

JVC



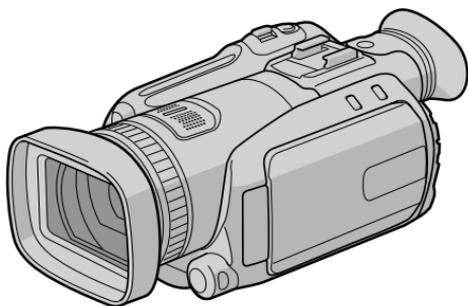
LYT1737-001B

ENGLISH

EN

INSTRUCTIONS

HD HARD DISK CAMCORDER GZ-HD7E/EK



Dear Customer

Thank you for purchasing this hard disk camera. Before use, please read the safety information and precautions contained in pages 4 and 5 to ensure safe use of this product.

HD

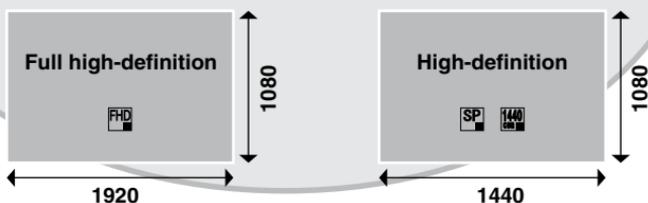


HDMI

Record in High-Definition!

Record in full high-definition (FHD mode)
Record a longer time in high-definition (SP mode)
Copy and edit high-definition images by i.LINK output (1440 CBR mode)

- **To change the settings**
See page 68.



View in High-Definition!

Enjoy viewing images in high-definition image quality by simply connecting the camera to a high-definition television using the optional HDMI cable. (☞ pg. 36)

- **If the television is not equipped with an HDMI connector**
Use the Component cable (included) and the AV cable (included) to connect to the television.
- **To view on conventional or wide screen televisions**
Use the AV cable (included). Images can be viewed with standard picture quality.



Back Up High-Definition Images on DVD Discs!

Video can easily be backed up on a DVD disc by connecting to a separate DVD burner (CU-VD40/CU-VD20). (☞ pg. 47)

- This DVD disc can then be played in the camera or a PC, but not in a DVD player.
- If a CU-VD40 is used, the DVD burner can be connected directly to a television so the disc can be played without using the camera.



Edit High-Definition Images on a PC!

Perform advanced editing on high-definition images by loading to a PC.

- **For PC models that can be connected**
See page 53 or 64.



Safety Precautions

IMPORTANT (for owners in the U.K.)
Connection to the mains supply in the United Kingdom.

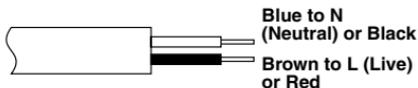
DO NOT cut off the mains plug from this equipment.

If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

BE SURE to replace the fuse only with an identical approved type, as originally fitted, and to replace the fuse cover.

If nonetheless the mains plug is cut off be sure to remove the fuse and dispose of the plug immediately, to avoid possible shock hazard by inadvertent connection to the mains supply. If this product is not supplied fitted with a mains plug then follow the instructions given below: **DO NOT** make any connection to the Larger Terminal coded E or Green.

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



If these colours do not correspond with the terminal identifications of your plug, connect as follows:

Blue wire to terminal coded N (Neutral) or coloured black.

Brown wire to terminal coded L (Live) or coloured Red.

If in doubt — consult a competent electrician.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTIONS:

- To prevent shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified personnel.
- When you are not using the AC adapter for a long period of time, it is recommended that you disconnect the power cord from AC outlet.

NOTES:

- The rating plate and safety caution are on the bottom and/or the back of the main unit.
- The serial number plate is on the battery pack mount.
- The rating information and safety caution of the AC adapter are on its upper and lower sides.

WARNING:

Batteries shall not be exposed to excessive heat such as direct sunshine, fire or the like.

CAUTION:

The mains plug shall remain readily operable.

Caution on Replaceable lithium battery

The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate.

Replace battery with Panasonic (Matsushita Electric), Sanyo, Sony or Maxell CR2025. Danger of explosion or Risk of fire if the battery is incorrectly replaced.

- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

When the equipment is installed in a cabinet or on a shelf, make sure that it has sufficient space on all sides to allow for ventilation (10 cm or more on both sides, on top and at the rear). Do not block the ventilation holes.

(If the ventilation holes are blocked by a newspaper, or cloth etc. the heat may not be able to get out.)

No naked flame sources, such as lighted candles, should be placed on the apparatus.

When discarding batteries, environmental problems must be considered and the local rules or laws governing the disposal of these batteries must be followed strictly.

The apparatus shall not be exposed to dripping or splashing.

Do not use this equipment in a bathroom or places with water.

Also do not place any containers filled with water or liquids (such as cosmetics or medicines, flower vases, potted plants, cups etc.) on top of this unit. (If water or liquid is allowed to enter this equipment, fire or electric shock may be caused.)

Do not point the lens directly into the sun. This can cause eye injuries, as well as lead to the malfunctioning of internal circuitry. There is also a risk of fire or electric shock.

CAUTION!

The following notes concern possible physical damage to the camera and to the user.

Carrying or holding the camera by the LCD monitor can result in dropping the unit, or in a malfunction.

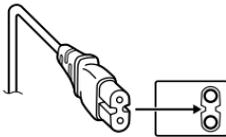
Do not use a tripod on unsteady or unlevel surfaces. It could tip over, causing serious damage to the camera.

CAUTION!

Connecting cables (Audio/Video, S-Video, etc.) to the camera and leaving it on top of the TV is not recommended, as tripping on the cables will cause the camera to fall, resulting in damage.

CAUTION:

To avoid electric shock or damage to the unit, first firmly insert the small end of the power cord into the AC Adapter until it is no longer wobbly, and then plug the larger end of the power cord into an AC outlet.



Information for Users on Disposal of Old Equipment

[European Union]

This symbol indicates that the electrical and electronic equipment should not be disposed as general household waste at its end-of-life. Instead, the product should be handed over to the applicable collection point for the recycling of electrical and electronic equipment for proper treatment, recovery and recycling in accordance with your national legislation.

By disposing of this product correctly, you will help to conserve natural resources and will help prevent potential negative effects on the environment and human health which could otherwise be caused by inappropriate waste handling of this product. For more information about collection point and recycling of this product, please contact your local municipal office, your household waste disposal service or the shop where you purchased the product.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

(Business users)

If you wish to dispose of this product, please visit our web page www.jvc-europe.com to obtain information about the take-back of the product.

[Other Countries outside the European Union]

If you wish to dispose of this product, please do so in accordance with applicable national legislation or other rules in your country for the treatment of old electrical and electronic equipment.



Attention:

This symbol is only valid in the European Union.

DON'T continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way — switch off, withdraw the mains plug and consult your dealer.

DON'T remove any fixed cover as this may expose dangerous voltages.

DON'T leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a standby mode. Switch off using the switch on the equipment and make sure that your family knows how to do this. Special arrangements may need to be made for infirm or handicapped people.

DON'T use equipment such as personal stereos or radios so that you are distracted from the requirements of road safety. It is illegal to watch television whilst driving.

DON'T listen to headphones at high volume, as such use can permanently damage your hearing.

DON'T obstruct the ventilation of the equipment, for example with curtains or soft furnishings.

Overheating will cause damage and shorten the life of the equipment.

DON'T use makeshift stands and **NEVER** fix legs with wood screws — to ensure complete safety always fit the manufacturer's approved stand or legs with the fixings provided according to the instructions.

DON'T allow electrical equipment to be exposed to rain or moisture.

ABOVE ALL

- NEVER let anyone especially children push anything into holes, slots or any other opening in the case — this could result in a fatal electrical shock;
- NEVER guess or take chances with electrical equipment of any kind — it is better to be safe than sorry!

SOME DO'S AND DON'TS ON THE SAFE USE OF EQUIPMENT

This equipment has been designed and manufactured to meet international safety standards but, like any electrical equipment, care must be taken if you are to obtain the best results and safety is to be assured.

DO read the operating instructions before you attempt to use the equipment.

DO ensure that all electrical connections (including the mains plug, extension leads and interconnections between pieces of equipment) are properly made and in accordance with the manufacturer's instructions. Switch off and withdraw the mains plug when making or changing connections.

DO consult your dealer if you are ever in doubt about the installation, operation or safety of your equipment.

DO be careful with glass panels or doors on equipment.

Remember that this camera is intended for private consumer use only.

Any commercial use without proper permission is prohibited. (Even if you record an event such as a show, performance or exhibition for personal enjoyment, it is strongly recommended that you obtain permission beforehand.)

Trademarks

- i.LINK is a trademark of Sony Corp.
- HDMI is a trademark of HDMI Licensing, LLC.
- Windows® is either registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.
- Macintosh is a registered trademark of Apple Computer, Inc.
- Other product and company names included in this instruction manual are trademarks and/or registered trademarks of their respective holders.



JVC Software Licence Agreement

JVC SOFTWARE LICENCE AGREEMENT

IMPORTANT

TO CUSTOMERS: PLEASE MAKE SURE TO READ THIS CAREFULLY BEFORE INSTALLING OR USING THE SOFTWARE PROGRAM NAMED "DIGITAL PHOTO NAVIGATOR" ("Program") ON YOUR PC.

The right to use the Program is granted by Victor Company of Japan, Limited ("JVC") to You only on the condition that You agree to the following. Should You not agree to the terms hereof, You may not install or use the Program. HOWEVER, INSTALLING OR USING THE PROGRAM INDICATES YOUR ACCEPTANCE OF THESE TERMS AND CONDITIONS.

1 COPYRIGHT; OWNERSHIP

You acknowledge that all copyrights and other intellectual property rights in the Program are owned by JVC and its licensor, and remain vested in JVC and such licensor. The Program is protected under the copyright law of Japan and other countries, and related Conventions.

2 GRANT OF LICENCE

- (1) Subject to the conditions of this Agreement, JVC grants to You a non-exclusive right to use the Program. You may install and use the Program on a HDD or other storage devices incorporated in Your PC.
- (2) You may make one (1) copy of the Program solely for your personal backup or archival purposes.

3 RESTRICTION ON THE PROGRAM

- (1) You may not reverse engineer, decompile, disassemble, revise or modify the Program, except to the extent that expressly permitted by applicable law.
- (2) You may not copy or use the Program, in whole or in part, other than as expressly specified in this Agreement.
- (3) You have no right to grant a licence to use the Program, and may not distribute, rent, lease or transfer the Program to any third party or otherwise let them use the Program.

4 LIMITED WARRANTY

JVC warrants that any media in which the Program is embodied are free from any defects in materials and workmanship for a period of thirty (30) days from the date of Your purchasing any our products accompanying the Program. JVC's entire liability and your exclusive remedy in connection with the Program shall be replacement of such defective media. EXCEPT FOR THE EXPRESS WARRANTIES STATED HEREIN AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, JVC AND ITS LICENSORS DISCLAIM ANY OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN REGARD TO THE PROGRAM AND THE ACCOMPANYING PRINTED MATERIALS. SHOULD THERE BE ANY PROBLEM ARISING FROM OR CAUSED BY THE PROGRAM, YOU SHOULD SETTLE ALL SUCH PROBLEM AT YOUR OWN COST AND EXPENSE.

5 LIMITED LIABILITY

TO THE EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL JVC AND ITS LICENSORS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES WHATSOEVER, REGARDLESS OF THE FORM OF ACTION WHETHER IN CONTRACT, TORT OR OTHERWISE ARISING OUT OF OR IN CONNECTION WITH THE USE OF OR INABILITY TO USE THE PROGRAM, EVEN IF JVC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. YOU WILL INDEMNIFY AND HOLD HARMLESS JVC FROM ANY LOSS, LIABILITY OR COST ARISING OUT OF OR IN ANY WAY CONNECTED TO CLAIMS FROM ANY THIRD PARTY RELATING TO THE USE OF THE PROGRAM.

6 TERM

This Agreement will become effective on the date when You install and use the Program on Your machine, and continue to be in effect until the termination under the following provision.

Should You breach any provision of this Agreement, JVC may terminate this Agreement without giving any notice to You. In this event, JVC may claim against You for any damages caused by Your breach. Should this Agreement be terminated, You must immediately destroy the Program stored in Your machine (including the erasing from any memory in Your PC), and no longer own such Program.

7 EXPORT CONTROL

You agree that You will not ship, transfer or export the Program or underlying information and technology to any countries to which Japan and other relevant countries have initiated an embargo on such goods.

8 U.S. GOVERNMENT USER

If You are an agency of the United States of America (the "Government"), You acknowledge JVC's representation that the Program is a "Commercial Item" as defined in Federal Acquisition Regulation (FAR) part 2.101 (g) consisting unpublished "Commercial Computer Software" as those items are used at FAR part 12.212 and is only licensed to You with the same use rights JVC grants all commercial end users pursuant to the terms of this Agreement.

9 GENERAL

- (1) No modification, change, addition, deletion or other alternation of or to this Agreement will be valid unless reduced to writing and signed by an authorized representative of JVC.
- (2) If any part of this Agreement is held invalid by or in conflict with any law having jurisdiction over this Agreement, the remaining provisions will remain in full force and effect.
- (3) This Agreement shall be governed by and interpreted under the laws of Japan. The Tokyo District Court has jurisdiction over all disputes which may arise with respect to the execution, interpretation and performance of this Agreement.

Victor Company of Japan, Limited

NOTE

If You acquired the Program in Germany, the provisions of Sections 4 (Limited Warranty) and 5 (Limited Liability) provided above will be replaced with those of the German version of this Agreement.

CAUTION:

- Operate this equipment according to the operating procedures described in this manual.
- Use only the provided CD-ROM. Never use any other CD-ROM to run this software.
- Do not attempt to modify this software.
- Changes or modifications not approved by JVC could void user's authority to operate the equipment.

How to handle a CD-ROM

- Take care not to soil or scratch the mirror surface (opposite to the printed surface). Do not write anything or put a sticker on either the front or back surface. If the CD-ROM gets dirty, gently wipe it with a soft cloth outward from the centre hole.
- Do not use conventional disc cleaners or cleaning spray.
- Do not bend the CD-ROM or touch its mirror surface.
- Do not store your CD-ROM in a dusty, hot or humid environment. Keep it away from direct sunlight.

You can find the latest information (in English) on the provided software program at our world wide web server at <http://www.jvc-victor.co.jp/english/global-e.html>

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Read This First!

■ Make a backup of important recorded data

JVC will not be responsible for any lost data. It is recommended to copy your important recorded data to a DVD or other recording media for storage. (☞ pg. 47)

■ Make a trial recording

Before the actual recording of important data, make a trial recording and play back the recorded data to check that the video and sound have been recorded correctly.

■ Reset the camera if it does not operate correctly

This camera uses a microcomputer. Factors such as background noise and interference can prevent it from operating correctly. If the camera does not operate correctly, reset the camera. (☞ pg. 74)

■ Precautions on handling batteries

- Be sure to use the JVC BN-VF815U/VF823U/V840U/V856U battery packs.
- If the camera is subjected to electrostatic discharge, turn the power off before using it again.

■ If a malfunction occurs, stop using the camera immediately and consult your local JVC dealer

- If a problem occurs when using the SD card, take the card together with the camera for repair. If one of them is not included, the cause of the malfunction cannot be diagnosed, and the camera cannot be repaired.
- Recorded data may be erased while the camera is being repaired or inspected. Back up all data before requesting repairs or inspections.

■ Because the camera may be used for demonstration in a shop, the demonstration mode is set to on by default

To deactivate the demonstration mode, set [DEMO MODE] to [OFF]. (☞ pg. 70)

Accessories

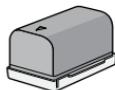


or

AC Adapter
AP-V17E/14E



Power Cord
(for AP-V14E only)



Battery Pack
BN-VF815U



Component Cable
(☞ pg. 36)



Audio/Video Cable
(☞ pg. 37, 51)



USB Cable
(☞ pg. 47, 56, 65)



Lens Hood
Already attached to the camera.
(☞ below)



Shoulder Strap
(☞ pg. 11)



CD-ROM
(☞ pg. 54, 64)



Remote Control Unit
RM-V750U (☞ pg. 11)

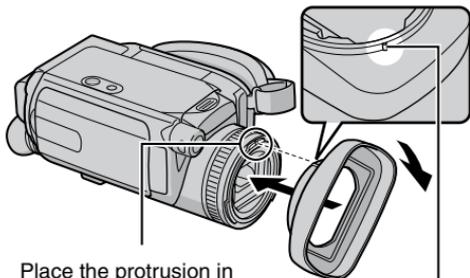
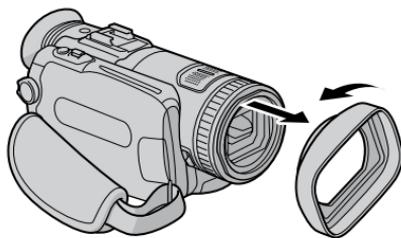


Lithium Battery
CR2025
Pre-installed in the remote control unit.

NOTE

Make sure to use the provided cables for connections. Do not use any other cables.

Attaching/Detaching the Lens Hood



Place the protrusion in the groove.

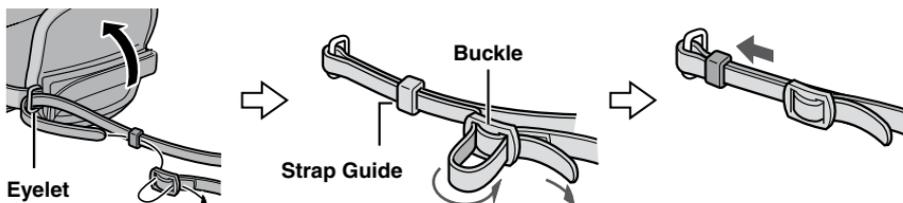
Protrusion

Attaching the Shoulder Strap

Peel off the pad and thread the end of the strap through the eyelet.

Thread the strap through the buckle, adjust its length, and use the strap guide to fix it in place.

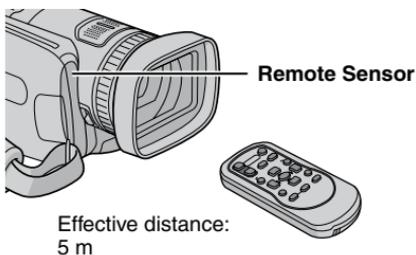
Position the buckle near the eyelet and reattach the pad.



Preparing the Remote Control

A battery is included inside the remote control at the time of purchase. Remove the insulation sheet before use.

Beam Effective Area



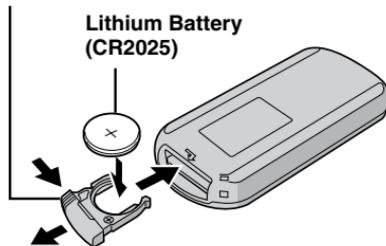
NOTE

The transmitted beam may not be effective or may cause incorrect operation when the remote sensor is directly exposed to sunlight or powerful lighting.

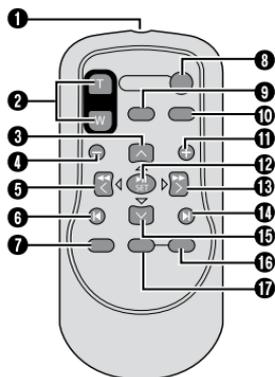
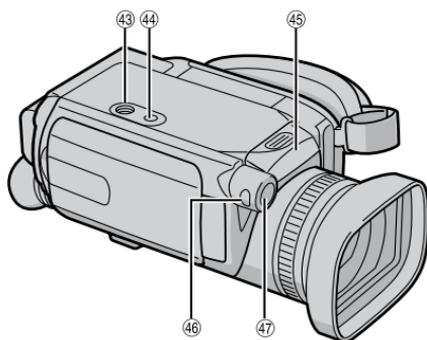
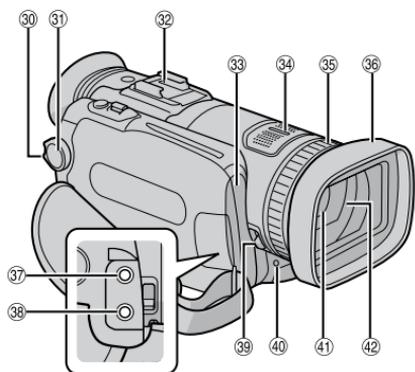
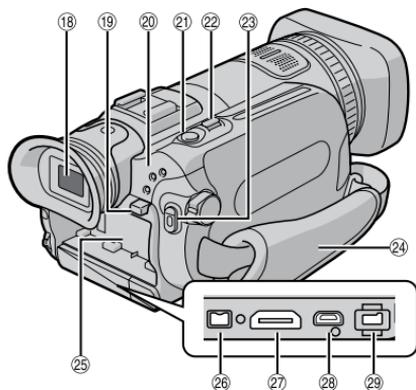
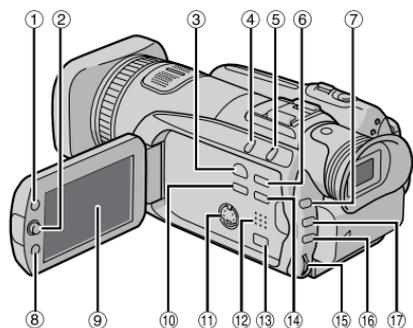
To Reinsert the Battery

Pull out the battery holder by pressing the lock tab.

Lock Tab

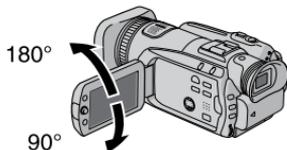


Index



NOTES

- The LCD monitor can rotate 270°.



• Power-linked operation

- You can also turn the camera on/off by opening/closing the LCD monitor during the recording mode.
- Be careful not to cover 33, 34 and 41 during shooting.

Camera

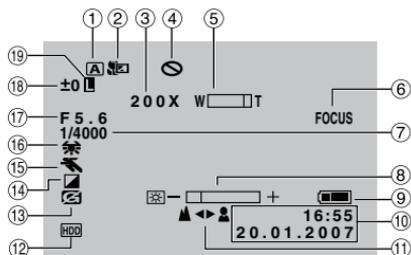
- ① Index Button [INDEX] (☞ pg. 32)/
Remaining Space Button/Data Battery
Button [ / ] (☞ pg. 18, 23)
- ② Set Lever
Move to \wedge :
Reverse Skip (☞ pg. 30)/Up
Move to \vee :
Forward Skip (☞ pg. 30)/Down
Move to \leftarrow :
Reverse Search (☞ pg. 30)/Left/
Nightscope [NIGHT] (☞ pg. 27)
Move to \rightarrow :
Forward Search (☞ pg. 30)/Right/
Program AE [PROGRAM AE] (☞ pg. 24)
Press down:
Play/Pause (☞ pg. 30)
- ③ Playback/Recording Mode Switching
Button [SELECT PLAY/REC] (☞ pg. 20)
- ④ Auto/Manual Mode Button [AUTO/
MANUAL] (☞ pg. 24)
- ⑤ Backlight Compensation Button/
Spot Exposure Control Button [BACK
LIGHT] (☞ pg. 27)
- ⑥ Information Button [INFO] (☞ pg. 40)
- ⑦ Aperture Priority Setting Button [A]
(☞ pg. 25)
- ⑧ Function Button [FUNCTION] (☞ pg. 28)
- ⑨ LCD Monitor
- ⑩ Direct Backup Button [DIRECT BACK
UP] (☞ pg. 57)/Event Button [EVENT]
(☞ pg. 23)
- ⑪ S Connector [S] (☞ pg. 37, 51)
- ⑫ Speaker (☞ pg. 30)
- ⑬ Component Connector [COMPONENT]
(☞ pg. 36)
- ⑭ Menu Button [MENU] (☞ pg. 17)
- ⑮ Value Adjustment Lever [M-MENU]
(☞ pg. 25)
- ⑯ Brightness Button [BRIGHT] (☞ pg. 26)
- ⑰ Shutter Speed Button [S] (☞ pg. 25)
- ⑱ Viewfinder (☞ pg. 22)
- ⑲ Battery Release Button [BATT.] (☞ pg. 16)
- ⑳ Access/Charge Lamp [ACCESS/CHARGE]
(☞ pg. 16)
(Blinks when you access files or charge the
battery. Do not turn off the power or remove the
battery pack/AC adapter while accessing files.)
Video/Still Image Mode Lamp [ , ]
(☞ pg. 20, 21)
- ㉑ Still Image Shooting Button [SNAPSHOT]
(☞ pg. 21)
- ㉒ Zoom Lever [W  , T ] (☞ pg. 22)
Speaker Volume Control [-VOL+]
(☞ pg. 30)
- ㉓ Video Recording Start/Stop Button [REC]
(☞ pg. 20)
- ㉔ Grip Strap (☞ pg. 18)
- ㉕ Battery Pack Mount (☞ pg. 16)
- ㉖ i.LINK Connector [i] (☞ pg. 50)
- ㉗ HDMI Connector [HDMI] (☞ pg. 36)
- ㉘ USB (Universal Serial Bus) Connector []
(☞ pg. 47, 56, 65)
- ㉙ DC Input Connector [DC] (☞ pg. 16)
- ㉚ Lock Button (☞ pg. 16)
- ㉛ Power/Mode Switch [OFF (CHARGE),
STANDBY/ON, MODE] (☞ pg. 16)
- ㉜ Shoe
- ㉝ Camera Sensor
Remote Sensor (☞ pg. 11)
- ㉞ Stereo Microphone
- ㉟ Focus Ring (☞ pg. 26)
- ㊱ Lens Hood (☞ pg. 10)
- ㊲ Microphone Input Connector [MIC]
- ㊳ Audio/Video Connector [AV] (☞ pg. 37, 51)
- ㊴ Lens Cover Switch [ , ] (☞ pg. 18)
- ㊵ Tally Lamp (☞ pg. 70)
- ㊶ Lens
- ㊷ Lens Cover (☞ pg. 18)
- ㊸ Stud Hole (☞ pg. 18)
- ㊹ Tripod Mounting Socket (☞ pg. 18)
- ㊺ SD Card Slot (☞ pg. 19)
- ㊻ Manual Focus Button [FOCUS] (☞ pg. 26)
- ㊼ Focus Assist Button [FOCUS ASSIST]
(☞ pg. 26)

Remote Control

- ① Infrared Beam Transmitting Window
- ② ZOOM (T/W) Buttons
Zoom In/Out
- ③ Up Button
Rotate Button (counterclockwise)
(☞ pg. 31)
- ④ Skip Backward Button
- ⑤ Left Button
- ⑥ Back Button
- ⑦ PLAYLIST Button (☞ pg. 44)
- ⑧ START/STOP Button
- ⑨ SNAPSHOT Button (☞ pg. 21)
- ⑩ INFO Button (☞ pg. 40)
- ⑪ Skip Forward Button
- ⑫ PLAY/PAUSE Button
- ⑬ Right Button
- ⑭ Next Button
- ⑮ Down Button
Rotate Button (clockwise) (☞ pg. 31)
- ⑯ INDEX Button
- ⑰ DATE Button

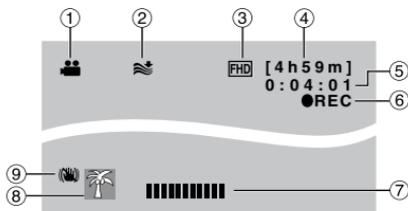
Indications on LCD Monitor

During both Video and Still Image Recording



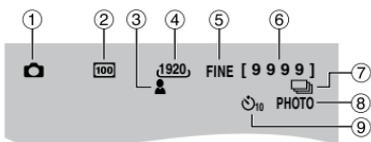
- ① Selected Recording Mode Indicator (↗ pg. 24)
- ② Tele Macro Mode Indicator (↗ pg. 29)
- ③ Approximate Zoom Ratio (↗ pg. 22)
- ④ Inhibit Indicator
- ⑤ Zoom Indicator (↗ pg. 22)
- ⑥ Focus Assist Indicator (↗ pg. 26)
- ⑦ Shutter Speed (↗ pg. 25)
- ⑧ Brightness/Sharpness Control Indicator (↗ pg. 29, 70)
- ⑨ Battery Indicator (↗ pg. 78)
- ⑩ Date/Time (↗ pg. 17)
- ⑪ Manual Focus Adjustment Indicator (↗ pg. 26)
- ⑫ Selected Recording Medium Indicator (↗ pg. 68, 69)
- ⑬ Drop Detection Indicator (Appears when [DROPP DETECTION] is set to [OFF].) (↗ pg. 70)
- ⑭ Effect Mode Indicator (↗ pg. 29)
- ⑮ Program AE Mode Indicator (↗ pg. 24)/
[A] : Nightscope Indicator (↗ pg. 27)
- ⑯ White Balance Indicator (↗ pg. 28)
- ⑰ Aperture Value (F-number) (↗ pg. 25)
- ⑱ ±0 : Exposure Adjustment Indicator (↗ pg. 26)
[A] : Backlight Compensation Indicator (↗ pg. 27)
[S] : Spot Exposure Control Indicator (↗ pg. 27)
- ⑲ Iris Lock Indicator (↗ pg. 27)

During Video Recording Only



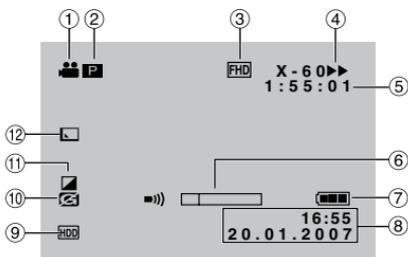
- ① Mode Indicator (↗ pg. 20)
- ② Wind Cut Indicator (↗ pg. 68)
- ③ Picture Quality (↗ pg. 68)
- ④ Remaining Time (↗ pg. 20, 81)
- ⑤ Counter (↗ pg. 68)
- ⑥ ●REC : (Appears during recording.) (↗ pg. 20)
●|| : (Appears during record-standby mode.)
- ⑦ External Microphone Input Level Indicator (↗ pg. 68)
- ⑧ Event Indicator (↗ pg. 23)
- ⑨ Optical Image Stabiliser (OIS) Indicator (Appears when [OIS] is set to [OFF].) (↗ pg. 68)

During Still Image Recording Only



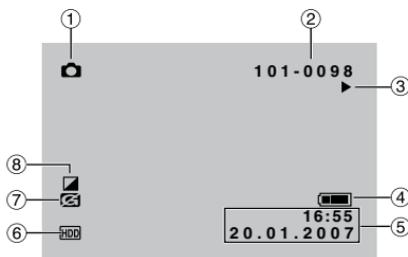
- ① Mode Indicator (↗ pg. 21)
- ② ISO Sensitivity (GAIN): When set to [AUTO], there is no indication. (↗ pg. 69)
- ③ Focus Indicator (↗ pg. 21)
- ④ Image Size (↗ pg. 69)
- ⑤ Picture Quality (↗ pg. 69)
- ⑥ Remaining Number of Shots (↗ pg. 81)
- ⑦ [S] : Continuous Shooting Mode Indicator (↗ pg. 69)
[B] : Bracket Shooting Mode Indicator (↗ pg. 69)
- ⑧ Shooting Indicator (↗ pg. 21)
- ⑨ Self-Timer Recording Indicator (↗ pg. 69)

During Video Playback



- ① Mode Indicator (↗ pg. 30)
- ② **IP** : Playlist Playback Indicator (Appears when playing back a playlist.) (↗ pg. 45)
- ③ **E** : Event Search Playback Indicator (Appears when playing back a video file from the event search.) (↗ pg. 33)
- ④ **D** : Date Search Playback Indicator (Appears when playing back a video file from the date search.) (↗ pg. 32)
- ⑤ Picture Quality (↗ pg. 68)
- ⑥ Playback Mode (↗ pg. 30)
 - ▶ : Playback
 - || : Pause
 - ▶▶ : Forward Search
 - ◀◀ : Reverse Search
 - ||▶ : Forward Slow-Motion
 - ◀|| : Reverse Slow-Motion
 (The number on the left shows speed.)
- ⑦ Counter (↗ pg. 68)
- ⑧ Volume Level Indicator
- ⑨ Battery Indicator (↗ pg. 78)
- ⑩ Date/Time (↗ pg. 70)
- ⑪ Selected Medium Indicator (↗ pg. 68, 69)
- ⑫ Drop Detection Indicator (Appears when [DROP DETECTION] is set to [OFF].) (↗ pg. 70)
- ⑬ Effect Mode Indicator (↗ pg. 34)
- ⑭ Wipe/Fader Effect Indicator (↗ pg. 35)

During Still Image Playback



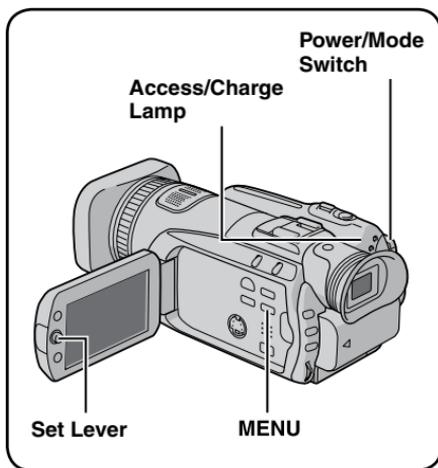
- ① Mode Indicator (↗ pg. 31)
- ② Folder/File Number
- ③ Slide Show Playback Indicator (↗ pg. 31)
- ④ Battery Indicator (↗ pg. 78)
- ⑤ Date/Time (↗ pg. 70)
- ⑥ Selected Medium Indicator (↗ pg. 68, 69)
- ⑦ Drop Detection Indicator (Appears when [DROP DETECTION] is set to [OFF].) (↗ pg. 70)
- ⑧ Effect Mode Indicator (↗ pg. 34)

Operation guide display

The operation guide is displayed at the bottom of the screen during menu display etc.



Necessary Settings before Use

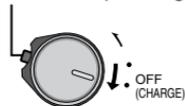


Be sure to configure the following three settings before use.

Charging the Battery Pack

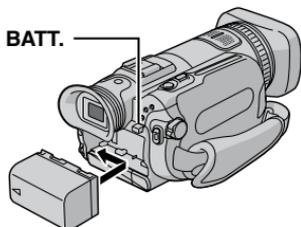
1 Set the power/mode switch to OFF.

Slide while pressing down the lock button.

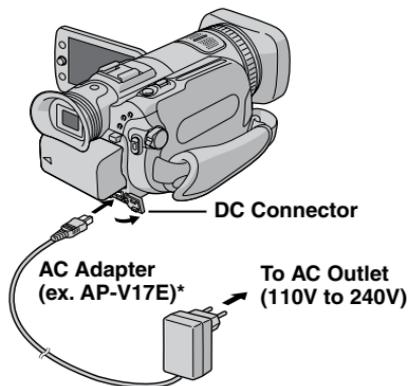


2 Attach the battery pack.

Slide the battery pack down until it locks in place.



3 Connect the AC adapter.



* If the provided AC adapter is AP-V14E, connect the power cord to the AC adapter, and plug the power cord into an AC outlet.

- The access/charge lamp blinks to indicate charging has started.
- When the lamp goes out, charging is finished. Unplug the AC adapter (or the power cord) from the AC outlet and disconnect the AC adapter from the camera.

Required charging / recording time (approx.)

Battery pack	Charging time	Recording time
BN-VF815U (Provided)	2 hr. 40 min.	1 hr. 20 min. (1 hr. 25 min.*)
BN-VF823U	3 hr. 50 min.	2 hr. 00 min. (2 hr. 10 min.*)
BN-V840U	—	3 hr. 45 min. (4 hr. 00 min.*)
BN-V856U	—	5 hr. 25 min. (5 hr. 40 min.*)

* When using the viewfinder.

■ To detach the battery pack

Slide and hold **BATT.** (☞ step 2), then remove the battery pack.

■ To check the remaining battery power

See page 18.

NOTES

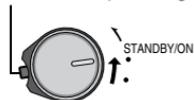
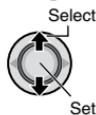
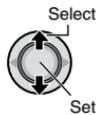
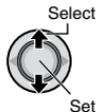
- You can also use the camera with just the AC adapter.
- Please do not pull or bend the AC adapter plug and cable. This may damage the AC adapter.

Language Setting

The language on the display can be changed.

1 Set the power/mode switch to STANDBY/ON.

Slide while pressing down the lock button.

**2****3****4 Select [GENERAL].****5 Select [LANGUAGE].****6 Select the desired language.****■ To return to the previous screen**

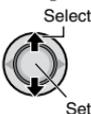
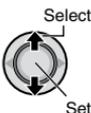
Move the set lever to \leftarrow .

■ To exit the screen

Press MENU.

Date/Time Setting

After performing steps 1-4 (☞ left column)

5 Select [CLOCK ADJUST].**6 Set the date and time.**

Repeat this step to input the month, day, year, hour and minute.

■ To return to the previous screen

Move the set lever to \leftarrow .

■ To exit the screen

Press MENU.

You have now finished configuring the necessary settings.

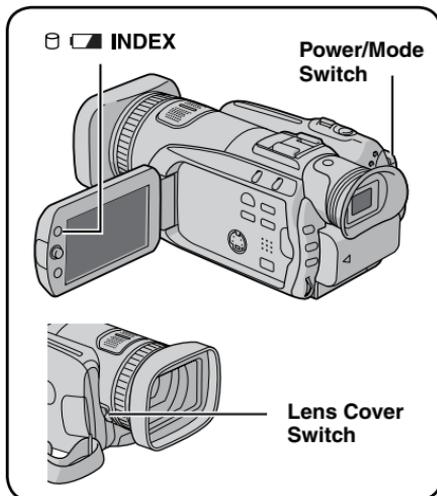
■ To use the camera right away

See page 20.

■ To configure other settings

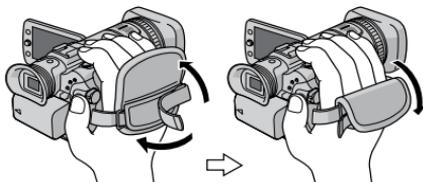
See page 18.

Other Settings



Grip Adjustment

Open the pad and make grip adjustments.



Lens Cover

When not using the camera, close the lens cover to protect the lens.



Open the lens cover

Close the lens cover

NOTE

Do not push the lens cover strongly. Doing so may cause damage to the lens.

Checking the Remaining Battery Power

Preparation:

- Set the power/mode switch to **OFF**.
- Attach the battery pack.



Battery information is displayed for approx. 3 seconds if the button is pressed and released quickly, and for approx. 15 seconds if the button is pressed and held for several seconds.

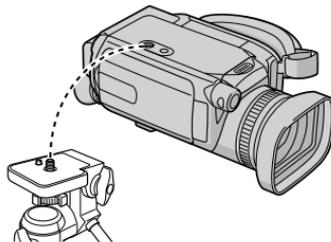
NOTES

- If "COMMUNICATING ERROR" appears, there may be a problem with your battery. In such a case, consult your nearest JVC dealer.
- The recordable time display should only be used as a guide. It is displayed in 10 minute units.

Tripod Mounting

Align the camera stud hole with the tripod stud, and the mounting socket with the screw, and then rotate the camera clockwise to mount it to the tripod.

Bottom of the Camera



NOTE

Do not use a tripod on unsteady or unlevel surfaces. It could tip over, causing serious damage to the camera.

When Using an SD Card

If you want to record to an SD card, the following three operations need to be performed.

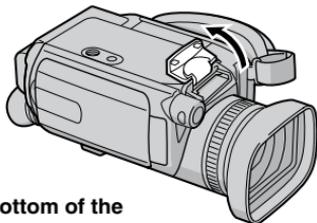
- Operations are guaranteed on the following SD cards.
 - Video recording: Class 6 compatible SDHC card
 - Still image recording: Panasonic, TOSHIBA, SanDisk, ATP (128 MB to 4 GB) or SDHC card (4 GB)
- If other media are used, they may fail to record data correctly, or they may lose data that had already been recorded.
- MultiMediaCards are not supported.
- Files in full high-definition picture quality cannot be recorded on an SD card.
- Cards used to record video on this camera cannot be played back on other devices.

1 Insert an SD card

Preparation:

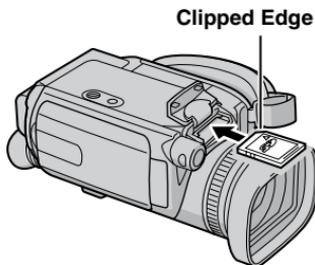
Set the power/mode switch to **OFF**.

1 Open the SD card cover.



Bottom of the Camera

2 Firmly insert the card with its clipped edge first.



3 Close the SD card cover.

To remove an SD card

Push the SD card once.

After the card comes out a little, pull it out.

NOTES

- Insert and remove the SD card only while the power is turned off. Otherwise, data on the card may be corrupted.
- Do not touch the terminal on the reverse side of the label.

Change the recording medium

The camera is programmed to record on the built-in hard disk when it is shipped from the factory. You can change the recording medium to SD card.

Set **[REC MEDIA FOR VIDEO]** and **[REC MEDIA FOR IMAGE]** to **[SD]**.
([pg. 68, 69](#))

NOTE

Video picture quality ([pg. 68](#)) will automatically be set to **[SP]**.

Format an SD card when using it for the first time

This will also ensure stable speeds and operation when accessing the SD card.

Select **[EXECUTE]** in **[FORMAT SD CARD]** to format the card. ([pg. 72](#))

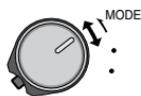
Recording Files

Video Recording

Preparation: Set the power/mode switch to **STANDBY/ON**.

1

Slide the power/mode switch to **MODE** to select  (video) mode.



The switch returns to the original position when it is released.

The  lamp on the camera lights up.

2

Press the **PLAY/REC** button to select recording mode.



3

Press the **REC** button to start recording.



FHD [4 h 59 m]

● REC

Approximate remaining time for recording appears.

■ To stop recording

Press the **REC** button again.

■ To change the picture quality

Change the settings in [QUALITY].

( pg. 68)

■ To register a file to an event

See page 23.

NOTES

- The video recording mode is automatically selected when you turn the camera's power off and then on again.
- If the camera is not operated for 5 minutes while the power is on, it turns itself off automatically to conserve power. To turn the camera on again when using the battery pack, set the power/mode switch to **OFF**, then to **STANDBY/ON**. When using the AC adapter, perform any operation such as zooming.
- Video files are given the names MOV001.TOD to MOV009.TOD, MOV00A.TOD to MOV00F.TOD, and MOV010.TOD in order of recording.
- A new file will be created for every 4 GB or approx. 19 minutes of continuous shooting.
- This camera records video in MPEG2 format compliant with SD-VIDEO format.
- Do not move or shake the camera suddenly during recording. If you do so, the sound of the hard disk drive may be recorded.

Still Image Recording

Preparation: Set the power/mode switch to **STANDBY/ON**.

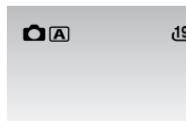
- 1** Slide the power/mode switch to **MODE** to select  (still image) mode.



The switch returns to the original position when it is released.

The  lamp on the camera lights up.

- 2** Press the **PLAY/REC** button to select recording mode.



- 3** Press and hold the **SNAPSHOT** button halfway.



The  indicator becomes green when the captured image is focused.

- **To change the picture quality**
Change the settings in [QUALITY].
( pg. 69)
- **To record still images continuously**
Set [CONTINUOUS SHOOTING] to [ON]. ( pg. 69)
- **To change the image size**
Change the settings in [IMAGE SIZE].
( pg. 69)

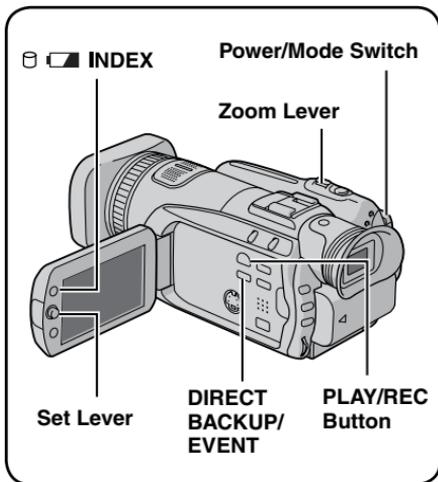
- 4** Press the **SNAPSHOT** button to start recording.



NOTES

- If the camera is not operated for 5 minutes while the power is on, it turns itself off automatically to conserve power. To turn the camera on again when using the battery pack, set the power/mode switch to **OFF**, then to **STANDBY/ON**. When using the AC adapter, perform any operation such as zooming.
- The sides of still images recorded in 16:9 size may be cut off when printed. Check whether 16:9 size prints can be printed at your local print store.

Recording Files (Continued)



Zooming

Preparation:

- Slide the power/mode switch to **MODE** to select or mode.
- Press the **PLAY/REC** button to select recording mode.

Zoom out



W: Wide angle

Zoom in



T: Telephoto

Maximum zoom ratio is 10X (factory-preset).

- **To change the maximum zoom ratio (for mode only)**

Change the settings in [ZOOM]. (☞ pg. 68)

NOTE

Macro shooting is possible as close as approx. 5 cm to the subject when the zoom lever is set all the way to **W**.

Record Using the Viewfinder

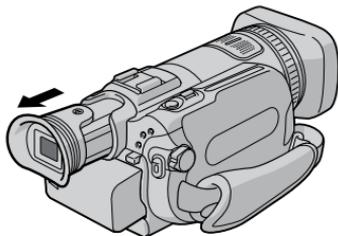
Recording by using the viewfinder is recommended in bright environments where the LCD monitor is difficult to see or to increase recording time on battery.

Preparation:

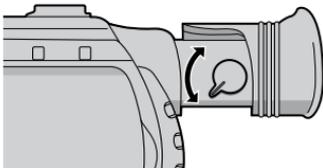
- Slide the power/mode switch to **MODE** to select or mode.
- Press the **PLAY/REC** button to select recording mode.

1 Close the LCD monitor.

2 Extend the viewfinder.



3 Adjust the view using the control bar.



NOTE

If the LCD monitor is opened while using the viewfinder, the picture will move to the LCD monitor and will not be displayed in the viewfinder. To set the viewfinder as priority when recording, set the [PRIORITY SETTING] to [FINDER]. (☞ pg. 71)

Registering Files to Events

–  mode only

If you select an **event** to register the file to before starting recording, the file will be registered to the selected event, thus making the file easy to find at playback. There are up to 3 different destinations within each event (for example: BABY1, BABY2, BABY3).

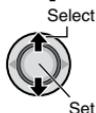
Preparation:

- Slide the power/mode switch to **MODE** to select  mode.
- Press the **PLAY/REC** button to select recording mode.

1

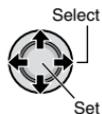


2 Select [ON/SELECT].



3 Select the event that you want to register the file to.

- To select a different destination, select [NEXT PAGE].
- To cancel the event registration, select [NON SECTION].



The selected event is displayed on the screen. Press the **REC** button to start recording.

■ To exit the screen

Press **EVENT**.

■ To search by event for a file to play back

See page 32.

NOTE

Once you select to register a file to a certain event, the setting will remain even if you turn the power off. Unless you change the setting, you will register a file to the same event that you had previously selected.

Checking the Remaining Space on the Recording Media – mode only

Preparation:

- Slide the power/mode switch to **MODE** to select  mode.
- Press the **PLAY/REC** button to select recording mode.

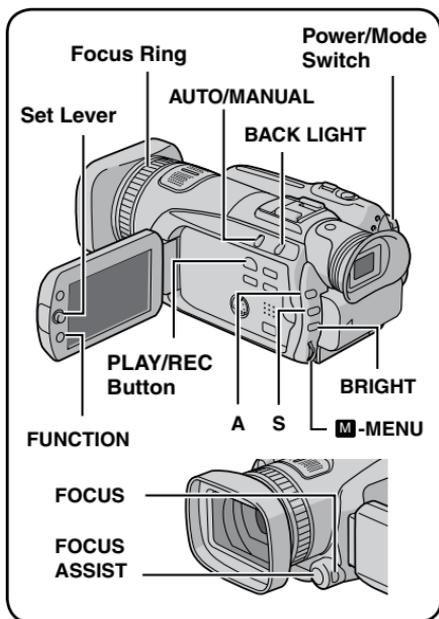


The maximum recording time is displayed for each picture quality mode.

■ To return to the normal screen

Press the  button again.

Manual Recording



Manual recording mode enables you to set the focus and screen brightness etc. manually. You need to switch to this mode because auto recording mode, which adjusts these settings automatically, is selected by default.

To Change to Manual Recording Mode

Preparation:

- Slide the power/mode switch to **MODE** to select or mode.
- Press the **PLAY/REC** button to select recording mode.

Press twice.



■ To return to the auto recording mode

Press the **AUTO/MANUAL** button so that the **A** indicator appears.

Program AE

You can record videos or still images with optimum brightness by adjusting the exposure and shutter speed to suit your surroundings or the subject.

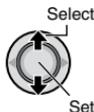
After performing "To Change to Manual Recording Mode" (left column)

1



2 Select the desired setting.

For details on each setting, see below.



■ To cancel the program AE

Select [OFF] in step 2.

■ Items for program AE setting

- **PORTRAIT:**
The subject in the foreground is accentuated by blurring the background.
- **SPORTS:**
Records fast moving subjects clearly.
- **SNOW:**
Compensates for subjects that may appear too dark when shooting in extremely bright surroundings, such as in snow.
- **SPOTLIGHT:**
Select this when a spotlight makes a subject appear too bright.
- **TWILIGHT:**
Makes evening scenes look more natural.

Aperture Priority Setting

You can add a blurring effect to the background by setting the aperture value (F-number).

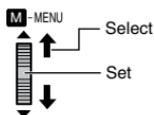
After performing “To Change to Manual Recording Mode” (☞ pg. 24)

1



2 Select the desired setting. (F1.8 to F8.0)

The lower the F-number (larger aperture value), the more blurred the background will become. The higher the F-number (smaller aperture value), the clearer the focus will be for both near and far objects.



■ To cancel the aperture priority setting

Press the **A** button so that the value indicator disappears.

NOTE

If the image is too bright, set to a larger F-number. If the image is too dark, set to a smaller F-number.

Changing the Shutter Speed

A fast shutter speed can freeze the motion of a fast-moving subject, and a slow shutter speed can blur the subject to give the impression of motion.

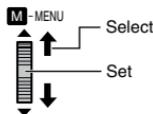
After performing “To Change to Manual Recording Mode” (☞ pg. 24)

1



2 Select the desired setting (1/2 to 1/4000 in mode, 1/2 to 1/500 in mode).

The smaller the value, the faster the shutter speed.



■ To cancel the shutter speed setting

Press the **S** button so that the value indicator disappears.

NOTE

It is recommended to use the tripod (☞ pg. 18) when recording with a slow shutter speed.

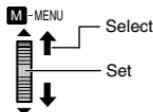
Manual Recording (Continued)

Adjust Brightness

After performing “To Change to Manual Recording Mode” (☞ pg. 24)



- 2 Select the desired setting. (-6 to +6 in  mode, -2.0EV to +2.0EV in  mode)



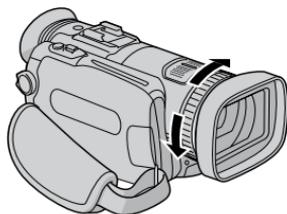
- **To lock the exposure**
After you finish configuring the setting, press and hold the set lever for more than 2 seconds. The  indicator appears.
- **To cancel the brightness setting**
Press the **BRIGHT** button so that the value indicator disappears.

Manual Focus

After performing “To Change to Manual Recording Mode” (☞ pg. 24)



- 2 Slide the focus ring to adjust the focus.



- **To cancel the manual focus setting**
Press the **FOCUS** button so that the /person indicator disappears.

Focus Assist

The borderlines of focused images are displayed in blue. Use these as a guide for adjusting the focus precisely.



- **To cancel the focus assist mode**
Press the **FOCUS ASSIST** button again.
- **To change the borderline colour**
Change the settings in [FOCUS ASSIST].
(☞ pg. 70)

NOTE

If you use focus assist in dark places, the grainy sections gain colour, and the colour of the borderline becomes difficult to see.

Nightscope

The shutter speed is automatically adjusted from 1/2 to 1/250 seconds. It enables recording with low light levels in dim locations.

After performing “To Change to Manual Recording Mode” (▶ pg. 24)



■ To cancel nightscope

Move the set lever to < (NIGHT) so that the  indicator disappears.

NOTE

It is recommended to use the tripod (▶ pg. 18) when recording with a slow shutter speed.

Backlight Compensation

Backlight compensation brightens the subject by increasing the exposure.

After performing “To Change to Manual Recording Mode” (▶ pg. 24)



■ To cancel backlight compensation

Press the **BACK LIGHT** button twice so that the  indicator disappears.

Spot Exposure Control

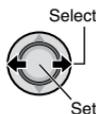
Use this function when backlight compensation does not work well, or to adjust the brightness in the desired spot.

After performing “To Change to Manual Recording Mode” (▶ pg. 24)

1 Press twice.



2 Select the desired spot metering area frame.



■ To lock the exposure

After you finish configuring the setting, press and hold the set lever for more than 2 seconds. The  indicator appears.

■ To cancel spot exposure control

Press the **BACK LIGHT** button once so that the  indicator disappears.

Manual Recording (Continued)

Manual Setting in Function Menu

You can use manual recording functions easily by selecting items in the function menu.

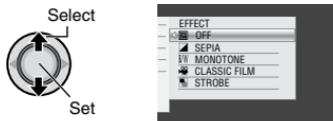
The following illustrations of display screens are examples of when [EFFECT] is set to [SEPIA].

After performing "To Change to Manual Recording Mode" (▶ pg. 24)

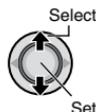


2 Select the desired menu.

For details on each menu, see below.



3 Select the desired setting.



4



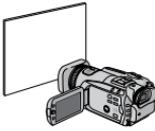
The menu disappears and the indicator for the set function appears.

■ To return to the previous screen

Move the set lever to <.

■ To exit the screen

Press **FUNCTION**.

Menus	Settings: [] = Factory-preset
<p>WB Adjusts the white balance to achieve the optimum colors for the amount of light in your surroundings during recording.</p>	<p>A [AUTO]: White balance is adjusted automatically.</p> <p><input checked="" type="checkbox"/> MWB: Adjusts the white balance manually depending on the light source.</p> <ol style="list-style-type: none"> 1) Hold a sheet of plain white paper in front of the subject so that the white paper fills the screen. 2) Press and hold the set lever until the  indicator starts blinking then stops blinking. <p> FINE: When shooting outdoors on a sunny day.</p> <p> CLOUD: When shooting outdoors on a cloudy day.</p> <p> HALOGEN: When a video light or similar type of lighting is used.</p> 

Menus	Settings: [] = Factory-preset
<p>EFFECT Enables you to record videos or still images with special effects.</p>	<p> [OFF]: No effect is used.  SEPIA: The image has a brownish tint like old photos. B/W MONOTONE: The image becomes black and white like old movies.  CLASSIC FILM*: This effect skips frames to give images of an old movie atmosphere.  STROBE*: The image looks like a series of consecutive snapshots.</p>
<p>TELE MACRO Enables you to shoot a subject as large as possible at a distance of approx. 40 cm.</p>	<p> [OFF]: Disables the function.  ON: Activates the function.</p>
<p>ZEBRA* The sections of the photographic subject that are reflected as white due to light are displayed in a striped pattern. Use this as a guide for adjusting the brightness.</p>	<p>[OFF]: Deactivate this function. 70%: Sections that are close to being reflected as white (bright) are displayed in a striped pattern. 100%: Sections that are completely reflected as white (too bright) are displayed in a striped pattern.</p>
<p>CUSTOM SETTING*</p> <p>SHARPNESS Adjusts the enhancement level of the outline of the recorded image.</p> <p>COLOR BAR The colour bar will be displayed. The colour characteristics of the camera can be confirmed by recording this display.</p>	<p>Press down the set lever then select sub menus.</p> <p>Adjust the sharpness moving the set lever to </>, then press down.</p> <p>NOTES</p> <ul style="list-style-type: none"> • Several functions will not be accessible when sharpness is set. • Enhancing the sharpness causes the recorded image to appear grainy. <p>[OFF]: Deactivate this function. ON: Activate this function.</p>

* Not available in  mode.

Playing Back Files

Video Playback

1 Slide the power/mode switch to **MODE** to select **VIDEO** (video) mode.



The switch returns to the original position when it is released.

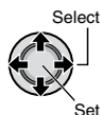
The **VIDEO** lamp on the camera lights up.

2 Press the **PLAY/REC** button to select playback mode.



The index screen for videos appears.

3 Move the set lever to **^**/**v**/**<**/**>** to select the desired file, then press down.



■ To return to the index screen

Press **INDEX**.

■ To watch on TV

See page 36.

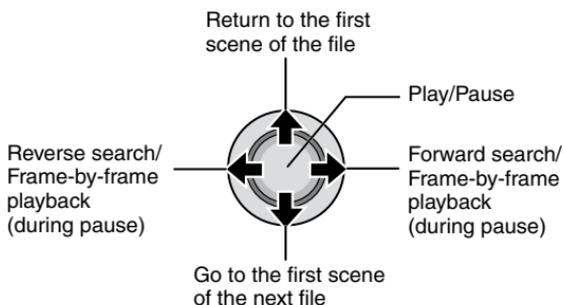
■ To turn the date display on/off

Change the settings in [DATE/TIME]. (→ pg. 70)

■ To check the file information

Press **INFO** when playback is paused. (→ pg. 40)

Operations during Playback



- : Turn down the volume



+ : Turn up the volume

During forward/reverse search, moving the set lever to **<**/**>** alters the search speed (maximum 60x).

Still Image Playback

- 1** Slide the power/mode switch to **MODE** to select  (still image) mode.



The switch returns to the original position when it is released.

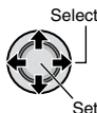
The  lamp on the camera lights up.

- 2** Press the **PLAY/REC** button to select playback mode.



The index screen for still images appears.

- 3** Move the set lever to **^ / \ / < / >** to select the desired file, then press down.



■ To return to the index screen

Press **INDEX**.

■ To watch on TV

See page 36.

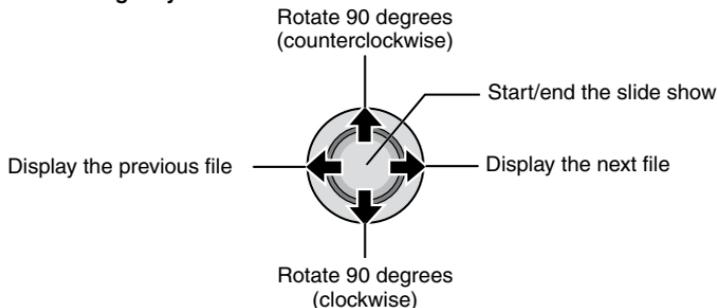
■ To turn the date display on/off

Change the settings in [DATE/TIME]. (☞ pg. 70)

■ To check the file information

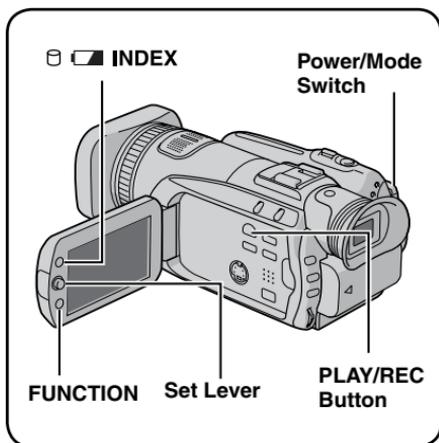
Press **INFO**. (☞ pg. 40)

Operations during Playback



During the slide show, moving the set lever to **^ / ** changes the playback order.

Playing Back Files (Continued)



File Search Function

You can switch the index screen to the date index screen or event screen for the convenient file search.

The event screen can be used in mode. It cannot be used in mode.

Date Index Screen

You can search the desired file by the recording date.

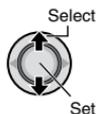
Preparation:

- Slide the power/mode switch to **MODE** to select or mode.
- Press the **PLAY/REC** button to select playback mode.

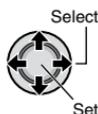
1



2 Select the recording date.



3 Select the file you want to play back.



- To return to the index screen
Press the **INDEX** button.

Event Screen – mode only

You can search the desired file by the event that you registered the file to when recording. (pg. 23) After searching by the event, you can search by the recording date to narrow down the search.

Preparation:

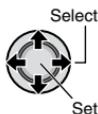
- Slide the power/mode switch to **MODE** to select mode.
- Press the **PLAY/REC** button to select the playback mode.

1 Press twice.



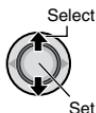
2 Select the event.

To move to the next page, select [NEXT PAGE].

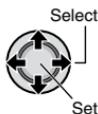


3 Select the recording date.

To display all the files, select [ALL SCENES].



4 Select the file you want to play back.



■ To return to the index screen

Press the **INDEX** button.

■ To change the event registration of a file

See page 41.

To Play Back Demonstration Files

– **mode only**

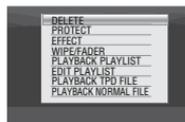
Video files that are used for demonstration in a shop may be recorded on the camera you purchased. These files are saved to the [EXTMOV] folder and can be played back by the following operations.

Preparation:

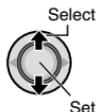
- Slide the power/mode switch to **MODE** to select **mode**.
- Press the **PLAY/REC** button to select playback mode.

1

FUNCTION



2 Select [PLAYBACK TPD FILE].



3 Select the file you want to play back.



■ To exit the screen

Press **FUNCTION**.

■ To return to the normal file playback mode

Select [PLAYBACK NORMAL FILE] in step 2.

NOTE

During TPD file playback, you cannot use some of the functions.

Playing Back Files (Continued)

Playback with Special Effects

Playback effects

Add effects that, for example, alter the colour tones of images.

Preparation:

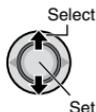
- Slide the power/mode switch to **MODE** to select  or  mode.
- Press the **PLAY/REC** button to select the playback mode.

1

FUNCTION

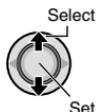


2 Select [EFFECT].

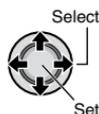


3 Select a desired effect.

For details on each effect, see right column.



4 Select the file you want to play back.



■ To exit the screen
Press **FUNCTION**.

■ To turn off the effect
Select [OFF] in step 3.

■ Items for **EFFECT** setting

●  **SEPIA**:

The image is given a brownish tint like an old photo.

●  **MONOTONE**:

The image becomes black and white like an old movie.

●  **CLASSIC FILM***:

The image is given an old movie atmosphere by the effect of skipping frames.

●  **STROBE***:

The image looks like a series of consecutive snapshots.

* Not available in  mode.

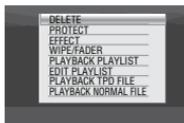
Wipe or fader effects – mode only

Add effects at the beginning and end of videos. These effects cannot be set for still images.

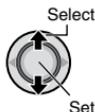
Preparation:

- Slide the power/mode switch to **MODE** to select  mode.
- Press the **PLAY/REC** button to select playback mode.

1

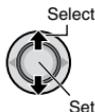


2 Select [WIPE/FADER].

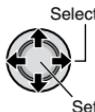


3 Select a desired effect.

For details on each effect, see right column.



4 Select the file you want to play back.



■ Items for WIPE/FADER setting

-  **FADER-WHITE:**
Fade in or out with a white screen.
-  **FADER-BLACK:**
Fade in or out with a black screen.
-  **FADER-B.W:**
Fade in to a colour screen from a black and white screen, or fade out in the opposite way.
-  **WIPE-CORNER:**
Wipe in on a black screen from the upper right to the lower left corner, or wipe out in the opposite way.
-  **WIPE-WINDOW:**
The scene starts in the centre of a black screen and wipes in toward the corners, or wipes out in the opposite way.
-  **WIPE-SLIDE:**
Wipe in from right to left, or wipe out in the opposite way.
-  **WIPE-DOOR:**
Wipe in as the two halves of a black screen open to the left and right revealing the scene, or wipe out in the opposite way.
-  **WIPE-SCROLL:**
The scene wipes in from the bottom to the top of a black screen, or wipes out in the opposite way.
-  **WIPE-SHUTTER:**
Wipe in from the centre of a black screen toward the top and bottom, or wipe out in the opposite way.

NOTE

There is no effect on files with a play time shorter than 7 seconds.

■ To exit the screen

Press **FUNCTION**.

■ To turn off the effect

Select [OFF] in step 3.

Watching Images on TV

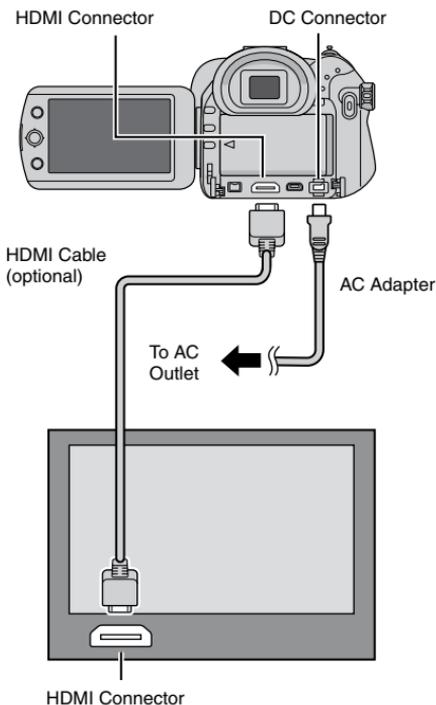
This camera is designed to be used with high-definition or PAL-type colour television signals. It cannot be used with a television of a different standard.

Connection with TV

You can output videos from the HDMI connector, COMPONENT connector, or AV/S connector. Select the connector that best suits your television.

Preparation: Turn off all units.

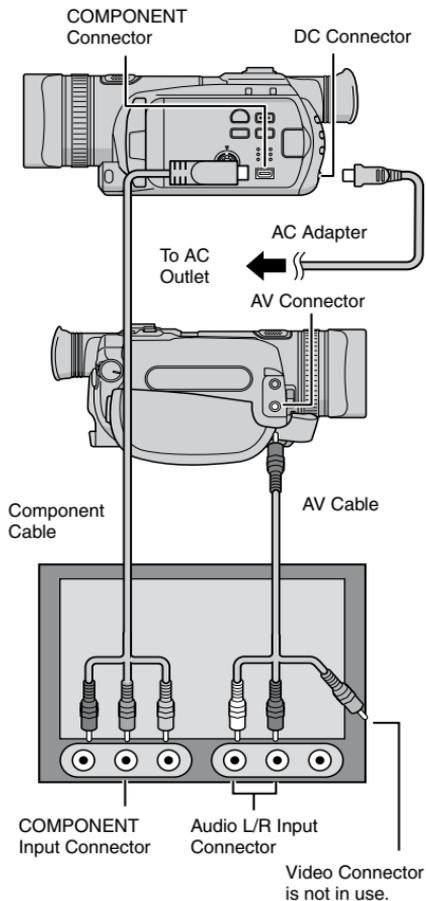
■ To connect using the HDMI connector



NOTE

Change the settings in [HDMI OUTPUT], [HDMI COLOR SETTING] or [HDMI ENHANCE SETTING] as you like. (⇨ pg. 71)

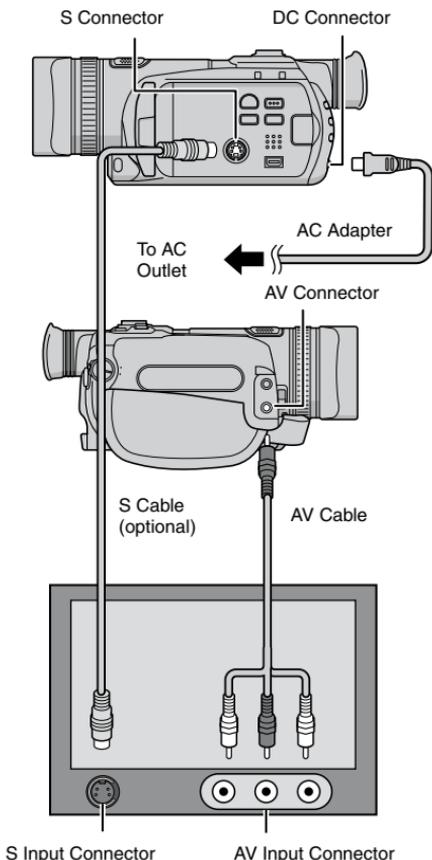
■ To connect using the COMPONENT connector



NOTE

Change the settings in [COMPONENT OUTPUT] as you like. (⇨ pg. 71)

■ To connect using the AV/S connectors



Playback Operation

After the connection with TV is completed

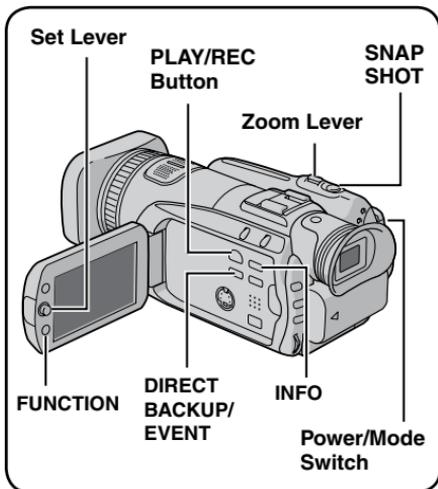
- 1 Turn on the camera and the TV.
- 2 Set the TV to its VIDEO mode.
- 3 (Only when connecting the camera to the VCR/DVD recorder)
Turn on the VCR/DVD recorder, and set the VCR/DVD recorder to its AUX input mode.
- 4 Start playback on the camera.
(☞ pg. 30, 31)

■ To display camera's on-screen display on TV
Set [DISPLAY ON TV] to [ON]. (☞ pg. 71)

NOTE

Change the settings in [VIDEO/S OUTPUT] to suit the screen size of your television.
(☞ pg. 71)

Managing Files



CAUTION

Do not remove the recording medium or perform any other operation (such as turning off the power) while accessing files. Also, be sure to use the provided AC adapter, as the data on the recording medium may be corrupted if the battery becomes exhausted during operation. If the data on the recording medium becomes corrupted, format the recording medium. (▶ pg. 72)

Deleting/Protecting Files

- Protected files cannot be deleted. To delete them, release the protection first.
- Once files are deleted, they cannot be restored. Check files before deleting.
- For an SD card, you can use the write/erase protection tab to set protection. To protect all the files, slide the tab to the "LOCK" position.

Write/erase protection tab



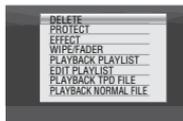
Preparation:

- Slide the power/mode switch to **MODE** to select or mode.
- Press the **PLAY/REC** button to select playback mode.

The following illustrations of display screens are examples of when performing [DELETE].

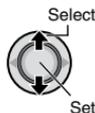
1

FUNCTION



2

Select [DELETE] or [PROTECT].



Set

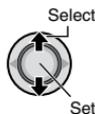


Deleting/Protecting the Currently Displayed File

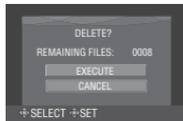
After performing steps 1-2

3

Select [CURRENT].



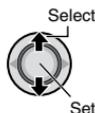
Set



You can select the previous or next file by moving the set lever to </>.

4

Select [EXECUTE].



Set

- To exit the screen Press **FUNCTION**.

Selecting and Deleting/Protecting Files

After performing steps 1-2 (☞ pg. 38)

3 Select [FILE SELECT].



4 Select the desired file.

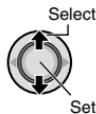


- The or mark appears on the file. To select other files, repeat this step.
- If you slide the zoom lever towards **T**, the preview screen is displayed. Sliding the zoom lever towards **W** returns to the index screen.

5 FUNCTION



6 Select [EXECUTE AND QUIT] (when performing [DELETE]) or [QUIT] (when performing [PROTECT]).



- To exit the screen
Press **FUNCTION**.

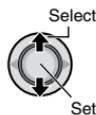
Deleting/Protecting All Files

After performing steps 1-2 (☞ pg. 38)

3 Select [DELETE ALL] or [PROTECT ALL].



4 Select [EXECUTE].



- To exit the screen
Press **FUNCTION**.

■ To release protection

Select the protected file in step 4 ("Selecting and Deleting/Protecting Files" ☞ left column).

■ To release protection of all files

- 1) In step 3, select [CANCEL ALL], then press down the set lever.
- 2) Move the set lever to \wedge / \vee to select [EXECUTE], then press down.

Managing Files (Continued)

Viewing File Information

Preparation:

- For  mode: Pause the playback. Alternatively, select the file on the index screen.
- For  mode: Play back the still image. Alternatively, select the file on the index screen.



- **FILE:**
File name
- **FOLDER:**
Folder name
- **DATE/TIME:**
Date and time of the recording
- **PB TIME (for video files):**
Playback time (length of the file)
- **SIZE (for still images):**
Image size (⇨ pg. 69)
- **QUALITY:**
Image quality (⇨ pg. 68, 69)
- **PROTECT:**
File protection status (⇨ pg. 38)

-
- **To turn off the file information display**
Press **INFO** again.

Histogram – mode only

A histogram is a graph indicating the image's brightness. By checking the image and its histogram, you can see the exposure level pattern and the overall tone reproduction.

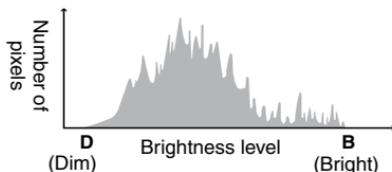
Preparation:

Play back the still image.

Press twice.



- A larger number of pixels in the centre position indicates correct exposure and well-balanced brightness.



- The shutter speed, F-number and ISO sensitivity (GAIN) when recorded are also displayed.

-
- **To turn off the file information display**
Press **INFO** several times.

NOTE

The shutter speed displayed during shooting in auto mode is an approximation. It may not match the one displayed with the histogram.

Changing the Event Registration of Video Files after Recording

– **mode only**

Preparation:

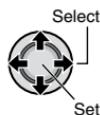
- Slide the power/mode switch to **MODE** to select **mode**.
- Press the **PLAY/REC** button to select playback mode.

1

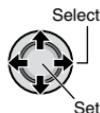


2 Select a new event to register the file to.

- To move to the next page, select **[NEXT PAGE]**.
- To cancel the event registration, select **[NON SECTION]**.



3 Select the file you want to register.

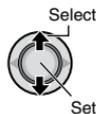


- To select other files, repeat this step.
- If you slide the zoom lever towards **T**, the preview screen is displayed. Sliding the zoom lever towards **W** returns to the index screen.

4



5 Select **[SAVE AND QUIT]**.



- To exit the screen Press **FUNCTION**.

Managing Files (Continued)

To Extract a Still Image File From a Video File – mode only

You can extract the desired scene from a recorded video file, and record it as a still image file.

Preparation:

- Slide the power/mode switch to **MODE** to select  mode.
- Press the **PLAY/REC** button to select playback mode.

1 Select the desired video file.



Playback starts. Search the desired scene.

2



NOTES

- Extracted still images are stored at a resolution of 1920 x 1080. The image can be elongated in the horizontal or vertical directions depending on the picture quality of the source video file.
- Images cannot be extracted when the video file is in search or slow-motion playback. Extract images when the video is in normal playback, or when it is paused.
- The continuous shooting function ( pg. 69) cannot be used to extract images.

DPOF Print Setting – mode only

The number of prints to make of a still image recorded on an SD card can be set. This feature is useful when taking the SD card to a photo lab for printing.

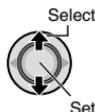
Preparation:

- Slide the power/mode switch to **MODE** to select  mode.
- Press the **PLAY/REC** button to select playback mode.
- Set [REC MEDIA FOR IMAGE] to [SD]. ( pg. 69)

1



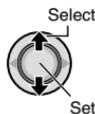
2 Select [DPOF].



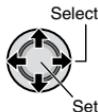
Setting Files Individually

After performing steps 1-2

3 Select [SELECT IMAGES].

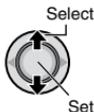


4 Select the desired file.



If you slide and hold the zoom lever towards **T**, the preview screen of the still image is displayed.

5 Select the number of prints. (max. 15 prints)



To set print information for other images, repeat steps **4** and **5**. (You can set up to 999 files.)



■ To exit the screen

Press **FUNCTION**.

■ To cancel the selection

Set the number of prints to "00" in step **5**.

■ To confirm DPOF settings

In step **3**, move the set lever to \wedge / \vee to select [CHECK SETTINGS], then press down.

- If necessary, change the number of prints for the desired file by following steps **4** and **5**.

■ To reset DPOF settings

- 1) In step **3**, move the set lever to \wedge / \vee to select [RESET], then press down.
- 2) Move the set lever to \wedge / \vee to select [EXECUTE], then press down.

Setting All Files Together (One Print for Each)

After performing steps 1-2

3 Select [ALL1].



4 Select [EXECUTE].



■ To exit the screen

Press **FUNCTION**.

■ To cancel the selection

Set the number of prints to "00" in step **5**.

■ To confirm DPOF settings

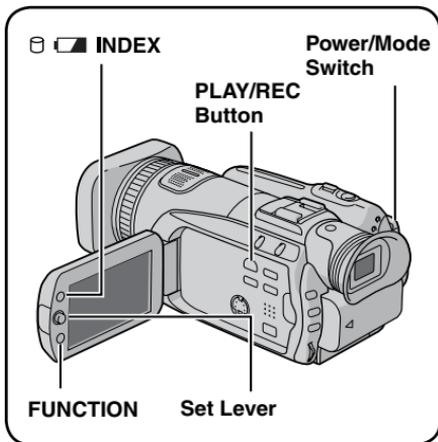
In step **3**, move the set lever to \wedge / \vee to select [CHECK SETTINGS], then press down.

- If necessary, change the number of prints for the desired file by following steps **4** and **5**.

■ To reset DPOF settings

- 1) In step **3**, move the set lever to \wedge / \vee to select [RESET], then press down.
- 2) Move the set lever to \wedge / \vee to select [EXECUTE], then press down.

Playlists – mode only



It is a list that enables you to organise recorded videos in order of preference.

Preparation:

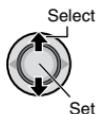
- Slide the power/mode switch to **MODE** to select  mode.
- Press the **PLAY/REC** button to select playback mode.

Creating Playlists

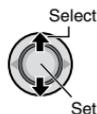
1



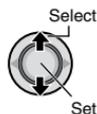
2 Select **[EDIT PLAYLIST]**.



3 Select **[NEW LIST]**.



4 Select an item and display files.



- **[IMPORT FROM EVENT]:**

Search for an event and display the corresponding files listed by recording date.

Move the set lever to \wedge / \vee / \langle / \rangle to select the event, then press down.

- **[IMPORT FROM DATE]:**

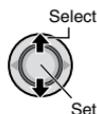
Display all the files in the medium listed by recording date.

- **[ALL SCENES]:**

Display all files individually.



5 Select the file to add to playlist.



- Files recorded in 1440 CBR video picture quality are displayed with a 1440 CBR icon.

- To preview scenes, move the set lever to \wedge / \vee to select the file and press the **INDEX** button. When the index screen of individual scenes appears, move the set lever to \wedge / \vee / \langle / \rangle to select the file, then press down.

To return to previous screen, press **INDEX**.

6 Select the insertion point.

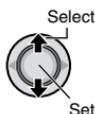


- To add other files, repeat steps **5** and **6**.
- To delete a registered scene, move the set lever to \wedge / \vee to select the registered file, then press down.

7



8 Select [SAVE AND QUIT].



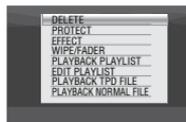
- **To exit the screen**
Press **FUNCTION**.

NOTES

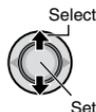
- A maximum of 99 playlists can be created.
- Each playlist can consist of a maximum of 99 scenes.
- If you delete the original files, the corresponding files are also deleted from the playlist.

Playing Back Playlists

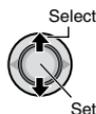
1



2 Select [PLAYBACK PLAYLIST].



3 Select the playlist that you want to play back.



- **To exit the screen**
Press **FUNCTION**.
- **To stop playback**
Press down the set lever.
- **To return to the normal file playback mode**
Select [PLAYBACK NORMAL FILE] in step **2**.
- **To play back from the desired scene**
 - 1) In step **2**, press the **INDEX** button. (The index screen for playlist appears.)
 - 2) Move the set lever to \wedge / \vee / \langle / \rangle to select the desired scene, then press down.

Playlists – mode only (Continued)

Other Operations of Playlists

You can perform additional editing and delete files in a created playlist.

Preparation:

Perform steps **1-2**. ( pg. 44)

Adding/Deleting Files in Playlist

3 Move the set lever to \wedge / \vee to select [EDIT], then press down.

4 Move the set lever to \wedge / \vee to select the playlist you want to edit, then press down.

To add or delete files, follow the steps **5** to **8** in "Creating Playlists". ( pg. 44)

Changing Playlist Names

The default name of a playlist is its creation date and time.

3 Move the set lever to \wedge / \vee to select [RENAME], then press down.

4 Move the set lever to \wedge / \vee to select the desired playlist, then press down.

5 Move the set lever to $\wedge / \vee / \langle / \rangle$ to select the desired letter, then press down.

- Repeat this process to complete the name.
- You can change the character types (capital letters, small letters or marks) by selecting [A/a/@].
- To correct a letter, select [\leftarrow] or [\rightarrow] and press down the set lever to move the cursor to the letter, then select [CLEAR] and press down the set lever.

6 Move the set lever to $\wedge / \vee / \langle / \rangle$ to select [\leftarrow], then press down.

Deleting Playlist

Original files are not deleted even if you delete the playlist.

3 Move the set lever to \wedge / \vee to select [DELETE], then press down.

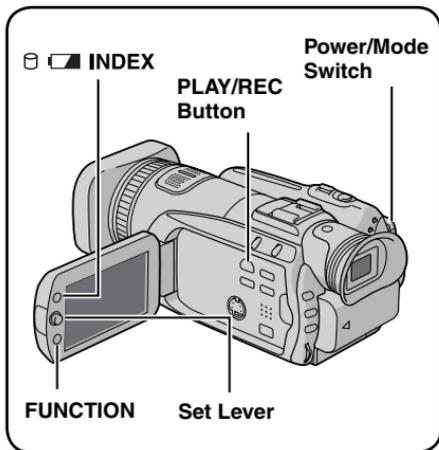
4 Move the set lever to \wedge / \vee to select a playlist you want to delete.

To delete all playlists at once, select [DELETE ALL].

5 Press down the set lever.

6 Move the set lever to \wedge / \vee to select [EXECUTE], then press down.

Copying Files



Types of Copying and Connectable Device



The Camera

You can copy still images between the HDD and SD card with this camera alone. (➡ pg. 52)



DVD Burner (CU-VD40/CU-VD20)

You can copy video/still image files recorded on this camera onto DVD discs. (➡ right column)



VCR/DVD Recorder

You can dub video files recorded on this camera onto DVD discs. (➡ pg. 50)



PC

You can copy video/still image files on this camera onto your PC. For details, refer to PC OPERATION section. (➡ pg. 53 to 66)

Using a DVD Burner to Copy Files from the Camera

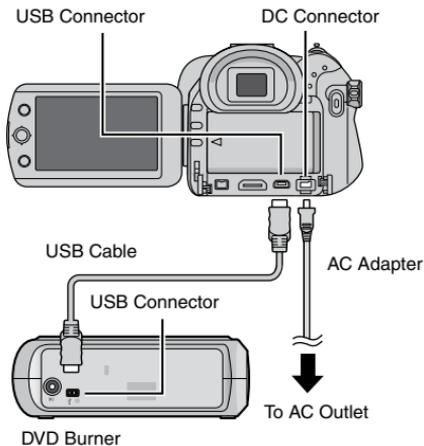
The files in the camera can be backed up to a DVD disc using a DVD burner (CU-VD40/CU-VD20 sold separately).

- Supported media: DVD-R, DVD-RW, DVD-R DL (More than one disc may be required depending on the size of the file to be copied. In this case, use new (unused) discs.)
 - This disc cannot be played in a normal DVD player. Use one of the following methods to view the disc.
 - Playback the disc using the camera. ("To play back the created disc using the camera" ➡ pg. 48, 50)
 - Playback the disc using a DVD burner.* (Only possible when using a CU-VD40.)
 - Playback on a PC.*
- * The disc must first be finalised on the camera.

Connection with a DVD Burner

Preparation:

Set the power/mode switch to **OFF**.



NOTE

Use the USB cable that came with the DVD burner.

Continued on next page

Copying Files (Continued)

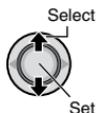
Backup All Files

Preparation:

- Connect the camera to the DVD burner.
(☞ pg. 47)
- Slide the power/mode switch to **MODE** to select  or  mode.

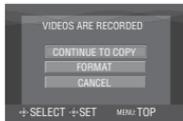
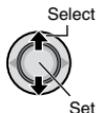
The following illustrations of display screens are examples of when backing up video files.

1 Select [NORMAL BACK-UP].



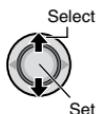
2 Select the desired menu.

- **[ALL]:**
All files in the recording medium are copied.
- **[UNSAVED SCENES/FILES NOT BACKED-UP]:**
Files that have never been copied to a DVD disc are automatically selected and copied.



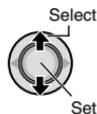
3 Select the desired menu.

- **[FORMAT]:**
After the disc is formatted (all recorded data on the disc is deleted), the files are copied to the disc.
- **[CONTINUE TO COPY]:**
Files are added to the free space of a disc. Displayed only when a recordable disc is inserted.



4 Select [EXECUTE] or [EXECUTE AND FINALIZE].

By selecting [EXECUTE AND FINALIZE], the disc is finalised after the files are copied.



- The disc begins to be created. When [COMPLETED] appears, press down the set lever to complete the operation.
- When [COMPLETED. CHANGE DISC] appears, change the disc. The second disc begins to be created.
- To cancel the disc creation, select [STOP].

■ To return to the top screen

Press **MENU**, then move the set lever to \wedge / \vee to select [YES] and press down.

■ To finalise the disc after copy is finished

- 1) Connect the camera to the DVD burner.
(☞ pg. 47)
- 2) Turn the camera's power on.
- 3) Select [FINALIZE].
- 4) Select [EXECUTE].
- 5) When [COMPLETED] appears, select [OK].

■ To play back the created disc using the camera

- 1) Connect the camera to the DVD burner.
(☞ pg. 47)
- 2) When watching on TV, connect the camera to TV. (☞ pg. 36)
- 3) Turn the camera's power on.
- 4) Select [PLAYBACK].
- 5) Select the desired folder.
- 6) Select the creation date of the disc.
- 7) Select the desired file. To return to the previous screen, press the **INDEX** button.

Select Files for Backup

Preparation:

- Connect the camera to the DVD burner.
(pg. 47)
- Slide the power/mode switch to **MODE** to select  or  mode.

The following illustrations of display screens are examples of when backing up video files.

1 Select [SELECT BACK-UP].



2 Select the desired menu.



• [SELECT FROM SCENES/SELECT FROM IMAGES]:

Register backup files individually.

- 1) Move the set lever to $\wedge / \vee / \langle / \rangle$ to select the desired file, then press down. To select other files, repeat this process.
- 2) Press the **INDEX** button then go to step 4.

• [SELECT FROM EVENT*]:

Files are sorted according to event. Relevant files are displayed in a list. Move the set lever to $\wedge / \vee / \langle / \rangle$ to select the event, then press down.

• [SELECT FROM PLAYLIST*]:

Select the desired playlist from the list of playlists. The selected playlists are displayed in a list.

- 1) Move the set lever to $\wedge / \vee / \langle / \rangle$ to select the desired list, then press down. To select other lists, repeat this process.
- 2) Move the set lever to \rangle twice.

• [SELECT FROM DATE]:

Files are sorted according to the date on which they were recorded. Relevant files are displayed in a list. Move the set lever to \wedge / \vee to select the recording date, then press down.

* Not available in  mode.

To preview scenes, press the **INDEX** button. (The index screen of individual scenes appears.) Move the set lever to $\wedge / \vee / \langle / \rangle$ to select the file, then press down. To return to previous screen, press **INDEX**.

3 Select [ALL].



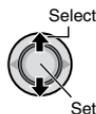
4 Select the desired menu.

• [FORMAT]:

After the disc is formatted (all recorded data on the disc is deleted), the files are copied to the disc.

• [CONTINUE TO COPY]:

Files are added to the free space of a disc. Displayed only when a recordable disc is inserted.

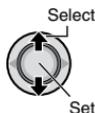


Continued on next page

Copying Files (Continued)

5 Select [EXECUTE] or [EXECUTE AND FINALIZE].

By selecting [EXECUTE AND FINALIZE], the disc is finalised after the files are copied.



- The disc begins to be created. When [COMPLETED] appears, press down the set lever to complete the operation.
- When [COMPLETED. CHANGE DISC] appears, change the disc. The second disc begins to be created.
- To cancel the disc creation, select [STOP].

■ To return to the top screen

Press **MENU**, then move the set lever to \wedge / \vee to select [YES] and press down.

■ To finalise the disc after copy is finished

- 1) Connect the camera to the DVD burner. (☞ pg. 47)
- 2) Turn the camera power on.
- 3) Select [FINALIZE].
- 4) Select [EXECUTE].
- 5) When [COMPLETED] appears, select [OK].

■ To play back the created disc using the camera

- 1) Connect the camera to the DVD burner. (☞ pg. 47)
- 2) When watching on TV, connect the camera to TV. (☞ pg. 36)
- 3) Turn the camera's power on.
- 4) Select [PLAYBACK].
- 5) Select the desired folder.
- 6) Select the creation date of the disc.
- 7) Select the desired file. To return to previous screen, press the **INDEX** button.

Using a VCR/DVD Recorder to Dub Files from the Camera

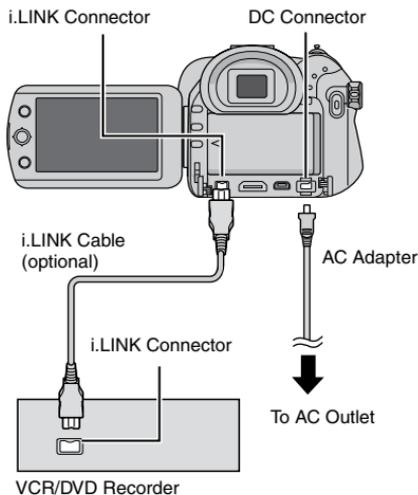
You can connect the camera to a VCR or DVD recorder, and dub the camera's files directly onto those devices.

Connection with a VCR/DVD Recorder

You can connect using either the i.LINK connector or AV/S connector. Select the connector that best suits your VCR/DVD recorder.

Preparation: Turn off all units.

■ To connect using the i.LINK connector

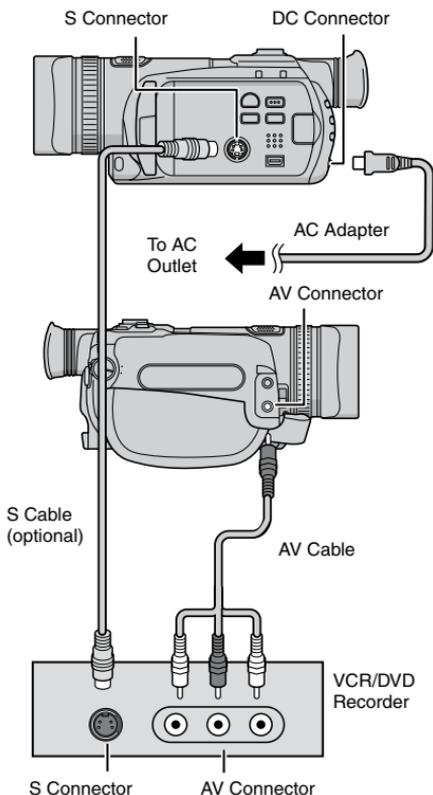


NOTES

- Be sure to use the VC-VDV204U or VC-VDV206U i.LINK cable. Operation using the i.LINK cable is not guaranteed on all of the devices.
- When dubbing using the i.LINK connector, only the playlist which has been played for dubbing can be dubbed. (☞ pg. 51) Normal video files and normally played playlists cannot be dubbed.

- When copying using the i.LINK connector, only files which are recorded in 1440 CBR video picture quality can be dubbed. If a DV input compatible device is connected, files recorded in other picture quality can also be dubbed. Set the [i.LINK OUTPUT (DUB)] to [DV]. (☞ pg. 71)

■ To connect using the AV/S connectors



Dubbing Operation

1 Set the VCR/DVD recorder to its AUX input mode.

Check that the images from the camera have been input correctly to the VCR/DVD recorder.

2 Start playback on the camera.

- To play back videos (☞ pg. 30)
- To play back playlists

- Press the **FUNCTION** button.
- Move the set lever to \wedge / \vee to select [PLAYBACK PLAYLIST], then press down.
- Move the set lever to \succ . *1
- Move the set lever to \wedge / \vee to select [START PLAYBACK], then press down. (A black screen is displayed for five seconds at the first and the last scene. *2)

*1 When dubbing using the i.LINK connection and with [i.LINK OUTPUT (DUB)] set to [1440 CBR], a confirmation screen is displayed after operation. Select [OK] and proceed to step 4).

*2 When dubbing using the i.LINK connection and with [i.LINK OUTPUT (DUB)] set to [1440 CBR], the image to be dubbed is not displayed on the camera's screen. Check the images on the VCR/DVD recorder side.

3 At the point you want to start dubbing, start recording on the VCR/DVD recorder.

Refer to the VCR/DVD recorder's instruction manual.

■ To stop dubbing

Stop recording on the VCR/DVD recorder, then press the **REC** button again.

NOTES

- The date displays cannot be dubbed using the i.LINK connection.
- When playing back images dubbed using the i.LINK on a VCR/DVD recorder, the images may stop momentarily at junctions between scenes.

Copying Files (Continued)

Copying/Moving Still Image Files

You can copy or move still image files between the HDD and SD card using the on-screen display.

Preparation:

- Slide the power/mode switch to **MODE** to select mode.
- Press the **PLAY/REC** button to select playback mode.
- Make sure that SD card is inserted in the SD slot.
- Make sure that enough free space is left in the copy/move destination medium.

1

FUNCTION



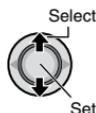
2 Select [COPY] or [MOVE].

• [COPY]:

Files are copied to the destination medium while leaving original files in the source medium.

• [MOVE]:

Files are moved to the destination medium while deleting original files (except read-only files) in the source medium.



3 Set the direction of copy/move. (HDD → SD or SD → HDD)



4



5 Set the file unit ([ALL] or [FILE]) to copy/move.



• [FILE]:

Select when you want to transfer the selected files.

- 1) Move the set lever to $\wedge / \vee / \langle / \rangle$ to select the desired file, then press down.

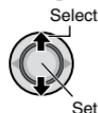
- The \checkmark mark appears on the file. To select other files, repeat this step.

- 2) Press **FUNCTION**.

• [ALL]:

Select when you want to transfer all files in the recording medium.

6 Select [EXECUTE].



File transfer starts. When [COPYING/ MOVING COMPLETED] appears, press down the set lever.

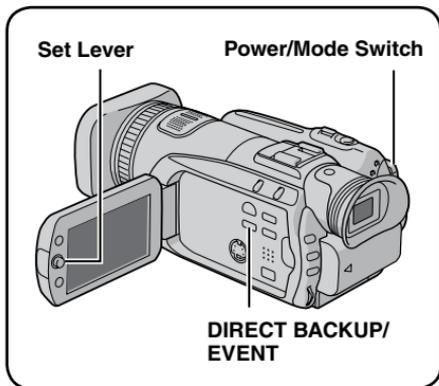
■ To exit the screen

Press **MENU**, then move the set lever to \wedge / \vee to select [EXECUTE] and press down.

■ To stop the file transfer

- 1) Press down the set lever.
- 2) Select [EXECUTE] and press down the set lever.

File Backup on the PC – Windows®



Install the software that came with the camera to your PC.

You can back up your files on your computer with a simple one-touch operation, edit your files on your computer, and also create discs. If you cannot install the software, you can still back up your files on your computer. (⇨ pg. 58)



- 1 You can perform detailed settings for each item.
- 2 Select a function on the right, and an explanation is displayed.
- 3 The operating procedure for each function is displayed.
- 4 Plays back video files on the PC (⇨ pg. 59)
- 5 Plays back still image files on the PC (⇨ pg. 59)
- 6 Creates discs/Edits files (⇨ pg. 60)
- 7 Backs up camera files onto the PC (⇨ pg. 57)

You can find the latest information on the provided software program at CyberLink's world wide web server at <http://www2.cli.co.jp/products/ne/>

System Requirements

OS:

Windows® XP Home Edition [XP] (pre-installed), or Windows® XP Professional [XP] (pre-installed)

CPU:

Intel® Pentium® 4, at least 2.4 GHz

(at least 3.0 GHz recommended)

Intel® Pentium® M, at least 1.6 GHz

RAM:

At least 512 MB (at least 1 GB recommended)

Free hard disk space:

At least 750 MB for installation

For creating Blu-ray disc, at least 30 GB (at least 60 GB recommended)

Connector:

USB 2.0 connector

Sound card:

DirectSound compatible sound card

Display:

Must be capable of displaying at least

1024 x 768 (XGA) in high color 16 bit or higher

(1280 x 1024 (SXGA) or higher is recommended)

Intel/nVidia/ATI MPEG-2 HD DxVA compatible card

Miscellaneous:

Internet Explorer 5.5 or later

DirectX 9.0 or later

DirectX is automatically installed during installation.

Supported media:

BD-RE, BD-R, DVD-R/-RW, DVD+R/+RW, CD-R/RW

For the compatible drives:

http://www.cyberlink.com/english/products/powerproducer/3/comp_dvd_drives.jsp

For the compatible BD drives:

http://software.transdigital.co.jp/products/cbs_ev/eng/support.htm

NOTE

Even if your system meets the recommended requirements above, you may still experience dropped frames while playing back high definition video, or you may find that editing takes a long time. In order to use these functions more smoothly, it is recommended that you use a higher performance computer (CPU: Intel® Core™ 2 Duo, memory: 2GB or more).

File Backup on the PC – Windows® (Continued)

Software Installation

The following software is included in the CD-ROM that came with your camera.

• CyberLink BD Solution

Comprehensive application software that consists of the following 3 software.

PowerCinema NE for Everio

The main authoring software. You can perform various operations such as file backup, playback, and editing from the top menu of this software.

PowerProducer 3 NE

Allows you to create discs. Automatically starts from an operation in PowerCinema NE for Everio.

PowerDirector 5 NE Express

Allows you to edit files on your PC. Automatically starts from an operation in PowerCinema NE for Everio.

• Digital Photo Navigator 1.5

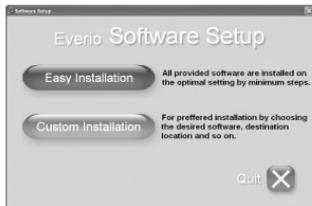
Allows you to change the format of still image files backed up on your computer.

Preparation:

Quit any other software you are using. (Check that there are no other application icons on the status bar.)

1 Load the provided CD-ROM into the PC.

After a moment, the [SETUP] screen appears. If the [SETUP] screen does not appear, double-click the CD-ROM icon in [My Computer].



2 Click [Easy Installation].

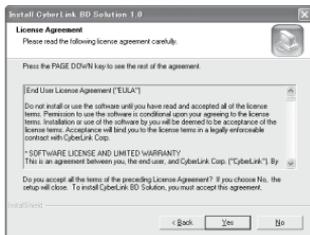
If you want to specify the type of software to install or the installation destination folder etc., select [Custom Installation]. Follow the instructions on the screen to install the software.



3 Click [Yes].



4 Select the desired language and click [OK].



5 Click [Yes].

The software installation starts.



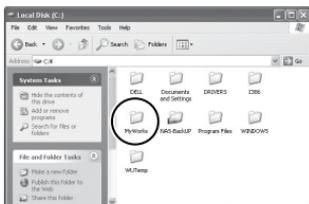
6 Click [Finish].

■ When installation is completed

The installed software is displayed in [All Programs].



The backup destination folder [MyWorks] for files is created on the hard disk drive that has the most free space.

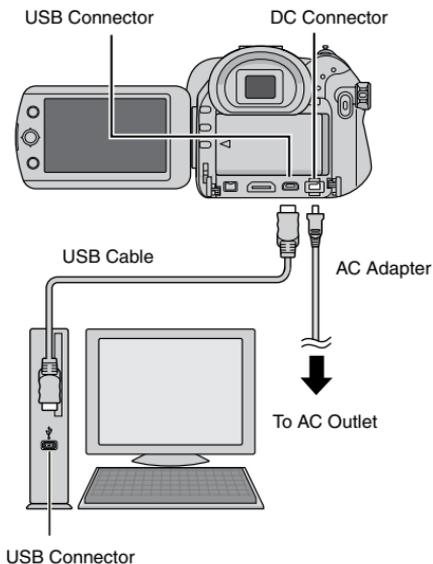


File Backup on the PC – Windows® (Continued)

Connecting the Camera to the PC

Preparation:

Set the camera's power/mode switch to **OFF**.



■ When you have finished operation

Always follow the procedures below when disconnecting the camera, or turning off the camera/computer power.

Failing to do so may cause damage to the camera and computer.

- 1) Confirm that the access/charge lamp on the camera does not light or blink. (If the access/charge lamp lights or blinks, wait until it is turned off before proceeding.)
- 2) Double-click the [Safely Remove Hardware] or [Unplug or Eject Hardware] icon in the status bar.
- 3) Select [USB Mass Storage Device] or [USB Disk], and then click [Stop].
- 4) Click [OK].
- 5) Disconnect the USB cable.
- 6) Turn off the camera and PC.

NOTES

- When the USB cable is connected, turning on or off the camera causes malfunctions of the PC.
- Connect the camera directly to the PC, not through the hub.
- Do not use an extension USB cable.
- Saving the wrong kinds of files in a recording medium or deleting files or folders from a recording medium can cause problems with the operation of the camera. When it is necessary to delete a file from a recording medium, delete it through the camera. Also, do not move or rename folders and files in the medium on PC.
- Never disconnect the USB cable while the access/charge lamp on the camera lights or blinks.

File Backup on the PC

This method uses the included software to back up files onto your computer.

Video files that have never been backed up onto the connected computer are automatically selected from the back up history and backed up.

If you could not install the software, turn to pg. 58 for details of how to back up your files without using this software.

Preparation:

- Install the software from the included CD-ROM. (☞ pg. 54)
- Connect the camera to the computer with the USB cable. (☞ pg. 56)

1 Set the camera's power/mode switch to STANDBY/ON.

2 On the camera, press the DIRECT BACK UP button.

A dialog box is displayed on the PC screen. However, you do not need to use the dialog box. File copy starts automatically.



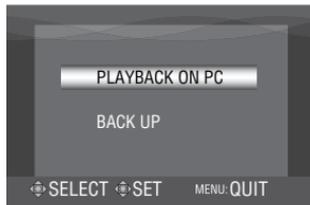
When the progress bar disappears, the process is complete.

File Backup from the specified media

Preparation:

- Install the software from the included CD-ROM. (☞ pg. 54)
- Connect the camera to the computer with the USB cable. (☞ pg. 56)

1 Set the camera's power/mode switch to STANDBY/ON.



2 On the camera, move the set lever to ^ / v to select [BACK UP], then press down.



3 Click [EVERIO_HDD] or [EVERIO_SD].

When the progress bar disappears, the process is complete.

NOTE

When backup is performed, a folder for each of the media (HDD or SD) stored in the [MyWorks] folder (☞ pg. 55) is created, and the files are backed up inside those folders. (If backup is performed from more than one camera HDD, that number of HDD folders is created.)

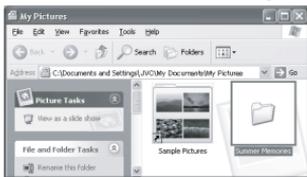
File Backup on the PC – Windows® (Continued)

File Backup on the PC without Using Software

Preparation:

Connect the camera to the computer with the USB cable. (pg. 56)

1 Create a folder to back up files into.

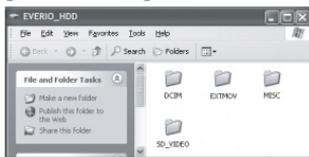


2 Set the camera's power/mode switch to STANDBY/ON.



3 On the camera, move the set lever to ^ / v to select [PLAYBACK ON PC], then press down.

4 Double-click [EVERIO_HDD] or [EVERIO_SD].



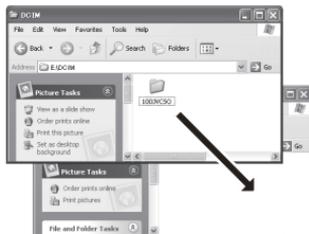
5 Select the folder that you want to back up, and drag & drop it into the folder you created in step 1.

• SD_VIDEO:

Folder that contains video files. If you want to back up files individually, open this folder, and drag & drop folders such as [PRG001] one by one.

• DCIM:

Folder that contains still image files. If you want to back up files individually, open this folder, and drag & drop files such as [PIC_0001.JPG] one by one.



NOTE

For further details on the use of folders, please refer to pg. 73.

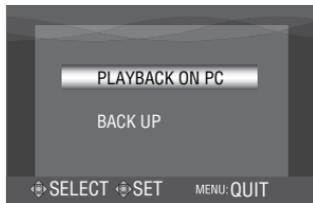
Other PC Operations – Windows®

Playing back Files on the PC

Preparation:

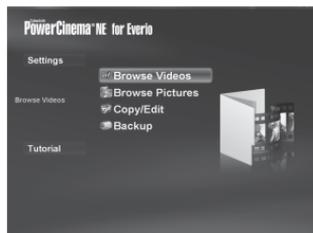
- Install the software from the included CD-ROM. (▶ pg. 54)
- Connect the camera to the computer with the USB cable. (▶ pg. 56)

1 Set the camera's power/mode switch to **STANDBY/ON**.



2 On the camera, move the set lever to \wedge / \vee to select **[PLAYBACK ON PC]**, then press down.

A dialog box is displayed on the PC screen. However, you do not need to use the dialog box. PowerCinema starts automatically.



3 Click **[Browse Videos]** (for video playback) or **[Browse Pictures]** (for still image playback).



4 Click the media that contains desired files.



5 Click the desired file.

You can use the convenient file search function.

- **Sort by:**
The order of files is rearranged according to item that you selected.
- **Filter by:**
Files are filtered according to the item that you selected.

Other PC Operations – Windows® (Continued)

Creating Discs/Editing Files

Preparation:

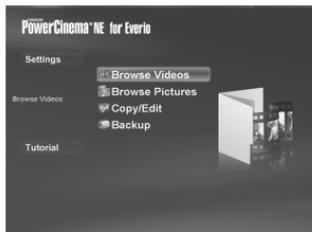
- Install the software from the included CD-ROM. (pg. 54)
- Connect the camera to the computer with the USB cable. (pg. 56)

- 1** Set the camera's power/mode switch to **STANDBY/ON**.



- 2** On the camera, move the set lever to \wedge / \vee to select [PLAYBACK ON PC], then press down.

A dialog box is displayed on the PC screen. However, you do not need to use the dialog box. PowerCinema starts automatically.



- 3** Click [Copy/Edit].



- 4** Click the media that contains desired files.



- 5** Click the check box of the desired file.

The \checkmark mark appears in the check box. To select other files, repeat this step.



6 Click [Copy/Advanced function].



7 Click [Create Disc] for creating discs, or [Advanced Editing] for editing.

PowerProducer (for creating discs) or PowerDirector (for editing) starts. For more information on detailed operations of these softwares, refer to their Readme (pg. 62) or CyberLink web site. (pg. 53)

NOTES

- Supported media is BD-RE, BD-R, DVD-R/-RW, DVD+R/+RW, CD-R/RW.
- DVD-RAM discs cannot be used. Regarding DVD-R/DVD+R discs, only unused DVD-R/DVD+R discs can be used. Regarding DVD-RW/DVD+RW discs, used DVD-RW/DVD+RW discs can also be used, but they need to be formatted before recording. Formatting a disc deletes all content recorded on the disc up until that time.
- You may not be able to play back the created disc depending on the performance of a device. Also the image may stop momentarily at junctions between scenes.
- PC must be equipped with a compatible drive and player software to playback the created disc.
- Edited files should be read and played back with PowerDirector.

Other PC Operations – Windows® (Continued)

Getting More Use from the Software

For more information on detailed operations of the software, see the Tutorials for each software program or the User's Guides.

PowerCinema NE for Everio

- 1 Select [PowerCinema NE for Everio] from [All Programs].
- 2 Click [Tutorial].

PowerProducer 3 NE

- 1 Select [PowerProducer 3 NE] from [All Programs].
- 2 Click [Readme].

PowerDirector 5 NE Express

- 1 Select [PowerDirector 5 NE Express] from [All Programs].
- 2 Click [User's Guide] or [Readme].

Digital Photo Navigator 1.5

The User's Guide is included on the CD-ROM in PDF format.

- 1 Load the provided CD-ROM into the PC.
- 2 Right-click the CD-ROM icon in [My Computer], then click [Open].
- 3 Double-click the [DOCS] folder.
- 4 Open the "Start.pdf" file and click the button of the desired language.

NOTES

- You need to connect to the Internet to be able to see the Tutorial.
- Adobe® Acrobat® Reader™ or Adobe® Reader® must be installed to read PDF files. Adobe® Reader® can be loaded from Adobe's web site: <http://www.adobe.com/>

Contact us for information on the included software

Use of this software is authorized according to the terms of the software licence.

JVC

When contacting the nearest JVC office or agency in your country about this software (refer to the JVC Worldwide Service Network at <http://www.jvc-victor.co.jp/english/worldmap/index-e.html>), please fill out the following and have the appropriate information ready.

- Product Name
- Model
- Problem
- Error Message
- PC Manufacturer
- Model (Desktop/Laptop)
- CPU
- OS
- Memory (MB)
- Available Hard Disk Space (MB)

Please note that it may take some time to respond to your questions, depending on their subject matter.

JVC cannot answer questions regarding basic operation of your PC, or questions regarding specifications or performance of the OS, other applications or drivers.

CyberLink

Telephone/fax support

Location	Language	Office hours (Mon. to Fri.)	Phone #	Fax #
Germany	English / German / French / Spanish / Italian / Dutch	9:00 to 17:00	+49-700-462-92375	+49-241-70525-25
Taiwan	Mandarin	9:00 to 18:00	+886-2-8667-1298 ext. 333	+886-2-8667-1300
Japan	Japanese	10:00 to 17:00	+81-3-3516-9555	+81-3-3516-9559

Paid voice support

Location	Language	Lines are open (Mon. to Fri.)	URL
U.S.A.	English	13:00 to 22:00 CST	http://www.cyberlink.com/english/cs/support/new_site/voice_support.jsp

Support web/e-mail

Language	URL/e-mail address
English	http://www.cyberlink.com/english/cs/support/new_site/support_index.html
German / French / Spanish / Italian	goCyberlink@aixtema.de
Japanese	http://jp.cyberlink.com/support/

File Backup on the PC – Macintosh

You can back up camera files onto your computer.

Furthermore, if the software from the included CD-ROM is installed, the backed up file can be viewed in QuickTime Player or edited in iMovie HD or Final Cut Pro. (Several functions will not be accessible.)

You can find the latest information on the provided software program at our world wide web server at <http://www2.cli.co.jp/products/ne/>

System Requirements

Hardware:

Macintosh 1.25 GHz or faster Power PC G4/G5 or Intel® processor (at least Intel® Core™ Duo recommended.)

USB 2.0 connector is required.

OS:

Mac OS X (10.4.4 to 10.4.8)

RAM:

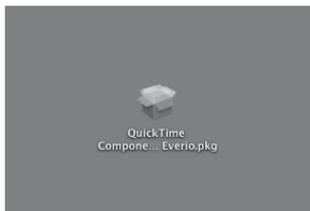
At least 512 MB (at least 1 GB recommended)

Software Installation

Preparation:

Quit any other software you are using.

- 1 Load the provided CD-ROM into the PC.
- 2 Double-click the CD-ROM icon.



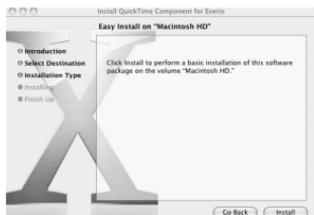
- 3 Double-click the QuickTime Component for Everio icon.



- 4 Click [Continue].



5 Click [Continue].



6 Click [Install].

The software installation starts.

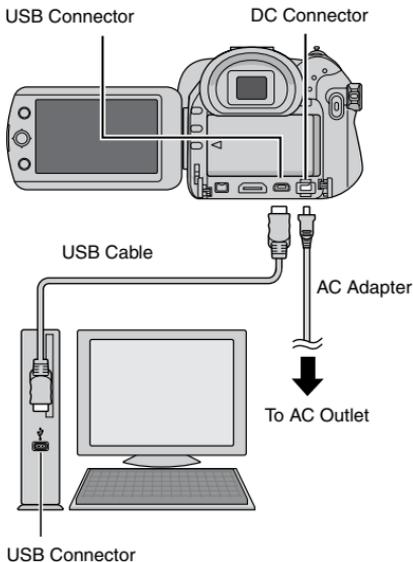


7 Click [Close].

Connecting the Camera to the PC

Preparation:

Set the camera's power/mode switch to **OFF**.



NOTES

- When the USB cable is connected, turning on or off the camera causes malfunctions of the PC.
- Connect the camera directly to the PC, not through the hub.
- Do not use an extension USB cable.
- Saving the wrong kinds of files in a recording medium or deleting files or folders from a recording medium can cause problems with the operation of the camera. When it is necessary to delete a file from a recording medium, delete it through the camera. Also, do not move or rename folders and files in the medium on PC.
- Never disconnect the USB cable while the access/charge lamp on the camera lights or blinks.

Continued on next page

File Backup on the PC – Macintosh (Continued)

■ When you have finished operation

Always follow the procedures below when disconnecting the camera, or turning off the camera/computer power.

Failing to do so may cause damage to the camera and computer.

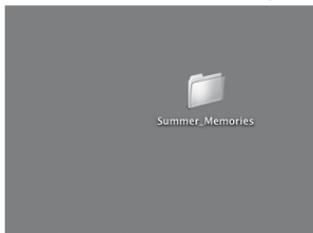
- 1) Drag & drop the recording medium icon on the desktop into the [Trash] icon. If the confirmation message appears, click [OK].
- 2) Confirm that the access/charge lamp on the camera does not light or blink. If the access/charge lamp lights or blinks, wait until it is turned off before proceeding.
- 3) Disconnect the USB cable.
- 4) Turn off the camera and PC.

File Backup on the PC

Preparation:

Connect the camera to the computer with the USB cable. (☞ pg. 65)

1 Create a folder to back up files into.



2 Set the camera's power/mode switch to STANDBY/ON.



3 On the camera, move the set lever to ^/∨ to select [PLAYBACK ON PC], then press down.



4 Double-click [EVERIO_HDD] or [EVERIO_SD].

5 Select the folder that you want to back up, and drag & drop it into the folder you created in step 1.

● SD_VIDEO:

Folder that contains video files. If you want to back up files individually, open this folder, and drag & drop folders such as [PRG001] one by one.

● DCIM:

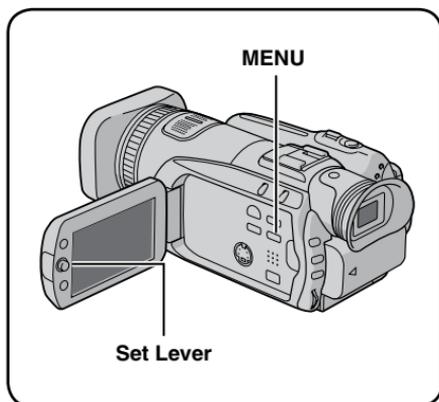
Folder that contains still image files. If you want to back up files individually, open this folder, and drag & drop files such as [PIC_0001.JPG] one by one.



NOTE

For further details on the use of folders, please refer to pg. 73.

Changing the Menu Settings



The following illustrations of display screens are examples of when [DEMO MODE] is set to [OFF].

1

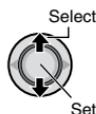


2



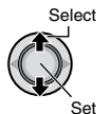
3 Select the desired menu from the first menu item.

- [VIDEO]:
Display menus related to mode.
- [IMAGE]:
Display menus related to mode.
- [GENERAL]:
Display menus common to and modes.
- [OUTPUT SETTING]:
Display menus related to image output when connecting to other devices.
- [MEDIA]:
Display menus related to recording media (HDD and SD cards).

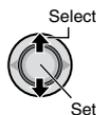


4 Select the desired menu from the second menu item.

For details on each menu, see page 68 to 72.



5 Select the desired setting from the third menu item.



■ To return to the previous screen

Move the set lever to .

■ To exit the screen

Press MENU.

Changing the Menu Settings (Continued)

Menus	Settings: [] = Factory-preset
 QUALITY Enables you to set the picture quality for videos.	<p>[FHD]: Record in 1920 x 1080i (full high-definition), VBR (Variable Bit Rate). Select this to record in the highest picture quality.</p> <p>[SP]: Record in 1440 x 1080i (high-definition), VBR (Variable Bit Rate). Select this in order to record for a long time.</p> <p>[1440 CBR]: Record in 1440 x 1080i (high-definition), CBR (Constant Bit Rate). Select this to copy a recorded video using the i.LINK connector.</p> <p>NOTE If you switch the quality settings, a new file management folder is created in the HDD or SD card. If you change the settings frequently, you may not be able to record due to a limited quantity of folders. In this case, perform the operation shown on page 79.</p>
 ZOOM Enables you to set the maximum zoom ratio.	<p>[10X] / 40X / 200X</p> <p>NOTE When the smallest value is set, the optical zoom is used. When one of the larger values is set, the digital zoom is used.</p>
 VIDEO  OIS Compensates for hand shake.	<p>[OFF]: Disables the function. [ON]: Activates the function.</p> <p>NOTES</p> <ul style="list-style-type: none"> • Accurate stabilisation may not be possible if hand shake is excessive, or depending on the shooting conditions. • Switch off this mode when recording with the camera on a tripod.
 GAIN UP Makes the subject appear bright automatically when you record in dark places. However, the overall colour tones appear grayish.	<p>[OFF]: Disables the function. [ON]: Activates the function.</p>
 WIND CUT Reduces noise caused by wind.	<p>[OFF]: Disables the function. [ON]: Activates the function.</p>
 REC MEDIA FOR VIDEO Enables you to set the recording medium for videos.	<p>[HDD] / SD</p> <p>NOTE When set to [SD], video picture quality will automatically be set to [SP].</p>
 SCENE COUNTER Enables you to set whether to display the scene counter.	<p>[OFF]: Disables the function. [ON]: Activates the function.</p>
 EXTERNAL MIC LEVEL Enables you to set whether display the input level when the external microphone (optional) is connected.	<p>[OFF]: Disables the function. [ON]: Activates the function.</p>

Menus	Settings: [] = Factory-preset
 QUALITY Enables you to set the picture quality for still images.	[FINE] / STANDARD
 IMAGE SIZE Enables you to select the picture size for still images.	[1920 x 1080] / 1440 x 1080 / 1024 x 768 / 640 x 480
 GAIN You can set the ISO setting to increase the sensitivity in dark conditions.	[AUTO] / 100 / 200 / 400
 CONTINUOUS SHOOTING Records still images continuously while the SNAPSHOT button is pressed.	<p>[OFF]: Disables the function. ON: Activates the function. BRACKETING: Activates the bracket shooting function. In addition to an image with the exposure set by the camera, two other images are recorded with exposure values shifted to the + 0.3 EV and – 0.3 EV sides. You can select the image that has a suitable exposure after shooting.</p> <p>NOTES</p> <ul style="list-style-type: none"> • The interval between recording still images is approx. 0.5 seconds. • Continuous shooting may not work well depending on the recording medium. • The continuous shooting speed will drop if this function is used repeatedly.
 SELF-TIMER Starts recording when the set time elapses after the SNAPSHOT button is pressed.	<p>[OFF] / 2SEC / 10SEC</p> <p>NOTES</p> <ul style="list-style-type: none"> • The operation of the timer can be confirmed by the tally lamp. • This can also be used to prevent vibration by hand.
 REC MEDIA FOR IMAGE Enables you to set the recording medium for still images.	[HDD] / SD
 LANGUAGE Enables you to set the display language. (→ pg. 17)	[ENGLISH] / FRANÇAIS / DEUTSCH / ESPAÑOL / ITALIANO / NEDERLANDS / PORTUGUÊS / РУССКИЙ / عربي / فارسی / B.MELAYU / BHS.INDO / ภาษาไทย / हिंदी / POLSKI / ČEŠTINA / TÜRKÇE / 日本語 / 한국어 / 中文 / 汉语
 CLOCK ADJUST Enables you to set the time. (→ pg. 17)	DATE / TIME
 DATE DISPLAY STYLE Enables you to set the date and time display format.	DATE STYLE: year.month.day / month.day.year / [day.month.year] TIME: [24h] / 12h

Changing the Menu Settings (Continued)

Menus	Settings: [] = Factory-preset
 DATE/TIME Enables you to set whether to display the current time on the LCD monitor.	OFF: The date/time does not appear. [AUTO]: The date/time appears for approx. 5 seconds in the following cases. <ul style="list-style-type: none"> • When the power/mode switch is set from OFF to STANDBY/ON • When playback starts ON: The date/time is always displayed.
 PRESET Returns all the camera settings to their default values.	EXECUTE: Performs this function. [CANCEL]: Returns to the menu screen without executing reset.
 BRIGHT Enables you to set the brightness of the LCD monitor or viewfinder.	Adjust the brightness of the display moving the set lever to < / >, then press down.
 DROP DETECTION Prevents damage to the HDD by turning off the power automatically when the camera detects that it has been dropped.	OFF: Disables the function. [ON]: Activates the function. To turn the unit on when the drop detection worked, set the power/mode switch to OFF , and to STANDBY/ON again. CAUTION Setting this function to off increases the chances of damaging the built-in hard disk if the camera is accidentally dropped.
 FOCUS ASSIST When the focus assist function is used, the borderline of the focused subject is displayed in the selected colour.	[BLUE] / RED / GREEN
 REMOTE Turns reception of the operation signal from the remote control on/off.	OFF: The camera does not receive the signal from the remote control. [ON]: Enables operation with the remote control.
 DEMO MODE Introduces special features of the camera when there is no operation for about 3 minutes during recording mode.	OFF: Disables the function. [ON]: Activates the function. NOTES <ul style="list-style-type: none"> • The demonstration only works when the AC adapter is connected, not with the battery. • If an SD card is in the camera, demonstration will not take place even if this mode is set to [ON].
 OPERATION SOUND Enables you to set the operation sound or turn the operation sound on/off.	OFF: Turns off the operation sound. [MELODY]: The melody sounds when any operation is performed.
 TALLY LAMP Set whether to light the tally lamp while shooting.	OFF: Unlit. [ON]: Lit.

Menus	Settings: [] = Factory-preset
GENERAL  PRIORITY SETTING Set whether to project the image onto the LCD monitor or viewfinder when both are open.	[LCD MONITOR]: Projects the image onto the LCD monitor. FINDER: Projects the image onto the viewfinder.
 DISPLAY Enables you to set whether to display the on-screen display.	OFF: Turns off the on-screen display. [ON]: Turns on the on-screen display.
 DISPLAY ON TV Used for displaying camera's on-screen display on a TV screen.	[OFF]: Does not display on TV. ON: Displays on TV. NOTE When connected to a TV using the i.LINK cable, the camera's on-screen display is not displayed on the TV, even if this setting is [ON].
OUTPUT SETTING  VIDEO/S OUTPUT Set the television screen size (16:9/4:3) of the connected television when outputting from the AV/S connector.	4:3 / [16:9]
 COMPONENT OUTPUT Set the definition of the video output from the COMPONENT connector.	[576i]: Outputs at 576i. 1080i: Outputs at 1080i.
 HDMI OUTPUT Set the definition of the video output from the HDMI connector.	[AUTO]: The definition that best suits the connected device is automatically selected in the following order: 1080i, 576p. 576p: Outputs at 576p. Select when the video is not projected correctly.
 HDMI COLOR SETTING Set the video format of the video output from the HDMI connector.	[AUTO]: Select this under normal circumstances. RGB: Select when the video is not projected correctly.
 HDMI ENHANCE SETTING Select whether or not to automatically adjust the image quality (depth of colour, dark colour suppression etc) of video output when connecting to the TV's DVI connector.	[OFF]: Image quality is not automatically adjusted. ON: Image quality is automatically adjusted.
 i.LINK OUTPUT (DUB) When using the i.LINK connector to copy files, set according to the type of device connected or file picture quality.	DV: Select when copying with a device that supports DV input. [1440 CBR]: Select when copying video that was recorded with [1440 CBR] set as the [QUALITY].

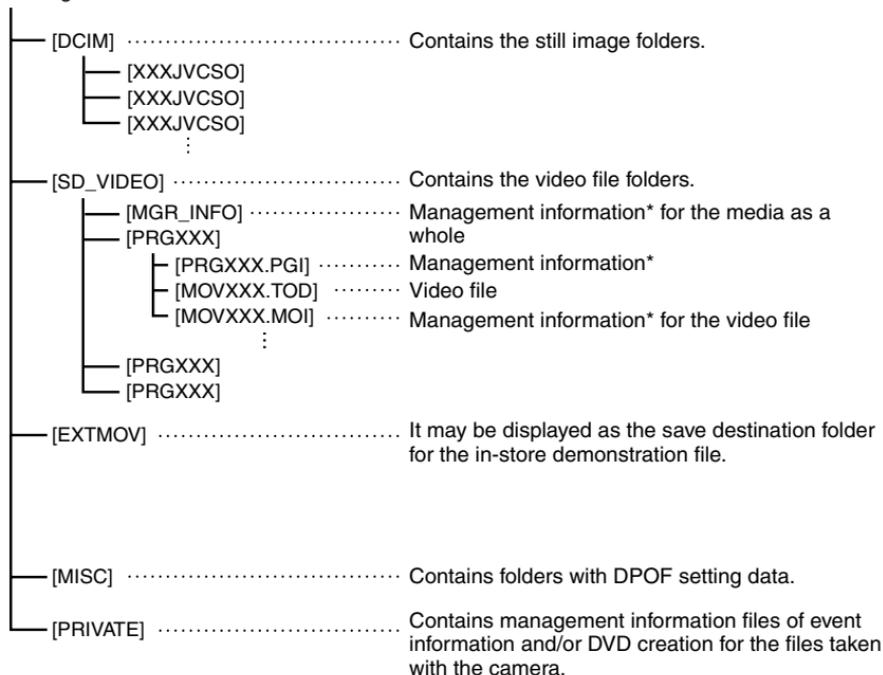
Changing the Menu Settings (Continued)

Menus	Settings: [] = Factory-preset
<p> CLEAN-UP HDD Writing speed to HDD tends to become slow after long periods of repeated use. Execute cleanup periodically to regain the writing speed.</p>	<p>Connect the AC adapter. EXECUTE: Performs this function. Select [OK] when completed. [CANCEL]: Cancels this function. NOTE Depending on the condition of the HDD, it may take several minutes for the cleanup process to be completed.</p>
<p> FORMAT HDD This will ensure stable speeds and operation when accessing the hard disk drive.</p>	<p>EXECUTE: Performs this function. Select [OK] when completed. [CANCEL]: Cancels this function. NOTES</p> <ul style="list-style-type: none"> ● Be aware that all files and data including protected files will be erased by the formatting process. ● Do not format the recording medium on your PC.
<p> DELETE DATA ON HDD This will make it more difficult to recover data on the HDD which has already been erased. It is recommended that you do this when disposing of the camera to prevent illegal data recovery (using commercially available software).</p>	<p>Connect the AC adapter. EXECUTE: Performs this function. Select [OK] when completed. [CANCEL]: Cancels this function.</p>
<p> FORMAT SD CARD You have to format newly purchased SD cards with this camera before using them. This will also ensure stable speeds and operation when accessing the SD card.</p>	<p>EXECUTE: Performs this function. Select [OK] when completed. [CANCEL]: Cancels this function. NOTES</p> <ul style="list-style-type: none"> ● Be aware that all files and data including protected files will be erased by the formatting process. ● Do not format the recording medium on your PC.
<p> VIDEO NO. RESET  IMAGE NO. RESET By resetting the file number (name), a new folder will be made. The new files you are going to make will be stored in the new folder. It is convenient to separate the new files from previously recorded files.</p>	<p>EXECUTE: Performs this function. Select [OK] when completed. [CANCEL]: Cancels this function.</p>

Folder Structure and Extensions

Recording medium

X = number



* Information such as the date and time of recording, recorded with the video file.

Extensions

Video files : ".TOD"

Still image files : ".jpg"

The file extension may not appear depending on the [FOLDER] option setting of Windows®.

Troubleshooting

The camera is a microcomputer-controlled device. External noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly.

The following phenomena are not malfunctions.

- The camera heats up when it is used for a long time.
- The battery heats up during charging.
- When playing back a video file, the image stops momentarily or the sound is interrupted at junctions between scenes.

- To solve the problem, first follow the instructions below.
- If the problem is not solved, reset the camera. (☞ below)
- If the problem persists, please consult your nearest JVC dealer.

■ **To reset the camera**

- 1) Set the power/mode switch to **OFF** and remove the power supply (battery pack or AC adapter) from the camera, then reattach it.
- 2) Execute [PRESET] from the menu. (☞ pg. 70)

Trouble		Action	☞
Power	No power is supplied.	● Connect the AC adapter securely.	16
		● Detach the battery pack once again and re-attach it firmly.	16
	No display appears.	● Replace the dead battery with a fully charged one.	—
		● If the camera is not operated for 5 minutes while the power is on, it turns itself off automatically to conserve power. To turn the camera on again when using the battery pack, set the power/mode switch to OFF , then to STANDBY/ON . When using the AC adapter, perform any operation such as zooming.	—
	The power was turned off accidentally.	● Adjust the brightness of the LCD monitor or viewfinder.	70
		● When using the viewfinder, the LCD monitor is opened. Either close the LCD monitor, or set the [PRIORITY SETTING] to [FINDER].	71
	The power was turned off accidentally.	● Move to a place where no vibration or excessive sound.	—
● The drop detection function operated. Set the power/mode switch to OFF , and to STANDBY/ON again. To turn off this function, set [DROP DETECTION] to [OFF].		70	
The displayed amount of remaining battery power differs from the actual operating time.	● Fully charge the battery, and then run it down. If the problem persists, the battery is worn out and needs to be replaced. Please purchase a new one.	16	
The power does not turn on, or the battery operation time is extremely short even after the battery is fully charged.	● Make sure to use the camera under appropriate operating temperatures.	80	
	● The battery is worn out and needs to be replaced. Please purchase a new one.	—	
The access/charge lamp on the camera does not light during charging.	● Charging is difficult in places subject to extremely high/low temperatures. To protect the battery, it is recommended to charge it in places with a temperature of 10°C to 35°C.	—	
	● When the battery is already fully charged, the lamp does not light. Check the remaining battery power.	18	

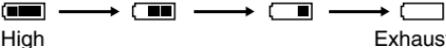
	Trouble	Action	
Displays	Images on the LCD monitor appear dark or whitish.	<ul style="list-style-type: none"> Adjust the brightness and angle of the LCD monitor. When the LCD monitor's LED light reaches the end of its service life, images on the LCD monitor become dark. Consult your nearest JVC dealer. 	70 –
	Colored bright spots appear on the LCD monitor.	<ul style="list-style-type: none"> The LCD monitor is made with high precision technology. However, black spots or bright spots of light (red, green or blue) may appear constantly on the LCD monitor. These spots are not recorded on the picture. This is not due to any defect of the unit. (Effective dots: more than 99.99%) 	–
Recording	Recording cannot be performed.	<ul style="list-style-type: none"> Recording medium is full. Delete unnecessary files or replace the SD card. Select the recording medium properly. 	38 68, 69
	Vertical lines appear on recorded images.	<ul style="list-style-type: none"> Such a phenomenon occurs when shooting a subject illuminated by bright light. This is not a malfunction. 	–
	The LCD monitor becomes red or black for an instant.	<ul style="list-style-type: none"> Such a phenomenon occurs when shooting under direct sunlight. This is not a malfunction. 	–
	During recording, the date/time does not appear.	<ul style="list-style-type: none"> Set [DATE/TIME] to [ON]. 	70
	During video recording, the ●REC indicator flashes.	<ul style="list-style-type: none"> The temperature of the camera is increasing. If the camera continues to heat up, recording may be stopped to protect the recording medium. In this case, turn off the power, and then wait until the camera cools down. 	–
	The LCD monitor indications blink.	<ul style="list-style-type: none"> Certain modes of program AE, effect, OIS, and other functions that cannot be used together are selected at the same time. 	–
	Digital zoom does not work.	<ul style="list-style-type: none"> Change the settings in [ZOOM]. Digital zoom is not available in the still image recording mode. 	68 –
	The focus is not adjusted automatically.	<ul style="list-style-type: none"> Set focus to the automatic mode. Clean the lens and check the focus again. 	26 79
	The colour of the image looks strange.	<ul style="list-style-type: none"> Wait to become natural colour. The camera adjusts the white balance automatically but it takes a time. Try manual white balance adjustment. In bright places, setting "Nightscope" or a slow speed is not recommended. When the recorded image is too dark, try backlight compensation or adjust brightness. When the recorded image is too bright, try adjust brightness. 	–
			28
–			
		26, 27	
		26	
White balance setting cannot be activated.	<ul style="list-style-type: none"> Do not select the sepia (SEPIA) or monotone (MONOTONE) mode before setting white balance. 	29	
The continuous shooting speed is slow.	<ul style="list-style-type: none"> The continuous shooting speed will drop when repeatedly making continuous shots, when using certain recording media, or under certain recording conditions. 	–	

Troubleshooting (Continued)

Trouble		Action	
Playback	Playback cannot be performed.	<ul style="list-style-type: none"> Select the recording medium properly. To watch images on a TV, set the TV's input mode or channel that is appropriate for video playback. 	68, 69 37
	The black & white fader does not work.	<ul style="list-style-type: none"> Do not select the sepia (SEPIA) or monotone (MONOTONE) mode before setting white balance. 	34
	There is a noise during playback.	<ul style="list-style-type: none"> The sound of the hard disk drive may have been recorded if the camera was moved suddenly during recording. Do not move or shake the camera suddenly during recording. 	—
	During video playback, the ► indicator flashes.	<ul style="list-style-type: none"> The temperature of the camera is increasing. If the camera continues to heat up, playback may be stopped to protect the recording medium. In this case, turn off the power, and then wait until the camera cools down. 	—
	Aspect ratio of the image is strange when watching images on your TV.	<ul style="list-style-type: none"> Change the settings in [VIDEO/S OUTPUT] so that it matches the screen size of the connected TV. 	71
			
When outputting from the HDMI connector, a part of the TV screen appears to be shaking.	<ul style="list-style-type: none"> Set [HDMI OUTPUT] to [AUTO]. 	71	
Some functions cannot be used when using the camera to playback a disc created with a DVD burner.	<ul style="list-style-type: none"> Some functions cannot be used when playing back a disc that was created with a DVD burner. (E.g.: Slow-motion playback, frame-by-frame playback, playback effects etc.) 	—	
Other problems	Files cannot be deleted.	<ul style="list-style-type: none"> Remove protection from the files and delete them. 	38
	The data process is too slow after the power is switched on or the mode is changed.	<ul style="list-style-type: none"> There is a large number of still images (approx. 1,000 or more) stored in the recording medium. Copy the stored files to other devices, and delete them from the recording medium. 	47, 53
	The SD card cannot be removed from the camera.	<ul style="list-style-type: none"> Push the SD card in a few more times. 	19

	Trouble	Action	P. 7
Other problems	<p>When connected with the i.LINK cable, the camera does not operate even if controls are attempted from the PC etc.</p>	<ul style="list-style-type: none"> ● Linked operation from an i.LINK connection is not supported. 	-
	<p>Dubbing cannot be done in high-definition.</p>	<ul style="list-style-type: none"> ● Output files recorded in [1440 CBR] quality from the i.LINK connection for dubbing. <ul style="list-style-type: none"> — When dubbing, change the [i.LINK OUTPUT (DUB)] setting to [1440 CBR]. — Only playlists that are played back for dubbing can be output via i.LINK. 	50
	<p>When dubbing a playlist using i.LINK output, some videos cannot be played back.</p>	<ul style="list-style-type: none"> ● In order to allow high definition dubbing, the [i.LINK OUTPUT (DUB)] setting of this camera is set to [1440 CBR] in the factory. Due to this setting, files other than those recorded at 1440 CBR quality are not output. If you want to perform dubbing in high definition quality, do not include files recorded at a quality other than 1440 CBR in the playlist. ● When connected to a device that supports DV input, you can output files recorded at other quality settings. Set the [i.LINK OUTPUT (DUB)] setting to [DV]. However, the quality of the dubbed images will be the standard quality. ● When connecting using an AV/S cable, you can output files irrespective of the quality. However, the quality of the dubbed images will be the standard quality. 	44 71 51

Warning Indications

Indication	Meaning/Action	☞
 (Battery indicator)	<ul style="list-style-type: none"> • Displays the remaining battery power.  <p>High Exhausted</p> • As the battery power comes close to nil, the battery indicator blinks. When the battery power is exhausted, power turns off automatically. 	<p>–</p> <p>–</p>
SET DATE/TIME!	<ul style="list-style-type: none"> • Appears when the date/time is not set. • The built-in clock's rechargeable lithium battery is discharged, so the previously set date/time is erased. Connect the camera to an AC outlet using the AC adapter for over 24 hours to charge the clock's lithium battery. Then set the date/time. 	<p>17</p> <p>16</p>
LENS COVER	<ul style="list-style-type: none"> • Appears for 5 seconds after power is turned on in recording mode if the lens cover is closed or when it is dark. 	<p>–</p>
HDD ERROR! MEMORY CARD ERROR!	<ul style="list-style-type: none"> • Remove the card once and insert it again. At this time, switch the camera's power on after inserting the SD card. If the error is not cancelled, replace the card with one that has been guaranteed for correct operation. • Perform clean up to restore the capacity of the recording media. 	<p>19</p> <p>72</p>
CHECK CARD'S WRITE PROTECTION SWITCH	<ul style="list-style-type: none"> • Appears when you attempt recording when the write/erase protection tab on the SD card is set to the "LOCK" position. 	<p>38</p>
VIDEO MANAGEMENT FILE IS BROKEN. TO RECORD/PLAYBACK VIDEO, RECOVERY IS REQUIRED. RECOVER?	<ul style="list-style-type: none"> • The video management file is broken. Recovery is required to record or play back video files. Move the set lever to ^ / v to select [YES], then press down to recover the video management file. 	<p>–</p>
CAN NOT READ EVENT INFORMATION	<ul style="list-style-type: none"> • Appears when the event information cannot be read. 	<p>–</p>
RECORDING FAILURE	<ul style="list-style-type: none"> • The writing speed of recording medium is slow, or the recording medium is corrupted. Use an SD card that is guaranteed to operate. • The recording medium was subjected to vibrations or jolts. Be careful not to subject the recording medium to vibrations or jolts. • Appears when the recording medium is full and recording is not possible. Delete unnecessary files, or replace the SD card. 	<p>19</p> <p>–</p> <p>38</p>
INCOMPATIBLE USB DEVICE	<ul style="list-style-type: none"> • Appears when an incompatible USB device is connected to the camera. • Appears when a DVD burner that is switched off is connected. If you want to use the DVD burner, switch the power on. 	<p>–</p> <p>–</p>

Indication	Meaning/Action	P. 19
RECORDING MAY NOT BE CORRECT ON THE MEMORY CARD	<ul style="list-style-type: none"> ● The data may not be recorded on the recording medium correctly. Try recording again. ● Otherwise, replace the SD card. 	<p style="text-align: center;">–</p> <p style="text-align: center;">19</p>
DROP DETECTION WORKED AND THE POWER IS TURNED OFF	<ul style="list-style-type: none"> ● To turn the unit on again, set the power/mode switch to OFF, and to STANDBY/ON again. 	<p style="text-align: center;">–</p>
NUMBER OF FOLDERS OVERFLOW	<ul style="list-style-type: none"> ● Cannot record because the number of file management folders on either the HDD or SD card has reached the maximum number. Backup your files to other media, and then perform the following operations to reset the folder numbers. <ol style="list-style-type: none"> 1) Select and set [FORMAT HDD] (to reset the HDD folder numbers) or [FORMAT SD CARD] (to reset the SD card folder numbers). 2) With [EXECUTE] selected, hold down the DIRECT BACK UP button and press down the set lever. 3) When [OK] is displayed, press down the set lever to complete the process. 	<p style="text-align: center;">–</p>

Cleaning

Before cleaning, turn off the camera and remove the battery pack and AC adapter.

■ To clean the exterior

Wipe gently with a soft cloth. If the camera is particularly dirty, dip the cloth into diluted mild soap and wring it out well before wiping. Then wipe again with a dry cloth.

■ To clean the LCD monitor

Wipe gently with a soft cloth. Be careful not to damage the monitor.

■ To clean the lens

Wipe gently with lens cleaning paper.

NOTES

- Avoid using strong cleaning agents such as benzine or alcohol.
- Mould may form if the lens is left dirty.
- When using a cleaner or chemically treated cloth, refer to the cautions for each product.

Specifications

Camera

■ For general

Power supply

DC 11 V (Using AC adapter)
DC 7.2 V (Using battery pack)

Power consumption

Approx. 7.1 W (When using the LCD monitor)
Approx. 6.7 W (When using the viewfinder)
Approx. 7.7 W (Maximum; when recording)

Dimensions (W x H x D)

91 mm x 77 mm x 186 mm

Weight

Approx. 665 g
(incl. strap)
Approx. 750 g
(incl. battery and strap)

Operating temperature

0°C to 40°C

Operating humidity

35% to 80%

Storage temperature

-20°C to 50°C

Pickup

1/5" (570,000 pixels) progressive CCD

Lens

F 1.8 to 1.9, f = 3.3 mm to 33.0 mm, 10:1
power zoom lens

Filter diameter

ø46.0 mm

LCD monitor

2.8" diagonally measured, LCD panel/TFT
active matrix system

Viewfinder

Electronic viewfinder with 0.57" colour LCD

Speaker

Monaural

Language

English/French/German/Spanish/Italian/Dutch/
Portuguese/Russian/Persian/Arabic/Malay/
Indonesian/Thai/Hindi/Polish/Czech/Turkish/
Japanese/Korean/Traditional Chinese/
Simplified Chinese

■ For video/Audio

Format

SD-VIDEO

Recording/Playback format

Video: MPEG-2 TS
Audio: MPEG-1 Layer 2

Signal format

1080/50i

Recording mode (video)

FHD: VBR, average of 26.6 Mbps
SP: VBR, average of 19 Mbps
1440 CBR: CBR, 27 Mbps

Recording mode (audio)

48 kHz, 384 kbps

■ For still image

Format

JPEG

Image size

4 modes (1920 x 1080 / 1440 x 1080 /
1024 x 768 / 640 x 480)

Picture quality

2 modes (FINE/STANDARD)

■ For connectors

HDMI

HDMI Ver.1.2a output

Component output

Y, Pb, Pr component output

i.LINK output

4-pin (i.LINK/IEEE1394 compliant)

S output

Y: 1.0 V (p-p), 75 Ω
C: 0.29 V (p-p), 75 Ω

AV output

Video output: 1.0 V (p-p), 75 Ω
Audio output: 300 mV (rms), 1 kΩ

USB

Mini USB type A and type B, USB 2.0
compliant

Microphone

ø3.5mm stereo mini jack

AC Adapter

Power requirement

AC 110 V to 240 V~, 50 Hz/60 Hz

Output

DC 11 V  , 1 A

Remote Control

Power supply

DC 3 V

Battery life

Approx. 1 year (depending on the frequency of use)

Operating distance

Within 5 m

Operating temperature

0°C to 40°C

Dimensions (W x H x D)

42 mm x 14.5 mm x 91 mm

Weight

Approx. 30 g

(incl. battery)

Design and specifications subject to change without notice.

Approximate recording time (minutes) (for video)

Quality	Recording medium	HDD	SDHC Card
		60 GB	4 GB
	FHD	300	–
	SP	420	25
	1440 CBR	300	–

Approximate number of storable images (for still image)

Image size/Quality	Recording medium	SD Card				
		HDD 60 GB	512 MB	1 GB	2 GB	4 GB
4:3	1440 x 1080 / FINE	9999	740	1440	2880	5760
	1440 x 1080 / STANDARD	9999	1160	2270	4540	9080
	1024 x 768 / FINE	9999	1460	2850	5700	9999
	1024 x 768 / STANDARD	9999	2320	4540	9080	9999
	640 x 480 / FINE	9999	3650	7140	9999	9999
	640 x 480 / STANDARD	9999	6400	9999	9999	9999
16:9	1920 x 1080 / FINE	9999	550	1080	2160	4320
	1920 x 1080 / STANDARD	9999	880	1720	3440	6880

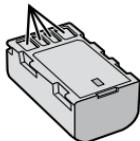
Cautions

Battery Packs

The supplied battery pack is a lithium-ion battery. Before using the supplied battery pack or an optional battery pack, be sure to read the following cautions:

- **To avoid hazards**
 - ... **do not** burn.
 - ... **do not** short-circuit the terminals. Keep it away from metallic objects when not in use. When transporting, make sure the provided battery cap is attached to the battery. If the battery cap is misplaced, carry the battery in a plastic bag.
 - ... **do not** modify or disassemble.
 - ... **do not** expose the battery to temperatures exceeding 60°C, as this may cause the battery to overheat, explode or catch fire.
 - ... use only specified chargers.
- **To prevent damage and prolong service life**
 - ... do not subject to unnecessary shock.
 - ... charge within the temperature range of 10°C to 35°C. This is a chemical reaction type battery — cooler temperatures impede chemical reaction, while warmer temperatures can prevent complete charging.
 - ... store in a cool, dry place. Extended exposure to high temperatures will increase natural discharge and shorten service life.
 - ... fully charge and then fully discharge the battery every 6 months when storing the battery pack over a long period time.
 - ... remove from charger or powered unit when not in use, as some machines use current even when switched off.

Terminals



Recording Medium

- **Be sure to follow the guidelines below to prevent corruption or damage to your recorded data.**
 - Do not bend or drop the recording medium, or subject it to strong pressure, jolts or vibrations.
 - Do not splash the recording medium with water.
 - Do not use, replace, or store the recording medium in locations that are exposed to strong static electricity or electrical noise.
 - Do not turn off the camera power or remove the battery or AC adapter during shooting, playback, or when otherwise accessing the recording medium.
 - Do not bring the recording medium near objects that have a strong magnetic field or that emit strong electromagnetic waves.
 - Do not store the recording medium in locations with high temperature or high humidity.
 - Do not touch the metal parts.
- When formatting or erasing data using the camera, only the file administration information is changed. The data is not completely erased from the hard disk. If you want to completely erase all of the data, we recommend either using commercially available software that is specially designed for that purpose, or by physically destroying the camera with a hammer etc.

LCD Monitor

- **To prevent damage to the LCD monitor, DO NOT**
 - ... push it strongly or apply any shocks.
 - ... place the camera with LCD monitor on the bottom.
- **To prolong service life**
 - ... avoid rubbing it with coarse cloth.

Main Unit

- **For safety, DO NOT**
 - ... open the camera's chassis.
 - ... disassemble or modify the unit.
 - ... allow inflammables, water or metallic objects to enter the unit.
 - ... remove the battery pack or disconnect the power supply while the power is on.
 - ... leave the battery pack attached when the camera is not in use.
 - ... place naked flame sources, such as lighted candles, on the apparatus.
 - ... expose the apparatus to dripping or splashing.
- **Avoid using the unit**
 - ... in places subject to excessive humidity or dust.
 - ... in places subject to soot or steam such as near a cooking stove.
 - ... in places subject to excessive shock or vibration.
 - ... near a television set.
 - ... near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
 - ... in places subject to extremely high (over 40°C) or extremely low (under 0°C) temperatures.
 - ... in places subject to the air pressure is low (more than 3000 m above the sea level).
- **DO NOT leave the unit**
 - ... in places of over 50°C.
 - ... in places where humidity is extremely low (below 35%) or extremely high (above 80%).
 - ... in direct sunlight.
 - ... in a closed car in summer.
 - ... near a heater.
 - ... in high places such as on a TV. Leaving the unit in high places while a cable is connected may result in a malfunction if the cable is caught and the unit falls onto the floor.
- **To protect the unit, DO NOT**
 - ... allow it to become wet.
 - ... drop the unit or strike it against hard objects.
 - ... subject it to shock or excessive vibration during transportation.
 - ... keep the lens directed at extremely bright objects for long periods.
 - ... expose the lens to direct sunlight.
 - ... swing it excessively when using the hand strap.
 - ... swing the soft camera case excessively when the camera is inside it.

How to Handle a CD-ROM

- Take care not to soil or scratch the mirror surface (opposite to the printed surface). Do not write anything or put a sticker on either the front or back surface. If the CD-ROM gets dirty, gently wipe it with a soft cloth outward from the centre hole.
- Do not use conventional disc cleaners or cleaning spray.
- Do not bend the CD-ROM or touch its mirror surface.
- Do not store your CD-ROM in a dusty, hot or humid environment. Keep it away from direct sunlight.

Dear Customer, **[European Union]**

This apparatus is in conformance with the valid European directives and standards regarding electromagnetic compatibility and electrical safety.

European representative of Victor Company of Japan Limited is:
 JVC Technology Centre Europe GmbH
 Postfach 10 05 52
 61145 Friedberg
 Germany

Terms

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