



Instruction Manual

8mm
Camcorder

VM-D5P



CONGRATULATIONS. You are now the owner of one of the many fine products manufactured by Sanyo Electric Co., a world-wide leader in electronics. We take pride in our international reputation for product quality and industry proven performance.

This product has been carefully inspected to comply with rigid quality control standards before shipment to you. We are sure you will find that with reasonable care it will provide you with years of reliable performance.

To obtain the full performance capability engineered into your new Sanyo product, please read this instruction manual thoroughly before attempting to operate this unit.

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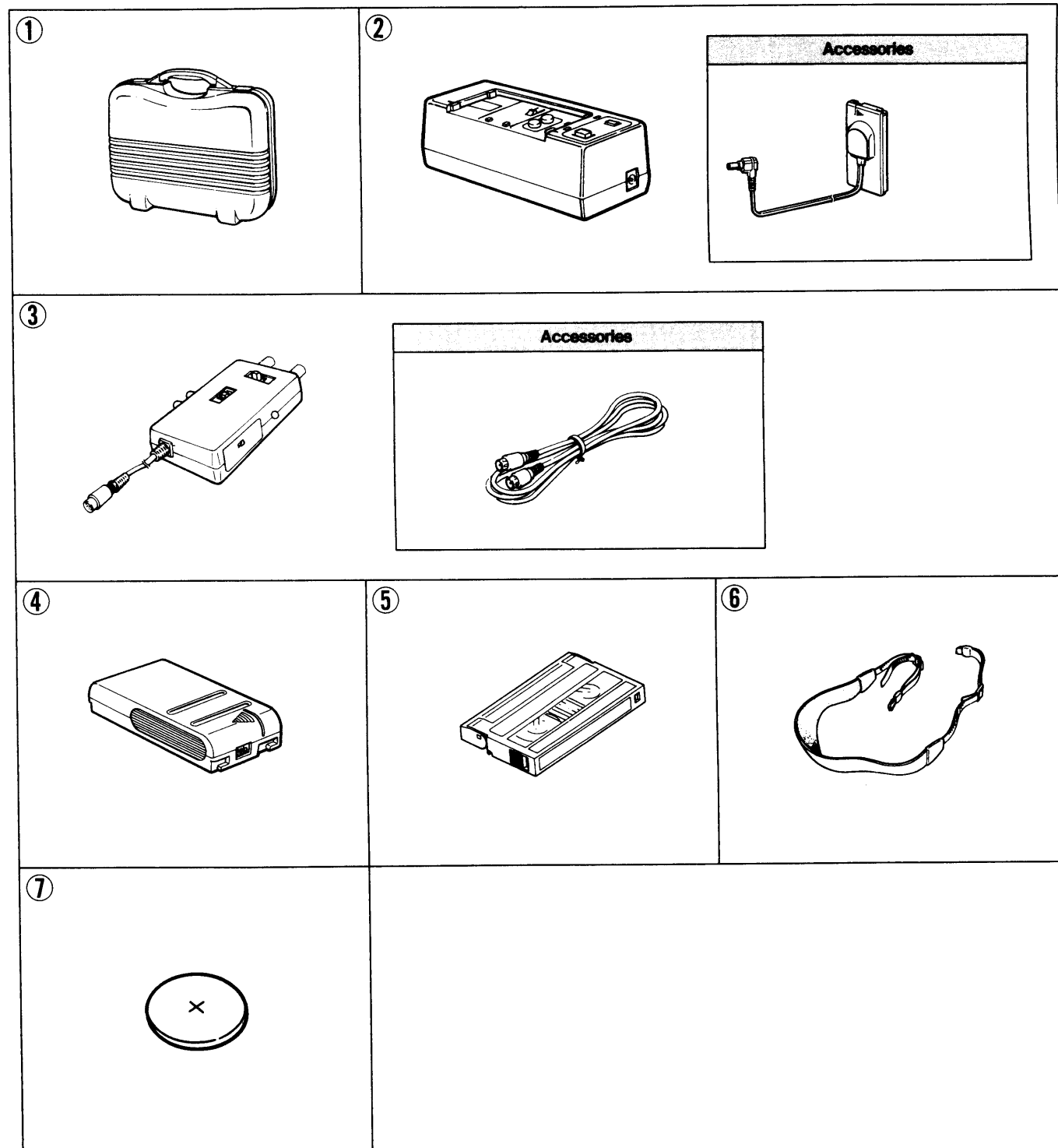
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Features

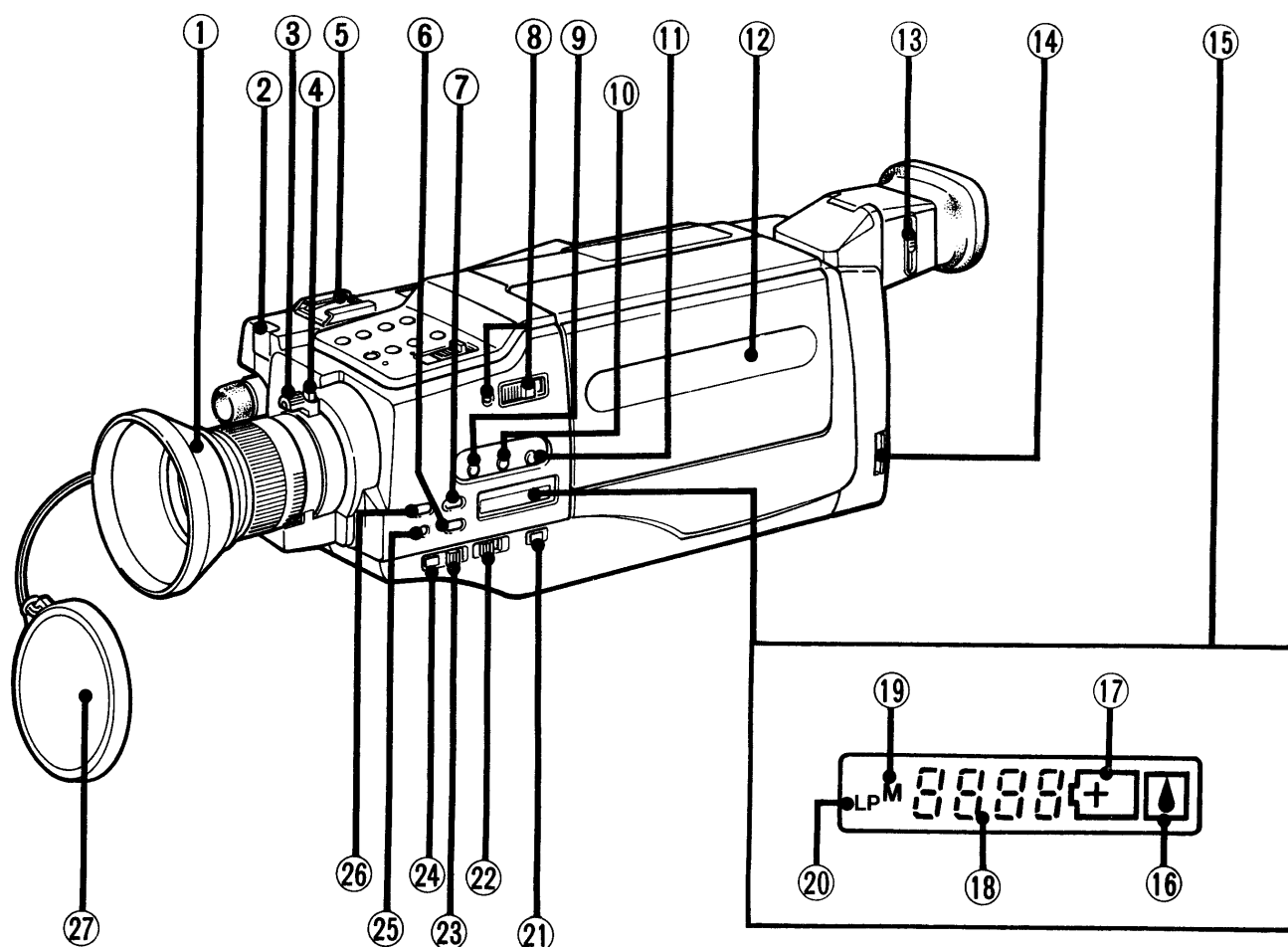
- Integrated camera/8mm video recorder
- Automatic focus
- Automatic white balance with WHITE SENSOR
- High speed shutter for slow/still frame playback pictures without blurs
- Title recording (digital memory function)
- Date imprint
- Macro (close-up) recording
- Six-power zoom-in/zoom-out — powered or manual operation
- Electronic viewfinder for immediate playback
- Recording review for checking the last part of recording
- Still frame/picture search/slow motion/frame-by-frame advance
- Memory counter
- Maximum 180 minutes recording

Accessories

- ① Carrying case 1
- ② VAR-33 AC adaptor 1
- ③ VRF-700 RF adaptor 1
- ④ NP-55 Battery pack 1
- ⑤ P5-15 8mm video tape 1
- ⑥ Shoulder belt 1
- ⑦ Lithium battery (CR2025) 1
- ⑧ Title kit 1

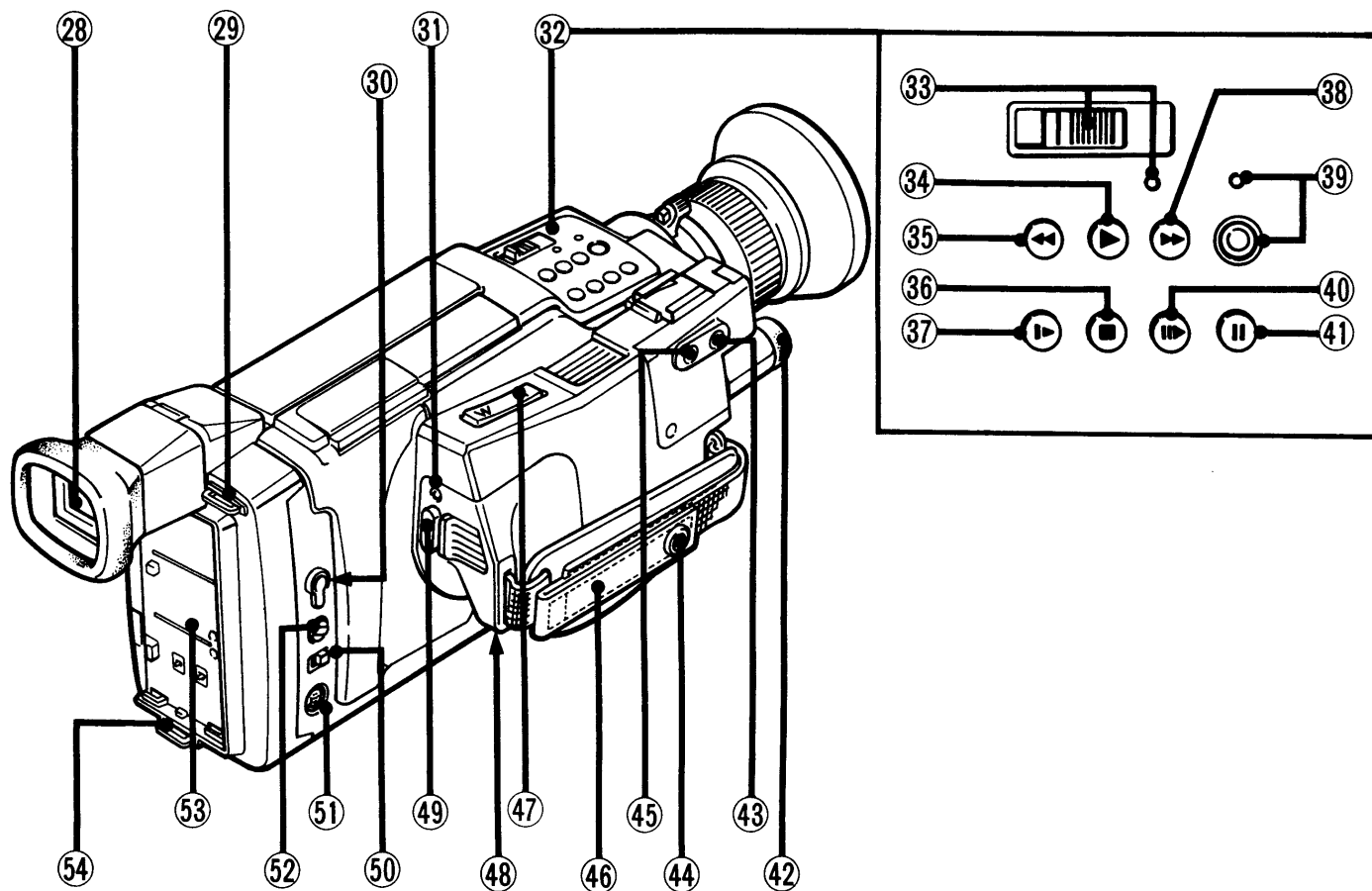


Parts Name



No.	Name
①	Focus ring
②	White sensor
③	Zoom lever
④	MACRO SET button
⑤	Accessory shoe
⑥	COUNT MEMORY button
⑦	COUNT RESET button
⑧	Power switch and lamp
⑨	TITLE MEMO button
⑩	TITLE COLOR button
⑪	TITLE ON/OFF button
⑫	Cassette holder
⑬	Eyesight compensation lever
⑭	BATTERY EJECT lever

No.	Name
⑮	DATA DISPLAY
⑯	DEW indicator
⑰	Battery indicator
⑱	Tape counter indicator
⑲	MEMORY indicator
⑳	Recording mode indicator
㉑	HIGH SPEED SHUTTER button
㉒	WHITE BALANCE switch
㉓	FOCUS switch
㉔	FOCUS REV button
㉕	DATE ADJ button
㉖	DATE ON/OFF button
㉗	Lens cap



No.	Name
28	Viewfinder
29	Shoulder belt hook
30	Still vertical jitter adjustment hole
31	REC/PAUSE lamp
32	VTR Operation panel
33	EJECT switch and lamp
34	PLAY button
35	REW button
36	STOP button
37	SLOW button
38	FF button
39	REC button and lamp
40	F. ADV button
41	PAUSE/STILL button

No.	Name
42	Microphone
43	EXT. MIC jack
44	Lens cap snap
45	EARPHONE jack
46	Grip belt
47	Power zoom button
48	Tripod screw mount
49	REC START/STOP button
50	REC MODE/EDIT switch
51	AV terminal
52	SLOW TRACKING knob
53	Battery holder
54	Shoulder belt hook

Note:

- The lens cap 27 can be conveniently attached to the lens cap snap 44 when recording.

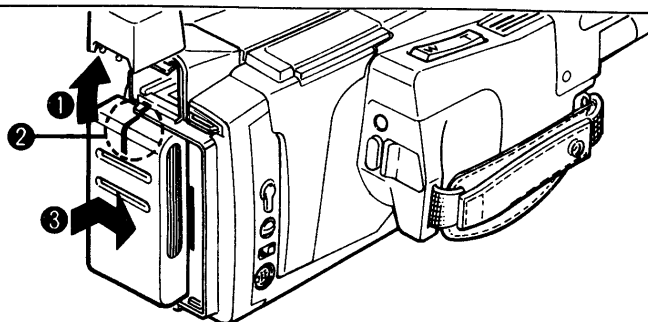
Preparations

POWER SOURCE

- For outdoor recording, use supplied battery pack, NP-55.

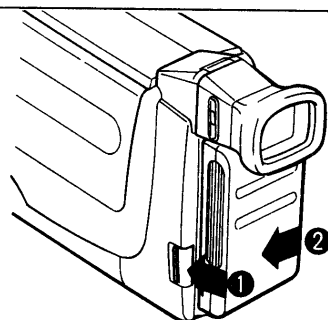
Attachment

1. Flip up the viewfinder.
2. Align the line on the battery pack with the one under the viewfinder.
3. Press and slide in the pack in the arrow direction until it clicks.



Removal

1. Slide back the BATTERY EJECT lever.
2. Slide out the battery pack.

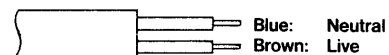


- For indoor use, the AC power can be used with supplied AC adaptor, VAR-33.

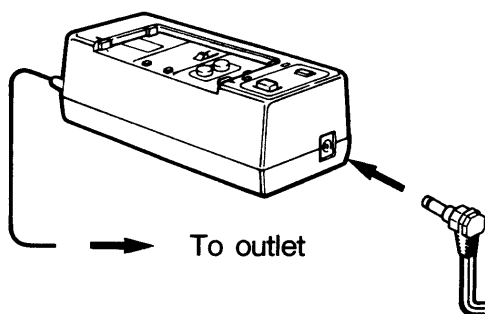
This unit can be used overseas as it operates on AC between 100V and 240V. Attach the power connection cord supplied with the AC adaptor in the same manner as the battery pack.

IMPORTANT

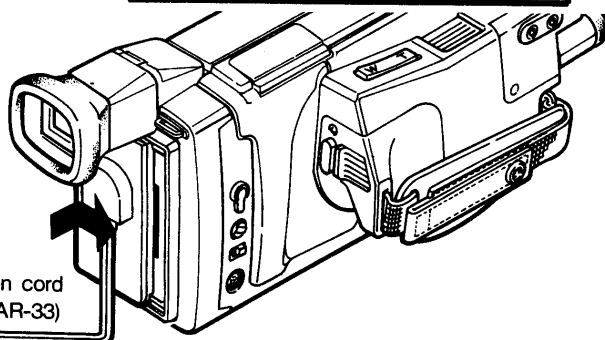
The wires in this mains lead are coloured in accordance with the following code:



- ☐ As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows.
- ☐ The wire which is coloured blue must be connected to the terminal which is marked with the letter **N** or coloured blue or black.
- ☐ The wire which is coloured brown must be connected to the terminal which is marked with the letter **L** or coloured brown or red.



Power connection cord
(included with VAR-33)



Notes:

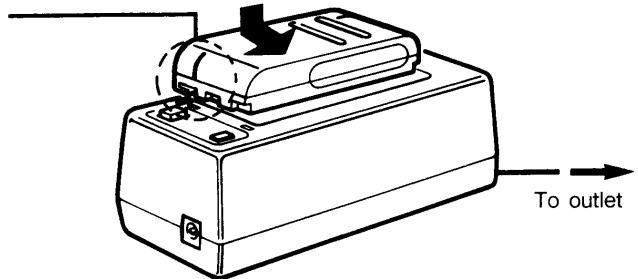
- The battery pack supplied with this unit has not been charged. Charge it before initial use. (See page 6)
- Do not use VAR-33 AC adaptor to supply power for other than VM-D5P 8mm camcorder.

CHARGING

Use the AC adaptor VAR-33 to charge the battery pack.

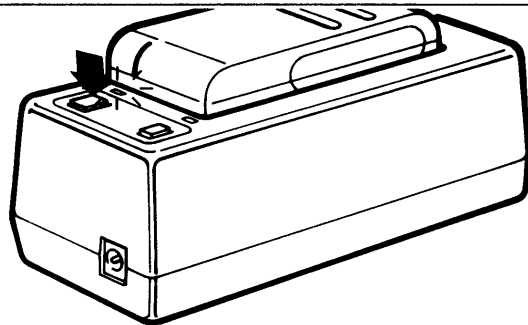
1. Attaching the battery pack.

Align the ■ marks, then while pressing it, slide the battery pack in the arrow direction.



2. Depress the POWER button.

The POWER lamp (green) will illuminate.



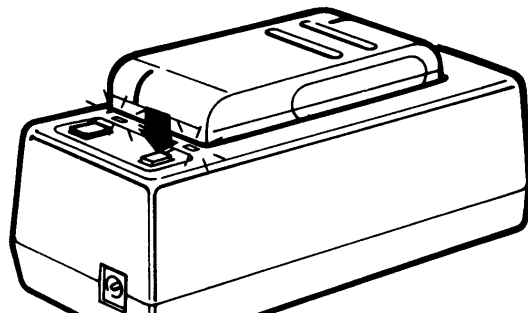
3. Press the CHARGE button.

The CHARGE lamp (red) will illuminate and charging will begin.

When charging is completed, the CHARGE lamp will change to yellow. The battery pack (NP-55) can be charged in about one hour. (2 hours for NP-77, optional pack)

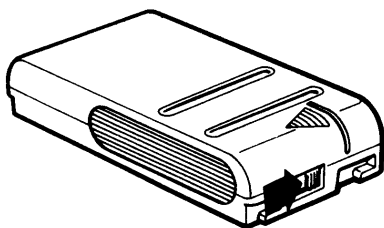
Depress the POWER button again to turn off the unit.

• The AC adaptor cannot be used as a power supply while charging.



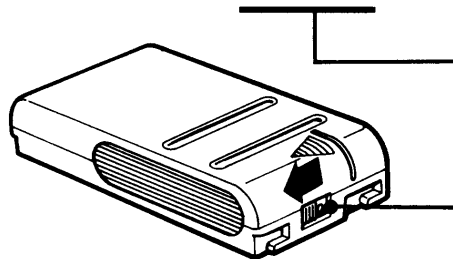
After charging

Set the switch so that the red circle is not visible.



Battery pack is exhausted

Set the switch so that the red circle is visible.



Notes:

- Fully charged, the battery pack NP-55 will provide power for about 45 minutes, and the battery pack NP-77 for about 90 minutes. It will provide much less recording time if the ambient temperature is low. Always prepare as many packs as required for two or three times the planned recording length.
- Do not use VAR-33 AC adaptor for purposes other than charging NP-55 or NP-77 battery packs.
- Do not continue charging a fully charged battery pack, because doing so will adversely affect its performance.
- Although charging is possible within a temperature range of 5°C ~ 35°C, for best results, a temperature range of 10°C ~ 30°C is suggested.

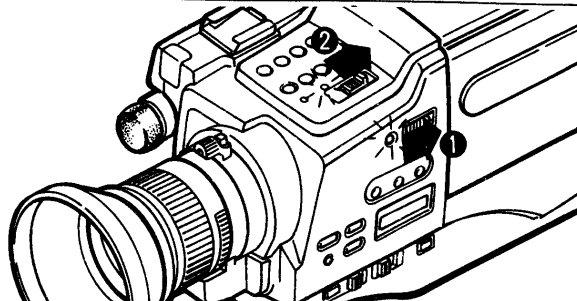
ABOUT 8mm VIDEO TAPE

Only 8mm video tape can be used in this unit.

Cassette insertion/ejection

1. Turn the power on and press the EJECT switch in arrow direction ②

The power lamp lights and the EJECT lamp blinks.
Pressing the EJECT switch changes the lamp state from blinking to lit. The EJECT lamp goes out after the cassette holder is completely opened. (It takes about seven seconds to completely open it.)

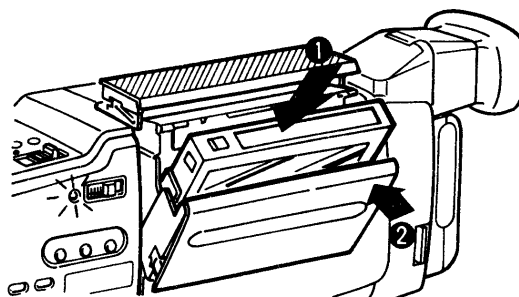


2. Insert the cassette with label side facing you and in arrow direction. Push the cassette door closed.

The raised holder will automatically return to the original position.

Do not force it down. (The holder is shown shaded in the illustration.)

Be careful not to pinch your finger. If you do, depress the EJECT switch to remove.



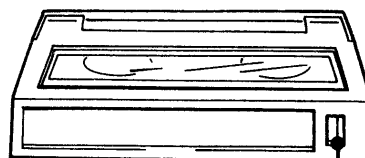
3. To eject the cassette, press the EJECT switch.
The EJECT lamp lights till the cassette holder is completely opened.

Video tape size

Recording mode	Recording time			
	P5-15	P5-30	P5-60	P5-90
SP	15 min	30 min	60 min	90 min
LP	30min	60min	120min	180min

SP mode: tape speed approx. 20.051 mm/sec.

LP mode: tape speed approx. 10.058 mm/sec.



ERASURE-PREVENTION switch

ERASURE-PREVENTION switch

To prevent the accidental erasure of recorded material, set the switch on the spine of the cassette to the red position. Recordings then cannot be made on that cassette. To record on it later, return the switch to the original position.

Notes:

- Never carry this unit by grasping the cassette holder.
- Do not cover the holes on the bottom of the cassette. These holes are used to determine the type and length of tape and whether or not recording is possible.
- Store the video tape cassettes in their case and standing upright (vertical); this will prevent the entrance of dust and uneven tape winding.
- To record from the beginning of the tape, run the camcorder for about 15 seconds at the beginning of a cassette before recording. It will avoid missing the starting point during playback on an 8mm video cassette recorder.

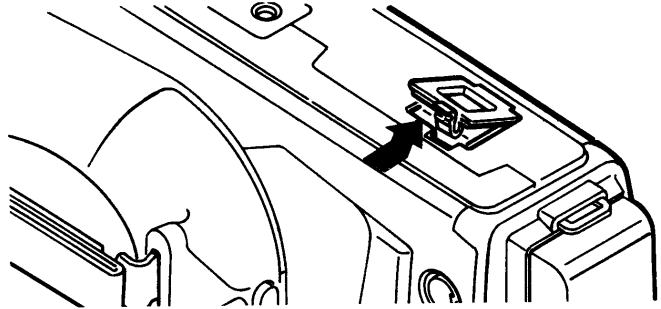
LITHIUM BATTERY

The date imprint operation of this unit requires a lithium battery to prevent loss of the date when the power is turned off. The lithium battery has a life of approximately 1 year when used normally. It is recommended that the battery be replaced within one year.

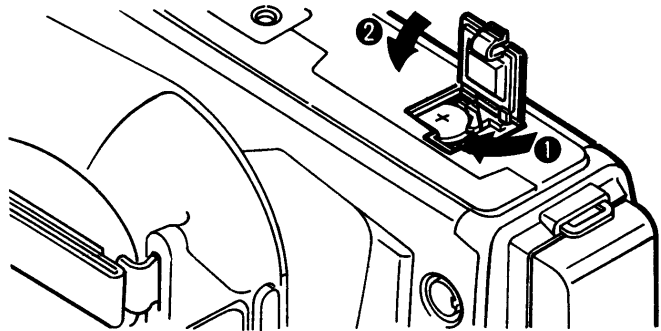
Lithium Battery Insertion

The same procedure is used for replacement. (Lithium Battery: CR2025 [3V])

1. Open the battery cover.



2. Insert the lithium battery. (Push in for insertion.)
Wipe the battery with a dry cloth to prevent faulty contact.
Insert properly with the + side up.



3. Close the battery cover.

Precaution for Replacement

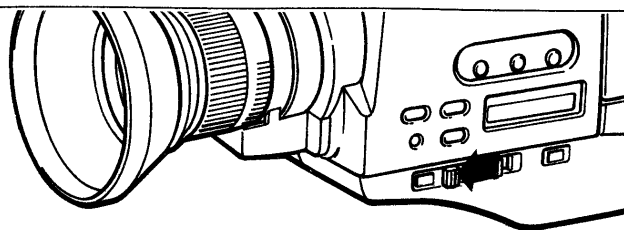
Replace the lithium battery only when the power of the unit is on. Replacing the battery with the power off will cause the loss of date memory. (It is necessary to set the date again if this occurs. See page 24, 25, and 26)

Notes:

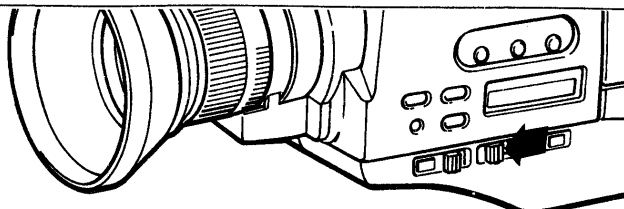
- Keep the lithium battery out of the reach of children.
- Do not grasp the battery with metallic tweezers, etc., as this is liable to cause a short circuit.
- Do not disassemble, subject to heat, or place the battery in water due to the danger of explosion. When discarding, treat the battery as non-burnable garbage.

Camera Recording

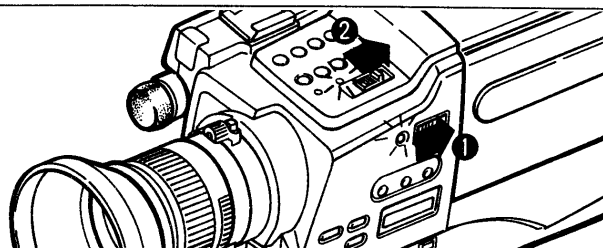
1. Set the FOCUS switch to the AUTO position.
(See page 22)



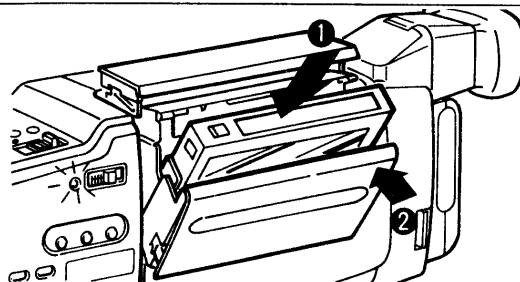
2. Set the WHITE BALANCE switch to the AUTO position.
(See page 21)



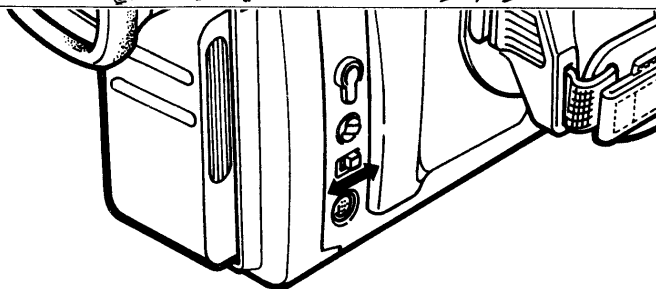
3. Turn the power on and the EJECT switch in arrow direction ②
Power source (battery pack or AC adaptor) must be connected. (See page 5)



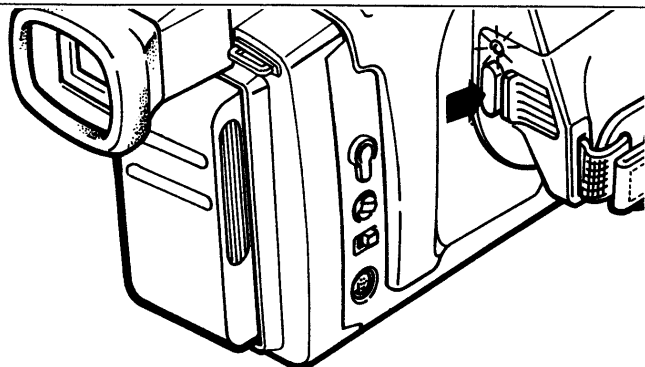
4. Insert a cassette. Close the door. (See page 7)
The cassette holder lowers automatically.
The unit will enter into the recording pause mode.



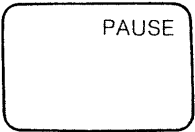
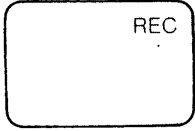
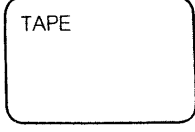
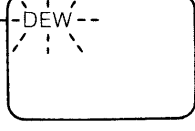

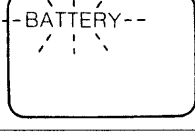

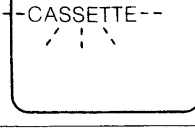
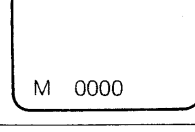
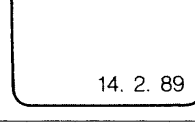
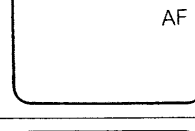
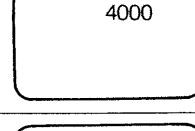
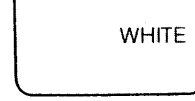
5. Set the REC MODE/EDIT switch to the SP or LP.



6. Press the REC START/STOP button.
The REC/PAUSE lamp state changes from blinking to and recording starts. Repressing the button makes the system go into the recording paused state and blinks the REC/PAUSE lamp. Repeating the operation provides the connection between pictures.
When you have finished recording.
Eject the cassette and then turn off the power.



INSIDE VIEWFINDER

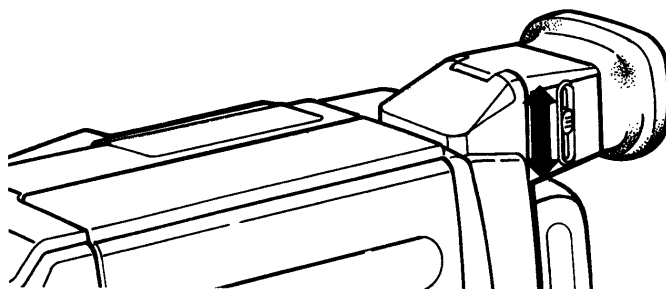
	During recording pause mode this mark appears.
	During recording this mark appears.
	This mark indicates that tape will reach its end in about 5 minutes.
	When dew (condensation) exists, this mark flashes. •  mark indication in digital indicator.
	When battery becomes weak, this mark flashes. •  mark flashes in digital indicator.
	In recording mode if no cassette inserted, tape is at end, cassette is set for erase prevention, the unit cannot record normally, or moisture on tape occurs, this mark flashes.
	Tape counter and memory indication. (See page 27) • It is also indicated in digital indicator.
	Date indication. (See page 24)
	Focus indication. (AF: auto-focus, MF: manual focus) (See page 22)
	Shutter speed indication. (See page 20)
	Color indication of digital memory function. (See page 18)

Notes:

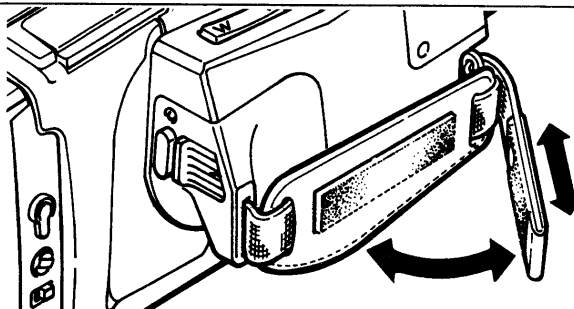
- Vertical stripes may appear if recording is attempted under candle light or in other conditions where the light is dim. This is not an indication of a malfunction.
- When operating on battery power:
If recording pause mode continues for about 5 minutes or longer, the power will turn OFF automatically. During AC power operation, it enters into stop mode. When stop mode continues for about 5 minutes or longer, the power will turn OFF automatically.
- When shooting under illumination which uses a discharge tube such as fluorescent lamps or mercury-vapor lamp, the images will flicker.

Eyesight compensation

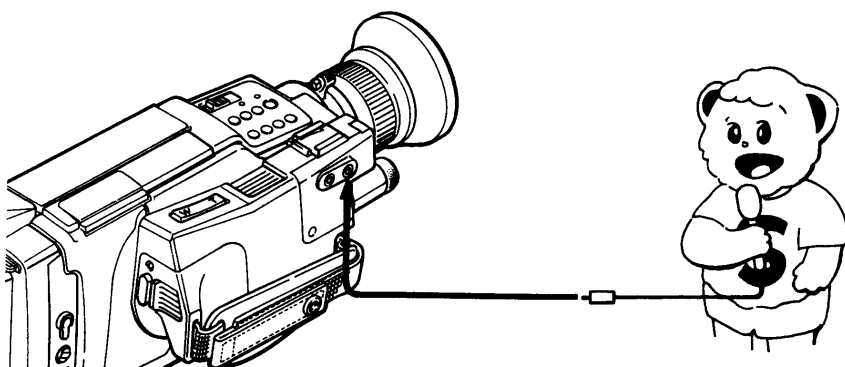
While looking through the viewfinder, slide the lever up or down until the best visibility is obtained.

**Grip belt adjustment**

If the grip belt does not fit your hand shaking may occur during shooting.
Adjust the belt's length.

**MICROPHONE**

The built-in microphone is monaural, omnidirectional type giving comparatively natural sound recordings. To record sounds at a greater distance, use of an external microphone is recommended.

**Note:**

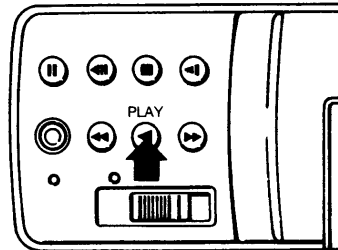
The built-in microphone will not function while an external microphone is connected.

Smooth Recording

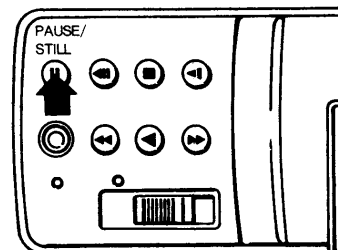
A smooth transition between scenes can be made after the recording is stopped or the unit is turned off, provided the cassette isn't removed.

To record smoothly after having removed the cassette, proceed as follows.

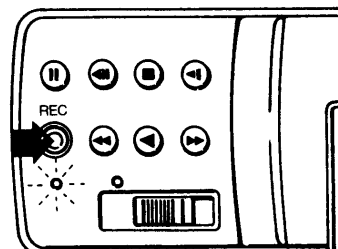
1. Looking at the playback picture on the viewfinder.
(See page 13)



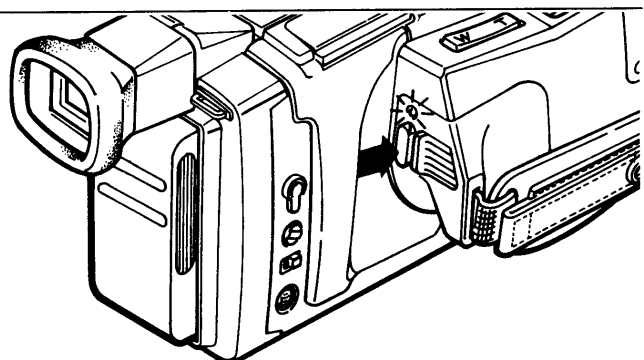
2. Press the PAUSE/STILL button where you want to restart recording.



3. Press the REC button.
The REC lamp blinks to change the state of the system to the recording paused state.



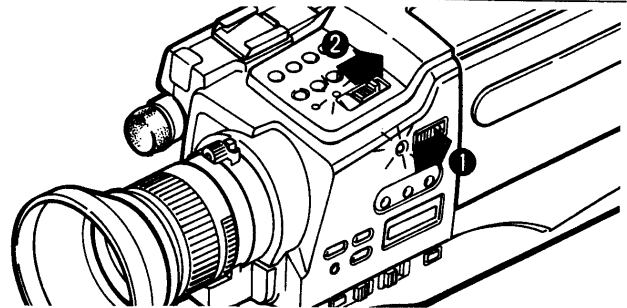
4. Press the REC START/STOP button.
The recording will begin.



Playback

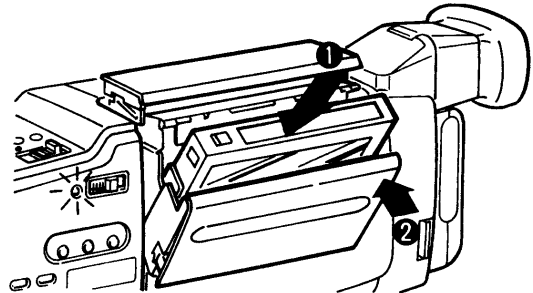
The tape recorded by this camcorder can be viewed on a TV screen. For TV connection, see pages 28,29. It can also be played back on the viewfinder of this unit. The sound can also be heard if an earphone is connected to the earphone terminal.

1. Turn the power on and press the EJECT switch in arrow direction ②.



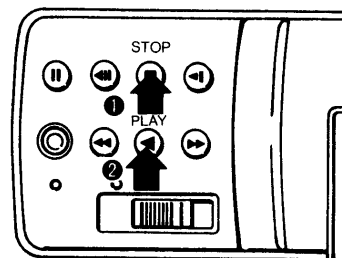
2. Insert the recorded cassette.
The unit will assume the recording pause mode.

Notes: Skip step 3.(press the STOP button), if the cassette has already been protected against accidental erasure.



3. Press the STOP button and then the PLAY button.
The playback will begin.

To stop the tape, press the STOP button.



Note:

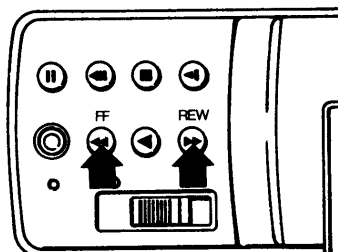
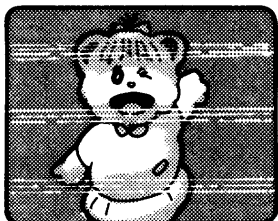
- To return to recording from stop mode, press the REC button. This will change the unit to the recording pause mode. Then press the REC START/STOP button.

SPECIAL PLAYBACK MODES

Picture search

Press the FF button or the REW button during playback. The tape will move fast forward or backward. To return to normal playback, press the PLAY button.

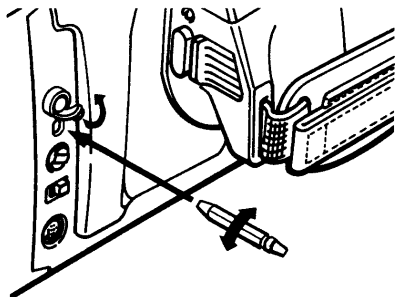
- Note that horizontal lines will appear in the picture during picture search.



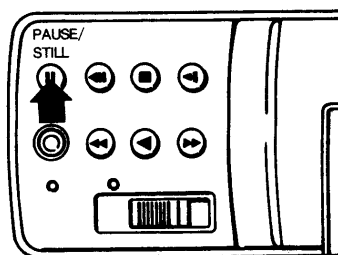
Still playback

Press the PAUSE/STILL button during playback; a still picture can be seen. To return to normal playback, press the same button again.

- Note that there will be an automatic change to the stop mode if still playback is continued for five minutes or longer.



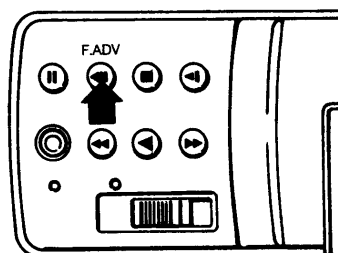
If there is vertical "jitter" in the still picture, use the supplied screwdriver to make adjustment.



Frame-by-frame advance

Press the F. ADV button during still mode to advance to the next frame. The tape will advance one frame each time the button is pressed.

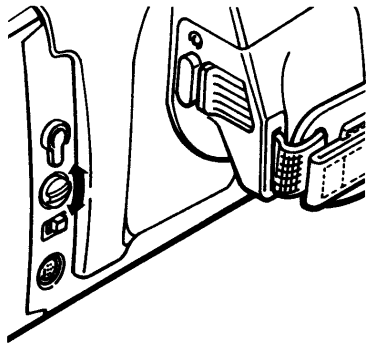
If the button is held, without releasing it, the tape will advance at ultra-slow-motion speed (1/30 slow).



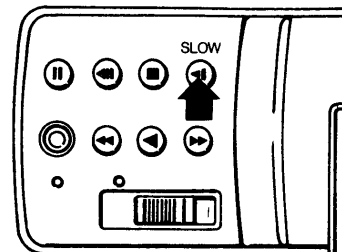
Slow-motion (1/5 slow)

Press the SLOW button during playback or still playback; slow-motion picture starts. To return to the previous picture, press the PLAY button or the STILL button.

- Note that there will be an automatic return to the playback mode if slow-motion playback is continued for five minutes or longer.



Turn the slow tracking control to get the best picture.



Slow search

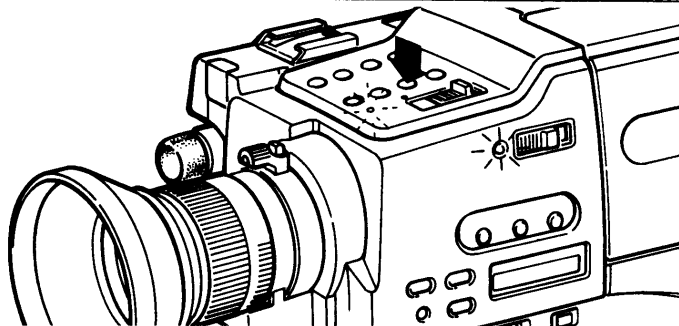
Press FF button during slow playback or still playback. The picture will attain normal playback speed while the button is pressed. When REW button is pressed, it will give reverse playback while the button is pressed. (Note that noise will appear in the picture.)

Recording Review

The last portion of the recording just made can be played back on the viewfinder to check its contents. This is called recording review.

Press the PLAY button during the recording pause mode.

When confirmation is completed, it enters again into recording pause mode.



Zoom

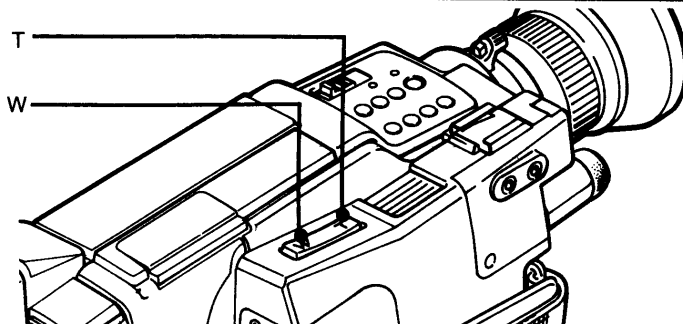
Two methods of zooming are provided: one is powered and the other manual. In either method, zooming effect is enhanced even more by shooting a fixed object for several seconds before and after the zooming.

Power zooming

This permits zooming in or out at a constant speed.


Press "W" for wide angle


Press "T" for telephoto

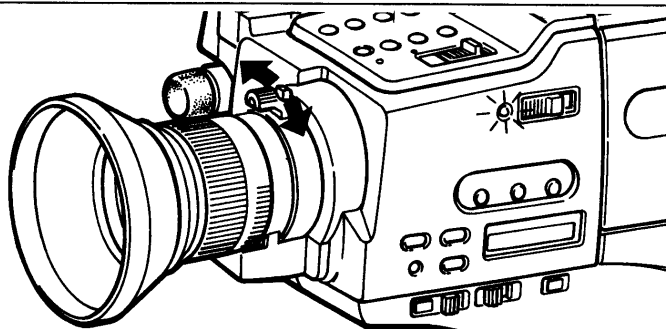


Manual zooming

Manual zooming lets you zoom at the speed you want.

Turn to  for telephoto

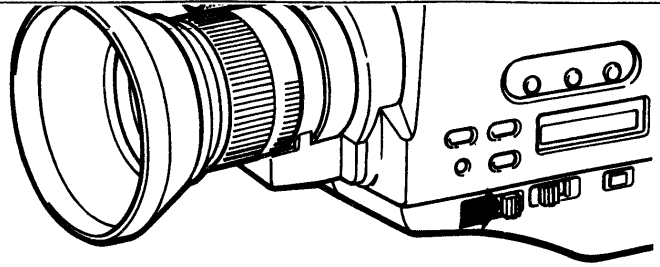
Turn to  for wide angle



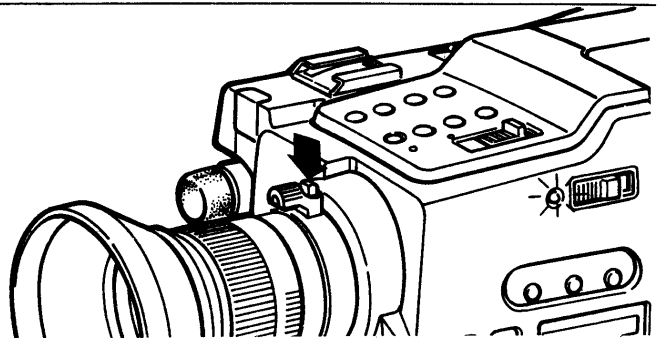
Macro (close-up)

Under ordinary conditions, an object cannot be focused if it is within about 1.2 m from the camera however by using the special macro device, focusing up to about 18 mm from the lens is possible, and an object the size of a cigarette pack will fill the entire lens.

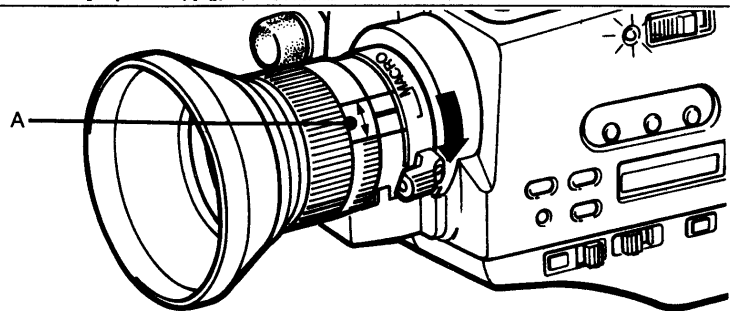
1. Set the FOCUS switch to MAN.



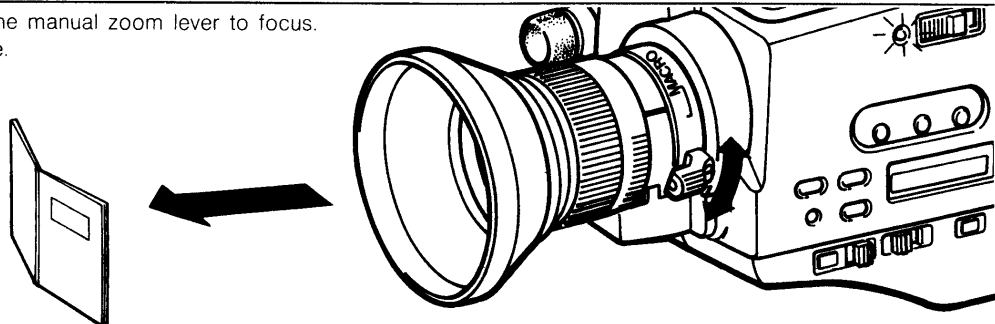
2. Press and hold the MACRO SET button.



3. Move the manual zoom lever to the MACRO range.
A : MACRO range



4. Approach the object and use the manual zoom lever to focus.
Adjust within the MACRO range.

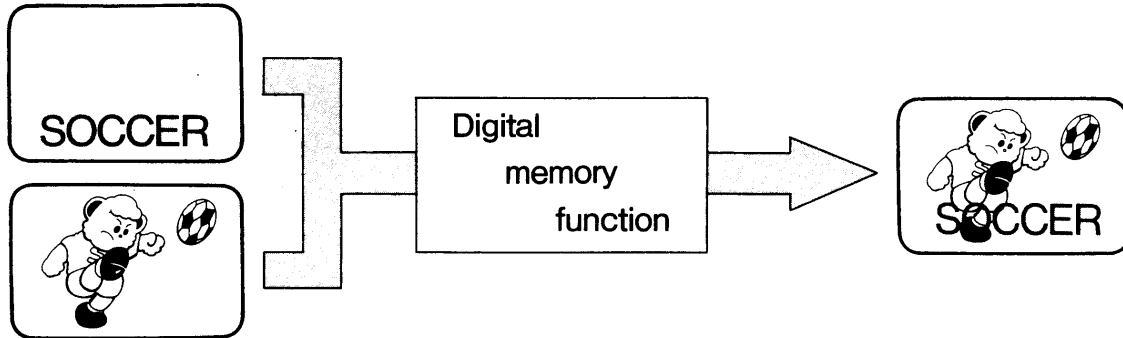


Notes:

- The zoom feature cannot be used for macro recording. To reduce the size of the object in the viewfinder, the camera and the object must be moved farther apart.
- As shaking is a problem with macro shooting, it is recommended that a tripod be used or the camera be fixed in place using a stand.

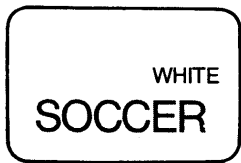
Title Recording

The digital memory function gives the ability to enhance your recordings by superimposing a title or illustration in a chosen colour. The title image can be memorised prior to the recording, for addition to the sequence at the start of shooting, or it can be introduced into the playback output signal during tape copying for inclusion on the copy tape.



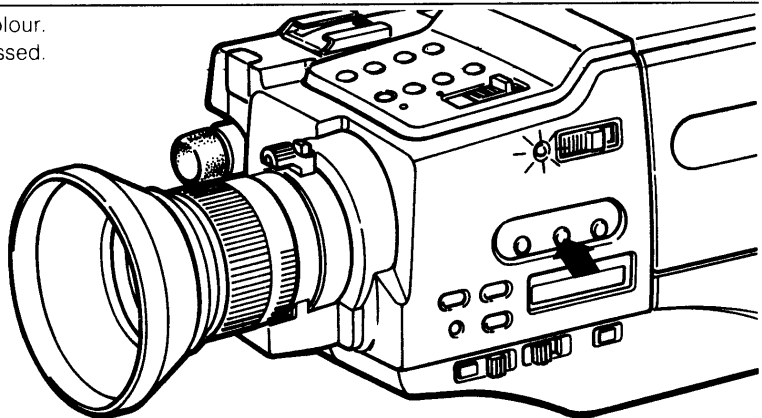
1. Make the title picture
Draw the lines or characters more than 3mm thick.
Use paper and marking pen of high contrast colours.
(e.g. black pen on white paper)

2. Compose the title picture in the viewfinder and press the TITLE MEMO button.
The memorised picture will remain with colour indication.



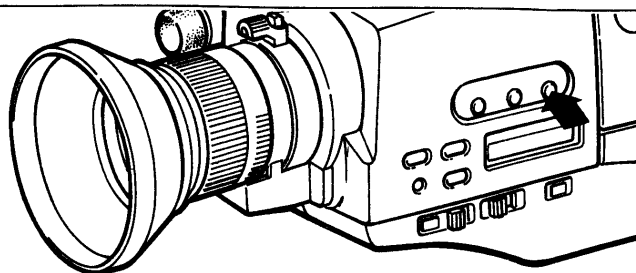
A previously memorised picture will be erased each time a new picture is memorised.

3. Press the TITLE COLOR button to select the desired colour.
Colour indication will change each time the button is pressed.
White → Blue → Red → Yellow → Black → White



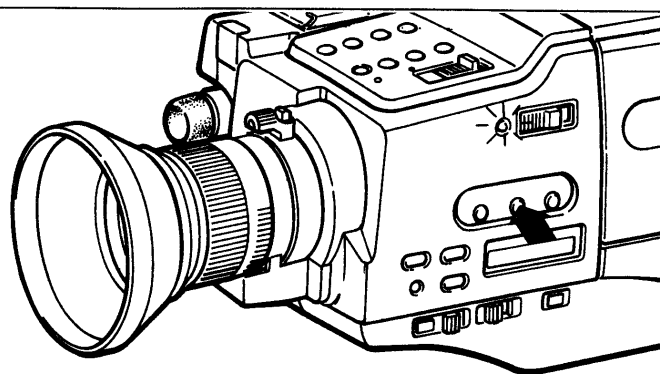
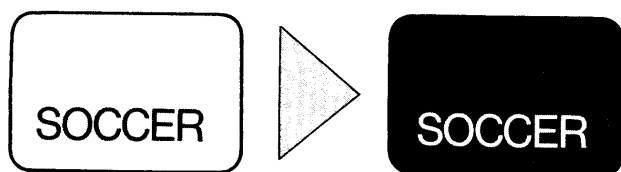
4. View the subject to be recorded and start recording.

5. To remove the title, press the TITLE ON/OFF button.
To put title on again, press the same button.



Memorized picture can be reversed (negative).

Keep pressing the TITLE COLOR button for about 2 seconds.



Do the same operation to return back to the previous picture.

Editing application.

During copying of a tape, press the TITLE ON/OFF button and the memorised picture will be recorded. See page 29 for tape copying procedure.

Notes:

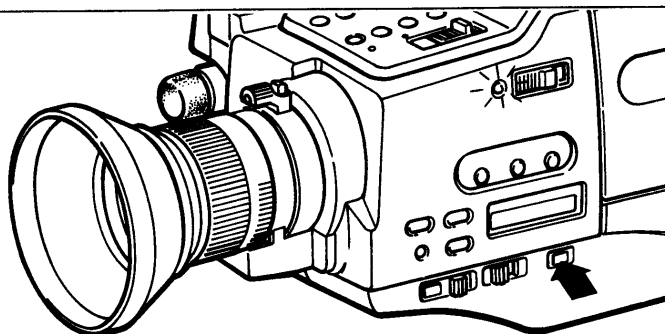
- Color indication will not be recorded.
- Memorized picture can be kept even after power switch is cut off, by the effect of the lithium battery.

High Speed Shutter

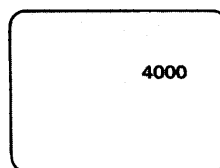
After recording an object in high speed motion, if you wish to watch the motion very slowly, for example to study a swing in playing tennis, momentary images can be seen clearly, without blurs, using slow playback or still playback.

1. Press the HIGH SPEED SHUTTER button and select shutter speed, Shutter speed indication will appear and it will change each time the button is pressed.

100 → 500 → 1000 → 2000 → 4000 → No indication
(1/100) (1/500) (1/1000) (1/2000) (1/4000)



2. Start recording
To cancel, press the HIGH SPEED SHUTTER button and make shutter speed indication disappear.



Criteria for selection of shutter speed

The faster the shutter speed becomes, the darker the picture turns. Therefore, select a slower shutter speed when the light is not sufficient.

Shutter speed	Lighting	Object
1/100	Cloudy sky sun light 1 hour after sun rise Lighting in indoor tennis court	
1/500	Cloudy sky with sun light in day time	Form of sports, etc.
1/1000	Fine sky with sun light at 3 in the afternoon	Kick in soccer play Jet coaster
1/2000	Fine sky with sun light at 10 in the morning	Hitting of tennis ball
1/4000	Fine sky with sun light in the afternoon	Car in auto race Hit of golf ball

Notes:

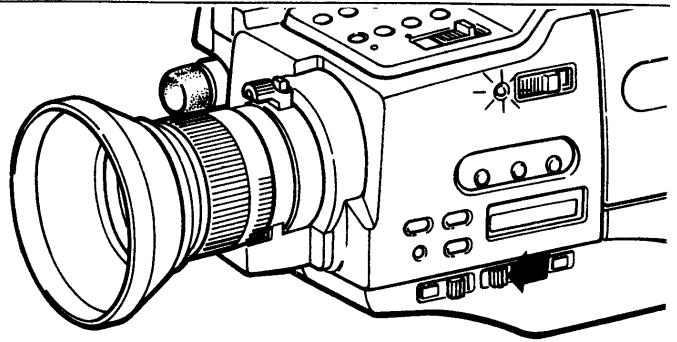
- Use the high speed shutter effectively. During normal playback, movement in pictures shot with the high speed shutter will not appear smooth.
- Shutter speed indication will not be recorded.

Auto White Balance

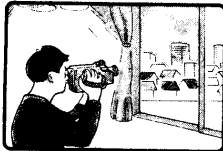
This camera is designed to automatically make the white balance adjustment. Normally, set the WHITE BALANCE switch to the AUTO position.


What white balance is

Adjustment of the white balance is necessary so that white subjects are recorded as white, and others are in their natural colour.



White balance cannot be adjusted automatically in the following cases. Set the switch to either  or  position.











When the light sources on the object and over the camera are different: (In this case set to "").



When performing close-up (macro) shooting:

Manual Setting

Switch to  or  , according to the light source illuminating the subject.

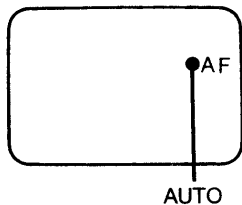
Sunlight, fluorescent lamp illumination, night views, fireworks.		Incandescent lamp, halogen lamp, candle illumination.	
	AUTO   		AUTO   

Notes:

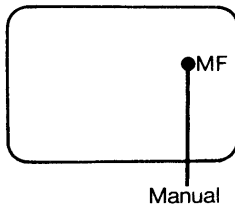
- The automatic adjustment for white balance ("AUTO" setting) cannot be made if the white sensor is blocked or covered.
- Increase the illumination when it is insufficient.
- When shooting under the illumination of mercury-vapor lamps or sodium lamps, leave the WHITE BALANCE switch in the AUTO position.

Auto Focusing

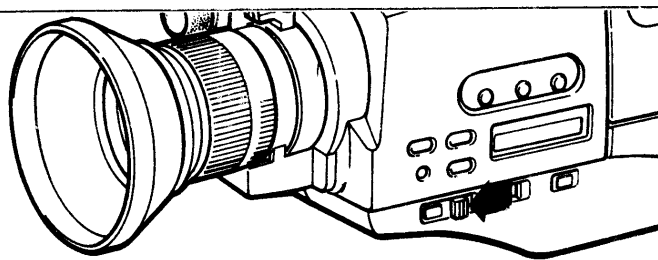
The FOCUS switch should usually be set to the "AUTO" position. For automatic focus, the vicinity in the center of the viewfinder is in focus. When shooting, the focus mode indication appears in the viewfinder.



AUTO



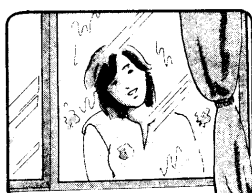
Manual



The auto-focus feature does not function normally against the following objects. In these cases, adjust the focus manually. (See next page.)



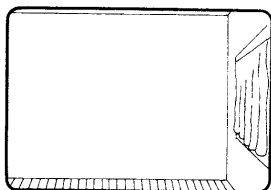
When shooting near and far objects together:



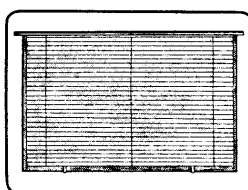
When shooting an object through a dirty glass:



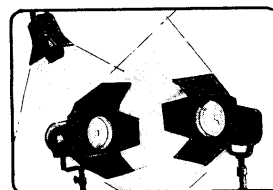
When shooting a dark object:



When shooting objects which have no contrast such as white wall, sky, etc.:



When shooting an object which has lateral stripes:



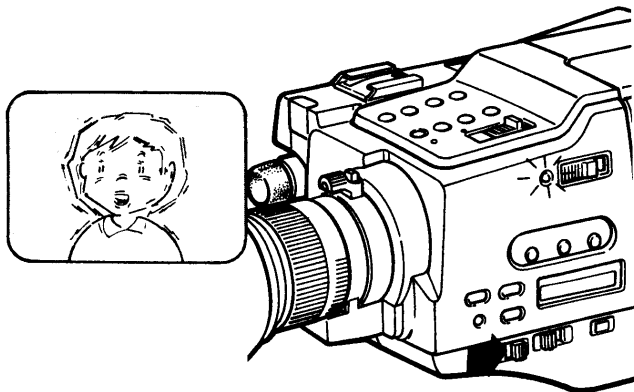
When shooting an extremely bright object:

Notes:

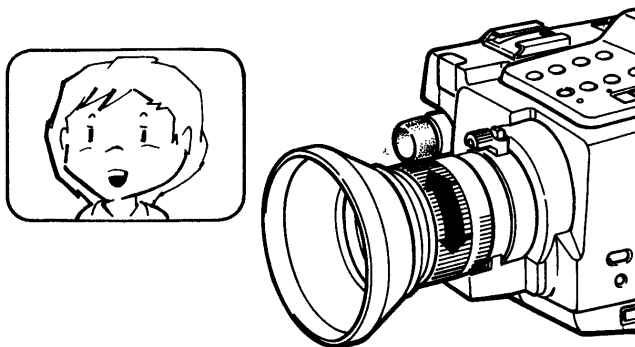
- The focus indication will not be recorded.
- While the auto focusing is in progress, do not try to forcibly turn or stop the focus ring.
- If a special filter (such as vari cross, mirages, etc.) is used, the automatic focus feature may not function normally.
- Use manual focusing for shooting objects moving fast, or with such camera operations as rapid panning, or tilting, etc. The auto-focus would not be stable in these situations.
- When there are other objects passing in front of the subject to be shot, the camera will attempt to focus on these other objects. It is recommended that manual focusing be used in this situation.

Manual focusing

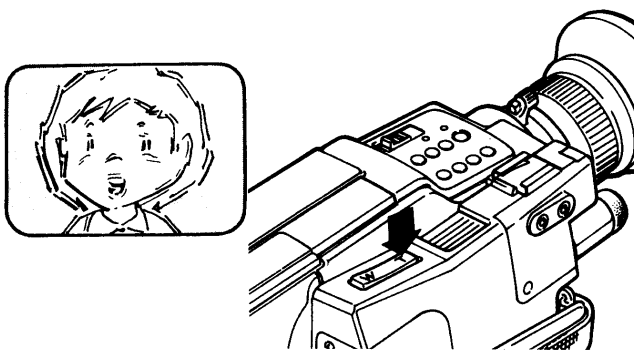
1. Set the FOCUS switch to the "MAN" position.



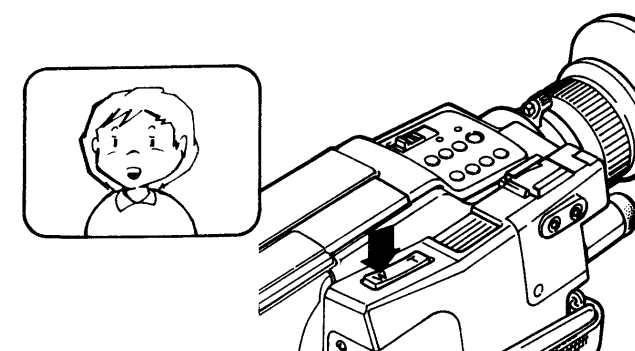
3. Turn the focus ring until the subject is clearly focused.



2. Close-up the subject by pressing the POWER ZOOM button.

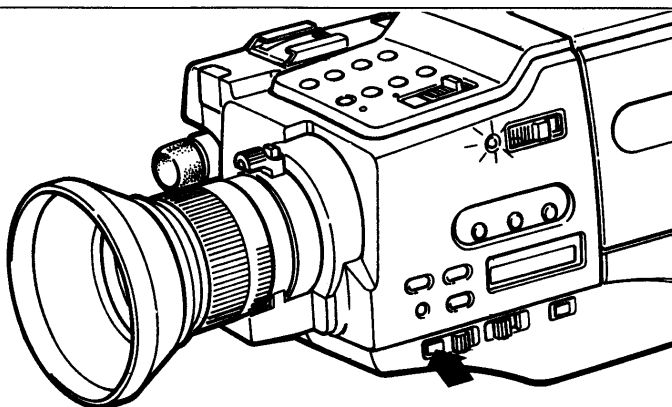


4. Use the zoom to get the desired setting.



FOCUS REV button

- During manual focusing (FOCUS switch set to "MAN"):
Press this button to quickly focus without using the focus ring.
While this button is kept depressed, auto-focusing continues.
- During auto-focusing (FOCUS switch set to "AUTO"):
Press this button to lock the focus momentarily. When the button is released, auto-focus mode resumes. This is a convenient feature to produce a smooth picture when panning a near scene.



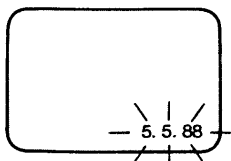
Date Imprint

The date of the recording can be imprinted in your recording. See "Date Setting" on this page.

Press the DATE ON/OFF button.

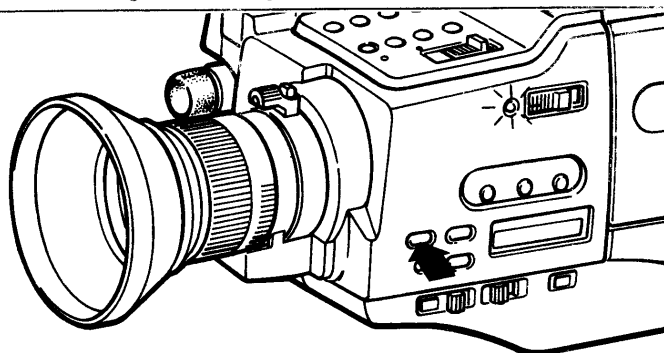
The date will appear in the viewfinder.

Example

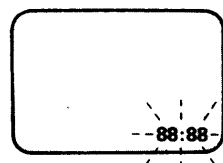


To stop the date imprint.

Press the DATE ON/OFF button again.



If "88:88" flashes by pressing the DATE ON/OFF button, that is because either that date was erased due to exhaustion of the lithium battery, or the date has not yet been set (initial state). Set the date by following the "Date Setting" procedure outlined below. (Replace the lithium battery if this is the source of the problem. See page 8)

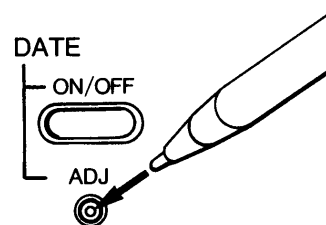
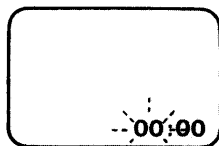
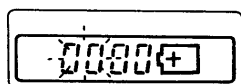


Date setting

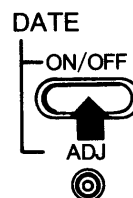
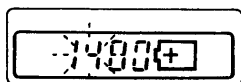
Example: PM2:10 February 14, 1989

As the date function of the unit operates from the internal clock and the date changes automatically, time is first set followed by date. Date appears on the digital display and the viewfinder.

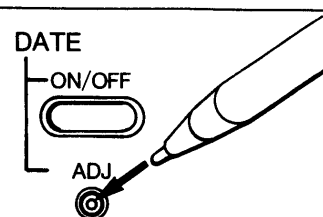
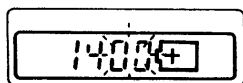
1. Press the DATE ADJ button for about one second.
The time indication will appear. (The hour indication flashes.)
 - Use a pointed object such as a pen to press this button.
 - Date appears on the digital display with 24-hour indication.



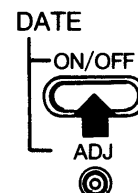
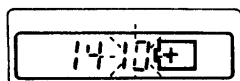
2. Set the hour by pressing the DATE ON/OFF button.



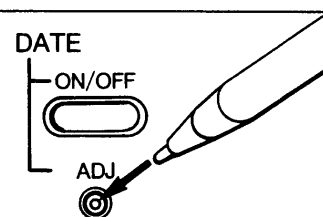
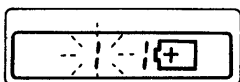
3. Press the DATE ADJ button.
The flashing will move right (minutes).



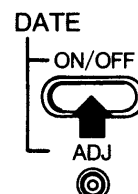
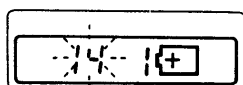
4. Set the minute to "10" by pressing the DATE ON/OFF button.



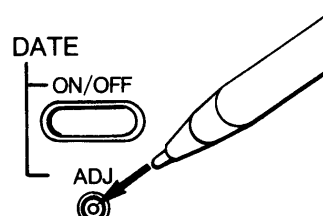
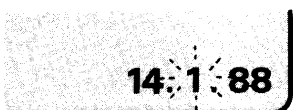
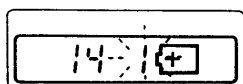
5. Press the DATE ADJ button.
This will set the 0 second of the minutes. The time indication changes to date indication.



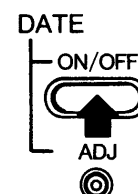
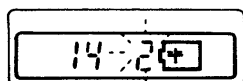
6. Set the day to "14" by pressing the DATE ON/OFF button.



7. Press the DATE ADJ button.
The flashing will move right.

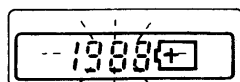


8. Set the month to "2" by pressing the DATE ON/OFF button.

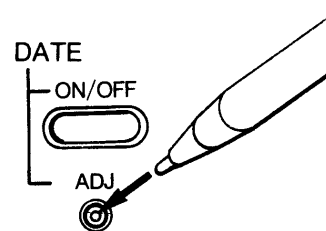


9. Press the DATE ADJ button.

Display image changes from month and day to dominical year on the digital display and the blinking moves to the right.

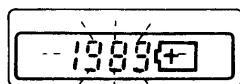


14.2.88

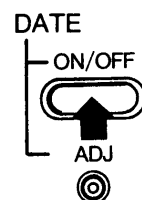


10. Set the year by pressing the DATE ON/OFF button.

The last two digits of the year are indicated in the viewfinder and indication up to 2015 AD is possible.

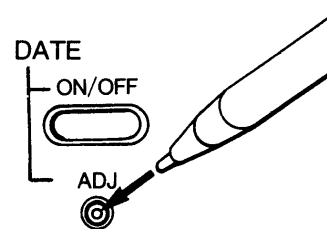
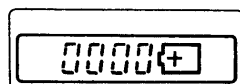


14.2.89



11. Press the DATE ADJ button.

The digital display returns to the tape counter indication after date adjustment is completed.



Notes:

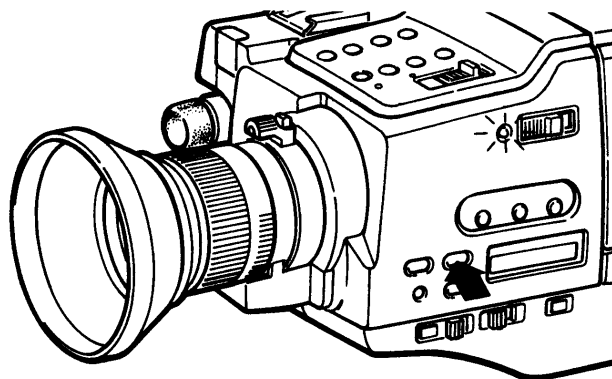
- The date can not be set during recording or playback. Set the date when the unit is in STOP, PAUSE, FF or REW mode.
- Time display is executed only when date is adjusted.
- Date appears on the digital display only when being adjusted to provide easy adjustment. (Usually, it does not appear.)

Tape Counter Operation

The tape counter setting will return to "0000" when the COUNT RESET button is pressed.

Rewind the tape to its beginning and reset the counter to "0000". The counter can be conveniently used to find the beginning of a recording on the tape. Make a note of the counter reading at the beginning and the content of the recording each time a recording is made. The cassette case card can be used for this purpose.

Also, tape counter is indicated in the viewfinder.

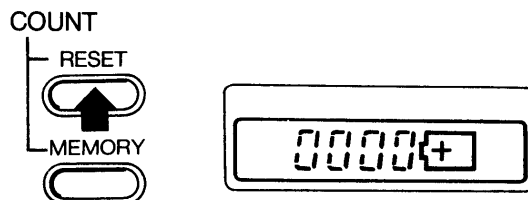


To find the beginning of a recording (MEMORY REWIND)

This counter has a memory system. Before starting a recording (or playback) reset the counter to "0000" and press the COUNT MEMORY button. This beginning position can be quickly and easily located later. When the tape is rewound after the recording (or playback), it will automatically stop in the vicinity of the "0000" reading of the counter.

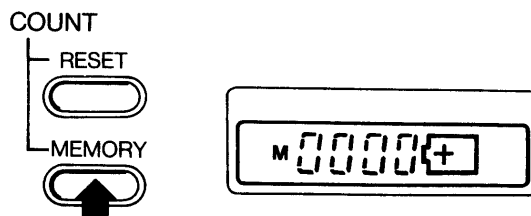
1. Press the COUNT RESET button.

The tape counter setting will return to "0000".



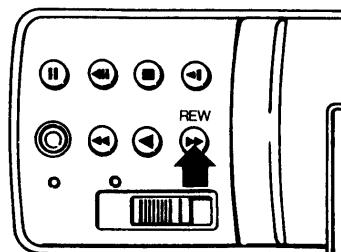
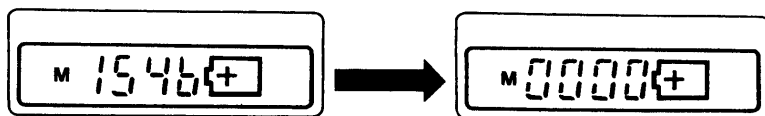
2. Press the COUNT MEMORY button.

The letter "M" will appear in the viewfinder. To cancel memory mode, press the same button again.



3. When you have finished recording or playback, press the REW button.

The tape will automatically stop in the vicinity of the "0000".



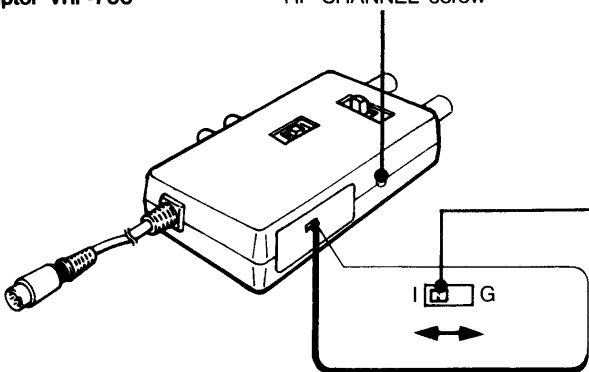
Notes:

- The tape counter indication may deviate slightly from the tape position.
- Tape counter indication is not recorded.

Connections

FOR TV'S WITHOUT AUDIO/VIDEO INPUT TERMINALS

RF adaptor VRF-700



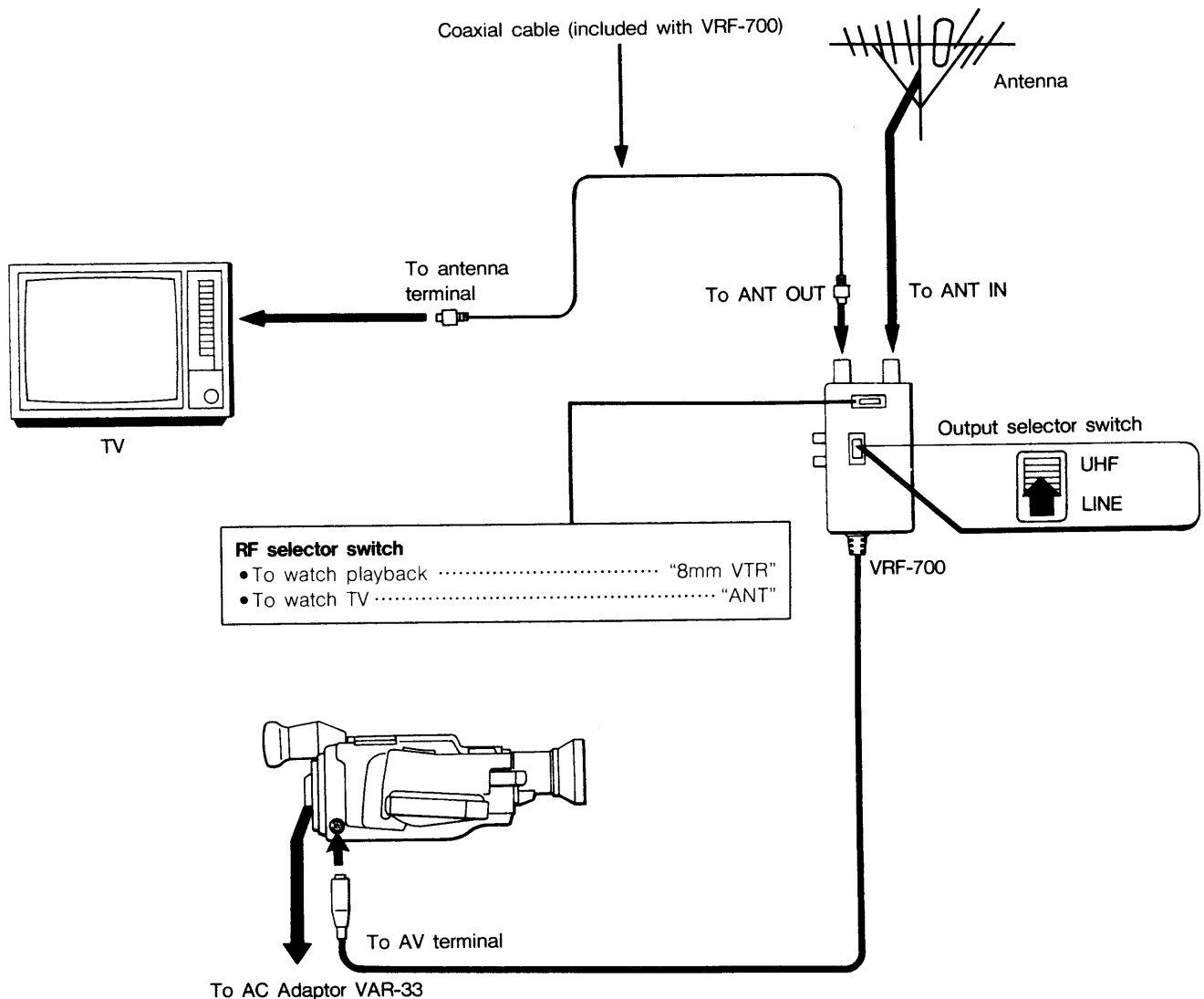
RF CHANNEL screw

I/G selector

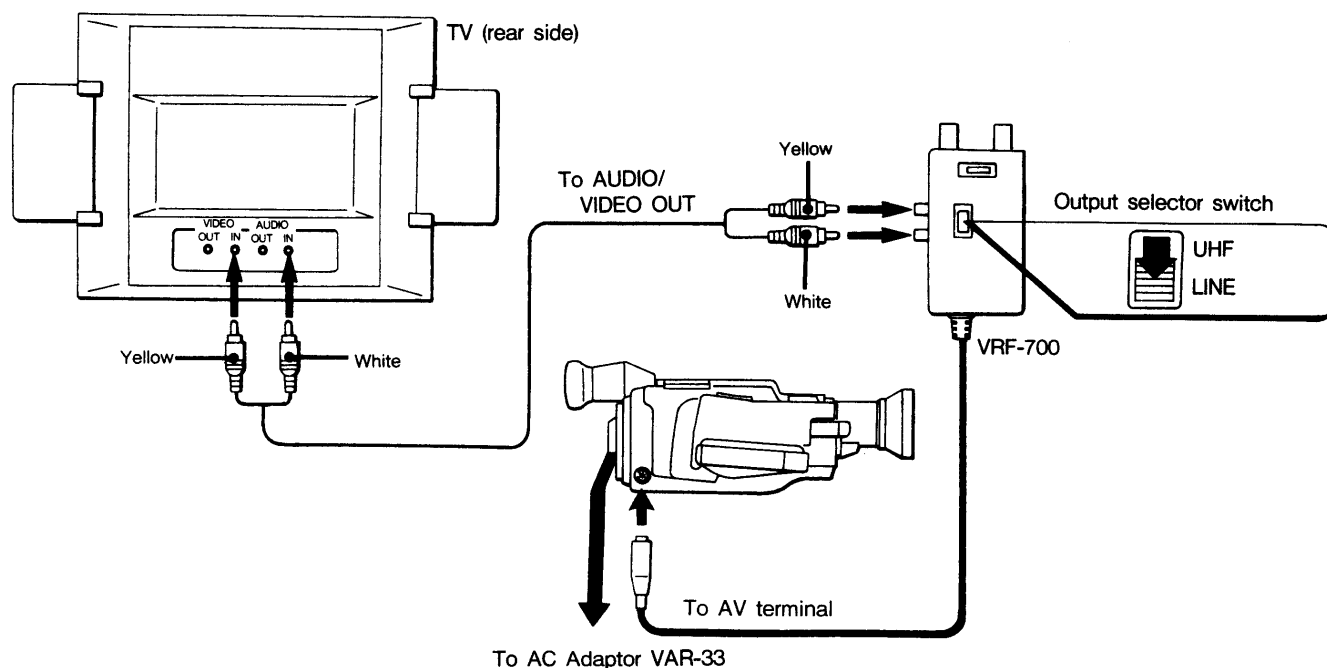
I G

Select a spare programme position (or one designated for VCR use) on the TV. With the connections and switch positions shown below and the camera power on, tune the TV across the UHF band until the camera's picture is found. This will usually be at about CH36 but this can be varied if necessary by adjustment of the RF CHANNEL screw.

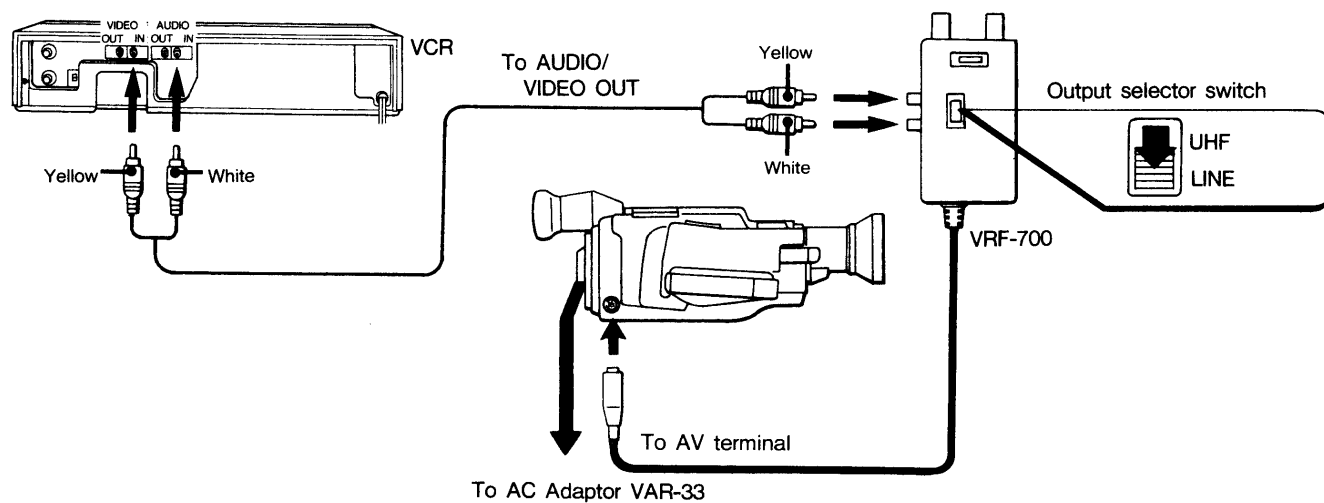
The I/G selector should be set to I for UK TVs.



FOR TV'S WITH AUDIO/VIDEO TERMINAL

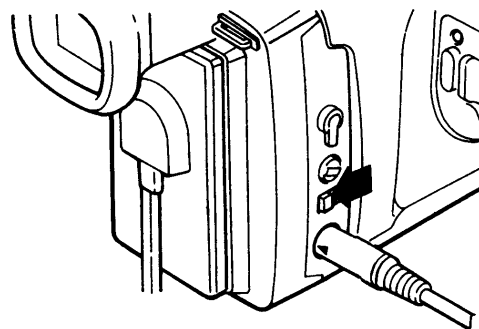


FOR TAPE COPY TO THE VCR



Tape copy operation

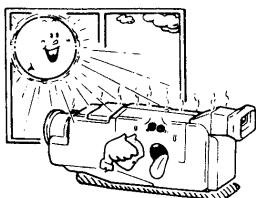
1. Set the REC MODE/EDIT switch of the unit to the ON position.
(It will prevent the deterioration of picture quality.)
2. Set the input selector of the VCR to LINE (external input).
3. Set VCR to recording position.
4. Set this unit to playback position.
5. When tape copying is finished, set the REC MODE/EDIT switch to the OFF position.



Important Notes

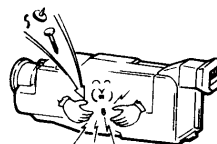
Keep away from high temperatures.

If you leave or use this unit in or near high heat, the exterior of the camcorder may be deformed. Do not leave it in a closed automobile on hot days.



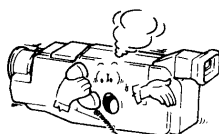
Don't put anything inside.

Trouble and a possible malfunction may result if any foreign substances (flammable articles, metal items such as pins, water, etc.) get inside the unit.



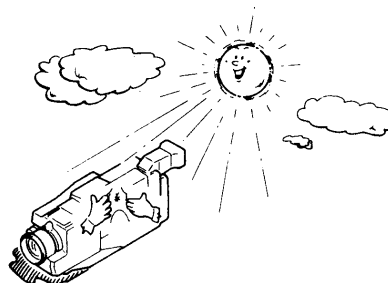
If operation seems abnormal...

If you notice anything abnormal (smoke, a strange odor, abnormal noise, etc.), switch OFF the power immediately and refer to the store where it was purchased.



Protect the viewfinder from direct sunlight.

Sunlight entering through the eyepiece is focused and may cause the unit to malfunction.



When not using the unit for an extended period of time...

- Remove the tape and the battery pack.
- Operate the unit with the power turned on from time to time.

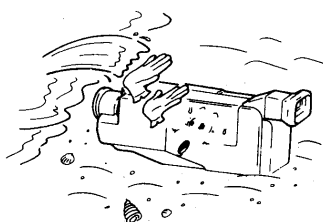


Do not use this unit...

- Where there is high humidity (a steamy bathroom for example).
- Where vibrations are violent.
- Where there is excessive dust or dirt.
- Where there is high magnetism.
Examples: near a transmitting antenna
near motors
near fluorescent lights

At the beach...

Take special care to prevent entry of water and sand.



Do not use the unit for monitoring only.

If the unit is used to record the same subject for a long time, e.g. for special applications such as monitoring, the picture quality will deteriorate.

Do not wrap the unit in a cloth etc.

If wrapped in a cloth, the temperature inside the unit will rise excessively during operation, causing the unit to malfunction.

Video heads

When the video heads have been used for a long time, the playback picture may become fuzzy, and eventually there may be no picture at all.

This is caused by dirty video heads, and is an indication that they should be cleaned.

To clean the heads, use a commercially available cleaning kit, or consult your dealer.

- Note that the video heads can be damaged if a cleaning tape cassette is used incorrectly. Read and follow the pertinent instructions carefully when cleaning the heads.

Video heads wear in the same way as a phono stylus.

If the picture is not clear even though the heads have been cleaned, it is possible that the heads themselves are worn. If so, they must be replaced.

For detailed information and assistance, please consult your dealer.

1000 hours of use is the guideline for inspections.

This unit requires an extremely high degree of precision to record images from the video camera onto magnetic tape and then to correctly reproduce those images.

In particular, the video heads and mechanical parts which transport the tape are especially subject to becoming dirty and worn after long use.

So, in order that you can continue to enjoy the beautiful pictures which this unit can reproduce, it is suggested that the unit be inspected (including cleaning, lubrication and possible replacement of some parts) after approximately every 1000 hours of use. For detailed information and assistance, please consult your dealer.



Use in other countries

All you need for recording in a foreign country is a charged battery pack(s) and cassette(s), but if you want to play back the tape in that country, you will have to use a TV with PAL colour system and AV input terminals.

Countries using the PAL system:

England, Italy, Austria, Australia, West Germany, Holland, Kuwait, Singapore, Switzerland, Sweden, Spain, Thailand, People's Republic of China, Denmark, New Zealand, Norway, Belgium, Portugal, Hong Kong

Countries using the NTSC system

Canada, Japan, Korea, Mexico, the Philippines, Taiwan, U.S.A.

Countries using the SECAM system:

Iran, Iraq, USSR, Hungary, France, Bulgaria, Poland, Monaco, Luxemburg, etc.

If a malfunction should unexpectedly occur while in another country, contact the dealer where the unit was purchased.

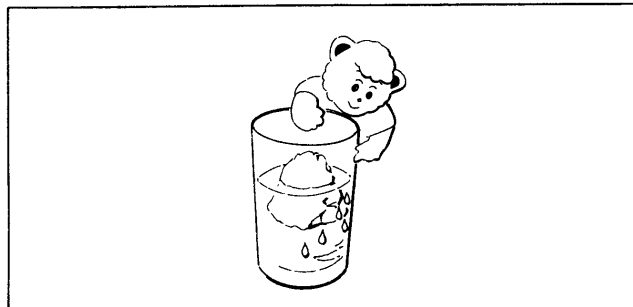
Before Requesting Service

MOISTURE ("DEW") CONDENSATION

If condensation occurs within this unit, operation of the unit, is prevented in order to protect internal mechanisms.

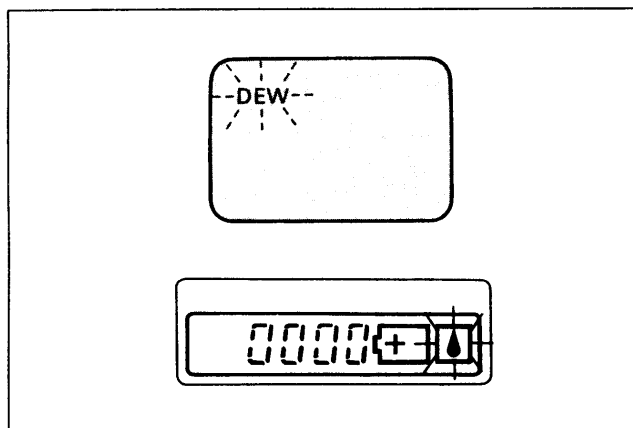
What Moisture ("Dew") is

- The water drops that form on the outside of a cup filled with ice water are called condensation.
- If this condensation forms within the unit and the unit is used in this state, the tape and video heads will be damaged and a malfunction will occur.







When moisture occurs

- When the unit is brought suddenly into a warm room from the cold outdoors and used.
- When a cold room is rapidly heated.
- In summer, when the unit is brought suddenly into a room having high humidity and/or temperature after being in an air-conditioned room or automobile.



If moisture occurs

- The DEW mark (flashing) appears in the viewfinder and  mark will also appear in the digital display.
- If there is a tape in the unit, be sure to remove it.
- When the moisture dries up, the DEW () mark disappears. The time required for drying varies according to the surrounding temperature.
- Moisture condensation sometimes occurs slowly and the DEW() mark may not appear until later despite the occurrence of moisture condensation. Thus in situations where condensation is suspected, remove the tape and wait 15 to 25 minutes. The unit can be used if the DEW() mark has not appeared during this period.

Preventing Moisture Condensation



When bringing the unit into a heated room from a cold place such as a skiing area, seal the unit in a plastic bag to prevent moisture condensation. Leave the unit in this state for about one hour after bringing into the room.

Moisture on Tape

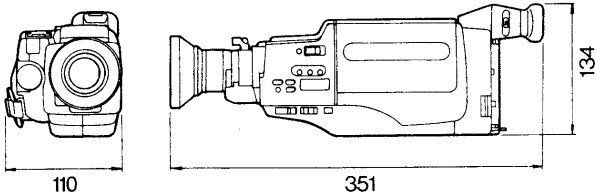
In the same manner, moisture may form on the tape when it is brought from a cold place to a hot place. If a tape with moisture on it is inserted, nothing will happen even when the PLAY button is pressed. Only the EJECT button will work. The CASSETTE mark will appear in the viewfinder at this time. Eject the tape and leave it until the moisture dries.

WHEN YOU THINK THERE'S A PROBLEM...

First check the items below. If operation still seems abnormal, ask store where your unit was purchased for assistance.

Symptom	Probable cause	Remedy	Page
No power.	Battery pack is exhausted.	Replace with a charged battery pack.	6
	AC adaptor is turned off.	Turn on the power	—
	Charging the battery.	Stop charging or wait for charge to complete.	—
Nothing happens even with batteries attached.	Moisture exists.	Wait for DEW()mark to disappear.	32
Power is suddenly turned off during use.	Battery pack is exhausted.	Replace with a charged battery pack.	6
	Stop mode or pause mode is continued for 5 minutes or longer.	Turn on the power again.	—
Cannot record.	No cassette.	Insert a cassette.	7
	Cassette is set for erase prevention.	Reset cassette's switch, or insert another cassette.	7
	Tape is at end.	Rewind the tape, or insert another cassette.	—
Cannot focus.	The subject is difficult to focus.	Adjust the focus manually.	22, 23
	Distance to subject is less than 1.2 m.	Move away, or use macro feature.	17
No picture on the TV.	TV channel is not set to the designated video channel.	Set the video channel	28
	Wrong connection.	Correct the connection.	28, 29
Playback picture flickers or blurs.	Video heads are dirty.	Clean them. (If this does not help, heads may need to be replaced.)	—
Cassette holder will not go in.	Moisture occurred.	Wait for DEW()mark to disappear.	32

Specifications

Systems, etc.		Power supplies, etc.	
Video recording system	Rotating 2-head helical-scan FM.color under system	Power supply voltage	Battery holder input 6V/7.5V
Audio recording system	Rotating head FM system	Power consumption	6.7W during camera recording (including viewfinder)
Video signals	PAL color, CCIR standard system	Operation temperature range	0°C ~ +40°C (32°F)
Cassette type	8mm video tape cassette	Storage temperature range	-20°C ~ +60°C (-4°F ~ +140°F)
Tape speed	SP: Approx. 20.051mm/sec. LP: Approx. 10.058mm/sec.	External dimensions	110×134×351mm (W×H×D)
Recording/playback time	180 minutes (with P5-90 cassette)		
Fast forward/rewind time	Approx. 5 minutes (P5-90 cassette)		
Pickup element	CCD solid-state type		
Viewfinder	Electronic (0.7 inch type, black and white)		
Lens	Electro-powered-6X zoom lens f=12~72mm F1.6 Close-up function (18mm~1.2m) Automatic focus Filter diameter 49mm	Weight	Approx. 1.2kg(not including battery pack and cassette)
White balance adjustment	Automatic or set	Microphone	Electret condenser type (omnidirectional)
Minimum subject illumination	5 lux	AV terminal	Video output 1 Vp-p, 75Ωunbalanced, negative sync Audio output -6 dBs, 2.2KΩ or less
Subject illumination range	5 lux~100,000 lux	Microphone jack	Mini jack, -64 dBs For low-impedance microphone
Recommended subject illumination	300 lux or more	Earphone jack	Mini jack, for 8Ωearphone

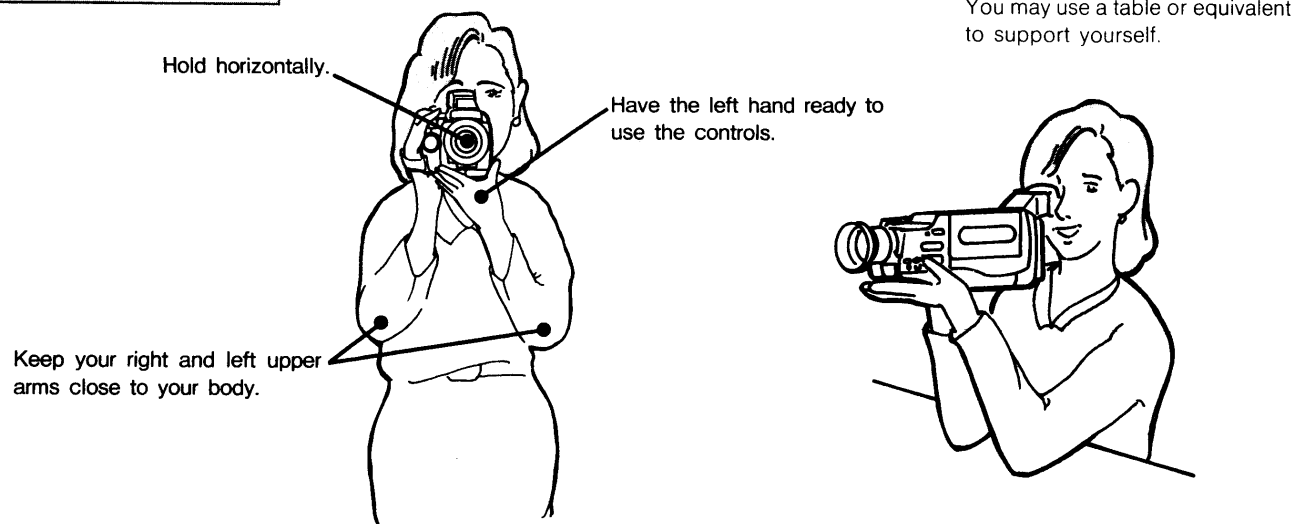
• Specifications and external appearance are subject to change without notice.

BASIC RECORDING TECHNIQUES

With just a little practice, you can acquire the basic techniques for fine recording results. With this unit you can record a scene over and over until you're satisfied.

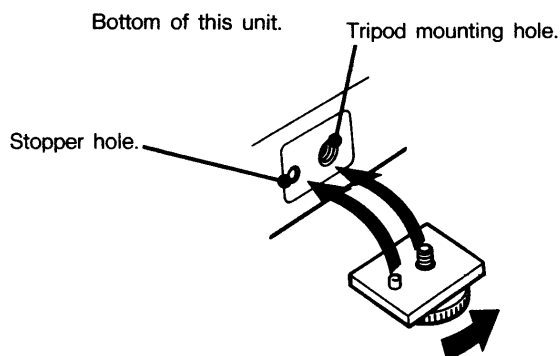
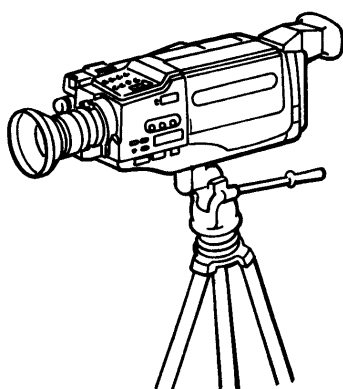
Holding The Camera

Usual recording posture



Using a tripod

The use of a tripod is suggested in order to prevent "jitter" caused by hand-held instability, particularly for close-up recording. Standby picture is improved by using a tripod.



Align tripod mounting hole and stopper hole of this unit with the tripod's screw and stopper tighten the screw securely.

Basic Shots

Effective angles and shots make your recordings more interesting.

Human subjects



Close-up shots

Close-up are effective for emphasizing a certain part of the subject.

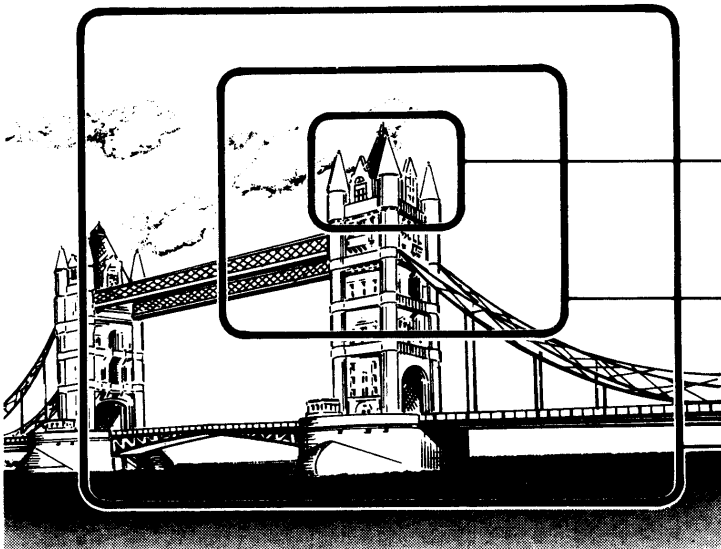
Bust shots

This size is excellent for showing both the facial expression and clothing.

Full-length shot

The full-length shot shows the subject entirely, as well as a clear view of the background; this is of course very effective to show overall body movement.

Scenic shots



Close-up

This type brings the subject close, and is very effective for emphasis.

Mid-range

This range is the basic range from which you'll zoom in or zoom out for wide-angle shots.

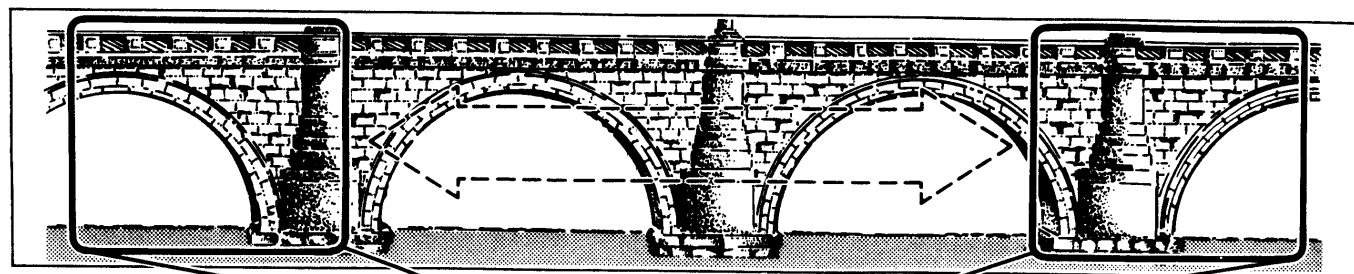
Long range

The most effective range for showing surrounding conditions and to express a sense of distance.

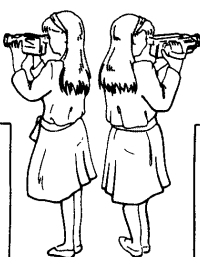
Panning/Tilting

Panning

Moving laterally ... to shoot the overall view and to express a sense of dimension.
A steady posture is important for wide-angle shots in order to prevent vibration of the picture.



- 1** Fix your body in the direction you want to face at the end of the shot. Then twist the upper torso to face the camera in the direction where you'll begin the shot.
- 2** Shoot the first scene for about three seconds.



- 3** Turn your body slowly while shooting, until you are facing in the direction where the shot will end.
- 4** Shoot the final scene for about three seconds.

Tilting

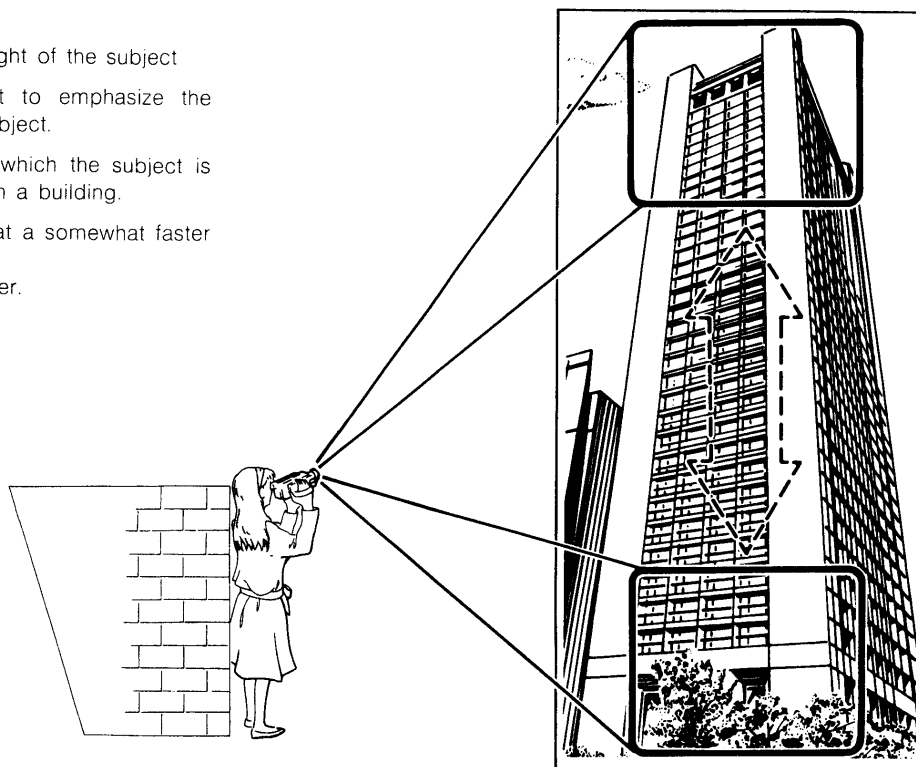
Moving up and down ... to show the height of the subject

Tilt(pan)upward when you want to emphasize the height of the subject.

Tilt(pan)down for a scene in which the subject is coming out from a building.

Tilting (vertical panning) should usually be at a somewhat faster speed than horizontal panning.

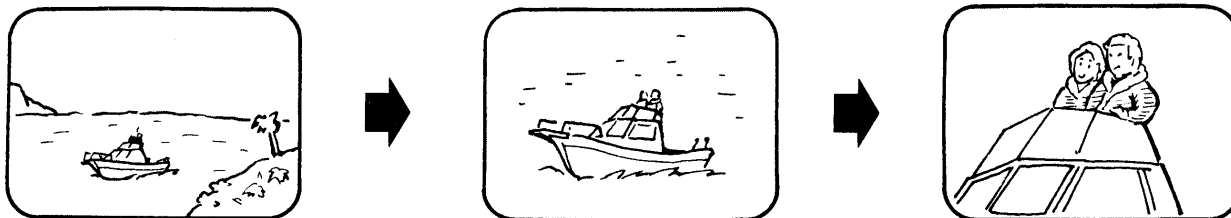
Support your back to make shooting easier.



Zooming

You may be able to change the picture smoothly from a wide angle picture in which you can comprehend the circumstances and position of the surroundings of the object to the picture of a close-up of a special section of the object. When too many zoomings are performed, they tend to become unsightly.

Zoom-in ... To call attention to a specific point.



Zoon-out ... To include a final shot of the surrounding scene.



Notes:

- Vibration is more noticeable in telephoto shots, so be sure to keep the camera steady.
- When using the manual focus for zooming, first adjust for correct focus at the telephoto setting and then make the zoom. The scene will be blurred if it is zoomed-in after the focus is made at wide angle.

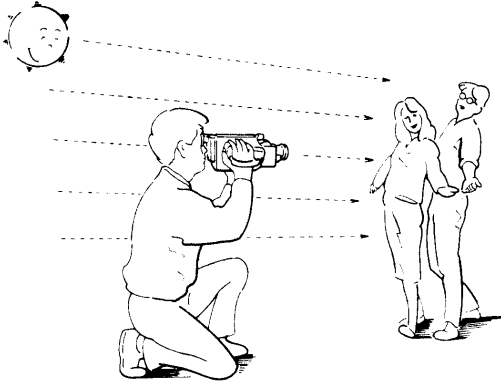
Lighting Conditions and Lights

An important point for the best results is correct lighting conditions. Use the table below as a reference for the most suitable lighting conditions.

ND filter is recommended	Unit(lux)	Snow-covered mountains Ski slopes Beach on clear summer day
	100,000	Clear-sky sunlight at noon(100,000) Clear-sky sunlight at 3 PM(35,000) Cloudy-sky sunlight at noon(32,000)
	10,000	
Usable range	1,000	Cloudy-sky sunlight one hour after dawn(2,000) Next to window in office with fluorescent lighting(1,000) Clear-sky one hour before sundown(1,000)
	500	Inside a department store(500 to 700) Ticket gate of a train station(650) Office with fluorescent light(400 to 500) 13-m ² (43-ft ²)room with two 30-W fluorescent lights(300) Subway platform(300)
Additional lighting is suggested	100	Shopping arcade at night(150 to 200) Inside movie theatre at intermission(15 to 35) Candlelight(10 to 15)
Additional lighting needed	10	

When shooting outdoors (natural lighting)

Select camera position as though carrying the sun on your back. In this way, the sun shines on the object evenly and enables shooting of lovely pictures.



Types of lights

Reflector flat light

The light will be spread over a wide range, making this an easy and convenient type of light for the beginner to use.

Reflector spotlight

This type of light can be used to emphasize a certain point, and to create special lighting effects.

Note:

- Do not place this unit near a light or where it will be directly struck by light. The light's heat might deform this unit's exterior.

For a scene on which there is excessive light, such as a beach or a snow scene on a bright day, the scene will appear too white, so an ND filter should be used to reduce the amount of light. The ND-4 filter will usually perform satisfactorily in most circumstances. (filter size 49 mm)

When shooting indoors (artificial lighting)

Pictures may be shot with only fluorescent lamps but more distinct pictures are obtained if the object is brighter.

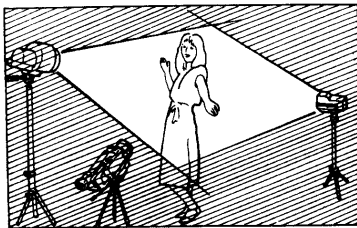
Directing the lights

For one light:

The light should basically be directed diagonally from the front. With a single light, the contrast will always be strong. Use another light if you want to get rid of the shadows.

For two lights:

Direct one diagonally from the front, and position the other at the side of the subject to eliminate any shadow.



The Personal Touch

Once you have mastered the techniques of the video camera, you can go on to create works, which bear your own individual touch.

1. Planning a script

The best work you'll do, if a story is involved, will be done with the help of a script that you've prepared in advance to plan every step and the sequence. A list of 6 easy questions (Who, What, When, Where, Why, How) helps you plan the progress of your story. Below you can see a story board script in which sketches were included.

2. Making titles

Your use of titles adds extra interest, flavour and the "professional touch". in the same way as films shown in theatres and on TV.

3. Start recording

Begin shooting scenes based on your prepared script.

Sounds and camera-work




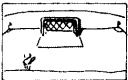


Sound effects and back-ground music

Recording time

"Frame out" indicates a scenechange

Techniques

A rough sketch of the scene in a "TV frame"

● Soccer game ●			Lined notebook paper, cts.
5 sec. Title (Sound effects: music from a TV soccer news report)		Title Mother: Date, place, etc.	Scene progression and nar- ration
10 sec. Zoom-out Frame-out		Son: A few words before the big game	
6 sec. Cut-in			Occasional short scenes to establish the season
30 sec. Cut-out Panning		Mother: Descrip- tion of the field	
2 min. 10 sec.		Description of the players	
2 min. 15 sec. Zoom-in		Mother: Cheering Cheerleaders and fans rooting for the team	

WARRANTY TO CUSTOMER

Sanyo Marubeni (UK) Ltd. (the Company) warrants to the initial retail purchaser that if this equipment is or becomes defective and that, in the opinion of the Company, the defect is due to faulty material or workmanship the Company will, for a period of 12 calendar months from the date of sale to the original purchaser repair or replace, at its sole option, free of charge, any such defective component part of the equipment, always provided that:-

1. The equipment has at all times been used in accordance with the operating instructions issued by the Company, and has not been connected to an electrical mains supply for which it has not been adjusted.
2. Accidental damage, or damage caused by negligence or misuse by the user, including leakage from exhausted batteries, is specifically excluded.
3. Unauthorised repairs, or any modification to the equipment which has not been expressly approved by the Company, shall render this warranty null and void.
4. Failure due to fair wear and tear of any item, such as batteries, record playing styli, and tape recording, playback and erase heads is specifically excluded.

This warranty is not transferable and is only applicable within the United Kingdom (and the Republic of Ireland).

Nothing in this express warranty affects the statutory rights available to the purchaser of this equipment.

Note: This warranty supersedes any other form of guarantee that may inadvertently have been enclosed with or attached to the product. (August 1978).

Dear Customer

Thank you for buying Sanyo. This equipment should give you many years of pleasure and faithful service but in the event that a fault occurs, the following notes for your guidance may be helpful:-

1. PLEASE RETAIN YOUR PURCHASE RECEIPT WHICH WILL BE REQUIRED FOR SERVICE DURING WARRANTY.
2. If your Sanyo equipment proves faulty during the period of guarantee, take it or send it back to the dealer who originally supplied it together with this guarantee and the proof of purchase. We have made arrangements with our approved dealers under which they will carry out in guarantee service repairs on our behalf. In this way, we hope to reduce to a minimum the amount of time you will be without your equipment.
3. If for some reason it is impossible to return the equipment to the original supplier, please contact our Service Department at the address below for further advice.
4. Should the equipment require servicing after the expiry of the guarantee period, take or send it to the original supplier or any other Sanyo dealer. He will be pleased to give you a quotation for the repair. If you are in any doubt about what to do, write to us at the address below or telephone:

Service Departments,
Sanyo Marubeni (UK) Limited,
Sanyo House
Otterspool way, Watford,
Hertfordshire WD2 8JX
Tel: Watford 246363

SANYO

SANYO Electric Co., Ltd.