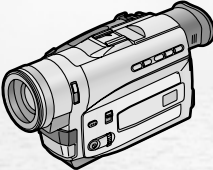
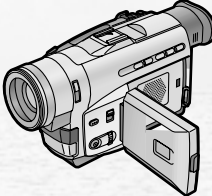
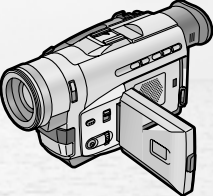
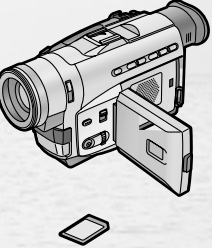


Model No.

NV-DS12B
NV-DS15B
NV-DS150B
NV-DS25B

Operating Instructions

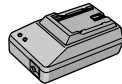
	NV-DS12B	NV-DS15B	NV-DS150B	NV-DS25B
				
LCD Monitor	—	●	●	●
MultiMediaCard	—	—	—	●
DV In	—	—	●	—



Before use, please read these instructions completely.

Check List for the Standard Accessories

AC Adaptor Set



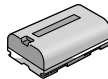
..... AC Adaptor



..... AC Mains Lead
(VJA0940)



..... DC Input Lead
(VJA1088)



..... Battery Pack
(VSB0418)



..... AV Cable
(K2KC4CB00001)



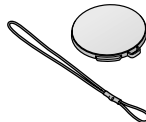
..... S-Video Cable
(VJA1120)



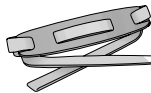
..... Remote Controller
NV-DS12, NV-DS15, VEQ2398
NV-DS25 VEQ2405
NV-DS150 VEQ2405



..... Button-Type Battery (CR2025)



..... Lens Cap and
Lens Cap Cord (VYF2700)



..... Shoulder Strap (VFC3299)



..... Digital Video Head Cleaner
(VFK1451)

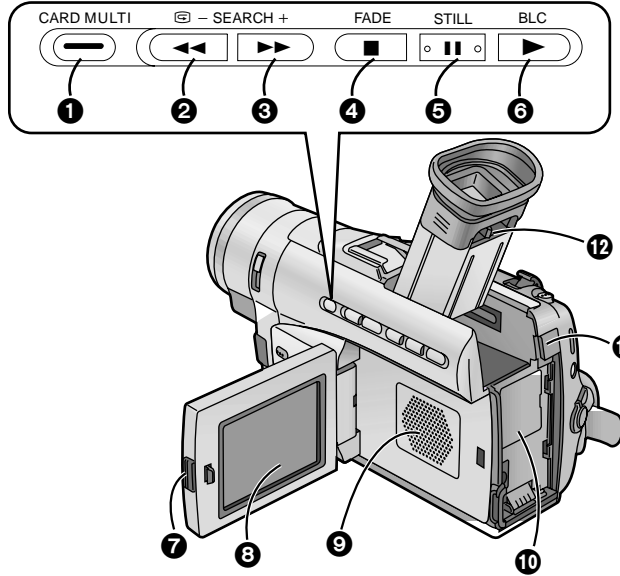


..... MultiMediaCard (VW-MMC8E)
(NV-DS25 only)

•For purchasing additional Battery Packs, see the list of optional accessories on p. 105.

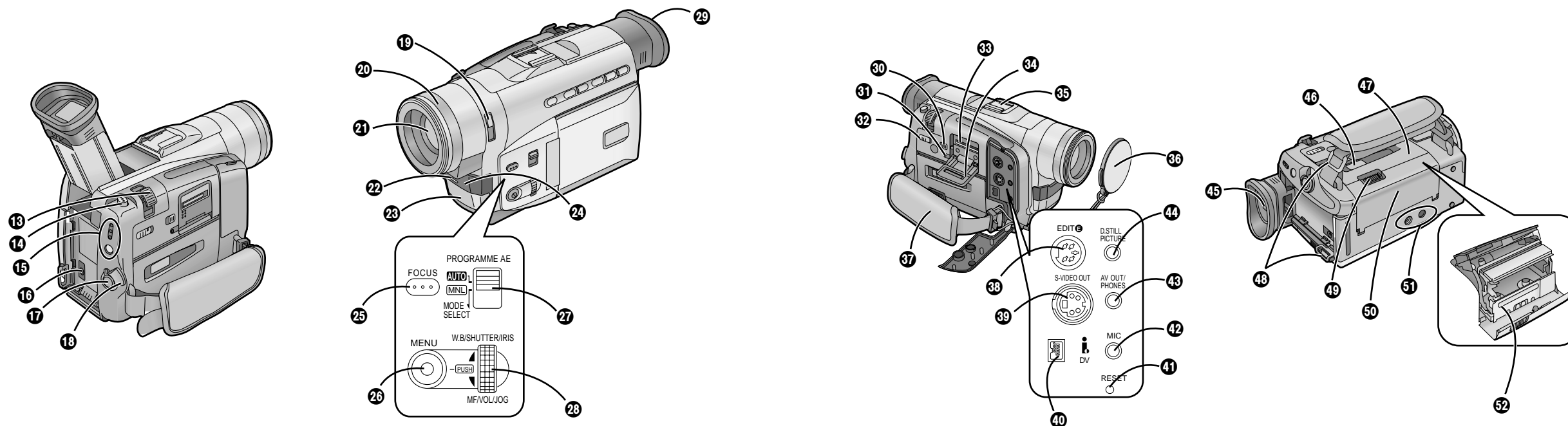
Controls and Functions

For more details, see the pages indicated in brackets.



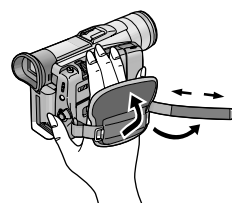
- 1 Card Multi Button [CARD MULTI] (p. 70)
(NV-DS25 only)
- 2 Rewind/Review Button [◀◀] (p. 34)
Recording Check Button [G] (p. 26)
Reverse Search Button [–SEARCH] (p. 40)
- 3 Fast Forward/Cue Button [▶▶] (p. 34)
Forward Search Button [SEARCH+] (p. 40)
- 4 Stop Button [■] (p. 34, 70)
Fade Button [FADE] (p. 44)
- 5 Pause Button [||] (p. 36, 70)
Still Button [STILL] (p. 31)
- 6 Play Button [▶] (p. 34, 70)
Backlight Button [BLC] (p. 26)
- 7 LCD Monitor Open Button [▲OPEN] (p. 14)
(NV-DS15, NV-DS150, NV-DS25 only)
- 8 LCD Monitor (p. 14, 22, 93)
(NV-DS15, NV-DS150, NV-DS25 only)
- 9 Speaker (p. 35)
(NV-DS15, NV-DS150, NV-DS25 only)
- 10 Battery Holder (p. 10)
- 11 Battery Eject Button [PUSH] (p. 11)
- 12 Eyepiece Corrector Knob (p. 14)

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.



- 13 Zoom Lever [W/T] (p. 30)
- 14 Photoshot Button [PHOTO SHOT] (p. 30, 68)
- 15 Camera (Recording) Mode/VCR (Playback) Mode/ Card Playback Mode Button (and Lamps) [MODE] (p. 24, 34, 70)
(Card Playback Mode is only available on model NV-DS25)
- 16 DC Input Socket [DC IN] (p. 8)
- 17 Recording Start/Stop Button (p. 24)
- 18 Movie Camera Off/On Switch [OFF/ON] (p. 14, 24, 38)
- 19 0-Lux Recording Switch [0 LUX OFF/ON] (p. 54)
- 20 Lens Hood (p. 93)
- 21 Lens
- 22 Recording Indicating (Tally) Lamp (p. 25)
- 23 Microphone (built-in, stereo) (p. 31)
- 24 White Balance Sensor (p. 95)
Remote Control Sensor (p. 82)
Built-in Infra-red Beam Emitters (p. 54)
- 25 Focus Button [FOCUS] (p. 28)
- 26 Menu Button [MENU] (p. 16)
- 27 Mode Selector Switch [AUTO/MNL/MODE SELECT] (p. 24, 28, 46, 56, 58)
- 28 Multi-Function Dial [PUSH] (p. 16, 28, 35, 37, 58)
- 29 Eyecup

- 30 MultiMediaCard Slot Cover Open Lever [OPEN] (p. 66) (NV-DS25 only)
- 31 MultiMediaCard Access Lamp [ACCESS] (p. 67) (NV-DS25 only)
- 32 Tape/Card Photoshot Selector [TAPE/CARD] (p. 68, 76) (NV-DS25 only)
- 33 MultiMediaCard Slot (p. 66) (NV-DS25 only)
- 34 MultiMediaCard Slot Cover (p. 66) (NV-DS25 only)
- 35 Accessory Shoe
To attach the Stereo Zoom Microphone (optional) or the Stereo Microphone (optional).
- 36 Lens Cap (p. 15, 39, 56)
- 37 Grip Belt
You can adjust the Grip Belt to the size of your hand. When you open or close the Cassette Compartment, push down the buckle of the Grip Belt so that it does not prevent the Cassette Compartment from opening and closing completely.



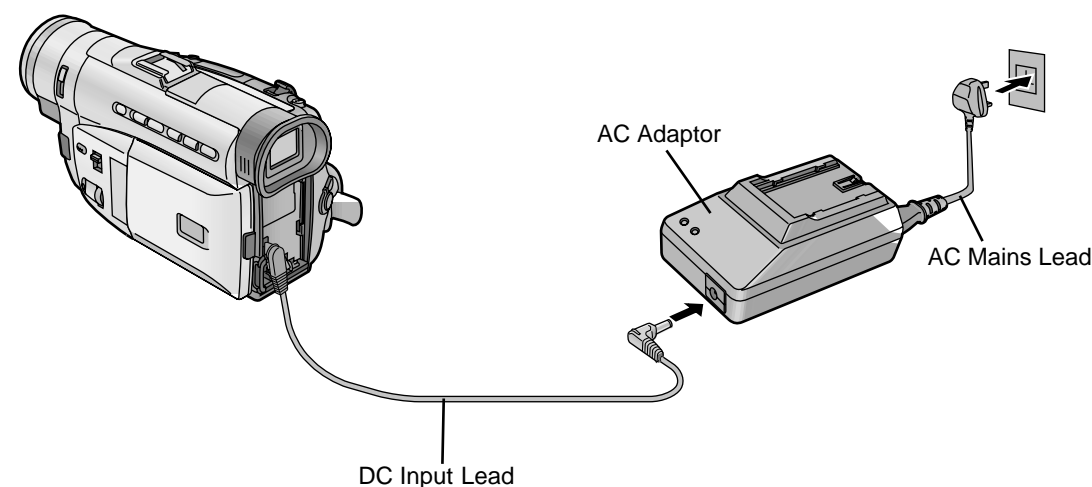
Pass your hand through the Grip Belt and adjust its length. Fold back the end of the Grip Belt to securely fasten the velcro tape closure.

- 38 Edit Socket [EDIT] (p. 86, 88)
- 39 S-Video Output Socket [S-VIDEO OUT] (p. 38, 84, 86, 87, 88)
- 40 DV Terminal (i.LINK) [i.LINK] (p. 85)
Connect it to digital video equipment. "i.LINK" is the name of the connector in accordance with the IEEE1394-1995. "i.LINK" is the logo marked on products conforming with the "i.LINK" specifications. (It is only possible to input digital signals with model NV-DS150.)
- 41 Reset Button [RESET] (p. 102)
- 42 Microphone Socket [MIC]
To connect an external microphone or audio equipment. (Connecting to this socket deactivates the built-in microphone.)
- 43 Audio-Video Output Socket [AV OUT] (p. 38, 84, 86, 87)
Headphone Socket [PHONES] (p. 39)
When a cable is connected to this socket, the Movie Camera's built-in speaker* is turned off.
*built-in speaker: NV-DS15, NV-DS150, NV-DS25 only
- 44 Digital Still Picture Terminal [D.STILL PICTURE] (p. 87)

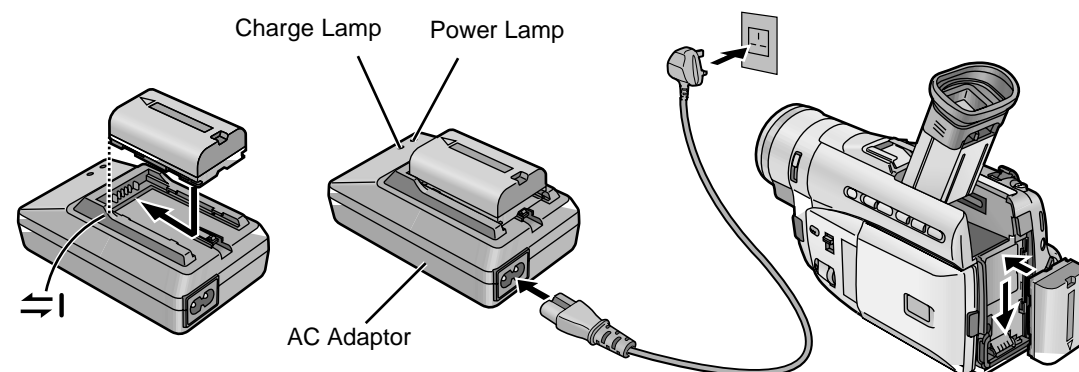
- 45 Viewfinder (p. 14, 22, 93)

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.

- 46 Cassette Compartment Window
- 47 Upper Cassette Compartment Cover (p. 12)
- 48 Shoulder Strap Holders (p. 93)
- 49 Cassette Eject Lever [OPEN/EJECT] (p. 12, 38)
- 50 Lower Cassette Compartment Cover (p. 12)
- 51 Tripod Receptacle
To mount the Movie Camera on an optional tripod.
- 52 Cassette Holder (p. 12)

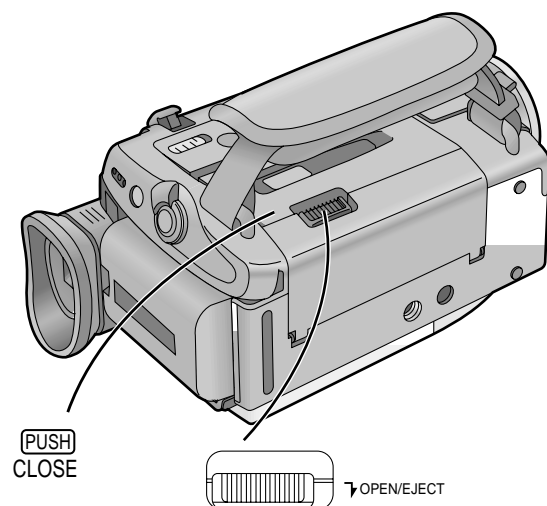


Title	Procedure	Remarks, etc.
<p>The 3 Types of Power Supply</p> <p>1) AC Adaptor (supplied) to supply power from an AC mains socket</p> <p>2) Car Battery Charger (optional) to supply power from the cigarette lighter socket in a vehicle</p> <p>3) Battery (supplied) (p. 10)</p> <p>1) Supplying Power from an AC Mains Socket</p>	<p>Connect the plug of the DC Input Lead to the [DC IN] Socket on the Movie Camera.</p> <p>Connect the other plug of the DC Input Lead to the [DC OUT] Socket on the AC Adaptor.</p> <p>Connect the other end of the AC Mains Lead to an AC mains socket.</p> <p>Connect the AC Mains Lead to the AC Adaptor.</p>	<ul style="list-style-type: none">• Before disconnecting the AC Mains Lead, set the [OFF/ON] Switch to [OFF].• If you use the Movie Camera for a long time, it becomes warm. However, this is normal.• The AC Mains Lead does not fit entirely into the AC Adaptor socket, but this has no effect on operation.
<p>2) Supplying Power from the Cigarette Lighter Socket in a Car</p> <p>The use of the Car Battery Charger (VW-KBD2E; optional) makes it possible to supply power to the Movie Camera in a car for recording and playback. It also allows charging the Movie Camera's Battery.</p>	<p>Start the engine and then plug the Car Battery Charger into the Cigarette Lighter Socket.</p> <p>Car Battery Charger</p> <p>DC Input Lead</p> <p>Connect the DC Input Lead.</p>	<ul style="list-style-type: none">• After use, be sure to disconnect the Car Battery Charger from the cigarette lighter socket.• If the Car Battery Charger is already connected to the cigarette lighter socket when you start the engine, the fuse in the Car Battery Charger's plug may blow out.• Also read the operating instructions of the Car Battery Charger.



		NV-DS12	NV-DS15, NV-DS150	NV-DS25
VSB0418 CGR-D120	A	1 h.	1 h.	1 h.
	B	1 h 20 min.	1 h 20 min. (1 h 10 min.)	1 h 20 min. (1 h 5 min.)
	C	40 min.	40 min. (35 min.)	40 min. (35 min.)
CGP-D210	A	1 h 50 min.	1 h 50 min.	1 h 50 min.
	B	2 h 20 min.	2 h 20 min. (2 h.)	2 h 15 min. (1 h 55 min.)
	C	1 h 10 min.	1 h 10 min. (1 h.)	1 h 10 min. (1 h.)
CGR-D220	A	2 h.	2 h.	2 h.
	B	2 h 50 min.	2 h 50 min. (2 h 25 min.)	2 h 40 min. (2 h 20 min.)
	C	1 h 25 min.	1 h 25 min. (1 h 15 min.)	1 h 20 min. (1 h 10 min.)
CGP-D320	A	3 h 15 min.	3 h 15 min.	3 h 15 min.
	B	4 h 50 min.	4 h 50 min. (4 h 15 min.)	4 h 40 min. (4 h 5 min.)
	C	2 h 25 min.	2 h 25 min. (2 h 10 min.)	2 h 20 min. (2 h 5 min.)
CGR-D815	A	5 h 20 min.	5 h 20 min.	5 h 20 min.
	B	9 h 20 min.	9 h 20 min. (8 h.)	9 h. (7 h 40 min.)
	C	4 h 40 min.	4 h 40 min. (4 h.)	4 h 30 min. (3 h 50 min.)

Title	Procedure				Remarks, etc.
3) Supplying Power with the Battery Before use, fully charge the Battery. <div> </div> <p>When the [CHARGE] Lamp Flashes Continuously If the temperature of the Battery is extremely low or extremely high, the [CHARGE] Lamp on the AC Adaptor flashes continuously when some malfunction has occurred in the Battery or the AC Adaptor. For details, read "Notes about the AC Adaptor" (p. 90).</p> <ul style="list-style-type: none"> • Charge the Battery at a room temperature between 10°C and 30°C. • If the DC Input Lead is connected to the AC Adaptor, disconnect it as charging is not possible otherwise. • If the [CHARGE] Lamp does not light even though the Battery is attached, remove the Battery and then re-attach it. • During recording and charging, the Battery becomes warm. However, this is normal. • If the temperature of the Battery is extremely high or extremely low, the [CHARGE] Lamp may keep on flashing and charging is not possible. After the Battery has cooled down or warmed up sufficiently, charging starts automatically. 	1 Have the front edge of the battery lined up with the ❶ mark on the side of the AC Adaptor, and then slide it horizontally until it locks with a click. <div> </div>	2 Connect the AC Mains Lead to the AC Adaptor and an AC mains socket. <ul style="list-style-type: none"> • The [POWER] Lamp and the [CHARGE] Lamp light and charging starts. • The AC Mains Lead does not fit entirely into the AC Adaptor socket, but this has no effect on operation. <div> </div>	3 Remove the Battery by sliding it in the opposite direction of Step 1. <div> </div> <ul style="list-style-type: none"> • Also disconnect the AC Mains Lead. 	4 Tilt the Viewfinder upward. <div> </div>	Charging Time and Maximum Time for Continuous Recording The times shown in the above chart are approximations. The figures in parentheses show the recording time when using the LCD Monitor. The times listed above for your information indicate the duration of recording performed at an ambient temperature of 20°C and 60% relative humidity. The charging time may be longer when you charge the Battery at higher or lower temperature. <p> (A) Charging Time (B) Maximum Continuous Recording Time (C) Intermittent Recording Time (The Intermittent Recording Time indicates the total recording time possible when you start and stop recording repeatedly.) </p> <ul style="list-style-type: none"> • The Battery Model VSB0418 is supplied. • During use and charging, the Battery becomes warm. The Movie Camera, too, becomes warm during use. • When you repeatedly stop and restart recording, the recording time per Battery is shorter than listed above. • If you do not use the Battery for a long time, please read "Precautions for Storage" (p. 92). • The Battery models CGP-D110 and CGP-D105 cannot be charged with this AC Adaptor. <p>Removing the Battery from the Movie Camera While pressing the [PUSH] Button, slide the Battery upward to remove it.</p> <ul style="list-style-type: none"> • Be careful not to drop the Battery by accident. • Before removing the Battery, set the [OFF/ON] Switch to [OFF]. <div> </div> <p>Battery Eject Button</p>
	5 Insert the Battery into the Battery Holder on the Movie Camera and slide it downward until it locks with a click. <div> </div>	Charge Lamp [CHARGE] Lit: During charging. Off: When the Battery is fully charged. <div> </div>			



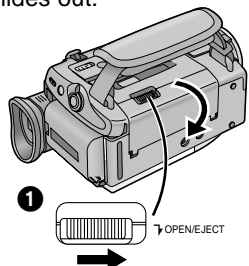
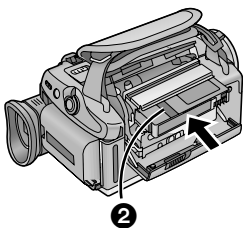
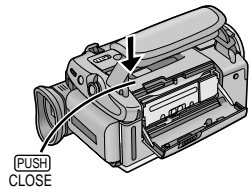
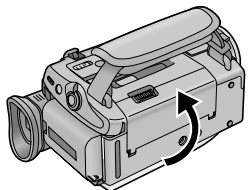
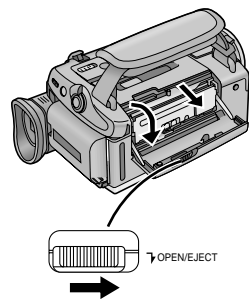
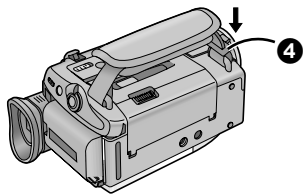
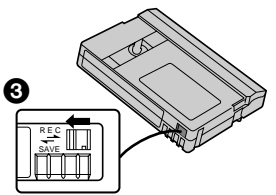
● LP Mode

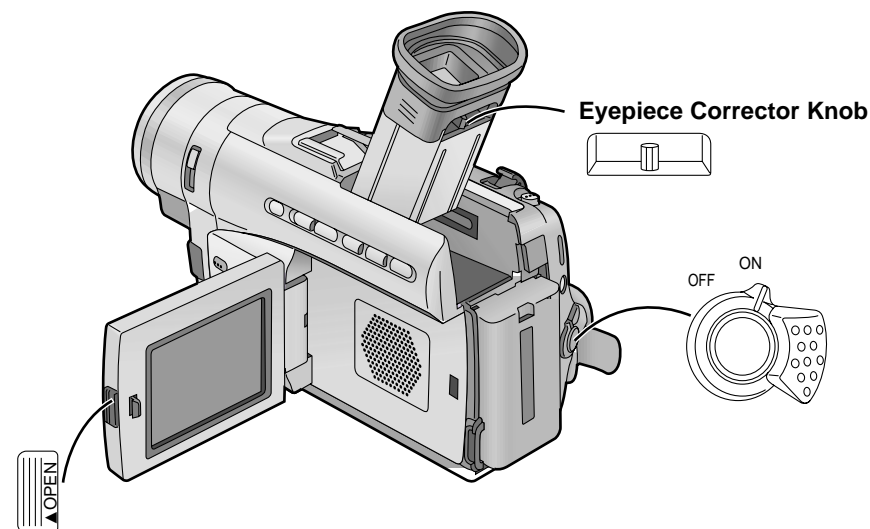
The desired recording speed can be selected with [REC SPEED] on the [RECORDING SETUP] Sub-Menu. (p. 18) If you select the LP Mode, the possible recording time is 1.5 times as long as in the SP Mode.

Recording in the LP mode does not deteriorate the picture quality. However, the playback picture may contain mosaic-like patterns and certain functions may be restricted.

- As the recording track width in the LP Mode is smaller than the head width, recording new sound onto an already recorded cassette (audio dubbing) (p. 64) is not possible.

- In the following cases, mosaic-like patterns may appear in the playback picture, or the picture may not be played back correctly:
 - When a cassette recorded in the LP Mode on this Movie Camera is played back on other digital video equipment.
 - When a cassette recorded in the LP Mode on other digital video equipment is played back on this Movie Camera.
 - When a cassette recorded in the LP Mode on this Movie Camera is played back on digital video equipment not featuring the LP Mode.
 - In the Slow Motion or Still Advance Playback Mode. (p. 36)
 - When using the Camera Search Function. (p. 40)

Title	Procedure				Remarks, etc.
Inserting the Cassette	<div>1</div> <div>Slide the [OPEN/EJECT] Lever ❶ to the right and simultaneously open the Lower Cassette Compartment Cover completely. The Cassette Holder slides out.</div> <div></div>	<div>2</div> <div>Insert the cassette with its window in position ❷.</div> <div></div>	<div>3</div> <div>Press on the [PUSH CLOSE] mark to close the Upper Cassette Compartment Cover. The Cassette Holder with the cassette slides back inside. Confirm that the Cassette Holder has retracted completely.</div> <div></div>	<div>4</div> <div>Close the Lower Cassette Compartment Cover.</div> <div></div>	<ul style="list-style-type: none">•When inserting the cassette, make sure it faces in the right direction and then push it in until it stops.•When you insert a cassette onto which you have recorded before, use the Camera Search Function (p. 40) to search for the position from which you want to continue recording.•When you insert a new cassette, rewind the tape to the beginning before starting to record. <p>If the Cassette Holder Does Not Slide Back In</p> <ul style="list-style-type: none">•Press on the [PUSH CLOSE] mark and close the Upper Cassette Compartment Cover securely.•Turn the Movie Camera off and then on again.•Check if the Battery is discharged. <p>If the Cassette Holder Does Not Slide Out</p> <ul style="list-style-type: none">•Close the Lower Cassette Compartment Cover completely and then open it again.•Check if the Battery is discharged.
	<div>Ejecting the Cassette</div> <ul style="list-style-type: none">•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. <div></div>	<div>When opening or closing the Cassette Compartment, push down the buckle ❹ of the Grip Belt in the direction of the arrow so that it does not obstruct the opening and closing of the Cassette Compartment.</div> <ul style="list-style-type: none">•Otherwise the Grip Belt may prevent the Cassette Compartment from opening completely, or it may get caught under the Cassette Compartment Cover and prevent it from closing properly. <div></div>			
					<p>Preventing Accidental Erasure of Recordings</p> <p>Opening the cassette's erasure prevention slider ❸ (sliding it in the direction of the [SAVE] arrow) prevents recording. To record again, close the erasure prevention slider (slide it in the direction of the [REC] arrow).</p> <div></div>



Attaching the Lens Cap

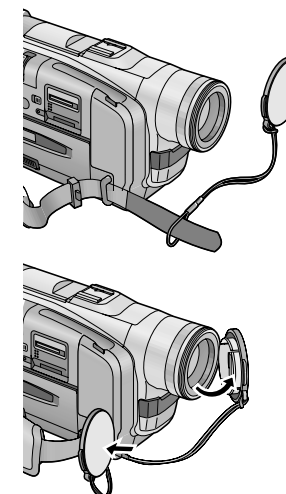
1
Pass the longer loop of the Lens Cap Cord through the attached eye on the Lens Cap.

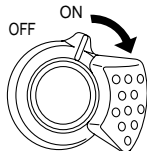
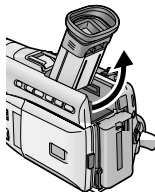
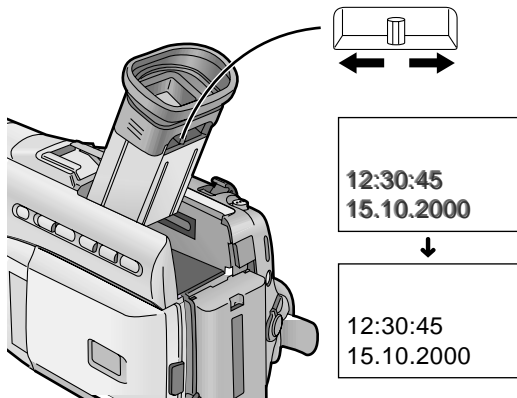
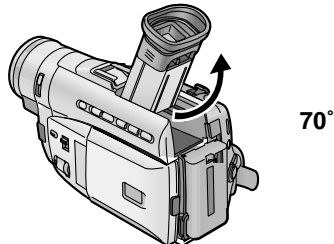
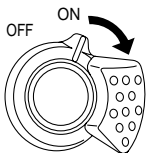
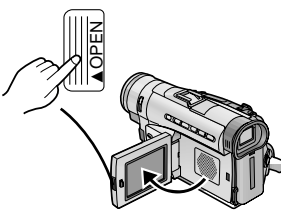
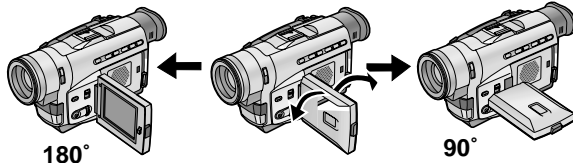
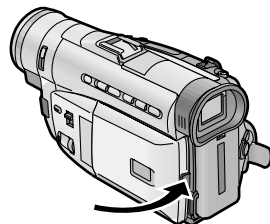
2
Then pass the shorter loop of the Lens Cap Cord through the centre of the longer loop and pull tight.

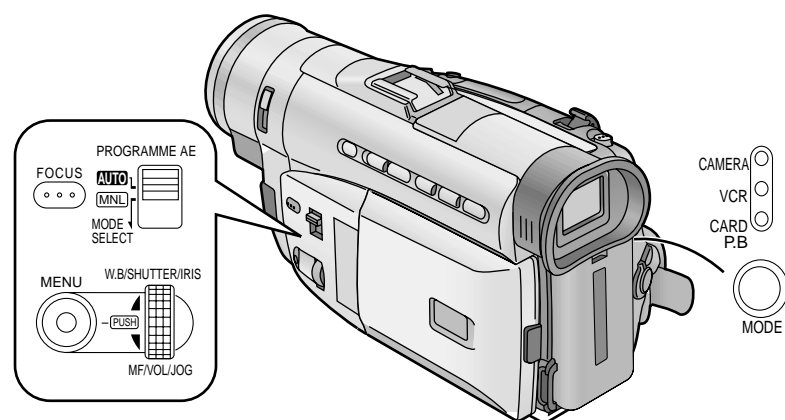
3
Attach the shorter loop to the Grip Belt.

You can hook the removed Lens Cap onto the Grip Belt. When not actually recording, always attach the Lens Cap to the Lens to protect it.

- Do not leave the Lens exposed to direct sunlight, as it could bundle the light beams and seriously heat-damage the CCD-Sensor.
- Before you start recording, remove the Lens Cap.



Title	Procedure			Remarks, etc.
Using the Viewfinder Before using the Viewfinder, adjust it to your eyesight so that the indications in the Viewfinder are clear and easy to read. <ul style="list-style-type: none"> • Due to limitations in production technology, there may be some tiny bright or dark spots on the Viewfinder, however, these are not recorded on the tape. 	1 Set the [OFF/ON] Switch to [ON]. 	2 Tilt the Viewfinder upward. The angle of the Viewfinder can be adjusted upward. 	3 Adjust by sliding the Eyepiece Corrector Knob. 	<ul style="list-style-type: none"> • Do not leave the Viewfinder exposed to direct sunlight, as its magnifying glass could bundle the light beams and seriously heat-damage the Viewfinder. • The Viewfinder can be tilted upward by up to approximately 70°. 
Using the LCD Monitor (NV-DS15, NV-DS150, NV-DS25 only) It is also possible to record while viewing the picture on the opened LCD Monitor. Relationship between Viewfinder and LCD Monitor Opening the LCD Monitor turns off the Viewfinder. Closing the LCD Monitor turns the Viewfinder on again. However, turning the LCD Monitor forward also turns on the Viewfinder again. (p. 28) <ul style="list-style-type: none"> • Due to limitations in production technology, there may be some tiny bright or dark spots on the LCD Monitor screen, however, these are not recorded on the tape. 	1 Set the [OFF/ON] Switch to [ON]. 	2 Push the [▲OPEN] Button and turn out the LCD Monitor approximately 90° in the direction of the arrow. The Viewfinder turns off. 	3 Adjust the angle of the LCD Monitor according to the desired recording angle. The LCD Monitor rotates upward a maximum of 180° and downward a maximum of 90° from its normal vertical position. Trying to forcefully rotate it beyond this range could seriously damage the Movie Camera. 	Closing the LCD Monitor Push the LCD Monitor close until the [▲OPEN] Button locks with a click. 



① Camera Functions Main-Menu

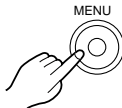

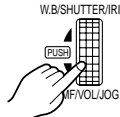

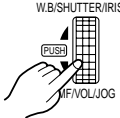
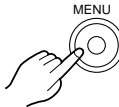
CAMERA FUNCTIONS
1. CAMERA SETUP
2. DIGITAL EFFECT
3. CARD SETUP
4. RECORDING SETUP
5. DISPLAY SETUP
6. OTHER FUNCTIONS
7. DEMO MODE
PRESS MENU TO EXIT

② VCR Functions Main-Menu

VCR FUNCTIONS
1. PLAYBACK FUNCTIONS
2. DIGITAL EFFECT
3. CARD SETUP
4. RECORDING SETUP
5. DISPLAY SETUP
6. OTHER FUNCTIONS
PRESS MENU TO EXIT

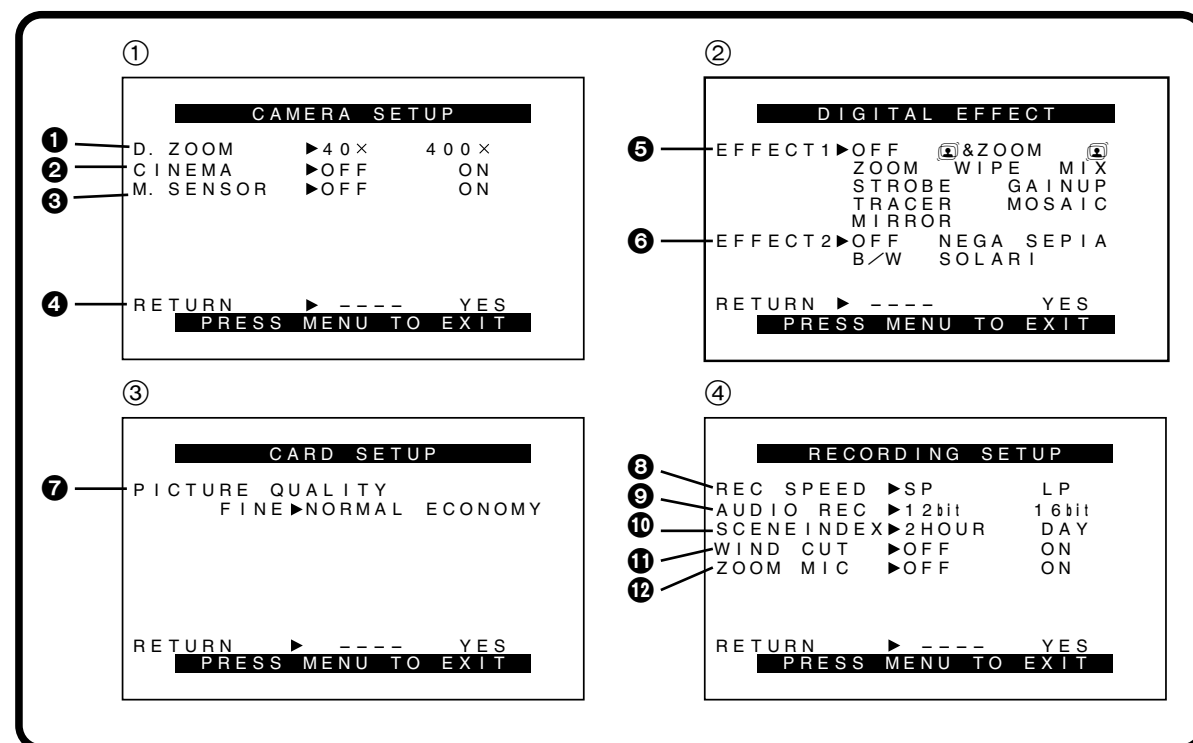
③ Card Functions Main-Menu

CARD FUNCTIONS
1. ERASE PICTURE
2. CARD EDITING
3. DISPLAY SETUP
4. OTHER FUNCTIONS
PRESS MENU TO EXIT

Title	Procedure				Remarks, etc.
Using the Menu Screen This Movie Camera displays the settings of various functions in Menus to make it easy to select the desired functions and settings.	1 Press the [MENU] Button. When the [CAMERA] Lamp is lit, Camera Mode Menu ❶ is displayed. When the [VCR] Lamp is lit, VCR Mode Menu ❷ is displayed. When the [CARD P.B] Lamp is lit, Card Playback Mode Menu ❸ is displayed. (NV-DS25 only) 	2 Turn the [PUSH] Dial to select the desired sub-menu. Turning the [PUSH] Dial changes the highlighted item. 	3 Press the [PUSH] Dial to display the selected sub-menu. 	4 Turn the [PUSH] Dial to select the item to be set. 	Note About the Settings Made on the Menu The settings you selected on the Menu are maintained when you turn the Movie Camera off. However, if you disconnect the power supply unit (Battery or AC Adaptor) from the Movie Camera before turning it off, the selected settings may not be maintained. •While the Menu is displayed, recording or playback is not possible. During playback, displaying Menu is possible, but not during recording. •Settings for the menu item(s) that cannot be used due to the combination of the selected functions are displayed in dark blue. •You can also perform these operations by using the Remote Controller. (p. 80)
	5 Press the [PUSH] Dial to set the selected item to the desired mode. Every press moves the cursor [▶] to the next mode. 	■ Exiting the Menu Press the [MENU] Button again. 			

Menu Functions

Camera Functions Menu



The illustrations of the menus are intended for explaining the functions; the actual menus look somewhat different.

Camera Mode Main-Menu [CAMERA FUNCTIONS]

1. CAMERA SETUP
2. DIGITAL EFFECT
3. CARD SETUP (NV-DS25 only)
4. RECORDING SETUP
5. DISPLAY SETUP
6. OTHER FUNCTIONS
7. DEMO MODE

[CAMERA SETUP] Sub-Menu ①

- ① Digital Zoom [D.ZOOM] (p. 31)
- ② Cinema-like Format Recording [CINEMA] (p. 32)
- ③ Motion-Sensor-Controlled Recording [M.SENSOR] (p. 52, 54)
- ④ Returning to the Main-Menu [RETURN]
If you set [RETURN] to [YES], the Menu changes back to the Main-Menu.

[DIGITAL EFFECT] Sub-Menu ②

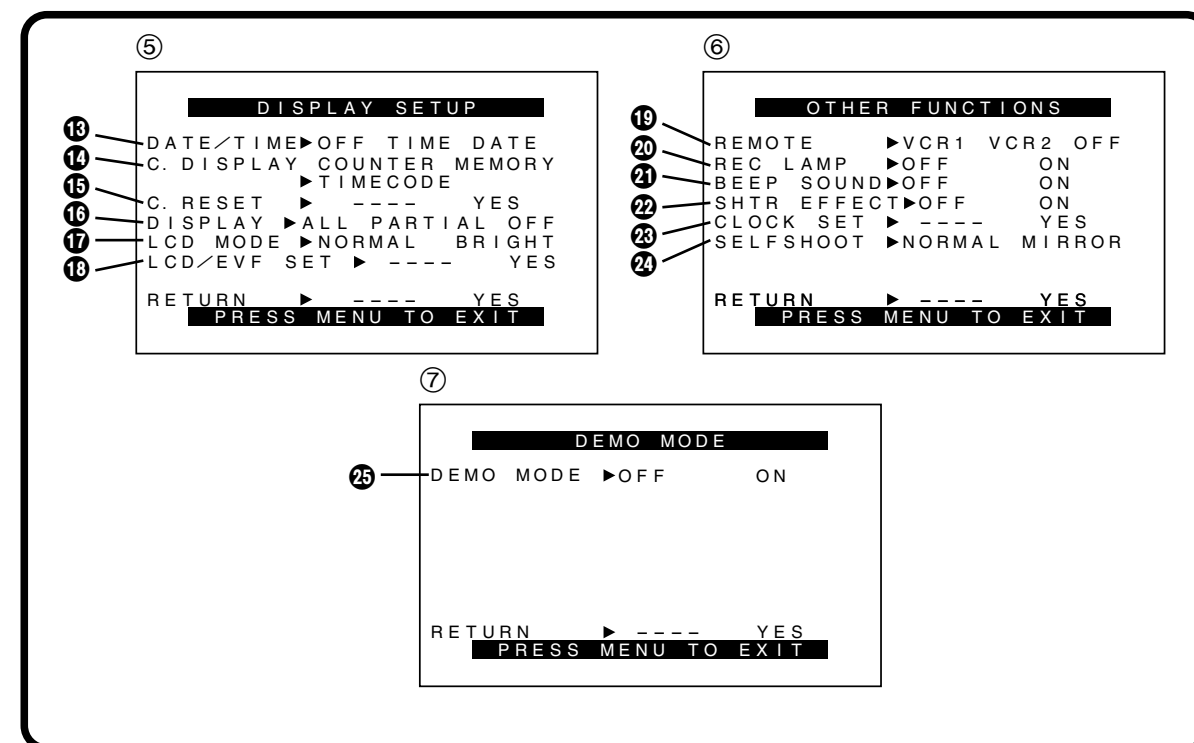
- ⑤ Digital Effects 1 [EFFECT1] (p. 48)
- ⑥ Digital Effects 2 [EFFECT2] (p. 48)

[CARD SETUP] Sub-Menu ③ (NV-DS25 only)

- ⑦ Picture Quality [PICTURE QUALITY] (p. 69)

[RECORDING SETUP] Sub-Menu ④

- ⑧ Recording Speed Mode [REC SPEED] (p. 13)
- ⑨ Audio Recording Mode [AUDIO REC] (p. 64)
- ⑩ Scene Index Mode [SCENEINDEX] (p. 42)
- ⑪ Wind Noise Reduction [WIND CUT]
If you set [WIND CUT] to [ON], the noise of the wind hitting the Microphone is reduced. However, this also causes a slight deterioration of the sound reproduction in the bass range.
- ⑫ Zoom Microphone [ZOOM MIC] (p. 31)



[DISPLAY SETUP] Sub-Menu ⑤

- ⑬ Date and Time Indication [DATE/TIME] (p. 35)
- ⑭ Counter Display Mode [C.DISPLAY] (p. 99)
- ⑮ Counter Reset [C.RESET] (p. 97)
To reset the counter to zero. However, the Time Code cannot be reset.
- ⑯ Display Mode [DISPLAY] (P. 99)
- ⑰ LCD Lighting Mode [LCD MODE] (p. 22) (NV-DS15, NV-DS150, NV-DS25 only)
- ⑱ LCD and Viewfinder Adjustment [LCD/EVF SET] (p. 22)
(LCD Monitor adjustment is only for models NV-DS15, NV-DS150 and NV-DS25.)

[OTHER FUNCTIONS] Sub-Menu ⑥

- ⑲ Remote Controller Mode [REMOTE] (p. 83)
- ⑳ Recording Lamp [REC LAMP] (p. 25)
- ㉑ Beep Sound [BEEP SOUND] (NV-DS15, NV-DS150, NV-DS25 only)
If you set [BEEP SOUND] to [ON], a confirmation/alarm beep sound is emitted in the following cases:
1 Beep
 - When you start recording
 - When you switch the [OFF/ON] Switch from [OFF] to [ON]
 2 Beeps
 - When you pause recording
 10 Beeps
 - When you operate the Movie Camera in an inappropriate way before or during recording

㉒ Shutter Effect [SHTR EFFECT] (p. 31)

㉓ Date and Time Setting [CLOCK SET] (p. 23)

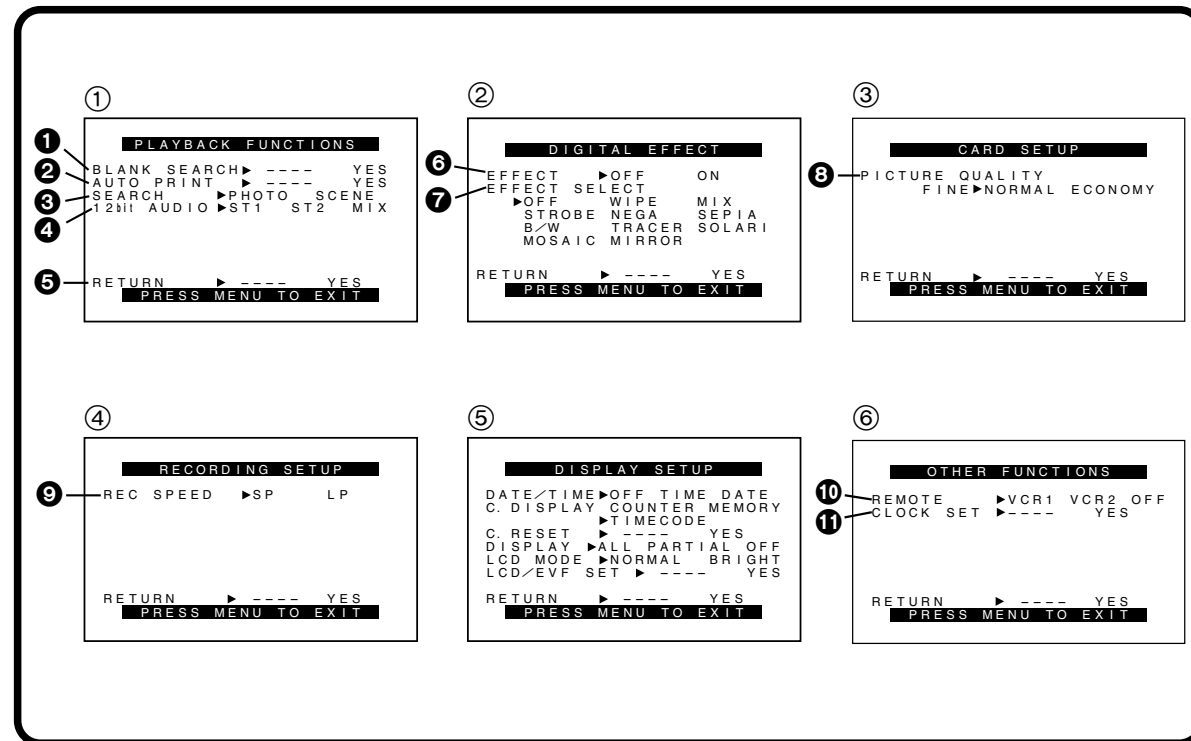
㉔ Self-Recording [SELF SHOOT] (p. 29) (NV-DS15, NV-DS150, NV-DS25 only)

[DEMO MODE] Sub-Menu ⑦

- ㉕ Demonstration Mode [DEMO MODE]
If you connect the AC Adaptor to the Movie Camera, set the [OFF/ON] Switch to [ON] without any cassette inserted, and leave it on for approximately 10 minutes without performing any operation, the Movie Camera automatically switches over to the Demonstration Mode to show its functions. Pressing a button or performing some other operation suspends the Demonstration Mode. Leaving the Movie Camera again on for more than 10 minutes without operating it, causes the demonstration to start again. Also, when you set [DEMO MODE] to [ON] and then exit the menu, the demonstration starts. To cancel the Demonstration Mode, insert a cassette or set [DEMO MODE] to [OFF].

Menu Functions (Continued)

VCR Functions Menu



VCR Mode Main-Menu [VCR FUNCTIONS]

1. PLAYBACK FUNCTIONS
2. DIGITAL EFFECT
3. CARD SETUP (NV-DS25 only)
4. RECORDING SETUP
5. DISPLAY SETUP
6. OTHER FUNCTIONS

[PLAYBACK FUNCTIONS] Sub-Menu ①

- ① Blank Search [BLANK SEARCH] (p. 40)
- ② Automatic Printing [AUTO PRINT] (p. 89)
- ③ Index Search Mode [SEARCH] (p. 42)
- ④ Audio Output Mode [12bit AUDIO] (p. 65)
- ⑤ Returning to the Main-Menu [RETURN]
If you set [RETURN] to [YES], the Menu changes back to the Main-Menu.

[DIGITAL EFFECT] Sub-Menu ②

- ⑥ Digital Effect On/Off [EFFECT] (p. 60)
- ⑦ Digital Effect Selection [EFFECT SELECT] (p. 60)

[CARD SETUP] Sub-Menu ③ (NV-DS25 only)

- ⑧ Picture Quality [PICTURE QUALITY] (p. 69)

[RECORDING SETUP] Sub-Menu ④

- ⑨ Recording Speed Mode [REC SPEED] (p. 13)
 - To select the recording speed when inputting digital signals and dubbing them. (NV-DS150 only)
 - When this setting is changed, the [REC SPEED] setting on the [RECORDING SETUP] Sub-menu of the [CAMERA FUNCTIONS] Main-Menu will likewise be changed.

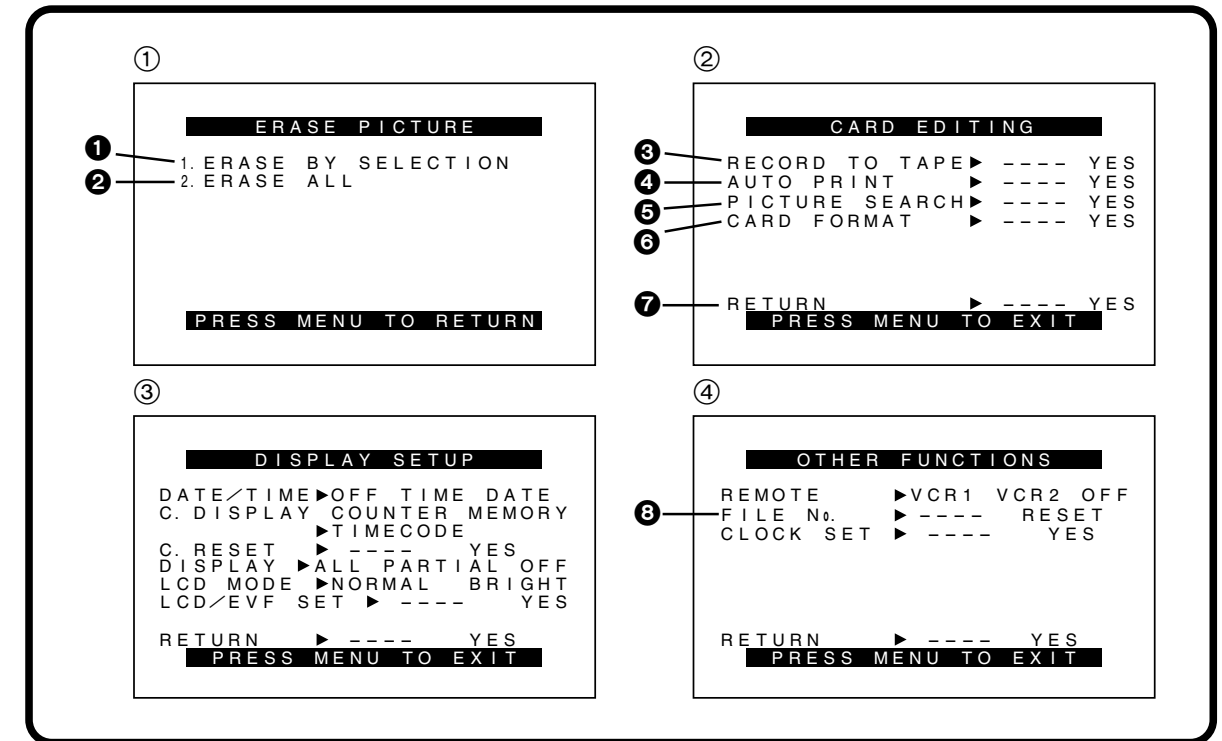
[DISPLAY SETUP] Sub-Menu ⑤

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

[OTHER FUNCTIONS] Sub-Menu ⑥

- ⑩ Remote Controller Mode [REMOTE] (p. 83)
- ⑪ Date and Time Setting [CLOCK SET] (p. 23)

Card Functions Menu (NV-DS25 only)



Card Playback Mode Main-Menu [CARD FUNCTIONS] (NV-DS25 only)

1. ERASE PICTURE
2. CARD EDITING
3. DISPLAY SETUP
4. OTHER FUNCTIONS

[ERASE PICTURE] Sub-Menu ①

- ① Selecting and Erasing a Picture [ERASE BY SELECTION] (p. 72)
- ② Erasing All Pictures [ERASE ALL] (p. 72)

[CARD EDITING] Sub-Menu ②

- ③ Recording to Cassette [RECORD TO TAPE] (p. 76)
- ④ Automatic Printing [AUTO PRINT] (p. 89)
If you connect the Movie Camera to the Digital Video Printer and set [AUTO PRINT] to [YES], all pictures stored on the MultiMediaCard are printed automatically.
- ⑤ Searching a Picture [PICTURE SEARCH] (p. 71)
- ⑥ Formatting a MultiMediaCard [CARD FORMAT] (p. 74)
- ⑦ Returning to the Main-Menu [RETURN]
If you set [RETURN] to [YES], the Menu changes back to the Main-Menu.

[DISPLAY SETUP] Sub-Menu ③

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

[OTHER FUNCTIONS] Sub-Menu ④

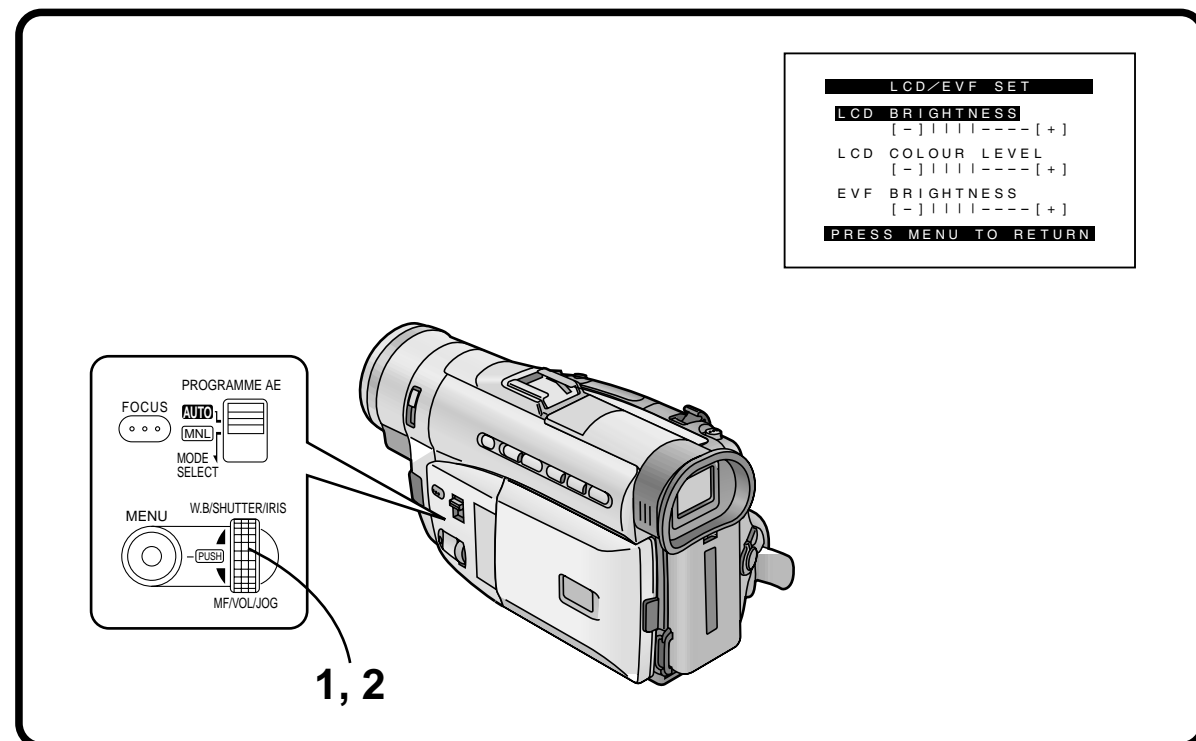
- ⑧ File Number Reset [FILE No.] (p. 75)

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

Adjusting the LCD Monitor/Viewfinder

(LCD Monitor adjustment is only for models NV-DS15, NV-DS150 and NV-DS25.)

If you set [LCD/EVF SET] on the [DISPLAY SETUP] Sub-Menu to [YES], the following items are displayed.



LCD Brightness [LCD BRIGHTNESS]

To adjust the brightness of the LCD screen. The Bar Indication is divided into 8 steps. The more vertical bars are shown, the brighter is the screen.

LCD Colour Level [LCD COLOUR LEVEL]

To adjust the colour saturation of the LCD screen. The Bar Indication is divided into 8 steps. The more vertical bars are shown, the stronger are the colours.

Viewfinder Brightness [EVF BRIGHTNESS]

To adjust the brightness of the Viewfinder. The Bar Indication is divided into 8 steps. The more vertical bars are shown, the brighter is the screen.

- 1 Press the [PUSH] Dial to select the item that you want to adjust.
- 2 Turn the [PUSH] Dial. Turning it increases or decreases the number of vertical bars of the Bar Indication.

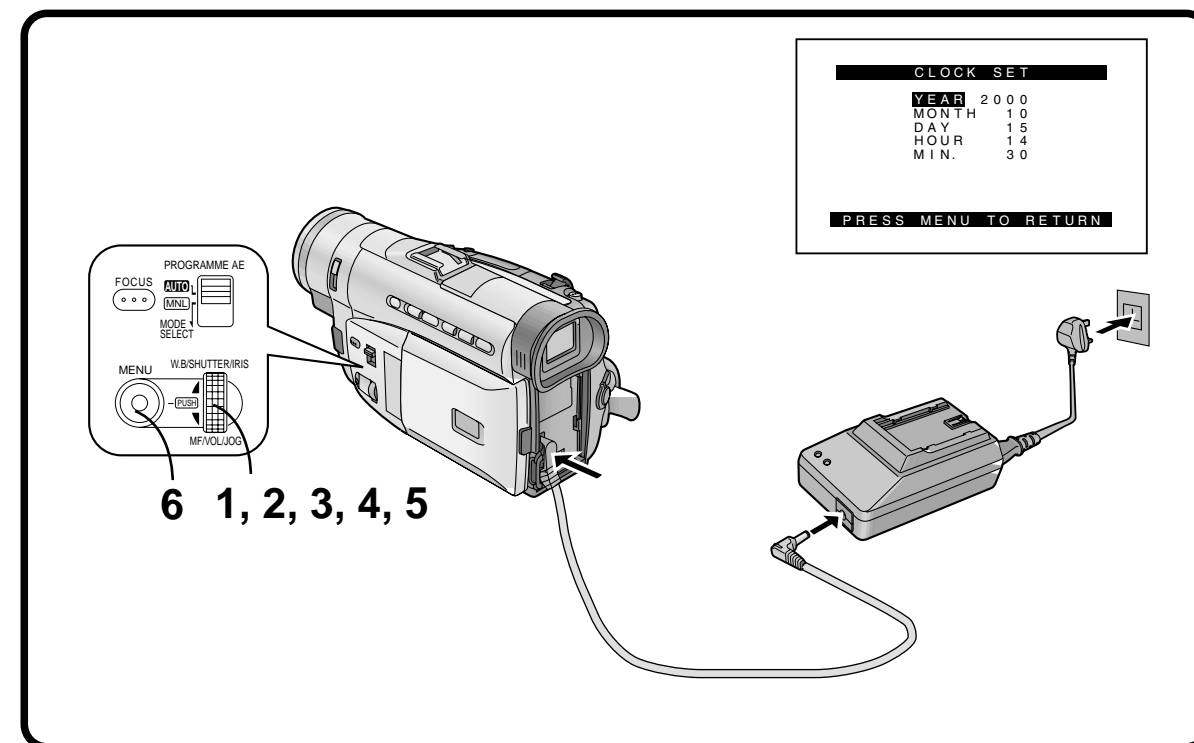
Increasing the Brightness of the Whole LCD Monitor Screen

Set [LCD MODE] on the [DISPLAY SETUP] Sub-Menu to [BRIGHT].

- These adjustments have no influence on the actually recorded picture.

Setting the Date and Time

If you set [CLOCK SET] on the [OTHER FUNCTIONS] Sub-Menu to [YES], the menu shown below appears.



For example: To set the clock to 15th October 2000, 14:30.

- 1 Turn the [PUSH] Dial to set to [2000].
The years change in the following order:
2000→2001→...→2089→2000→...
- 2 Press the [PUSH] Dial to select [MONTH], then turn it to set to [10].
- 3 Press the [PUSH] Dial to select [DAY], then turn it to set to [15].
- 4 Press the [PUSH] Dial to select [HOUR], then turn it to set to [14].
- 5 Press the [PUSH] Dial to select [MIN.], then turn it to set to [30].
- 6 Press the [MENU] Button to finish the date and time setting.
The operation of the clock starts from [00] seconds.
Pressing the button one more time makes the menu disappear.

- As the time of the Movie Camera's built-in clock is subject to a slight imprecision, be sure to check the time before recording. If the flashing [⌚] Indication appears, charge the built-in battery and set the date and time again.
- The clock employs the 24-hour system.

Charging the Built-in Lithium Battery

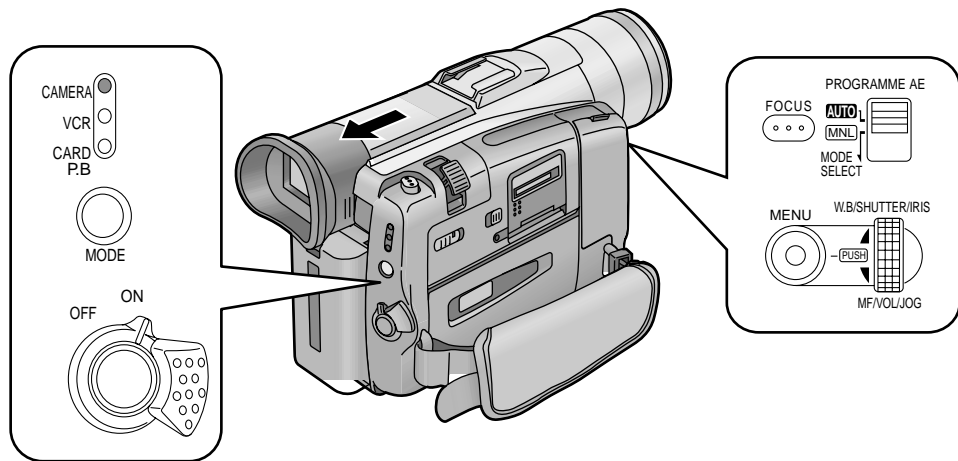
The built-in lithium battery maintains the operation of the clock. When the [⌚] Indication appears, the built-in lithium battery is discharged. Charge the discharged battery in the following way and after charging is finished, set the date and time.

- 1 Connect the AC Adaptor to the Movie Camera and to an AC mains socket. (p. 8)
- 2 Leave the Movie Camera turned off.
- 3 Leave the Movie Camera in this condition for approximately 4 hours.
After charging for 4 hours, the built-in lithium battery can power the clock for approximately 3 months.

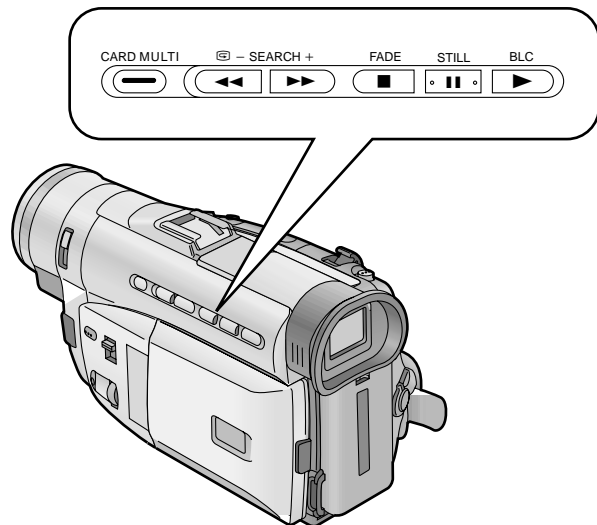
Information for your safety

WARNING

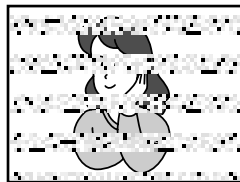
THE LITHIUM BATTERY IN THIS EQUIPMENT MUST ONLY BE REPLACED BY QUALIFIED PERSONNEL. WHEN NECESSARY, CONTACT YOUR LOCAL PANASONIC SUPPLIER.



Title	Procedure				Remarks, etc.
<h3>Recording (Filming)</h3> <p>After setting the [OFF/ON] Switch to [ON] to turn the Movie Camera on and setting the Mode Selector Switch to [AUTO], you can start recording simply by pressing the Recording Start/Stop Button. In this case, the Movie Camera adjusts the focus and white balance fully automatically.</p> <p>Before Recording Check the following settings before recording especially important scenes:</p> <ul style="list-style-type: none">•Recording Speed (p. 13, 18, 64) When you intend to perform editing or audio dubbing afterward: Set to [SP].•Audio Recording Mode (p. 18, 64) When you want to perform audio dubbing afterward: Set to [12bit].•Cinema Mode (p. 18, 32)•Depending on the light source and recording situation, correct automatic focusing and white balance adjustment may not be possible. In such cases, adjust them manually. Focus: p. 28 White Balance: p. 56 <div><p>Mode Selector Switch</p></div>	<h3>1</h3> <p>Set the [OFF/ON] Switch to [ON]. The [CAMERA] Lamp lights.</p> <div></div>	<h3>2</h3> <p>Press the Recording Start/Stop Button. Recording starts. The [RECORD] Indication appears briefly and then changes to [REC].</p> <div></div>	<h3>3</h3> <p>To pause recording: Press the Recording Start/Stop Button again. The [PAUSE] Indication appears.</p> <div></div>	<h3>4</h3> <p>To finish recording: Set the [OFF/ON] Switch to [OFF].</p> <div></div>	<ul style="list-style-type: none">•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 [OFF/ON] Switch to [OFF] and then to [ON] again.•Be sure to remove the Lens Cap before setting the [OFF/ON] Switch to [ON]. If the Lens Cap is attached to the Lens when you set the [OFF/ON] Switch to [ON], the automatic white balance adjustment (p. 95) may not be precise. <p>Recording Indicating (Tally) Lamp The Recording Lamp lights during recording to let the people in front of the Movie Camera know that recording is being performed. If you set [REC LAMP] on the [OTHER FUNCTIONS] Sub-Menu to [OFF], the Recording Lamp does not light.</p> <ul style="list-style-type: none">•Even if [REC LAMP] on the [OTHER FUNCTIONS] Sub-Menu is set to [OFF], the Recording Lamp flashes briefly to confirm when the Movie Camera has received a command from the Remote Controller. <div><p>Recording Indicating (Tally) Lamp</p></div>




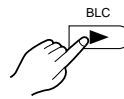
■ Video Head Clogging and Remedy
 When the video heads (which contact the tape) are dirty, the playback picture contains mosaic-like patterns or the whole screen becomes black. If they become even more dirty, the recording performance deteriorates and in the worst case, recording may not be possible at all.

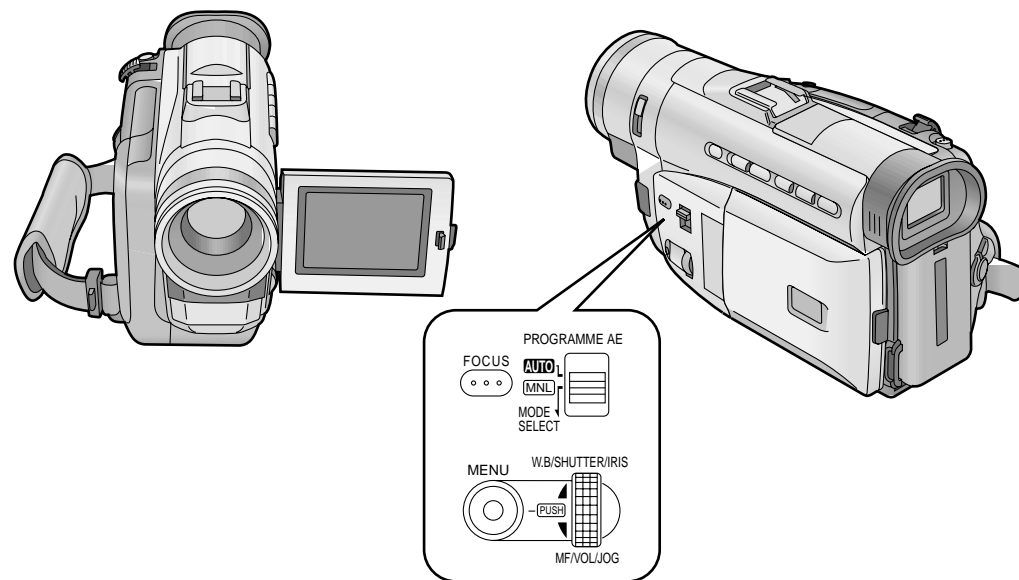


- Causes of Dirty Video Heads**
- A lot of dust in the air.
 - High-temperature and high-humidity environment.
 - Damaged tape.
 - Long-time use.

- Using the Mini-DV Format Digital Video Head Cleaner (VFK1451)**
- 1 Insert the Head Cleaner into the Movie Camera in the same way as a video cassette.
 - 2 Press the Play Button [▶], and after approximately 20 seconds press the Stop Button [■]. (Do not rewind the tape.)
 - 3 Take out the Head Cleaner. Insert a video cassette, perform recording and then play it back to check the picture.
 - 4 If the picture is still not clear, repeat above operation steps 1–3. (Do not use the Head Cleaner more than 3 times in succession.)
- This Video Head Cleaner (VFK1451) is available from Panasonic service centres.

- Notes:**
- Do not rewind the tape in the Head Cleaner after every use. Rewind it only after the tape has reached its end, and then use it again in the same way from the beginning.
 - If the video heads again become clogged with dirt soon after cleaning, this might be caused by a damaged tape. In this case, stop using that cassette immediately.
 - Be careful not to clean the video heads too much. (Too much cleaning could cause excessive wear to the video heads. If the video heads get worn, the picture is not played back clearly even after cleaning.)
 - If using the Head Cleaner does not clear the video head clogging, the Movie Camera requires cleaning or repairing by a service centre. Please consult with your dealer.
 - Video head cleaning due to clogging is not a malfunction of the product and is not covered by your warranty.

Title	Procedure	Remarks, etc.
<p>Checking If the Picture Is Recorded (Recording Check)</p> <p>To play back the final few seconds of the last recorded scene in the Recording Pause Mode.</p>	<p>1 Press the Recording Check Button [G] ① briefly in the Recording Pause Mode. The [CHK] Indication ② appears. After checking, the Movie Camera returns to the Recording Pause Mode.</p> 	<p>• For Recording Check, the Movie Camera must be in the same mode (SP or LP) as used for recording, otherwise the playback picture is distorted.</p>
<p>Recording Backlit Scenes (Backlight Compensation)</p> <p>To prevent the backlit subject from being recorded very dark. (Backlight means that the light falls on the subject from behind, i.e. the subject is between the light source and the Movie Camera.)</p>	<p>1 Keep the Backlight Button [BLC] pressed. The backlight is being compensated as long as you keep the Button pressed, and the subject is recorded more brightly. (The picture brightens up as a whole.)</p>  <p>Returning to Normal Recording Release the Backlight Button [BLC].</p>	

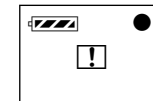


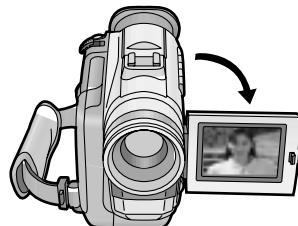
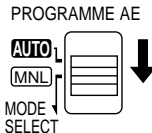
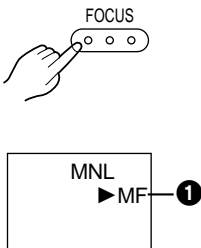
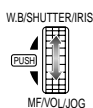
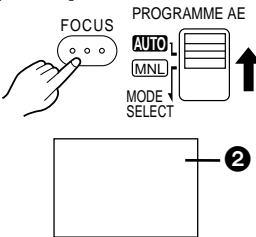
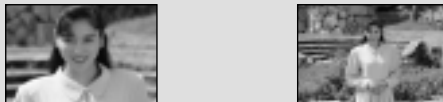
Mirror Mode for the Picture on the LCD Monitor (NV-DS15, NV-DS150, NV-DS25 only)

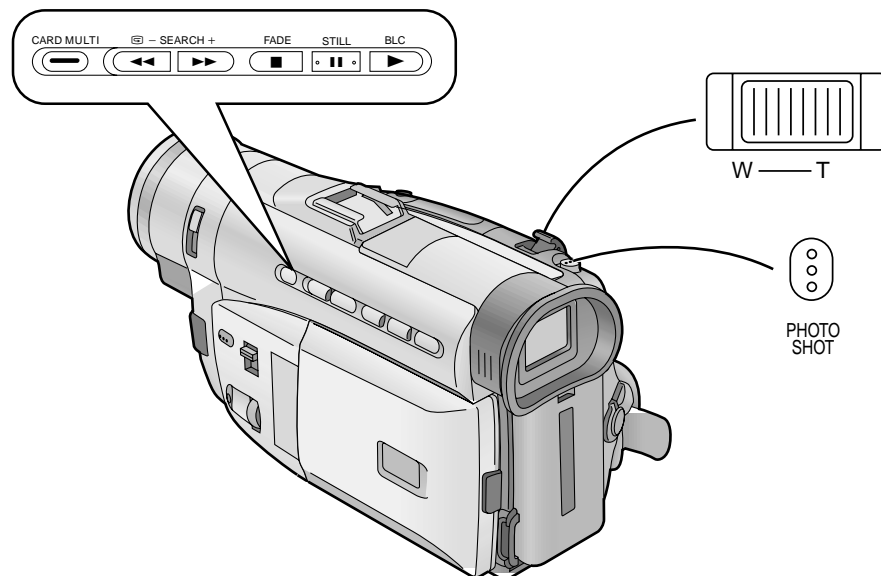
You are used to looking at yourself in the mirror. Therefore, when recording yourself with the LCD Monitor facing forward, the picture (as it is being recorded) might look unusual and distracting. If you prefer to see yourself on the LCD Monitor in the same way as you see yourself in a mirror, i.e. with the sides reversed, set [SELFSHOOT] on the [OTHER FUNCTIONS] Sub-Menu to [MIRROR]. However, the picture will still be recorded in the normal, non-reversed way. This mirror mode for the picture on the LCD Monitor works only during recording and in the Recording Pause Mode with the LCD Monitor facing forward. Also, it is completely different from the Mirror Mode of the Digital Effects 1 (p. 48).

- In the Mirror Mode, only the following indications are displayed.
- : Recording
- ||: Recording Pause
- ▬: Remaining Battery Power

When the General Warning/Alarm Indication [!] appears, turn the LCD Monitor backward so that you can confirm the actual Warning/Alarm Indication. (p. 100)



Title	Procedure			Remarks, etc.	
Recording Yourself (Recording with the LCD Monitor Facing Forward) (NV-DS15, NV-DS150, NV-DS25 only) This makes it possible to record yourself while viewing the picture on the LCD Monitor or to show the persons in front of the Movie Camera the picture being recorded.	1 Open the LCD Monitor and turn it so that it faces forward (lens side). 			Opening the LCD Monitor automatically turns off the Viewfinder. However, when you turn the LCD Monitor forward, the picture also appears in the Viewfinder. This lets you aim the Movie Camera and view the picture in the Viewfinder, while the persons in front of the Movie camera can check the picture on the LCD Monitor during recording.	
Focusing on the Subject Manually (Manual Focus) This makes it possible to adjust the focus manually for subjects and recording situations for which automatic focusing is not precise. MF: Manual Focus Mode MNL: Manual	1 Set the Mode Selector Switch to [MNL]. The [MNL] Indication appears. 	2 Press the [FOCUS] Button to make the [MF] Indication (Manual Focus Mode) ❶ appear. 	3 Turn the [PUSH] Dial to adjust the focus. 	Returning to the Automatic Focusing Mode Press the [FOCUS] Button to make the [MF] Indication disappear ❷. Or, set the Mode Selector Switch to [AUTO]. 	Hint for Manual Focus Adjustment ● If you adjust the focus in the wide-angle setting, the subject may go out of focus when you enlarge it. Therefore, enlarge the subject ❸ before you adjust the focus, so that the picture remains focused when you zoom out ❹.  ● If you want to adjust the focus manually after having adjusted the shutter speed (p. 58) or the iris (p. 58), be sure to press the [FOCUS] Button to make the [▶MF] Indication appear, even if the [MF] Indication is displayed.



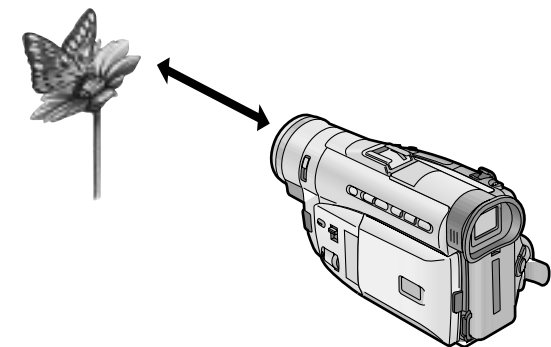
Using the Zoom Microphone Function
 When using Zoom-In to shoot from a distance, you can also clearly record the sound.

- Set the [ZOOM MIC] on the [RECORDING SETUP] Sub-Menu to [ON]. ([Z.MIC] Indication appears.) The [Z.MIC] Indication will appear even when an external microphone or audio equipment has been connected to the [MIC] Socket (p. 7) but the Zoom Microphone Function will not work.
- When using Zoom-In, the microphone direction changes from stereo to monaural.

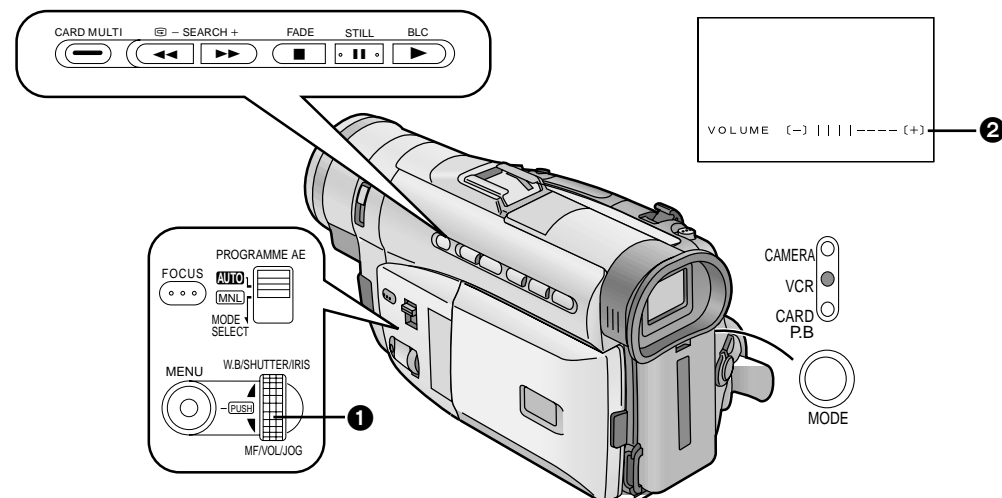
Digital Still Picture
 A picture can be viewed as a still picture by pressing the [STILL] Button. The Digital Still Picture Mode is released by pressing the button again.

- It is recommended that the [PHOTO SHOT] Button be pressed after the Digital Still Picture Mode has been established by pressing the [STILL] Button where the shot is to be taken.

Recording Extra Close-up Shots of Small Subjects (Macro Close-up Function)
 When the zoom magnification is 1×, the Movie Camera can focus on subjects down to a distance of approximately 5 mm between lens and subject. This allows recording very small subjects such as insects.



Title	Procedure		Remarks, etc.
Enlarging Your Subject or Widening the Recording Angle (Zooming In/Out) Recording close-ups of your subjects and recording wide-angle shots adds special effects to your videos. <div> </div>	1 To record a wider view (Zooming-out): Push the [W/T] Zoom Lever toward [W]. To enlarge your subject (Zooming-in): Push the [W/T] Zoom Lever toward [T]. •The Zoom Magnification Indication appears for a few seconds. <div> </div>	Enlarging Your Subjects Even More (Digital Zooming) If you set [EFFECT1] on the [DIGITAL EFFECT] Sub-Menu to [& ZOOM] or [ZOOM], it is possible to further enlarge the subject. For the item [D.ZOOM] on the [CAMERA SETUP] Sub-Menu, you can select either [40×] or [400×] as the maximum zoom magnification. The [D.ZOOM] Indication appears. <ul style="list-style-type: none"> •40×: Digital zooming up to 40×. •400×: Digital zooming up to 400×. •Up to 20×, the zooming is done optically. •The higher the Digital Zoom Magnification is, the lower is the picture quality. •When you have zoomed to 20× or higher (digital zoom range), manually adjusting the white balance is not possible. 	<ul style="list-style-type: none"> •The further you push the [W/T] Zoom Lever toward [W] or [T], the faster the zooming speed becomes. •When you have zoomed to the tele setting, precise focusing is only possible on subjects no closer than 2.2 metres.
Recording Still Pictures on the Cassette (Photoshot) With this function, you can record still pictures with sound for approximately 7 seconds each. This function is convenient for example for pictures that you want to print on a Video Printer. <div> </div>	1 Press the [PHOTO SHOT] Button. (This function can be used during recording.) The Movie Camera records a still picture for approximately 7 seconds and then switches over to the Recording Pause Mode. •The image in the Viewfinder also stands still. <div> </div>	Continuous Photoshot If you set [SHTR EFFECT] on the [OTHER FUNCTIONS] Sub-Menu to [ON] and keep the [PHOTO SHOT] Button pressed (either in the Recording Pause Mode or during recording), the Movie Camera automatically records still pictures successively at intervals of approximately 0.7 second until you release the button. <ul style="list-style-type: none"> •One more still picture may be recorded after you release the [PHOTO SHOT] Button. •As the still pictures recorded in the Continuous Photoshot Mode or in the Digital Still Picture Mode are not marked with photoshot index signals, they cannot be located by using the Photoshot Index Search Function and printed with the Auto Print Function. 	<ul style="list-style-type: none"> •If you set [SHTR EFFECT] on the [OTHER FUNCTIONS] Sub-Menu to [ON], the screen blinks briefly and a simulated shutter click sound can be recorded when you press the [PHOTO SHOT] Button. This audiovisual effect is also recorded. •With the still pictures that you have recorded in the Photoshot Mode, you can do the following: <ul style="list-style-type: none"> •Index Search (p. 42) •Automatic printing (p. 89) •The visual shutter effect and click sound may occur with slight delay after recording of the still picture has started. •The picture quality deteriorates slightly.



Search Lock Function

For longer Cue or Review Playback, press the Cue Button [▶▶] or the Review Button [◀◀] only briefly. As this locks the search function, you do not need to keep the button pressed for a long time.

- To resume normal playback, press the Play Button [▶].
- In Cue and Review Playback, pictures with fast-moving subjects may contain mosaic-like patterns.

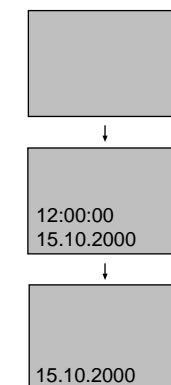
Hyper Check Function

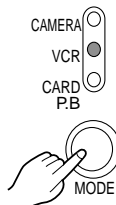


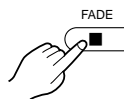

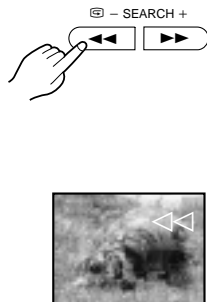
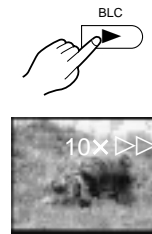

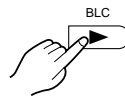
- If you press the Fast-forward Button [▶▶] during fast-forwarding of the tape or the Rewind Button [◀◀] during rewinding of the tape, Cue Playback or Review Playback continues for as long as you keep the Button pressed.
- At the beginning and end of Cue Playback or Review Playback, some momentary picture distortion may occur.

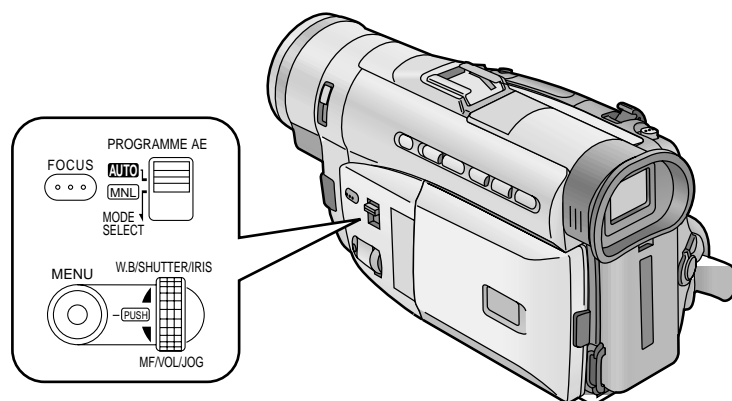
Making the Date/Time Indication Appear

This Movie Camera automatically records the date and time, however not directly in the picture but as part of the sub code (p. 96).

To make the Date/Time Indication appear, set [DATE/TIME] on the [DISPLAY SETUP] Sub-Menu to the desired setting. It is also possible to make the Date/Time Indication appear and change it by repeatedly pressing the [DATE/TIME] Button on the Remote Controller. (p. 81)



Title	Procedure				Remarks, etc.
Viewing the Just Recorded Scenes on the Movie Camera (Playback) You can play back recorded scenes right after recording.	1 Press the [MODE] Button until the [VCR] Lamp lights. 	2 Press the Rewind Button [◀◀] to rewind the tape. <ul style="list-style-type: none"> • Rewind the tape to the point where the recording started. • If the tape reaches the beginning during rewinding, it automatically stops. 	3 Press the Play Button [▶] to start playback. 	4 To stop playback: Press the Stop Button [■]. 	●Adjusting the Volume Keep the [PUSH] Dial ① pressed until the [VOLUME] Indication ② appears. Then, turn the [PUSH] Dial to adjust the volume. After adjusting, press the [PUSH] Dial to make the [VOLUME] Indication disappear. To adjust the volume with the Remote Controller, press the [T] or [W] Button to make the [VOLUME] Indication appear. You can then increase the volume by pressing the [T] Button or decrease it by pressing the [W] Button. A few seconds after finishing the adjustment, the [VOLUME] Indication disappears. <ul style="list-style-type: none"> • The output volume from the built-in speaker* and [PHONES] socket is adjusted. *built-in speaker: NV-DS15, NV-DS150, NV-DS25 only • When using the Playback Zoom Function, it is not possible to adjust the sound volume. • If a cassette recorded with copyright protection signal is played back, the screen becomes black.
Searching for a Scene That You Want to Play Back	Cue Playback Keep the Cue Button [▶▶] pressed during playback. 	Review Playback Keep the Review Button [◀◀] pressed during playback. 	Variable Speed Search Function It is possible to change the speed of Cue Playback or Review Playback. 1 Press the Play Button [▶] during playback. 	2 Turn the [PUSH] Dial to select the desired search speed. 	Returning to Normal Playback Press the Play Button [▶]. Playback continues at normal speed.  <ul style="list-style-type: none"> • The Variable Speed Search Function offers the following 6 different playback speeds both in forward and reverse directions: 1/5× (slow playback in SP Mode only), 1/3× (slow playback in LP Mode only), 1×, 2×, 5×, 10×, 20× • During Variable Speed Search, mosaic-like patterns appear in the picture. • When using the Variable Speed Search Function, the sound is muted.



Using the Jog Dial (Jog Playback)

By turning the Jog Dial ([PUSH] Dial) on the Movie Camera in the Still Playback Mode, you can advance the still pictures one by one in forward or reverse direction.

forward

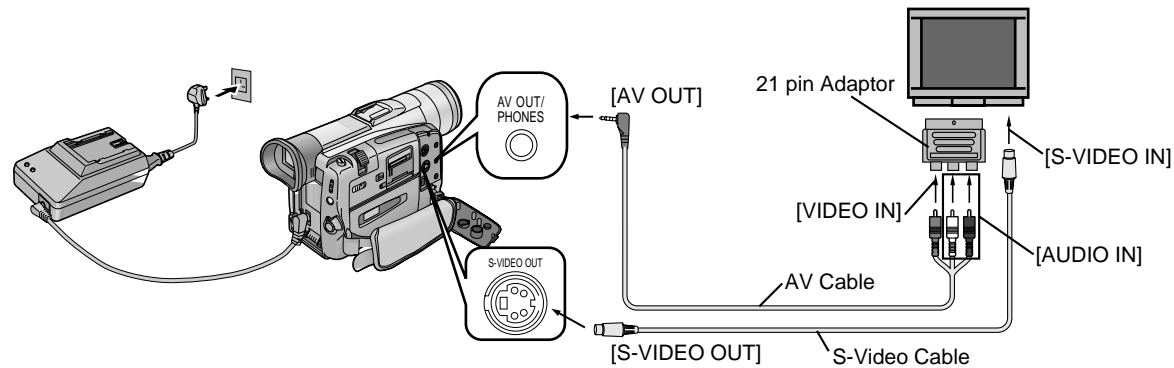
W.B./SHUTTER/IRIS

PUSH

MF/VOL/JOG

reverse

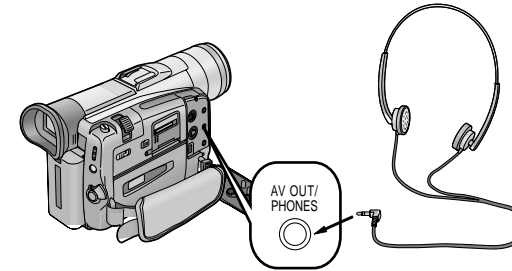
Title	Procedure			Remarks, etc.
Playing Back in Slow Motion (Slow Motion Playback)	1 Press the Play Button [▶].	2 Press the Slow Motion/Still Advance Button [◀▶] or [▶▶] on the Remote Controller.	Resuming Normal Playback Press the Play Button [▶]. Playback continues with normal speed.	<ul style="list-style-type: none"> During slow motion playback in reverse direction, the Time Code Indication may not be accurate. Scenes recorded in the SP Mode are played back at approximately 1/5th of the normal speed. Scenes recorded in the LP Mode are played back at approximately 1/3rd of the normal speed.
Playing Back Still Pictures and Advancing Them One by One (Still Playback/Still Advance Playback) You can freeze the action during playback and advance the still pictures one by one.	1 Press the Play Button [▶].	2 Press the Pause Button [⏏]. The playback picture stops in the Still Playback Mode.	3 Press the Slow Motion/Still Advance Button [◀▶] or [▶▶] on the Remote Controller.	Resuming Normal Playback Press the Play Button [▶]. Playback continues with normal speed.
				Pressing the [◀▶] Button advances the still pictures one by one in reverse direction. Pressing the [▶▶] Button advances the still pictures one by one in forward direction. <ul style="list-style-type: none"> Each press of the [◀▶] Button advances to the next still picture in reverse direction. Each press of the [▶▶] Button advances to the next still picture in forward direction. Keeping either button pressed continuously advances the still pictures one by one until you release the button. If you leave the Movie Camera in the Still Playback Mode for more than 6 minutes, it switches over to the Stop Mode to protect the video heads against excessive wear. During Still Advance Playback, the Time Code Indication may not be accurate. During Still Playback, adjusting the sound volume is not possible.



Listening to the Playback Sound via Headphones

If you want to use headphones to listen to the playback sound, connect them to the [PHONES] Socket on the Movie Camera. In this case, no sound (including beep and shutter click sounds) is reproduced from the Movie Camera's built-in speaker*.

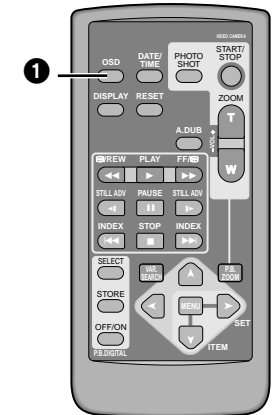
*built-in speaker: **NV-DS15, NV-DS150, NV-DS25 only**

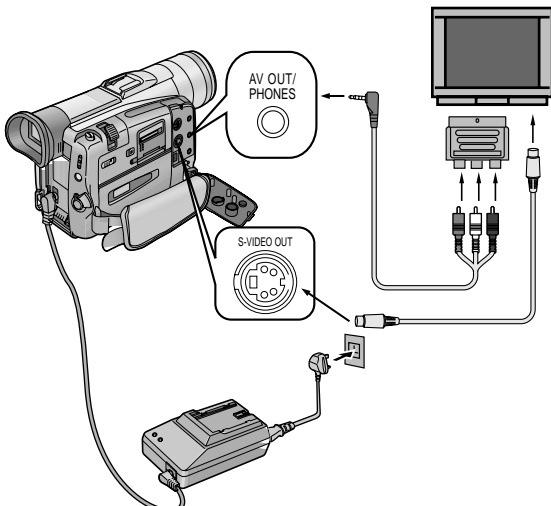


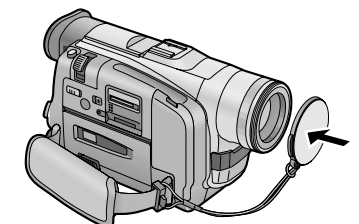
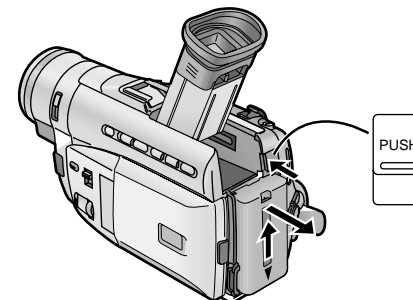
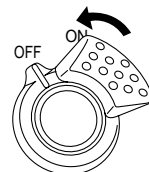
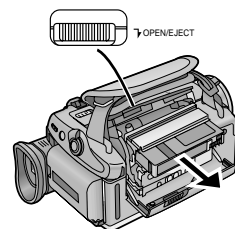
Making the Indications Appear on the TV Screen

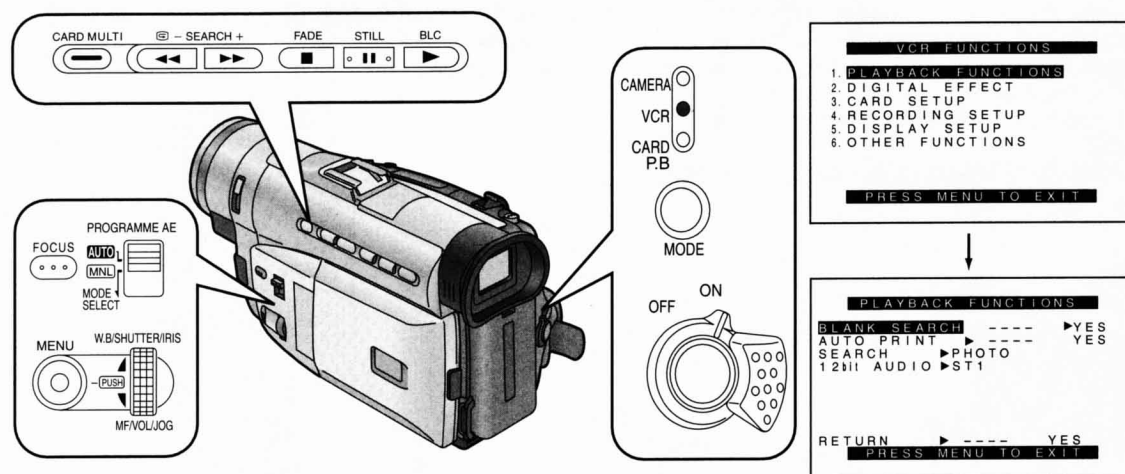
Press the [OSD] Button **1** on the Remote Controller.

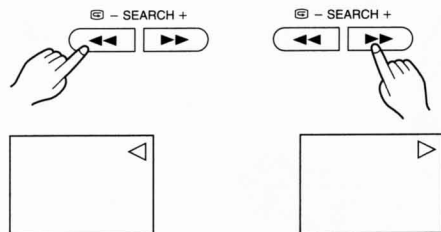
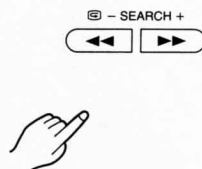

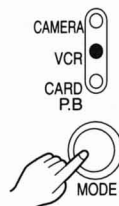
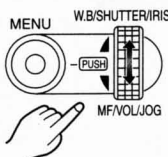


The On-Screen Indications also appear on the TV screen.

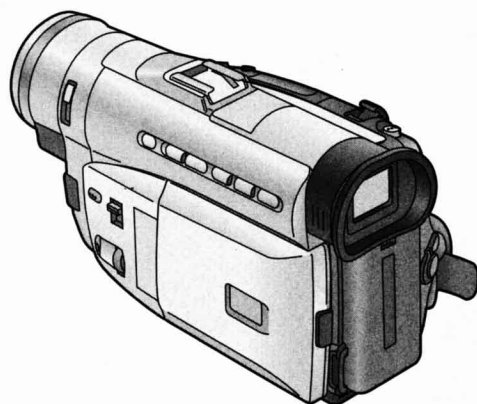


Title	Procedure			Remarks, etc.
Playing Back on a TV By connecting the Movie Camera to a TV, you can watch playback of the recorded scenes on the TV screen.	1 Connect the [AV OUT] Socket on the Movie Camera with the Video and Audio Input Sockets on the TV. Use the AV Cable and to connect to the TV. If your TV is equipped with an S-Video Socket, also connect the S-Video Cable.			 <ul style="list-style-type: none">• Before connecting, turn off both the Movie Camera and the TV.• If a cassette recorded with copyright protection signal is played back, the screen becomes black. However, scenes recorded with this Movie Camera do not contain a copyright protection signal.• If your TV is not equipped with AV Input Sockets, the 21pin Adaptor (purchase separately) is necessary. Consult your dealer.
After Use For models NV-DS15, NV-DS150 and NV-DS25, first close the LCD Monitor.	1 Take out the cassette. (p. 12)	2 Set the [OFF/ON] Switch to [OFF].	3 Remove the Battery (p. 11) and retract the Viewfinder.	
				Attaching the Lens Cap After use, attach the supplied Lens Cap to the Lens to protect it.

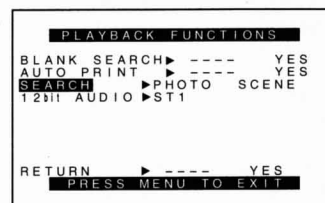




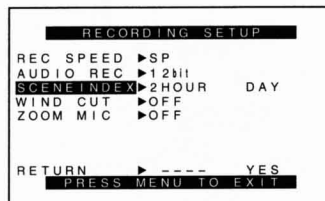
Title	Procedure			Remarks, etc.	
Viewing Recorded Scenes During Recording Pause (Camera Search) You can view recorded scenes when the Movie Camera is in the Recording Pause Mode. The Camera Search Function is convenient to search for a scene from which you want to start recording a new scene with smooth scene-to-scene transition.	<div><div>1 Keep the Reverse Search Button [–SEARCH] or the Forward Search Button [SEARCH+] pressed. Pressing the [–SEARCH] Button plays back the picture in reverse direction. Pressing the [SEARCH+] Button plays back the picture in forward direction.</div><div></div></div> <div><div>2 Starting to Record from the Desired Position: Release the pressed Search Button. The Movie Camera is in the Recording Pause Mode.</div><div></div></div> <div><div>3 Press the Recording Start/Stop Button to start recording. The Movie Camera starts recording a new scene with smooth scene-to-scene transition.</div><div></div></div>			<ul style="list-style-type: none">• In the Camera Search Mode, the picture may contain mosaic-like patterns. However, this is a phenomenon particular to digital video and completely normal.• If the Recording Speed Mode (SP/LP) of the previous and the new recording are different, the playback picture may be distorted.	
Searching for the End of the Recorded Part on a Cassette (Blank Search) With the Blank Search Function, you can quickly locate the end of the recorded part on a cassette (or a blank part between recordings).	<div><div>1 Press the [MODE] Button until the [VCR] Lamp lights.</div><div></div></div>	<div><div>2 Select the [PLAYBACK FUNCTIONS] on the [VCR FUNCTIONS] Main-Menu. (p. 16) The [PLAYBACK FUNCTIONS] Sub-Menu appears.</div><div></div></div>	<div><div>3 Turn the [PUSH] Dial to select [BLANK SEARCH].</div><div></div></div>	<div><div>4 Press the [PUSH] Dial to select [YES]. Approximately 1 second before the end of the last recorded scene, the Movie Camera switches over to the Still Playback Mode.</div><div></div></div>	<ul style="list-style-type: none">• If there is no blank part on a cassette, the Movie Camera stops at the end of the tape.• When the Blank Search has finished, you can press the [MODE] Button until the [CAMERA] Lamp lights, and then start recording. The new scene is recorded with a smooth transition from the last to the new scene. <p>Cancelling the Blank Search Before It Has Finished Press the [■] Button.</p>



VCR Mode



CAMERA Mode



Index Search

To allow easy searching for desired scenes, this Movie Camera automatically records index signals during recording as follows:
(While an index signal is being recorded, the [INDEX] Indication flashes for a few seconds.)

INDEX

1 Photoshot Index Signal

To search for still pictures recorded in the Photoshot Mode (p. 30) and to use for automatic printing (p. 89).
A photoshot index signal is automatically recorded every time you record a still picture in the Photoshot Mode.
However, in the Continuous Photoshot Mode (p. 31), no photoshot index signals are recorded.

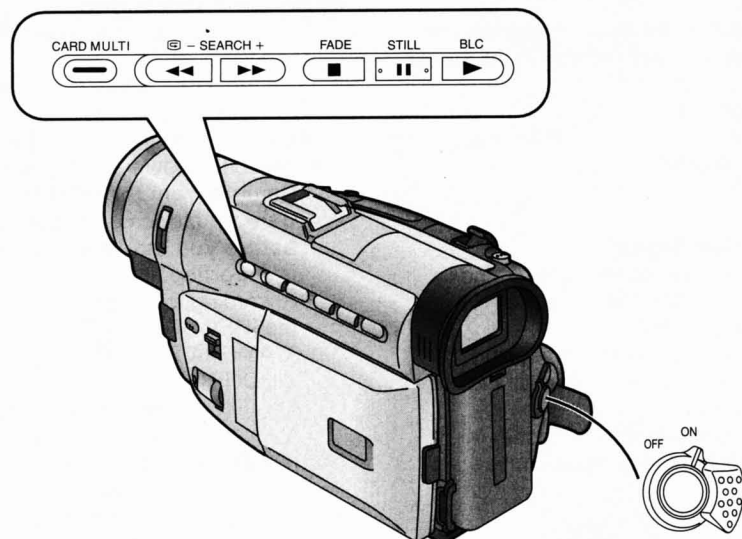
2 Scene Index Signal


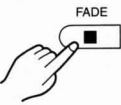

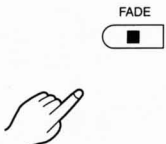

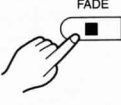

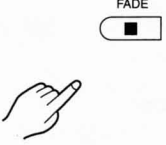
To search for the beginning of recorded scenes.
A scene index signal is automatically recorded in the following cases:

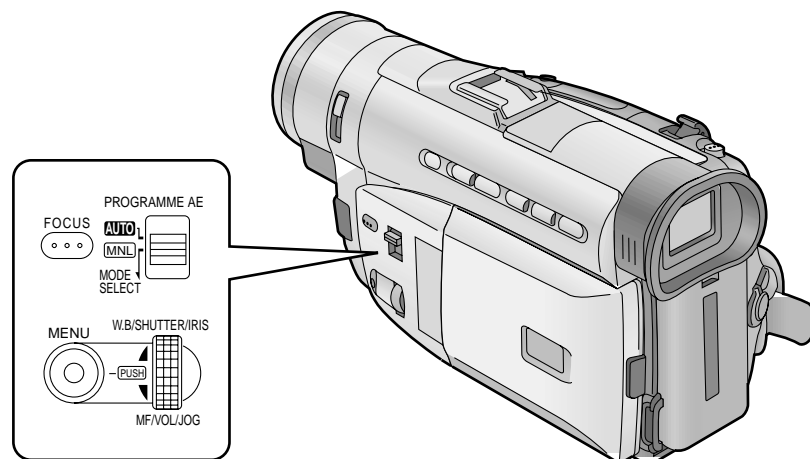
- When you start recording after inserting a cassette. **However, if you switch the Movie Camera from the VCR Mode over to the Camera Mode or set the date and/or time before you start recording, no index signal is recorded.**
- According to the setting of [SCENEINDEX] on the [RECORDING SETUP] Sub-Menu of the [CAMERA FUNCTIONS] Main-Menu:
 - [2HOUR]: An index signal is recorded when recording is restarted after a lapse of more than 2 hours.
 - [DAY]: An index signal is recorded when recording is restarted after the date has changed since the last recording.

Title	Procedure		Remarks, etc.
Searching for the Beginning of Recorded Scenes Marked with Index Signal (Index Search) ■ Searching for Photoshot Pictures (Photoshot Index Search) • Press the [MODE] Button until the [VCR] Lamp lights. • Set [SEARCH] on the [PLAYBACK FUNCTIONS] Sub-Menu to [PHOTO].	Photoshot Index Search in Forward Direction Press the Index Button [▶▶] on the Remote Controller.	Photoshot Index Search in Reverse Direction Press the Index Button [◀◀] on the Remote Controller.	• At every press of the corresponding button, the tape is fast-forwarded or rewound to the next still picture recorded in the Photoshot Mode. After reaching the next still picture, the still picture is played back continually, however the sound only for approximately 4 seconds. (If you leave the Movie Camera in the Still Playback Mode for more than 6 minutes, it switches over to the Stop Mode to protect the video heads against excessive wear.)
■ Searching for the Beginning of Recorded Scenes (Scene Index Search) • Press the [MODE] Button until the [VCR] Lamp lights. • Set [SEARCH] on the [PLAYBACK FUNCTIONS] Sub-Menu to [SCENE].	Scene Index Search in Forward Direction Press the Index Button [▶▶] on the Remote Controller.	Scene Index Search in Reverse Direction Press the Index Button [◀◀] on the Remote Controller.	• When you briefly press the corresponding button once, the [S 1] Indication appears and the search for the next scene marked with an index signal starts. After the Scene Index Search has started, every time you press the button, the indication changes successively from [S 2] to [S 9], and the beginning of the scene corresponding to the selected number is located. After reaching the desired scene, playback starts automatically. (At a time, Scene Index Search in forward or reverse direction is possible up to the ninth scene marked with index signal from the present tape position.)

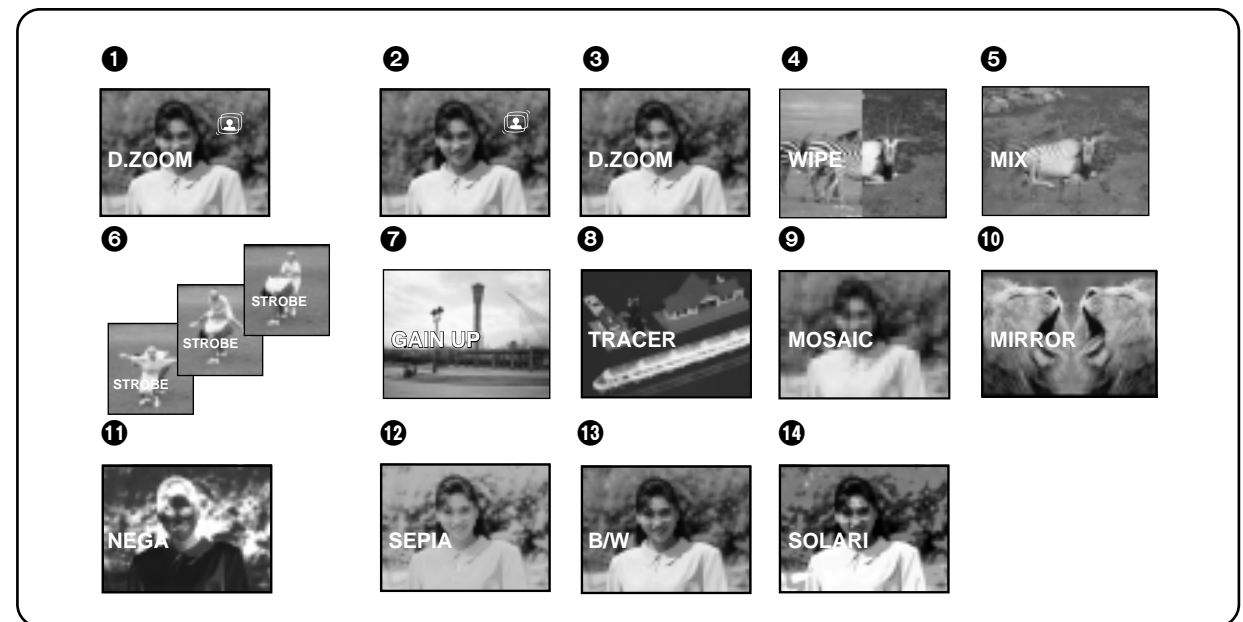
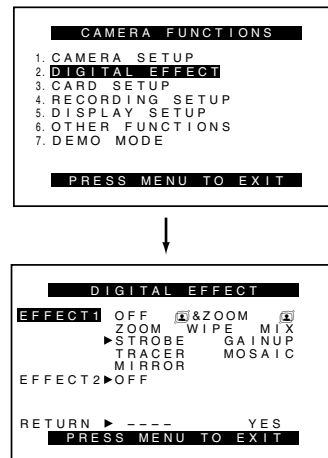
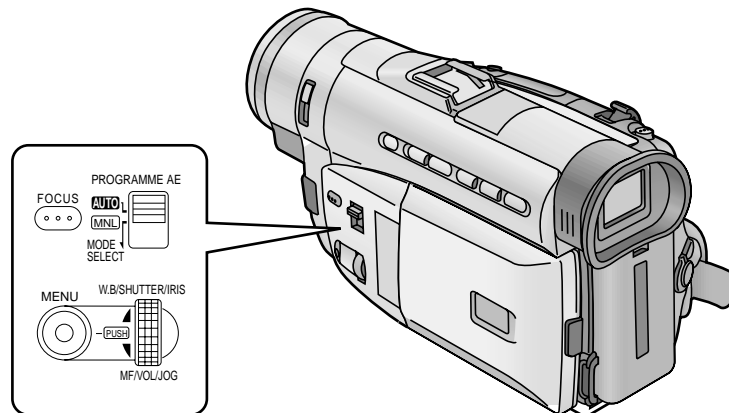
S 3

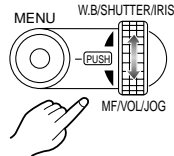
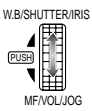
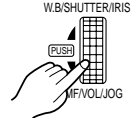


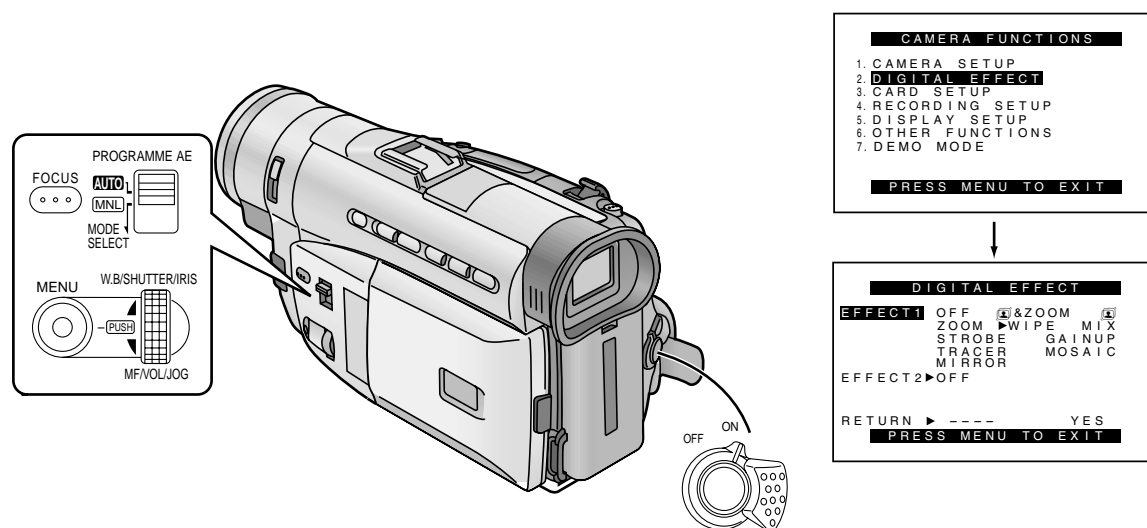
Title	Procedure			Remarks, etc.
<p>Starting to Record with Gradually Appearing Picture and Sound (Fading In)</p> <p>Fading-in lets you make the picture and sound appear gradually from a black screen at the beginning of a scene.</p> 	<p>1 With the Movie Camera in the Recording Pause Mode, keep the Fade Button [FADE] pressed. The picture gradually disappears.</p> 	<p>2 When the picture has completely disappeared, press the Recording Start/Stop Button to start recording.</p> 	<p>3 Approximately 3 seconds after the recording has started, release the Fade Button [FADE]. The picture gradually appears again.</p> 	<p>•Fading-in and fading-out cannot be used when recording still pictures in the Photoshot Mode (p. 30).</p>
<p>Ending the Recording of a Scene with Gradually Disappearing Picture and Sound (Fading Out)</p> <p>Fading-out lets you make the picture and sound disappear gradually into a black screen at the end of a scene.</p> 	<p>1 During recording, keep the Fade Button [FADE] pressed. The picture gradually disappears.</p> 	<p>2 After the picture has completely disappeared, press the Recording Start/Stop Button to stop recording. The Movie Camera is in the Recording Pause Mode.</p> 	<p>3 Release the Fade Button [FADE].</p> 	

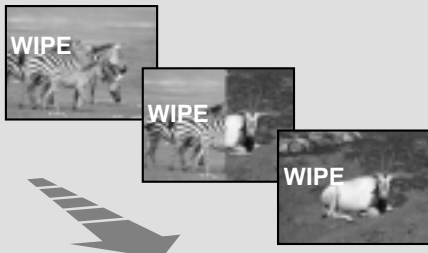
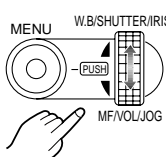
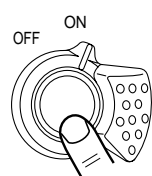
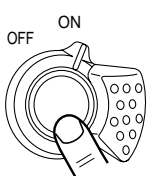
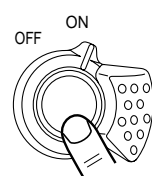
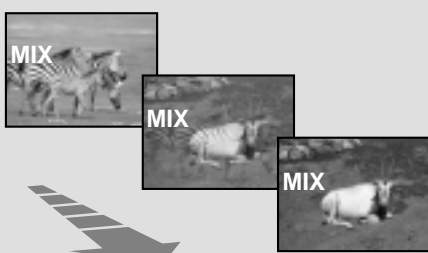
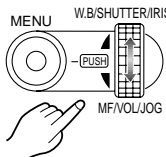
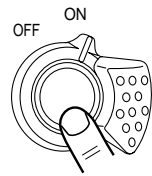
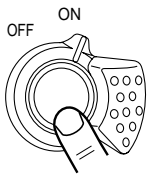
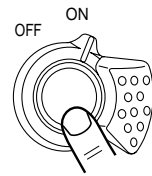


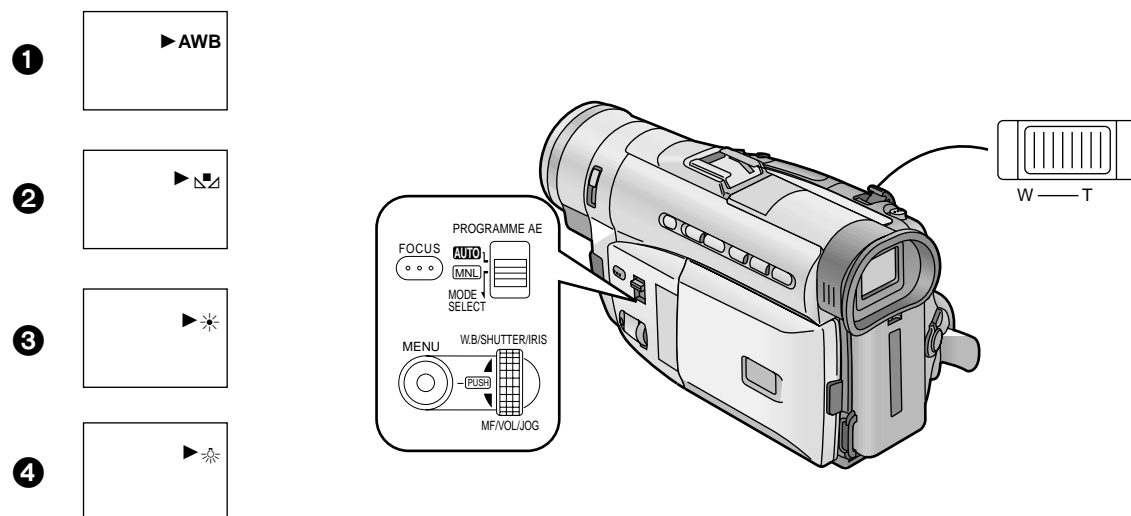
Title	Procedure		Remarks, etc.
<p>Recording in Special Situations (Programme AE)</p> <p>This function lets you select Automatic Exposure settings optimized for special recording situations.</p> <div data-bbox="194 1016 600 1427"> </div>	<p>1</p> <p>Slide the Mode Selector Switch down repeatedly from the [MNL] position, until the Movie Camera is put in the desired mode ([], [], [], [] or []).</p> <p>The indication of the selected mode appears.</p> <div data-bbox="930 1035 1100 1180"> </div> <p>[] Sports Mode To record scenes with fast-moving subjects such as sports scenes.</p> <p>[] Portrait Mode To make subjects stand out sharply from the background.</p> <p>[] Low Light Mode To record dark scenes more brightly.</p> <p>[] Spotlight Mode To record subjects under bright spotlights such as at a party, in the theatre, etc.</p> <p>[] Surf & Snow Mode To record subjects in brightly lit surroundings such as on a ski slope, beach, etc.</p>	<p>Cancelling the Programme AE Function Set the Mode Selector Switch to [AUTO].</p> <div data-bbox="1602 1035 1772 1180"> </div>	<p>• It is not possible to adjust the shutter speed (p. 58) or the iris value (p. 58) when one of the Programme AE Modes is selected.</p> <p>Sports Mode</p> <ul style="list-style-type: none"> • When playing back on a VCR scenes that you have recorded in the Sports Mode, you can enjoy slow motion and still playback of very sharp images with fine details. • During normal playback, movements in the picture may not be smooth. • Avoid recording under fluorescent, mercury-vapour or sodium lamps in this mode, as the colour and the brightness of the playback picture might fluctuate. • When recording subjects lit by strong lights or with much light reflection, the playback picture may contain vertical streaks of light. • When the scene is not sufficiently lit, the [] indication flashes. • When using this mode for recording indoors, the playback picture may flicker. • It is not possible to use the Sports Mode [] together with the Gain-up Mode [GAIN UP]. <p>Portrait Mode</p> <ul style="list-style-type: none"> • When using this mode for recording indoors, the playback picture may flicker. • It is not possible to use the Portrait Mode [] together with the Gain-up Mode [GAIN UP]. <p>Low Light Mode</p> <ul style="list-style-type: none"> • It may not be possible to sufficiently brighten up extremely dark scenes. <p>Spotlight Mode</p> <ul style="list-style-type: none"> • When using this mode, the recorded picture may be extremely dark. • If a subject is extremely bright, the recorded picture may be whitish. <p>Surf & Snow Mode</p> <ul style="list-style-type: none"> • If a subject is extremely bright, the recorded picture may be whitish.

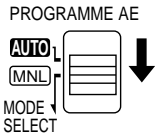

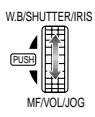
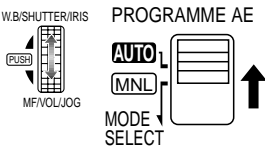
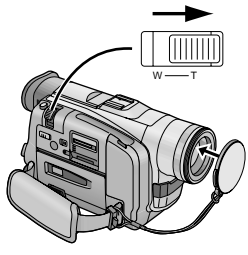
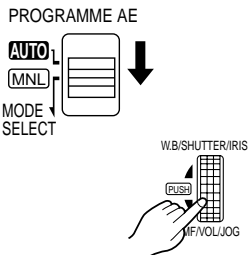

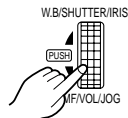


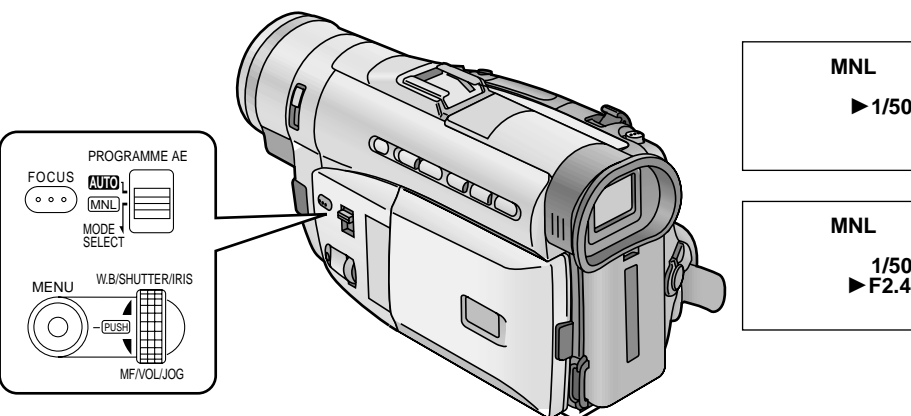
Title	Procedure	Remarks, etc.
<p>Recording with Special Effects (Digital Effects)</p> <p>In addition to the Super Image Stabilizer and Digital Zoom, this Movie Camera offers you various digital effect modes to make it easy to enhance your scenes in many creative ways.</p>	<div data-bbox="743 745 1347 1213"> <p>1 Select the [DIGITAL EFFECT] on the [CAMERA FUNCTIONS] Main-Menu. (p. 16)</p>  </div> <div data-bbox="1347 745 1992 1213"> <p>2 Turn the [PUSH] Dial to select [EFFECT1] or [EFFECT2].</p>  </div> <div data-bbox="1347 1213 1992 1839"> <p>3 Press the [PUSH] Dial to select the desired digital effect.</p>  </div> <div data-bbox="743 1222 1347 1839"> <p>Digital Effects 1 [EFFECT1]</p> <p>1 Super Image Stabilizer and Digital Zoom Mode [D.ZOOM] (p. 31, 32) This combination mode allows recording in the extreme tele range and prevents shaky picture.</p> <p>2 Super Image Stabilizer mode [WIPE] (p. 32) This prevents shaky pictures when recording in the tele range of from a moving vehicle.</p> <p>3 Digital Zoom Mode [D.ZOOM] (p. 31) It enlarges the subject beyond the optical zooming range.</p> <p>4 Wipe Mode [WIPE] It gradually replaces a picture of the last previously recorded scene with the picture of the new scene, like drawing the curtain. For details, (p. 50)</p> <p>5 Mix Mode [MIX] It gradually fades out the picture of the last previously recorded scene while fading in the picture of the new scene. For details, (p. 50)</p> <p>6 Strobe Mode [STROBE] It records the pictures with a stroboscope-like effect.</p> </div> <div data-bbox="1347 1222 1992 1839"> <p>7 Gain-up Mode [GAIN UP] It electronically brightens up the picture. In this mode, adjust the focus manually.</p> <p>8 Trailing Effect Mode [TRACER] The picture is recorded with a trailing effect.</p> <p>9 Mosaic Mode [MOSAIC] The picture becomes mosaic-like.</p> <p>10 Mirror Mode [MIRROR] The right half of the picture is a mirror image of the left half.</p> <p>Digital Effects 2 [EFFECT2]</p> <p>11 Negative Mode [NEGA] The recorded pictures have reversed colours similar to photographic negatives.</p> <p>12 Sepia Mode [SEPIA] Scenes are recorded with a brown tint similar to the colour of old photographs.</p> <p>13 Black & White Mode [B/W] The picture is recorded in black and white.</p> <p>14 Solarisation Mode [SOLARI] The picture is recorded with an effect similar to a painting.</p> </div>	<p>Remarks, etc.</p> <ul style="list-style-type: none"> • If you have set [EFFECT1] on the [DIGITAL EFFECT] Sub-Menu to [GAINUP], you need to adjust the focus manually; however, adjusting the shutter speed (p. 58) and selecting a white balance mode (p. 56) are not possible. • If you have set [EFFECT2] on the [DIGITAL EFFECT] Sub-Menu to [B/W] or [SEPIA], changing the selected white balance mode is not possible. • It is not possible to use the Sports Mode [] or the Portrait Mode [] together with the Gain-up Mode [GAIN UP]. <p>Cancelling the Digital Effect Set [EFFECT1] or [EFFECT2] on the [DIGITAL EFFECT] Sub-Menu to [OFF].</p>

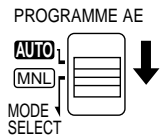
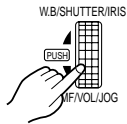

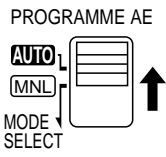
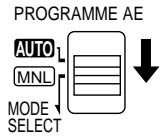
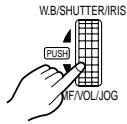

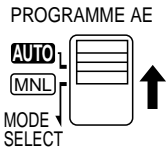


Title	Procedure				Remarks, etc.
Recording with Special Effects (Digital Effects) (Continued) ■ Wipe Mode <p>It gradually replaces a still picture of the last recorded scene with the moving picture of the new scene, like drawing a curtain.</p> 	1 <p>Set [EFFECT1] on the [DIGITAL EFFECT] Sub-Menu to [WIPE] and exit the Menu. (p. 48)</p> <p>The [WIPE] Indication appears.</p> 	2 <p>Press the Recording Start/Stop Button to start recording.</p> <p>The normal recording starts.</p> 	3 <p>Press the Recording Start/Stop Button to pause recording.</p> <p>The last picture is stored in memory.</p> <p>The [WIPE] Indication changes to [WIPE].</p> 	4 <p>Press the Recording Start/Stop Button to start recording again.</p> <p>The last picture of the previous scene is gradually replaced by the new scene.</p> 	<ul style="list-style-type: none"> If you perform any of the following operations after performing Step 3, the picture stored in memory is erased and the Wipe Function cannot be used: <ul style="list-style-type: none"> Selecting any other digital function in [EFFECT1] or in [EFFECT2] on the [DIGITAL EFFECT] Sub-Menu. Using the Camera Search Function. <p>Wipe from a Photoshot Still Picture</p> <p>Instead of performing the Wipe from the last recorded picture, you can store a still picture in memory by pressing the [PHOTO SHOT] Button after Step 1 and then perform Step 4.</p>
■ Mix Mode <p>It gradually fades out a still picture of the last recorded scene while fading in the moving picture of the new scene.</p> 	1 <p>Set [EFFECT1] on the [DIGITAL EFFECT] Sub-Menu to [MIX] and exit the Menu. (p. 48)</p> <p>The [MIX] Indication appears.</p> 	2 <p>Press the Recording Start/Stop Button to start recording.</p> <p>The normal recording starts.</p> 	3 <p>Press the Recording Start/Stop Button to pause recording.</p> <p>The last picture is stored in memory.</p> <p>The [MIX] Indication changes to [MIX].</p> 	4 <p>Press the Recording Start/Stop Button to start recording again.</p> <p>The last picture gradually fades out while the new scene fades in.</p> 	<ul style="list-style-type: none"> If you perform any of the following operations after performing Step 3, the picture stored in memory is erased and the Mix Function cannot be used: <ul style="list-style-type: none"> Selecting any other digital function in [EFFECT1] or in [EFFECT2] on the [DIGITAL EFFECT] Sub-Menu. Using the Camera Search Function. <p>Mix from a Photoshot Still Picture</p> <p>Instead of performing the Mix from the last recorded picture, you can store a still picture in memory by pressing the [PHOTO SHOT] Button after Step 1 and then perform Step 4.</p>



Title	Procedure				Remarks, etc.
<p>Recording with Natural Colours (White Balance)</p> <p>This Movie Camera automatically adjusts the white balance to ensure that the pictures are recorded with natural colours. For certain types of subjects and lighting conditions, however, this Auto White Balance Adjustment Mode may not be able to ensure natural colours (p. 95). In these cases, you can select either one of the 3 preset modes explained below (indoor, outdoor, or the last manually adjusted white balance setting), or you can manually adjust the white balance.</p> <p>The modes change in the following order:</p> <ol style="list-style-type: none"> Automatic White Balance Adjustment [AWB] Last manually adjusted White Balance setting [] Outdoor Mode [] Indoor Mode [] (recording under incandescent lamp) 	<p>1</p> <p>Set the Mode Selector Switch to [MNL]. The [MNL] Indication appears.</p> 	<p>2</p> <p>Press the [PUSH] Dial. The [AWB] Indication appears.</p> 	<p>3</p> <p>Turn the [PUSH] Dial to select the desired White Balance Mode.</p> 	<p>Returning to the Auto White Balance Adjustment Mode Turn the [PUSH] Dial until the [AWB] Indication appears. Or, set the Mode Selector Switch to [AUTO].</p> 	<p>Notes about the Recording with Natural Colours</p> <ul style="list-style-type: none"> Be sure to remove the Lens Cap before setting the [OFF/ON] Switch to [ON]. If the Lens Cap is still attached to the Lens when the [CAMERA] Lamp lights, the automatic white balance setting may not be precise. <p>Notes about the Adjusting the White Balance Manually</p> <ul style="list-style-type: none"> It is not possible to manually adjust the white balance when you have zoomed to 20X or higher (digital zoom range), when [EFFECT1] on the [DIGITAL EFFECT] Sub-Menu is set to [GAINUP] and when [EFFECT2] is set to [SEPIA] or [B/W]. We recommend that you adjust the white balance anew whenever there is a change in the recording situation. <p>In the Following Cases, the [] Indication Flashes:</p> <ul style="list-style-type: none"> When you recall the last manually adjusted white balance setting The flashing indication tells you that the white balance setting you last adjusted is still maintained. This setting is kept until you adjust the white balance again. When you are trying to adjust the white balance in a dark place Under weak illumination, precise manual white balance adjustment may not be possible. In this case, set the Mode Selector Switch to [AUTO] to record with automatic white balance adjustment. During manual adjustment of the white balance The [] Indication flashes while the white balance is being adjusted. When the white balance adjustment is finished, the [] Indication stops flashing and remains lit.
<p>Adjusting the White Balance Manually</p> <p>Use the Manual White Balance Adjustment Mode for all types of lighting outside the range ① (p. 95), as the Auto White Balance Adjustment Mode can only ensure natural colours for the types of lighting within that range. For optimum results under almost any types of lighting, we recommend that you adjust the white balance manually for each new scene.</p>	<p>1</p> <p>Attach the Lens Cap and zoom in until the entire screen becomes white.</p> 	<p>2</p> <p>Operate the above step 1 and 2. The [AWB] Indication appears.</p> 	<p>3</p> <p>Turn the [PUSH] Dial until the [] Indication appears.</p> 	<p>4</p> <p>Keep the [PUSH] Dial pressed until the [] Indication stops flashing and remains lit.</p> 	<p>Notes about the Adjusting the White Balance Manually</p> <ul style="list-style-type: none"> It is not possible to manually adjust the white balance when you have zoomed to 20X or higher (digital zoom range), when [EFFECT1] on the [DIGITAL EFFECT] Sub-Menu is set to [GAINUP] and when [EFFECT2] is set to [SEPIA] or [B/W]. We recommend that you adjust the white balance anew whenever there is a change in the recording situation. <p>In the Following Cases, the [] Indication Flashes:</p> <ul style="list-style-type: none"> When you recall the last manually adjusted white balance setting The flashing indication tells you that the white balance setting you last adjusted is still maintained. This setting is kept until you adjust the white balance again. When you are trying to adjust the white balance in a dark place Under weak illumination, precise manual white balance adjustment may not be possible. In this case, set the Mode Selector Switch to [AUTO] to record with automatic white balance adjustment. During manual adjustment of the white balance The [] Indication flashes while the white balance is being adjusted. When the white balance adjustment is finished, the [] Indication stops flashing and remains lit.



Title	Procedure			
<p>Adjusting the Shutter Speed Manually</p> <p>To achieve special creative effects or to cope with special lighting situations or fast-action scenes, you can adjust the shutter speed manually.</p>	<p>1 Set the Mode Selector Switch to [MNL]. The [MNL] Indication appears.</p> 	<p>2 Press the [PUSH] Dial until the Shutter Speed Indication appears. You can change between the Shutter Speed, the Iris (F Number), and the Manual White Balance Indications by repeatedly pressing the [PUSH] Dial.</p> 	<p>3 Turn the [PUSH] Dial to adjust the shutter speed.</p> 	<p>Returning to the Normal Shutter Speed Set the Mode Selector Switch to [AUTO].</p> 
<p>Adjusting the Iris (F Number) Manually</p> <p>To achieve special creative effects or to cope with special lighting situations, you can adjust the iris (F number) manually.</p>	<p>1 Set the Mode Selector Switch to [MNL]. The [MNL] Indication appears.</p> 	<p>2 Press the [PUSH] Dial until the [F] Indication appears. You can change between the iris (F Number), the Manual White Balance, and the Shutter Speed Indications by repeatedly pressing the [PUSH] Dial.</p> 	<p>3 Turn the [PUSH] Dial to adjust the Iris.</p> 	<p>Returning to the Normal Iris Value (F Number) Set the Mode Selector Switch to [AUTO].</p> 

Remarks, etc.

Notes about the Adjusting the Shutter Speed Manually

Range of Shutter Speed Adjustment

1/50–1/8000 s

The standard shutter speed is 1/50 s.

The nearer to [1/8000] a setting you select, the faster the shutter speed becomes.

- The playback picture of subjects lit by strong lights or with much light reflection may contain vertical streaks of light.
- During normal playback, the scene-to-scene transitions may not be smooth.
- Avoid recording under fluorescent lamps, mercury lamps or sodium lamps, as they can cause unstable colours and brightness of the playback picture.
- When using the Gain-up Mode (p. 48) or any of the Programme AE Modes (p. 46), it is not possible to adjust the shutter speed. If the shutter speed was manually adjusted, this setting is cancelled.
- Adjust the shutter speed according to the recording situation.

Notes about the Adjusting the Iris (F Number) Manually

Range of Iris Adjustment

CLOSE (Closed) → F16...F1.6 →

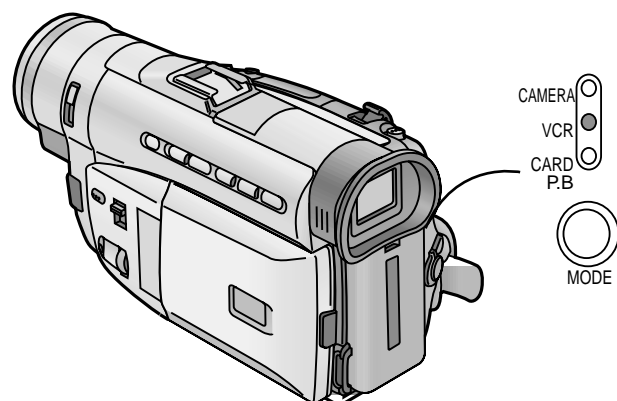
OP (Opened)+0dB...OP+18dB

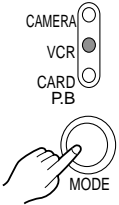
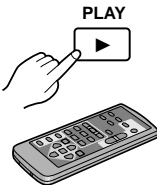




The nearer to [CLOSE] a value you select, the darker the picture becomes.

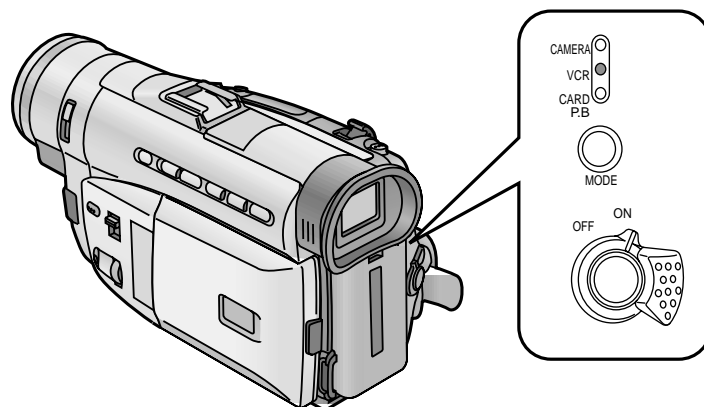
The nearer to [OP+18dB] a value you select, the brighter the picture becomes.

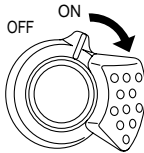
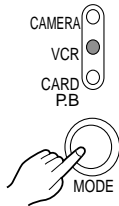

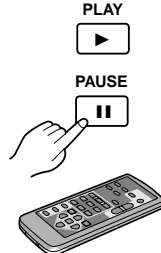



The figures with +dB show the Gain-up value, if you increase the value too much, the picture quality deteriorates.

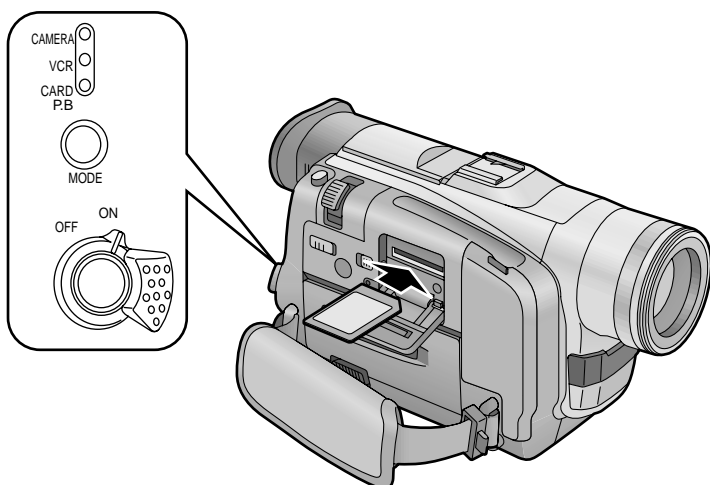
- Manually adjusting the shutter speed after performing manual iris adjustment changes the iris back to automatic adjustment. Therefore, if you want to adjust both the shutter speed and iris manually, be sure to adjust the shutter speed first.
- When using any of the Programme AE Modes (p. 46), it is not possible to adjust the iris.
- Increasing the Gain-up value also increases the graininess of the picture.
- Depending on the zoom magnification, some iris values may not be displayed.

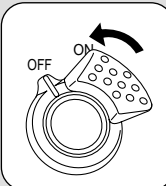
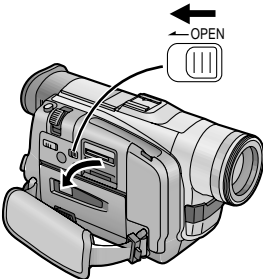
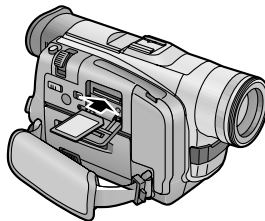
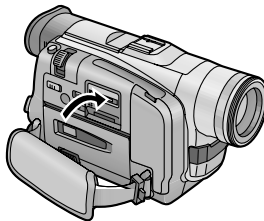
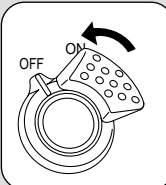
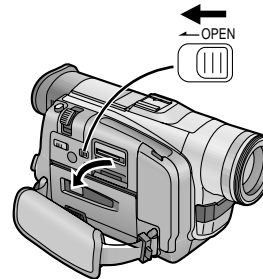
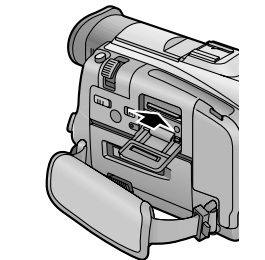
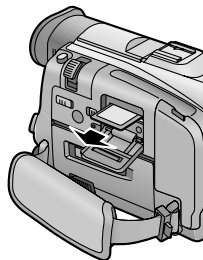
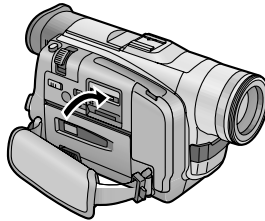
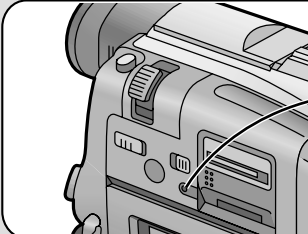


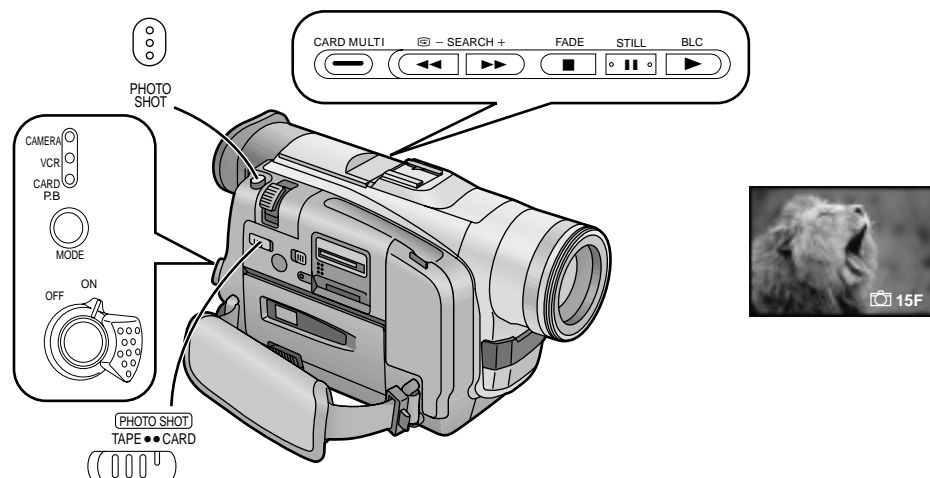
Title	Procedure			Remarks, etc.
Playing Back with Special Effects (Playback Digital Effects) There are various modes available for adding special digital picture effects to your recordings during playback. They are identical to the Digital Effects 1 and 2 (p. 48) that can be used during recording. 1 [WIPE] 2 [MIX] 3 [STROBE] 4 [NEGA] 5 [SEPIA] 6 [B/W] 7 [TRACER] 8 [SOLARI] 9 [MOSAIC] 10 [MIRROR]	1 Press the [MODE] Button until the [VCR] Lamp lights. 	2 Press the Play Button [▶]. 	3 Press the [SELECT] Button on the Remote Controller to select the desired digital effect. •Repeatedly pressing the [SELECT] Button changes the selected digital effect in the order 1 to 10 . •Selecting a digital effect is also possible by setting [EFFECT SELECT] on the [DIGITAL EFFECT] Sub-Menu of the [VCR FUNCTIONS] Main-Menu to the desired effect. 	Suspending the Playback Digital Effect Temporarily You can suspend and re-activate the digital effect by repeatedly pressing the [OFF/ON] Button 1 . Suspending a digital effect is also possible by setting [EFFECT] on the [DIGITAL EFFECT] Sub-Menu to [OFF], and later to [ON] to re-activate it. When the digital effect is temporarily suspended, the indication of the selected effect flashes. Cancelling the Digital Effect Press the [SELECT] Button on the Remote Controller to make the displayed digital effect indication disappear. Or, set [EFFECT SELECT] on the [DIGITAL EFFECT] Sub-Menu to [OFF]. •When you want to output the signal of the picture with a digital effect added during playback, use the [AV OUT] Sockets. This signal cannot be output from the DV Terminal (p. 7) or the Digital Still Picture Terminal (p. 7). •In the VCR Mode, the Wipe Function and the Mix Function can only be operated with the Remote Controller. •It is not possible use the Wipe Mode, Mix Mode, Trailing Effect Mode, or Mirror Mode of the Playback Digital Effects and the Playback Zoom Function (p. 62) at the same time. •If you press the [OFF/ON] Button while the Wipe or Mix is being performed, the effect is paused at that point. If you press the [OFF/ON] Button again, the effect resumes.
■ Wipe Mode and Mix Mode After having selected [WIPE] or [MIX] in Step 3 .	1 Press the [▶] Button to start playback. 	2 Press the [STORE] Button at the moment that you want to store as still image in memory. The [WIPE] or [MIX] Indication appears and the picture is stored in memory. 	3 Press the [OFF/ON] Button at the scene at which you want to use a Wipe or Mix effect. The scenes change with a Wipe or Mix effect. 	



Title	Procedure				Remarks, etc.
<h3>Adding New Sound on a Recorded Cassette (Audio Dubbing)</h3> <p>You can add music or narration on a recorded cassette.</p> <ul style="list-style-type: none">●If you perform audio dubbing onto a tape that was recorded with [AUDIO REC] on the [RECORDING SETUP] Sub-Menu of the [CAMERA FUNCTIONS] Main-Menu set to [16bit], the original sound is erased. <p>If you intend to perform audio dubbing but also want to keep the original sound, be sure to set [AUDIO REC] to [12bit] before making the original recording.</p> <ul style="list-style-type: none">●It is not possible to perform audio dubbing onto recordings made in the LP Mode. (p. 13)	<h4>1</h4> <p>Insert the recorded cassette and set the [OFF/ON] Switch to [ON].</p> <ul style="list-style-type: none">●Make sure that the prevention slider of the cassette is set to [REC]. 	<h4>2</h4> <p>Press the [MODE] Button until the [VCR] Lamp lights.</p> 	<h4>3</h4> <p>Search for the position from which you want to insert the new sound.</p> <ul style="list-style-type: none">●Using Cue Playback, Review Playback or Variable Speed Search makes it easy to search for this point. 	<h4>4</h4> <p>Press the Play Button [▶] and then Pause Button [⏏] on the Remote Controller</p> 	<h3>Playing Back the Sound Recorded with Audio Dubbing</h3> <ul style="list-style-type: none">●Depending on the setting selected for [12bit AUDIO] on the [PLAYBACK FUNCTIONS] Sub-Menu of the [VCR FUNCTIONS] Main-Menu, the sound added with audio dubbing and the original sound are played back as follows: ST1: The original sound alone is played back. ST2: The dubbed sound alone is played back. MIX: The original sound and the sound added with audio dubbing are played back together.
	<h4>5</h4> <p>Press the [A.DUB] Button on the Remote Controller.</p>  <div>A.DUB⏏</div>	<h4>6</h4> <p>Press the Pause Button [⏏] on the Remote Controller to start audio dubbing.</p>  <div>A.DUB▶</div>	<h3>Stopping Audio Dubbing</h3> <p>Press the Pause Button [⏏] on the Remote Controller. The Movie Camera is again in the Still Playback Mode.</p>  <div>⏏</div>		



Title	Procedure				Remarks, etc.
<h3>Using the MultiMediaCard (NV-DS25 only)</h3> <p>You can use the supplied MultiMediaCard to record still pictures onto it, even without a cassette inserted. You can also take favourite scenes recorded on the cassette and copy them as still pictures onto the MultiMediaCard, or you can copy still pictures recorded on the MultiMediaCard onto the cassette.</p> <p>■ Inserting the MultiMediaCard Be sure to turn the Movie Camera off before inserting the MultiMediaCard. Set the [OFF/ON] Switch to [OFF].</p> 	<p>1 Slide the [OPEN] Lever to the left to open the Card Slot Cover.</p> 	<p>2 Hold the MultiMediaCard with its cut-off corner facing right and toward the Movie Camera and insert it straight until it stops.</p> 	<p>3 Close the Card Slot Cover securely.</p> 	<ul style="list-style-type: none">Do not turn the Movie Camera off while the MultiMediaCard is being read, such as during Card Photoshot recording, copying pictures onto the cassette, erasing pictures on the MultiMediaCard or using the Multi-Picture Function in the Card Playback Mode. This could damage the MultiMediaCard or recorded contents, and even cause malfunction of the Movie Camera.Before closing the Card Slot Cover, be sure to confirm that the MultiMediaCard is inserted correctly. <p>The [ACCESS] Lamp While accessing the MultiMediaCard (reading, recording, playing back, deleting, transmitting pictures), the [ACCESS] Lamp is lit.</p> <ul style="list-style-type: none">While the [ACCESS] Lamp is lit, do not open the Card Slot Cover and remove the MultiMediaCard, or turn the Movie Camera off. Doing so could damage the card and cause a malfunction with the Movie Camera.	
<p>■ Taking Out the MultiMediaCard Be sure to turn the Movie Camera off before taking out the MultiMediaCard. Set the [OFF/ON] Switch to [OFF].</p> 	<p>1 Slide the [OPEN] Lever to the left to open the Card Slot Cover.</p> 	<p>2 Push the MultiMediaCard on its centre.</p> 	<p>3 Pull the MultiMediaCard straight out.</p> 	<p>4 Close the Card Slot Cover securely.</p> 	 <p>[Access] Lamp</p>



Quality of Card Photoshot Pictures

You can choose among 3 picture quality modes for the Card Photoshot Function.

Maximum recordable number of pictures on the supplied 8 MB MultiMediaCard

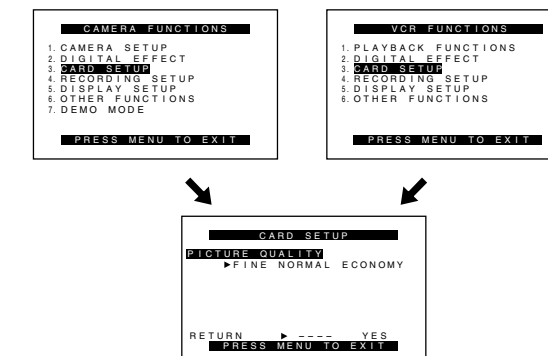
FINE: Approx. 50 pictures

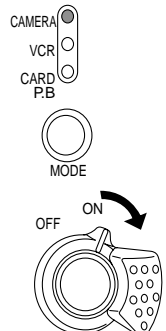
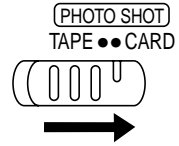
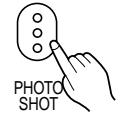
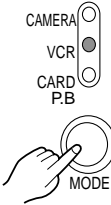
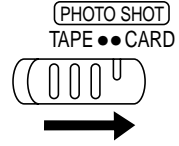

NORMAL: Approx. 100 pictures

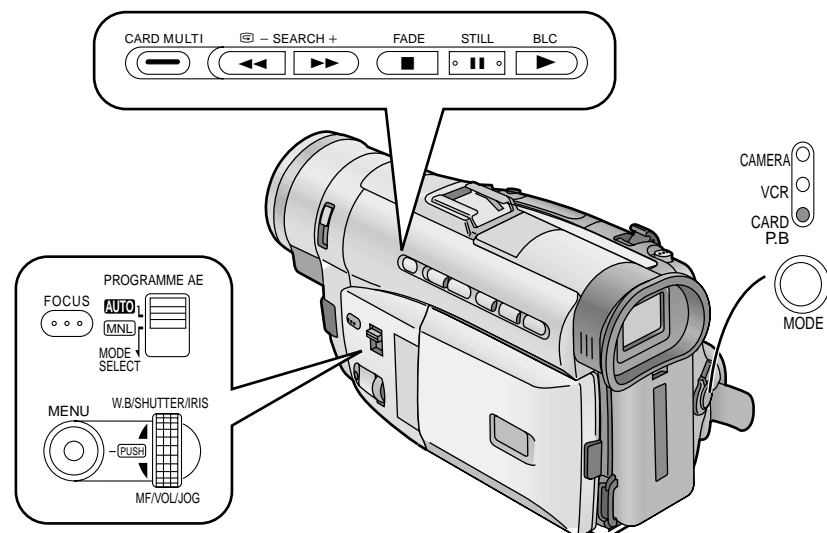
ECONOMY: Approx. 200 pictures

- When recording in more than one mode (FINE, NORMAL, ECONOMY) on the same MultiMediaCard, the maximum recordable number differs from the numbers indicated above.
- The maximum recordable numbers are approximations. When recording intricate pictures with fine details, the number of recordable still pictures on the MultiMediaCard decreases due to their large data volume.
- To be able to record an even larger number of still pictures, we recommend that you use the 16 MB MultiMediaCard VW-MMC16E (optional).

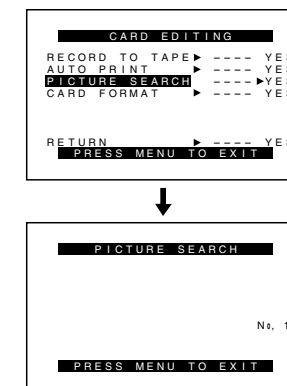
- To record pictures in high quality, set [PICTURE QUALITY] on the [CARD SETUP] Sub-Menu to [FINE]; to record as many pictures as possible, set it to [ECONOMY].
- When you select [ECONOMY] for recording, the playback picture may contain mosaic-like noise patterns depending on the picture content.

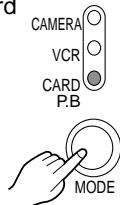
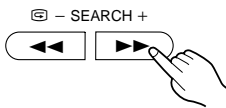
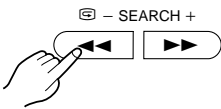
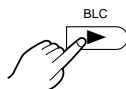
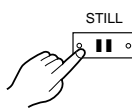
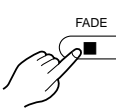

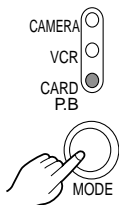
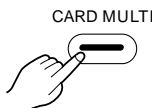
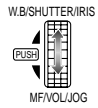
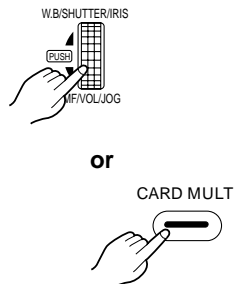


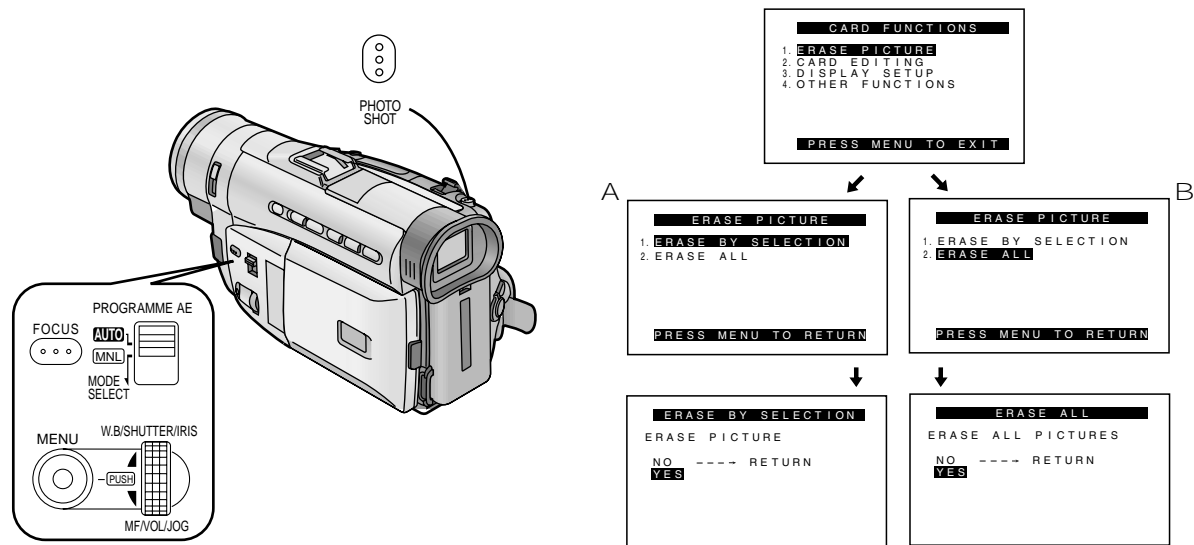
Title	Procedure			Remarks, etc.
Recording Still Pictures on the MultiMediaCard (Card Photoshot) (NV-DS25 only) You can record still picture onto the MultiMediaCard both through the Movie Camera's lens and from scenes that you have already recorded on the cassette. • Sound is not recorded. • The Shutter Effect (p. 31) cannot be used.	1 Set the [OFF/ON] Switch to [ON]. The [CAMERA] Lamp lights. 	2 Slide the [TAPE/CARD] Selector to [CARD]. 	3 Press the [PHOTO SHOT] Button at the scene that you want to record. 	<ul style="list-style-type: none"> • Electromagnetic waves, static electricity, malfunction of the Movie Camera or of the MultiMediaCard itself could erase the data recorded on it. To prevent the loss of picture data, we recommend that you make a backup copy on a cassette (p. 76) or on the computer (p. 78). • If you use the Card Photoshot Function during recording, the Movie Camera is automatically put in the Recording Pause Mode. • Before pressing the [PHOTO SHOT] Button, we recommend that you press the [1/STILL] Button to check the picture.
Recording Still Pictures on the MultiMediaCard in the VCR Mode:	1 Press the [MODE] Button until the [VCR] Lamp lights. The [VCR] Lamp lights. 	2 Slide the [TAPE/CARD] Selector to [CARD]. 	3 Start playback and press the [PHOTO SHOT] Button at the scene that you want to record. The picture stands still for approximately 4 seconds (when [PICTURE QUALITY] on the [CARD SETUP] Sub-Menu is set to [NORMAL]) while the picture is being recorded. 	



Using the Picture Search Mode
After setting the [PICTURE SEARCH] on the [CARD EDITING] Sub-Menu to [YES] to appear the picture search screen, turn the [PUSH] Dial to select the desired number of the picture and press it.



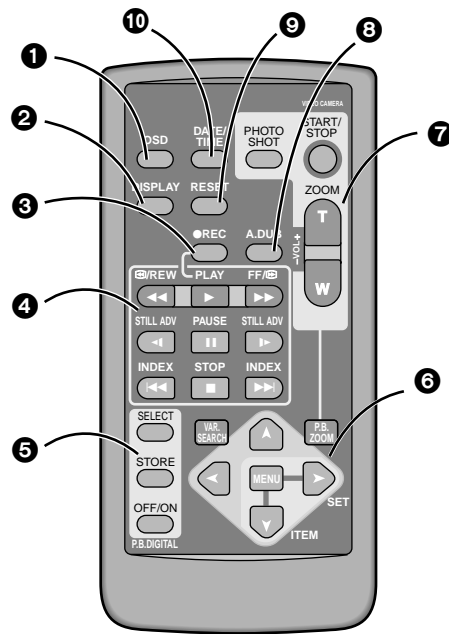
Title	Procedure				
<p>Playing Back Pictures Recorded on the MultiMediaCard (Card Playback) (NV-DS25 only)</p> <p>■ Playing Back Pictures</p>	<p>1 Press the [MODE] Button until the [CARD P.B] Lamp lights and the Movie Camera is in the Card Playback Mode. The last recorded still picture on the MultiMediaCard is displayed.</p> 	<p>To play back later recorded pictures: Press the [SEARCH+] Button.</p>  <p>To play back earlier recorded pictures: Press the [-SEARCH] Button.</p> 	<p>To play back all recorded pictures in succession (Slide Playback): Press the [▶] Button. The [SLIDE▶] Indication appears ①. •All pictures are played back for approximately 6 seconds each, from the first to the last recorded picture, and playback then stops.</p> 	<p>To pause the Slide Playback: Press the [] Button. The [SLIDE] Indication appears ②. •To resume the Slide Playback, press the [] Button again or the [▶] Button. Playback resumes from the next picture and stops at the last recorded picture.</p> 	<p>To stop the Slide Playback: Press the [■] Button. •To resume the Slide Playback, press the [▶] Button. Playback resumes from the next picture, and after all recorded pictures have been played back, it stops at the picture, at which you stopped the Slide Playback before. •The [N], [F] or [E] Indication displayed in Card Playback pictures shows the volume of image data of a still picture recorded on the MultiMediaCard. (p. 79)</p> 
<p>■ Selecting and Playing Back Pictures Displayed in the Multi-Picture Mode</p> 	<p>1 Press the [MODE] Button until the [CARD P.B] Lamp lights and the Movie Camera is in the Card Playback Mode. The last recorded still picture on the MultiMediaCard is displayed.</p> 	<p>2 Press the [CARD MULTI] Button. The pictures recorded on the MultiMediaCard are displayed in the Multi-Picture Mode.</p> 	<p>3 Turn the [PUSH] Dial to select the desired picture. •The selected picture is marked with a red frame.</p> 	<p>4 Press the [PUSH] Dial or the [CARD MULTI] Button. The selected picture appears in full screen size.</p> 	<p>Remarks, etc.</p> <ul style="list-style-type: none"> •It is not possible to select the desired multi-picture with the Remote Controller. •In the Multi-Picture Mode, 9 still pictures are displayed on the same screen. If more than 9 still pictures are recorded on the MultiMediaCard, turn the [PUSH] Dial to display the next 9 pictures. (Instead of the [PUSH] Dial, you can also use the [SEARCH+] Button or the [-SEARCH] Button.) •When you play back a blank (unrecorded) MultiMediaCard, the screen becomes white and the [---] Indication appears. •If you attempt to play back a still picture recorded in a different format or a picture whose image data is defective, the [×] Indication and the [CARD ERROR] Indication could appear as warning. •When the still pictures are displayed in the Multi-Picture Mode, the Slide Playback cannot be activated.



Title	Procedure					
Erasing Pictures Recorded on the MultiMediaCard (NV-DS25 only) You can use the Movie Camera to erase the still pictures recorded on the MultiMediaCard. After erasing them, the pictures cannot be recovered any more. ■ Selecting and Erasing Pictures ① After putting the Movie Camera in the Card Playback Mode... (p. 70) Press the [MENU] Button.	1 Select [ERASE PICTURE] on the [CARD FUNCTIONS] Main-Menu. (p. 16)	2 Turn the [PUSH] Dial to select [ERASE BY SELECTION] and then press it.	3 Turn the [PUSH] Dial to select the picture that you want to erase and then press it. The selected picture flashes.	4 Press the [PHOTO SHOT] Button. The confirmation message appears.	5 Turn the [PUSH] Dial to select [YES] and then press it. The selected picture is now erased from the MultiMediaCard. If you select [NO], the picture selection is cancelled.	6 Press the [MENU] Button to exit the menu.
■ Erasing All Pictures ② After putting the Movie Camera in the Card Playback Mode... (p. 70) Press the [MENU] Button.	1 Select [ERASE PICTURE] on the [CARD FUNCTIONS] Main-Menu. (p. 16)	2 Turn the [PUSH] Dial to select [ERASE ALL] and then press it. The confirmation message appears.	3 Turn the [PUSH] Dial to select [YES] and then press it. All pictures stored on the MultiMediaCard are now erased.			

Remote Controller

Using the wireless Remote Controller supplied with the Movie Camera allows operating most of the Movie Camera's major functions from a distance.



Buttons on the Remote Controller

1 Indication Output Button [OSD] (p. 39)

To display the function and operation indications on a connected TV.

2 Indication Shift Button [DISPLAY] (p. 99)

To select the desired counter indication.

3 Recording Button [REC] (p. 85) (NV-DS150 only)

To dub digital signals Input Into the Movie Camera via the DV Input/Output Terminal, press the [REC] Button and the [PLAY] Button together.

4 Controls for Playback

Rewind/Review Button [◀◀]

To start review playback (p. 34).
To rewind the tape (p. 34).
To activate the Camera Search Function (p. 40).
To activate the Recording Check Function (p. 26).
To display the previous 9 pictures in the Card Multi-Picture Mode or in the Card Erase-Picture Mode (p. 70, 72). (NV-DS25 only)

Fast-forward/Cue Button [▶▶]

To start cue playback (p. 34).
To fast-forward the tape.
To activate the Camera Search Function (p. 40).
To display the next 9 pictures in the Card Multi-Picture Mode or in the Card Erase-Picture Mode (p. 70, 72). (NV-DS25 only)

Play Button [▶]

To start playback (p. 34).
To start slide playback (p. 71). (NV-DS25 only)

Slow Motion/Still Advance Button [◀◀, ▶▶] (p. 36)

To perform Slow Motion Playback.
To perform Still Advance Playback.
(◀◀: in reverse direction, ▶▶: in forward direction)

4 Controls for Playback (Continued)

Index Search Button [◀◀, ▶▶] (p. 42)

To search for recorded scenes marked with an index signal.
(◀◀: in reverse direction, ▶▶: in forward direction)

Stop Button [■] (p. 34)

To stop the tape.
To stop slide playback. (NV-DS25 only)

Pause Button [||] (p. 36)

To pause playback.
To pause slide playback. (NV-DS25 only)

5 Playback Digital Effects

Selection Button [SELECT] (p. 60)

To select the desired playback digital effect.

Store Button [STORE] (p. 60)

To store a still picture in memory for the Wipe or Mix Function.

Off/On Button [OFF/ON] (p. 60)

To suspend the selected digital mode or re-activate it.
To start/pause a Wipe or Mix transition from the still picture stored in memory.

6 Controls for Menu Settings and Playback Zoom and Variable Speed Search

Menu Button [MENU] (p. 16)

To display the menu.

Item set Button [SET]

Item select Button [ITEM]

Playback Zoom Button [P.B.ZOOM] (p. 62)

To enlarge a part of the playback picture.
•Each time this button is pressed, the Playback Zoom Function is toggled between on and off.

Upward Direction Button [▲]

Left/Right Direction Button [◀, ▶]

Downward Direction Button [▼]

Variable Speed Search Button

[VAR. SEARCH] (p. 35)

To change the speed of Cue Playback or Review Playback.

•Each time this button is pressed, the Variable Speed Search Function is toggled between on and off.

•When the Playback Zoom Function is on, the Direction Buttons of the Playback Zoom Function take precedence, and the following two buttons can no longer be operated.

Speed Selection Button [▲, ▼]

Selecting Pictures for Card Erase-Picture Mode (p. 72) (NV-DS25 only)

Picture Selection Button [▼]

Picture Confirm Button [▶]

7 Controls for Recording, Zoom/Sound Volume

Photoshot Button [PHOTO SHOT] (p. 30, 68)

To record still pictures.

To show the message that prompts the user to verify whether the picture is to be erased in the Card Erase-Picture Mode. (NV-DS25 only)

Recording Start/Stop Button [START/STOP] (p. 24)

To start and pause recording.

Zoom/Sound Volume Buttons [ZOOM/VOL]

To zoom in and out (p. 30, 56).
To adjust the volume of the playback sound (p. 35).
To change the zoom magnification of the Playback Zoom (p. 62).

8 Audio Dubbing Button [A.DUB] (p. 64)

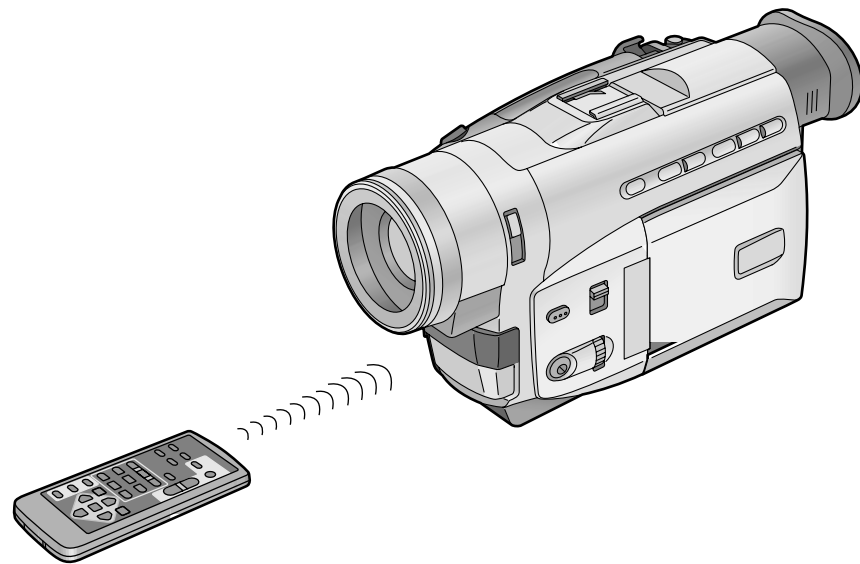
To perform audio dubbing.

9 Reset Button [RESET] (p. 97)

To reset the Tape Counter to zero.

10 Date and Time Button [DATE/TIME] (p. 35)

To make the Date/Time indication appear or disappear.



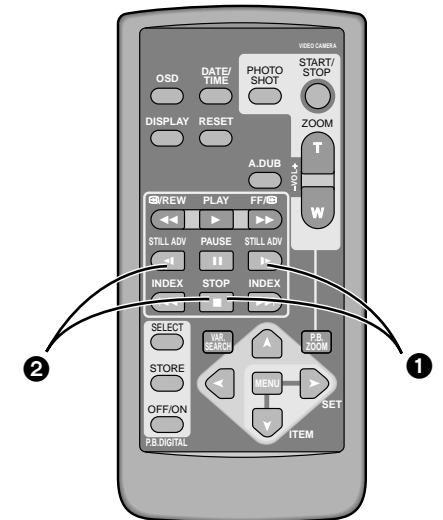
■ Selecting the Remote Controller Mode

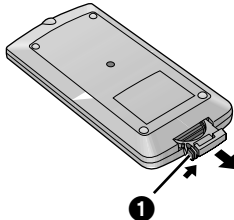
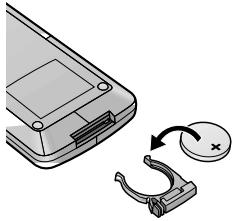
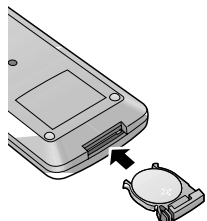
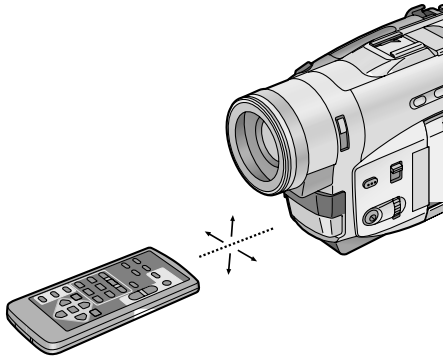
When using two Movie Cameras at the same time, selecting different Remote Controller Modes makes it possible to operate them separately.

- If the Remote Controller Mode set on the Movie Camera and on its Remote Controller are not matched, the [REMOTE] Indication appears.
- Replacing the batteries in the Remote Controller automatically resets it to the [VCR1] Mode.

① Press the [▶] Button and [■] Button simultaneously.
This selects the [VCR1] Mode.

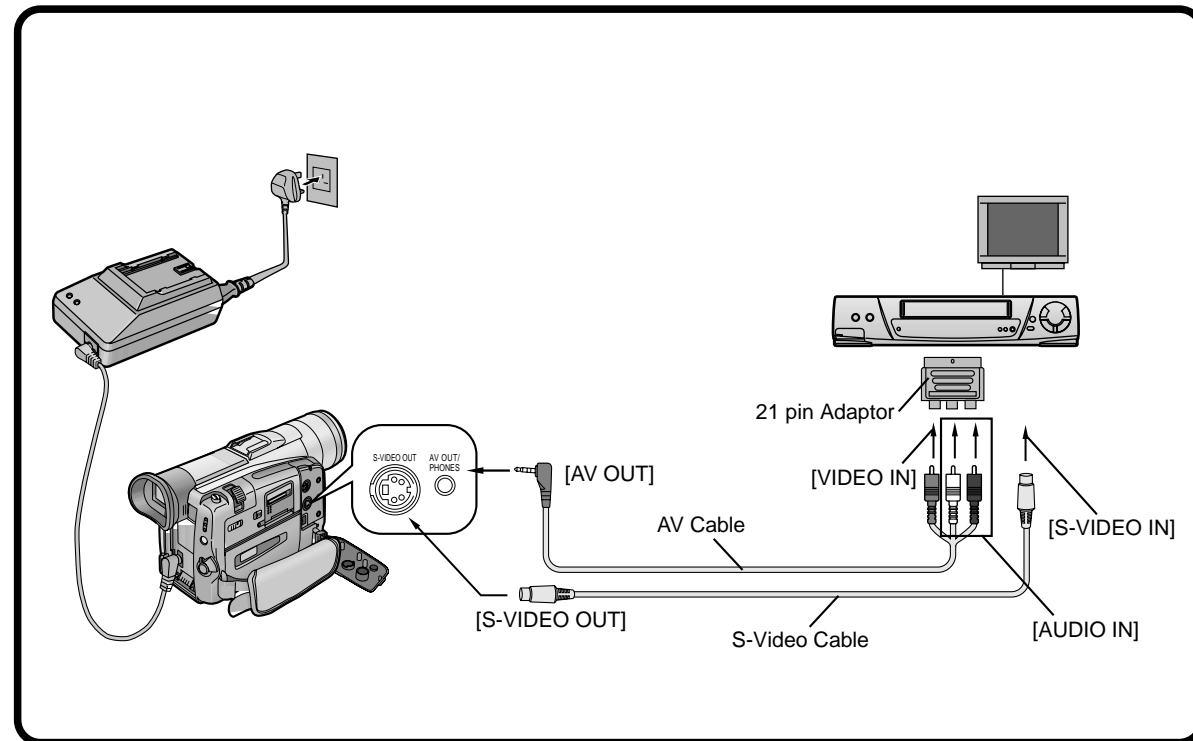
② Press the [◀] Button and [■] Button simultaneously.
This selects the [VCR2] Mode.



Title	Procedure			Information for your safety
<p>Remote Controller (Continued)</p> <p>■ Inserting the Button-type Battery Insert the supplied button-type battery before using the Remote Controller.</p> <ul style="list-style-type: none"> ● When the button-type battery is exhausted, replace it with a new CR2025 battery. (The life of the battery is about 1 year. However, it depends on the frequency of use.) ● Make sure you insert the battery with its poles correctly aligned. ● Keep the button-type battery out of the reach of children. 	<p>1 Pull out the Battery Holder while pressing the Stopper ①.</p> 	<p>2 Insert the button-type battery with the stamped (+) mark facing upward.</p> 	<p>3 Insert the Battery Holder into the Remote Controller.</p> 	
<p>■ Using the Remote Controller</p>	<p>Aim the Remote Controller at the Remote Control Sensor on the Movie Camera and press the appropriate button. Distance to the Movie Camera: Less than 5 metres. Angle: Approximately 15° up, down, left and right from centre axis.</p> 			<p>Remarks, etc.</p> <ul style="list-style-type: none"> ● The operative range described on the left is valid for using the Remote Controller indoors. When using it outdoors or under strong lights, it may not work correctly even within the left range. ● Within a distance of about 1 metre, it is also possible to use the Remote Controller from the side ([MENU] Button side). <p>Setting to be Made on the Movie Camera: Set [REMOTE] on the [OTHER FUNCTIONS] Sub-Menu to the desired Remote Controller Mode.</p>

Copying onto an S-VHS (or VHS) Cassette (Dubbing)

You can copy the picture and sound recorded on this Movie Camera onto an S-VHS or VHS cassette in a home video recorder.



After making the connections shown above, perform the necessary operations.

Before copying, be sure to press the [OSD] Button on the Remote Controller (p. 80) so that no indications are visible. Otherwise, the displayed tape counter and function indications are also copied.

- If your VCR is not equipped with AV Input Sockets, the 21pin Adaptor (purchase separately) is necessary. Consult your dealer.

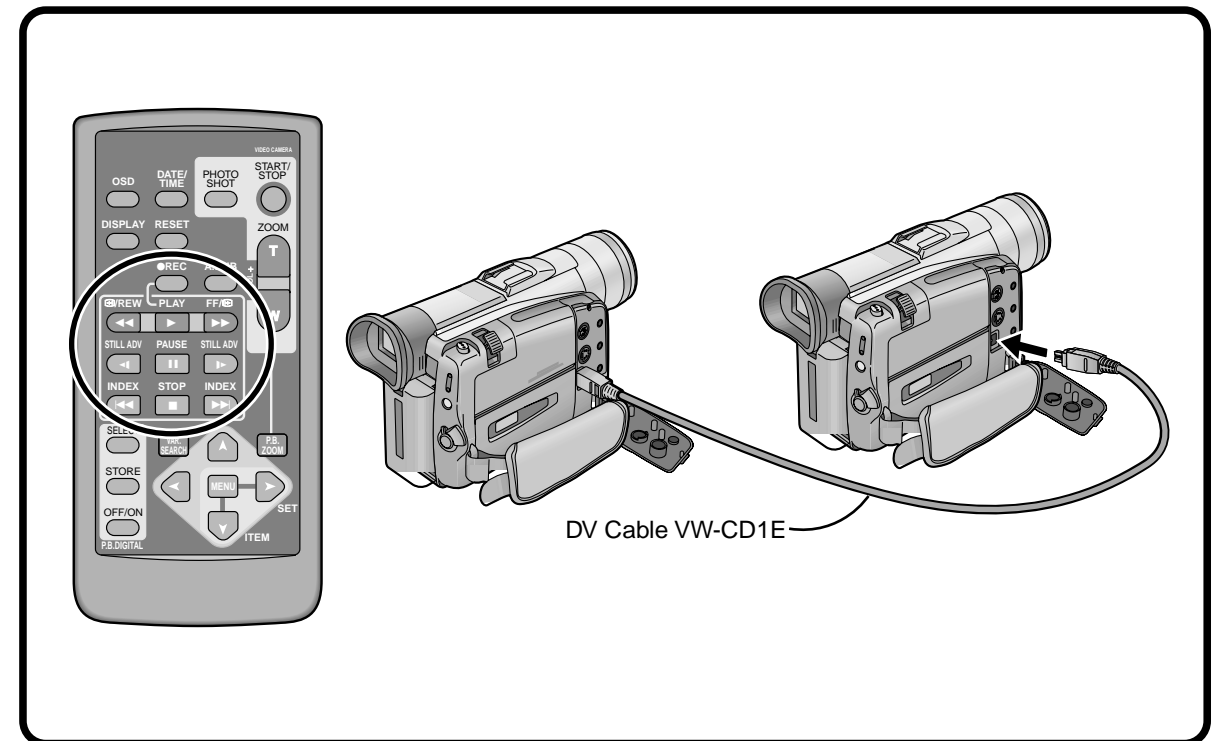
Movie Camera:

- 1 Set the [OFF/ON] Switch to [ON].
- 2 Insert the recorded cassette.
- 3 Press the [MODE] Button until the [VCR] Lamp lights.
- 5 Press the Play Button [▶] to start playback.
- 8 Press the Stop Button [■] to stop playback.

VCR:

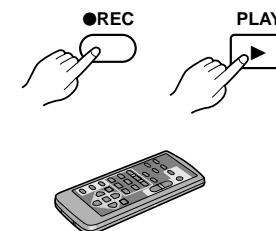
- 4 Insert an unrecorded cassette with intact erasure prevention tab.
As some settings (external input, tape speed, etc.) on the VCR are necessary, please refer to your VCR's operating instructions.
- 6 Start recording.
- 7 Press the Pause or Stop Button to stop recording.

Using with Digital Video Equipment (Dubbing) (NV-DS150 only)



If you connect this Movie Camera with other Digital Video equipment (for example another Movie Camera of the same type) equipped with DV Input/Output Terminal (i.LINK) using the DV Cable VW-CD1E (optional), you can dub high-quality picture and sound in the digital format.

- 1 **[Playback Unit]**
Insert the recorded cassette and set the Movie Camera to the VCR Mode.
- 2 **[Recording Unit]**
Insert a cassette onto which you want to perform dubbing and set the Movie Camera to the VCR Mode.
- 3 **[Playback Unit]**
Press the Play Button [▶] to start playback.
- 4 **[Recording Unit]**
While pressing the [REC] Button, press the [PLAY] Button (both on the Remote Controller).
Recording starts.



Stopping Dubbing

Press the Pause Button [⏸] or the Stop Button [■] to stop recording.

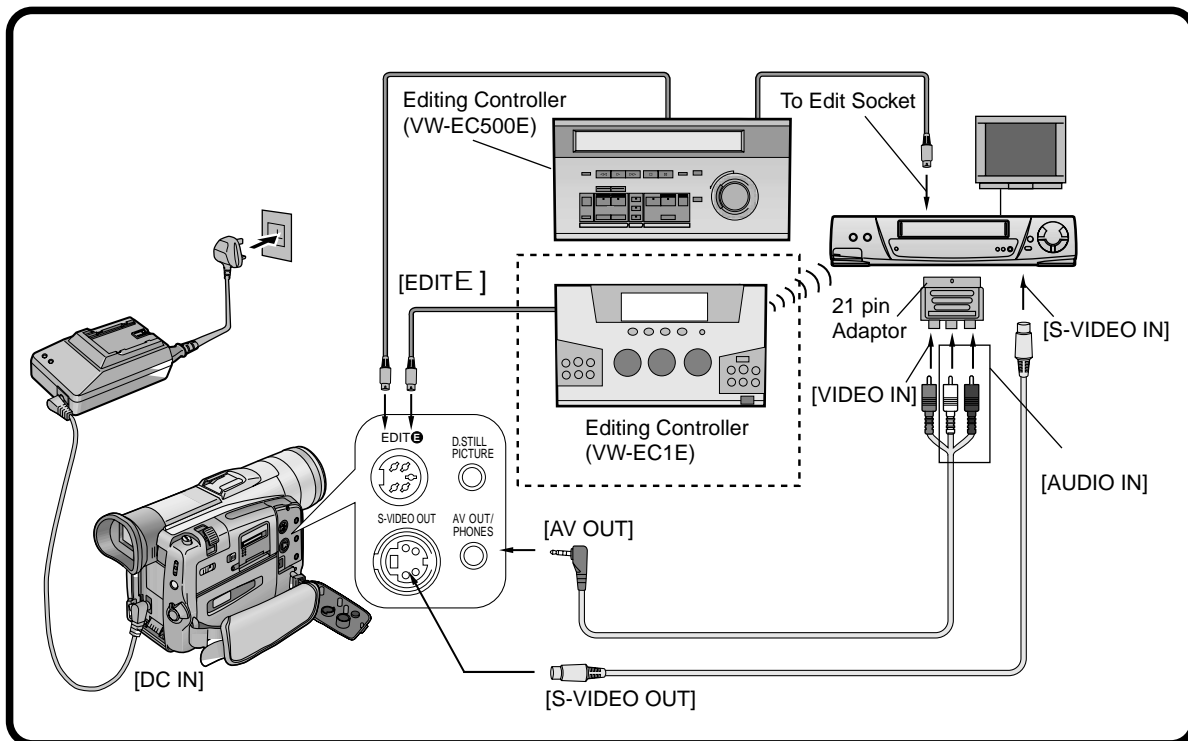
- Dubbing is automatically performed in the same audio recording mode as that of the cassette in the playback unit, regardless of the setting for [AUDIO REC] on the [RECORDING SETUP] Sub-Menu of the [CAMERA FUNCTIONS] Main-Menu of the recording unit.
- The lower part of the monitor picture of the recording unit (the picture displayed on the LCD Monitor*, Viewfinder or TV) may be distorted, or the picture may roll up or down. However, this is not a malfunction and does not affect the picture being recorded.

*LCD Monitor: NV-DS15, NV-DS150, NV-DS25 only

- If the DV Cable is not connected, a black picture is recorded.

Copying with the Help of an Editing Controller

If you connect the Movie Camera to an Editing Controller equipped with 5-pin Edit Socket, this Movie Camera's playback functions can be controlled from the Editing Controller.



When Connecting the Editing Controller VW-EC500E (optional)

- When you perform editing with the NV-HS1000 VCR (optional) connected to this Movie Camera, first activate the Still Playback Mode on the Movie Camera and then start the actual editing operation.
- A VCR equipped with 5-pin Edit Socket is necessary.
- When you connect the VW-EC500E to the Movie Camera, an adjustment on the VW-EC500E is necessary. For the operation of the Editing Controller, refer to its operating instructions.

When Connecting the Editing Controller VW-EC1E (optional)

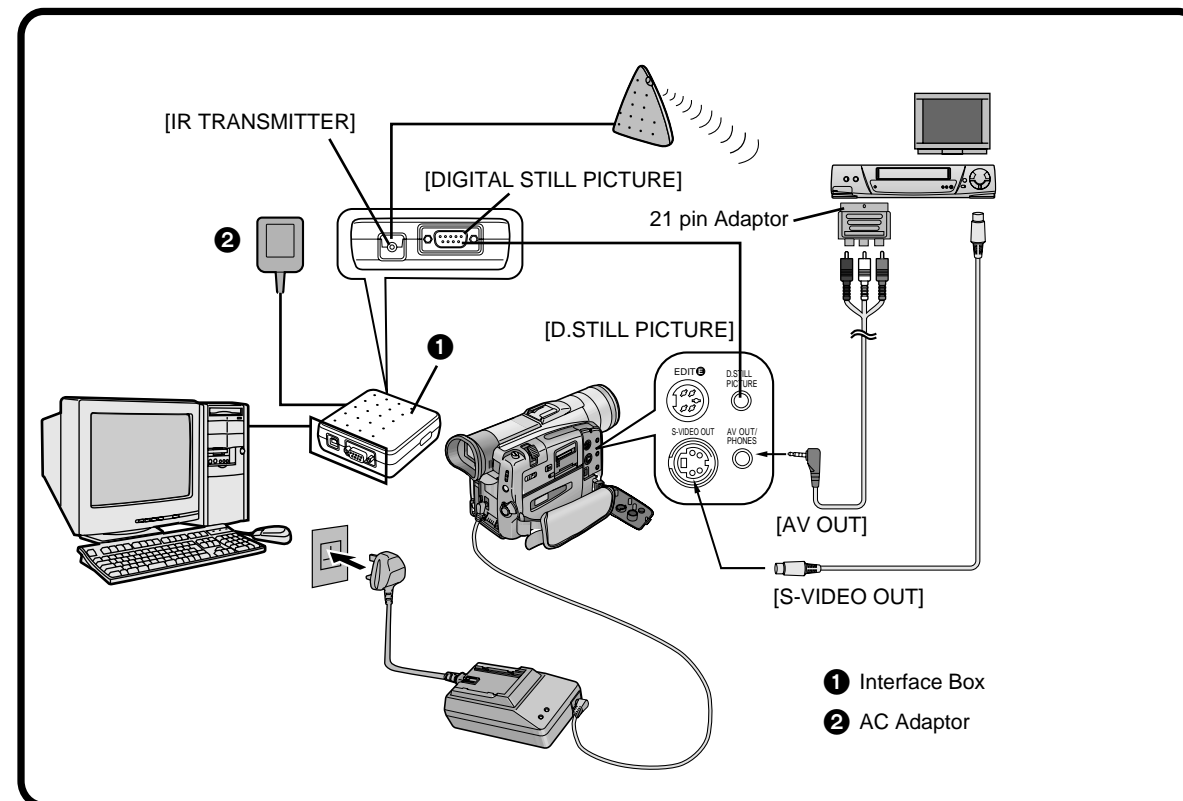
- When you perform editing with the NV-HS1000 VCR (optional) connected to this Movie Camera, first activate the Still Playback Mode on the Movie Camera and then start the actual editing operation.
- When you use the Editing Controller VW-EC1E, it is not necessary to connect it to the Edit Socket on the VCR, as the VCR's operation is performed via infrared remote control. Therefore, editing is also possible onto VCRs not equipped with an Edit Socket.
- For the operation of the Editing Controller, refer to its operating instructions.

When Editing with Time Code

Set [C.DISPLAY] on the [DISPLAY SETUP] Sub-Menu of the [VCR FUNCTIONS] Main-Menu to [TIMECODE] to make the Time Code appear.

- When the Time Code is displayed, the Time Code Signal is output from the Edit Socket.
- When the Counter Indication is displayed, the Linear Tape Counter Signal is output.
- If your VCR is not equipped with AV Input Sockets, the 21pin Adaptor (purchase separately) is necessary. Consult your dealer.

Using the Movie Camera with a Computer



The Personal Computer Connection Kit VW-DTA9E (optional), or VW-DTA10B (optional) makes it possible to connect the Movie Camera to a computer and transmit still video images to it.

The above illustration shows the connections in case of using the VW-DTA10B. For the VW-DTA9E, refer to its operating instructions.

Computer System Requirements (VW-DTA10B)

DV STUDIO2 can be installed in a PC/AT compatible personal computer which can run Microsoft® Windows® 95/98.

Compatible machines:

Personal computer with 80486DX4 or higher CPU (Pentium™ or higher recommended)

Graphic card:

True Color (approx. 16.7 million colours) recommended (operation also possible even with 256 colours)

Installed memory:

16 MB or more (32 MB or more recommended)

Free hard disk space: At least 16 MB

Disk drive: CD-ROM drive

Ports: RS-232C (D-sub 9 pin)/or USB

Other requirements: Mouse

To connect the Movie Camera to the computer, use the special Interface Box ① contained in the Personal Computer Connection Kit.

• If your VCR is not equipped with AV Input Sockets, the 21pin Adaptor (purchase separately) is necessary. Consult your dealer.

• To use the DV STUDIO2 software via USB, a computer with Windows® 98 preinstalled is necessary.

• Pictures that you intend to import from cassette into computer applications should be recorded in the SP Mode.

• When recording, take care that the Time Code is uninterrupted from the beginning of the tape.

• For detailed explanations on the operating environment, connections and operations, refer to the Personal Computer Connection Kit's operating instructions.

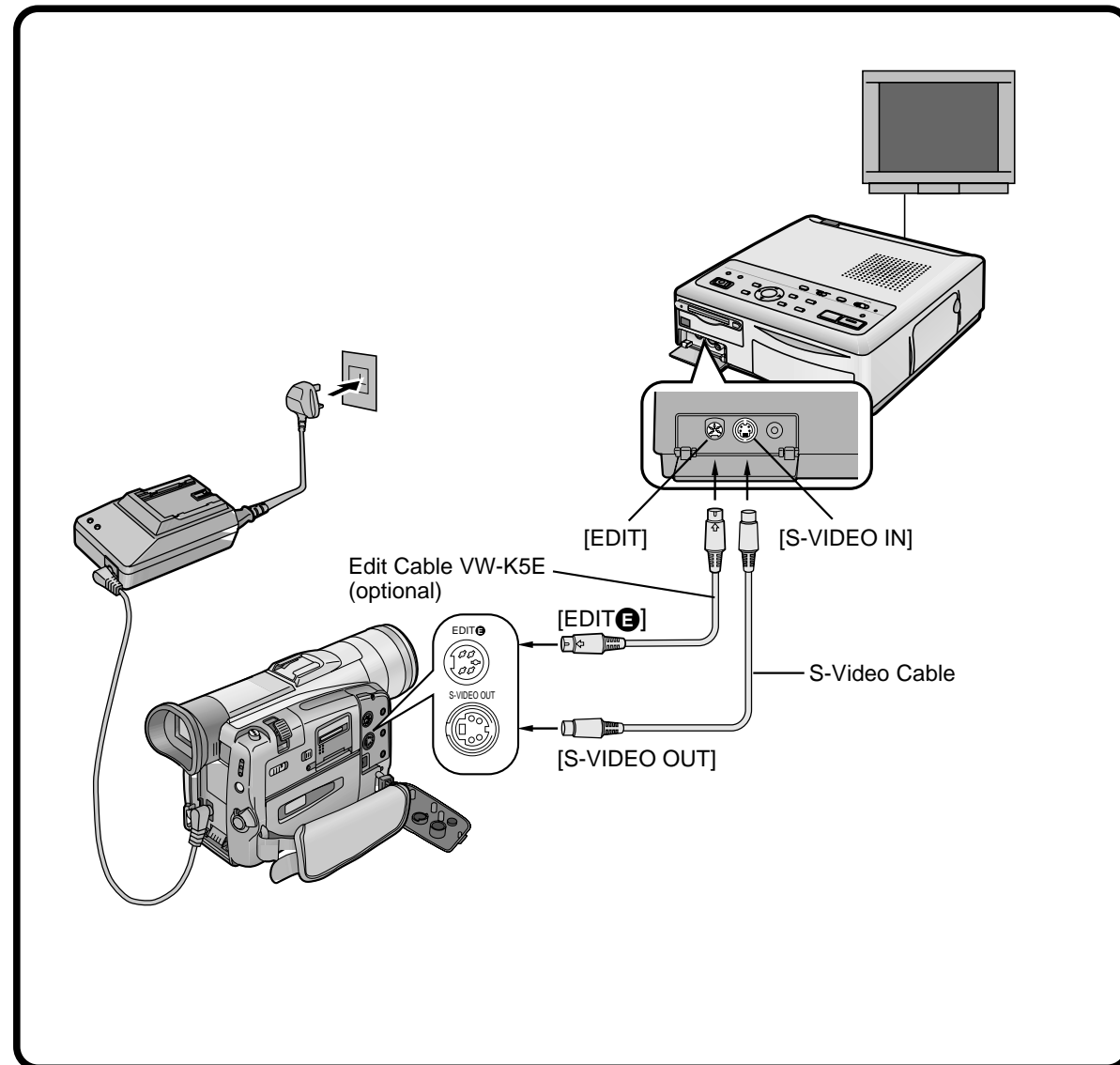
• Windows® is a trademark of Microsoft Corporation U.S.A.

• All other company and product names in the operating instructions are trademarks of their respective corporations.

Using the Movie Camera with a Video Printer

If you connect the Movie Camera to a Video Printer, you can print still pictures from scenes recorded with the Movie Camera.

If you do not intend to use the Automatic Printing Function, connecting the Edit Cable is not necessary.



Movie Camera:

- 1** Set the [OFF/ON] Switch to [ON] to turn the Movie Camera on.
- 2** Press the [MODE] Button until the [VCR] Lamp lights.
- 4** Press the Play Button [▶].

Video Printer:

- 3** Turn the Video Printer on.
 - 5** Store the image in memory.
 - 6** Start printing.
- For details about the operation of the Video Printer, read its operating instructions.
 - Compatibility cannot be guaranteed for pictures recorded on other video equipment and played back on this Movie Camera, or vice versa.

■ Using the Automatic Printing Function (Autoprint)

If you connect the Movie Camera to a Video Printer equipped with 5-pin Edit Socket, you can use the Autoprint Function to automatically print all still pictures recorded in the Photoshot Mode.

Video Printer:

- 1** Turn the Video Printer on.
- 2** Make the necessary settings on the Video Printer according to the input signal.

Movie Camera:

- 3** Set the [OFF/ON] Switch to [ON] to turn the Movie Camera on.
- 4** Press the [MODE] Button until the [VCR] Lamp lights.
- 5** Search for the first still picture from which you want to start printing with the Autoprint Function.
If you want to print all still pictures recorded on the cassette, rewind the tape to its beginning.
- 6** Press the [MENU] Button.
- 7** Set [AUTO PRINT] on the [PLAYBACK FUNCTIONS] Sub-Menu to [YES].
Automatic printing starts.

- If you want to stop the automatic printing in the middle, press the Stop Button [■] on the Movie Camera.

- When the cooling function of the Video Printer is activated and the printing speed slows down, automatic printing may stop. In this case, set [AUTO PRINT] on the [PLAYBACK FUNCTIONS] Sub-Menu on the [VCR FUNCTIONS] Main-Menu to [YES] again.

- If still pictures are recorded successively in the Photoshot Mode, some pictures may be skipped during printing.

- Before storing an image in memory on the Video Printer, press the [OSD] Button (p. 80) on the Remote Controller of the Movie Camera so that no indications appear in the picture. Otherwise, the Counter Indication and other function indications are also printed in the picture.

- The [PRINTER ERROR] Indication appears if the Movie Camera is not correctly connected to the Video Printer or when the ink cassette and/or the paper in the Video Printer are not loaded or used up.

- As index signals are not recorded with the still pictures recorded in the Continuous Photoshot Mode, automatic printing of these pictures is not possible.

- If you replace the ink cassette or paper during printing, the same picture may be printed twice.

- In the following cases, some pictures may be skipped when printing with the Auto Print Function.
 - When you print still pictures recorded in the Photoshot Mode on a video camera of another brand.
 - If you turn the Movie Camera on and off several times (3 times or more) between recording two still pictures in the Photoshot Mode.
 - When you record a still picture in the Photoshot Mode on the same part of a cassette where a Photoshot picture was recorded before.
 - When you select a different recording speed (SP/LP) between the recording of two still pictures in the Photoshot Mode.
 - At the first Photoshot picture to be printed.

- A picture that is recorded very close to the beginning of the tape may not be printed.

- Pictures that you have edited or composed on a Video Printer (NV-MPD1B, NV-MPD5B, NV-MPD7B) can be recorded on the MultiMediaCard, however, they can no longer be played back on this Movie Camera. (NV-DS25 only)

Cautions for Use

Take care that no water enters the Movie Camera when using it in the rain and snow or on the beach.

- The Movie Camera and the cassette could become damaged. (It might not be repairable.)
- If seawater has accidentally splashed on the Movie Camera, moisten a soft cloth with tap water, wring it well and wipe the camera body carefully with it. Then thoroughly wipe it with a soft, dry cloth.

Keep the Movie Camera away from magnetized equipment (TVs, video games, etc.).

- If you use the Movie Camera on or near a TV, the electromagnetic radiation may cause picture and sound distortion.
- Strong magnetic fields generated by speakers and large motors may damage the recordings on the tape and distort the picture.
- The electromagnetic radiation from micro-processors can adversely influence the Movie Camera and cause picture and sound distortion.
- If the Movie Camera is adversely influenced by magnetized equipment and does not work correctly, turn the Movie Camera off, remove the Battery or disconnect the AC Adaptor and attach the Battery or connect the AC Adaptor again. Then turn the Movie Camera on.

Do not use the Movie Camera near a radio transmitter or high-voltage power line.

- If you record near a radio transmitter or high-voltage power line, the recorded picture and sound may be adversely influenced.

Do not use the Movie Camera for surveillance and other industrial application.

- If the Movie Camera is being used for a long time, the inside temperature could rise excessively and this may cause malfunction.
- This Movie Camera is not designed for industrial use.

Take care that no sand and fine dust enters the Movie Camera when using it on a beach or similar places.

- Sand and dust could damage the Movie Camera and cassette. (Be careful when inserting and removing the cassette.)

Do not spray insecticide or volatile agents on the Movie Camera.

- Such agents could deform the body and cause the surface coating to peel off.
- Do not leave the Movie Camera in direct contact with rubber or plastic products for a long time.

Do not use benzine or thinner for cleaning.

- They could deform the body and cause the surface coating to peel off.
- Before cleaning, remove the Battery or unplug the AC Mains Lead from the AC mains socket.
- Wipe the Movie Camera with a soft, clean cloth. To remove persistent stains, wipe with a cloth moistened with mild detergent diluted with water, and then finish with a dry cloth.
- When storing or transporting the Movie Camera, place it in a softly padded bag or case to prevent the coating of the camera body from wearing off.

After use, always take out the cassette and remove the Battery or unplug the AC Mains Lead from the AC mains socket.

- If you leave the cassette in the Movie Camera, the tape can become loosened and damaged.
- If you leave the battery attached to the Movie Camera for a long time, the voltage level may drop very low so that the Battery cannot be used any more even after charging.

Notes about the AC Adaptor

- If the temperature of the Battery is extremely high or extremely low, the [CHARGE] Lamp may keep on flashing and charging is not possible. After the Battery has cooled down or warmed up sufficiently, charging starts automatically. However, if the [CHARGE] Lamp continues to flash after the Battery has cooled down or warmed up sufficiently, some malfunction may have occurred in the Battery or in the AC Adaptor. In this case, consult with your dealer.
- When the battery is warm, charging takes longer than usual.
- When you use the AC Adaptor near a radio, the radio reception may be distorted. Keep the AC Adaptor more than 1 metre away from the radio.
- When the AC Adaptor is in use, it may emit a whirring sound. However, this is normal.
- After use, be sure to disconnect the AC Mains Lead from the AC mains socket. (If you leave it connected, a small amount of electricity is consumed.)
- Always keep the terminals of the AC Adaptor and the battery clean.

■ Condensation

Determining Whether Condensation Has Formed Inside and Remedy for Condensation

If the Condensation Indication flashes after you turn on the Movie Camera, condensation has formed inside the Movie Camera. In this case, the Movie Camera automatically switches off after approximately 1 minute.

Remedy as follows:

- 1 Take out the cassette.**
All other functions do not work. Depending on the amount of condensation, it may not be possible to take out the cassette. In this case, wait 2–3 hours before taking out the cassette.
- 2 Leave the Cassette Compartment open and wait for 2–3 hours.**
The required time depends on the amount of condensation and the ambient temperature.
- 3 After 2–3 hours, turn the Movie Camera on and check if the Condensation Indication is not displayed.**
Even if the Condensation Indication is no longer displayed, wait 1 more hour for added safety before using the Movie Camera again.

Pay Attention to Condensation Even Before the Condensation Indication Appears.

- As condensation forms gradually, the Condensation Indication may not appear for the first 10–15 minutes after condensation has formed inside.
- In an extremely cold place, the condensation could freeze and turn into frost. In such a case, it takes an additional 2–3 hours for the frost to first melt into condensation and then to be dissolved.

Remedy for a Fogged-up Lens

Set the [OFF/ON] Switch to [OFF] and leave the Movie Camera in this condition for about 1 hour. When the lens has reached about the same temperature as its surroundings, it automatically clears up.

Periodic Inspection

To ensure optimum picture quality, we recommend that you have worn-out parts such as video heads replaced after approximately 1000 hours of use. (However, this depends considerably on the conditions of use such as temperature, humidity and dust.)

Cautions for Use (Continued)

■ Optimum Use of the Battery

Special Characteristics of the Battery

This Battery is a rechargeable lithium-ion battery. Its ability to generate electric energy is based on an internal chemical reaction. This reaction is easily influenced by ambient temperature and humidity, and the useful operation time that the Battery can provide becomes shorter at high and low temperatures. When used in extremely cold surroundings, the Battery may only be able to provide approximately 5 minutes of operation time. If the Battery becomes extremely hot, a protection function is activated and prevents the use of the Battery for some time.

After Use, Always Remove the Battery.

Be sure to remove the Battery from the Movie Camera. (If it is attached to the Movie Camera, a small amount of electric current is consumed even if the Movie Camera is turned off.) Leaving the Battery attached to the Movie Camera for a very long time could cause it to become excessively discharged, so that it cannot be used any more even after charging.

Keep the Battery's Terminals Clean.

Be careful that the terminals do not get plugged up with dust, dirt or other substances.

If you accidentally drop the Battery, confirm that the Battery itself and the terminals are not deformed. Attaching a deformed Battery to the Movie Camera or to the AC Adaptor could damage the Movie Camera or the AC Adaptor.

Discarding a Battery That Has Become Unusable

- The usable life of the Battery is limited.
- Do not throw the Battery in a fire because it could explode.

■ Precautions for Storage

Before Storing the Movie Camera, Take out the Cassette and Remove the Battery.

Store all equipment in a dry place where the temperature remains relatively constant. (Recommended temperature is 15°C–25°C and recommended relative humidity is 40%–60%.)

Movie Camera

- Wrap it with a soft cloth to prevent dust from entering.
- Never leave the Movie Camera in places with high temperature.

Battery

- Extremely low or high temperature shortens the Battery life.
- Storing it in places with oily smoke and a lot of dust could cause the terminals to get rusty, and this can result in a malfunction.
- **Do not allow metal objects (such as necklaces and hair pins) to touch the battery terminals. Short-circuiting may occur and generate heat, and touching it in this condition could inflict serious burns.**
- Store the Battery in discharged condition. If you store the Battery for a long time, we recommend that you charge it once a year and completely use up the charge before storing it again in discharged condition.

Cassette

- Rewind the tape to its beginning before storing. Leaving the cassette with the tape stopped halfway for more than 6 months (depending on the storing condition) loosens the tape. Be sure to rewind it to the beginning.
- Put the cassette in its case to store it. Dust, direct sunlight (ultraviolet rays) and humidity could damage the tape. Dust contains hard mineral particles and cassettes with dust damage the video heads and other parts of the Movie Camera. Make it a habit to always put the cassette back into its case.
- Completely wind the tape forward and then rewind it once every half year. Leaving the cassette for more than a year without winding/rewinding it may deform the cassette because of stretching and shrinking of the tape due to changes in temperature and humidity. Also, the tape may stick together.
- Do not place the cassette near strongly magnetized objects or equipment.
- The tape surface is coated with microscopic magnetic particles and they record signals. Such objects as magnetic necklaces and toys have stronger magnetic force than commonly thought, and this could erase the recorded contents and cause noise in picture and sound.

MultiMediaCard (NV-DS25 only)

- While the MultiMediaCard is being read, do not remove it, turn off the power, or subject it to vibrations and shocks.
- Do not leave the MultiMediaCard in a place with high temperature, exposed to direct sunlight, or where electromagnetic waves and static electricity can be generated.
- Do not bend or drop the MultiMediaCard as this could damage the MultiMediaCard or the stored contents.
- **After use, be sure to remove the MultiMediaCard from the Movie Camera.**
- After using the MultiMediaCard or when storing or carrying it, put it in the supplied MultiMediaCard Case.
- Do not touch the connector on the rear edge of the MultiMediaCard with your fingers and take care that no dirt, dust or water enters it.

■ LCD Monitor/Viewfinder/Lens Hood

LCD Monitor (NV-DS15, NV-DS150, NV-DS25 only)

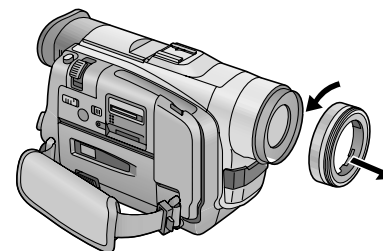
- In places where big changes in temperature occur, condensation may form on the LCD Monitor. Wipe it with a soft, dry cloth.
- If the Movie Camera is very cold when it is turned on, the picture on the LCD Monitor is initially a little darker than normally. However, as the internal temperature rises, the LCD Monitor regains its normal brightness.
- Extremely high precision technology is employed to produce the LCD Monitor screen featuring a total of approximately 112,000 pixels. The result is more than 99.99% effective 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.

Viewfinder

- Extremely high precision technology is employed to produce the Viewfinder screen featuring a total of approximately 113,000 pixels. 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.
- Do not leave the Viewfinder or the Lens aimed at the sun. This could seriously damage internal parts.
- If you use a large-capacity Battery (CGP-D320; optional) attached to the Movie Camera, viewing the picture in the Viewfinder from behind may not be practical. In this case, turn up the Viewfinder to an angle that allows comfortable viewing.

Lens Hood

- Never try to attach any conversion lens onto the front of the Lens Hood; it does not have a threaded mount on the front.
- When you want to attach the Tele Conversion Lens (VW-LT4314WE, optional), the Wide Conversion Lens (VW-LW4307WE, optional) or a filter of the Filter Kit (VW-LF43WE, optional), be sure to first remove the Lens Hood by turning it counterclockwise. If you attach a filter of the Filter Kit, you can attach the Lens Hood onto it.



- During recording with a filter or conversions lens attached, the four corners of the picture may become dark (vignetting effect), when you push the [W/T] Zoom Lever toward [W]. For details, please also read the operating instructions of the accessory being used.

Microphone Socket

- If you want to perform audio dubbing via an external microphone or audio equipment, connect it to the [MIC] Socket. In this case, the Movie Camera's built-in microphone is turned off.

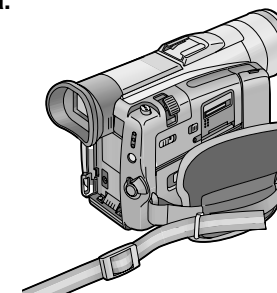
■ Repeat Playback

- If you keep the Playback Button [▶] pressed for more than 5 seconds, the Movie Camera switches over to the Repeat Playback Mode and the [R ▷] Indication appears. (To cancel the Repeat Playback Mode, set the [OFF/ON] Switch to [OFF].)

■ Attaching the Shoulder Strap

Before you go recording outside, we recommend that you attach the Shoulder Strap to prevent the Movie Camera from dropping accidentally.

- 1 Pull the end of the Shoulder Strap through the Shoulder Strap Holder on the Movie Camera.**



- 2 Fold the end of the Shoulder Strap back, pull it first through the loop and then the Shoulder Strap Length Adjuster.** Pull it out more than 2 cm ❶ from the Shoulder Strap Length Adjuster so that it cannot slip off.

