.

How to Attach the Shoulder Pad

1

Slide the base to forward.

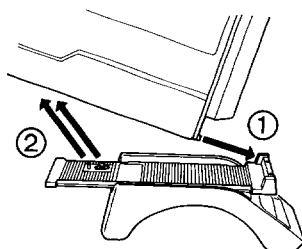


• Remove the shoulder strap from the VHS Movie.

2

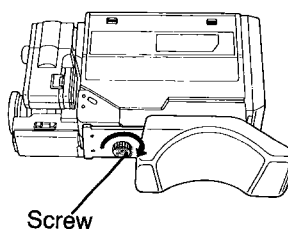
① Align the protruding knob on the back of the VHS Movie with the “◀” mark at the rear of the base and insert it into the hole.

② Align the lug and screw with the 2 holes on the VHS Movie.



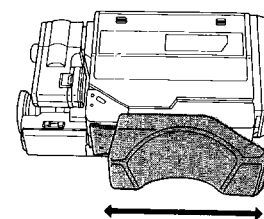
3

Tighten the screw.



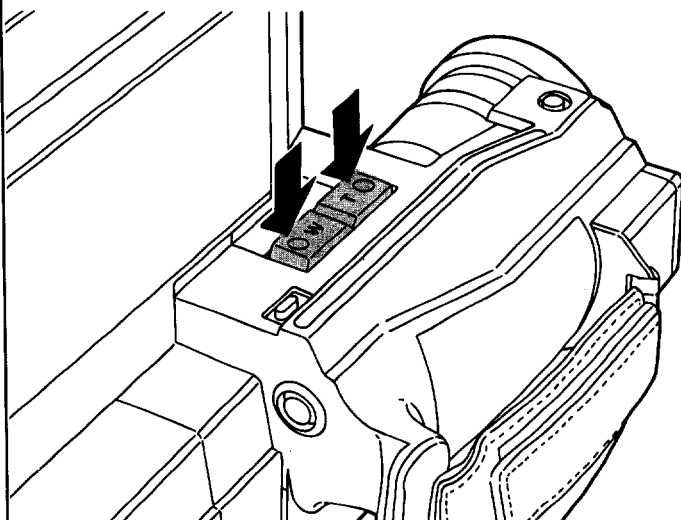
4

Adjust the position of the pad.



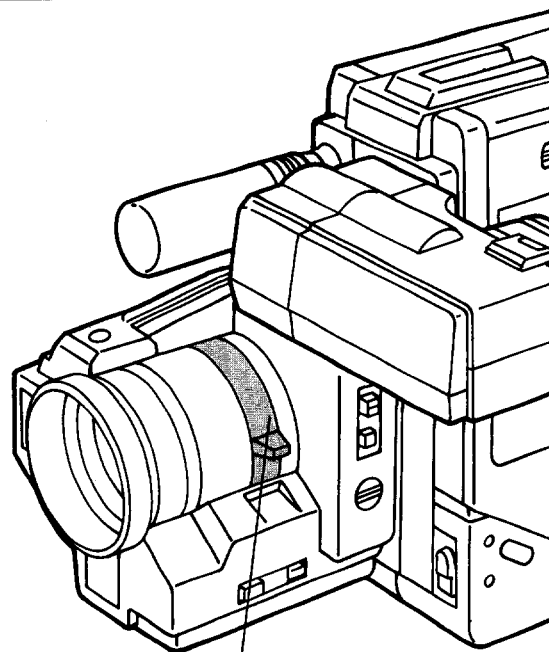
1

Power Zoom Control



- When the "W" side of the control is kept pressed, the VHS Movie will gradually zoom out (back) from the subject it is aimed at for a wide-angle shot.
- When the "T" side of this control is kept pressed, the VHS Movie will gradually zoom in on the subject it is aimed at for a telephoto shot.

2

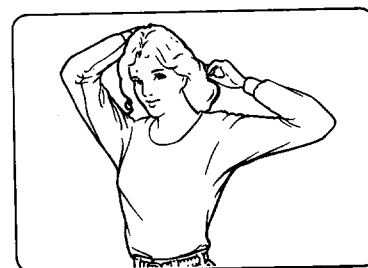


Zoom Ring

- Use the Zoom Ring for manual zooming. With quick zooming you can give a scene some shock effect.

Zoom Out

Zooming out can be a very effective way of showing the surrounding circumstances and to explain the development of the story.

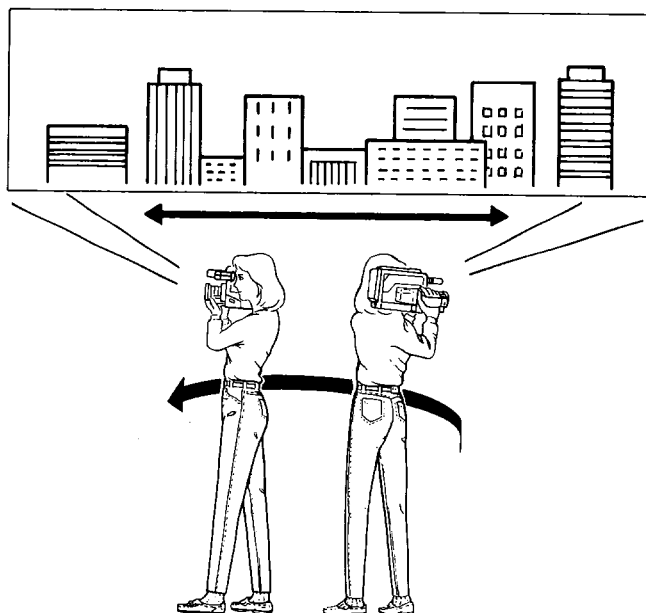


Zoom In

Zooming in is an effective technique when you want to focus the viewer's attention on a particular subject or object.

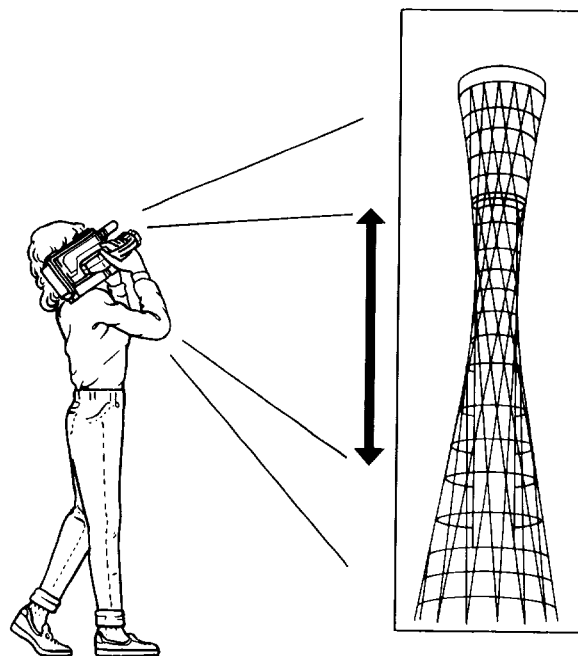
Panning

Moving a camera horizontally from side to side is known as panning. This is often used when shooting scenery and large places.



Tilting

Moving a camera vertically up and down is called tilting. This is often used when shooting tall, narrow objects such as trees and buildings.

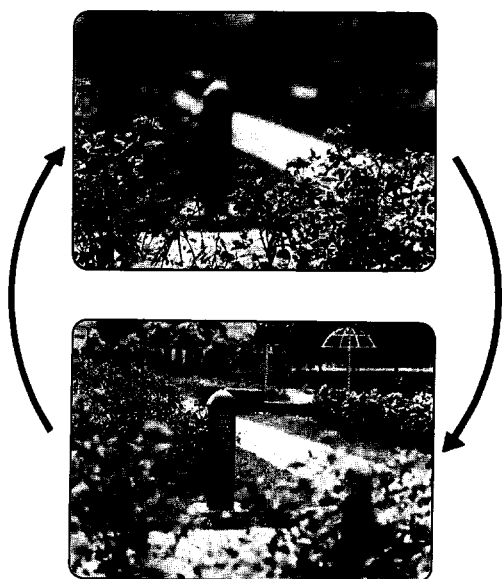


Focus Shifting Techniques

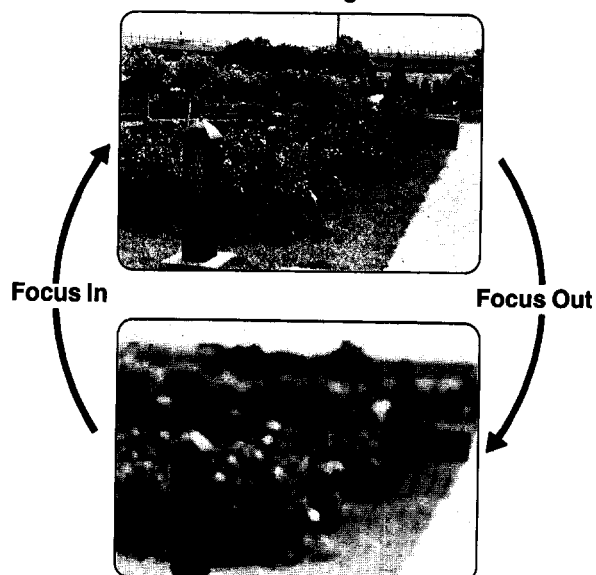
The focus shifting techniques can be employed to direct the viewer's attention for example from a subject in the foreground to one in the background, or to give a subject a dreamy quality by shooting it more or less out of focus.

Focus In/Out is an often-used method for connecting two scenes.

To use these focus shifting techniques, set the Focus Mode Selector to the "MANUAL" position and adjust with the Focus Ring.



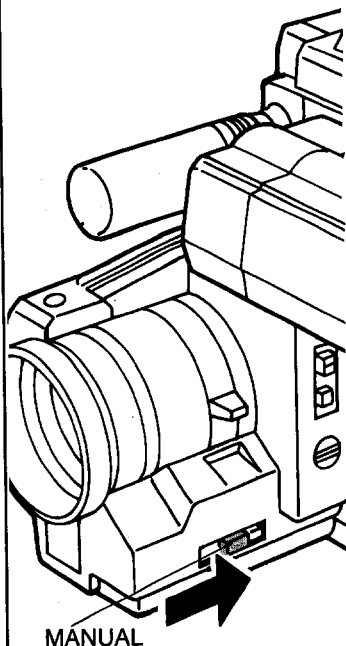
Focusing



MACRO CLOSE-UP SHOOTING

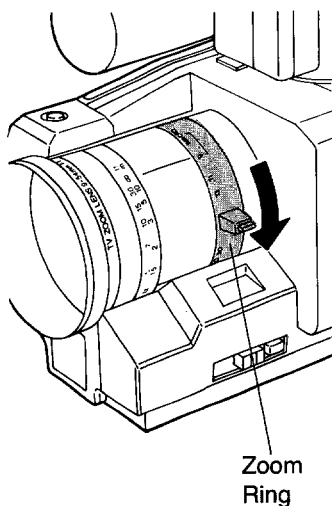
1

When shooting in the macro range, the Auto Focus system does not operate correctly. Therefore, use the MANUAL mode to adjust the Focus.



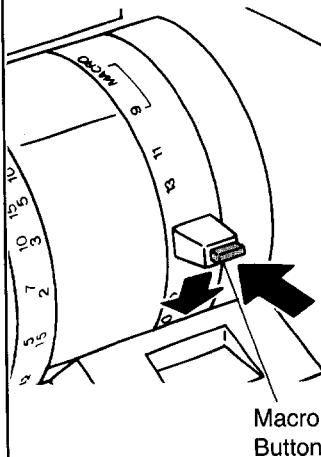
2

Turn the Zoom Ring all the way down.



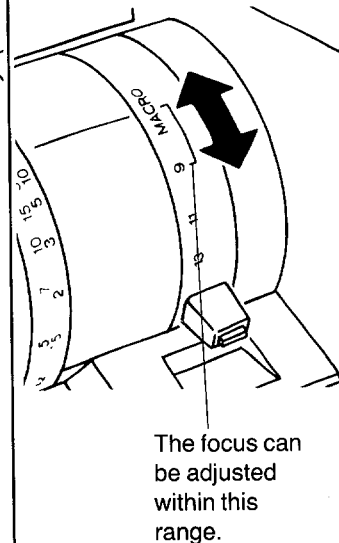
3

Press the Macro Button and again turn the Zoom Ring down.



4

Turn the Zoom Ring slowly up or down to focus on the desired object.



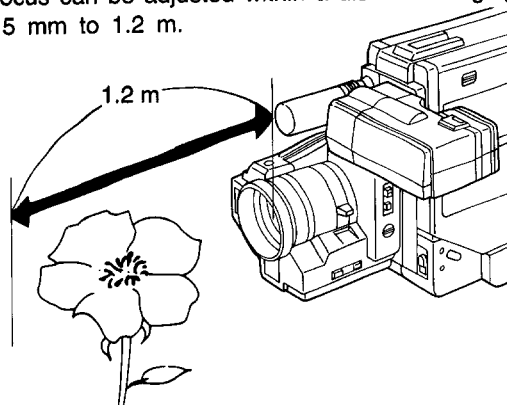
When shooting in the macro range, set the White Balance Mode Selector to "AUTO" and press the White Balance Set Button. (See page 24.)

Shooting Small Objects

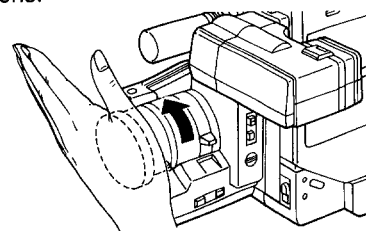
The macro function can be used to display small objects and details of larger things in bigger-than-life size on the TV screen. It is also possible to shoot photos from a photo album and enjoy watching them on TV.



The focus can be adjusted within a distance ranging from 5 mm to 1.2 m.



For extreme close-up shots, remove the lens hood from the lens.



•To remove the lens hood, press it from the front with the palm of the hand and turn it counterclockwise.

Built-in Microphone and External Microphone Socket

1 External Microphone Socket

- In normal shooting conditions, the built-in microphone is used. However, when you want to record sound in a large area or the singing of wild birds which you cannot get close to with the built-in microphone, an external microphone (optional) may be more suitable.
- When the recording is likely to be impaired by external noise or if the operating noise of the VHS Movie is disturbing, use an external microphone. When an external microphone is connected, the built-in microphone is automatically switched off.

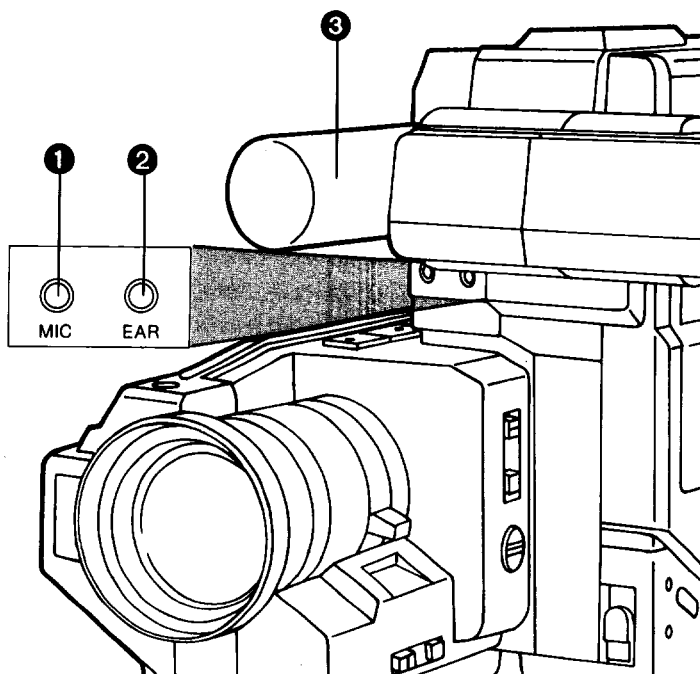
2 Earphone Socket



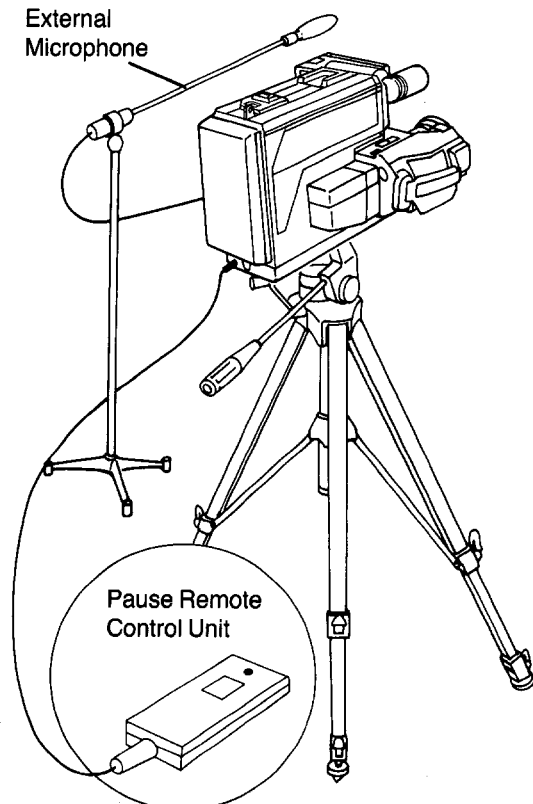
The sound being picked up by the microphone and being recorded can be monitored by connecting the earphone (supplied).

3 Built-In Microphone

The built-in microphone is a sensitive unidirectional condenser mike.

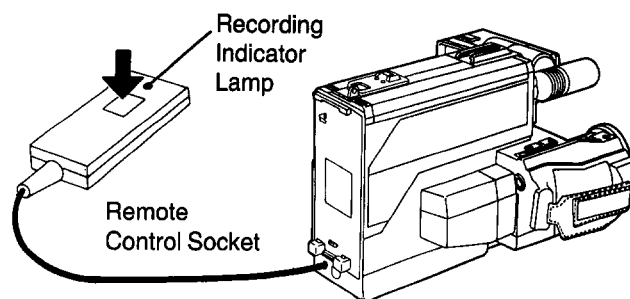


External Microphone



Pause Remote Control Unit (optional)

- This pause remote controller is designed exclusively for the VHS Movie and allows operating recording start and stop from some distance. This is convenient when shooting with the VHS Movie mounted on a tripod.

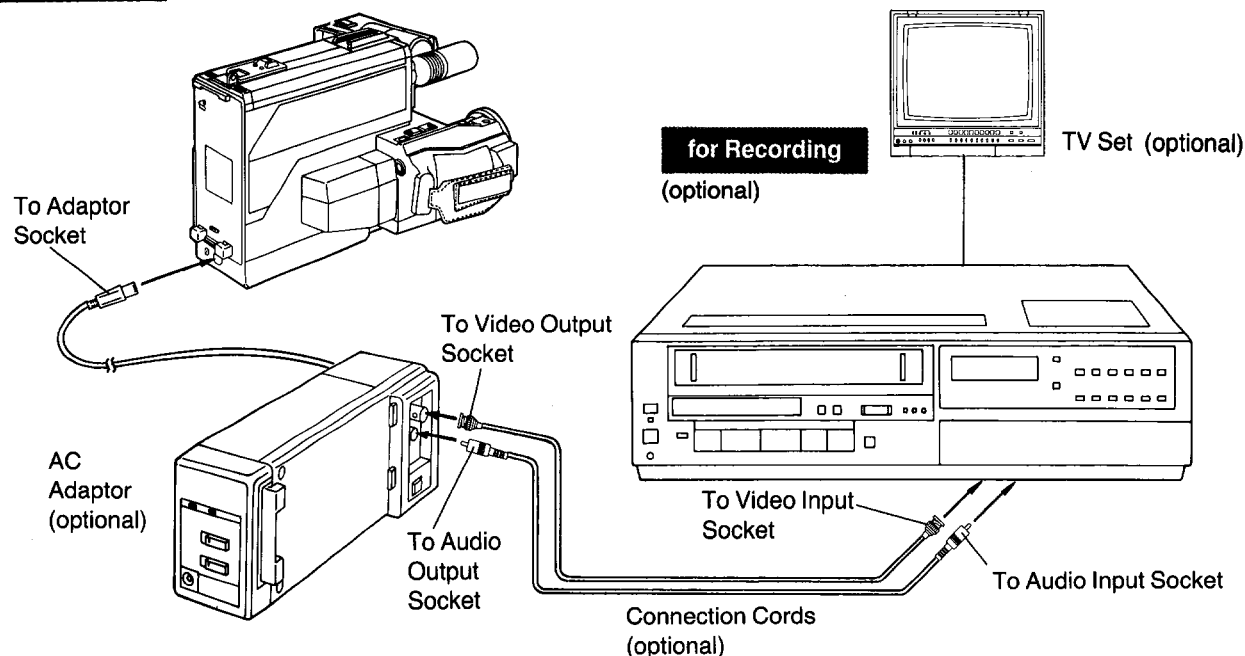


- Press this button to start recording when the VHS Movie is in the recording pause mode. Press it again to change the VHS Movie over to the recording pause mode.
- The recording indicator lamp is lit during recording.

DUBBING (COPYING)

Connection of the VHS Movie with a video recorder

for Playback



- 1 Put the VTR into the recording pause mode at the point on the tape where you want to start recording the picture from the VHS Movie.
 - 2 Locate the exact point on the tape from where you want to start copying and put the VHS Movie into the still playback mode.
 - 3 Press the Still Button on the VHS Movie and the Pause/Still Button on the VTR to start the copying.
- The picture quality of a copied tape is inferior to that of the original tape.
If the VTR used for copying features 2 tape speeds, select the normal speed (SP mode) for recording.
 - Before starting the dubbing (copying) of a tape, press the Memory Button twice to delete the Remaining Battery Power Indication and the Tape Counter Indication in the EVF so that those indications will not be recorded.
 - When a tape, that was originally recorded on the VHS Movie and that later had some scene added on a VTR by using the Insert Editing function, is again played back on the VHS Movie, the playback of the inserted part may be affected by uneven colours and coloured stripes.

CAUTIONS

Please Read these Cautions before Operating the VHS Movie.

ENGLISH

Video Head Clogging

The video heads are the means by which the recorder places picture signals on the tape during recording, and reads picture signals from the tape during playback. If these heads become dirty and clogged from long use, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, if during the playback of a tape, the sound is reproduced normally, but no picture is seen or the picture is greatly distorted. When such symptoms occur, have the VHS Movie checked by qualified service personnel.

If Condensation Forms Inside the VHS Movie

Condensation (dew) forms when warm air comes in contact with a cold object, for example on a window in a heated room in winter.

Condensation may form in the VHS Movie and damage the tape and the video heads, if:

- The VHS Movie is in a room where the heater has just been turned on.
- The VHS Movie is in a room with steam or high humidity.
- The VHS Movie is brought from cold surroundings into a well-heated room.
- The VHS Movie is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.
- When condensation has formed inside the VHS Movie, the "DEW" indication in the EVF will flash and a few seconds later, the unit will turn itself off to protect the tape and the video heads. When a video cassette is inside, turn the VHS Movie on and take out the video cassette immediately. After a while, turn the VHS Movie on again and confirm that the Operation Lamp is lit. Wait about 1 hour before operating the VHS Movie again. Depending on the surrounding conditions, it may take several hours before the VHS Movie can be used again.
- As condensation forms gradually, it may take about 10–15 minutes before the VHS Movie turns itself off.
- In an extremely cold place, condensation may freeze and turn into frost. In this case, it may take quite some time for the frost to melt and turn into dew.
- When you bring the VHS Movie from a very cold place, e.g. the ski slopes, into a heated room, keep it in a tightly closed plastic bag or the like to prevent condensation.
- The VHS Movie has a built-in heating device which prevents condensation.
This heater operates even if the VHS Movie is switched off (this, provided the AC adaptor is used as power source).

Keep the VHS Movie away from Oily Smoke and Steam

Never use or leave the VHS Movie in places where there is oily smoke or steam.

Protect the VHS Movie from Humidity and Dust

Avoid places with high humidity or much dust. Keep the VHS Movie in a well-ventilated place to prevent mildew from forming on the lens.

Operating Temperature

Use the VHS Movie under conditions where the temperatures are between 0°C and 40°C, and where the humidity is between 10% and 80%. To avoid deformation of the outer cover and other damage, do not leave it exposed to direct sunlight for any length of time, also never leave it behind in a closed automobile.

Keep the VHS Movie away from Heaters

Keep the VHS Movie away from heaters to protect the body and internal parts.

Keep the VHS Movie away from TV sets

Do not place the VHS Movie near a TV set because it might impair the picture and sound quality of the recorded tape.

Keep Magnets Away

Never bring a magnet or magnetized object such as fluorescent lamps, motors and TV sets close to the VHS Movie because this could adversely affect its performance.

Keep the VHS Movie Away From Areas with Strong Electric Waves <p>The picture may become distorted, when the VHS Movie is used in places with strong electric waves, such as near TV and radio emitter antennas.</p>	Proper Illumination for Shooting <p>Shooting should be done under lighting as bright as possible to obtain vivid colour pictures. Fluorescent lamps tend to give natural colours a hard appearance, so choose more suitable lighting whenever possible.</p>
Never put any Objects Inside <p>Never insert any object other than a video cassette into the VHS Movie. If any object is dropped into it or if any liquid is spilled into it, consult your video dealer. Operating it with some foreign matter inside may cause fire or electric shock.</p>	Cover the Lens with the Cap after Shooting <p>If some cables have been connected to the VHS Movie, disconnect them after you finish shooting and be sure to place the White Cap on the lens.</p>
No Fingers Inside <p>Touching internal parts of the VHS Movie is very dangerous and may cause serious damage to the VHS Movie. Do not attempt to disassemble it. For internal inspection, adjustment or repairs, consult your video dealer.</p>	Keep the VHS Movie Away from Strong Light <p>Do not expose the VHS Movie to strong light, because the heat from it may cause deformation and other damage.</p>
In Case of Accident <p>Do not use the VHS Movie, if it emits smoke, strange noises or smell. Have it checked by your video dealer and repaired, if necessary.</p>	When Carrying and Transporting the VHS Movie <ul style="list-style-type: none"> •Take care not to bump the VHS Movie against any object. •Remove the video cassette from the VHS Movie and put it back into its case for transporting it.
Operation on the Beach <p>Take care not to splash any water on the VHS Movie and protect it from sand.</p>	When the VHS Movie is not Used for a Long Period of Time <p>Turn the VHS Movie on occasionally and operate it to prevent from malfunction.</p>
Operation in the Rain <p>Take care that the VHS Movie does not get wet.</p>	When the VHS Movie Is not Being Used <p>Remove the video cassette and turn the VHS Movie off with the Operation On/Off Switch.</p>
Do not Use the VHS Movie in a Thunderstorm <p>Stop operating the VHS Movie when a thunderstorm approaches. Especially operation in a wide open space would be dangerous.</p>	Battery Pack <p>Be sure to recharge the battery pack soon after use.</p>
Handle with Care <p>Never drop the VHS Movie or expose it to strong shocks. Shocks during use may result in picture noise.</p>	Keep Insecticide Spray Away <p>Never spray chemicals like insecticide on the lens and body of the VHS Movie. Also, never leave rubber or plastic objects in contact with any part of it for a long time, because the colour might change and the body surface might be damaged.</p>
Do not Aim the Camera at the Sun <p>Never aim the camera at the sun, whether the VHS Movie is turned on or not, because it could result in irreparable damage to the pick-up tube. Be especially careful of this when shooting outdoors.</p>	

Connection to Other Equipment

Carefully read the operating instructions for all equipment to be connected. Keep these operating instructions handy for future reference.

**Never Place the VHS Movie with the
Cassette Compartment Side Facing Down**

Never use the VHS Movie with the cassette compartment facing down as this might cause uneven winding and slacking of the tape.

Cleaning the VHS Movie

- The body of the VHS Movie is made of plastic materials. Never use benzine, thinner or other chemicals for cleaning, because the colour might be changed and the body surface might be damaged.
- Wipe the body and operation panel with a soft, clean cloth. For persistent stains, use a cloth moistened with mild detergent and water, and then wipe with a dry cloth.
- Clean the lens with a blower brush (used for photo cameras) or lens cleaning tissue (used for glasses and cameras).

Video Cassette Tapes

- Keep the video cassettes away from places with direct sunlight, strong heat, high humidity and much dust.
- Keep the video cassettes away from magnetized objects as they could adversely affect the tape.
- Never drop the video cassettes or subject them to other strong shocks.
- To store a video cassette, always fully rewind it, put it back into its case and place it upright.

BEFORE REQUESTING SERVICE

SYMPTOM	CAUSE	REMEDY
Power Source		
Power does not turn on.	The safety devices are operating.	After turning the power off, disconnect the mains cord of the AC adaptor and then plug it in again.
	The VHS Movie is in the standby mode.	Press the Standby Button.
Power turns on, but it turns off again immediately.	The battery pack is exhausted.	Use a fully recharged battery pack.
	Condensation has formed in the VHS Movie.	Wait until the dew disappears.
Camera Recording		
Power is on, but no picture appears in the EVF.	The VHS Movie is in the standby mode.	Press the Standby Button.
	The lens is covered with the White Cap.	Remove the White Cap.
	The Iris is not properly adjusted.	Set the Iris Close/Open Adjustment Control to the centre click position (Auto position).
Camera recording cannot be performed.	The tab of the cassette is broken out.	Cover the tab hole with adhesive tape.
Colours are not natural.	The TV set is not properly turned.	Properly tune the TV set.
	The white balance is not properly adjusted.	Adjust the white balance.
	The illumination is not proper.	Use proper illumination.
Picture is obscure.	The lens is covered with dust.	Clean the lens.
	The subject is not in focus.	Adjust the focus to the subject.
Playback		
No playback picture is reproduced on the TV set.	The connection with TV set is not correct.	Connect the VHS Movie to the TV set correctly.
	The TV set is not tuned to the video playback channel.	Tune TV set to the video playback channel.
Colour is not proper.	The white balance was not properly adjusted during shooting.	Adjust the white balance before shooting.
Playback picture is not in colour. Playback picture has large amounts of "snow".	The tracking is misaligned.	Precisely align the tracking.
	The video heads are clogged with dirt.	Consult qualified service personnel.
	The video heads are abraded.	Consult qualified service personnel.
	The tape is old.	Use a new tape.
Playback picture is unstable.	The battery pack is insufficiently charged.	Recharge the battery pack.

SPECIFICATIONS

NV-M3B, E, EG

Power Source:	DC 12 V
Power Consumption:	Recording mode; 12 V-9.5 W (Battery Operation) Stand-by mode; 12 V-1.0 W (Battery Operation)
Video Recording System:	4 rotary heads, helical scanning system
Tape Speed:	23.39 mm/s
Tape Format:	VHS tape
Recording/Playback Time:	240 min. with NV-E240
FF/REW Time:	Less than 12 min. with NV-E180

VIDEO

Television System:	CCIR; 625 lines, 50 fields, PAL colour signal
Modulation System:	Luminance; FM azimuth recording Colour signal; Coverted subcarrier phase shift recording
Output Level:	ADAPTOR (Multi); 1.0 Vp-p

75 ohm unbalanced

AUDIO

Input Level:	MIC IN (M3); -70 dB
Output Level:	ADAPTOR (Multi); -8 dB
Audio Track:	1 track

4.7 kohm unbalanced

600 ohm unbalanced

Pick-up Tube:	1/2-inch 3.9 MHz NEWVICON
Lens:	6:1 Power Zoom Lens with MACRO Function, Auto/Manual Iris, Auto Focus System, F1.4 (9-54 mm), Lens Front Diameter 49 mm
Viewfinder:	1/2-inch Black/White Electronic Viewfinder
Standard Illumination:	1,400 Lux
Minimum Required Illumination:	10 Lux (35 IRE)
Video Horizontal Resolution:	Colour; More than 250 lines
Signal-to-Noise Ratio:	Video; More than 43 dB Audio; More than 43 dB
Audio Frequency Response:	80 Hz-8 kHz
Operating Temperature:	0°C-40°C
Operating Humidity:	10%-80%
Weight:	Approx. 2.8 kg (without battery pack)
Dimension:	155 (W)×192 (H)×324 (D) mm With viewfinder turned down (without carrying handle)

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

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