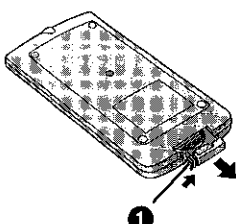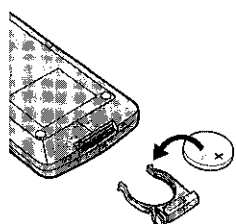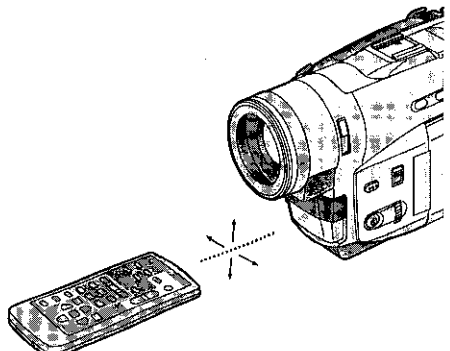| Title	Procedure

Remote Controller (Continued)

■ Inserting the Button-type Battery
Insert the supplied button-type battery before using the Remote Controller.

● 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.**

1
Pull out the Battery Holder while pressing the Stopper ❶.

2
Insert the button-type battery with the stamped (+) mark facing upward.

■ Using the Remote Controller

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.

■ 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.

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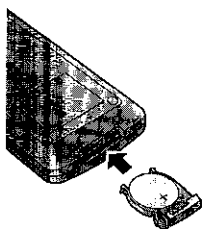This selects the [VCR1] Mode.

❷ Press the [◄] Button and [■] Button simultaneously.
This selects the [VCR2] Mode.
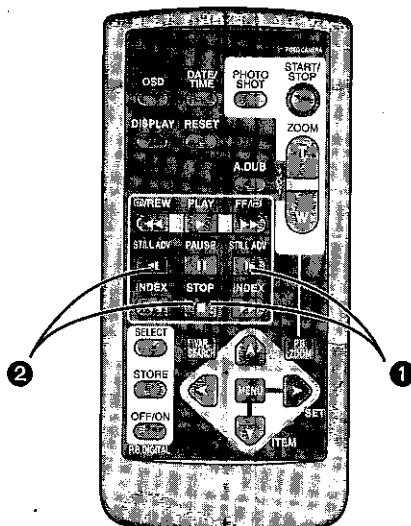
3

Insert the Battery Holder Into the Remote Controller.

Information for your safety

WARNING

"THE LITHIUM BATTERY IS A CRITICAL COMPONENT (TYPE NUMBER CR2025 MANUFACTURED BY PANASONIC).
IT MUST NEVER BE SUBJECTED TO EXCESSIVE HEAT OR DISCHARGE. IT MUST THEREFORE ONLY BE FITTED IN EQUIPMENT DESIGNED SPECIFICALLY FOR ITS USE.
REPLACEMENT BATTERIES MUST BE OF THE SAME TYPE AND MANUFACTURER.
THEY MUST BE FITTED IN THE SAME MANNER AND LOCATION AS THE ORIGINAL BATTERY, WITH THE CORRECT POLARITY CONNECTIONS OBSERVED.
DO NOT ATTEMPT TO RE-CHARGE THE OLD BATTERY OR RE-USE IT FOR ANY OTHER PURPOSE. IT SHOULD BE DISPOSED OF IN WASTE PRODUCTS DESTINED FOR BURIAL RATHER THAN INCINERATION."

Remarks, etc.

● 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).

Setting to be Made on the Movie Camera:
Set [REMOTE] on the [OTHER FUNCTIONS] Sub-Menu to the desired Remote Controller Mode.

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.
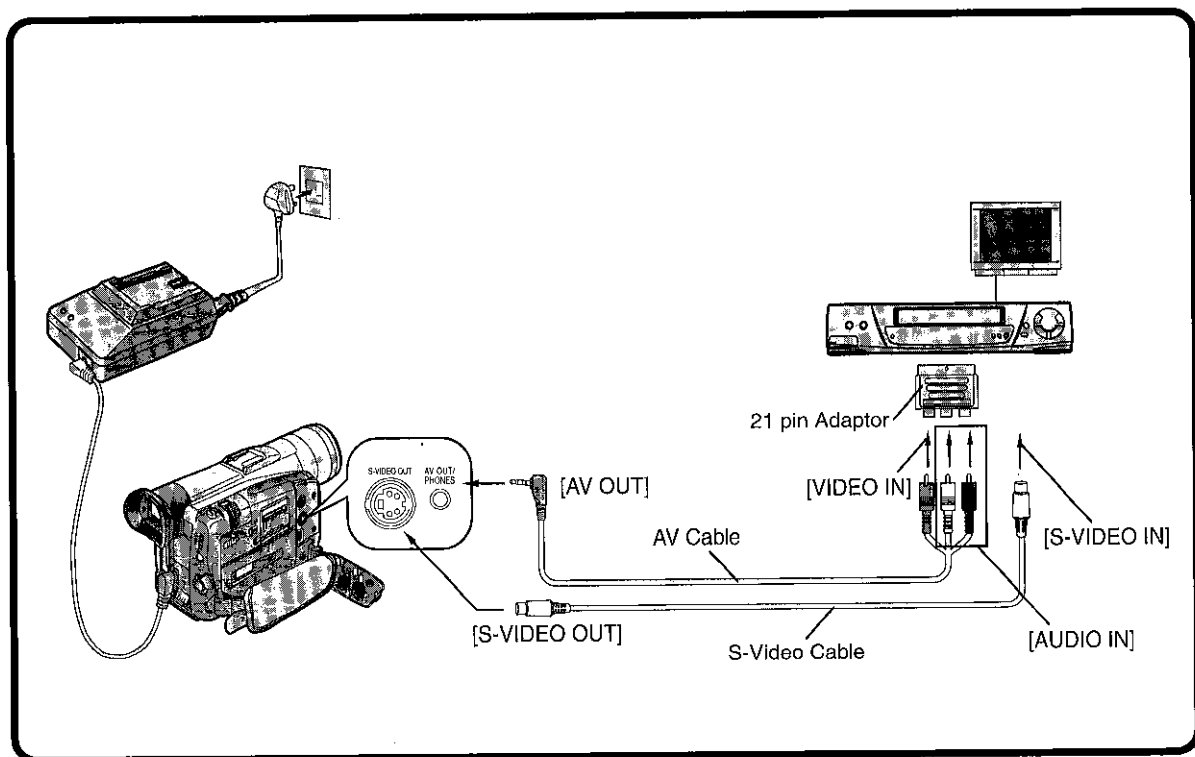
After making the connections shown above, perform the necessary operations.
Before copying, be sure to press the [OSD] Button on the Remote Controller (p. 80) so that no indications are visible. Otherwise, the displayed tape counter and function indications are also copied.
● If your VCR is not equipped 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)
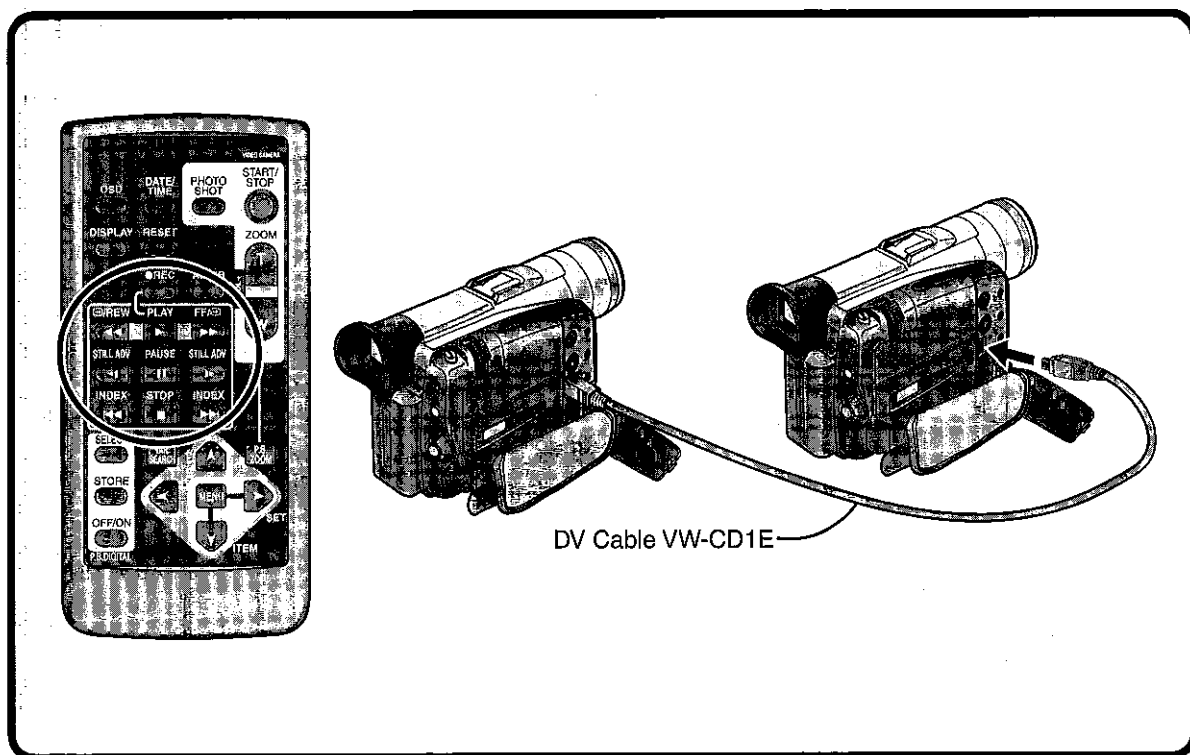
DV Cable VW-CD1E

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 digitalformat.

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.

●REC   PLAY
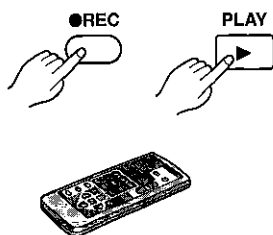
Stopping Dubbing
Press the Pause Button [❚❚] or the Stop Button [■] to stop recording.
●Dubbing is automatically performed in the same audio recording mode as that of the cassette in the playback unit, regardless of the setting for [AUDIO REC] on the [RECORDING SETUP] Sub-Menu of the [CAMERA FUNCTIONS] 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.

Editing

85

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.
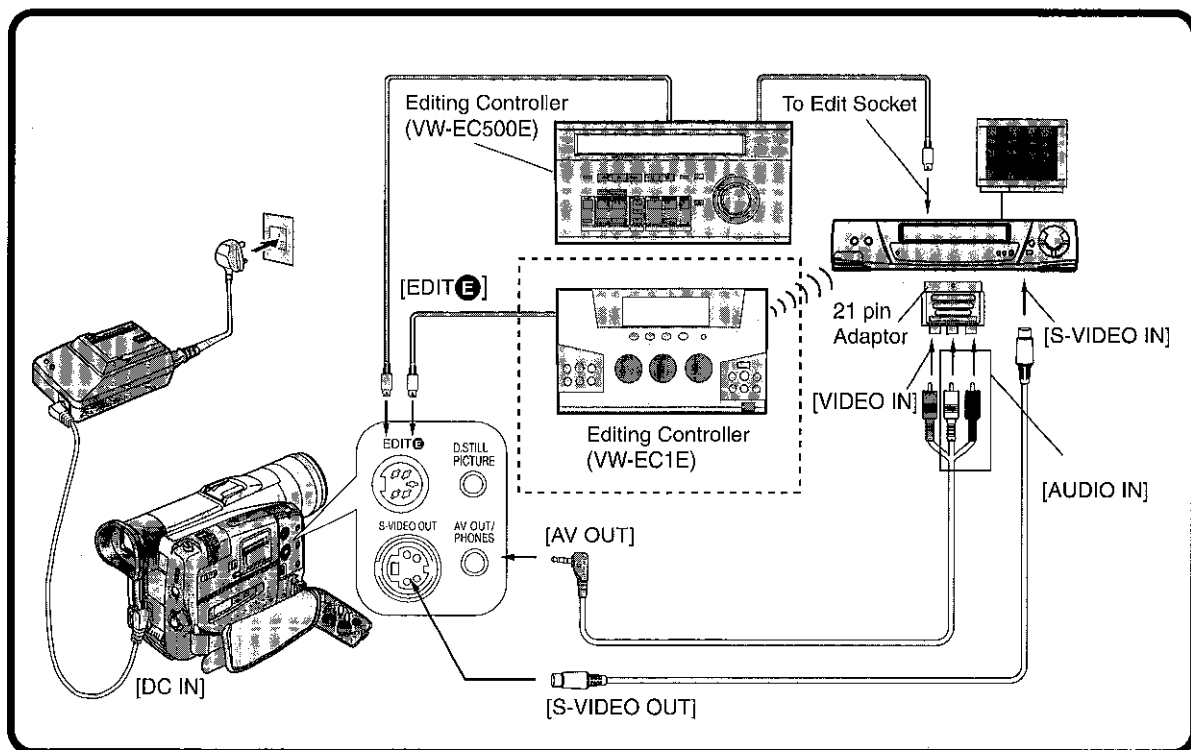
When Connecting the Editing Controller VW-EC500E (optional)

● 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.

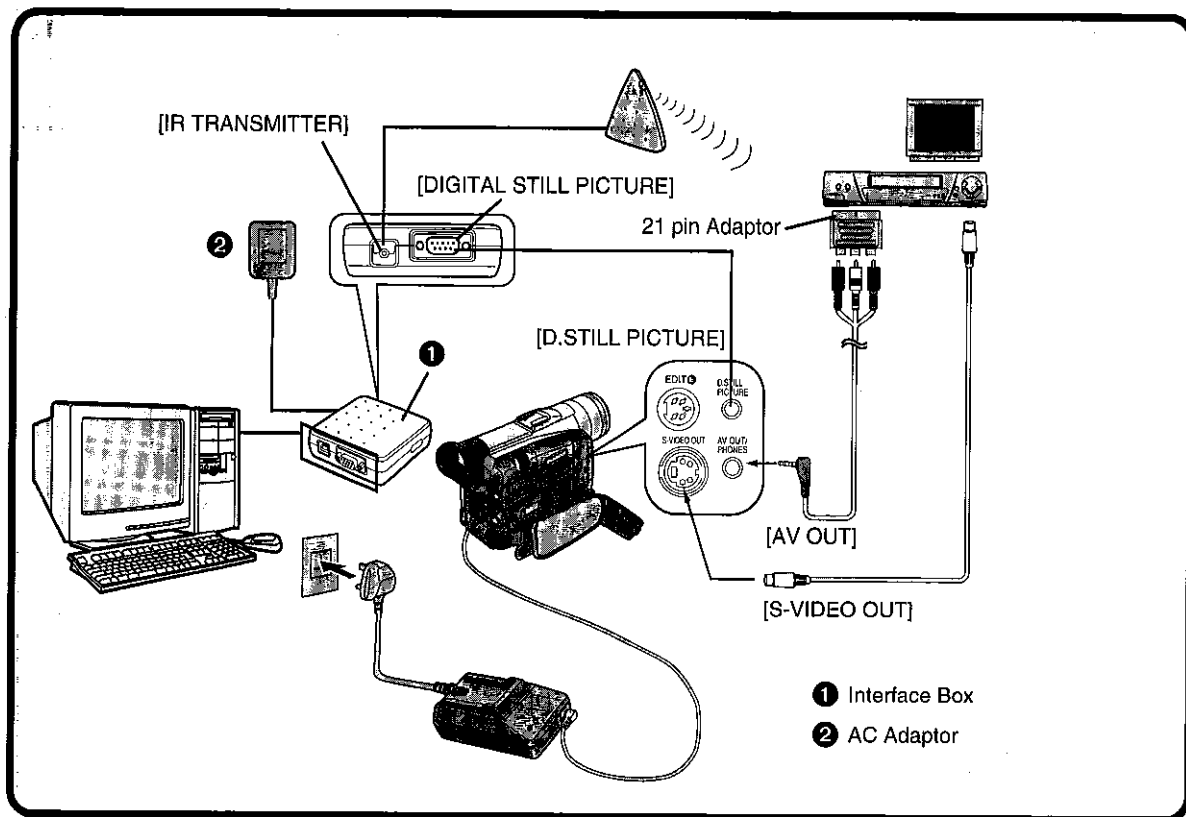### When Connecting the Editing Controller VW-EC1E (optional)

● 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

[IR TRANSMITTER]

[DIGITAL STILL PICTURE]

21 pin Adaptor

[D.STILL PICTURE]

EDIT○ D.STILL PICTURE

S-VIDEO OUT AV OUT/ PHONES

[AV OUT]

[S-VIDEO OUT]

❶ Interface Box

❷ AC Adaptor

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 ❶ 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.

[EDIT]   [S-VIDEO IN]

Edit Cable VW-K5E
(optional)

[EDIT●]

S-Video Cable

[S-VIDEO OUT]
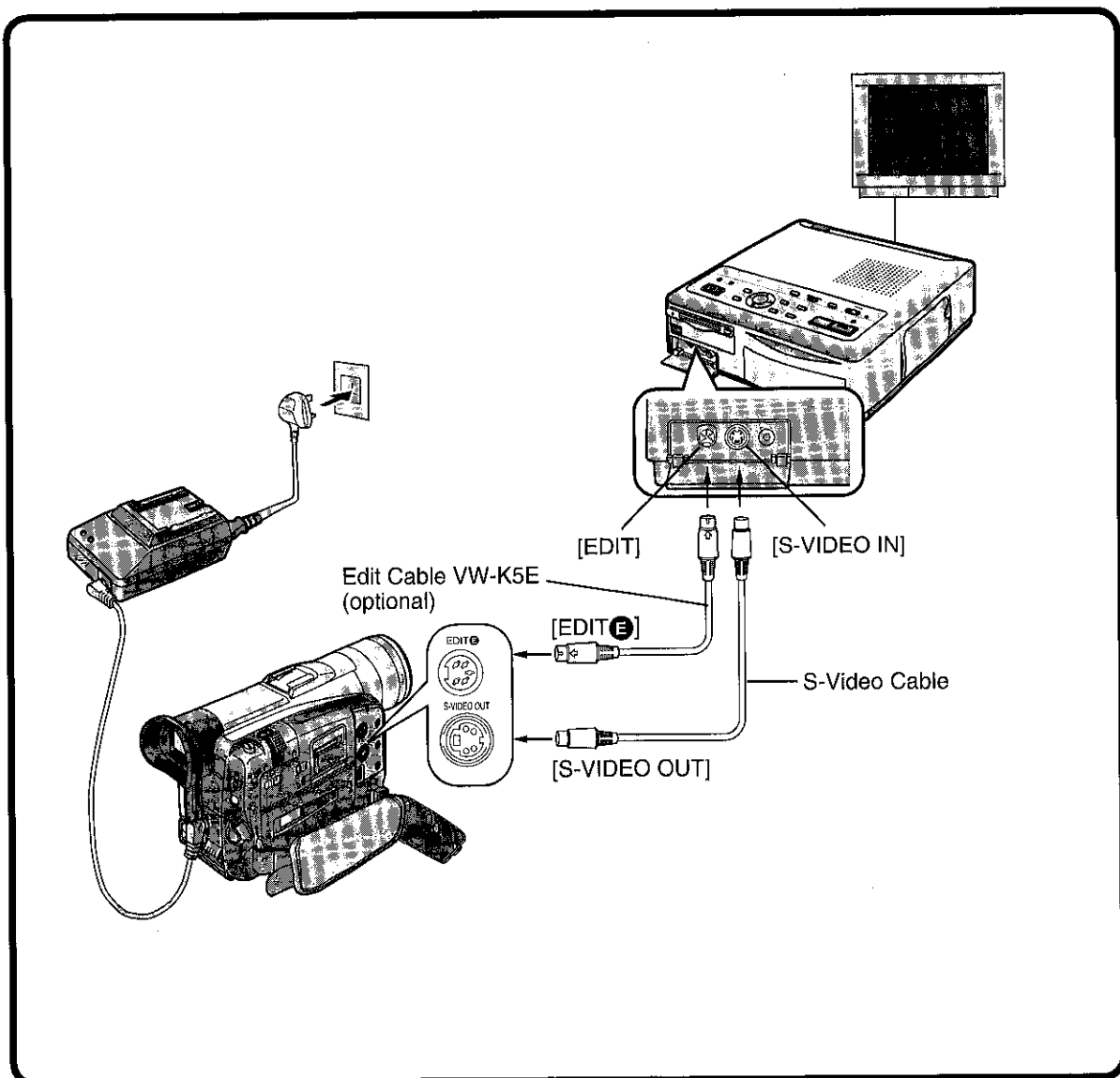
Movie Camera:

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.

88

■ 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)**

Editing

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.

90

■ 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.)

Miscellaneous/
Care of Unit/Options

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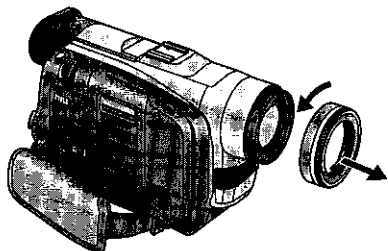
●During recording with a filter or conversions lens attached, the four corners of the picture may become dark (vignetting effect), when you push the [W/T] Zoom Lever toward [W]. For details, please also read the operating instructions of the accessory being used.

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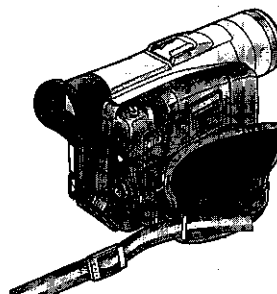
2 Fold the end of the Shoulder Strap back, pull it first through the loop and then the Shoulder Strap Length Adjuster.
Pull it out more than 2 cm ❶ from the Shoulder Strap Length Adjuster so that it cannot slip off.

Miscellaneous/
Care of Unit/Options

93
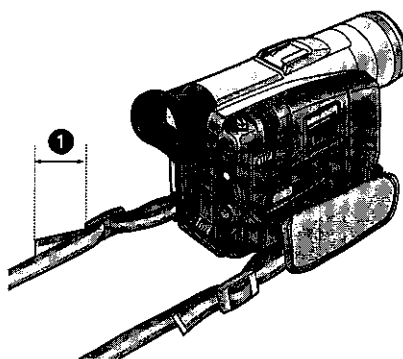
Glossary

■ Focus

If you look at an object through a magnifying glass and move it closer or further away from your eye, you will reach a point where the object becomes clearly visible. Being focused or in focus means that the subject can be seen with optimum clarity and sharpness.

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

Movie Camera
The image of the subject enters the Movie Camera through the lens and is converted into an electric signal (video signal) for recording onto magnetic tape. The focus is adjusted either manually or automatically by moving a focusing lens.

Auto Focus Adjustment
The Auto Focus System automatically moves the internal focusing lens forward or backward and adjusts the focus so that the subject can be seen clearly.
The Auto Focus Adjustment has the following characteristics:
- It adjusts until the vertical contours of the subject are as sharp and clean as possible.
- It adjusts the focus on the subjects with strong contrast.
- It adjusts the focus on the subject in the centre of the Viewfinder.
  Unlike human eyes, the lens of the Movie Camera cannot instantaneously change the focus from a nearby to a distant subject and vice versa.

For the following subjects and recording situations, the Auto Focus system cannot provide precise adjustment. Use the Manual Focus Mode instead. (p. 28)

❶ Recording subjects with a part of it near the Movie Camera and another part far away from it
As the Auto Focus adjusts on the centre part of the image, it is often impossible to bring the nearby and distant parts of the subject into focus.
When you want to record a person with a distant mountain in the back, it is not possible to focus on both.

❷ Recording subjects behind glass covered with dirt or dust
As the focus is adjusted on the dirty glass, the subject behind the glass is out of focus. When recording a subject across a street on which cars are running, the focus may be adjusted on the cars.

❸ Recording subjects in dark surroundings
As the amount of light information entering through the lens is greatly reduced, the Movie Camera cannot adjust the focus precisely.

❹ Recording subjects surrounded by objects with shiny surfaces or much light reflection
As the Movie Camera adjusts the focus on objects with shiny surfaces or much light reflection, the subject may go out of focus. Therefore, when recording at a lake or the sea, evening scenes, fireworks, or under special types of lighting, the subject may be out of focus.

❺ Recording fast-moving subjects
As the internal focusing lens is moved mechanically, it cannot follow fast-moving subjects without delay.
Therefore, subjects like children running back and forth may temporarily go out of focus.

❻ Subjects with weak contrast
As the Movie Camera adjusts the focus based on vertical contours in the picture, subjects with little contrast such as a white wall may be out of focus.

94

■ White Balance Adjustment

While most recording with a Movie Camera is probably done outdoors under sunlight, video recording is also done very often under artificial light sources, both indoors and outdoors. However, each of these light sources gives the subject slightly different colours.

Human Eyes
Human eyes can easily adjust to different kinds of lighting and see an object with the same colours even under different lighting.

Movie Camera
Unlike human eyes, the Movie Camera does not have the innate ability to adapt to changes in lighting, and they influence the colours being recorded. Therefore, depending on the light source, the picture would be recorded with a bluish or reddish tint. To minimise the influence of the lighting on the colours of the subject, an adjustment called White Balance Adjustment is necessary.

White Balance Adjustment
The White Balance Adjustment determines the colour of the light and adjusts the colours so that white remains pure white. As white is the basic colour of the entire colour spectrum, if white is reproduced correctly, the other colours are correct and natural, too.

Auto White Balance Adjustment
This Movie Camera stores the optimum settings for several common light sources in memory. The Movie Camera judges the recording situation by determining the tint of the light received through the lens and by the White Balance Sensor (p. 6), and it selects the setting for the most similar tint. This function is called Auto White Balance Adjustment.
However, as the white balance settings for only a few light sources are stored in memory, the white balance is not correctly adjusted for other lighting conditions.

For the range of different types of lighting within which the Auto White Balance Function can provide precise adjustment, refer to the chart. For recording under lighting conditions outside this range, the Auto White Balance Function does not work correctly, and the recorded picture has a red or blue cast. However, the same also applies, if the subject is lit by more than one light source, even if these light sources are within this range.

■ Colour Temperature

Every light source has its own colour temperature measured in Kelvin (K). The higher the Kelvin value, the more bluish the light; the lower the value, the more reddish the light. The Kelvin value is related to the tint of the light, but not directly to its brightness.
The range ❶ indicated in the illustration below shows the light sources for which this Movie Camera can provide precise white balance adjustment and, therefore, natural colours in the recorded pictures, when using the Full Auto Mode. For light sources outside this range, adjust the white balance manually (p. 56). Also, additional lighting may be necessary.

❶ Control range of this Movie Camera's Auto White Balance Adjustment Mode

❷ Blue Sky

❸ Cloudy sky (Rain)

❹ TV screen

❺ Sunlight

❻ White fluorescent lamp

❼ 2 hours after sunrise or before sunset

❽ 1 hour after sunrise or before sunset

❾ Halogen light bulb

❿ Incandescent light bulb

⓫ Sunrise or sunset

⓬ Candlelight
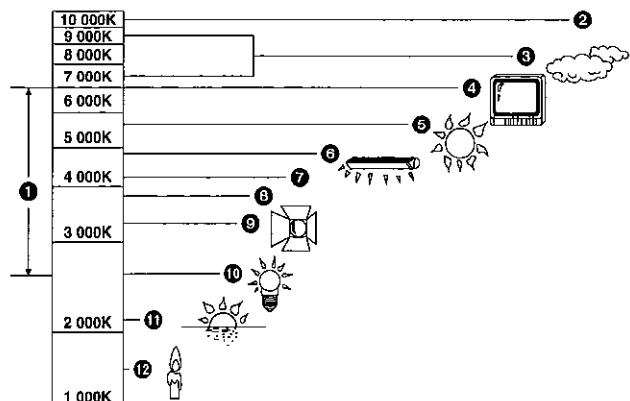
Glossary (Continued)

■ Digital Video System

In the digital video system, picture and sound are converted into digital signals and recorded onto the tape.

This completely digital recording allows recording and playback of picture and sound with minimum quality deterioration.

In addition, such data as Time code, Date and Time are also automatically recorded as digital signals.

Features
●Superior picture resolution
●Excellent signal-to-noise ratio
●Stable pictures
●Minimised quality deterioration in dubbing
●Minimised cross colour distortion
●PCM digital sound
●No picture deterioration in LP Mode
●6.35 mm-wide tape
●Compact cassette with long recording time
●Minimised quality deterioration in editing
●Time Code editing

Compatibility with S-VHS or VHS Cassettes
As this Movie Camera uses a digital method for recording picture and sound, there is no compatibility with conventional S-VHS or VHS video equipment using analog recording methods. In addition, the size and shape of the cassette are completely different.

Compatibility with Output Signals
As the video and audio signals output from the audio and video output sockets are analog—the same as in conventional video systems—you can connect this Movie Camera to your S-VHS or VHS VCR or TV for playback.

PCM Digital Sound
For recording of the sound, this Movie Camera offers the choice between two different PCM Audio Recording Modes.
●16 bit, 48 kHz, 2 channels
●12 bit, 32 kHz, 4 channels
The "16 bit, 48 kHz, 2 channels" Mode offers superior recording sound quality.
The "12 bit, 32 kHz, 4 channels" Mode lets you record the original sound in stereo on two channels and the dubbed sound in stereo on two separate channels.

Sub Code
The digital recording system offers the added capability of recording sub code containing various data.
The following data is recorded as sub code on this Movie Camera:
●Time code
●Recording date and time
●Index signals for locating still images recorded in the Photoshot Mode
●Index signals for locating the beginning of scenes marked with index signal

■ Time Code

Time Code signals are the data which indicated the time in hours, minutes, seconds and frames (25 frames/sec). Having this data included in the recording gives every single picture on the tape its own address.

- The Time Code is automatically recorded as part of the sub code with every recording you make.
- When you insert a new (previously unrecorded) cassette, the Time Code automatically starts from zero. If you insert a recorded cassette, the Time Code continues where the time code of the last previous scene stopped. (In this case, the zero indication [0h00m00s00f] may appear after inserting the cassette, but when the recording starts, the Time Code records from the previous value.)
- You cannot reset the Time Code to zero.
- In playback modes other than the Normal Playback Mode, the Time Code may not be displayed (or not be correct).
- Unless the Time Code is recorded continuously from the beginning of the tape, precise editing may not be possible. To ensure that the Time Code is recorded without interruption, we recommend that you use the Camera Search Function (p. 40) or Blank Search Function (p. 40) before starting to record a new scene.

■ Memory Stop Function

The Memory Stop Function is convenient for the following operations.

Rewinding or fast-forwarding the tape to a desired position

1 Set [C.DISPLAY] on the [DISPLAY SETUP] Sub-Menu to [MEMORY].

2 Reset the Tape Counter to zero at the tape position from which you want to play back later. (p. 19, 81)

3 Start playback or recording.

4 After playback or recording is finished: **Press the [MODE] Button until the [VCR] Lamp lights.**

5 Rewind the tape.
The tape automatically stops approximately at the position at which you reset the counter to zero.

Stopping the editing automatically in the audio dubbing

1 Set [C.DISPLAY] on the [DISPLAY SETUP] Sub-Menu to [MEMORY].

2 Reset the Tape Counter to zero at the tape position at which you want the editing to stop.

3 Play back a still picture at the point at which you want the audio dubbing to start.

4 Start the audio dubbing. (p. 64)
The audio dubbing automatically stops approximately at the position at which you reset the counter to zero.

Miscellaneous/
Care of Unit/Options

97
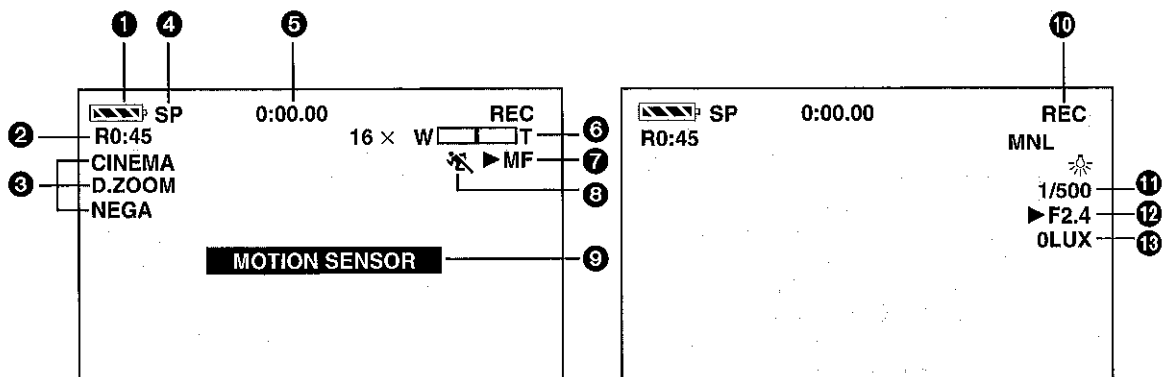
Indications

❶ Remaining Battery Power
As the remaining battery power decreases, the indication changes as follows:
▨▨▨▶ → ▨▨▨▶ → ▨▨▶ → ▨▶ → ▭▶
When the battery is completely discharged, the ▨▶ (▭▶) Indication flashes.
(When you are using the AC Adaptor, the ▨▨▨▶ Indication may appear, however, this has no meaning in this case.)

❷ Remaining Tape Time
The remaining tape time is displayed in minutes. (When it becomes less than 3 minutes, the indication starts to flash.)
●If a recording lasts less than 15 seconds, the Remaining Tape Time cannot be displayed correctly.
●The displayed remaining tape time may be shorter than the actual remaining tape time.

❸ Cinema Mode (p. 32)
When recording the Cinema Mode, this indication is displayed.

Digital Zoom (p. 31)
When the Digital Zoom function is activated, this indication is displayed.

Digital Effects (p. 48, 60)
When a digital effect is activated, the corresponding indication is displayed.

Playback Zoom (p. 62)
When the Playback Zoom Function is activated, this indication and the zoom magnification are displayed.

❹ Recording Speed Mode (p. 13)
The selected Recording Speed Mode is displayed.
SP: Standard Mode
LP: Long-play Mode

❺ Tape Counter, Time Code (p. 99)
The Tape Counter, Memory Stop Function or Time Code Indication is displayed.

❻ Zoom Magnification (p. 30)
When you push the [W/T] Zoom Lever up or down, the Zoom Magnification Indication and the Zoom Gauge are displayed.

Recording Mode (p. 24, 28, 46, 56, 58)
AUTO: This appears when the Mode Selector Switch is set to [AUTO].
MNL: This appears when the Mode Selector Switch is set to [MNL].

Super Image Stabilizer (p. 32)
(📷) :   When the Super Image Stabilizer Function is activated, this indication is displayed.

Audio Recording Mode (p. 64)
12bit/16bit: The indication of the Audio Recording Mode that was selected for recording is displayed during playback.

Automatic Printing (p. 89)
AUTOPRINT: This indication is displayed when the Auto Print Function is being used.

❼ Manual Focus (p. 28)
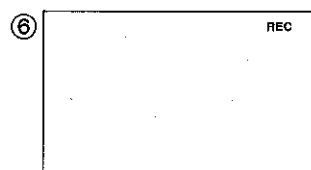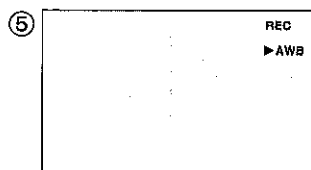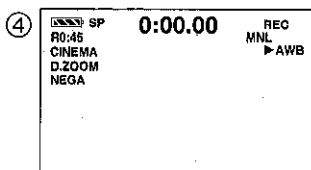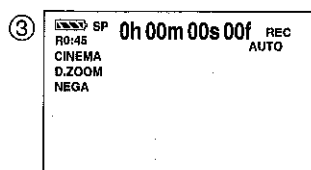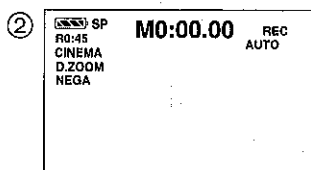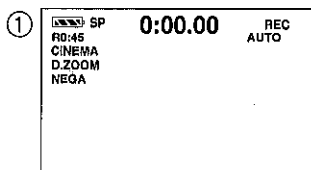If you select the Manual Focus Mode, the [MF] Indication is displayed.

❽ Programme AE Mode (p. 46)
The Programme AE Function offers the following settings:
🏃 :   Sports Mode
👤 :   Portrait Mode
◊ :   Low Light Mode
🔦 :   Spotlight Mode
⛷ :   Surf & Snow Mode

❾ Motion-Sensor-Controlled Recording Mode (p. 52, 54)
When the Motion-Sensor-Controlled Recording Mode is activated, this indication is displayed.

① Tape Run Indications

REC:	Recording (p. 24)
PAUSE:	Recording Pause (p. 24)
STDBY:	Motion Sensor Stand-by (p. 52, 54)
▷:	Playback (p. 34)/Camera Search in forward direction (p. 40)
◁:	Camera Search in reverse direction (p. 40)
❚❚:	Still playback (p. 36)
▷▷:	Fast-forward/Cue playback (p. 34)
◁◁:	Rewind/Review playback (p. 34)
I▷/◁I:	Slow Playback in forward direction/ Slow Playback in reverse direction (p. 36)
❚❚▷/◁❚❚:	Still Advance playback in forward direction/Still Advance playback in reverse direction (p. 36)
▷▷I/I◁◁:	Index Search in forward direction/ Index Search in reverse direction (p. 42)
CHK:	Recording check (p. 26)
A.DUB ▷:	Audio dubbing (p. 64)
A.DUB ❚❚:	Audio dubbing pause (p. 64)
PHOTO:	Recording in the Photoshot Mode (p. 30, 68)
BLANK:	Blank Search (p. 40)
2×▷▷:	Variable Speed Search (p. 35)
R ▷:	Repeat playback (p. 93)

●When you record with the LCD Monitor facing forward using the Mirror Mode, none of the Tape Run Indications shown above appear. Only the Remaining Battery Power Indication, the Recording Indication [●] and the Recording Pause Indication [●❚❚] appear. If the [[!]] Indication appears, turn the LCD Monitor so that it faces backward and then confirm the displayed warning message(s). **(NV-DS15, NV-DS150, NV-DS25 only)**

① Shutter Speed (p. 58)
When you manually adjust the shutter speed, this indication is displayed.

② Iris Value (F Number) (p. 58)
When you manually adjust the iris, this indication is displayed.

③ 0 Lux Night View Mode (p. 54)
When the 0 Lux Night View Mode is activated, this indication is displayed.
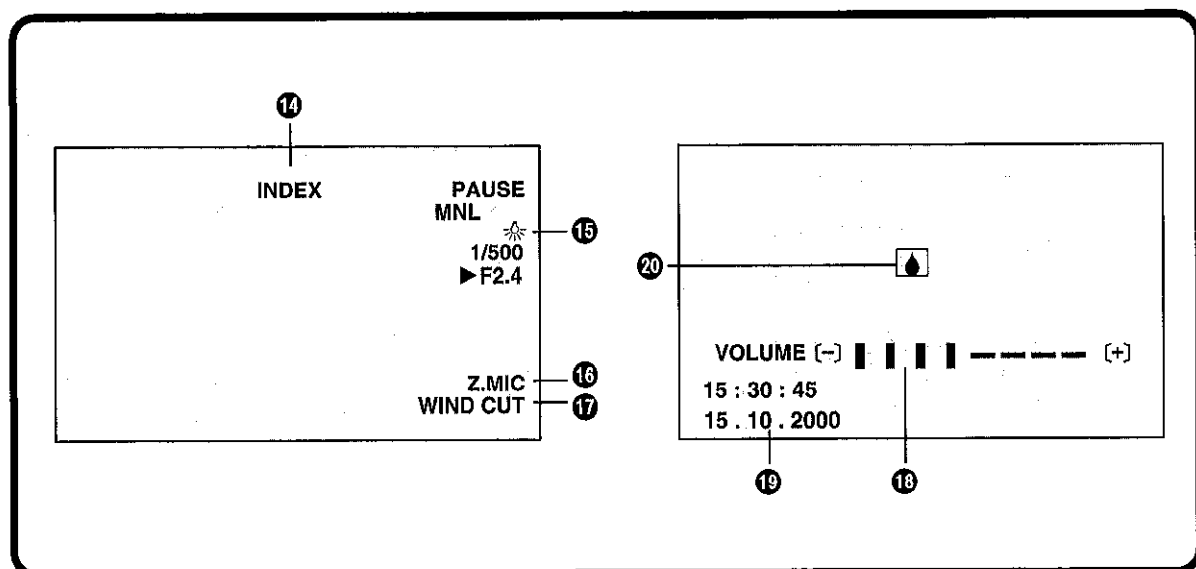
Changing the Counter Display Mode
By changing the setting for [C.DISPLAY] on the [DISPLAY SETUP] Sub-Menu, the Counter Display Mode can be changed in the order shown in the above illustrations ①–③.

① **COUNTER:** Tape Counter Indication

② **MEMORY:** Tape Counter Indication with activated Memory Stop Indication

③ **TIMECODE:** Time Code Indication

Changing the Display Mode
By changing the setting for [DISPLAY] on the [DISPLAY SETUP] Sub-Menu, the Counter Display Mode can be changed in the order shown in the above illustrations ④–⑥.

④ **ALL:** All Indications appear (Initial setting)

⑤ **PARTIAL:** Only a few indications appear

⑥ **OFF:** The minimally required indications, such as the Operation Mode Indications and Warning/Alarm Indications, appear

Miscellaneous/ Care of Unit/Options

99

⓮

INDEX   PAUSE
               MNL
               ⌖ — ⓯
               1/500
               ►F2.4

⓴ — ⬤

               Z.MIC — ⓰
               WIND CUT — ⓱

VOLUME [-] ▮ ▮ ▮ ▮ — — — — [+]
15 : 30 : 45
15 . 10 . 2000

⓳   ⓲

⓮ Index (p. 43)
INDEX: The [INDEX] Indication flashes for a few seconds while an index signal is being recorded.

Search Number (p. 42)
S 1: The figure indicates which number of scene ahead from the present scene is to be played back.

⓯ White Balance Mode (p. 56)
The White Balance Mode offers the following possible settings:
AWB: Automatic White Balance Mode
↖◢: Last manually adjusted White Balance setting
☀: Outdoor Mode
⌖: Indoor Mode (recording under incandescent lamp)

When the Movie Camera is in the Auto Mode, none of the above 4 indications are displayed.

⓰ Zoom Microphone (p. 31)
When the Zoom Microphone Function is active, this indication is displayed.

⓱ Wind Noise Reduction [WIND CUT]
If you set [WIND CUT] on the [RECORDING SETUP] Sub-Menu of the [CAMERA FUNCTIONS] Main-Menu to [ON], the [WIND CUT] Indication is displayed.

⓲ Sound Volume (p. 35)
Use this indication to adjust the volume of the playback sound from the built-in speaker* or headphones.
*built-in speaker: **NV-DS15, NV-DS150, NV-DS25 only**

⓳ Date and Time (p. 35)
The time is indicated in the 24-hour system.

⓴ Warning/Alarm
When any of the following indications lights or flashes, confirm the condition of the Movie Camera.
▮●▮: Condensation has occurred. (p. 91)
⊡: The erasure prevention slider of the inserted cassette is open (set to [SAVE]).
       Audio dubbing was attempted on an unrecorded (blank) part of the tape.
       No cassette is inserted.
▭⃥: The Battery is discharged. Charge it. (p. 10)
⬚: The built-in battery is discharged. (p. 23)
⊗: The video heads are dirty. (p. 26)
END: During recording, the tape has reached its end.
REMOTE: Wrong Remote Controller Mode is selected. (p. 83)
PRINTER ERROR:
       The Video Printer is not connected correctly, or there is some trouble on the Video Printer.
UNPLAYABLE TAPE
(OTHER FORMAT):
       Playback was attempted on a part of a tape recorded in a different television system.
UNABLE TO A. DUB
(LP RECORDED):
       Audio dubbing is not possible because the original recording was made in the LP Mode.
INCOMPATIBLE TAPE:
       The cassette is incompatible.

100

Specifications

Digital Video Camera Information for your safety

Power Source:	DC 7.9/7.2 V
Power Consumption:	**(NV-DS12)** Recording: 4.2 W
	(NV-DS15, NV-DS150) Recording: 4.2 W (When using Viewfinder)
	4.9 W (When using LCD Monitor)
	(NV-DS25) Recording: 4.5 W (When using Viewfinder)
	5.2 W (When using LCD Monitor)

Recording Format:	Mini DV (Consumer-use Digital Video SD Format)
Tape Used:	6.35 mm digital video tape
Recording/Playback Time:	SP: 80 min.; LP: 120 min. (with DVM80)
Video Recording System:	Digital Component
Television System:	CCIR: 625 lines, 50 fields PAL colour signal
Audio Recording System:	PCM Digital Recording: 16 bit (48 kHz/2ch), 12 bit (32 kHz/4ch)
Input Sensitivity/Impedance:	MIC IN (M3); −70 dBV, 5.6 Kohm
Image Sensor:	1/4-inch CCD Image Sensor
Lens:	Auto Iris, F1.6, Focal Length; 2.9–58 mm, Macro (full range AF)
Filter Diameter:	43 mm
Zoom:	20:1 Power Zoom
Monitor:	**(NV-DS15, NV-DS150, NV-DS25)** 2.5-inch LCD
Viewfinder:	Colour Electronic Viewfinder
Microphone:	Stereo
Speaker:	**(NV-DS15, NV-DS150, NV-DS25)** 1 round speaker ∅ 28 mm
Standard Illumination:	1,400 lx
Minimum Required Illumination:	1 lx (Digital Gain-up Mode)
Video Output Level:	1.0 Vp-p, 75 ohm
S-Video Output Level:	Y Output: 1.0 Vp-p, 75 ohm, C Output: 0.3 Vp-p, 75 ohm
Audio Output Level:	316 mV, 600 ohm
Digital Still Picture:	Digital Still Picture Output, Control Signal Input/Output (Transfer rate: max. 115 kbps)
Digital Interface:	**(NV-DS12, NV-DS15, NV-DS25)** DV Output Terminal (i.LINK, 4-pin)
	(NV-DS150) DV Input/Output Terminal (i.LINK, 4-pin)
Dimensions:	Approx. 190 (W)×98 (H)×69 (D) mm
Weight:	**(NV-DS12)**
	Approx. 620 g (without Battery and DV cassette) Approx. 700 g (withVSB0418 and DVM60)
	(NV-DS15, NV-DS150)
	Approx. 680 g (without Battery and DV cassette) Approx. 760 g (with VSB0418 and DVM60)
	(NV-DS25)
	Approx. 690 g (without Battery and DV cassette) Approx. 770 g (with VSB0418 and DVM60)
Operating Temperature:	0°C–40°C
Operating Humidity:	10%–80%

Card Memory Functions (NV-DS25)

Recording Media:	MultiMediaCard
Image Compression:	JPEG

AC Adaptor Information for your safety

Power Source:	AC 100–240 V, 50/60 Hz
Power Consumption:	20 W
DC Output:	DC 7.9 V, 9 W (Movie Camera Operation)
	DC 8.4 V, 1.2 A (Battery Charging)

Dimensions:	70 (W)×45 (H)×116 (D) mm
Weight:	Approx. 165 g

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

<div style="writing-mode: vertical-rl">Miscellaneous/
Care of Unit/Options</div>

Before Requesting Service (Problems & Solutions)

Power Supply

P1: The Movie Camera does not turn on.

S1: Is the Battery or the AC Adaptor connected correctly? Confirm the connection. (p. 8, 10)

P2: The Movie Camera has turned off automatically.

S2: 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. (p. 25)

P3: The Movie Camera quickly turns off.

S3-1: Is the Battery discharged? When the Remaining Battery Power Indication is flashing or the [☐▷] Indication is displayed, the Battery is discharged. Charge the Battery or attach a fully charged Battery. (p. 10)

S3-2: Has condensation formed? If the Movie Camera is brought from a cold to a warm place, condensation may form inside. In this case, the Movie Camera automatically switches off and no operation can be performed except taking out the cassette. Wait until the Condensation Indication disappears. (p. 91)

P4: The Movie Camera is turned on but no functions operate.

S4: Press the [RESET] Button. If this does not solve the problem, turn the power off for approximately one minute before turning the power on again.
(If the above operation is performed when the [ACCESS] Lamp of the Card Slot is lighting for NV-DS25, the data of the MultiMediaCard may be damaged.)

Battery

P1: The Battery discharges quickly.

S1-1: Is the Battery fully charged? Charge it until the [CHARGE] Lamp on the AC Adaptor goes off. (p. 10)

S1-2: Are you using the Battery in a place where the temperature is very low? The ambient temperature greatly influences the Battery's performance. Its operation time becomes shorter in a cold place. (p. 92)

S1-3: Has the Battery reached the end of its service life? The service life of the Battery is limited. It depends on the way the Battery is used, but when the operation time even after proper charging is too short for normal use, the service life of the Battery has reached its end.

P2: The Battery cannot be charged.

S2: If the DC Input Lead is connected to the AC Adaptor, charging is not possible. Disconnect the DC Input Lead.

Normal Recording

P1: Recording cannot be started even though the Movie Camera is supplied with power and the cassette is inserted correctly.

S1-1: Is the erasure prevention slider of the cassette open? If it is open (set to [SAVE]), recording is not possible. (p. 13)

S1-2: Has the tape reached its end? Insert a new cassette. (p. 12)

S1-3: Is the Movie Camera turned on? (p. 14)

S1-4: Is the [CAMERA] Lamp lit? When the [CAMERA] Lamp is not lit, no recording functions can be operated. (p. 24)

S1-5: Is the Condensation Indicaiton [[▲]] displayed? When condensation has formed, no functions except taking out the cassette can be operated. Wait until the Condensation Indicaiton disappears. (p. 91)

Other Recording

P1: The picture in the Viewfinder suddenly stands still for a few seconds.

S1: Did you press the [PHOTO SHOT] Button? If you press the [PHOTO SHOT] Button, a still picture is recorded for approximately 7 seconds. After approximately 7 secondes, the Movie Camera switched back to the Recording Pause Mode. (p. 30)

P2: The Auto Focus Function does not work.

S2-1: Is the Manual Focus Mode selected? If you select the Auto Focus Mode, the focus is adjusted automatically. (p. 28)

S2-2: Is the subject or recording situation suitable for the Auto Focus Mode? The Auto Focus Function does not work correctly for some kinds of subjects and recording situations. In this case, use the Manual Focus Mode to adjust the focus. (p. 28)

Editing

P1: Audio dubbing cannot be performed.

S1-1: Is the erasure prevention slider of the cassette open? If it is open (set to [SAVE]), editing is not possible. (p. 13)

S1-2: Are you trying to edit parts of the tape recorded in the LP Mode? As the tracks recorded in the LP Mode are narrower than the heads, audio dubbing is not possible. (p. 13, 64)

Indicaitons

P1: The Time Code becomes incorrect.
S1: In the Slow Motion Playback Mode in reverse direction, the counter of the Time Code Indication may not be stable, however, this is not a malfunction.

P2: The Remaining Tape Time Indication disappears.
S2: If you record a still picture in the Photoshot Mode, the Remaining Tape Time Indication may disappear temporarily. However, if you switch the Movie Camera over to the Normal Recording Mode, it appears again.

P3: The Remaining Tape Time Indication does not match the actual remaining tape time.
S3-1: If scenes of less than 15 seconds are recorded successively, the remaining tape time is not indicated correctly.
S3-2: The Remaining Tape Time Indication may show a remaining tape time that is 2–3 minutes shorter than the actual remaining tape time.

Playback (Picture)

P1: No playback picture is reproduced when pressing the Play Button [▶].
S1: Is the [VCR] Lamp lit? When the [VCR] Lamp is not lit, no playback functions can be operated. (p. 34)

P2: Mosaic-like patterns appear in the picture during Cue, Review or Slow Motion Playback.
S2: This phenomenon is a characteristic of the digital video system. This is not a malfunction.

P3: The Movie Camera is correctly connected to a TV, but no playback picture is reproduced.
S3: Did you select "Video Input" on the TV? Carefully read the operating instructions for your TV and select the channel that matches the input sockets used for connection.

P4: The playback picture is not reproduced clearly.
S4: Are the video heads on the Movie Camera dirty? If the video heads are dirty, the picture cannot be played back clearly. (p. 26)

Playback (Sound)

P1: No sound is played back from the Movie Camera's built-in speaker* or headphones.
S1: Is the volume set too low? During playback, keep the [PUSH] Dial pressed until the [VOLUME] Indication appears. Then turn the [PUSH] Dial to adjust the volume. (p. 35)
*built-in speaker: **NV-DS15, NV-DS150, NV-DS25 only**

P2: Different sounds are played back together.
S2: [12bit AUDIO] on the [PLAYBACK FUNCTIONS] Sub-Menu of the [VCR FUNCTIONS] Main-Menu is set to [MIX]. Therefore, the original sound and the sound dubbed with audio dubbing are played back together. It is also possible to play them back individually. (p. 65)

P3: The original sound was erased by performing audio dubbing.
S3: If you perform audio dubbing on a recording made in the [16bit] Mode (p. 64), the original sound is erased. If you want to keep the original sound, be sure to select the [12bit] Mode for the original recording.

P4: No playback sound is reproduced.
S4-1: Is [12bit AUDIO] on the [PLAYBACK FUNCTIONS] Sub-Menu of the [VCR FUNCTIONS] Main-Menu set to [ST2] even though no audio dubbing has been performed on the cassette that you are playing back? When you play back a cassette onto which no audio dubbing was performed, [12bit AUDIO] must be set to [ST1]. (p. 65)
S4-2: Is the Variable Speed Search Function activated? Press the Play Button [▶] to cancel the Variable Speed Search Function (p. 35).

Before Requesting Service (Problems & Solutions) (Continued)

MultiMediaCard (NV-DS25 only)

P1: The recorded pictures are not beautiful.

S1: Was [PICTURE QUALITY] on the [CARD SETUP] Sub-Menu set to [ECONOMY]? If it was set to [ECONOMY] for recording, pictures with many fine details may contain mosaic-like patterns. Set [PICTURE QUALITY] to [NORMAL] or [FINE]. (p. 69)

P2: When a picture recorded on the MultiMediaCard is played back, the displayed picture quality indication is different from that originally set for the Card Photoshot recording. (p. 68)

S2: The picture quality selected for recording and that displayed for playback may be different. This is normal and not a malfunction.

P3: The played back Card Photoshot picture does not look normal.

S3: The image data may be damaged. 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).

P4: The [×] Indication appears during playback.

S4: The picture was recorded in a different format or its data is damaged.

P5: Even after formatting, the MultiMediaCard cannot be used.

S5: The Movie Camera or the MultiMediaCard may be damaged. Consult with your dealer for servicing.

Others

P1: The cassette cannot be taken out.

S1-1: Is the Movie Camera supplied with power? Is the AC Adaptor correctly connected or the Battery correctly attached? To remove the cassette, the Movie Camera must be supplied with power, however, it is not necessary to set the [OFF/ON] Switch to [ON].

S1-2: The attached Battery may be discharged. Replace it with a charged Battery.

P2: No operation except taking out the cassette can be performed.

S2: Is the Condensation Indication [[⬛]] displayed? If condensation has formed inside the Movie Camera, it automatically switches off and prevents all operations except taking out the cassette. Wait until the Condensation Indication disappears. (p. 91)

P3: The Remote Controller does not work.

S3-1: Is the button-type battery in the Remote Controller exhausted? If the Remote Controller does not work when you use it near the Remote Controller Sensor on the Movie Camera, the button-type battery is exhausted. Replace it with a new battery. (p. 82)

S3-2: Is the correct Remote Controller Mode selected? If the Movie Camera's setting for [REMOTE] on the [OTHER FUNCTIONS] Sub-Menu and the mode selected on the Remote Controller are not matched, operating the Movie Camera with the Remote Controller is not possible and the [REMOTE] Indication is displayed. (p. 83)

Optional Accessories

AC Adaptor VW-AD9B	Battery Pack CGR-D120 (800 mAh)	Battery Pack CGP-D210 (1400 mAh)	Battery Pack CGR-D220 (1600 mAh)	Battery Pack CGP-D320 (2800 mAh)
Battery Pack CGR-D815 (5300 mAh)	Car Battery Charger VW-KBD2E	5-Pin Synchro Cord VW-K10E	Wide Conversion Lens VW-LW4307WE	Tele Conversion Lens VW-LT4314WE
Filter Kit VW-LF43WE	Stereo Zoom Microphone VW-VMS1E	Stereo Microphone VW-VMS2E	Shoe Adaptor VW-SK11E	Tripod VZ-CT55E
Tripod with Remote Controller VZ-CTR1E	Editing Controller VW-EC500E	Editing Controller VW-EC1E	Video Titler VW-VT1B	Personal Computer Connection Kit VW-DTA9E
Personal Computer Connection Kit VW-DTA10B	Edit Cable VW-K5E	DV Cable VW-CD1E	MultiMediaCard External Drive VW-RWM1E (NV-DS25 only)	PC Card Adaptor VW-MAP1E (NV-DS25 only)
Floppy Disk Adaptor VW-MAF1E (NV-DS25 only)	MultiMediaCard VW-MMC8E (NV-DS25 only)	MultiMediaCard VW-MMC16E (NV-DS25 only)	Digital Video Head Cleaner VFK1451	

Notes:
- Consult your dealer for details of other accessories not listed here.
- Some of the accessories listed above may not be available in some countries.

Digital Video Head Cleaner
- If you wish to purchase this Digital Video Head Cleaner, please contact your Panasonic dealer to obtain it from the Panasonic spare parts department.

Miscellaneous/ Care of Unit/Options

Index

A

AC Adaptor (p. 8, 10, 90)
Audio Dubbing (p. 64)
Auto Focus (p. 94)
Automatic Printing Function (p. 89)
Automatic White Balance Adjustment (p. 95)

B

Backlight (p. 26)
Black & White Mode (p. 48)
Blank Search (p. 40)

C

Camera Search (p. 40)
Card Photoshot (p. 68)
Card Playback (p. 70)
Charging the Battery (p. 10)
Cinema Mode (p. 32)
Colour Temperature (p. 95)
Condensation (p. 91)
Continuous Photoshot (p. 31)
Cue Playback (p. 34)

D

Date/Time Indication (p. 35)
Date/Time Setting (p. 23)
Digital Effects (p. 48, 60)
Digital Still Picture (p. 31)
Digital Zoom (p. 31)
Dubbing (p. 84, 85)

E

Editing Controller (p. 86)
Erasure Prevention Slider (p. 13)

F/G

Fade (p. 44)
FF (Fast-Forward) (p. 34)
F Number (p. 58)
Formatting the MultiMediaCard (p. 74)
Gain-up Mode (p. 48)

H/I

Hyper Check Function (p. 35)
Index Signals (p. 43)
Iris (p. 58)

J

Jog Playback (p. 37)

L

LCD Monitor (p. 14, 22, 93)
Low Light Mode (p. 46)

M

Macro Close-up Function (p. 31)
Manual Focus (p. 28)
Memory Stop Function (p. 97)
Menu Screen (p. 16)
Microphone (p. 93)
Mirror Mode (p. 48, 60)
Mix Mode (p. 48, 50, 60)
Mosaic Mode (p. 48, 60)
MultiMediaCard (p. 66)
Multi-Picture Mode (p. 70)

Index