

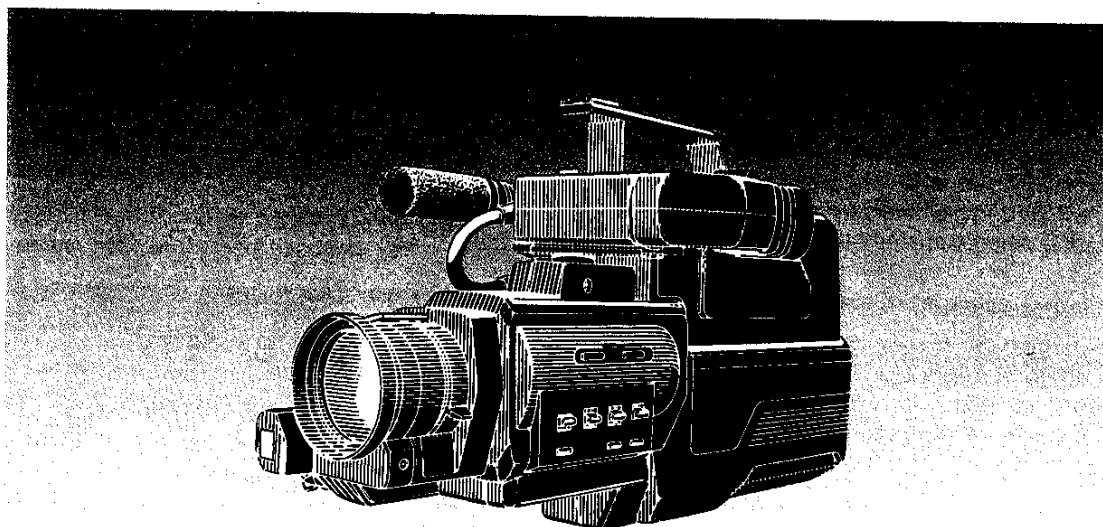
Operating Instructions

ENGLISH

VHS HQ
PAL

VHS Movie

NV-M5AM



中文

 **National**

Before attempting to connect, operate or adjust this product, please read these instructions completely.

CONTENTS

Page

3	FEATURES
4	CONTROLS AND COMPONENTS
9	VHS MOVIE SYSTEM
10	POWER SUPPLIES
14	THE VIDEO CASSETTE
15	ELECTRONIC VIEWFINDER
16	CAMERA RECORDING
19	PLAYBACK VIA THE EVF
22	CABLE CONNECTIONS
24	RECORDING FROM A TV BROADCAST/DUBBING
25	AUDIO DUBBING
26	ASSEMBLE EDITING
27	TECHNIQUES FOR SHOOTING
32	CAUTIONS
35	BEFORE REQUESTING SERVICE
36	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.

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.

VHS Movie NV-M5

- The rating plate is on the rear panel of the unit.

AC Adaptor VW-AM5

- The rating plate is on the bottom surface of the unit.

is the safety information.

FEATURES

Piezo Auto Focus System

This innovative new Auto Focus System uses a fully camera-internal system consisting of a sophisticated microprocessor and a special piezo-element-controlled focusing system. It continuously analyzes the focusing conditions and determines and adjusts the optimum focus setting based on the picture information contained in the light that enters through the lens. For added versatility, the NV-M5 is also equipped with a 2-step focusing zone selector that lets you preset the size of the measuring zone for the Auto Focus System to assure optimum adjustment in any kind of shooting situation.

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).

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.

VHS Movie Camera

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

Compact, Lightweight and Superportable

Weighing only 2.5 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.

Full Auto White Balance Adjustment Function

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

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 look away from the viewfinder. The indications include: Date, Time, Memory, Tape Counter, recording and various warnings.

Rec Review Function

After you finish shooting a scene and tape is stopped 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.

6× Power Zoom Lens and Macro Feature

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.

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 (optional) to the VHS Movie, you can record a programme that is being received (and watched) on the TV set.

High Speed Shutter Function

When shooting fast-action events like sports scenes, selecting the high speed shutter offers special advantages. When later watching these recordings using the Super Still, Super Still Advance or Super Fine Slow Motion functions of an advanced type VTR, the result will be extremely stable pictures with superior sharpness and crisp edges.

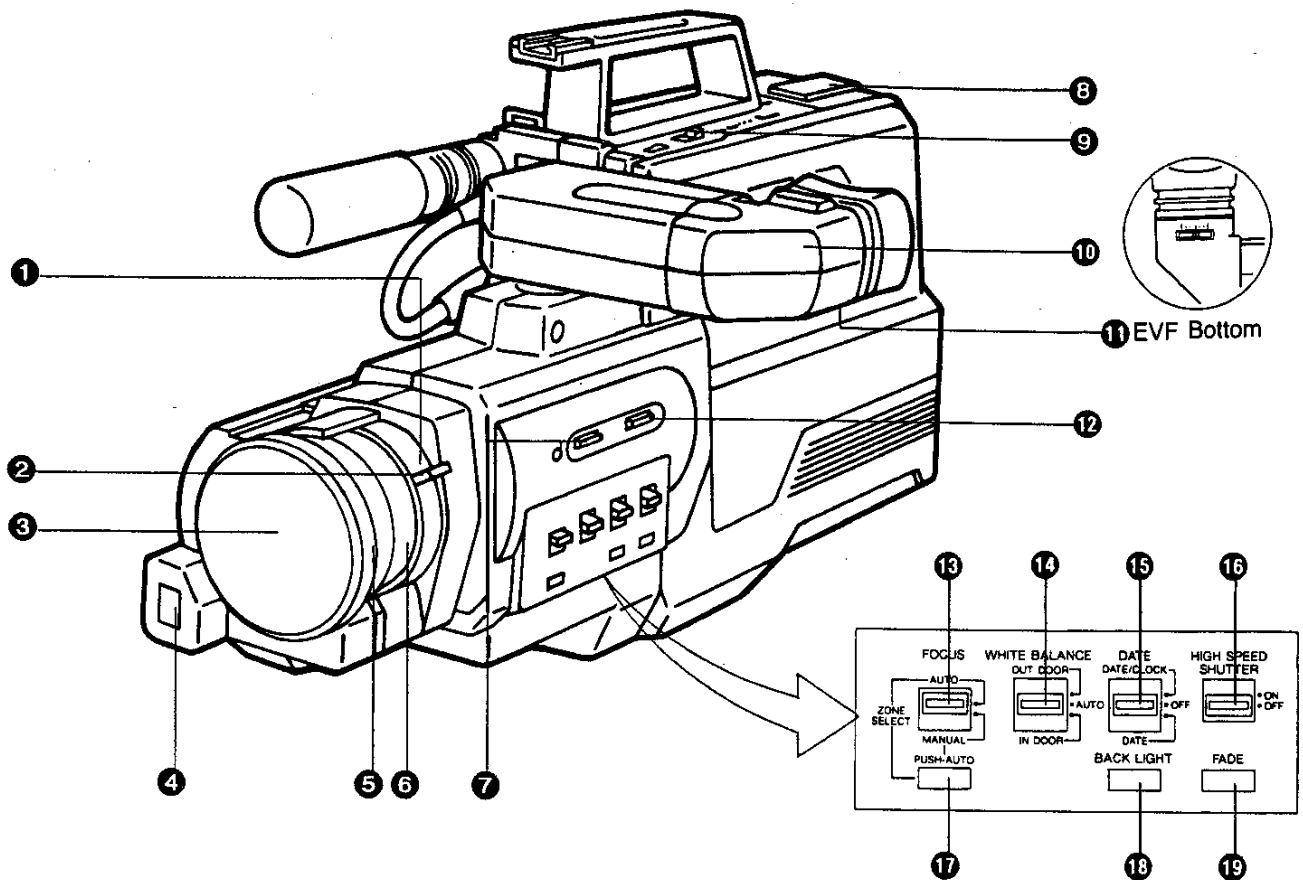
Audio Dubbing Function

The Audio Dubbing function of the VHS Movie makes it possible to replace the sound that was recorded during shooting by a new recording of narration, background music or special sound effects using either the built-in or an external microphone.

HQ (High Quality) Picture System

Video recorders carrying the HQ symbol mark feature the new VHS High Quality Picture System. This system assures complete compatibility with VTRs that use the conventional VHS system.

CONTROLS AND COMPONENTS



No.	Description	Page
1	Zoom Ring	29
2	Manual Zoom Lever	29
3	Lens Cap	—
4	White Balance Sensor Window	—
5	Lens Hood	—
6	Focus Ring	28
7	Standby Button with Indicator (STAND BY)	18
8	Tape Running Buttons	6
9	General Operation Controls	6
10	Electronic Viewfinder	15

No.	Description	Page
11	Eyepiece Corrector Control	15
12	Rec Review Button (REC REVIEW)	17
13	Focus Mode Selector (FOCUS)	16
14	White Balance Mode Selector (WHITE BALANCE)	16
15	Date Function Selector (DATE)	21
16	High Speed Shutter Selector (HIGH SPEED SHUTTER)	30
17	Focus Adjusting Button/Zone Selector (PUSH AUTO)	28
18	Back Light Button (BACK LIGHT)	30
19	Fade In/Fade Out Button (FADE)	30

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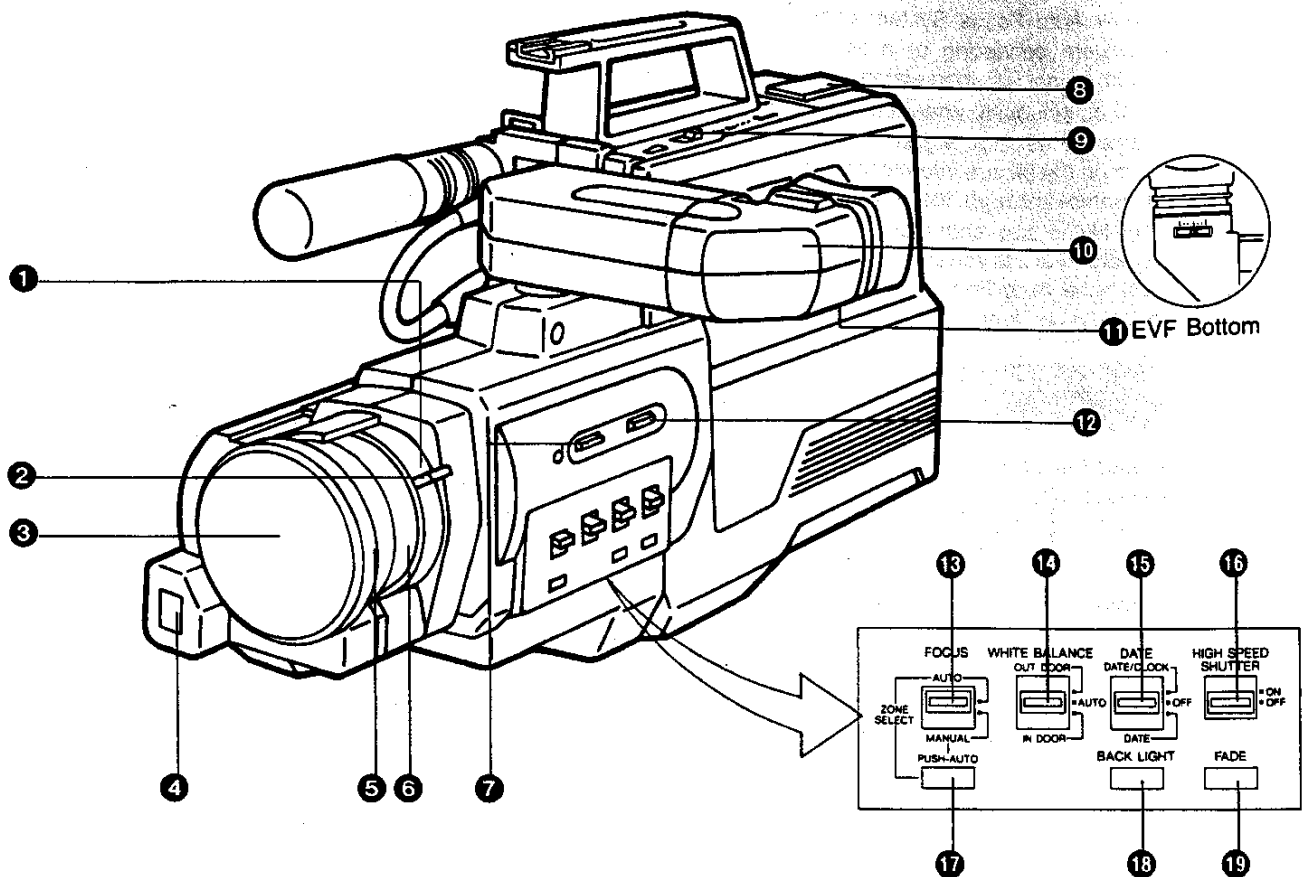
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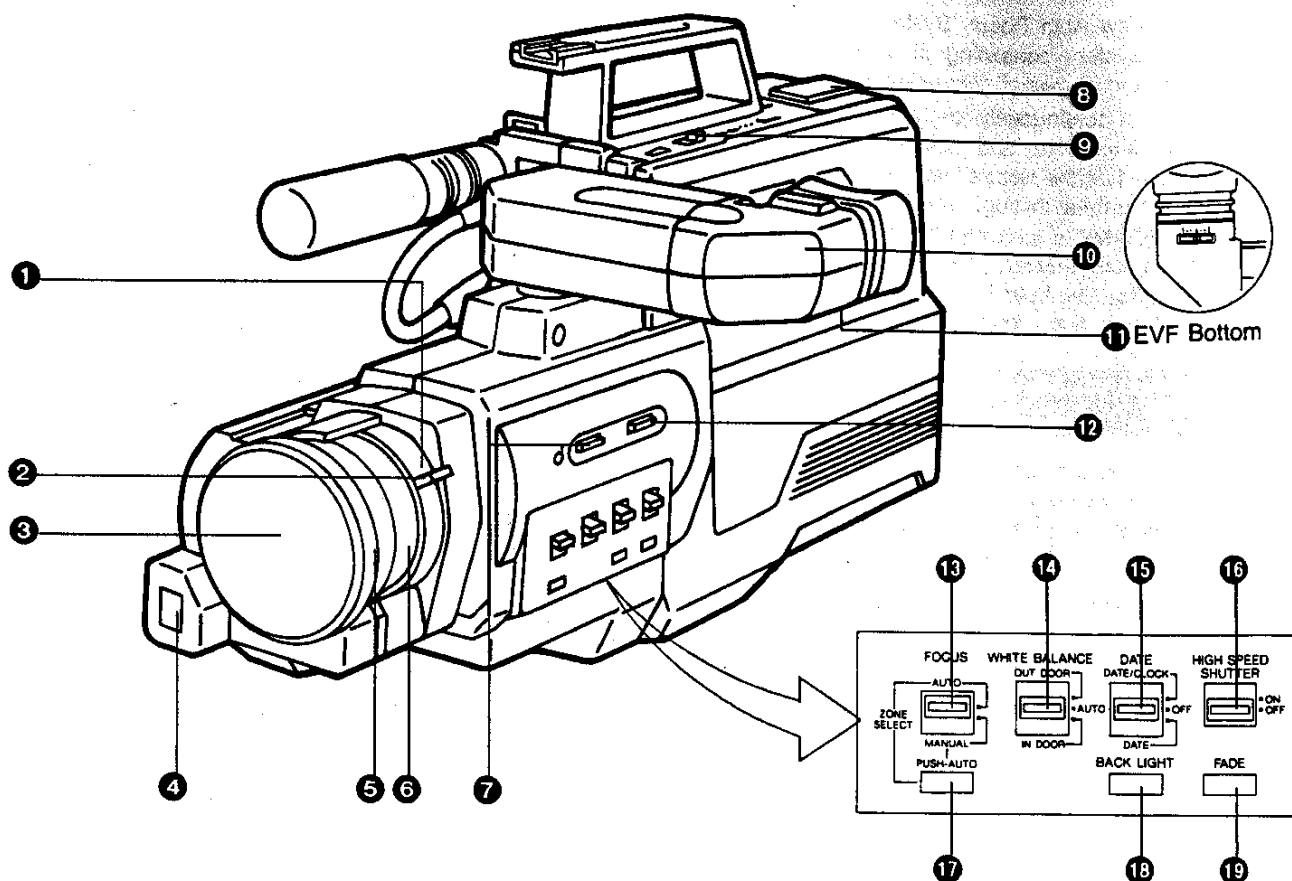
CONTROLS AND COMPONENTS



No.	Description	Page
1	Zoom Ring	29
2	Manual Zoom Lever	29
3	Lens Cap	—
4	White Balance Sensor Window	—
5	Lens Hood	—
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7	Standby Button with Indicator (STAND BY)	18
8	Tape Running Buttons	6
9	General Operation Controls	6
10	Electronic Viewfinder	15

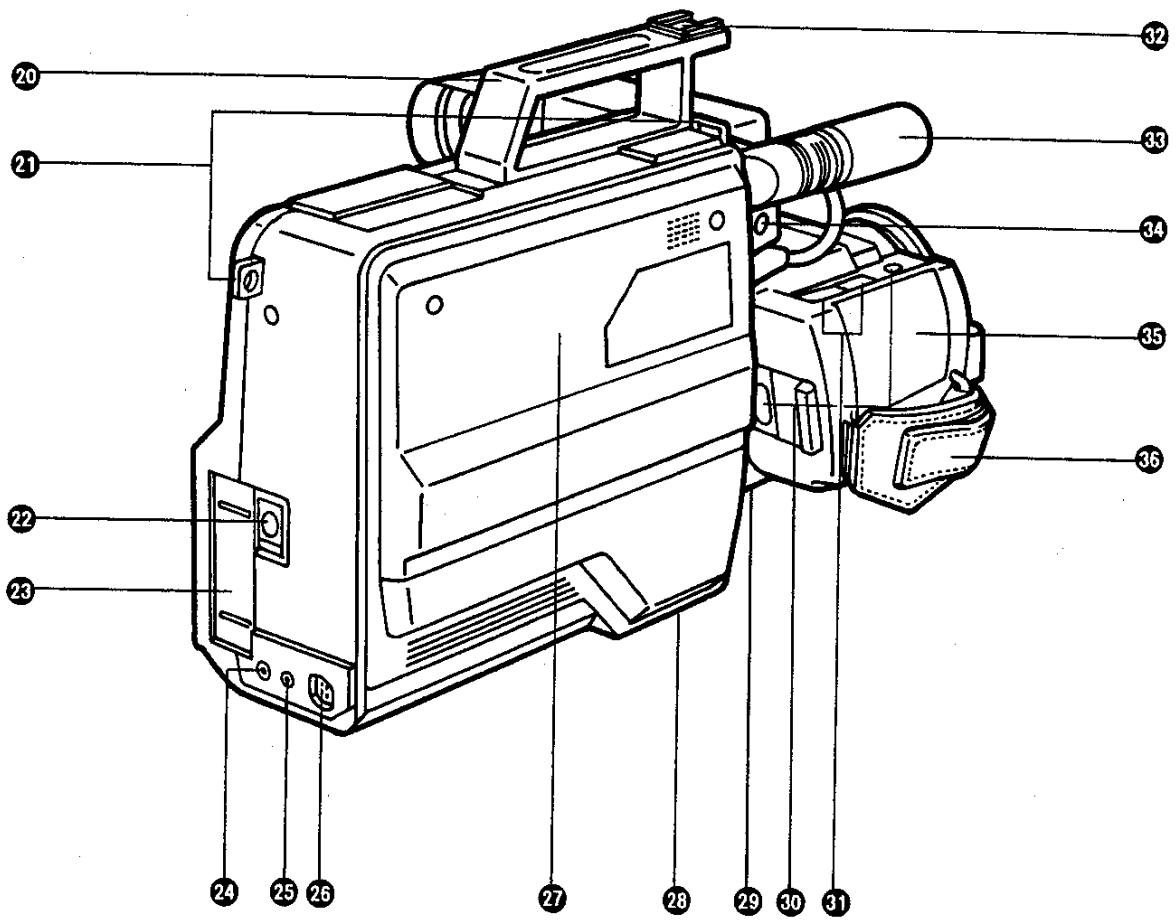
No.	Description	Page
11	Eyepiece Corrector Control	15
12	Rec Review Button (REC REVIEW)	17
13	Focus Mode Selector (FOCUS)	16
14	White Balance Mode Selector (WHITE BALANCE)	16
15	Date Function Selector (DATE)	21
16	High Speed Shutter Selector (HIGH SPEED SHUTTER)	30
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10	Electronic Viewfinder	15

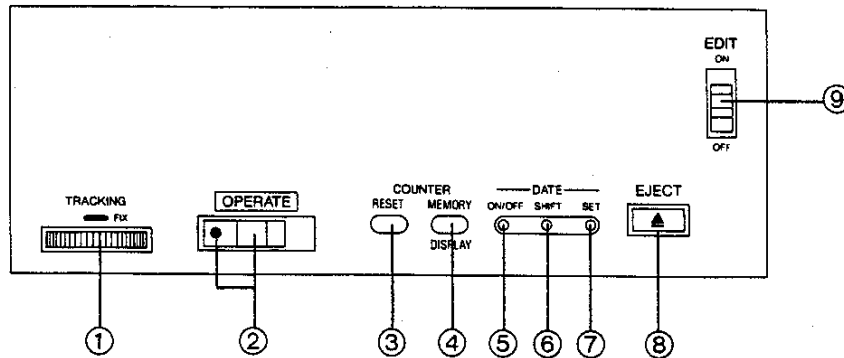
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18	Back Light Button (BACK LIGHT)	30
19	Fade In/Fade Out Button (FADE)	30



lo.	Description	Page
0	Carrying Handle	—
1	Metal Fitting for Shoulder Strap	31
2	Battery Eject Button (BATT EJECT)	10
3	Battery Compartment	10
4	Earphone Socket (EAR)	31
5	Remote Control Socket (REMOTE)	31
6	Adaptor Socket (ADAPTOR)	11
7	Cassette Compartment	14
8	Tripod Receptacle	31

No.	Description	Page
29	Battery Compartment for Auto Date/Clock	21
30	Start/Stop Button	17
31	Power Zoom Control	29
32	Accessory Shoe	—
33	Built-In Microphone	25
34	Microphone Socket (MIC)	25
35	Handgrip	16
36	Grip Belt	16

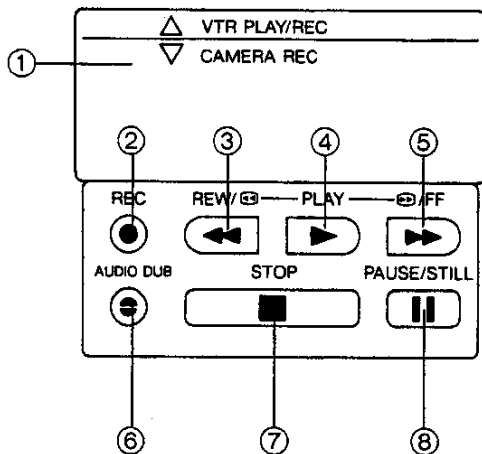
⑨ General Operation Controls



No.	Description	Page
①	Tracking Control (TRACKING)	20
②	Operation On/Off Switch with Indicator (OPERATE)	16
③	Counter Reset Button (RESET)	20
④	Memory Button (MEMORY)	20
⑤	Date On/Off Button (ON/OFF)	21

No.	Description	Page
⑥	Date Shift Button (SHIFT)	21
⑦	Date Set Button (SET)	21
⑧	Eject Button (EJECT)	14
⑨	Edit Switch (EDIT)	24

⑧ Tape Running Buttons



① Function of the Camera/VTR Operation Selector Cover

Before starting camera recording, slide this cover close to conceal the Tape Running Buttons and render them inoperative.

For playback, audio dubbing, tape copying and other VTR operations, open this cover. This renders the Start/Stop Button and other operation controls for camera recording inoperative.

No.	Description	Page
①	Camera/VTR Operation Selector Cover	16
②	Record Button (REC)	26
③	Rewind ◀◀/Review ◀▶ Button	19
④	Play Button (PLAY)	19

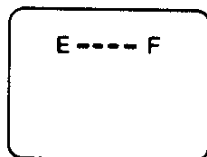
No.	Description	Page
⑤	Fast Forward ▶▶/Cue ▶▶▶▶ Button	19
⑥	Audio Dubbing Button (AUDIO DUB)	25
⑦	Stop Button (STOP)	19
⑧	Pause/Still Button (PAUSE/STILL)	19

ENGLISH

Remaining Battery Power Indication

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.

- This indication will not be recorded.

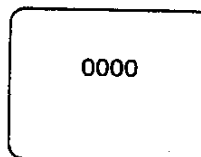


Tape Counter Indication

The displayed number changes according to the tape movement.

The tape counter operates even when the figures are not displayed in the EVF. The Tape Counter Indication is memorized even after the VHS Movie is turned off.

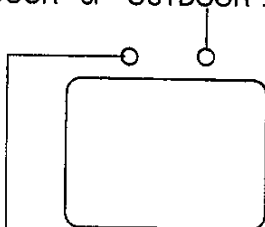
- This indication will not be recorded.



Indication Lamps

Manual White Balance Indication Lamp

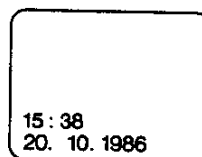
This lamp is lit when the White Balance Mode Selector is set to "INDOOR" or "OUTDOOR".



Recording Indication Lamp

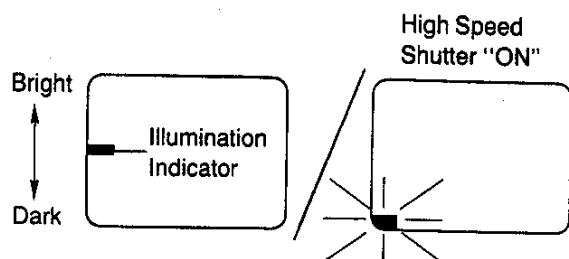
Date/Clock Indications

A built-in digital clock, that is operated on batteries having a service life of at least one year, lets you call up the correct time and/or date on the EVF during shooting and simultaneously superimpose it on the picture being recorded.

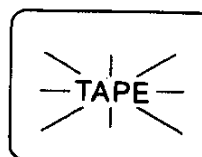


Warning/Alarm Indications

This indicator shows the brightness of the illumination. When the High Speed Shutter Selector is set to "ON", it flashes.

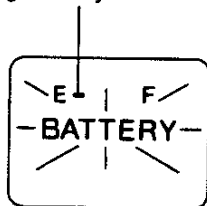


It is impossible to record because the erasure prevention tab of the cassette is not intact.

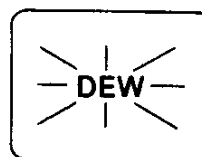


There is little battery power left. The VHS Movie will be turned off in a few minutes. Replace the battery pack.

Remaining Battery Power Indication



When condensation has formed inside the VHS Movie, the "DEW" indication will flash and a few seconds later, the unit will turn itself off.



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

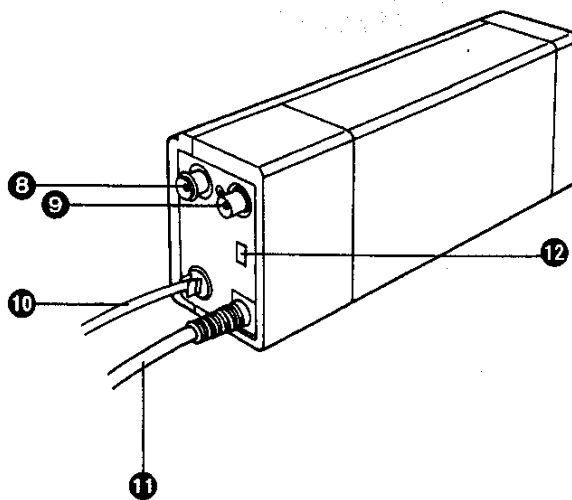
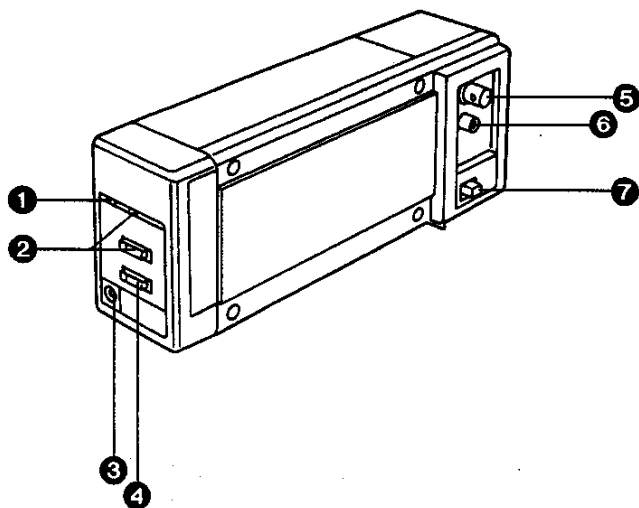
AC Adaptor (VW-AM5)

Precautions

- Avoid violent shocks and rough handling of the unit.
- Do not allow liquid to spill into the unit.
- Do not block or cover the ventilation slots on the top and side of the unit, especially by soft material such as cloth or paper.
- Do not place heavy objects on the unit.

- When unplugging the mains cord or other connector cords, be sure to grasp the plug, not the cord.
- When listening to a radio while the VW-AM5 is in operation, the radio reception may be distorted. In this case, move the VW-AM5 away from the radio.

Controls and Components

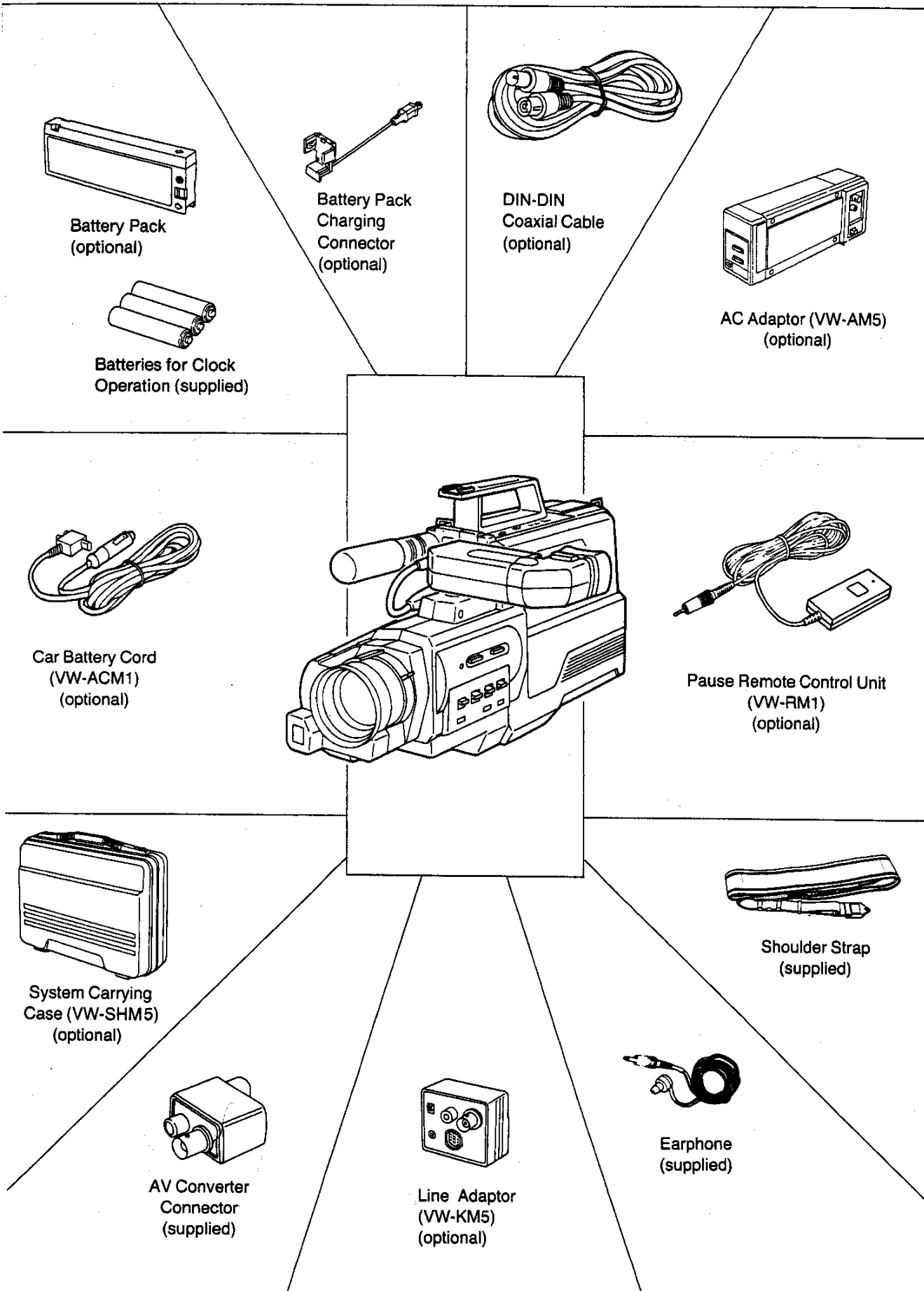


No.	Description	Page
1	Charging Indicator	12
2	Operation Switch with indicator	11
3	Battery Pack Charging Socket	12
4	TV/VTR Selector	23
5	Video Output Socket	—
6	Audio Output Socket	—

No.	Description	Page
7	Power ON/OFF Switch	11
8	RF Input Socket	23
9	RF Output Socket	23
10	Mains Lead	11
11	Adaptor Cable	11
12	RF Converter Channel Selector	23

VHS MOVIE SYSTEM

ENGLISH



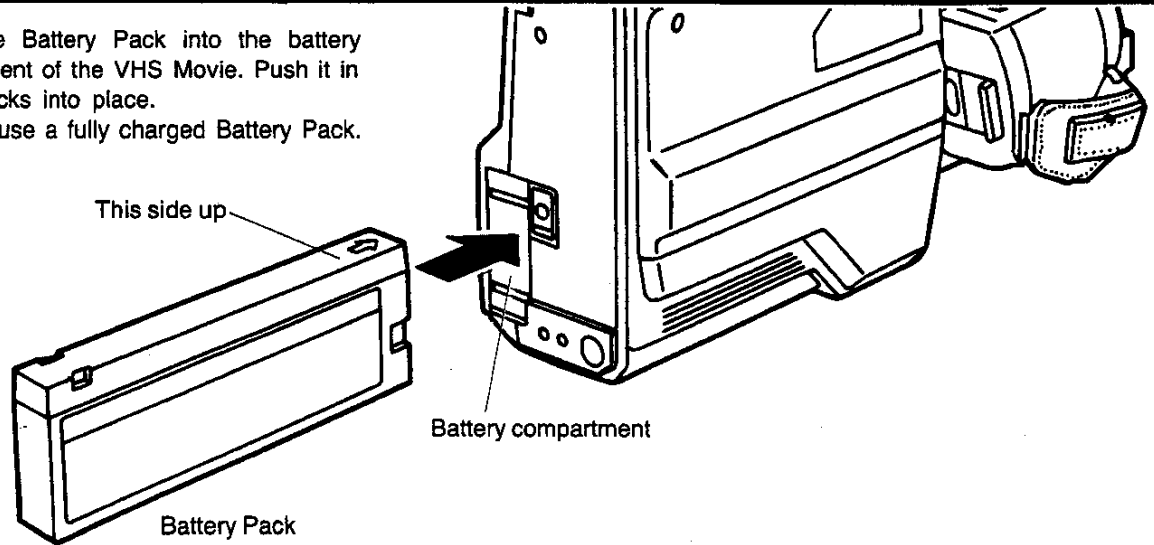
CAUTION: TO PREVENT FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

POWER SUPPLIES

Inserting the Battery Pack

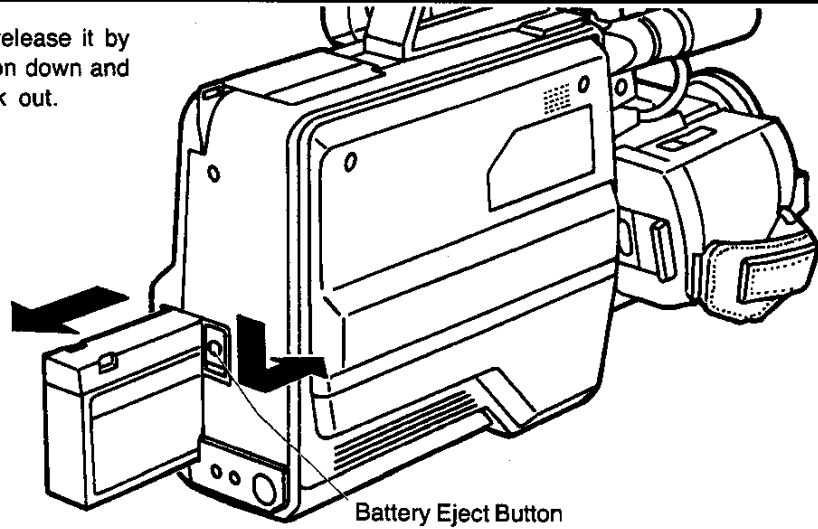
Insert the Battery Pack into the battery compartment of the VHS Movie. Push it in until it clicks into place.

- Always use a fully charged Battery Pack.

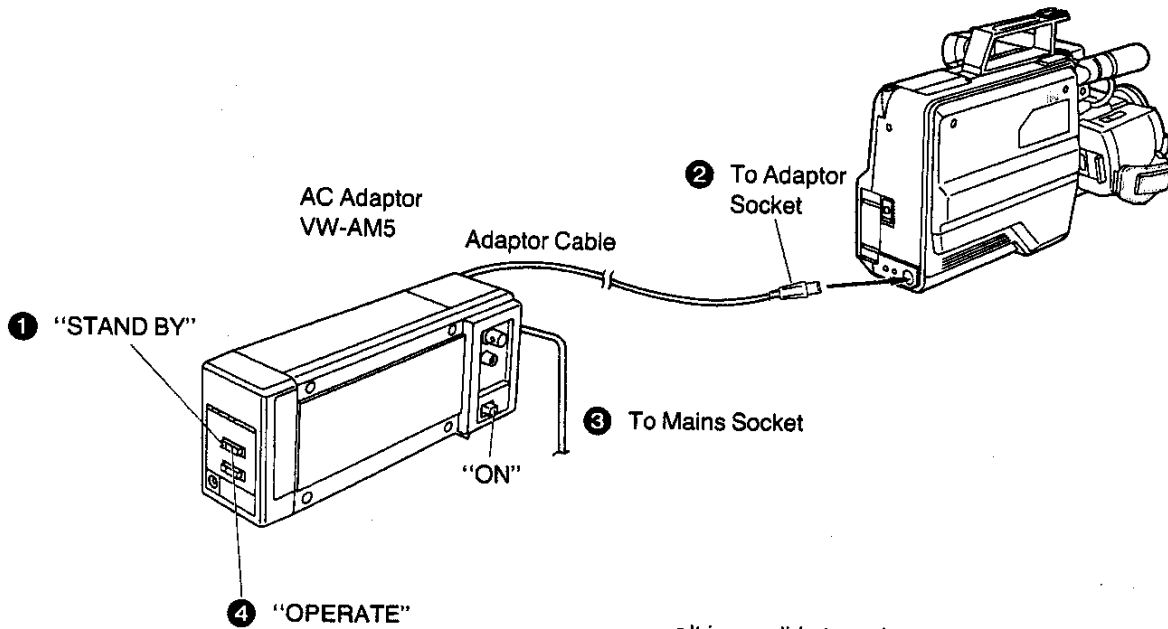


Removing the Battery Pack

To remove the Battery Pack, release it by pressing the Battery Eject Button down and in, then slide the Battery Pack out.

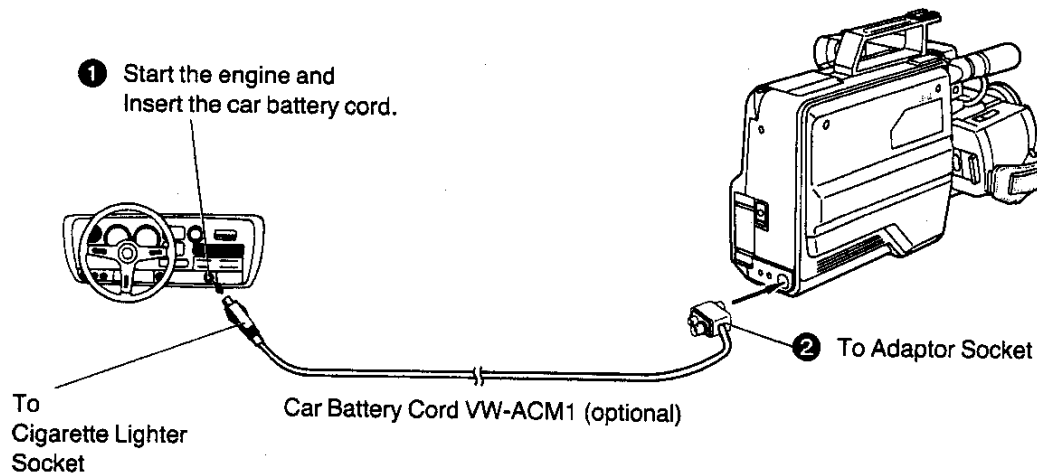


AC Adaptor (optional)



- 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 page 12.
- Never use any other AC adaptor than specified.

Car Battery Cord (optional)

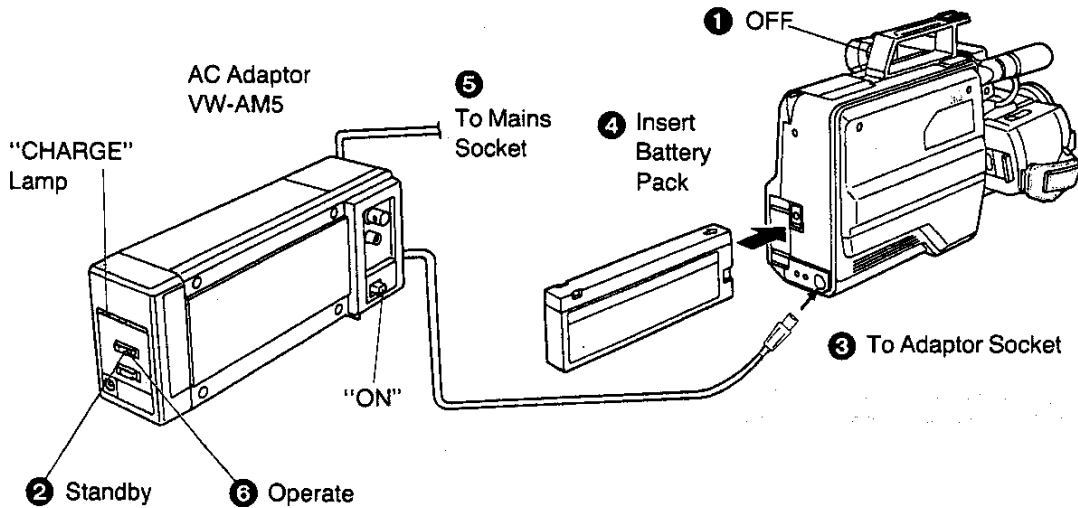


- The car battery cord can only be used with 12 V DC negative-grounded vehicles. 24 V DC or positive-grounded vehicles can not be used.
- The car engine must be kept running while the VHS Movie is powered by the car battery.

- If the supplied power from the vehicle drops too low, 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.
- It is not possible to recharge the battery pack by using the vehicle's battery and/or the car battery cord.

Charging the Battery Pack

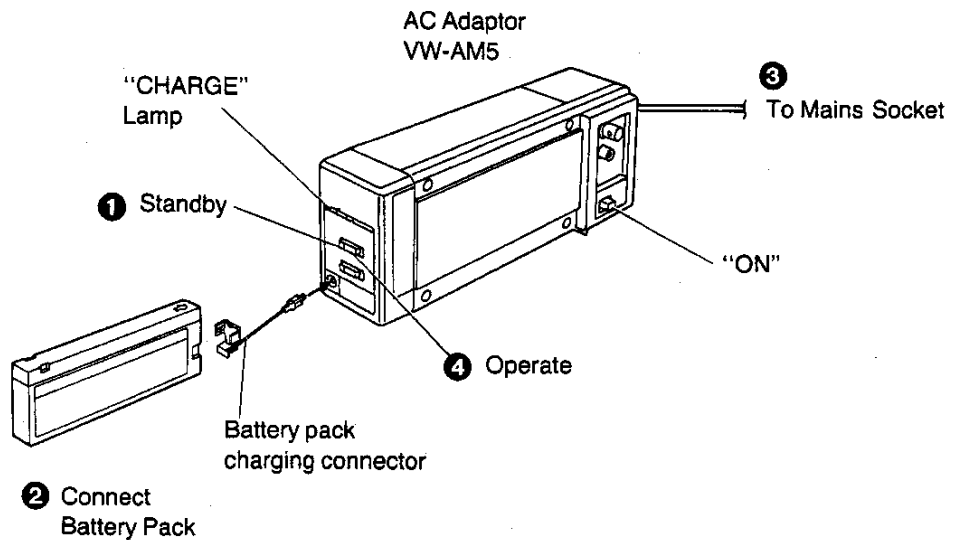
To charge an inserted battery pack in the VHS Movie



- The Charging Indicator will go out about 90 minutes after charging starts. However, the Battery Pack should be charged at least 3 hours for extended use.

To charge the Battery Pack connected to the AC Adaptor

Use the Battery Pack Charging Connector provided with the AC Adaptor.



- It is possible to charge two battery packs simultaneously—one connected to the AC Adaptor and another inserted in the VHS Movie. However, charging them at the same time takes twice as long as charging them separately.

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.

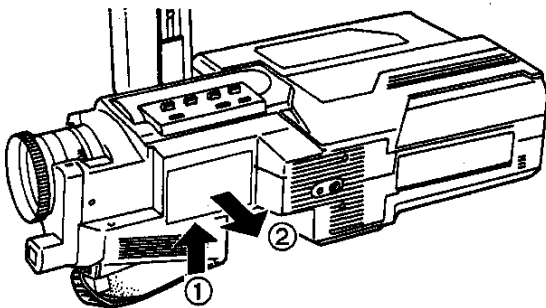
To Extend the Battery Life

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 may not be possible to recharge it.
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 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, avoid recharging it for more than 24 hours.
 - Do not overcharge nor completely discharge battery packs.
5. Store it in a dry and cool place.

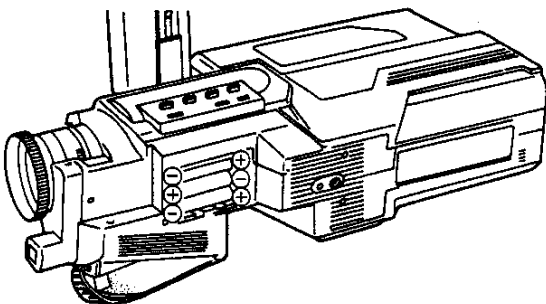
How to Insert the Batteries for the Clock Operation

Three IEC "R03" size batteries (supplied) are necessary for the operation of the built-in digital clock, and to memorize the Date/Clock and the Tape Counter Indications when the VHS Movie is turned off.

- ① Remove the lid on the bottom of the VHS Movie.



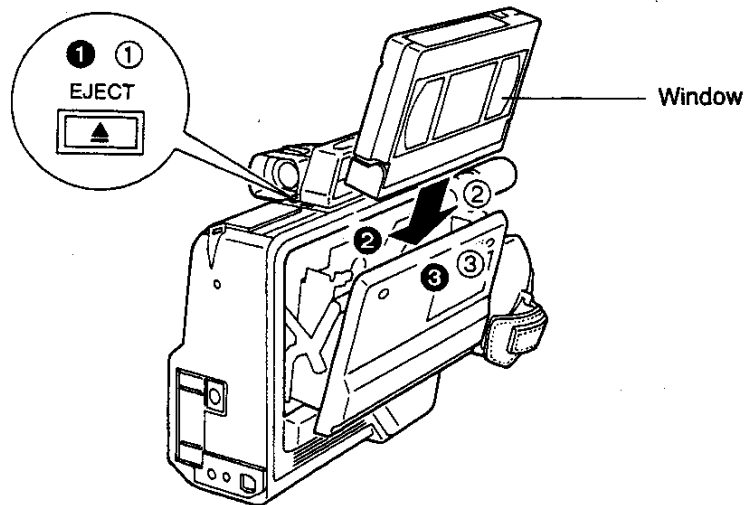
- ② Insert the three batteries with their polarities (⊕ and ⊖) aligned correctly and then replace the lid.



CAUTION FOR BATTERY REPLACEMENT

- The life of the batteries is about one year, however, it depends on the frequency of use. Inspect and if necessary, replace the batteries once a year.
- Load the new batteries with their polarities (⊕ and ⊖) aligned correctly.
- Do not apply heat to batteries, or internal short-circuit may occur.
- Remove spent batteries immediately and dispose of them.
- Do not use an old and a new batteries together. (Also never use an alkaline battery with a manganese battery.)

THE VIDEO CASSETTE

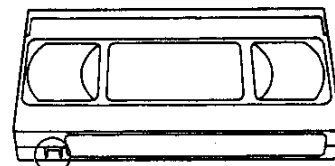


Inserting a Video Cassette

- 1 Press the Eject Button.
- 2 Insert the video cassette into the cassette holder with its window facing outside and the arrow mark pointing downward.
- 3 Push the cassette holder (near its front end) inward, until it locks with a click.

• Use **VHS** video cassette only.

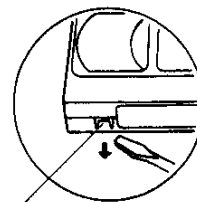
• When a power supply unit (Battery Pack, AC Adaptor or car battery) is connected to the VHS Movie, the Eject Button remains operative, even if the VHS Movie has been switched off with the Operation On/Off Switch.



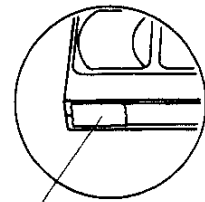
Removing a Video Cassette

- 1 Press the Eject Button.
- 2 Pull out the video cassette.
- 3 Push the cassette holder (near its front end) inward, until it locks with a click, to close the cassette compartment.

To prevent accidental erasure



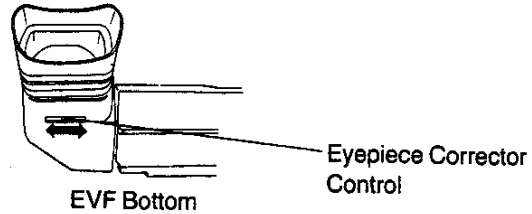
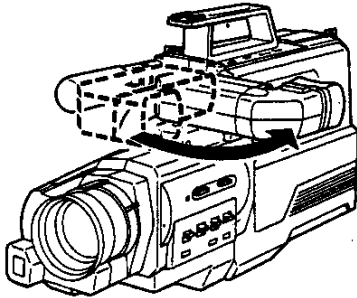
To record again



ELECTRONIC VIEWFINDER

Rotate the electronic viewfinder.

Turn the EVF outward until it locks with a click.

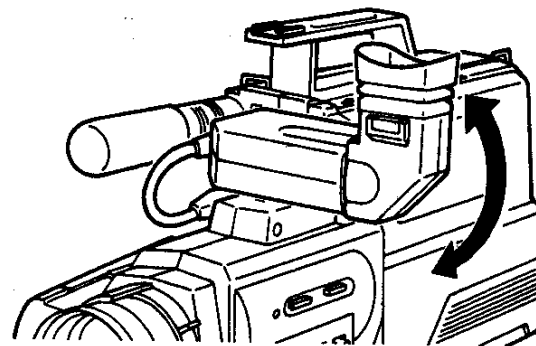
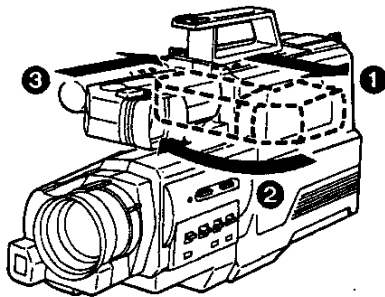


This control allows correction of the eyepiece to suit your eyesight. This assures more convenient focusing and reduces the possibility of recordings that are blurred because the focus was not properly adjusted.

To adjust the eyepiece corrector to suit your eyesight, bring the eyecup of the viewfinder close to the eye, press the Eyepiece Corrector Control inward and slide it forward or backward until the Recording Indication Lamp or the viewfinder frame can be seen most clearly.

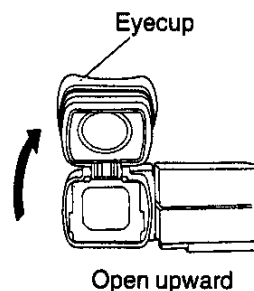
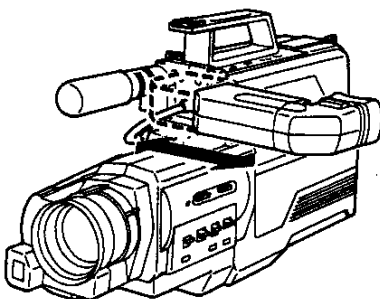
To move the viewfinder back to its original position:

- 1 Pull the viewfinder outside.
- 2 Turn it forward toward the lens, as shown.
- 3 Then push the viewfinder back toward its base again.



The eyepiece assembly can be turned vertically 180° to allow for any shooting position.

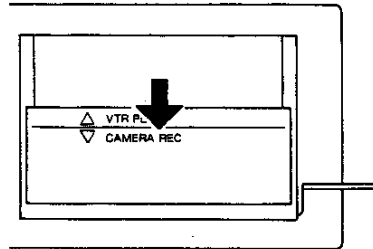
Pull the EVF outward and adjust it to the most comfortable viewing position.



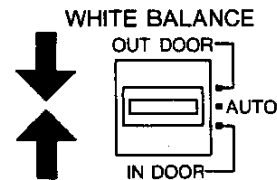
To watch the picture in the viewfinder from some distance, swing up the eyecup.

CAMERA RECORDING

1. Slide the Camera/VTR Selector Cover close so that it covers the Tape Running Buttons.



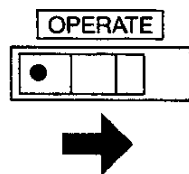
- 1 Set the White Balance Mode Selector to "AUTO" position.



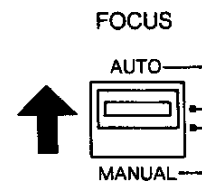
For more details, see page 27.

2. Slide the Operation On/Off Switch backward to turn the VHS Movie on.
 - As soon as the corresponding indication lights up, the VHS Movie is ready for operation.

To turn the VHS Movie off, slide the Operation On/Off Switch backward again.



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

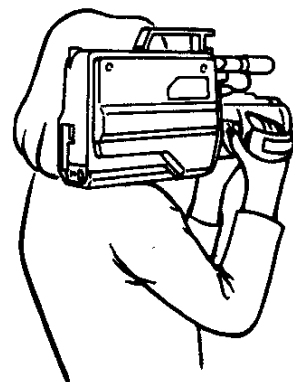


For more details, see page 28.

3. Press the Eject Button to open the cassette compartment. Insert a video cassette with the erasure prevention tab intact.
 - The window side of the cassette must face outside and the arrow mark point downward.
 - A few seconds later, the VHS Movie will change over to the recording pause mode.

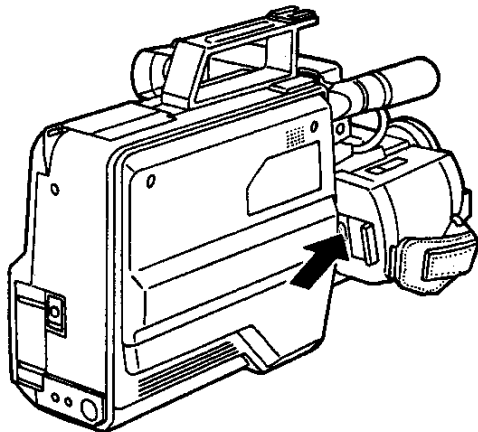


- 3 Place the VHS Movie on the shoulder to get ready for shooting.

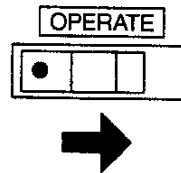


- Grasp the Handgrip and adjust the length of the Grip Belt (Velcro tape closure) to the size of your hand.

- 4** Press the Start/Stop Button.
- The Recording Indication Lamp in the EVF will light up and the recording starts.

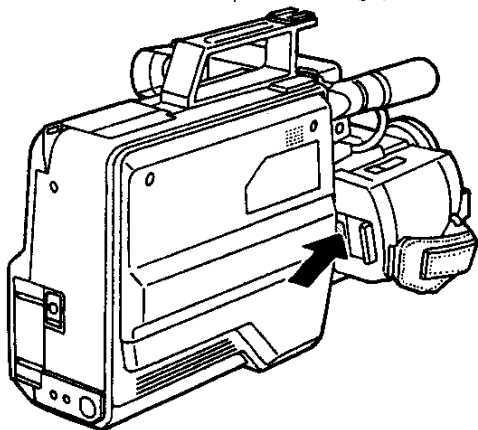


- 6** To finish recording, slide the Operation On/Off Switch backward again.
- The lamp will go out.



- After turning off the power, wait at least 2 seconds before performing any other operations.

- 5** When the Start/Stop Button is pressed again, the lamp will go out, the recording will be stopped and the VHS Movie will be in the recording pause mode.

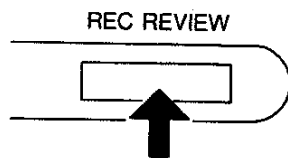


- If the VHS Movie is left in the pause mode for more than 5 minutes:
The VHS Movie will automatically switch over to the standby mode (viewfinder is off) to protect the tape and save battery power. To switch over to the recording pause mode (viewfinder is on) again, press the Standby Button.
- When the tape reaches its end, the VHS Movie will automatically switch over to the stop mode.

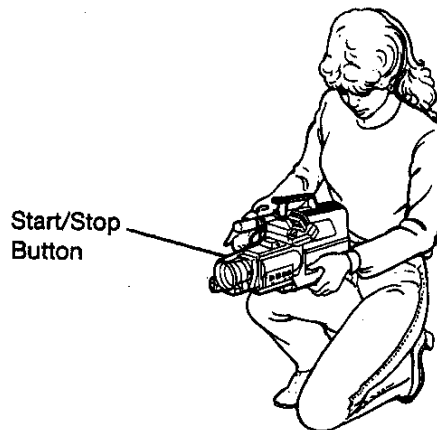
To Check a Recording

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

- The last 4 seconds of the recorded scene will be played back and the VHS Movie will again stop in the recording pause mode ready for further recording.



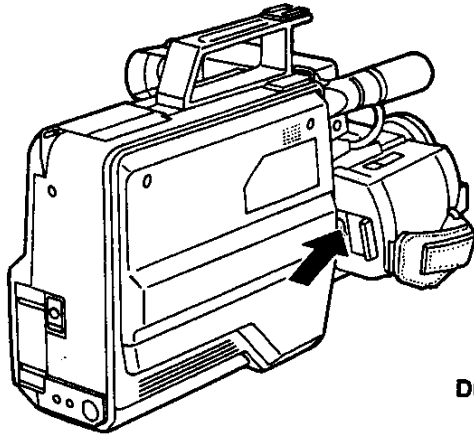
For low-angle shots, it is convenient to open up the Eyecup and use the Start/Stop Button located on top of the Handgrip near its front end.



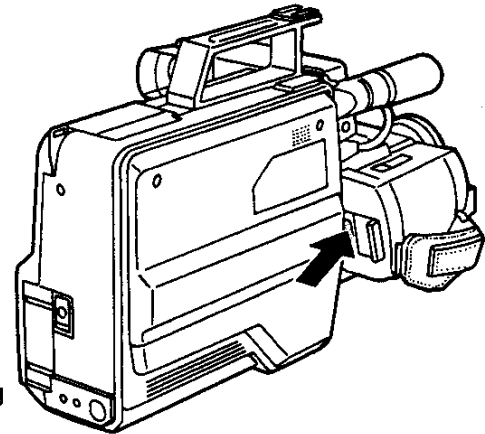
Standby Function

To save power and extend the life of the battery pack when the recording pause duration is longer than a few minutes

Press the Start/Stop Button to stop the recording.

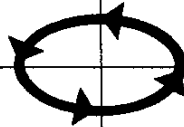


Press the Start/Stop Button to start recording again.



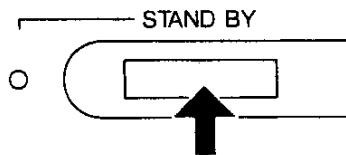
During Recording

Recording Pause



Recording Pause

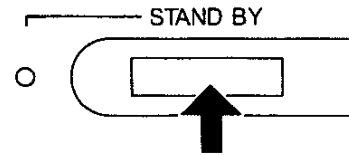
Press the Standby Button.



- The corresponding lamp will light up.
- The VHS Movie is now in the standby condition.
- No picture can be seen in the EVF.
- After putting the VHS Movie in the standby mode, wait at least 4 seconds before performing any other operations.

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

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



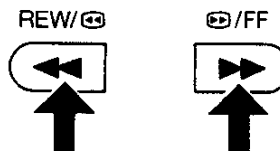
Note: To turn the VHS Movie off when it is in the standby mode, press the Standby Button again before turning the VHS Movie off with the Operation On/Off Switch.

Preparation

1. Slide the Operation On/Off Switch backward to turn the VHS Movie on.
2. Slide the Camera/VTR Selector Cover open so that the Tape Running Controls become accessible.
3. Insert the recorded video cassette.
4. For Playback via a TV set, see "CABLE CONNECTIONS" on pages 22 and 23.
5. Make sure that the Edit Switch is set to "OFF".

Cue & Review Playback

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



Fast Forward

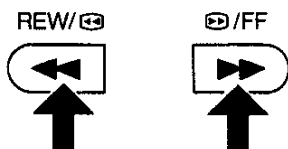
Press the Fast Forward/Cue Button to wind the tape forward rapidly.

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

Rewind

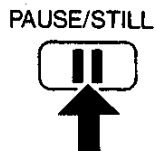
Press the Rewind/Review Button to rewind the tape.

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



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.



- If you leave the VHS Movie in the still playback mode for more than 5 minutes, it will automatically switch over to the stop mode, to protect the tape and the video heads.

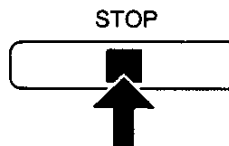
Playback

Press the Play Button.

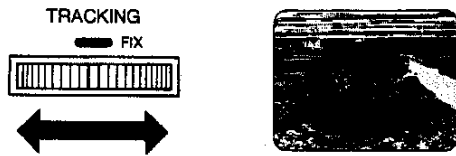


To Finish Playback

Press the Stop Button.



Tracking Adjustment Control



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

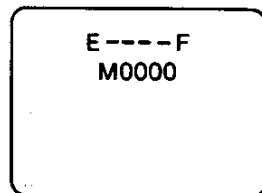
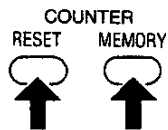
A tape recorded on a VTR in the LP mode cannot be played back on the VHS Movie.

During Stop mode...

- When the VHS Movie is in the stop mode during use with the AC Adaptor or a car battery, it will remain on for as long as the AC Adaptor is on or as long as the VHS Movie remains connected to the car battery.
- If the VHS Movie is left in the stop mode for more than 5 minutes whilst using the rechargeable battery pack the VHS Movie will automatically switch to power off.

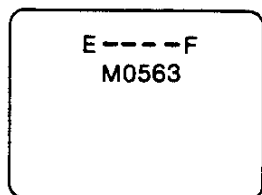
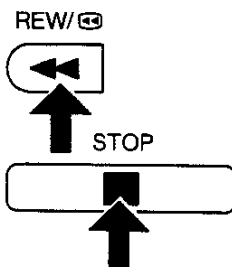
Tape Counter and Memory Function

During playback if you want to locate a particular scene on the tape at a later time, press the Reset Button at that point and then press the Memory Button.



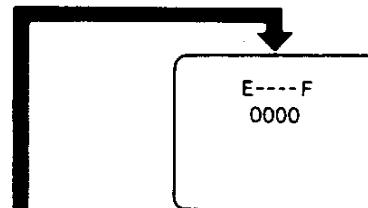
- The tape counter is reset to "0000" and the Memory Indication "M" appears.

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

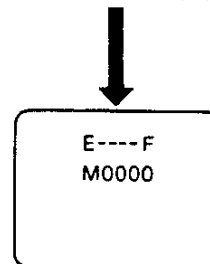


- When the Rewind or Fast Forward Button is pressed, the tape will automatically stop about the point where the Tape Counter reads "0000". Then press the Play Button to see the required scene again.

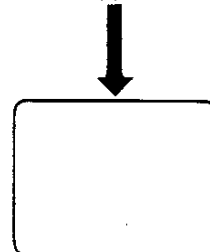
Memory Button



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



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

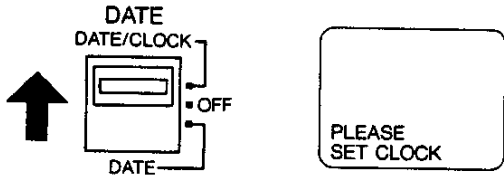


- If you press this button three times, only the Battery Level and the Tape Counter indications will be displayed again. The Memory function will not operate.

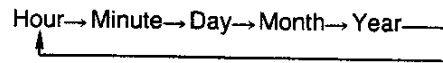
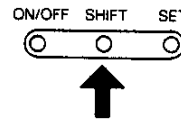
Setting of the Date and Clock & Recording the Date/Clock Indications

ENGLISH

- ① Set the Date Function Selector to "DATE/CLOCK" so that the indication "PLEASE SET CLOCK" appears in the EVF.

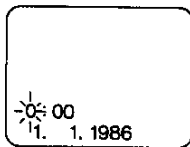
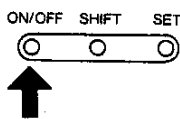


- ④ When the Shift Button is pushed, the flashing portion will be changed in the following sequence.



- Repeat procedures ③ and ④ until all five items have been set.
- Once the time and date are set, press the ON/OFF button in response to a precise time signal so that the clock may begin to function.

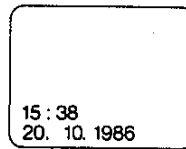
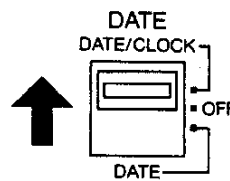
- ② When the ON/OFF Button is pressed, "0" hour flashes and a random date is displayed.



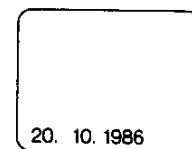
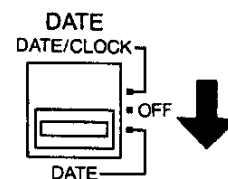
Recording the Date/Clock Indications

Select the desired mode with the Date Function Selector as shown below.

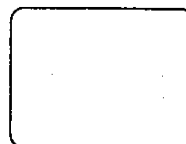
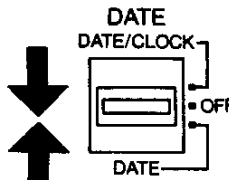
To record the Date and Clock Indications:



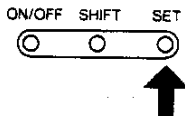
To record only the Date Indication:



To record neither the Date nor the Clock Indication:



- ③ When the Set Button is pushed, the flashing portion displayed will be changed in the following sequence.

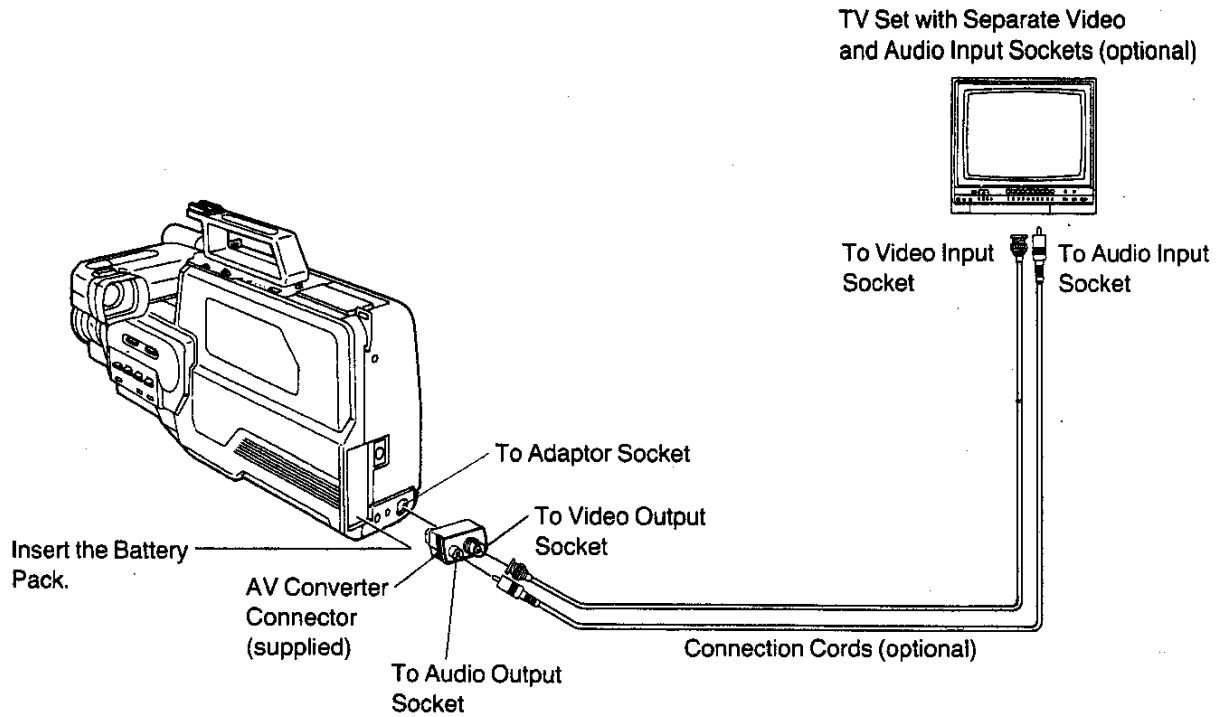


HOUR: 0 → 1 → → 23
 MINUTE: 00 → 01 → → 59
 DAY: 1 → 2 → → 31
 MONTH: 1 → 2 → → 12
 YEAR: 1986 → 1987 → → 1999

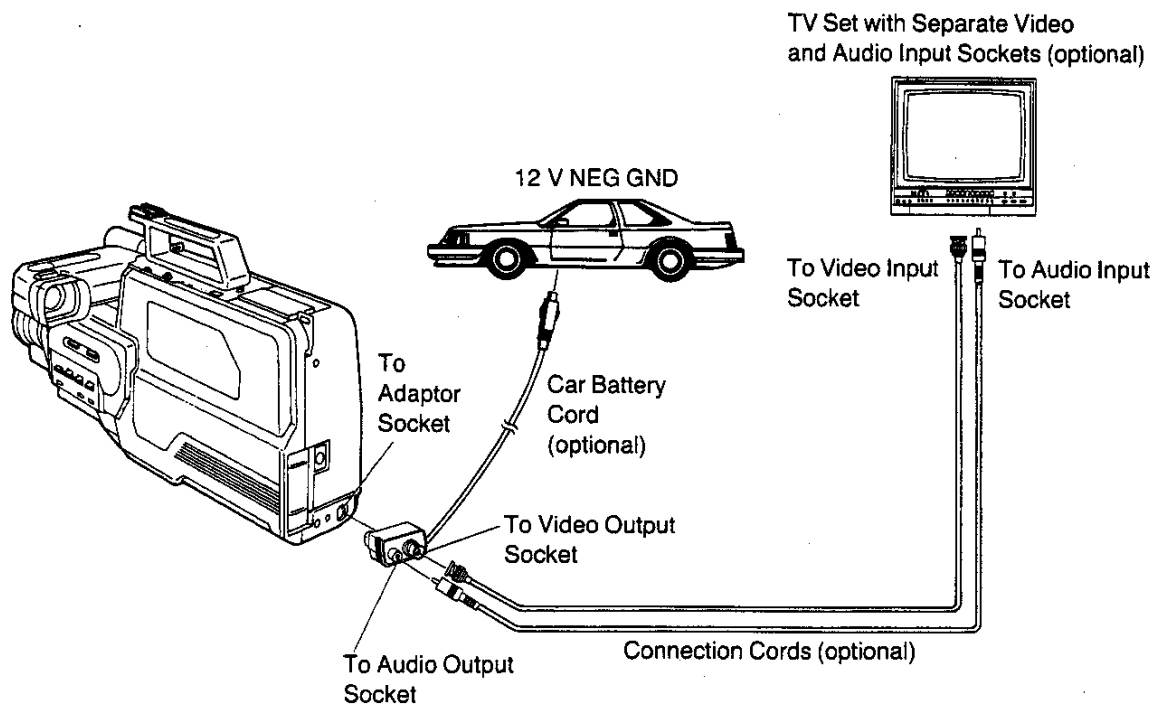
CABLE CONNECTIONS

Connection to a TV Set with Video and Audio Input Sockets

When using the battery pack as power source:

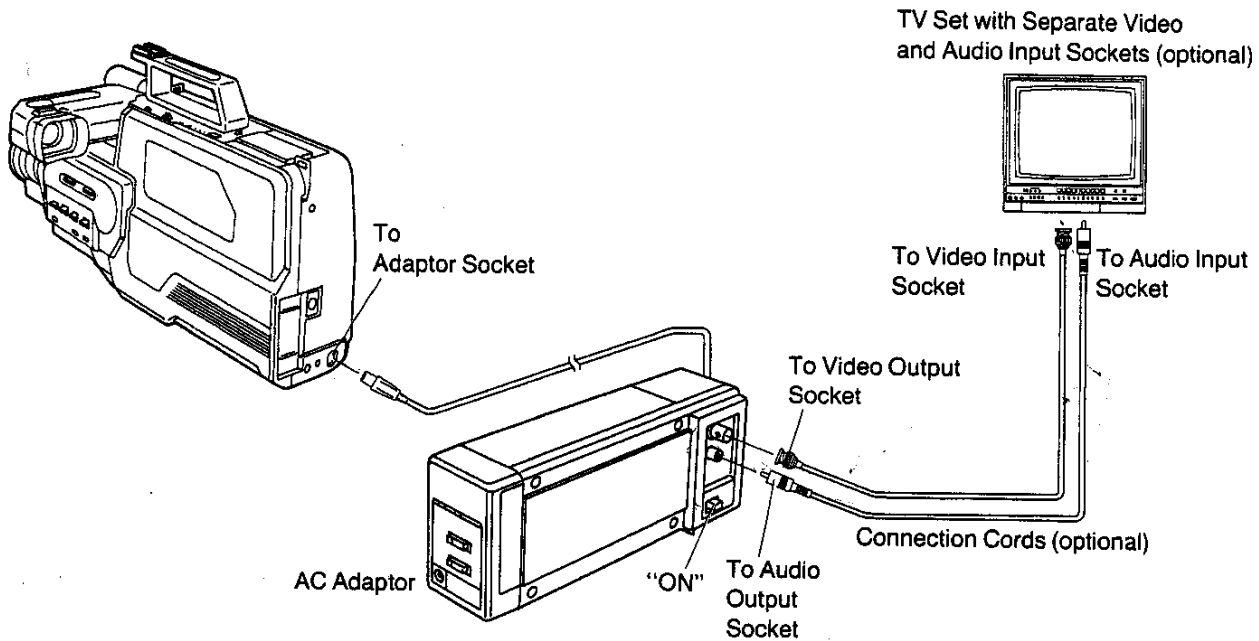


When using a car battery cord as power source:



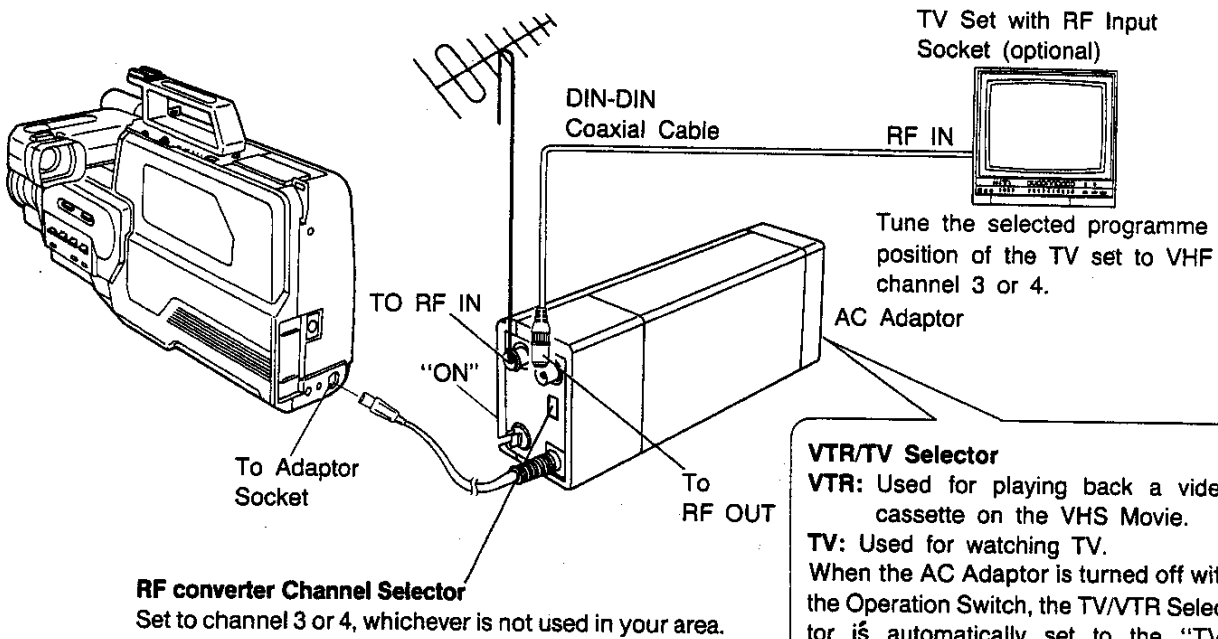
Connection to a TV Set with Video and Audio Input Sockets

When using an AC adaptor:



Connection to a TV Set without Video and Audio Input Sockets

An AC adaptor is required:



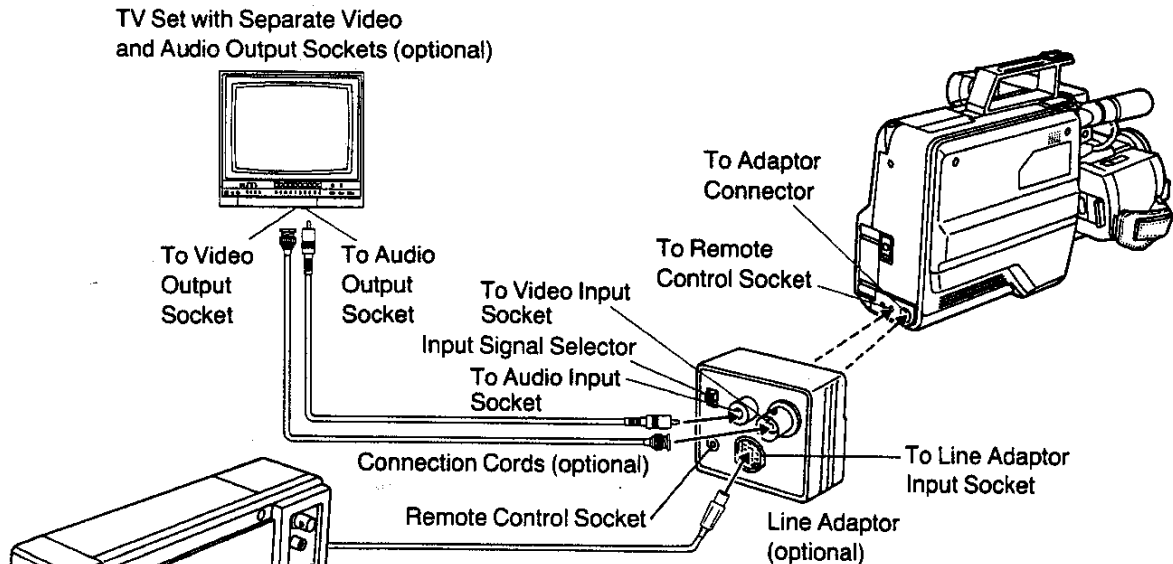
VTR/TV Selector
VTR: Used for playing back a video cassette on the VHS Movie.
TV: Used for watching TV.
 When the AC Adaptor is turned off with the Operation Switch, the TV/VTR Selector is automatically set to the "TV" position.

Note: Only use the specified adaptors for the above connections.

RECORDING FROM A TV BROADCAST/DUBBING

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

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

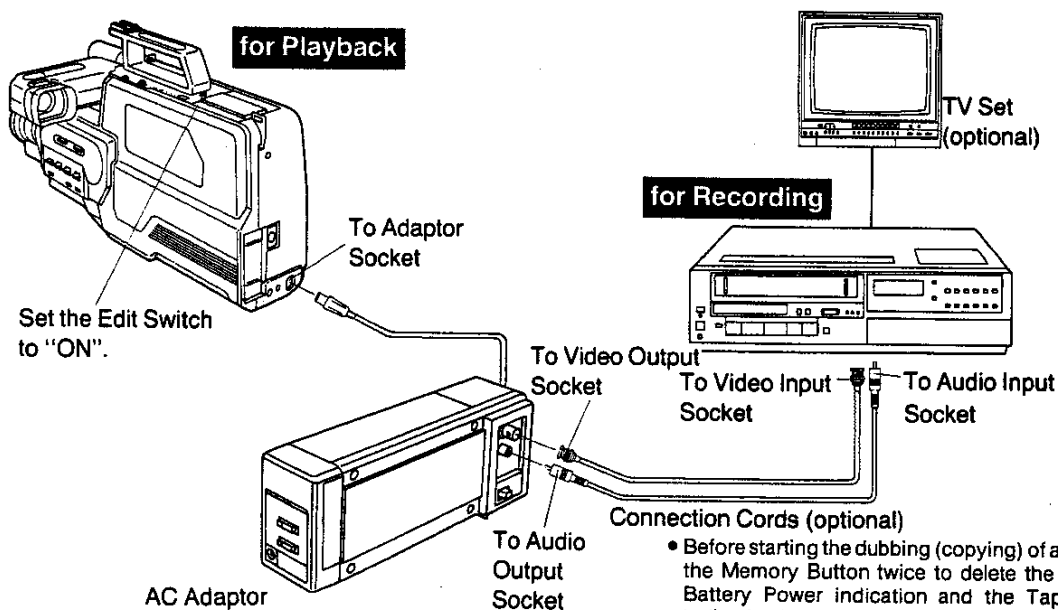


How to Use the Line Adaptor

	Camera/VTR Operation Selector Cover (on VHS Movie)	Input Signal Selector (on Line Adaptor)
To record picture and sound from an external source (Use as VTR)	Open	LINE
For Camera Shooting	Open	CAMERA REC
	Closed	Line or CAMERA REC is o.k.

- Connecting the Pause Remote Controller (optional) makes it possible to start and stop recording of picture and sound from some distance.

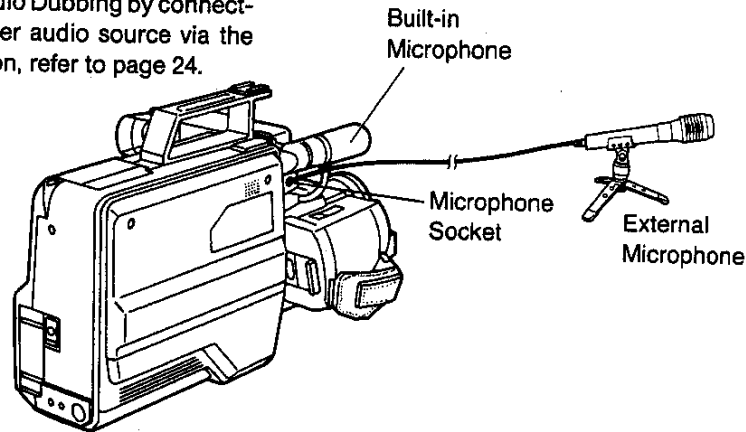
Connection of the VHS Movie with a video recorder



- 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.

Audio Dubbing can be performed by using the built-in microphone or an external microphone. If an external microphone is connected, the built-in microphone is automatically switched off.

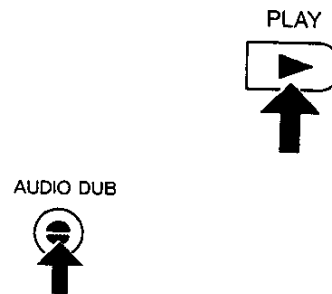
It is also possible to perform Audio Dubbing by connecting a microphone or some other audio source via the Line Adaptor. For the connection, refer to page 24.



Preparation

- Insert a video cassette with the erasure prevention tab intact.
- Slide the Camera/VTR Selector Cover open.

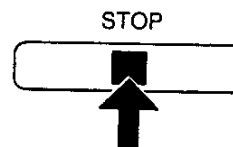
- 2 Press the Audio Dubbing Button and Play Button at the same time.



- 1 Press the Play Button and find the point where you want to start the audio dubbing.



- 3 Press the Stop Button to stop the audio dubbing.

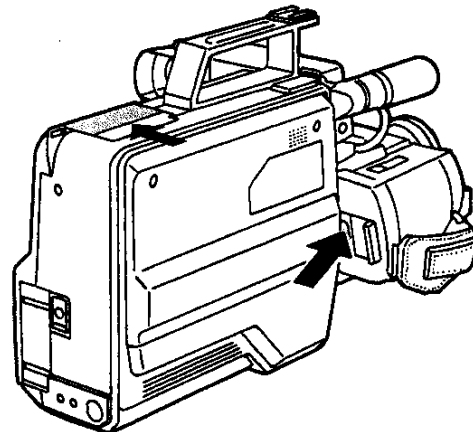


Preparation

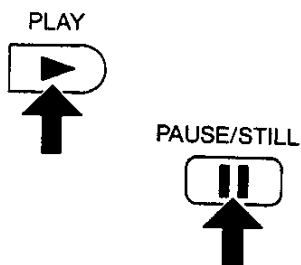
- Insert a video cassette with the erasure prevention tab intact.
- Slide the Camera/VTR Selector Cover open.

3 Assemble Editing Camera Recording

Slide the Camera/VTR Selector Cover closed, and then press the Start/Stop Button.

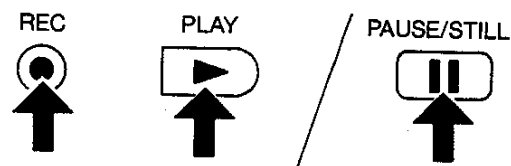


- 1 Press the Play Button, and then press the Pause/Still Button.



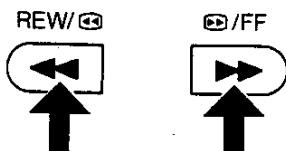
Assemble Editing Recording from another VTR...

Press the Record Button and Play Button at the same time.



- Press the Pause/Still Button to start the Assemble Editing recording.
- If the recording pause continues for more than 5 minutes in the VTR Assemble Editing mode, the VHS Movie will switch over to the standby mode to protect the video heads and the tape.

- 2 Find the point where the new recording is to be joined (Assemble Editing).

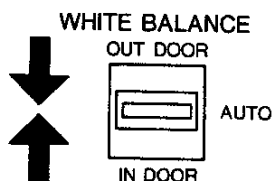


- Release the pressed button to switch back to the still playback mode.

White Balance

The VHS Movie, like any other video camera, responds differently to the colours depending on the weather and the time, even under seemingly same sunlight. The adjustment necessary to assure natural colour rendition is called "white balance adjustment".

"AUTO" position...The white balance is automatically adjusted as the illumination changes.



In certain cases, the use of the preset positions is recommended:

"INDOOR"... When shooting under the light from incandescent light bulbs or halogen lamps.

"OUTDOOR"... When shooting outdoors under the sunlight.

Cautions for Use of the Auto White Balance Adjustment Mode

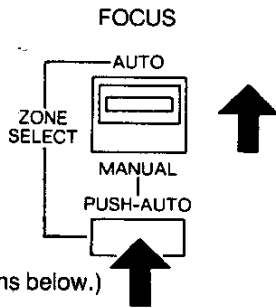
In the Auto mode, the sensors built into the front of the VHS Movie detect the colour temperature of the illumination of the scene and automatically adjust the white balance. In the following shooting conditions, the Auto mode may not provide exact white balance adjustment.

1. When the illumination of the subject is different from the light that falls on the VHS Movie.
2. When either the VHS Movie or the subject is in the shade.
3. When extremely bright light sources are used, such as mercury-vapor lamps, sodium lamps or some types of fluorescent lamps.
4. When the illumination is not bright enough (if the brightness on the sensor window is less than 3 lux).
5. When the scene has strong red-coloured illumination, e.g. during sunrise and sunset.
6. When intensive light hits only the red or the blue light sensor in the window.
7. When there is some other light source that is outside the sensing range of the white balance adjustment sensors, e.g. snowy landscape, cloudy weather, incandescent light and candle light.
8. When there is some object placed in front of the sensor window that prevents light from reaching it.
9. When shooting in the macro range, the Auto mode does not operate. Therefore, use the "INDOOR" or "OUTDOOR" position.

Auto Focus

Set the Focus Mode Selector to "AUTO".

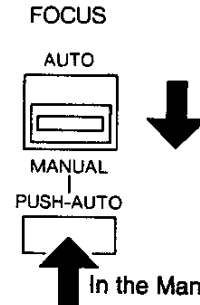
- While watching the picture in the EVF, aim the VHS Movie at the subject on which you want to focus.



(See explanations below.)

Manual Focus

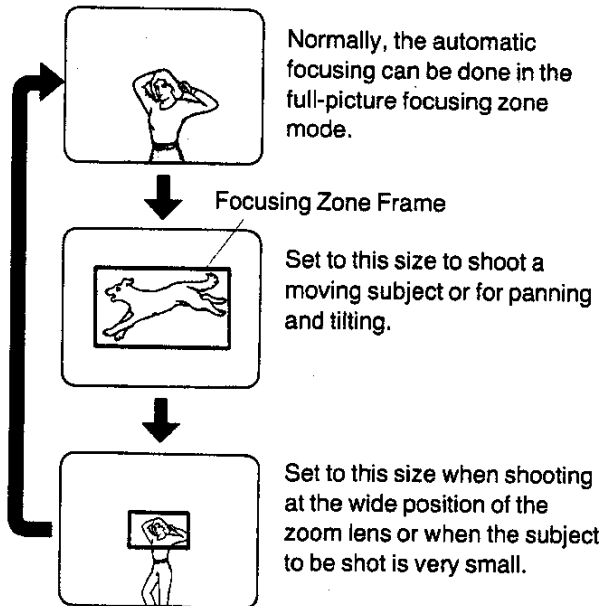
① Set the Focus Mode Selector to "MANUAL".



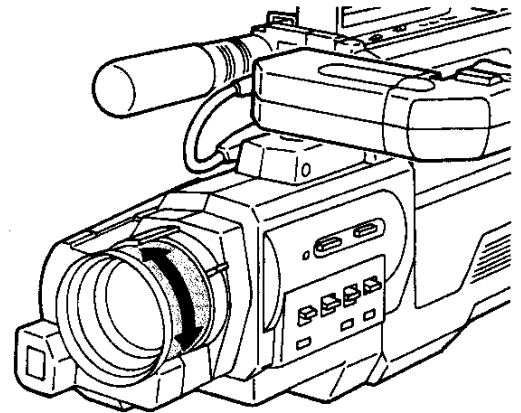
In the Manual Focusing mode, momentary automatic focus adjustment is possible for as long as the "PUSH AUTO" Button is kept pressed.

About the Focusing Zone Selection with the Focus Adjusting Button

For shooting conditions where the full-picture focusing zone does not provide satisfactory results, a smaller focusing zone can be selected. The focusing zone selected in the Auto Focus mode by pressing the Focus Adjusting Button will be indicated in the EVF. The focus will automatically be adjusted to the object within the focusing zone.



② Turn the Focus Ring to adjust the focus.

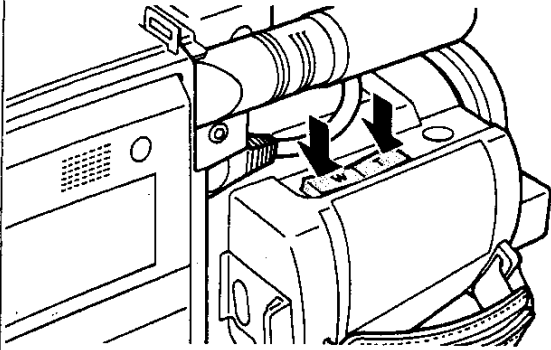


In the following shooting conditions, the Auto Focus system will not be able to provide stable and exact focus adjustment. Set the Focus Mode Selector to "MANUAL" in such cases and adjust the focus by turning the Focus Ring.

1. When shooting a subject through dirty glass.
2. When shooting subjects with shiny surfaces.
3. When shooting a subject with a part of it near and another part far from the VHS Movie.
4. When shooting an oblique subject.
5. When shooting a subject with distinct horizontal stripes.
6. When shooting a flat subject such as a white wall.
7. When no part of the subject is within the focusing zone frame.
8. When shooting with the macro close-up function or with special lenses or filters.
9. When shooting a fast-moving subject.
10. When shooting a dark subject.

Zooming

Power Zooming

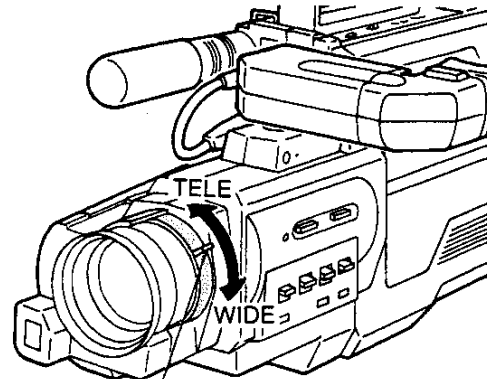


To Zoom to wide-angle, press the "W" Button.

To Zoom to telephoto, press the "T" Button.

Manual Zooming

Use the Manual Zoom Lever.



Manual Zoom Lever

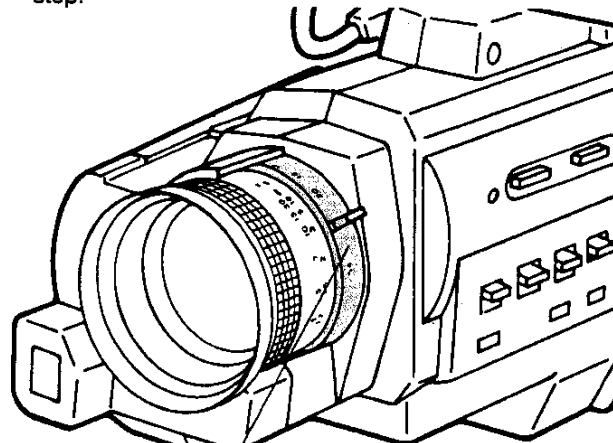
Macro Close-Up

Shooting Small Objects

The macro function allows shooting small plants and tiny insects. It is also possible to shoot photos from a photo album.

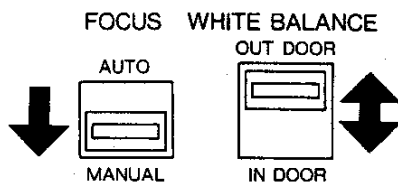
(The focus can be adjusted within a distance of 1.2 m.)

- 2 Turn the Zoom Ring all the way down to the click stop.

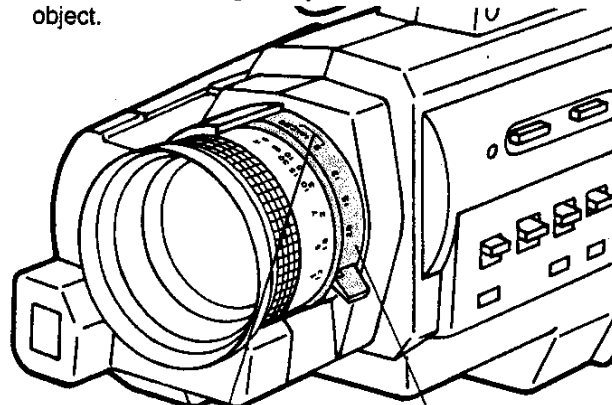


Zoom Ring

- 1 Set the White Balance Mode Selector to "INDOOR" or "OUTDOOR" position and set the Focus Mode selector to "MANUAL".



- 3 When the Zoom Ring is turned further down, the lens is in the macro range. Turn the Zoom Ring slowly and focus on the desired object.



The focus can be adjusted within this range.

Zoom Ring

Lighting

- Outdoor**
- Choose a camera position with the sun in your back, so that the sunlight falls evenly on the subject and makes for a better picture.
- Indoor**
- It is possible to shoot under low light levels. However, the stronger a subject is lit (up to approx. 2000 lux), the better the picture obtained.

Overriding the Iris Control

Shooting a backlit subject

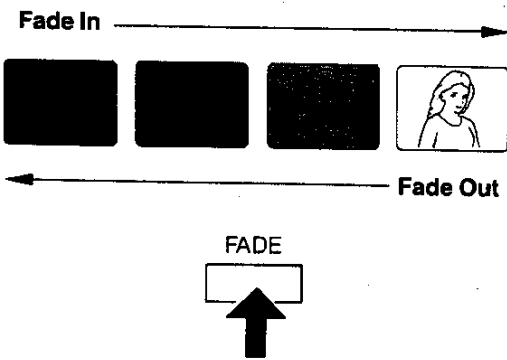
To compensate for backlighting, keep this button pressed.



(lux)	Standard Values of Brightness (Place or Daylight)
10-15	• Candle-light
400-500	• Office with fluorescent lamps
500-700	• Department store counter
1000	• Sunlight one hour before sunset, clear day
2000	• Sunlight one hour after sunrise, cloudy day
25000	• Sunlight at 10 AM, cloudy day
32000	• Sunlight at noon, cloudy day
35000	• Sunlight at 3 PM, clear day
65000	• Sunlight at 10 AM, clear day
100000	• Sunlight at noon, clear day

Fade-in and Fade-out

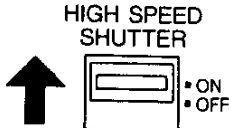
Fading out a scene to black is possible by keeping the Fade Button pressed, and fading in from black is operated by releasing this button.



Use of the High Speed Shutter

When shooting fast-action scenes, which you will later want to play back on a VTR equipped with super Still, Super Still Advance and Super Fine Slow Motion playback functions, set the High speed Shutter Selector to "ON". This will assure that even fast-moving objects will be reproduced with extremely sharp and clear edges in these special playback functions.

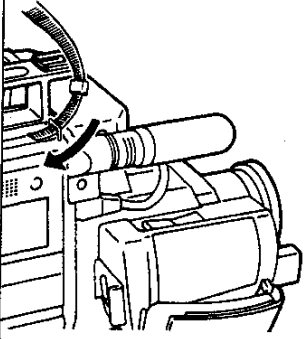
For shooting normal scenes and when the VTR to be used for playback is not equipped with these "Super" playback functions, set the High Speed Shutter Selector to "OFF".



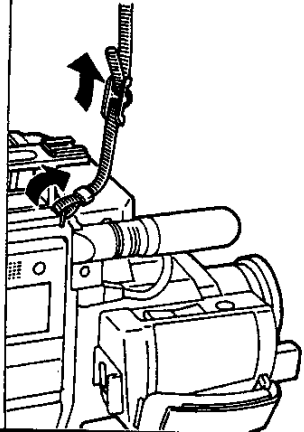
- The following conditions are required for shooting with the High Speed Shutter function:
The subject must be brightly lit, with little shade, under sunlight or some other illumination of more than 300 lux.
- If shooting under the illumination produced by fluorescent lamps, the picture will be adversely influenced by flickering.
- If the picture is played back in the normal playback mode, the movements may appear to be not very smooth.
- The playback picture will be slightly darker than the picture recorded without using the High Speed Shutter function.
- The Back Light Button may be inoperative during shooting with the High Speed Shutter function.

How to Attach the Shoulder Strap

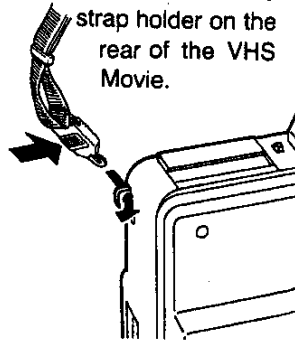
1 Pass the end of the Shoulder Strap through the slit of the Shoulder Strap Holder on the front of the VHS Movie.



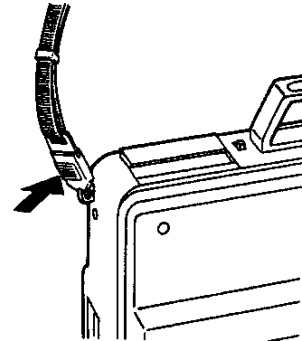
2 Securely attach the end of the strap.



3 While pressing the square button in the buckle on the other end, push the rear part of the buckle forward so that the hook comes out. Attach the hook to the strap holder on the rear of the VHS Movie.



4 Press again the square button in the buckle to lock the hook.

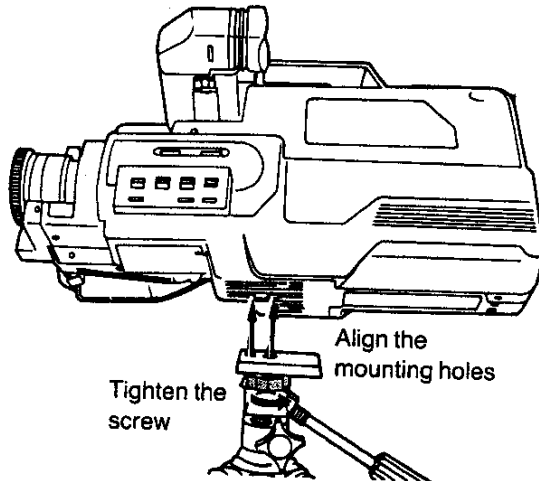


How to Mount the VHS Movie on a Tripod (optional)

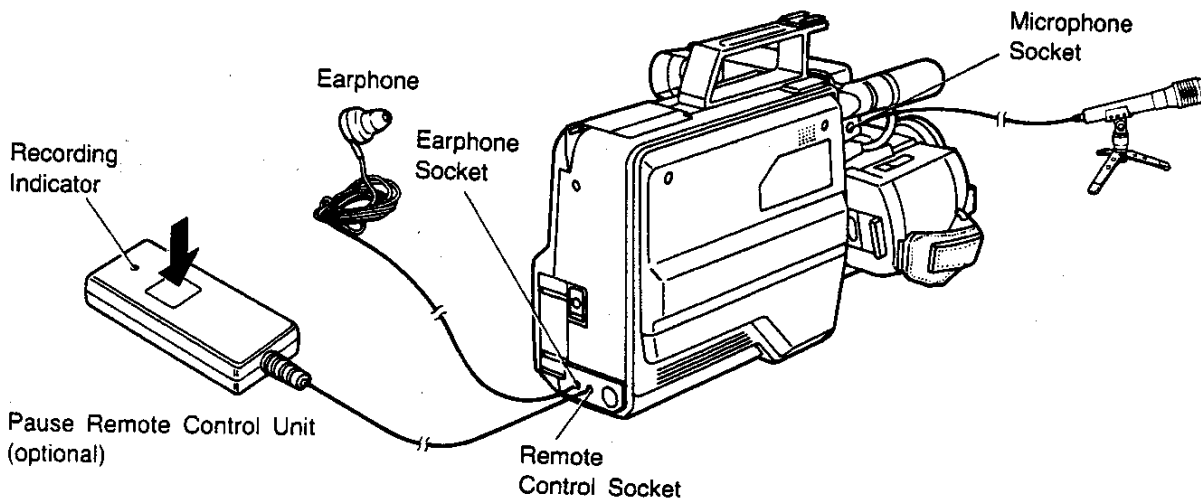


• Place the tripod on a stable surface, with its legs fully spread.

Bottom panel of the VHS Movie



Connection Socket



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CAUTIONS

Please read these cautions before operating the VHS Movie.

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, during the playback of a tape, the sound of which 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. Wait about 1 hour before operating the VHS Movie again. Should a video cassette be inside the machine, turn the VHS Movie on again and quickly remove the tape. If the operation lamp flashes, wait for a further period of time. 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 after a change of working environment.
- 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, turn into dew and evaporate.
- 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 similar to prevent condensation forming inside the unit.
- The VHS Movie has a built-in heating device which prevents condensation.

This heater operates even if the VHS Movie is switched off (provided the AC adaptor is used as power supply).

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 levels. 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 case or 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, and/or adversely affect the performance of the unit.

Keep Magnets Away.

Never bring a magnet or magnetized object such as fluorescent lamps, motors, electric clocks and battery operated toys etc. close to the VHS Movie because this could adversely affect its performance.

<p>Keep the VHS Movie Away From Areas with Strong Electric Fields</p>	<p>Proper Illumination for Shooting</p>
<p>The picture may become distorted, when the VHS Movie is used in places with strong electric fields, such as near TV or radio antennas.</p>	<p>Shooting should be done under lighting as bright as possible to obtain the best colour pictures. Fluorescent lamps tend to give natural colours an unnatural tint, so choose suitable lighting.</p>
<p>Never put any Objects Inside</p>	<p>Cover the Lens with the Cap after Shooting</p>
<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 qualified service personnel. Operating it with some foreign matter inside may cause fire or electric shock.</p>	<p>Disconnect the cables from the VHS Movie after you finish shooting and be sure to place the lens cap on the lens.</p>
<p>No Fingers Inside</p>	<p>Keep the VHS Movie Away from Strong Light</p>
<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 qualified service personnel.</p>	<p>Do not expose the VHS Movie to strong light, because the heat from it may cause deformation or other damage.</p>
<p>In Case of Accident</p>	<p>Transporting the VHS Movie</p>
<p>Do not use the VHS Movie, if it emits smoke, strange noises or odours. Have it checked by qualified service personnel and repaired, if necessary.</p>	<ul style="list-style-type: none"> • Take care not to bump the VHS Movie against any object. • Remove the cassette tape from the VHS Movie before transporting.
<p>Operation at the Beach</p>	<p>When the VHS Movie is not Being Used</p>
<p>Take care not to splash any water on the VHS Movie and protect it from sand.</p>	<p>Remove the video cassette and turn the VHS Movie off with the Operation Switch.</p>
<p>Operation in the Rain</p>	<p>Battery Pack</p>
<p>Take care that the VHS Movie does not get wet.</p>	<p>Be sure to recharge the battery pack soon after use.</p>
<p>Do not Use the VHS Movie in a Thunderstorm</p>	<p>Keep Insecticide Spray Away</p>
<p>Stop operating the VHS Movie when a thunderstorm approaches.</p>	<p>Never spray things like insecticide on the lens and body of the VHS Movie. Also, never leave rubber or vinyl 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>
<p>Handle with Care</p>	
<p>Never drop the VHS Movie or expose it to strong physical shocks. Shocks during use may result in abnormal operation and performance.</p>	
<p>Smear Appearance</p>	
<p>Smear (vertical bright stripe) may appear on the screen when the camera is aimed at the spot lights or bright lights, and light reflecting objects. The smear is peculiar characteristic of CCD device. It is recommended that objects of camera operation should be taken care.</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 case surface might be damaged.
- Wipe the case 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 only with a blower brush (used for photo cameras) or a special 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 high dust levels.
- 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 physical shocks.
- To store a video cassette, put it back into its case and place it upright.

BEFORE REQUESTING SERVICE

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SYMPTOM	CAUSE	REMEDY
Power Source		
Power does not turn on.	Safety devices are operating.	After turning the power off, disconnect the mains cord of 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.	Battery pack is exhausted.	Use 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 on the EVF.	VHS Movie is in the standby mode.	Press the Standby Button.
	Lens is covered with the lens cap.	Remove the lens cap.
Camera recording cannot be performed.	The tab of the cassette is broken out.	Cover tab hole with adhesive tape.
Colour is not proper when using the TV as a monitor.	TV set is not properly tuned.	Properly tune the TV set.
	White balance is not properly adjusted.	Adjust the white balance.
	Illumination is not sufficient or of good colour temperature.	Use proper illumination.
Picture is blurred.	Lens is covered with dust.	Clean the lens.
	Subject is not in focus.	Focus the subject.
Playback		
No playback picture is reproduced on the TV set.	Connection with TV set is not correct.	Connect the VHS Movie to the TV set correctly.
	TV set is not tuned to the video playback channel.	Tune TV set to the video playback channel.
Colour is not correct.	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".	Tracking is misaligned.	Align the tracking precisely.
	Video heads are clogged with dirt.	Consult qualified service personnel.
	Video heads are abraded.	Consult qualified service personnel.
	Tape is old.	Use new tape.

SPECIFICATIONS

NV-M5AM

Power Source:	DC 12 V
Power Consumption:	Recording mode; 12 V-7.9 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: Converted subcarrier phase shift recording

Output Level: ADAPTOR (Multi); 1.0 Vp-p 75 ohm unbalanced

AUDIO

Input Level:	MIC IN (M3); -70 dB	4.7 kohm unbalanced
Output Level:	ADAPTOR (Multi); -8 dB	600 ohm unbalanced

Audio Track: 1 track (MONO)

Image Sensor: 1/2-inch CCD Image Sensor

Lens: 6:1 Power Zoom Lens with MACRO Function, Auto Iris,
Auto focus System F1.2 (9-54 mm) Lens Front Diameter 49 mm

Viewfinder: 2/3-inch Electronic Viewfinder

Standard Illumination: 1,400 Lux

Minimum Required

Illumination: 10 Lux

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. 2.5 kg (without battery pack)

Dimensions: 97 (W) x 181 (H) x 398 (D) mm

With viewfinder turned down (without carrying handle)

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