

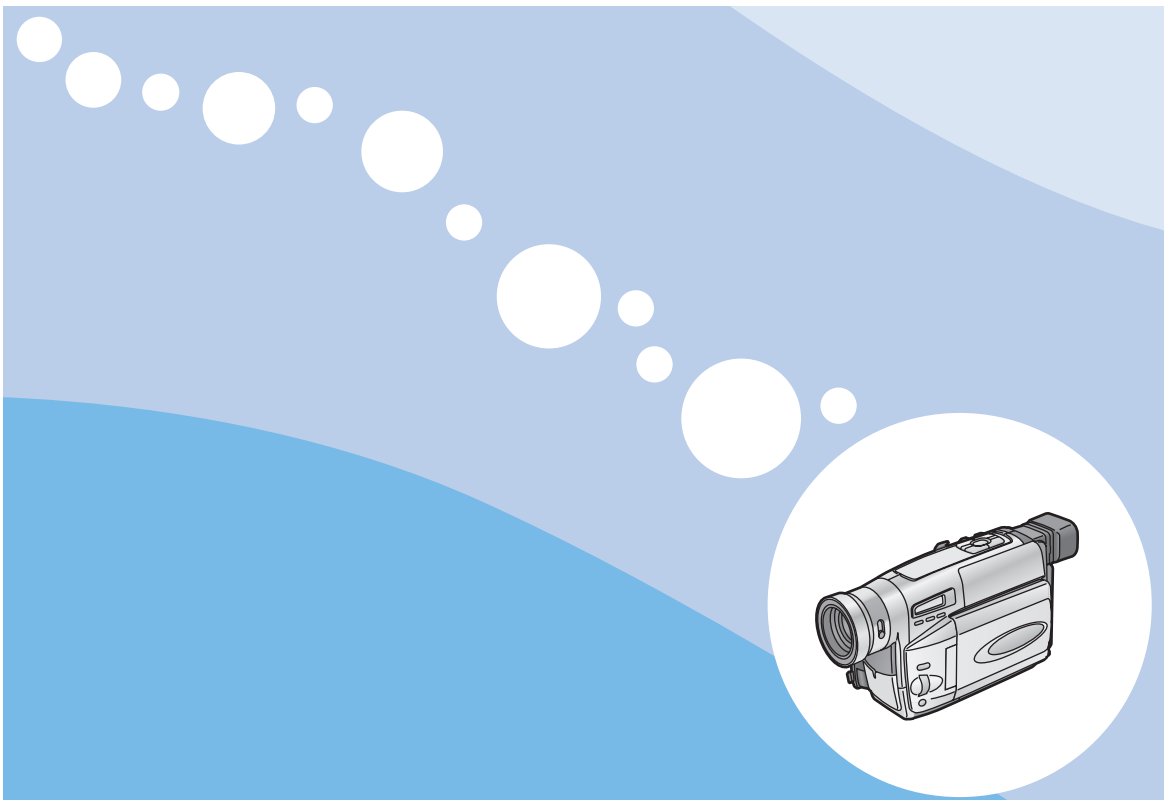
Panasonic®

VHS-C 型摄像机
VHS-C Movie Camera

Model No.

NV-VZ18GC/GCS

使用说明书
Operating Instructions
Инструкция по
эксплуатации



Before use, please read these instructions completely.

使用前，请详细阅读本说明书。

Перед использованием прочтите, пожалуйста, эту инструкцию полностью.



VQT0H40-1

Information for Your Safety

As this equipment gets hot during use, operate it in a well ventilated place; do not install this equipment in a confined space such as a bookcase or similar unit.

To reduce the risk of fire, electric shock or product damage, do not expose this equipment to rain, moisture, dripping or splashing and ensure that no objects filled with liquids, such as vases, shall be placed on the equipment.

Movie Camera

- The rating plate is on the underside of the Movie Camera.

AC Adaptor

- The rating plate is on the underside of the AC Adaptor.

The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.

■ Carefully read the Operating Instructions and use the Movie Camera correctly.

- Injury or material damage resulting from any kind of use that is not in accordance with the operating procedures explained in these Operating Instructions are the sole responsibility of the user.

Try out the Movie Camera.

Be sure to try out the Movie Camera before recording your first important event and check that it records properly and functions correctly.

The manufacturer is not liable for loss of recorded contents.

The manufacturer shall in no event be liable for the loss of recordings due to malfunction or defect of this Movie Camera, its accessories or cassettes.

Carefully observe copyright laws.

Recording of pre-recorded tapes or discs or other published or broadcast material for purposes other than your own private use may infringe copyright laws. Even for the purpose of private use, recording of certain material may be restricted.

- All company and product names in the operating instructions are trademarks or registered trademarks of their respective corporations.

■ **WARNING**

Do not remove the cover (or back); there are no user serviceable parts inside. Refer servicing to qualified service personnel.

Use only the recommended accessories.

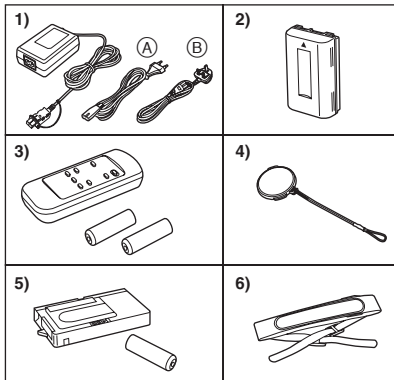
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Before Use

Standard Accessories

Illustrated are accessories supplied with the Movie Camera.



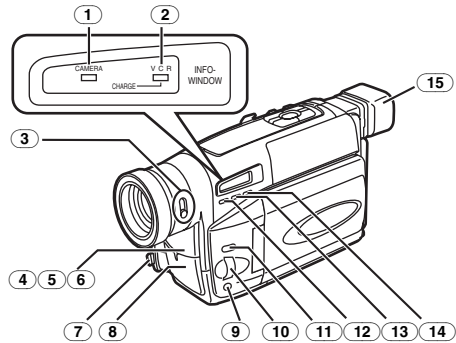
- 1) **AC Adaptor and AC Mains Lead** -34-
 - A NV-VZ18GC
 - A,B NV-VZ18GCS
- 2) **Battery Pack** -34-
- 3) **Remote Controller and Batteries for Remote Controller** -33-
- 4) **Lens Cap** -35-
- 5) **Cassette Adaptor and Battery** -51-
- 6) **Shoulder Strap** -35-
 - Standard Accessories are subject to change without notice.

Optional Accessories

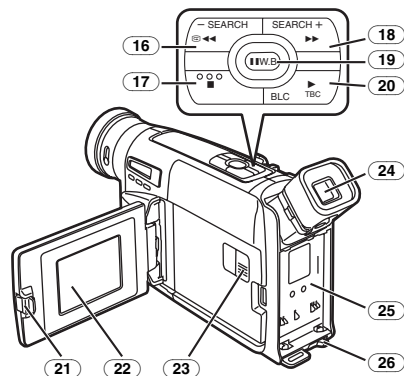
- 1) Battery Charger (VW-BCV1E)
- 2) Battery Pack (Lithium-Ion) (CGR-V14S)
- 3) Battery Pack (Lithium-Ion) (CGR-V26S)
- 4) ND Filter (VW-LND37E)
- 5) MC Protector (VW-LMC37E)
- 6) Tele Conversion Lens (VW-LT3714ME)
- 7) Wide Conversion Lens (VW-LW3707ME)
- 8) Tripod (VZ-CT55E)
- 9) Cassette Adaptor (VW-TCA7E)
- 10) IR/Video DC Light (Halogen & Infra-red) (VZ-LDR10E)
 - It requires the Shoe Adaptor for attaching to the Movie Camera.
- 11) Shoe Adaptor (for attaching the IR/Video DC Light) (VW-SK11E)
 - Optional Accessories are subject to change without notice.
 - Some optional accessories may not be available in some countries.

Controls and Components

Movie Camera



- 1) **Camera Mode Lamp [CAMERA]** -37-, -41-
- 2) **VCR Mode/Charging Lamp [VCR]/[CHARGE]** -34-, -49-, -55-
- 3) **0-Lux Recording Switch [0 LUX OFF/ON]** -48-
- 4) **White Balance Sensor** -44-
- 5) **Remote Control Sensor** -34-
- 6) **Built-in Infra-red Beam Emitters** -48-
- 7) **Lens Cap Holder** -35-
- 8) **Microphone**
- 9) **Focus Button [FOCUS]** -45-
Item Set Button [SET] -38-
Tracking Button -50-
- 10) **Multi-Function Dial [▲▼]/[MF]/[TRACKING]/[EXPOSURE]** -38-, -45-, -50-
- 11) **Menu Button [MENU]** -38-
- 12) **Auto Exposure Selector Button [PROG. AE]** -43-
- 13) **Fade Button [FADE]** -42-, -46-, -51-
- 14) **Super Image Stabilizer Button [SIS]** -42-
- 15) **Eyecup**



- 16) **Rewind/Review Button [◀◀]** -49-, -50-
Reverse Search Button [-SEARCH] -41-
Recording Check Button [Ⓞ] -41-
- 17) **Stop Button [■]** -49-
- 18) **Fast Forward/Cue Button [▶▶]** -50-
Forward Search Button [SEARCH+] -41-
- 19) **White Balance Button [W.B.]** -44-
Pause Button [||] -50-
- 20) **Play Button [▶]** -49-
Backlight Button [BLC] -42-
TBC Button [TBC] -49-
- 21) **LCD Monitor Open Lever [▲OPEN]** -37-

22 LCD Monitor -37-

Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the LCD Monitor screen. However, this is not a malfunction and does not affect the recorded picture.

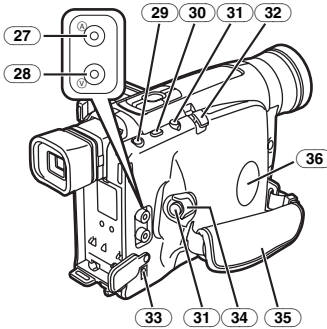
23 Cassette Compartment Lock Button [LOCK] -36-

24 Viewfinder -37-

Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the Viewfinder screen. However, this is not a malfunction and does not affect the recorded picture.

25 Battery Holder

26 Battery Eject Lever [◀BATTERY EJECT] -35-



27 Audio Output Socket [A] -51-, -53-

28 Video Output Socket [V] -51-, -53-

29 Cassette Eject Button [▲EJECT] -36-

30 Date/Time/Title Button [DATE/TITLE] -40-, -50-

31 Recording Start/Stop Button -41-

- Use either of these buttons depending on the recording angle.

32 Zoom Lever [W/T] -42-, -44-, -46-

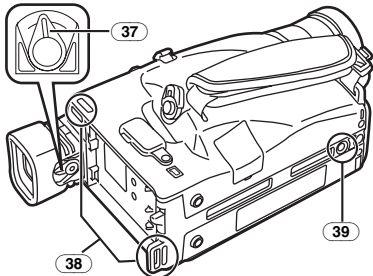
Volume Adjustment Lever [-VOL+] -49-

33 DC Input Socket [DC IN] -34-

34 Off/On Mode Selector Switch [CAMERA/OFF/VCR] -37-, -41-, -58-

35 Grip Belt -35-

36 Speaker



37 Eyepiece Corrector Knob -37-

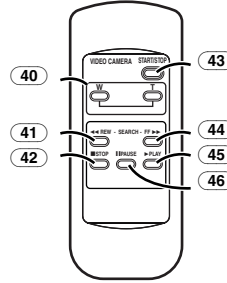
38 Shoulder Strap Holders -35-

39 Tripod Receptacle

- Used for mounting the Movie Camera on an optional tripod.

Remote Controller

The buttons with the same mark as on the Movie Camera generally have the same function.



40 Zoom Buttons [W/T] -42-, -46-, -49-

41 Rewind/Review Button [◀◀] -41-

- To start review playback. -50-
- To rewind the tape. -49-
- To activate the Camera Search Function. -41-
- To activate the Recording Check Function. -41-

42 Stop Button [■] -49-

43 Recording Start/Stop Button [START/STOP] -41-

44 Fast Forward/Cue Button [▶▶] -41-

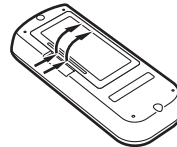
- To start cue playback. -50-
- To fast-forward the tape.
- To activate the Camera Search Function. -41-

45 Playback Button [▶] -49-

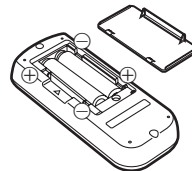
46 Pause Button [||] -50-

■ Inserting the Batteries into the Remote Controller

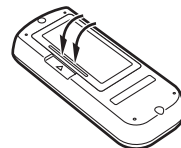
1 Remove off the Battery Cover.



2 Insert the batteries with the polarity (+ and -) correctly aligned.



3 Replace the Battery Cover.



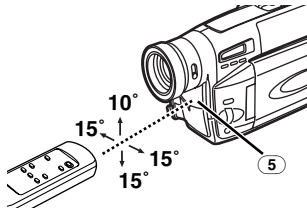
■ Replacing the Batteries

The life of the batteries is about 1 year.

When the batteries are exhausted, purchase two new "AAA", "UM-4" or "R03" type batteries and insert them in the same way as explained above.

- Do not mix old batteries with new batteries.
- Do not mix different battery types, i.e. Alkaline and Manganese.
- Do not use rechargeable (Ni-Cd) batteries.
- Do not short-circuit the batteries.
- When you do not use the Remote Controller for a long time, take out the batteries and store them in a cool, dry place.

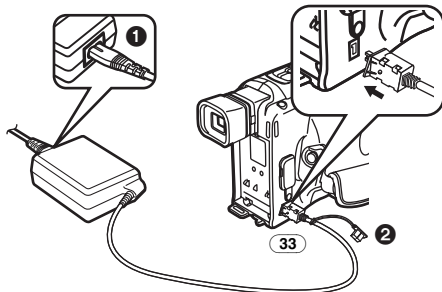
■ Conditions for Correct Operation of the Remote Controller



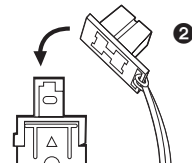
- The distance to the Movie Camera must not be more than 5 metres.
- The Transmitter Window on the Remote Controller or the Remote Control Sensor (5) on the Movie Camera must not be exposed to direct sunlight and not be covered with clothes, etc.
- When operating the Zoom Function with the Remote Controller, it is not possible to vary the zooming speed. Also, there is a slight delay between pressing the Zoom Buttons (40) on the Remote Controller and the mechanical zoom adjustment on the Movie Camera.
- Within a distance of about 1 metre, it is also possible to use the Remote Controller from the side ([MENU] Button side).

Power Supply

■ Using the AC Adaptor



- 1 Detach the cap 2 from the plug of DC Input Lead.
- 2 Connect the AC Adaptor to the [DC IN] Socket (33) on the Movie Camera.
- 3 Connect the AC Mains Lead to the AC Adaptor and the AC mains socket.
 - The AC Mains Lead's outlet plug does not fit entirely into the AC Adaptor socket. A gap will remain as shown 1.

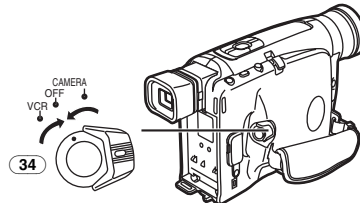


- After use, be sure to attach the cap 2 to the plug of DC Input Lead.
- Before connecting or disconnecting the power supply, set the [CAMERA/OFF/VCR] Switch on the Movie Camera to [OFF] and make sure that neither [CAMERA] Lamp nor [VCR/CHARGE] Lamp is lit.
- Keep the AC Adaptor out of reach of children. Do not put the plug of DC Input Lead into a mouth. An electric shock may occur.

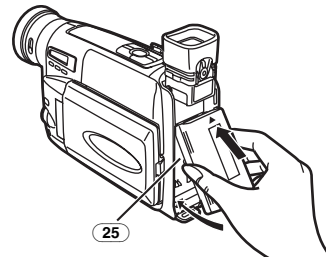
■ Using the Battery

Before use, fully charge the Battery.

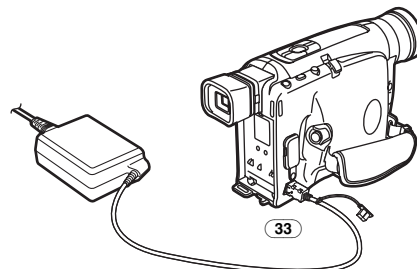
- 1 Set the [CAMERA/OFF/VCR] Switch (34) to [OFF].



- 2 Insert the Battery with its top (so that the arrow points upward) into the top Battery Holder (25) and press the bottom of it toward the Movie Camera until it locks with a click.

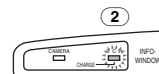


- 3 Connect the AC Adaptor to the [DC IN] Socket (33) on the Movie Camera.



- 4 Connect the AC Mains Lead to the AC Adaptor and the AC mains socket.

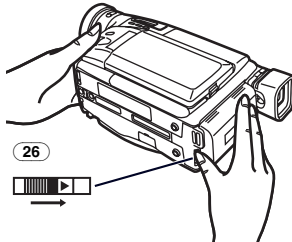
- The [CHARGE] Lamp (2) flashes and charging starts.



- When the [CHARGE] Lamp (2) goes off, charging is completed. After that, disconnect the AC Adaptor.

To Remove the Battery from the Movie Camera

Set the [CAMERA/OFF/VCR] Switch (34) to [OFF] and, while sliding the [◀BATTERY EJECT] Lever (26) in the direction of the arrow, hold the Battery firmly to prevent it from dropping and pull it off.



•For other notes concerning this item, see -55-.

Charging Time and Available Recording Time

CGR-V14	(A)	2h20min.
CGR-V14S	(B)	2h55min. (2h05min.)
CGR-V26S	(A)	4h20min.
	(B)	5h25min. (4h05min.)

(A) Charging Time

(B) Maximum Continuous Recording Time
"1h10min." indicates 1 hour and 10 minutes.

- Battery CGR-V14 is supplied.
- The times shown in the table are approximate times. The numbers in parentheses indicate the recording time when the LCD Monitor is used. In actual use, the available recording time may be shorter.
- The times shown in the table are for continuous recording at a temperature of 25°C and humidity of 60%. If the Battery is charged at a higher or lower temperature, the charging time may be longer.

Lens Cap and Grip Belt

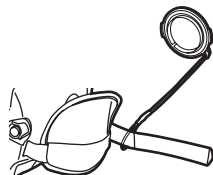
■ Attach the Lens Cap

To protect the Lens surface, attach the Lens Cap.

1 Detach the tip of the Grip Belt.



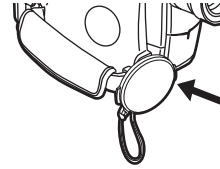
2 Attach the shorter loop of the Lens Cap Cord to the Grip Belt.



3 Reattach the Grip Belt.



- The removed Lens Cap can be hooked onto the Grip Belt. (When you are not recording, be sure to keep the Lens Cap attached to the Lens for protection.)

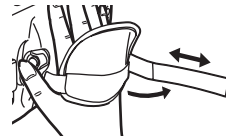


■ Adjust the Grip Belt

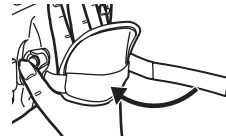
Adjust the length of the Grip Belt to the size of your hand.

1 Detach the tip of the Grip Belt.

2 Slide the pad to obtain the optimum length.



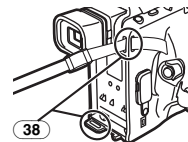
3 Reattach the Grip Belt.



Attaching the Shoulder Strap

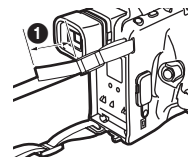
We recommend that you attach the Shoulder Strap before going out of doors to record so as to avoid dropping the Movie Camera.

1 Pull the end of the Shoulder Strap through the Shoulder Strap Holder (38) on the Movie Camera.



2 Fold the tip of the Shoulder Strap, run it through the Shoulder Strap Length Adjuster, and pull it.

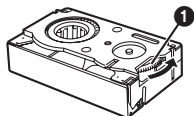
- Pull it out more than 2 cm (1) from the Shoulder Strap Length Adjuster so that it cannot slip off.



Inserting a Cassette

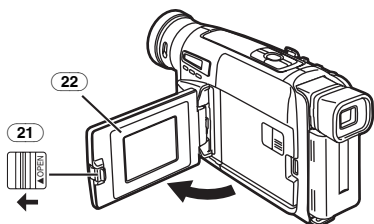
If the AC Adaptor or Battery is used to supply power, it is possible to insert or eject the cassette without turning on the Movie Camera.

- 1 Connect the AC Adaptor or attach a charged Battery.
- 2 Turn the cog wheel ❶ to tighten the tape.

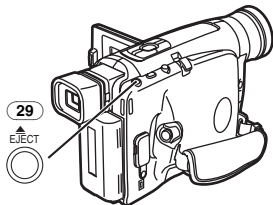


- 3 Slide the [▲OPEN] Lever (21) to the left and simultaneously open the LCD Monitor (22) in the direction of the arrow approximately 90°.

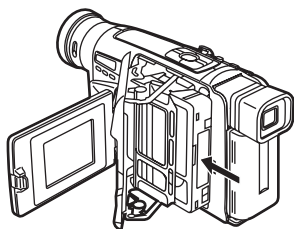
- Be sure to keep the LCD Monitor in its vertical position, so that the Cassette Compartment Cover, when it opens, does not hit the LCD Monitor.



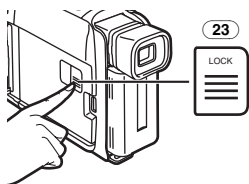
- 4 Press the [▲EJECT] Button (29).



- 5 Insert the cassette with the cassette window facing outward and push it all the way in.

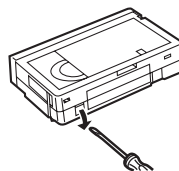


- 6 Close the Cassette Compartment by pressing the [LOCK] Button (23).

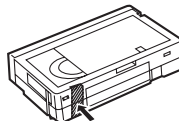


Accidental Erasure Prevention

- Recording on a previously recorded cassette erases the existing scenes and sound.
- To protect important recordings against accidental erasure, use a screwdriver to break out the tab on the cassette (some cassettes have sliding-type tabs).



- To be able to record again on a protected cassette, firmly cover the hole where the tab was with 2 layers of adhesive tape.

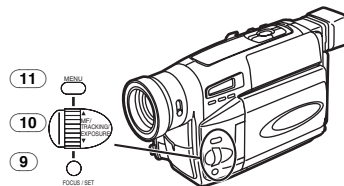


- For other notes concerning this item, see -55-.

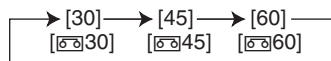
Selecting the Correct Tape Length

To ensure that the Remaining Tape Time Indication displayed during recording and playback is correct, you need to set the tape length that matches that of the inserted cassette.

- 1 Set [DISPLAY SETUP] >> [TAPE] >> the correct tape length.

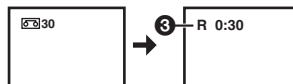


- The Tape Length Indications change in the following order:

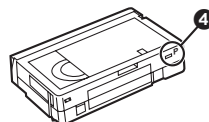


Confirming the Remaining Tape Time

During recording and playback, the Remaining Tape Time Indication ❸ is automatically displayed, so you always know how much time you have left on the cassette. However, to ensure correct display of the remaining tape time, the tape length of the cassette being used must be set correctly on the Movie Camera.



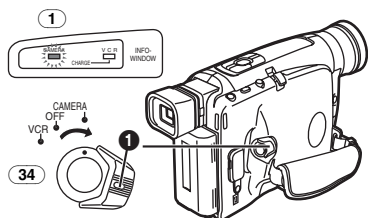
- When recording or playback starts, the Tape Length Indication disappears, and in its place the [R] Indication ❸ flashes while the remaining tape time is being calculated. A few seconds later, the Remaining Tape Time Indication appears. ([R] means Remaining.)
- When the remaining tape time is less than 2 minutes, the [R] Indication and the Remaining Tape Time Indication start to flash.
- When you use a cassette bearing the [P] mark ❹ or other special types of cassettes, the Remaining Tape Time Indication may not be very precise.



Turning on the Movie Camera and Selecting Modes

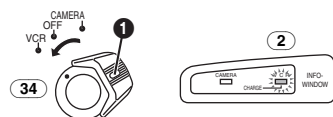
How to Turn on the Power

- 1 Set the [CAMERA/OFF/VCR] Switch (34) to [CAMERA] while pressing the button 1.
 - The [CAMERA] Lamp 1 lights up.



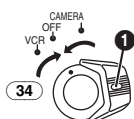
How to Switch Modes

- 2 Set the [CAMERA/OFF/VCR] Switch (34) to [VCR] while pressing the button 1.
 - The [VCR] Lamp 2 lights up.



How to Turn off the Power

- 3 Set the [CAMERA/OFF/VCR] Switch (34) to [OFF] while pressing the button 1.

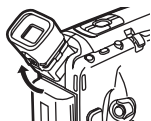


Using the Viewfinder/LCD Monitor

Using the Viewfinder

Before using the Viewfinder, adjust the field of view so that the displays inside the Viewfinder become clear and easy to read.

- 1 Hold the Viewfinder and tilt it up.



- 2 Adjust by turning the Eyepiece Corrector Knob (37).



Never aim the Movie Camera with its Viewfinder or Lens directly at the sun; this could damage internal parts of the unit. 1



If sunlight or other strong light enters the Viewfinder, sparkling noise occurs on the Viewfinder screen. 2 If you block off the light, this phenomenon disappears after a few minutes and does not affect the recorded picture.

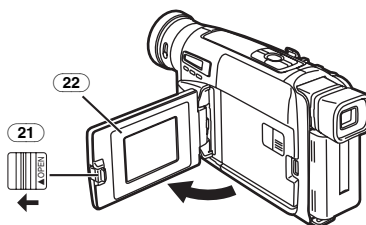
If a subject with strong contrast or a menu is displayed in the Viewfinder, a ghost image may remain temporarily. 3 However, this is not a malfunction and does not affect the recorded picture.



Using the LCD Monitor

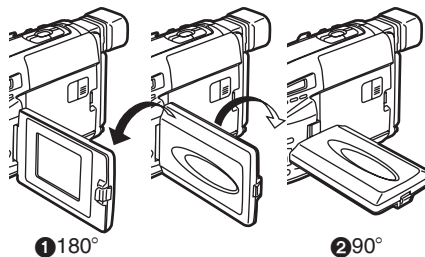
With the LCD Monitor open, you can also record the picture while watching it.

- 1 Slide the [▲OPEN] Lever (21) and pull the LCD Monitor (22) out about 90° in the direction of the arrow.
 - The Viewfinder goes off.



- 2 Adjust the LCD Monitor angle according to the desired recording angle.

- The LCD Monitor can rotate a maximum of 180° 1 from the vertical position to the upward direction and a maximum of 90° 2 to the downward direction. Forcefully rotating the LCD Monitor beyond these ranges will damage the Movie Camera.



Closing the LCD Monitor

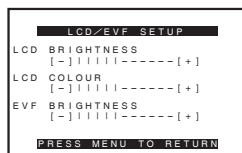
Push the LCD Monitor until it is securely locked.

Extremely high precision technology is employed to produce the LCD Monitor. The result is more than 99.99% active pixels with a mere 0.01% of the pixels inactive or always lit. However, this is not a malfunction and does not affect the recorded picture.

- For other notes concerning this item, see -55-.

Adjusting Brightness and Colour Level

If you select the [LCD/EVF SETUP] Sub-Menu, the following items are displayed.



LCD Brightness [LCD BRIGHTNESS]

It adjusts the brightness of the image on the LCD screen.

LCD Colour Level [LCD COLOUR]

It adjusts the colour saturation of the image on the LCD screen.

Brightness of the Viewfinder [EVF BRIGHTNESS]

It adjusts the brightness of the image in the Viewfinder.

To Adjust

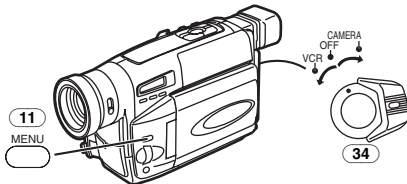
Press the [SET] Button and select the item to be adjusted, and then turn the [▲▼] Dial to raise or lower the number of vertical bars in the Bar Indication.

- A larger number of vertical bars indicates stronger brightness or colour saturation.
- For other notes concerning this item, see -55-.

Using the Menu Screen

To facilitate the selection of a desired function or setup, this Movie Camera displays various function setups on Menus.

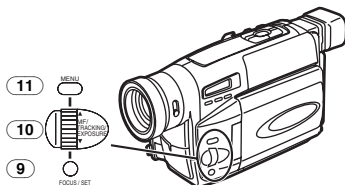
- 1 Set the [CAMERA/OFF/VCR] Switch (34) either to [CAMERA] or [VCR] while pressing the [MENU] Button (11).



- The [MENU LANGUAGE SELECT] Menu appears.



- 2 Press the [SET] Button (9) to select the desired language.



- 3 Press the [MENU] Button (11).
 - When you press this button while the [CAMERA] Lamp is lit in red, the Camera Mode Main-Menu appears. When you press this button while the [VCR] Lamp is lit in green, the VCR Mode Main-Menu appears.
- 4 Turn the [▲▼] Dial (10) to select a desired Sub-Menu.
 - Turn the [▲▼] Dial (10) to display the highlighted item.
- 5 Press the [SET] Button (9) to display the selected Sub-Menu.

- 6 Turn the [▲▼] Dial (10) to select the item to be set.

- 7 Press the [SET] Button (9) to set the selected item to a desired mode.
 - With each press of the [SET] Button, the cursor [▶] moves to the next mode.
 - You can display the menu during playback, but not during recording. Also, it is possible to start playback while the menu is displayed, but if you start recording, the displayed menu disappears.

To Exit the Menu Screen

Press the [MENU] Button (11) again.

About the Menu Mode Setting

The setting selected on the Menu will be retained even when the Movie Camera is turned off. However, if the Battery or AC Adaptor is disconnected before turning off the Movie Camera, the selected setup may not be retained.

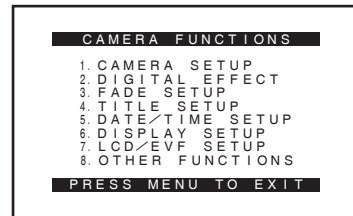
- Menu operation flow is shown in this text by >>.

- For other notes concerning this item, see -55-.

List of Menus

The figures of the Menus are for explanation purposes only, and they are different from the actual Menus.

[CAMERA FUNCTIONS]
Camera Mode Main-Menu



- 1) [CAMERA SETUP]
 - Camera Setup Sub-Menu
 - [MOTION SENSOR]
 - Motion Sensor Function -47-
 - [DIGITAL ZOOM]
 - Digital Zoom -46-
 - [MANUAL EXPOSURE]
 - Manual Iris Adjustment -45-
 - [RETURN]
 - Returning to the Main-Menu
 - If you set [RETURN] to [YES], the menu changes back to the Main-Menu.
- 2) [DIGITAL EFFECT]
 - Digital Effect Functions Sub-Menu
 - [DIGITAL EFFECT]
 - Digital Effects -45-
- 3) [FADE SETUP]
 - Fade Setup Sub-Menu
 - [DIGITAL FADE]
 - Digital Fade Off/On -46-
 - [FADE IN]
 - Fade in -46-
 - [FADE OUT]
 - Fade out -46-
 - [FADE COLOUR]
 - Colour of the Digital Fade -46-

4) [TITLE SETUP]

Title Setup Sub-Menu

[DATE/TITLE]

Date/Time/Title Indication -40-

[TITLE]

Title -48-

[LANGUAGE FOR TITLE]

Language of the Title -48-

[SIZE]

Size of the Title -48-

[COLOUR]

Colour of the Date/Time/Title Indication -48-

5) [DATE/TIME SETUP]

Date and Time Setup Sub-Menu -40-

6) [DISPLAY SETUP]

Display Setup Sub-Menu

[TAPE]

Tape Length -36-

[DISPLAY]

Counter Display Mode -54-

[COUNTER RESET]

Counter Reset -52-, -54-

[SELF SHOOT]

Recording Yourself -42-

7) [LCD/EVF SETUP]

LCD and Viewfinder Adjustment Sub-Menu

-37-

8) [OTHER FUNCTIONS]

Other Functions Sub-Menu

[REC SPEED]

Recording Speed Mode -40-

[INTERVAL REC]

Interval Recording -47-

[REC TIME]

Recording Time of Interval Recording -47-

[INTERVAL TIME]

Interval Time of Interval Recording -47-

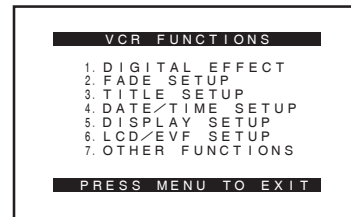
[DEMO MODE]

Demonstration Mode

- If no operation takes place for approximately 10 minutes after the AC Adaptor was connected to the Movie Camera and the [CAMERA/OFF/VCR] Switch was turned to [CAMERA] without inserting a Cassette, the Movie Camera is automatically set to Demonstration Mode for introducing its functions. If any button is pressed or operated, the Demonstration Mode is cancelled. The Demonstration Mode can be started by setting [DEMO MODE] to [ON] and by exiting the Menu. To terminate the Demonstration Mode, insert a Cassette or set [DEMO MODE] to [OFF].
- If you set the [CAMERA/OFF/VCR] Switch to [CAMERA] while pressing the [▶] Button, [DEMO MODE] on the menu is automatically set to [ON] and the Demonstration Mode starts immediately.
- If you set the [CAMERA/OFF/VCR] Switch to [CAMERA] while pressing the [■] Button, [DEMO MODE] is automatically set to [OFF].

■ [VCR FUNCTIONS]

VCR Mode Main-Menu

**1) [DIGITAL EFFECT]**

Playback Digital Effect Functions Sub-Menu

-51-

[EFFECT]

Digital Effect On/Off -51-

- All of the other items on the [DIGITAL EFFECT] Sub-Menu are the same as those on the [DIGITAL EFFECT] Sub-Menu of the [CAMERA FUNCTIONS] Main-Menu.

2) [FADE SETUP]

Fade Setup Sub-Menu -51-

- All of the items on the [FADE SETUP] Sub-Menu are the same as those on the [FADE SETUP] Sub-Menu of the [CAMERA FUNCTIONS] Main-Menu.

3) [TITLE SETUP]

Title Setup Sub-Menu -40-, -48-

- All of the items on the [TITLE SETUP] Sub-Menu are the same as those on the [TITLE SETUP] Sub-Menu of the [CAMERA FUNCTIONS] Main-Menu.

4) [DATE/TIME SETUP]

Date and Time Setup Sub-Menu -40-

5) [DISPLAY SETUP]

Display Setup Sub-Menu -36-, -52-, -54-

- All of the items on the [DISPLAY SETUP] Sub-Menu are the same as those on the [DISPLAY SETUP] Sub-Menu of the [CAMERA FUNCTIONS] Main-Menu.

6) [LCD/EVF SETUP]

LCD and Viewfinder Adjustment Sub-Menu

-37-

7) [OTHER FUNCTIONS]

Other Functions Sub-Menu

[AUDIO DUBBING]

Audio Dubbing -52-

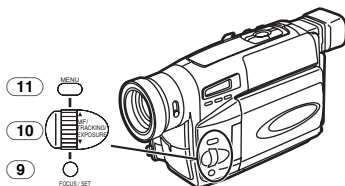
[INSERT]

Insert Editing -52-

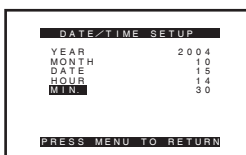
Setting Date and Time

Since the internal clock of the Movie Camera has a slight imprecision, make sure to check the time before recording.

- 1 Set [CAMERA FUNCTIONS] or [VCR FUNCTIONS] >> [DATE/TIME SETUP].



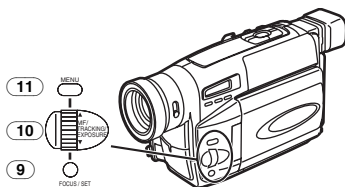
- 2 Press the [SET] Button (9) to select [YEAR]/[MONTH]/[DATE]/[HOUR]/[MIN.] and turn the [▲ ▼] Dial (10) to set it to a desired value.



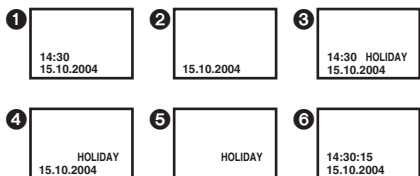
- Year will cycle in the following order: 1980, 1981, ..., 2079, 1980, ...
- 3 Press the [MENU] Button (11) to finish setting the date and time.
 - The clock operation starts from [00] second.
 - The Menu will disappear when the [MENU] Button is pressed again.
 - The clock employs the 24-hour system.

Recording with the Date/Time/Title Superimposed in the Picture -48-

- 1 Set [CAMERA FUNCTIONS] >> [TITLE SETUP] >> [DATE/TITLE].



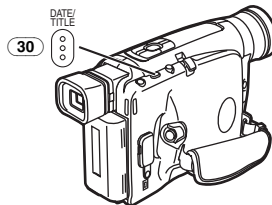
- 2 Press the [SET] Button (9) to select the desired indication.
 - The indications change in the order ① to ⑥.
 - ① Date and Time → ② Date →
 - ③ Date, Time and Title →
 - ④ Date and Title → ⑤ Title →
 - ⑥ Date and Time with seconds →



- 3 Press the [MENU] Button (11) to exit the menu.
 - The selected Date/Time/Title Indication appears.

Deleting the Date/Time/Title Indication

During recording or when the Movie Camera is in the Recording Pause Mode, press the [DATE/TITLE] Button (30) to make the Date/Time/Title Indication disappear.



- After turning the Movie Camera off and then on again, the previously selected Date/Time/Title Indication is no longer displayed. To make it appear again, press the [DATE/TITLE] (30) Button once.
- Be sure to turn the Movie Camera off before removing the Battery or disconnecting the AC Adaptor. Disconnecting the power supply while the Movie Camera is on erases the Date/Time/Title Indication stored in memory.

LP Mode

A desired recording speed can be selected with [REC SPEED] on the [OTHER FUNCTIONS] Sub-Menu.

If LP Mode is selected, the recording time becomes 2.0 times longer than that of SP Mode.

([SP] means Standard Play. [LP] means Long Play.)

Camera Mode

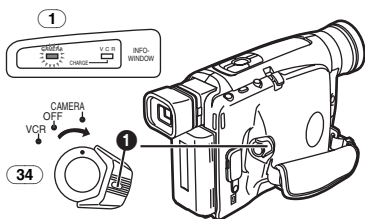
Recording

When recording with the [AUTO] Indication displayed, the Movie Camera automatically adjust the focus and white balance. In some cases, they cannot be adjusted automatically and need to be adjusted manually. (-44-)

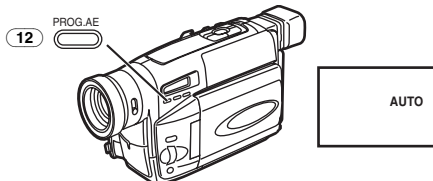
When recording in a dimly lit location, the picture may become noisy and less sharp, so we recommend that you use the IR/Video DC Light (optional), etc. to brighten up the scene.

1 Set the [CAMERA/OFF/VCR] Switch (34) to [CAMERA].

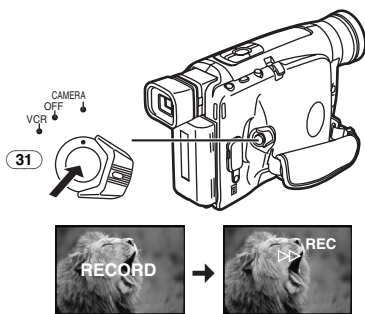
- Turn the switch while pressing the button (1).
- The [CAMERA] Lamp (1) lights up.



2 Press the [PROG. AE] Button (12) repeatedly until [AUTO] Indication appears.



3 Press the Recording Start/Stop Button (31).



- Recording starts and the [▶▶] Indication and the [REC] Indication appear.

To Pause the Recording

Press the Recording Start/Stop Button (31) again.

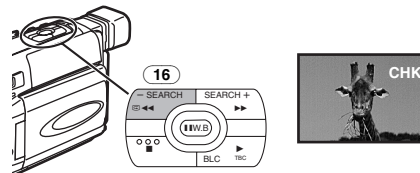
- The [PAUSE] Indication is displayed.



- If the Recording Pause Mode continues for more than 6 minutes, the power is turned off automatically for tape protection and power conservation. To resume recording from this condition, turn off, then turn on the power again.

To Check the Recording

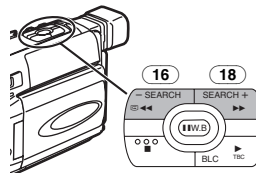
By pressing the [CAMERA] Button (16) briefly in the Recording Pause Mode, you can play back the last few seconds of the recorded scene.



- The [CHK] Indication is displayed. ([CHK] means "Check".) After checking, the Movie Camera resumes the Recording Pause Mode.
- The noise bars may appear when switching from Recording Pause to the last recorded scene.

To View the Recorded Scene while the Recording Is Paused (Camera Search)

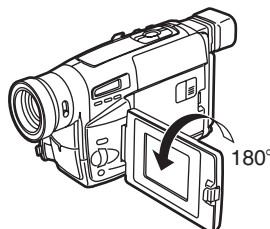
The recorded scene can be viewed by keep pressing the [-SEARCH] Button (16) or [SEARCH+] Button (18) in the Recording Pause Mode.



- When the [-SEARCH] Button is pressed, images are played back in the reverse direction.
- When the [SEARCH+] Button is pressed, images are played back in the forward direction.

Recording Yourself

By opening the LCD Monitor and rotating it frontward (to the lens side), you can view yourself in the LCD Monitor from the front of the Lens, and record it. Also you can let the subject in front of the Movie Camera see the shot while recording is in progress. If you mount the Movie Camera on a tripod and use the Remote Controller, you can also take part in the action that you are recording and check the picture from the front on the LCD Monitor.



- When the LCD Monitor is opened, the Viewfinder is disabled automatically. However, when the LCD Monitor is rotated frontward, the image is also shown in the Viewfinder.
- If you prefer to have the image on the LCD Monitor to look like an image in a mirror, set [SELF SHOOT] on the [DISPLAY SETUP] Sub-Menu to [MIRROR]. However, images are recorded normally and no left and right reversal occurs.
- In the [MIRROR] mode, only the basic indications, such as the Recording Indication [●], Recording Pause Indication [⏸] and Remaining Battery Power Indication [█], are displayed.
- If a general Warning/Alarm Indication [!] appears, return the LCD Monitor to the original position in order to check the specific content of the Warning/Alarm Indication.

■ To Finish the Recording

Set the [CAMERA/OFF/VCR] Switch (34) to [OFF].

- For other notes concerning this item, see -55-.

Zoom In/Out Functions

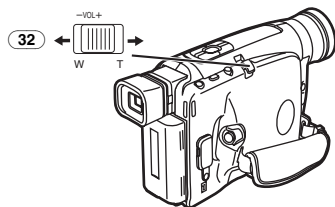
It gives special effects to the scene by recording objects close by or with wide-angle shot.

1 For wide-angle shots (zoom out):

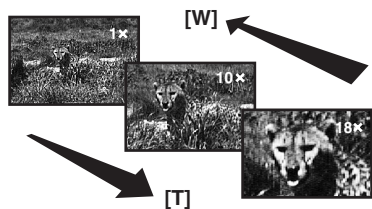
Push the [W/T] Lever (32) toward [W].

For close-ups (zoom in):

Push the [W/T] Lever toward [T].



- Zoom Magnification Indication is displayed for a few seconds.



■ To Take Close-up Shots of Small Subjects

(Macro Close-up Function)

When the zoom magnification is 1x, the Movie Camera can focus on a subject that is as close as approximately 5 mm from the Lens. With this, small subjects like insects can be recorded.

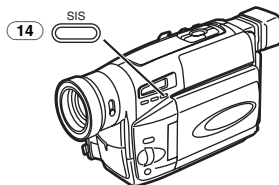
- For other notes concerning this item, see -55-.

Super Image Stabilizer Function

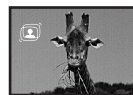
If the Movie Camera might be shaken while recording, the camera shake in the image can be corrected.

- If the Movie Camera shakes too much, this function may not be able to stabilize images.

1 Press the [SIS] Button (14).



- The [] Indication appears.



To Cancel Image Stabilizer

Press the [SIS] Button (14) again.

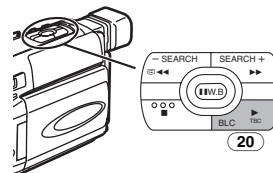
- For other notes concerning this item, see -55-.

Backlight Compensation Function

This prevents a recording subject from being recorded darker in backlight. (Backlight is the light that shines from behind a recording subject.)

Under some conditions, this function may not work properly.

1 Keep the [BLC] Button (20) pressed.



- The entire screen becomes brighter.



Fade In/Out Functions

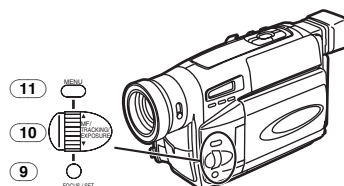
■ Fade In

Fade In brings out images gradually from a black screen at the beginning of a scene.

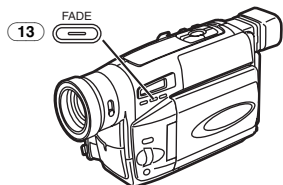
- Sounds do not fade in.



1 Set [CAMERA FUNCTIONS] >> [FADE SETUP] >> [DIGITAL FADE] >> [OFF].

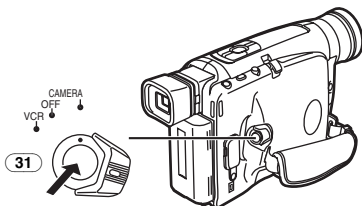


- 2 Keep pressing the [FADE] Button (13) during the Recording Pause Mode.**



- The image fades out gradually.

- 3 When the image is completely gone, press the Recording Start/Stop Button (31) to start recording.**



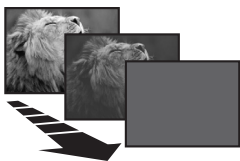
- 4 Release the [FADE] Button (13) about 3 - 4 seconds after starting recording.**

- The image reappears gradually.

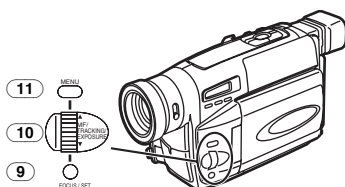
■ Fade Out

Fade Out causes images to disappear gradually, leaving a black screen at the end of a scene.

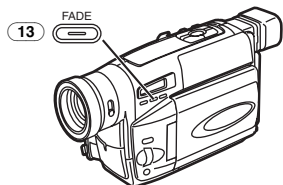
- Sounds do not fade out.



- 1 Set [CAMERA FUNCTIONS] >> [FADE SETUP] >> [DIGITAL FADE] >> [OFF].**

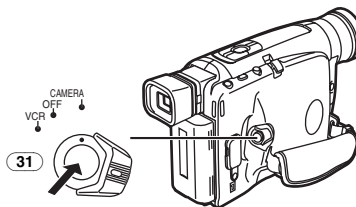


- 2 Keep pressing the [FADE] Button (13) while recording.**



- The image fades out gradually.

- 3 When the image is completely gone, press the Recording Start/Stop Button (31) to stop recording.**



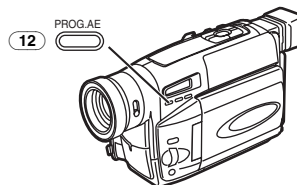
- 4 Release the [FADE] Button (13).**

Recording in Special Situations

(Programme AE)

You can select optimal automatic exposures under specific recording situations.

- 1 Press the [PROG. AE] Button (12) repeatedly until the indication of the desired mode ([Sports], [Portrait], [Low Light], [Spotlight], [Surf & Snow] or [Sunset]) appears.**



- 1) [Sports] Sports Mode**
•For recording scenes involving quick movements, such as sports scenes.
- 2) [Portrait] Portrait Mode**
•For bringing up people clearly from the background.
- 3) [Low Light] Low Light Mode**
•For recording a dark scene brighter.
- 4) [Spotlight] Spotlight Mode**
•For recording a subject under spotlight in a party, theatre, etc.
- 5) [Surf & Snow] Surf & Snow Mode**
•For recording in a glaring surrounding, such as skiing grounds, beaches, etc.
- 6) [Sunset] Sunset Mode**
•Makes scenes have a reddish tint like sunset.

To Cancel the Programme AE Function

Press the [PROG. AE] Button (12) repeatedly until none of the indications ([Sports], [Portrait], [Low Light], [Spotlight], [Surf & Snow], [Sunset]) are displayed.

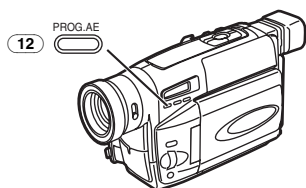
- For other notes concerning this item, see -56-.

Manual White Balance Adjustment

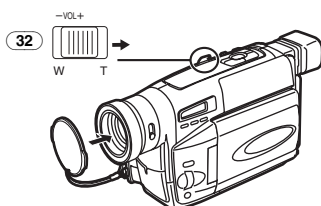
White Balance Adjustment recognizes the colour of light and makes adjustment so that the white colour will become pure white. The Movie Camera determines the hue of light that it receives through the Lens and White Balance Sensor, thereby judging the recording condition, and selects the closest hue setting. This function is called Automatic White Balance Adjustment.

For light outside the functional Auto White Balance Adjustment range, use the Manual White Balance Adjustment Mode.

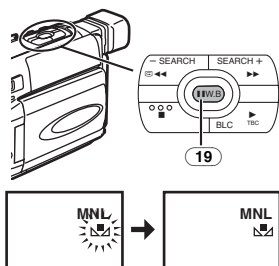
- 1 Press the [PROG. AE] Button (12) repeatedly until an indication other than [AUTO] appears.



- 2 Attach the Lens Cap and zoom in until the entire screen becomes white.



- 3 Keep pressing the [W.B] Button (19) until the [MNL] Indication stops flashing.

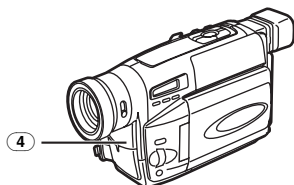


To Resume Automatic Adjustment

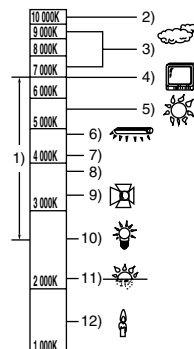
Press the [W.B] Button (19). Or, press the [PROG. AE] Button (12) repeatedly until the [AUTO] Indication appears.

About White Balance Sensor

The White Balance Sensor (4) determines the nature of the light source during recording.



- Do not cover the White Balance Sensor with your hand during recording. Otherwise, White Balance will not function normally.



Outside of the effective range of Automatic White Balance Adjustment, the image will become reddish or bluish. Even within the effective range of Automatic White Balance Adjustment, the Automatic White Balance Adjustment may not function properly if there is more than one light source. In this case, adjust the White Balance.

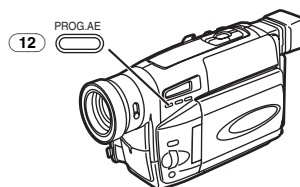
- 1) The effective range of Automatic White Balance Adjustment on this Movie Camera
- 2) Blue sky
- 3) Cloudy sky (Rain)
- 4) TV screen
- 5) Sunlight
- 6) White fluorescent lamp
- 7) 2 hours after sunrise or before sunset
- 8) 1 hour after sunrise or before sunset
- 9) Halogen light bulb
- 10) Incandescent light bulb
- 11) Sunrise or sunset
- 12) Candlelight

- For other notes concerning this item, see -56-.

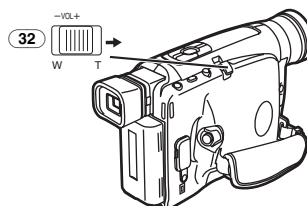
Manual Focus Adjustment

Focus can be adjusted manually for recording in a situation where auto focus may not function well.

- 1 Press the [PROG. AE] Button (12) repeatedly until an indication other than [AUTO] appears.

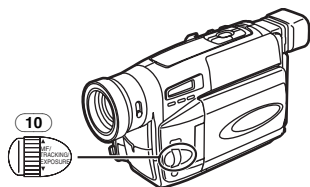


- 2 Keep the [W/T] Lever (32) pushed toward [T] to zoom in on the subject.



- Zooming in on the subject before adjusting the focus ensures that the subject remains precisely focused even when you later zoom out.

3 Turn the [MF] Dial (10) to adjust the focus.



- The [MF] Indication (Manual Focus mode) appears.



4 Push the [W/T] Lever (32) toward [W] to zoom out as desired.

To Resume Automatic Adjustment

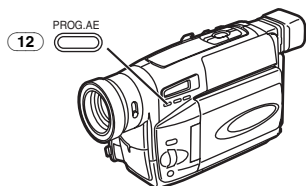
Press the [FOCUS] Button (9) to make the [MF] Indication disappear. Or, press the [PROG. AE] Button (12) repeatedly until the [AUTO] Indication appears.

- For other notes concerning this item, see -56-.

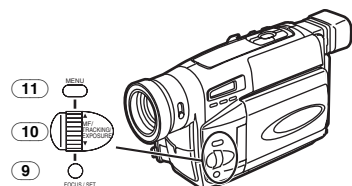
Manual Iris Adjustment

You can use this function when the screen is too bright or too dark.

1 Press the [PROG. AE] Button (12) repeatedly until an indication other than [AUTO] appears.



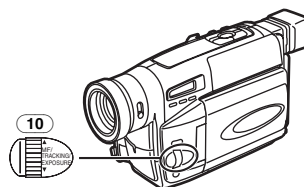
2 Set [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [MANUAL EXPOSURE] >> [YES].



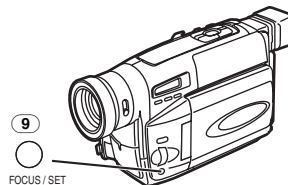
- The [EXP] Indication flashes.



3 Turn the [EXPOSURE] Dial (10) to adjust the iris.



4 Press the [SET] Button (9).



To Resume Automatic Adjustment

Press the [PROG. AE] Button (12) repeatedly until the [AUTO] Indication appears.

Digital Effect Functions

This Movie Camera is equipped with Digital Effect Functions that add special effects to the scene.

Digital Effects [DIGITAL EFFECT]



- 1) Digital Zoom Mode [D.ZOOM]**
• It enlarges the subject beyond the optical zooming range.
- 2) Black & White Mode [B/W]**
• It records an image in black and white.
- 3) Sepia Mode [SEPIA]**
• It records a scene with a brownish tint, like the colour of old pictures.
- 4) Mosaic Mode [MOSAIC]**
• It produces a mosaic-like image.
- 5) Negative Mode [NEGA]**
• The colours of the recorded image are inverted as seen in a negative.
- 6) Solarisation Mode [SOLARI]**
• It records an image with a painting-like effect.
- 7) Stretch Mode [STRETCH]**
• The picture is stretched horizontally while its height remains unchanged.
- 8) Red Mode [RED FILTER]**
• The picture becomes reddish.
- 9) Blue Mode [BLUE FILTER]**
• The picture becomes bluish.

To Select a Desired Digital Effect

Set [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [DIGITAL EFFECT] >> a desired Digital Effect.

To Cancel the Digital Effect

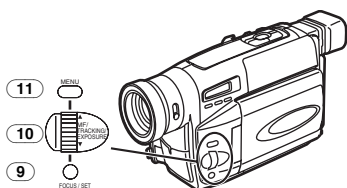
Set [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [DIGITAL EFFECT] >> [OFF].

- If you set the [CAMERA/OFF/VCR] Switch to [OFF] and then set it to [CAMERA] again, the indication of the selected digital effect flashes for a few seconds to inform you of the selected setting.

Digital Zoom Function

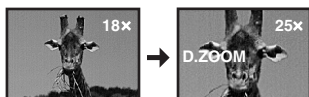
This function is useful when you want to record close-up shots of subjects located beyond a normal zoom range of 1× to 18× magnification. With the Digital Zoom Function, you can select a magnification of 45×, 100× or even to 800×.

- 1 Set [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [D.ZOOM].

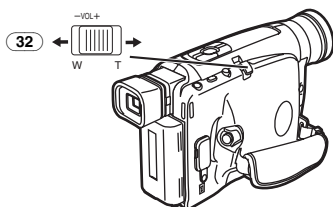


- 2 Continuing the aforesaid setup, select [CAMERA SETUP] >> [DIGITAL ZOOM] >> [45×], [100×] or [800×].

- 45×: Digital zooming to 45×
- 100×: Digital zooming to 100×
- 800×: Digital zooming to 800×
- The [D.ZOOM] Indication appears.



- 3 Push the [W/T] Lever (32) toward [T] or [W] to zoom in or out.



To Cancel the Digital Zoom Function

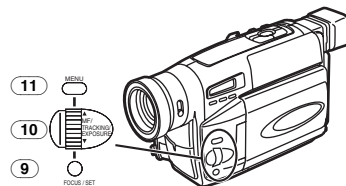
Set [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [DIGITAL EFFECT] >> [OFF].

- For other notes concerning this item, see -56-.

Digital Fade Function

There are various Digital Fade Modes available.

- 1 Set [CAMERA FUNCTIONS] >> [FADE SETUP] >> [DIGITAL FADE] >> [ON].

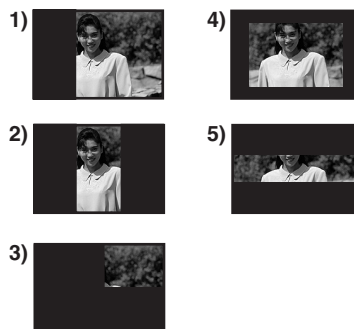


- 2 Continuing the aforesaid setup, select [FADE IN] >> a desired fade in effect.
- 3 Continuing the aforesaid setup, select [FADE OUT] >> a desired fade out effect.
- 4 Continuing the aforesaid setup, select [FADE COLOUR] >> a desired colour.

- The colours of the Digital Fade will cycle in the following order:
BLACK (black) → WHITE (white) → YELLOW (yellow) → RED (red) → MAGENTA (magenta) → BLUE (blue) → CYAN (cyan) → GREEN (green) → BLACK...

- 5 Record with the digital fade in/out effect in the same manner as the normal fade in/out recording. (-42-)

- The image fades in/out gradually with the selected digital fade effect.



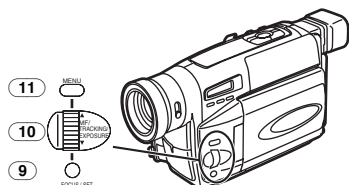
- 1) **Slide Mode [SLIDE]**
 - The picture fades in/out with a wipe effect.
- 2) **Door Mode [DOOR]**
 - The picture fades in to the left and right like a door opens or fades out in reverse direction.
- 3) **Corner Mode [CORNER]**
 - The picture fades in from the upper right to the lower left corner or fades out in reverse direction.
- 4) **Window Mode [WINDOW]**
 - The picture fades in starting at the centre and extending toward the edges or fades out in reverse direction.
- 5) **Shutter Mode [SHUTTER]**
 - The picture fades in vertically from the center like a shutter or fades out in reverse direction.

Interval Recording

You can record sequentially at preset time spans. Leaving the Movie Camera aimed at a specific subject, you can record subtle changes over an extended period of time.

- It is not possible to perform interval recording in the LP Mode. (-40-)

1 Set [CAMERA FUNCTIONS] >> [OTHER FUNCTIONS] >> [INTERVAL REC] >> [ON].

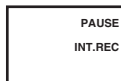


2 Continuing the aforesaid setup, select [REC TIME] >> a desired recording time.

- The recording time will cycle in the following order:
1/4S (1/4 seconds) → 1/2S (1/2 seconds) → 1S (1 second) → 5S (5 seconds) → 1/4S...

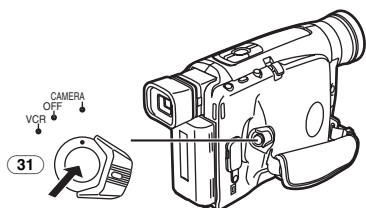
3 Continuing the aforesaid setup, select [INTERVAL TIME] >> a desired interval time.

- The interval time will cycle in the following order:
15S (15 seconds) → 30S (30 seconds) → 1MIN (1 minute) → 5MIN (5 minutes) → 15S...
- The [INT.REC] Indication appears.



4 Press the Recording Start/Stop Button

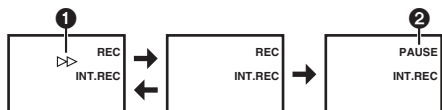
(31).



- Recording and intervals alternate automatically.

To Cancel the Interval Recording Mode

When the [▷▷] Indication ① is not displayed, press the Recording Start/Stop Button (31) to make the [PAUSE] Indication ② appear. And then set [INTERVAL REC] on the [OTHER FUNCTIONS] Sub-Menu to [OFF].

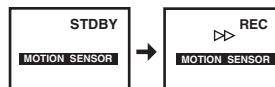
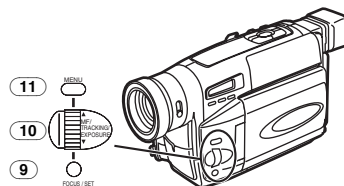


- For other notes concerning this item, see -56-.

Motion Sensor Function

With the built-in Motion Sensor, the Movie Camera senses the subject's movement and starts recording automatically.

1 Set [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [MOTION SENSOR] >> [ON].



- The [STDBY] Indication appears. ([STDBY] means Stand-by.)
- When the Movie Camera's Motion Sensor senses a movement in the screen for approximately 1 second or longer, the Movie Camera starts recording automatically.
- Approximately 10 seconds after the movement in the screen stops, the recording is automatically stopped, and the Movie Camera resumes the Motion Sensor Stand-by Mode.
- When the Movie Camera stays in the Motion Sensor Stand-by Mode for 6 minutes or longer, the Display turns off. When the Motion Sensor senses a movement in the screen again, the Display turns back on automatically and, approximately 4 seconds afterwards, the Movie Camera starts recording.

To Cancel the Motion Sensor Function during Stand-by

Set [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [MOTION SENSOR] >> [OFF].

To Cancel the Motion Sensor Function during Recording

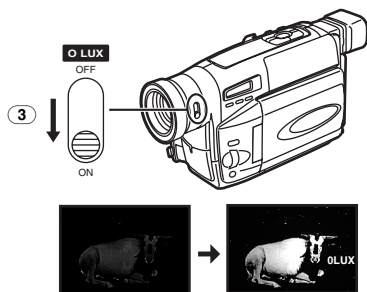
Press the Recording Start/Stop Button (31) for more than 2 seconds.

- For other notes concerning this item, see -56-.

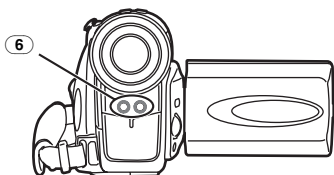
0 Lux Night View Function

Your Movie Camera emits infra-red rays so as to record subjects that cannot be seen with the naked eye.

- 1 Set the [0 LUX OFF/ON] Switch (3) to [ON] to make the [0LUX] Indication appear.



- Built-in Infra-red Beam Emitters (6) light up. Be careful not to cover them with your hand during recording.



To Cancel the 0 Lux Night View Function

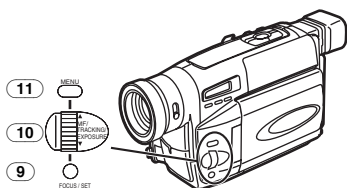
Set the [0 LUX OFF/ON] Switch (3) to [OFF] to turn off the [0LUX] Indication.

- For other notes concerning this item, see -57-.

Title Indication Function

You can insert one of 10 pre-programmed titles in recordings of special occasions such as weddings and birthday parties. These titles are available in 11 languages.

- 1 Set [CAMERA FUNCTIONS] >> [TITLE SETUP] >> [LANGUAGE FOR TITLE] >> a desired language.



- The languages will cycle in the following order:
 [ENGLISH] (English) → [GERMAN] (German) → [FRENCH] (French) → [ITALIAN] (Italian) → [SPANISH] (Spanish) → [RUSSIAN] (Russian) → [CHINESE] (Chinese) → [ARABIC] (Arabic) → [PORTUGUESE] (Portuguese) → [UKRAINIAN] (Ukrainian) → [PERSIAN] (Persian) → [ENGLISH]...

- 2 Continuing the aforesaid setup, select [TITLE] >> a desired title.

- The titles will cycle in the following order:
 [HOLIDAY] → [HAPPY BIRTHDAY] → [WEDDING] → [FAMILY] → [PARTY] → [THE END] → [CONGRATULATIONS] → [MERRY CHRISTMAS] → [HAPPY MEMORIES] → [HAPPY NEW YEAR] → [HOLIDAY]...

- In the other available languages, they are arranged in the same order.

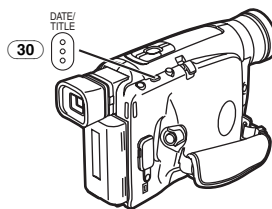
- 3 Continuing the aforesaid setup, select [COLOUR] >> a desired colour.

- The colours will cycle in the following order:
 [WHITE] (white) → [YELLOW] (yellow) → [RED] (red) → [MAGENTA] (magenta) → [BLUE] (blue) → [CYAN] (cyan) → [GREEN] (green) → [BLACK] (black) → [WHITE]...

- 4 Continuing the aforesaid setup, select [SIZE] >> [NORMAL] or [LARGE].

To Record with Pre-programmed Title Inserted in the Picture -40-

During recording, press the [DATE/TITLE] Button (30) to make the title appear.



To Delete the Title

Press the [DATE/TITLE] Button (30) to make the title disappear.

- For other notes concerning this item, see -57-.

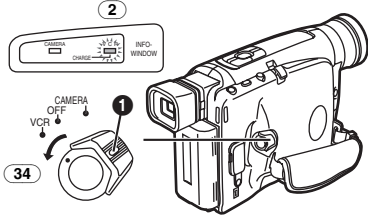
VCR Mode

Playing Back

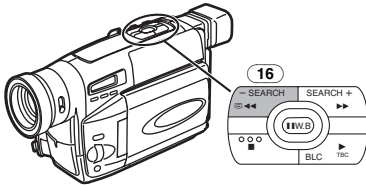
The recorded scenes can be played back immediately after the recording.

1 Set the [CAMERA/OFF/VCR] Switch (34) to [VCR].

- Turn the switch while pressing the button ❶.
- The [VCR] Lamp (2) lights up.



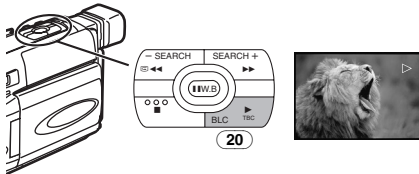
2 Press the [◀◀] Button (16) to rewind the tape.



- Rewind the tape to the point where you want to start playback.
- When the tape reaches the beginning, rewinding stops automatically.

3 Press the [▶] Button (20) to start playback.

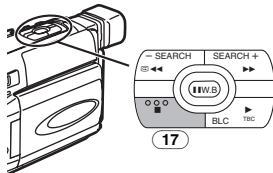
- The [▶] Indication appears.



- When the tape reaches the end, it automatically rewinds to the beginning.
- When you play back the scene between previous recording and new recording, the sound of the top of new recording is slightly delayed. However, this is not a malfunction.

To Stop Playback

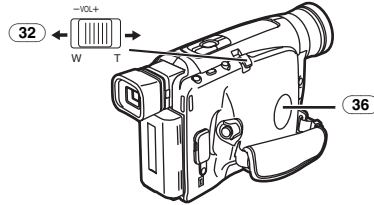
Press the [■] Button (17).



- Never disconnect the AC Adaptor during Playback. This could damage the Movie Camera or the tape.

Adjusting the Sound Volume

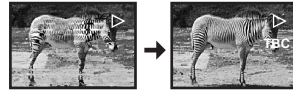
Push the [-VOL+] Lever (32) toward [+] to increase or [-] to decrease the volume. The [VOLUME] Indication appears and the number of bars increases or decreases. When you release the Lever, this indication disappears. You can also adjust the volume with the Remote Controller. Increase the volume by pressing the [T] Button, or decrease it by pressing the [W] Button. This adjustment is only possible during playback.



- Because the speaker (36) contains a magnet, do not bring a cassette near the speaker. It could adversely influence the recorded content.

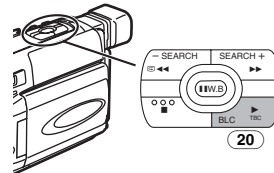
TBC (Time Base Corrector) Function

This function minimises horizontal shaking of the picture or other distortion when playing back and ensure a stable picture. It is automatically activated within a few seconds after playback has started, and the [TBC] Indication appears.



To Cancel the TBC Function

With certain cassettes, however, the TBC Function could cause slight vertical shaking or other distortion in the playback picture. In this case, first try to adjust the tracking. If this does not improve the picture, cancel the TBC Function by keeping the [TBC] Button (20) pressed until the [TBC] Indication disappears.



If you want to turn the TBC Function on again, press the [TBC] Button for a few seconds until the [TBC] Indication reappears. Even if you cancel the TBC Function, it is automatically turned back on when you turn the Movie Camera off and then on again.

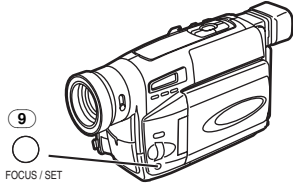
- For other notes concerning this item, see -57-.

Eliminating Picture Distortions

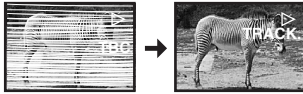
(Manual Tracking Adjustment)

This Movie Camera adjusts the tracking automatically. With certain cassettes, however, the tracking adjustment may not be precise. In this case, adjust the tracking manually.

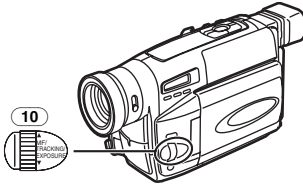
- 1 Press the Tracking Button (9) briefly during playback.



- The [TRACK.] Indication appears.



- 2 Turn the [TRACKING] Dial (10) to adjust the tracking.



To Resume the Auto Tracking Mode

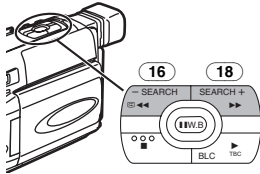
Press the Tracking Button (9) for more than 2 seconds during playback.

- For other notes concerning this item, see -57-.

Finding a Scene You Want to Play Back

■ Cue/Review Playback

If you keep pressing the [▶▶] Button (18) or [◀◀] Button (16) during Playback, it turns to Cue Playback or Review Playback.



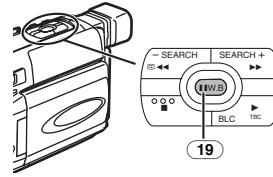
Search Lock Function

If the Button is pressed only briefly, it turns to Cue Playback or Review Playback until you press the [▶] Button (20).

■ Still Playback

This Movie Camera is capable of still picture playback.

- 1 Press the [||] Button (19) during playback.



- The playback image stops in the Still Playback Mode.

To Resume Normal Playback

Press the [||] Button (19) again.

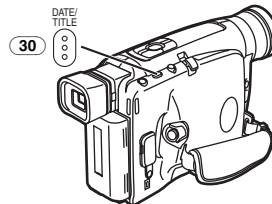
- If the Movie Camera is left in the Still Playback Mode for more than 6 minutes, the Movie Camera switches to the Stop Mode to protect the video heads from excessive wear and tear. And, if the Movie Camera is being powered by the Battery, it switches off completely after further 6 minutes.

- For other notes concerning this item, see -57-.

Playback Title Indication Function

The Date/Time/Title Indication that can be inserted in the pictures during recording (-40-) can also be inserted in the picture during playback (editing).

- 1 During playback, press the [DATE/TITLE] Button (30) to superimpose the desired Date/Time/Title Indication.



- The Date/Time Indication is generated by the Movie Camera's built-in clock.

To Make the Superimposed Date/Time/Title Indication Disappear

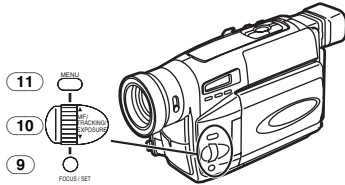
Press the [DATE/TITLE] Button (30) again.

Playback Digital Effect Functions

During playback, special digital effects can be added to the recorded pictures. The same effects as those of Digital Effects (-45-) except the Digital Zoom Mode which are used during recording, are obtained.

The Playback Digital Effect Function can be used only when the TBC Function is activated. Make sure that the [TBC] Indication is displayed. (-49-)

- 1 Set [VCR FUNCTIONS] >> [DIGITAL EFFECT] >> [DIGITAL EFFECT] >> a desired Digital Effect.



- 2 Continuing the aforesaid setup, select [EFFECT] >> [ON].

To Suspend the Playback Digital Effect Temporarily

Set [VCR FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT] >> [OFF]. When the digital effect is suspended temporarily, the selected effect's indication flashes.

To Cancel the Playback Digital Effect

Set [VCR FUNCTIONS] >> [DIGITAL EFFECT] >> [DIGITAL EFFECT] >> [OFF].

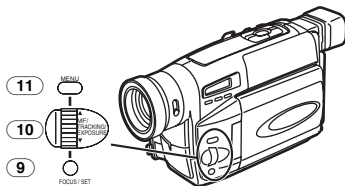
- For other notes concerning this item, see -57-.

Playback Digital Fade Function

There are various Playback Digital Fade Modes available. They are the same as the Digital Fade Modes that can be used for recording. (-46-)

The Playback Digital Fade Modes can be used only when the TBC Function is activated. Make sure that the [TBC] Indication is displayed. (-49-)

- 1 Set [VCR FUNCTIONS] >> [FADE SETUP] >> [DIGITAL FADE] >> [ON].



- 2 Continuing the aforesaid setup, select [FADE IN] >> a desired fade in effect.
- 3 Continuing the aforesaid setup, select [FADE OUT] >> a desired fade out effect.
- 4 Continuing the aforesaid setup, select [FADE COLOUR] >> a desired colour.

- The colours of the Digital Fade change in the same order as Camera Mode. (-46-)

- For other notes concerning this item, see -57-.

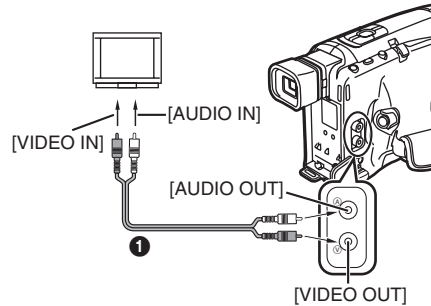
Playing Back on Your TV

Using the AV Cable ①

By connecting your Movie Camera with your TV, the recorded scenes can be viewed on your TV screen.

- Before connecting them, turn off the power of both the Movie Camera and TV.

- 1 Connect to the Audio/Video Output Sockets of the Movie Camera and the Audio/Video Input Sockets of the TV.

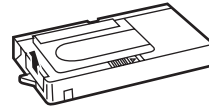


- When plugging the pin plugs of the AV cable into the [△] and [▽] Sockets, plug them in as far as possible.

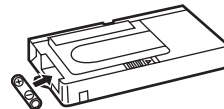
Using the Cassette Adaptor (supplied)

By using the Cassette Adaptor, you can play back compact cassettes in your VCR in the same way as full-size cassettes.

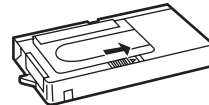
- 1 Push the Battery Compartment Cover upward and remove it.



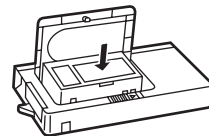
- 2 Insert the Battery (supplied) and then re-attach the Battery Compartment Cover.



- 3 Slide the Open Lever in the direction of the arrow.



- 4 Insert the recorded cassette and close the Top Cover.



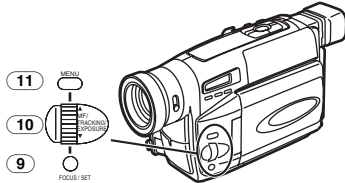
- 5 Insert the Cassette Adaptor into the VCR.
- 6 Start playback on the VCR.

- After use, take out the cassette from the Cassette Adaptor.

Audio Dubbing

You can add music or narration to the recorded cassette.

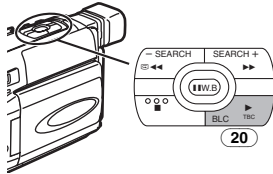
- 1 Switch the Movie Camera over to the Still Playback Mode at the point where you want to add new sound.
- 2 Set [VCR FUNCTIONS] >> [OTHER FUNCTIONS] >> [AUDIO DUBBING] >> [ON].



- The [A.DUB] Indication appears.



- 3 Press the [▶] Button (20) to start the Audio Dubbing.



To Stop Audio Dubbing

Press the [||] Button (19).

The Movie Camera is in the Still Playback Mode again.

To Cancel Audio Dubbing

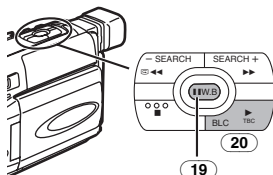
Press the [■] Button (17).

- For other notes concerning this item, see -57-.

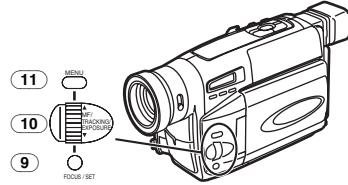
Insert Editing

You can record a new scene onto a previously recorded tape, replacing a section of the original recording with minimal picture distortion at the in- and out-points. The original audio remains unchanged.

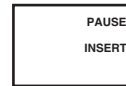
- 1 Insert the recorded cassette.
 - Be sure to insert the cassette with an intact tab or if the tab has been removed, cover the hole with an adhesive tape.
- 2 Press the [▶] Button (20) to start playback and press the [||] Button (19) at the tape position where you want the editing to stop.



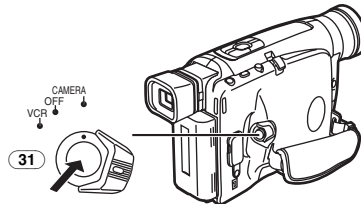
- 3 Set [VCR FUNCTIONS] >> [DISPLAY SETUP] >> [COUNTER RESET] >> [YES].



- 4 Continuing the aforesaid setup, select [DISPLAY] >> [MEMORY].
- 5 Switch the Movie Camera over to the Still Playback Mode at the point where you want the Insert Editing to start.
- 6 Set [VCR FUNCTIONS] >> [OTHER FUNCTIONS] >> [INSERT] >> [ON].
 - The [INSERT] Indication appears.



- 7 Press the Recording Start/Stop Button (31).



- The Insert Editing automatically stops approximately at the position where you reset the counter to zero.

To Stop Insert Editing

Press the Recording Start/Stop Button (31).

The Movie Camera is in the Recording Pause Mode again.

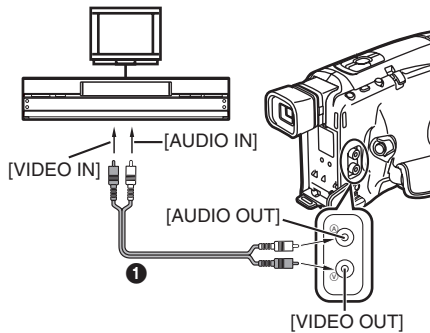
To Cancel Insert Editing

Press the [■] Button (17).

- For other notes concerning this item, see -57-.

Dubbing

After connecting the Movie Camera and the VCR as illustrated, start the following procedures.



① AV Cable (not supplied)

Movie Camera:

1) Insert the recorded Cassette.

VCR:

2) Insert an unrecorded Cassette with an erasure prevention tab.

- If various setups (such as external input, tape speed, etc.) are required, please refer to the operating instructions of your VCR.

Movie Camera:

3) Press the [▶] Button (20) to start playback.

VCR:

4) Start recording.

5) Stop recording at the point where you want to stop.

Movie Camera:














6) Press the [■] Button (17) to stop playback.

- For other notes concerning this item, see -58-.

Others

Indications

Various functions and the Movie Camera status are shown on the screen.

- : Remaining Battery Power
- As the remaining battery power decreases, the indication changes as follows:

 (When you are using the AC Adaptor, the  Indication may appear, however, this is not a malfunction.)
- R 0:45: Remaining Tape Time
- Remaining tape time is indicated in minutes. (When it reaches less than 2 minutes, the indication starts flashing.)
- 30: Tape Length -36-
- SP: Standard Mode (Recording Speed Mode) -40-
- LP: Long Play Mode (Recording Speed Mode) -40-
- REC: Recording -41-
- PAUSE: Recording Pause -41-
- CHK: Recording Check -41-
- AUTO: Automatic Mode -41-
- MNL: Manual Mode -44-, -45-
- 5X: Zoom Magnification Indication -42-
- : Super Image Stabilizer -42-
- : Sports Mode (Programme AE) -43-
- : Portrait Mode (Programme AE) -43-
- : Low Light Mode (Programme AE) -43-
- : Spotlight Mode (Programme AE) -43-
- : Surf & Snow Mode (Programme AE) -43-
- : Sunset Mode (Programme AE) -43-
- : Manual White Balance Mode -44-
- MF: Manual Focus -45-
- EXP: Manual Iris -45-
- D.ZOOM: Digital Zoom Mode -46-
- B/W: Black & White Mode -45-
- SEPIA: Sepia Mode -45-
- MOSAIC: Mosaic Mode -45-
- NEGA: Negative Mode -45-
- SOLARI: Solarisation Mode -45-
- STRETCH: Stretch Mode -45-
- RED FILTER: Red Mode -45-
- BLUE FILTER: Blue Mode -45-
- INT.REC: Interval Recording Mode -47-
- STDBY: Motion Sensor Stand-by Mode -47-
- OLUX: 0 Lux Night View Mode -48-
- ▷: Playback -49-
- : Forward Camera Search -41-
- : Still Playback -50-
- ▷▷: Fast-forward
- ◀◀: Rewind -49-
- VOLUME: Volume adjustment -49-
- TBC: Time Base Corrector -49-
- TRACK.: Tracking Adjustment Mode -50-
- A.DUB: Audio Dubbing -52-
- INSERT: Insert Editing Mode -52-

To Use the Tape Counter Indication

The Tape Counter Indication is convenient for the following 2 purposes: to check the Elapsed Tape Time, and to use the Memory Stop Function.

■ To check the Elapsed Tape Time

The Tape Counter Indication shows the elapsed tape time both during recording and playback. You can freely reset this indication (return the counter to [0:00:00]). Therefore, by resetting the counter to zero when you start recording or playback, you can check the tape time that has elapsed from that point.

1 Set [CAMERA FUNCTIONS] or [VCR FUNCTIONS] >> [DISPLAY SETUP] >> [DISPLAY] >> [ALL].

2 Continuing the aforesaid setup, select [COUNTER RESET] >> [YES].

- When recording or playback starts, the elapsed tape time is indicated in hours, minutes and seconds. During playback of parts of the tape on which no recording has been made, this indication does not change.
- If you rewind the tape further than the tape counter position [0:00:00], the minus sign [-] appears in front of the Tape Counter Indication.

■ To Change the Display Mode

By changing [DISPLAY] on the [DISPLAY SETUP] Sub-Menu, you can change the Display Mode to All Function Display [ALL], Memory Stop Indication and Elapsed Tape Time Indication Display [MEMORY], Partial Display [PARTIAL] (Camera Mode only) and Minimum Display [OFF]. With Partial Display and Minimum Display, when you turn on the Movie Camera, all indications appear for a few seconds to inform you of the selected settings.

- With Partial Display, if you switch the Movie Camera over to the VCR Mode and then back to the Camera Mode, [ALL] is automatically selected for the Tape Counter Indication.

■ Memory Stop Function

This function is convenient for temporarily marking a tape position during recording or playback so that you can easily find it again later for playback.

1 Reset the Tape Counter to zero at the tape position from which you want to play it back later. (-39-)

2 Set [CAMERA FUNCTIONS] or [VCR FUNCTIONS] >> [DISPLAY SETUP] >> [DISPLAY] >> [MEMORY].

3 Start recording or playback.

4 After recording or playback has finished, set the [CAMERA/OFF/VCR] Switch to [VCR].








- The [VCR] Lamp lights up.

5 Fast-forward or rewind the tape.

- The tape automatically stops approximately at the position where the counter was set to zero.

Warning/Alarm Indications

If any one of the following indications lights up or flashes, please check the condition of the Movie Camera.

- : Condensation has occurred. (-59-)
- : The tab of the inserted Cassette is broken out.
No Cassette is inserted. (-36-)
- : The Battery is low. Recharge it. (-34-)
- : The built-in battery is low. Consult your dealer for replacement, or set the Date and Time as necessary before you start recording. (-40-)
- : The video heads are dirty. (-59-)
- END:
The tape came to the end during recording or playing back.
- : If you record with the LCD Monitor facing forward using the Mirror Mode (-42-), this indication appears instead of the actual Warning/Alarm Indication.

Notes and Hints

Concerning the Power Supply

- The AC Adaptor features automatic universal voltage adjustment (AC 110–240 V, 50/60 Hz), therefore, there is no need for any manual voltage adjustment for use in other countries.
- If the [CHARGE] Lamp does not flash even though the Battery is attached and the AC Adaptor is connected, remove the Battery and then re-attach it.
- Charge the Battery at a room temperature between 10°C and 30°C.
- When the Movie Camera is used for a long time, the Camera body becomes warm, but this is not a malfunction.
- During recording or charging, the Battery becomes warm. However, this is normal.
- To ensure precise indication of the remaining battery power, always use a fully charged Battery when attaching a Battery.

Charging Lamp [CHARGE]

- Flashing: During charging
- Flashing with [CAMERA] Lamp: When error occurs
- Lit: VCR Mode
- Off: The Battery is fully charged.

Inserting the Cassette

- You will hear noise of tightening the tape when you insert the cassette, and noise of rewinding the tape when you close the cassette compartment. However, this is not a malfunction.
- In the case of using a previously recorded Cassette, you can use the Camera Search Function to find the position where you want to continue recording.
- If a new Cassette is inserted, rewind to the beginning of the tape before starting recording.
- When inserting the cassette, make sure it faces in the right direction and then push it in until it stops.

Using the LCD Monitor

- Return the LCD Monitor to its vertical position before closing it. Also, make sure that the Cassette Compartment is securely closed before closing the LCD Monitor.
- Opening the LCD Monitor automatically turns the Viewfinder off. However, when you turn the LCD Monitor so that it faces forward, the Viewfinder turns on again.
- When the Movie Camera is very cold when turning it on, the picture on the LCD Monitor is darker than normally. However, as it reaches normal temperature, it regains its normal brightness.
- To remove fingerprints, wipe the LCD Monitor with a soft cloth.
- Do not push the LCD Monitor hard. If it is pushed hard, finger marks etc. may remain on the Monitor for a while. Though it disappears naturally, please set the [CAMERA/OFF/VCR] Switch to [OFF], then turn on the power again for quick recovery.
- Do not expose the LCD Monitor to direct sunlight. When sunlight falls onto the LCD Monitor, it may be difficult to view the picture.

Using the Menus

- Do not turn off the power while performing a menu operation.
- Turn the [\blacktriangle \blacktriangledown] Dial slowly. If you turn it fastly, selecting the item may stop halfway.

Recording

- Before turning on the power, remove the Lens Cap. If the Lens Cap is still attached when the power is turned [ON], Automatic White Balance Adjustment (-44-) may not function correctly.

Camera Search

- In Camera Search Mode, horizontal noise bars may appear in the picture.

Recording Yourself

- It is not possible to display and record the Date, Time and/or Title Indication in the Mirror Mode.


Even if the LCD Monitor is rotated frontward, in the following cases, the Viewfinder turns off:

- Changing from the Camera to the VCR Mode.
- Closing the LCD Monitor with the screen facing outward.

Zoom In/Out Functions






- The further you push the [W/T] Lever toward [W] or [T], the faster the zooming speed becomes.
- When you are zooming on a faraway subject, a sharper focus is achieved if the recording subject is 1.8 metres or more away from the Lens.
- When using the Macro Close-up Function, we recommend that you use the IR/Video DC Light (optional), etc. rather than the 0 Lux Night View Function to brighten up the scene.

Super Image Stabilizer Function


- The Super Image Stabilizer Function does not operate in a dimly lit place. In this case, the [] Indication flashes.
- Under fluorescent lighting, image brightness may change or colours may not look natural.
- After-images may appear.

- When a tripod is used, it is recommended that you turn the Super Image Stabilizer off.
- The Super Image Stabilizer Function does not operate when you set [DIGITAL EFFECT] of [DIGITAL EFFECT] Sub-Menu on the [CAMERA FUNCTIONS] Main-Menu to [STRETCH].
- Subjects with horizontal or vertical stripes may not be stabilized sufficiently.
- Flat subjects may not be stabilized sufficiently.

■ Programme AE

- During recording, it is not possible to change the recording mode ([AUTO], [MNL], [], [], [], [], []), even if you press the [PROG. AE] Button.
- It is not possible to use any of the Programme AE Modes when the 0 Lux Night View Mode is activated.

Sports Mode

- When playing back scenes recorded in the Sports Mode, you can enjoy slow motion and still playback of very sharp images with fine details.
- During normal playback, the image movement may not look smooth.
- Because the colour and brightness of the playback image may change, avoid recording under fluorescent light, mercury light or sodium light.
- If you record a subject illuminated with strong light or a highly reflective subject, vertical lines of light may appear.
- If the light is insufficient, the [] Indication flashes.

Sports Mode/Portrait Mode

- If this mode is used for indoor recording, playback images may flicker.

Low Light Mode

- Extremely dark scenes may not be able to be made brighter to a satisfactory degree.
- The use of this mode for recording may cause noise in the playback picture.

Spotlight Mode

- With this mode, recorded images may turn out to be extremely dark.

Spotlight Mode/Surf & Snow Mode

- If the recording subject is extremely bright, its recorded image may turn out to be whitish.

Sunset Mode

- When you set [DIGITAL EFFECT] of [DIGITAL EFFECT] Sub-Menu on the [CAMERA FUNCTIONS] Main-Menu to [B/W], [SEPIA], [RED FILTER] or [BLUE FILTER], Sunset Mode is cancelled.

■ White Balance

In the following cases, you cannot change White Balance:

- When you use the Sunset Mode
- When you set [DIGITAL EFFECT] of [DIGITAL EFFECT] Sub-Menu on the [CAMERA FUNCTIONS] Main-Menu to [B/W], [SEPIA], [RED FILTER] or [BLUE FILTER]
- When you display a Menu
- When you use the 0 Lux Night View Function

In the following cases, the [] Indication flashes:

- The flashing indicates that the previously adjusted White Balance setting is still kept. This setting will be kept until White Balance is adjusted again.
- You may not be able to achieve correct White Balance Adjustment manually under weak illumination.

■ Manual Focus Adjustment

Subjects and recording conditions not suitable for recording in the Full Auto Mode

- Subjects with dark surfaces
- Subjects with shiny surfaces or a lot of light reflection
- Subjects with weak contrast
- Subjects with part of it near and part of it far away from the Movie Camera
- Subjects without vertical contours
- Subjects with fast movement
- Subjects behind moving objects
- Subjects behind glass covered by dirt, dust or water drops

■ Digital Effect Functions

- As the magnification of digital zoom increases, the quality of image may deteriorate.

■ Interval Recording

- Before performing other operations following Interval Recording, make sure the Interval Recording Mode is deactivated.
- The Interval Recording Mode is cancelled when the Movie Camera is turned off.

■ Motion Sensor Function

- When you use the Motion Sensor Function, it is recommended that you use the AC Adaptor.
- Depending on the colour, size, or movement of the recording subject, the Motion Sensor may not function properly.
- When setting the Motion Sensor Function, the recording and search functions are disabled.
- You cannot record the beginning of the movement.
- To prevent accidental recording start caused by Movie Camera movement, the Movie Camera should be mounted on a tripod or be otherwise secured in a very stable position.
- Although you can select a digital effect on the [DIGITAL EFFECT] Sub-Menu when [MOTION SENSOR] on the [CAMERA SETUP] Sub-Menu is set to [ON], the Motion Sensor Function has priority and the selected digital effect is automatically cancelled.
- When you use the AC Adaptor to power the Movie Camera, the Motion Sensor Stand-by Mode will continue when no movement is detected in the picture, even when the tape has reached the end during recording.
- To ensure correct functioning of the Motion Sensor Function, the moving subject should be quite large in the picture. Therefore, when you have zoomed the lens to the maximum wide-angle position, the distance between lens and subject should preferably be within about 2 metres. For subjects at larger distances, be sure to zoom in accordingly.
- If there is a power interruption, the Motion Sensor Function is cancelled.

In the Following Recording Situations, the Motion Sensor May Not Work Correctly:

- A white wall or another single-colour background behind the subject.
- A subject with horizontal, vertical or oblique stripes.
- Sudden changes in the surrounding brightness.
- Exposure of the Movie Camera to slight shocks or vibration.
- Extremely slow or fast movement of the subject.
- Very little movement of the subject.
- Recording in a dimly lit place. (The [MOTION SENSOR] Indication flashes.)
- A very small subject.
- Movement of the subject near the edge of the picture.
- A background with horizontal or vertical stripes.

0 Lux Night View Function

- The 0 Lux Night View Function should not be used in brightly-lit places, and the Movie Camera should not be directed toward the sun. Otherwise, irreparable damage may occur.
- Scenes taken by the 0 Lux Night View Function are played back in black and white.
- When recording with the 0 Lux Night View Function, adjusting the white balance is not possible.
- While the 0 Lux Night View Function is operating, you cannot use any of the Programme AE Modes.
- When the 0 Lux Night View Function is in use, the subject should be within 3 metres of the Movie Camera.
- When the automatic focusing is not precise, adjust the focus manually. (-44-) (In this case, the Manual Focus Mode is activated when the [FOCUS] Button is pressed even if the [AUTO] Indication is displayed.)
- If the Motion Sensor Function is used with the 0 Lux Night View Function, the [MOTION SENSOR] Indication may flash, and you may not be able to record properly.
- If you change the setting of the [0 LUX OFF/ON] Switch during recording, a switching noise is also recorded.
- As the iris is fully opened in the 0 Lux Night View Mode, subjects in white or other light colours may be recorded whitish, blurred and with weak contrast.

Title Indication Function

- When a large-size title is displayed, some indications do not appear even if the corresponding modes are activated.
- Even if you set [SIZE] on the [TITLE SETUP] Sub-Menu to [LARGE], the large [RECORD] and [PAUSE] Indications, which usually appear briefly when you start or stop recording, do not appear.
- The Date/Time/Title Indication remains displayed when you exit the [TITLE SETUP] Sub-Menu after having change the type of Date/Time/Title Indication (-40-), the language of the title, the title itself, the size of the title or the colour of the title.

TBC Function

- When you play back a cassette with stretched, shrunk or otherwise damaged tape, the TBC Function does not work correctly (it may repeatedly turn on and off). In this case, cancel the TBC Function.

In the following cases, the TBC Function does not work:

- In the Cue, Review or Still Playback Mode
- When using the Camera Search or Recording Check Function
- When adjusting the tracking
- When playing back an unrecorded part on the tape

Manual Tracking Adjustment

- The Tracking Adjustment Function is automatically cancelled when the [TRACKING] Dial is not turned for 5 seconds.
- It may not be possible to remove the noise bars completely.
- It is not possible to adjust the tracking when a menu is displayed.
- If you eject the cassette after adjusting the tracking, the adjusted setting is cancelled.

Finding a Scene You Want to Play Back

- In the Cue, Review and Still Playback Modes, horizontal noise bars appear in the picture, or the picture may become black and white or distorted.
- The horizontal noise bars have a different pattern in the SP Mode and LP Mode.
- During Cue or Review Playback, no indications are displayed.
- The sound is muted during search.

Playback Digital Effect Functions

- If you set the [CAMERA/OFF/VCR] Switch to [OFF] and then set it to [VCR] again, the previously selected Playback Digital Effect is automatically cancelled.

Playback Digital Fade

- If you set the [CAMERA/OFF/VCR] Switch to [OFF] and then set it to [VCR] again, the previously selected Playback Digital Fade is automatically cancelled.

Audio Dubbing

- It is not possible to perform Audio Dubbing on an unrecorded part of the tape. If you try to do so, the tape will stop.
- It is not possible to set [AUDIO DUBBING] on the [OTHER FUNCTIONS] Sub-Menu to [ON] when it is not in the Still Playback Mode.
- When using the Audio Dubbing Function, the picture quality is somewhat reduced. However, it does not affect the recorded picture.
- If you set the tape counter back to 0 at the position where you want to stop Audio Dubbing so as to make it possible to use the Memory Stop Function (-54-), Audio Dubbing is terminated automatically when the tape reaches this position.

Insert Editing

- It is not possible to set [INSERT] on the [OTHER FUNCTIONS] Sub-Menu to [ON] when it is not in the Still Playback Mode.

- It is not possible to perform Insert Editing on an unrecorded part of the tape. If you try to do so, the tape will stop.
- When pressing the [MENU] Button in the Recording Pause Mode, the Camera Mode Main-Menu appears. However, you cannot use the [MOTION SENSOR] of the [CAMERA SETUP] Sub-Menu, [REC SPEED] and [INTERVAL REC] of the [OTHER FUNCTIONS] Sub-Menu.

■ Dubbing

- As the picture quality on the dubbed cassette is slightly reduced, we recommend that you select the standard speed (SP Mode) on the VCR for dubbing.
- If your VCR is equipped with an Edit Switch, turn it on to ensure optimum picture quality of the dubbed cassette.

Precautions

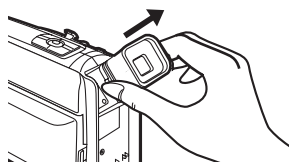
■ After Use

- 1 Take out the Cassette. (-36-)
- 2 Set the [CAMERA/OFF/VCR] Switch to [OFF]. Detach the power supply and retract the Viewfinder or the LCD Monitor. (-34-, -37-)
- 3 To protect the Lens, attach the supplied Lens Cap.

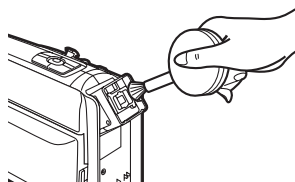
Cleaning the Viewfinder

If dust has entered the Viewfinder:

- 4 Push the Buttons on both sides of the Viewfinder and remove it in the direction of the arrow.



- 5 Remove dust with a blower brush (not supplied).



- If you use a cotton swab or similar to clean the inside of the Viewfinder, use it very carefully to prevent scratching the screen inside the Viewfinder.

- 6 To re-attach the Viewfinder, push it forward onto the Viewfinder Tube until it locks with a click.

- Clean the LCD Monitor with a soft cloth or a blower brush.
- Wipe the Movie Camera Body with a soft cloth.
- Clean the lens with a soft cloth or a blower brush.

■ Precautions for the Movie Camera

In the event of abnormal operation (e.g. if the unit emits smoke or an unusual smell), immediately stop operating the unit and consult qualified service personnel.

To prevent fire, electric shock and malfunction, observe the following points:

- Use only the recommended accessories.
- Do not disassemble the Movie Camera or make any alterations to it.
- Protect against spray water and sand.
- Take care that water splashes (especially seawater) or dust do not enter the Movie Camera. If seawater has accidentally splashed onto the Movie Camera, moisten a soft cloth with tap water, wring it out well and carefully wipe the camera body with it. Then thoroughly wipe it with a soft, dry cloth.
- Do not insert any foreign objects.
- Do not cover with a cloth during use.
- Do not subject to strong vibrations or mechanical shocks.
- Do not use in places with oily smoke and a lot of dust.
- If a thunderstorm approaches, stop using the Movie Camera. (If you are using the AC Adaptor, disconnect it from the AC mains socket taking care not to touch any metal parts.)
- Do not use near magnetized equipment.
- Do not use near a radio or TV.
- Do not use near a cell phone because doing so may cause noise to adversely affect the picture and sound.
- Do not use with the cassette compartment facing down.
- Do not aim the Lens or Viewfinder directly at the sun; the lens collects light and the resulting heat could deform internal precision parts and cause irreparable damage to the Movie Camera.
- Do not leave in a closed car on a summer day. The inside temperature becomes higher than you imagine and this could damage the Movie Camera.
- Do not wash with water. Water might leak into the Movie Camera and cause an electric shock or fire.
- Do not use a cleaning fluid, benzene, alcohol, thinner or other chemicals for cleaning. They might not only change the colour and damage the surface of the camera body, but might also increase the risk of fire if there is an open flame or heater nearby.
- Never leave the Movie Camera in places with high temperature.

Precautions for Storing the Movie Camera

Be sure to take out the cassette and remove the Battery before storing.

Avoid the following places:

- Places with high temperature and high relative humidity
 - Recommended temperature: 15°C–25°C
 - Recommended relative humidity: 40%–60%
- Places exposed to direct sunlight
- In direct contact with rubber or plastic products for a long time
- In reach of children

■ Precautions for the AC Adaptor

Observe the following points:

- Use only for the specified Movie Camera and Battery.
- Do not handle with wet hands.

- To unplug the AC Mains Lead, be sure to pull it out by the plug, not by the cable.
- Do not forcefully bend the cables or alter them.
- Do not operate very close to a radio, TV etc.

■ Precautions for the Battery

The Battery's ability to generate electric energy is based on a chemical reaction. If the Battery is incorrectly handled, it could cause leakage, excessive rise in temperature, fire or explosion.

Observe the Following Points:

- Use only the specified AC Adaptor to charge the Battery, and use the Battery only for this Movie Camera.
- When you have finished using the Movie Camera, be sure to remove the Battery. If you leave the Battery attached to the Movie Camera, a small amount of electricity is consumed even if the [CAMERA/OFF/VCR] Switch is set to [OFF], and this reduces the Battery's charge. Leaving the Battery attached to the Movie Camera for a very long time could discharge it excessively and this could make charging impossible.
- Do not allow metal objects such as keys and necklaces to touch the battery terminals. Short-circuiting may occur and generate heat, and this could cause the Battery to explode. Be especially careful when storing or carrying the Battery in a bag.
- Do not deform or alter the Battery.
- When the operation time even after proper charging is too short for normal use, the service life of the Battery has reached its end.
- If the Battery becomes too warm, a protection function is activated and it puts the Battery temporarily out of operation.
- Do not throw the Battery into a fire. This could cause it to explode.

■ Precautions for Storing the Battery

Avoid the following places, as they could shorten the service life of the Battery:

- Places with extremely high temperature and high relative humidity
 - Recommended temperature: 15°C–25°C
 - Recommended relative humidity: 40%–60%
- Places with oily smoke and a lot of dust. The terminals of the Battery might rust.
- Before you store the Battery for a long time, perform playback or other operations to completely use up the remaining charge in the Battery. Then remove it from the Movie Camera and store it. We recommend that you reactivate the Battery about once a year by charging it and then completely using up the charge before storing it again.

■ Precautions for the Cassette

When you have finished using the Movie Camera, rewind the tape to the beginning and take the cassette out of the Movie Camera. If you store the cassette for a long time, fast-forward and then rewind it at least once a year to expose the tape to fresh air.

Observe the following points to prevent deformation of the cassette case and deterioration of the picture and sound quality.

- Do not subject the cassette to strong vibration or mechanical shocks.

- Do not place it near magnetized equipment.
- Avoid places where the temperature can become very high.


■ Causes of Condensation and Remedy

When condensation has formed inside the Movie Camera and on the tape, recording becomes impossible. In addition, the tape might remain in contact with the heads and this could seriously damage the Movie Camera.

Main Causes of Condensation

- When the Movie Camera is brought from a cold to a warm place.
- When the Movie Camera is taken outdoors from inside an air-conditioned car or house.
- When the heating is turned on in a cold room.
- When the Movie Camera is exposed to the cold breeze from an air-conditioner.
- When the Movie Camera is in a very hot or humid place or in a place with steam.

Symptoms of Condensation

When turning on the Movie Camera, the Condensation Indication [] appears. (A few seconds later, the Movie Camera automatically turns itself off.)

Remedy as Follows:

- 1) Take out the cassette.
- 2) Keep the Cassette Compartment open and wait a few hours.
- 3) A few hours later, turn on the Movie Camera and confirm that the Condensation Indication is not displayed any more. For added safety, wait about 1 more hour.

To Prevent Condensation from Forming

When bringing the Movie Camera from a very cold to a warm place, keep it in a tightly closed plastic bag or something similar for 1 to 2 hours before using it again.


When the Lens Is Fogged up

Turn the Movie Camera on and wait for about 1 hour until it has reached about the same temperature as its surroundings.

■ Video Head Clogging and Remedy

If the video heads become dirty and clogged with dust, the picture quality deteriorates.

Symptoms of Dirty Video Heads

- When turning on the Movie Camera, the [] Indication appears.
- When playing back a cassette on the Movie Camera and watching the picture on a connected TV, white noise bars appear in the picture. However, if the heads are extremely dirty, the playback picture cannot be seen at all.

Remedy as Follows:

Use a video head cleaning cassette to clean the heads. Carefully follow the instructions for its use as too much cleaning wears down the heads. If the playback picture is not clear after cleaning, it means that the video heads are worn out. Consult qualified service personnel.

Before Requesting Repair (Problems and Solutions)

Power Supply

1: The Movie Camera does not turn on.

- Is the Battery or the AC Adaptor connected correctly? Confirm the connection. (-34-)

2: The Movie Camera has turned off automatically.

- If you leave the Movie Camera in the Recording Pause Mode for more than 6 minutes, it automatically switches off to protect the tape and to conserve battery power. To resume recording from this condition, set the [CAMERA/OFF/VCR] Switch to [OFF] and then to [CAMERA] again. (-37-)

3: The Movie Camera quickly turns off.

- Is the Battery discharged? When the Remaining Battery Operation Time Indication shows the [] Indication is flashing, the Battery is discharged. Charge the Battery or attach a fully charged Battery. (-34-)
- Has condensation formed? If the Movie Camera is brought from a cold to a warm place, condensation may form inside. In this case, the Movie Camera automatically switches off and no operations can be performed except taking out the cassette. Wait until the Condensation Indication disappears (approximately 2–3 hours). (-59-)

Cassette

1: The Remaining Tape Time Indication is not correct.

- Is the tape length of the inserted cassette correctly selected? Select the correct tape length. (-36-)

2: The Movie Camera and cassettes underwent security X-ray inspection at an airport. Does this affect the cassettes?

- No, this has no negative influence on the Movie Camera or the cassettes.

3: When playing back a cassette that was stored for some time, the picture is distorted.

- The cassette was stored in an unsuitable place (dusty, humid, hot, etc.) or near strongly magnetized objects or equipment. Unfortunately, there is no remedy. Always store the cassettes correctly. (-59-)

Recording

1: No picture appears in the Viewfinder.

- The LCD Monitor is open (Except when recording with the LCD Monitor facing forward). Securely close the LCD Monitor. (-55-)

2: Picture on the LCD Monitor is not clear.

- Picture quality is not properly adjusted. Adjust picture quality. (-37-)

3: Recording does not start when pressing the Recording Start/Stop Button.

- The tab of the inserted cassette is broken out. Insert a cassette with intact tab. Or cover the hole where the tab was with two layers of adhesive tape. (-36-)

4: The Date/Time/Title Indication is not displayed.

- This is due to incorrect operation of the [DATE/TITLE] Button and/or the Menu. Press the [MENU] Button and set the desired

Date/Time/Title Indication. Then press the [DATE/TITLE] Button so that the Date/Time/Title Indication appears. (-40-)

Playback

1: No playback picture is reproduced when pressing the [▶] Button.

- Is the [CAMERA/OFF/VCR] Switch set to [VCR]? When it is set to [CAMERA], no playback function can be operated. (-49-)

2: The playback picture is distorted or contains noise bars.

- The tape in the cassette is loose. Tighten it. (-36-)
- The video heads are dirty. Clean them with an optional video head cleaning cassette. (-59-)
- The tracking is not adjusted correctly. Adjust the tracking correctly. (-50-)

3: The playback picture is not in colour.

- The colour adjustment on the TV is not made properly. Adjust the colour control on the TV.

Remote Controller

1: The Remote Controller does not work.

- The batteries in the Remote Controller are exhausted. Replace them with new batteries. (-33-)
- The Remote Controller and/or the Movie Camera are exposed to strong light. Prevent strong light from falling on the Remote Controller and/or Movie Camera when using the Remote Controller.

Demonstration Mode

1: The Movie Camera remains in the Demonstration Mode.

- The Demonstration Mode is designed for explaining the versatile functions of this Movie Camera. To switch this mode off, set [CAMERA/OFF/VCR] Switch to [OFF], then set it to [CAMERA] again while pressing the [■] Button. Or, set [DEMO MODE] on the [OTHER FUNCTIONS] Sub-Menu to [OFF]. (-39-)

Explanation of Terms

■ **How the White Balance (Tint) Adjustment Works**

Video recording takes place under various light sources, from sunlight as the main natural light source to a wide range of artificial light sources such as fluorescent lamps. As each of these light sources has a different colour temperature, each of them gives the colours of the subject a slightly different tint.

Human eyes can easily adjust to different kinds of lighting and recognize an object as having the same colour, even under different light sources. The eye of the Movie Camera (lens), however, cannot adapt to the change in lighting and is influenced by the lighting. Therefore, depending on the light source, the picture would be recorded with a bluish or reddish tint. To minimize the influence of the lighting on the colours of the subject, an adjustment called White Balance Adjustment is necessary.

Auto White Balance

This Movie Camera offers both Auto White Balance Adjustment and Manual White Balance Adjustment. When the Movie Camera is in the Full Auto Mode, the internal system of the Movie Camera automatically determines the temperature of the light and compensates the tint of the subject accordingly. White is the basic colour by which the tint is determined. Because this adjustment is performed based on the white colour, it is called White Balance Adjustment. The optimum settings for several light sources are stored in the memory of the Movie Camera. The internal microcomputer compares the colour temperature of the light received by the White Balance Sensor positioned on the front of the Movie Camera with the colour stored in memory, and selects the setting for the most similar tint.

Be careful not to cover the White Balance Sensor (-32-) with your hand, etc.

Manual White Balance

Although this Movie Camera stores the optimum settings for several light sources in memory to correctly judge the white colour, it cannot cope with all light sources. Therefore, to record under those types of lighting which cannot be correctly adjusted with Auto White Balance Adjustment, use Manual White Balance Adjustment. (-44-)

■ **How the Focus Adjustment Works**

If you look at an object through a magnifying glass and move it closer or further away from your eye, you will reach a point where the object becomes clearly visible. Being focused or in focus means that the subject can be seen with optimum clarity and sharpness. The distance between the lens and the point where the rays of light come together is called Focal Distance or Focal Length and depends on the size and shape of the lens.

Human eyes have lenses too, and when we look at objects at different distances, the shape of these lenses changes automatically so that we can always see the objects clearly.

Auto Focus Adjustment

The image of the subject enters the Movie Camera through the lens and is converted into an electrical signal (video signal) for recording onto tape. Based on this signal, the Auto Focus System automatically adjusts the focal distance by moving the focusing lens forward or backward.

The focus is adjusted on the subject in the centre of the Viewfinder.

Specifications

VHS-C Movie Camera

Information for your safety

Power Source:

DC 7.2 V (Battery)
DC 11.0 V (AC Adaptor)

Power Consumption

(Battery Operation):
3.4 W (When using Viewfinder)
4.6 W (When using LCD Monitor)

Tape Format:

VHS-C Cassette

Recording/Playback Time:

LP; 2 hour with EC60

VIDEO

Television System:

CCIR; 625 lines, 50 fields
PAL colour signal

Output Level:

VIDEO OUT (PHONO);
1.0 Vp-p, 75 ohm terminated

AUDIO

Output Level/Impedance:

AUDIO OUT (PHONO);
-6 dBV (47 kohm loaded)/less than 1 kohm

Audio Track:

1 track (Normal – Monaural)

Image Sensor:

1/6-inch CCD Image Sensor

Lens:

18:1 Power Zoom Lens (Optical capability)
F1.8
Focal Length; 3.1–55.8 mm
Digital AI Auto Focus/Auto Iris
Filter Diameter; 37 mm

Monitor:

2.4-inch Colour LCD Monitor

Viewfinder:

0.24-inch Electronic Viewfinder

Standard Illumination:

1,400 lx

Operating Temperature:

0°C–40°C

Operating Humidity:

10%–80%

Weight:

Approx. 900 g (without Battery)

Dimensions:

Approx. 88 (W)×118 (H)×241 (D) mm

AC Adaptor (VSK0657)

Information for your safety

Power Source:

AC 110–240 V, 50/60 Hz

Power Consumption:

14 W

DC Output:

DC 11.0 V, 1.0 A

Weight:

Approx. 125 g
(without AC Mains Lead)

Dimensions:

Approx. 60 (W)×32 (H)×97 (D) mm

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



ИНФОРМАЦИЯ О СЕРТИФИКАЦИИ ПРОДУКЦИИ

Сетевые адаптеры для видеокамер
МОДЕЛЬ VSK0657 Panasonic
Сертифицирована органом по сертификации
промышленной продукции РОСТЕСТ-Москва
(Регистрационный номер в Госреестре — РОСС RU.0001.10АЯ46)

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Информация для покупателя

Название продукции:	VHS-C видеокамера
Название страны производителя:	Малайзия
Название производителя:	Мацүшита Электрик Индастриал Ко., Лтд.
Юридический адрес:	1006 Кадома, Осака, Япония
Дата производства: Вы можете уточнить год и месяц по серийному номеру на табличке. Пример маркировки — Серийный номер №: А1XXXXXXXX (X-любая цифра или буква) Месяц: Первая цифра серийного номера (А — Январь, В — Февраль, ...L — Декабрь) Год: Вторая цифра серийного номера (3 — 2003, 4 — 2004, ...)	
Дополнительная информация:	Пожалуйста внимательно прочитайте инструкцию по эксплуатации.
Срок службы	7(семь) лет



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Web site: <http://www.panasonic.co.jp/global/>

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