

JVC



LYT1876-003B

ENGLISH

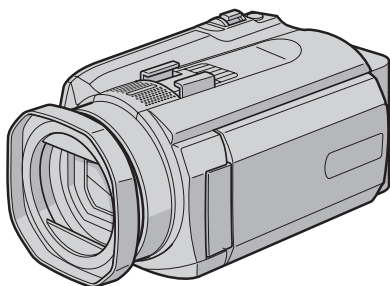
EN

GUIDEBOOK

HD HARD DISK CAMCORDER

GZ-HD5 

GZ-HD6 



The camera illustrations appearing in this instruction manual are of the GZ-HD6.

Dear Customers

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

For Future Reference:

Enter the Model No. (located on the bottom of the camera) and Serial No. (located on the battery pack mount of the camera) below.

Model No. _____

Serial No. _____

HD

micro
SD
HC



HDMI[™]
HIGH-DEFINITION MULTIMEDIA INTERFACE

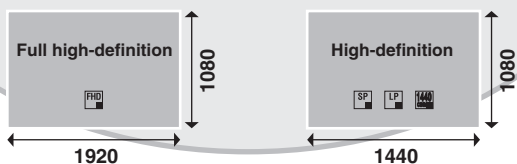
Record in High-Definition!

Select the mode which suits your purpose.

- **FHD** To record in full high-definition
- **SP** To record in higher quality video
- **LP** To record a longer time
- **1440 CBR** If you want to copy and edit the video as high-definition images by i.LINK output

■ To change the settings

See page 66.



View in High-Definition!

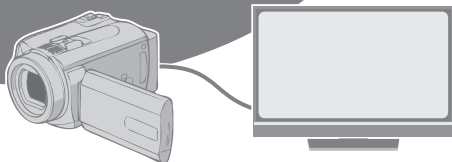
Enjoy viewing images in high-definition image quality by simply connecting the camera to a high-definition television using an optional HDMI cable.

■ 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

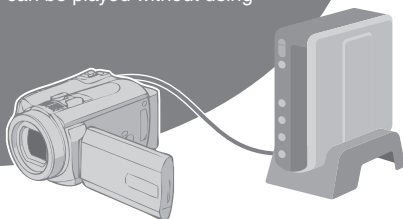
Use the AV cable (included). Images can be viewed with standard picture quality.



Back Up High-Definition Images on DVD Discs!

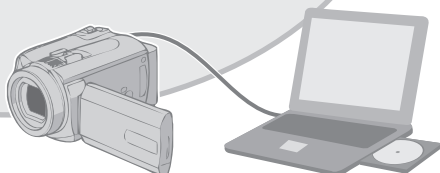
Video can easily be backed up on a DVD disc by connecting to a separate DVD burner (CU-VD40).

- 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.

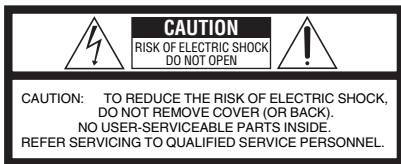


Edit High-Definition Images on a PC!

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



Safety Precautions



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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

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.

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.

For USA-California Only

This product contains a CR Coin Cell Lithium Battery which contains Perchlorate Material – special handling may apply.

See www.dtsc.ca.gov/hazardouswaste/perchlorate

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 (3-15/16") 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 uneven 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:

The mains plug shall remain readily operable.

WARNING:

Batteries, including lithium batteries installed in the camera and the remote control, should not be exposed to excessive heat such as direct sunshine, fire or the like.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Only use attachments/accessories specified by the manufacturer.
10. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 
11. Unplug this apparatus during lightning storms or when unused for long periods of time.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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 Corporation.
- x.v.Color™ is a trademark of Sony Corporation.
- 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 Inc.
- Other product and company names included in this instruction manual are trademarks and/or registered trademarks of their respective holders.



If this symbol is shown, it is only valid in the European Union.

JVC Software License Agreement

JVC SOFTWARE LICENSE 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.

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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 LICENSE

- (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 license 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 center 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**

It is recommended to copy your important recorded data to a DVD or other recording media for storage. (☞ p. 46) JVC will not be responsible for any lost data.

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. (☞ p. 76)

Precautions on handling batteries

- Be sure to use the JVC BN-VF815U/ VF823U 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 microSD 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.

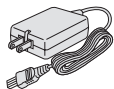
Because cameras may be used for demonstration in a shop, the demonstration mode is set to on by default

To deactivate the demonstration mode, set [DEMO MODE] to [OFF]. (☞ p. 69)

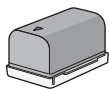
Do not cover the fan (☞ p. 12 ⑤, ⑧)

If the camera becomes too hot inside it may cause a malfunction.

Accessories



AC Adapter
AP-V14U



Battery Pack
BN-VF815U



Component Cable
(☞ p. 35)



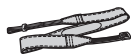
Audio/Video Cable
(☞ p. 36, 50)



USB Cable
(☞ p. 46, 55, 62)



GZ-HD6
Lens Hood
Already attached to the camera. (☞ below)



Shoulder Strap
(☞ p. 11)



CD-ROM
(☞ p. 53, 61)



Remote Control
RM-V750U (☞ p. 11)



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

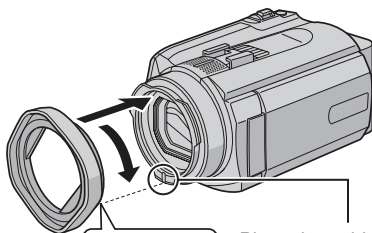
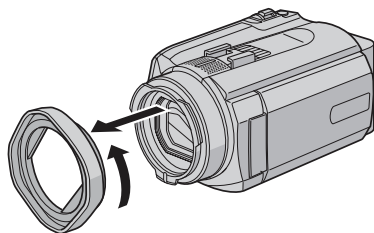


Core Filter
(☞ p. 11)

NOTE

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

GZ-HD6 Attaching/Detaching the Lens Hood



Guide ridge

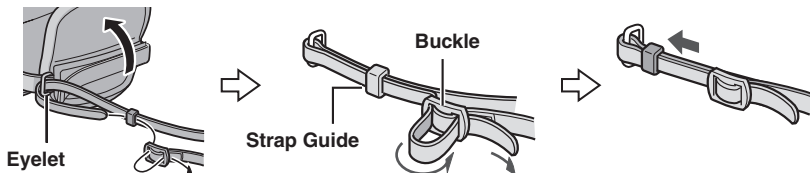
Place the guide ridge in the groove.

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.

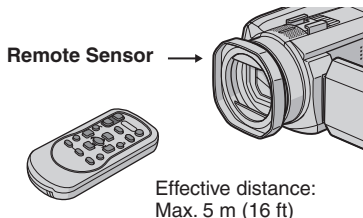
Position the buckle near the eyelet and reattach the pad.



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

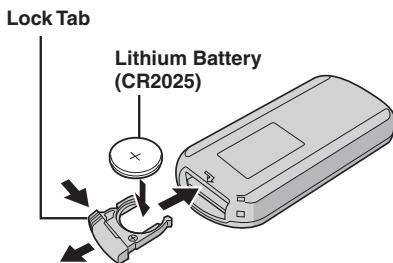


NOTE

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.



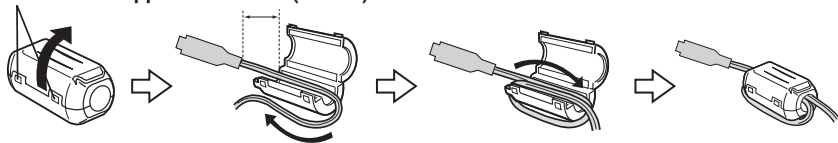
Attaching the Core Filter to the DC Cord

Attach the core filter to the DC cord. The core filter reduces interference. Connect the end of the cable with the core filter to the camera.

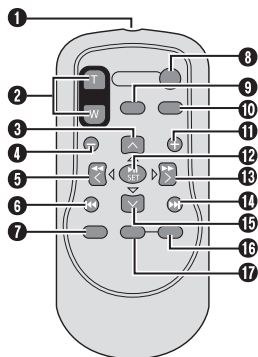
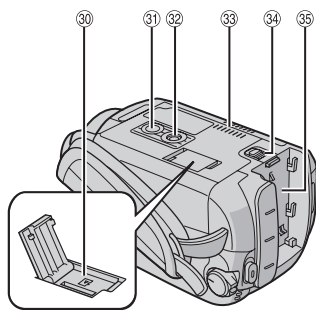
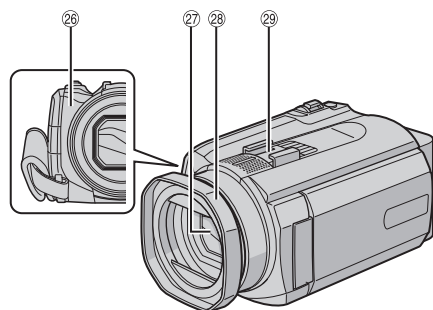
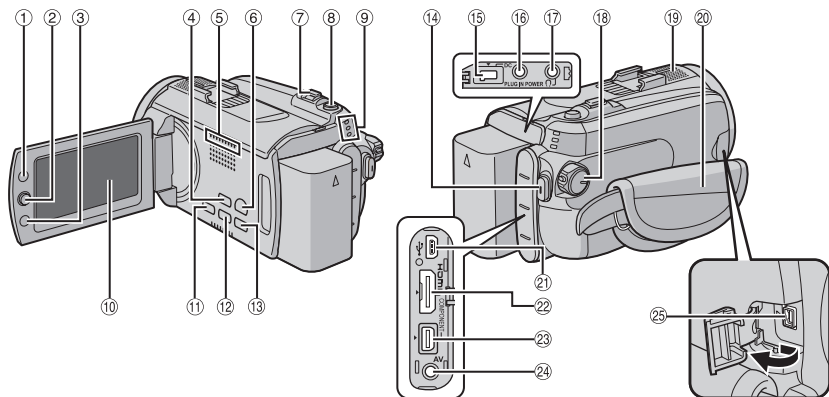
Release the stopper.

3 cm (1-3/16")

Wind once.

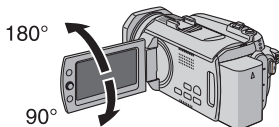


Index



NOTES







- The LCD monitor can rotate 270°.




• Power-linked operation

- You can also turn the camera on/off by opening/closing the LCD monitor.
- Be careful not to cover sensors 19, 25 and 27 during shooting.

Camera

- ① Index Button [INDEX] (⇨ p. 31)/
Remaining Space Button/
Data Battery Button [ / ] (⇨ p. 23)
- ② Set Lever
Move to ^ :
Reverse Skip (⇨ p. 29)/Up/ Backlight
Compensation Button [BACK LIGHT]
(⇨ p. 25)
Move to v :
Forward Skip (⇨ p. 29)/Down/ Manual
Focus Button [FOCUS] (⇨ p. 25)
Move to < :
Reverse Search (⇨ p. 29)/Left/Nightlive
[NIGHT] (⇨ p. 25)
Move to > :
Forward Search (⇨ p. 29)/Right/Program
AE [PROGRAM AE] (⇨ p. 24)
Press down:
Play/Pause (⇨ p. 29)
- ③ Function Button [FUNCTION] (⇨ p. 26)
- ④ Auto/Manual Mode Button [AUTO]
(⇨ p. 24)/Information Button [INFO]
(⇨ p. 39)
- ⑤ Fan outlet
- ⑥ Playback/Recording Mode Switching
Button [PLAY/REC] (⇨ p. 20)
- ⑦ Zoom Lever [W , T ] (⇨ p. 22)
- ⑧ Speaker Volume Control [-VOL+] (⇨ p. 29)
- ⑧ Still Image Shooting Button [SNAPSHOT]
(⇨ p. 21)
- ⑨ Access/Charge Lamp [ACCESS/CHARGE]
(⇨ p. 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 [, ]
(⇨ p. 20, 21)
- ⑩ LCD Monitor
- ⑪ Direct Backup Button [DIRECT BACK UP]
(⇨ p. 56)/Event Button [EVENT] (⇨ p. 22)
- ⑫ Focus Assist Button [FOCUS ASSIST]
(⇨ p. 25)
- ⑬ Menu Button [MENU] (⇨ p. 17, 66)
- ⑭ Video Recording Start/Stop Button [REC]
(⇨ p. 20)
- ⑮ DC Input Connector [DC] (⇨ p. 16)
- ⑯ Microphone Input Connector [MIC]
- ⑰ **GZ-HD6** Headphone Connector
- ⑱ Power/Mode Switch [OFF (CHARGE), ON,
MODE] (⇨ p. 16)
- ⑲ Stereo Microphone

- ⑳ Grip Strap (⇨ p. 18)
- ㉑ USB (Universal Serial Bus) Connector []
(⇨ p. 46, 55, 62)
- ㉒ HDMI Connector [HDMI] (⇨ p. 35)
- ㉓ Component Connector [COMPONENT]
(⇨ p. 35)
- ㉔ Audio/Video Connector [AV] (⇨ p. 36, 50)
- ㉕ i.LINK Connector [i] (⇨ p. 49)
- ㉖ Remote Sensor (⇨ p. 11)
- ㉗ Lens Cover/Lens
- ㉘ **GZ-HD6** Lens Hood (⇨ p. 10)
- ㉙ Shoe
- ㉚ microSD Card Slot (⇨ p. 19)
- ㉛ Stud Hole (⇨ p. 18)
- ㉜ Tripod Mounting Socket (⇨ p. 18)
- ㉝ Fan inlet
- ㉞ Battery Release Button [BATT.] (⇨ p. 16)
- ㉟ Battery Pack Mount (⇨ p. 16)

Remote Control

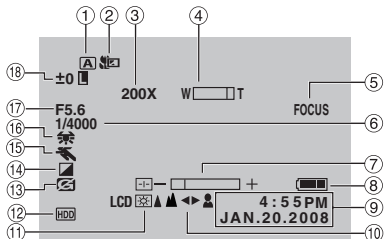
- ① Infrared Beam Transmitting Window
- ② ZOOM (T/W) Buttons
(Zoom in/out during playback.)
- ③ Up Button
Rotate Button (counterclockwise) (⇨ p. 30)
- ④ Skip Backward Button
- ⑤ Left Button
- ⑥ Back Button
- ⑦ PLAYLIST Button (⇨ p. 43)
- ⑧ START/STOP Button
- ⑨ SNAPSHOT Button (⇨ p. 21)
- ⑩ INFO Button (⇨ p. 39)
- ⑪ Skip Forward Button
- ⑫ PLAY/PAUSE Button
- ⑬ Right Button
- ⑭ Next Button
- ⑮ Down Button
Rotate Button (clockwise) (⇨ p. 30)
- ⑯ INDEX Button
- ⑰ DATE Button

NOTE

You can move the zooming area with the up/
down/left/right button during zoom in playback
mode.

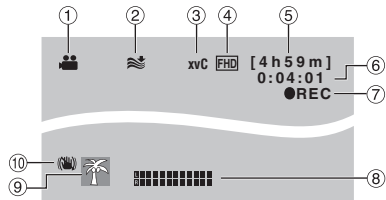
Indications on LCD Monitor

During both Video and Still Image Recording



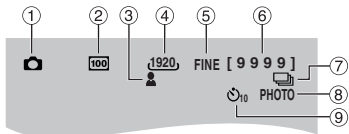
- ① Selected Recording Mode Indicator (↗ p. 24)
- ② Tele Macro Mode Indicator (↗ p. 28)
- ③ Approximate Zoom Ratio (↗ p. 22)
- ④ Zoom Indicator (↗ p. 22)
- ⑤ Focus Assist Indicator (↗ p. 25)
- ⑥ Shutter Speed (↗ p. 27)
- ⑦ Brightness/Sharpness Control Indicator (↗ p. 28, 69)
- ⑧ Battery Indicator (↗ p. 23)
- ⑨ Date/Time (↗ p. 17)
- ⑩ Manual Focus Adjustment Indicator (↗ p. 25)
- ⑪ Monitor Backlight (↗ p. 69)
- ⑫ Selected Recording Medium Indicator (↗ p. 67, 68)
- ⑬ Drop Detection Indicator (Appears when [DROP DETECTION] is set to [OFF].) (↗ p. 69)
- ⑭ Effect Mode Indicator (↗ p. 28)
- ⑮ Program AE Mode Indicator (↗ p. 24/)
- ⑯ : Nightlive Indicator (↗ p. 25)
- ⑰ White Balance Indicator (↗ p. 27)
- ⑱ Aperture Value (F-number) (↗ p. 27)
- ⑲ ±0 : Exposure Adjustment Indicator (↗ p. 27)
- : Backlight Compensation Indicator (↗ p. 25)
- : Spot Exposure Control Indicator (↗ p. 26)
- : Iris Lock Indicator (↗ p. 26)

During Video Recording Only



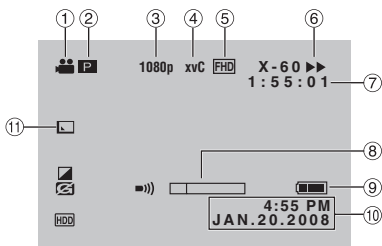
- ① Mode Indicator (↗ p. 20)
- ② Wind Cut Indicator (↗ p. 67)
- ③ x.v.Color™ (↗ p. 67)
- ④ Picture Quality (↗ p. 66)
- ⑤ Remaining Time (↗ p. 20, 81)
- ⑥ Counter (↗ p. 67)
- ⑦ ●REC : (Appears during recording.) (↗ p. 20)
- II : (Appears during record-standby mode.)
- ⑧ External Microphone Input Level Indicator (↗ p. 67)
- ⑨ Event Indicator (↗ p. 22)
- ⑩ Optical Image Stabilizer (OIS) Indicator (Appears when [OIS] is set to [OFF].) (↗ p. 67)

During Still Image Recording Only



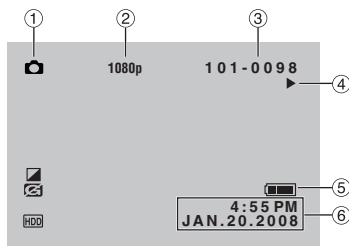
- ① Mode Indicator (↗ p. 21)
- ② ISO Sensitivity (GAIN) : When set to [AUTO], there is no indication. (↗ p. 67)
- ③ Focus Indicator (↗ p. 21)
- ④ Image Size (↗ p. 67)
- ⑤ Picture Quality (↗ p. 67)
- ⑥ Remaining Number of Shots (↗ p. 81)
- ⑦ : Continuous Shooting Mode Indicator (↗ p. 68)
- : Bracket Shooting Mode Indicator (↗ p. 68)
- ⑧ Shooting Indicator (↗ p. 21)
- ⑨ Self-Timer Recording Indicator (↗ p. 68)

During Video Playback



- ① Mode Indicator (☞ p. 29)
- ② **PL** : Playlist Playback Indicator (Appears when playing back a playlist.) (☞ p. 44)
- ③ Output with 1080p (☞ p. 70)
- ④ x.v.Color™ (☞ p. 67)
- ⑤ Picture Quality (☞ p. 66)
- ⑥ Playback Mode (☞ p. 29)
 - ▶▶▶ : Playback
 - || : Pause
 - ▶▶▶▶ : Forward Search
 - ◀◀◀ : Reverse Search
 - ||▶▶▶ : Forward Slow-Motion
 - ◀◀|| : Reverse Slow-Motion
 (The number on the left shows speed.)
- ⑦ Counter (☞ p. 67)
- ⑧ Volume Level Indicator
- ⑨ Battery Indicator
- ⑩ Date/Time (☞ p. 68)
- ⑪ Wipe/Fader Effect Indicator (☞ p. 34)

During Still Image Playback



- ① Mode Indicator (☞ p. 30)
- ② Output with 1080p (☞ p. 70)
- ③ Folder/File Number
- ④ Slide Show Playback Indicator (☞ p. 30)
- ⑤ Battery Indicator
- ⑥ Date/Time (☞ p. 68)

Operation guide display

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



Necessary Settings before Use

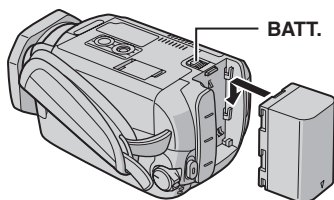
Be sure to configure the following 3 settings before use.

Charging the Battery Pack

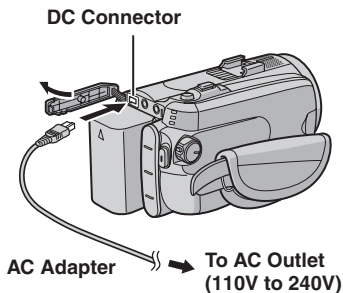
1 Set the power/mode switch to OFF.



2 Attach the battery pack.



3 Connect the AC adapter.



- The access/charge lamp blinks to indicate charging has started.
- When the lamp goes out, charging is finished.

Required charging/recording time (approx.)

| Battery pack | Charging time | Recording time |
|-------------------------|---------------|--|
| BN-VF815U (Provided) | 2 hr. 40 min. | GZ-HD5 1 hr. 25 min. GZ-HD6 1 hr. 20 min. |
| BN-VF823U | 3 hr. 50 min. | GZ-HD5 2 hr. 05 min. GZ-HD6 2 hr. 00 min. |

■ To detach the battery pack

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

■ To check the remaining battery power

See page 23.

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 ON.



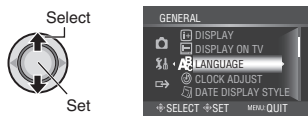
2 Select the menu mode.



3 Select [GENERAL].



4 Select [LANGUAGE].



5 Select the desired language.



■ To return to the previous screen

Move the set lever to \leftarrow .

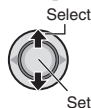
■ To exit the screen

Press the **MENU** button.

Date/Time Setting

After performing steps 1-3 (☞ left column)

4 Select [CLOCK ADJUST].



5 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 .

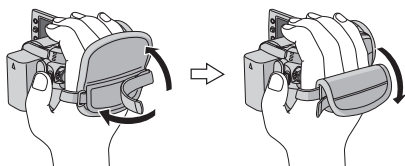
■ To exit the screen

Press the **MENU** button.

Other Settings

Grip Adjustment

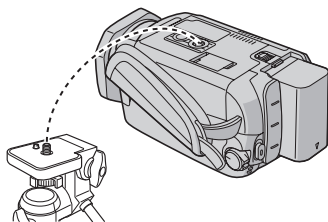
Open the pad and make grip adjustments.



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 a microSD Card

If you want to record to a microSD card, the following 3 operations need to be performed.

● Operations are certified on the following microSD cards.

- Panasonic
- TOSHIBA
- SanDisk
- ATP

Video recording:

Class 6 compatible SDHC card (4 GB)

Still image recording:

microSD card (128 MB to 2 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 are recorded on a microSD card in SP mode, regardless of the picture quality setting. You cannot dub these files on HDV devices in high-definition picture quality.
- Cards used to record video on this camera cannot be played back on other devices.

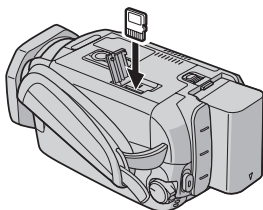
1 Insert a microSD card

Preparation:

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

- 1 Open the microSD card cover.
- 2 Firmly insert the card with its clipped edge first.

Bottom of the Camera



- 3 Close the microSD card cover.

■ To remove a microSD card

Push the microSD card once.

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

NOTES

- Insert and remove the microSD 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.

2 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 microSD card.

Set **[REC MEDIA FOR VIDEO]** and **[REC MEDIA FOR IMAGE]** to **[SD]**.
(p. 67, 68)

NOTE

Video picture quality will automatically be set to **[SP]**.

3 Format a microSD card when using it for the first time


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

Select **[EXECUTE]** in **[FORMAT SD CARD]** to format the card. (p. 71)


Recording Files

Video Recording

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

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

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

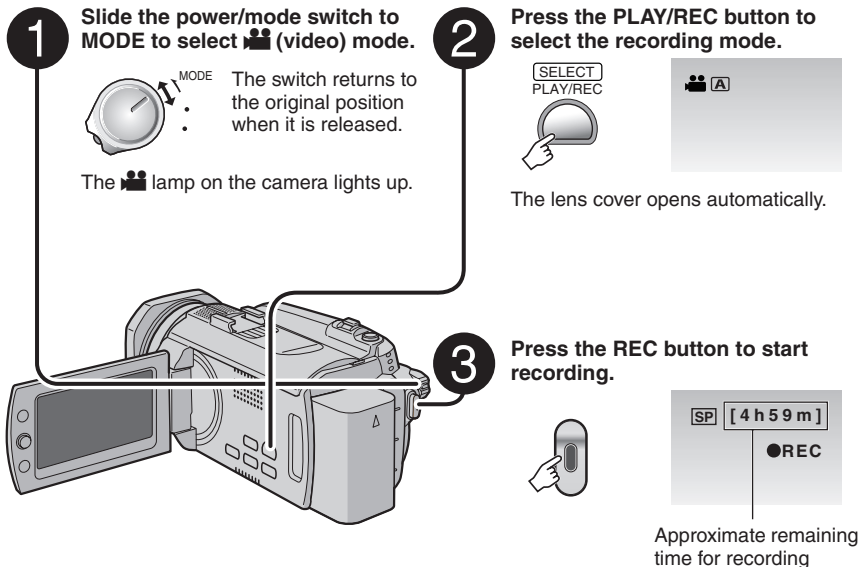
The  lamp on the camera lights up.

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

The lens cover opens automatically.

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

Approximate remaining time for recording



■ To stop recording

Press the **REC** button again.

■ To change the picture quality

Change the settings in [QUALITY].

( p. 66)

■ To register a file to an event


See page 22.

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 **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 driving sound (hum) of the hard disk may be recorded.

Still Image Recording

Preparation: Set the power/mode switch to **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 the recording mode.


SELECT
PLAY/REC






The lens cover opens automatically.

- 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].
( p. 67)
- **To record still images continuously**
Set [CONTINUOUS SHOOTING] to [ON].
( p. 68)
- **To change the image size**
Change the settings in [IMAGE SIZE].
( p. 67)

- 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 **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

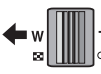
Preparation:

- Select or mode.
- Select the 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]. (➔ p. 67)

NOTE

Macro shooting is possible as close as approx. 5 cm (2") to the subject when the zoom lever is set all the way to **W**.

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.

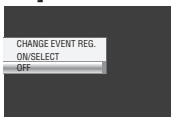
Preparation:

- Select mode.
- Select the recording mode.

1



2 Select [ON/SELECT].



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

To cancel the event registration, select [NON SECTION].



The selected event is displayed on the screen.

■ To exit the screen

Press the **EVENT** button.

■ To search by event for a file to play back


See page 31.

NOTE

Once you select a certain event to register a file, the setting will remain even if you turn the power off.

Checking the Remaining Space on the Recording Media – mode only

Preparation:

- Select  mode.
- Select the recording mode.



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

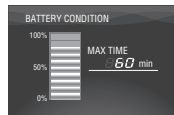
■ To return to the normal screen

Press the /  button again.

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.

NOTE

The recordable time display should only be used as a guide. It is displayed in 10 minute units.

Manual Recording

Manual recording mode enables you to set the focus and screen brightness etc. manually.

To Change to Manual Recording Mode

Preparation:

- Select  or  mode.
- Select the recording mode.



■ To return to the auto recording mode

Press the **AUTO/INFO** 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.

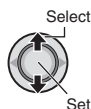
In the manual recording mode;

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.

Manual Focus

In the manual recording mode;

1



2 Adjust the focus.



■ To cancel the manual focus setting

Move the set lever to ∇ (FOCUS) so that the \blacktriangle /person indicator disappears.

Focus Assist

The image becomes black and white. The outline of focused object is displayed in blue. Use this for adjusting the focus more precisely.

1



2 Adjust the focus, then press down the set lever to fix the focus.



■ To cancel the focus assist mode

Press the **FOCUS ASSIST** button again.

NOTE

If you use focus assist in dark places, the rough area of the image appears in color, and the outline color becomes difficult to see.

Nightlive

Nightlive enables recording with more sensitivity in dim locations, by adjusting the shutter speed automatically.

In the manual recording mode;



■ To cancel Nightlive

Move the set lever to \leftarrow (NIGHT) so that the \odot indicator disappears.

NOTE

It is recommended to use the tripod (p. 18) because the shutter speed becomes slow.

Backlight Compensation

Backlight compensation brightens the subject by increasing the exposure.

In the manual recording mode;



■ To cancel backlight compensation

Move the set lever to \wedge (M) twice so that the \square indicator disappears.

Manual Recording (Continued)

Spot Exposure Control

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

In the manual recording mode;


1 Move 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

Move the set lever to  once so that the  indicator disappears.

Manual Setting in Function Menu

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

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

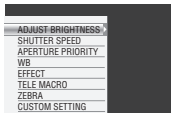
In the manual recording mode;

1

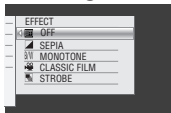


2 Select the desired menu.

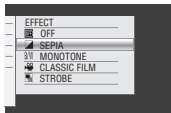
For details on each menu, see below.



3 Select the desired setting.



4









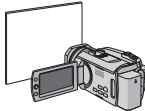



The menu disappears and the indicator for the set function appears.

■ To return to the previous screen








Move the set lever to .

■ To exit the screen

Press the **FUNCTION** button.

| Menus | Settings: [] = Factory-preset |
|--|---|
| <p>ADJUST BRIGHTNESS Adjusts the brightness.</p> | <p>For  mode [AUTO]: The brightness is adjusted automatically. -6 to +6: Corrects the brightness within this range in increments of 1. Move the set lever to \wedge / \vee to set the value.</p> <p>For  mode [\pm0]: The brightness is not adjusted. -2.0 to +2.0 (EV): Corrects the brightness within this range in increments of 1/3EV. Move the set lever to \wedge / \vee to set the value.</p> <p>■ To lock the exposure When the menu disappears after you finish configuring the setting, press and hold the set lever for more than 2 seconds. The  indicator appears.</p> |
| <p>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.</p> | <p>[AUTO]: The shutter speed is adjusted automatically. 1/2 to 1/4000: The smaller the value, the faster the shutter speed. Move the set lever to \wedge / \vee to set the value.</p> <p>NOTE It is recommended to use a tripod ( p. 18) when recording with a slow shutter speed.</p> |
| <p>APERTURE PRIORITY You can add a blurring effect to the background by setting the aperture value (F-number).</p> | <p>[AUTO]: The aperture value is adjusted automatically. F1.8 to F8: 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. Move the set lever to \wedge / \vee to set the value.</p> <p>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.</p> |
| <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.  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></p> <p> FINE: When shooting outdoors on a sunny day.  CLOUD: When shooting outdoors on a cloudy day.  HALOGEN: When a video light or similar type of lighting is used.</p> |

Manual Recording (Continued)

| 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 (1.32 ft).</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>Press down the set lever then select sub menus.</p> |
| <p>SHARPNESS Adjusts the enhancement level of the outline of the recorded image.</p> | <p>Adjust the sharpness moving the set lever to < / > , then press down.  NOTE Enhancing the sharpness causes the recorded image to appear grainy.</p> |
| <p>COLOR BAR The color bar will be displayed. The color characteristics of the camera can be confirmed by recording this display.</p> | <p>[OFF]: Deactivate this function. ON: Activate this function.</p> |

* Not available in  mode.

Playing Back Files

Video Playback

1 Select (video) mode.



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

The  lamp on the camera lights up.

2 Select the playback mode.

SELECT
PLAY/REC



The index screen appears.
(The lens cover closes automatically.)

3 Select the desired file.



■ To return to the index screen

Press the **INDEX** button.

■ To watch on TV


See page 35.

■ To turn the date display on/off

Change the settings in [DATE/TIME].

( p. 68)

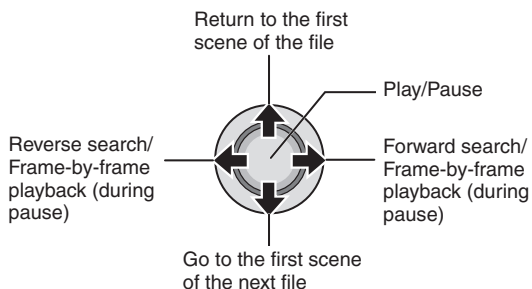
■ To check the file information

Press the **AUTO/INFO** button when playback is paused. ( p. 39)

■ To make one frame of video being played back into a still image

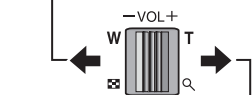
Press the **SNAPSHOT** button when playback is paused.

Operations during Playback



Speaker volume/ [GZ-HD6] Headphone volume

— : Turn down the volume



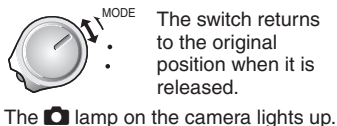
+ : Turn up the volume

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

Playing Back Files (Continued)

Still Image Playback

1 Select  (still image) mode.



2 Select the playback mode.



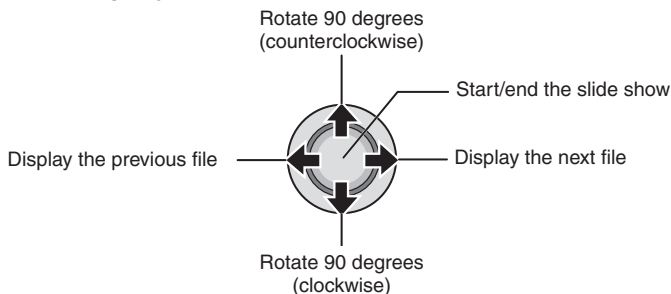
The index screen appears.
(The lens cover closes automatically.)

3 Select the desired file.



- **To return to the index screen**
Press the **INDEX** button.
- **To watch on TV**
See page 35.
- **To turn the date display on/off**
Change the settings in [DATE/TIME]. (☞ p. 68)
- **To check the file information**
Press the **AUTO/INFO** button. (☞ p. 39)

Operations during Playback



During the slide show, moving the set lever to \wedge / \vee changes the playback order.

File Search Function

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

Date Index Screen

You can search the desired file by the recording date.

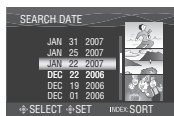
Preparation:

- Select or mode.
- Select the 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. (→ p. 22) After searching by the event, you can search by the recording date to narrow down the search.

Preparation:

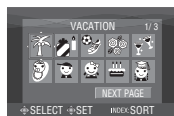
- Select mode.
- Select the playback mode.

1 Press twice.



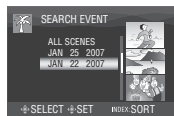
2 Select the event.

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 40.

Playing Back Files (Continued)

To Play Back TPD Files

–  mode only

TPD files (demonstration files, etc.) are stored in the EXTMOV folder.

If you copy videos recorded on this camera to a PC, edit them on the PC, and then recopy them to this camera, store them in the EXTMOV folder. (p. 64)

Follow the procedure below to play back the TPD files in the EXTMOV folder.

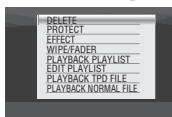
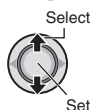
Preparation:

- Select  mode.
- Select the playback mode.

1



2 Select [PLAYBACK TPD FILE].



3 Select the file you want to play back.



■ To exit the screen

Press the **FUNCTION** button.

■ 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.

Playback with Special Effects

Playback effects

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

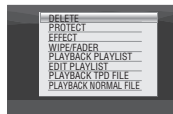
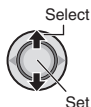
Preparation:

- Select  or  mode.
- Select the playback mode.

1

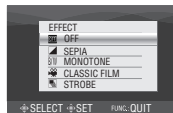
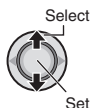


2 Select [EFFECT].



3 Select a desired effect.

For details on each effect, see below.



4 Start playback.





■ To exit the screen

Press the **FUNCTION** button.

■ 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.
 - **B/W 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.

Playing Back Files (Continued)

Wipe or fader effects – mode only

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

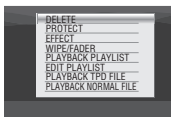
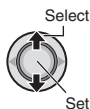
Preparation:

- Select  mode.
- Select the playback mode.

1

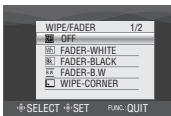


2 Select [WIPE/FADER].



3 Select a desired effect.

For details on each effect, see the right column.



4 Start playback.










■ To exit the screen

Press the **FUNCTION** button.

■ To turn off the effect

Select [OFF] in step 3.

■ Items for WIPE/FADER setting

-  **FADER-WHITE:**
Fades in or out with a white screen.
-  **FADER-BLACK:**
Fades in or out with a black screen.
-  **FADER-B.W:**
Fades in to a color screen from a black and white screen, or fades out in the opposite way.
-  **WIPE-CORNER:**
Wipes in on a black screen from the upper right to the lower left corner, or wipes out in the opposite way.
-  **WIPE-WINDOW:**
Starts in the center of a black screen and wipes in toward the corners, or wipes out in the opposite way.
-  **WIPE-SLIDE:**
Wipes in from right to left, or wipes out in the opposite way.
-  **WIPE-DOOR:**
Wipes in as the two halves of a black screen which open to the left and right revealing the scene, or wipes out in the opposite way.
-  **WIPE-SCROLL:**
Wipes in from the bottom to the top of a black screen, or wipes out in the opposite way.
-  **WIPE-SHUTTER:**
Wipes in from the center of a black screen toward the top and bottom, or wipes out in the opposite way.

NOTE

No effect will be applied on files with a play time shorter than 7 seconds.

Watching Images on TV

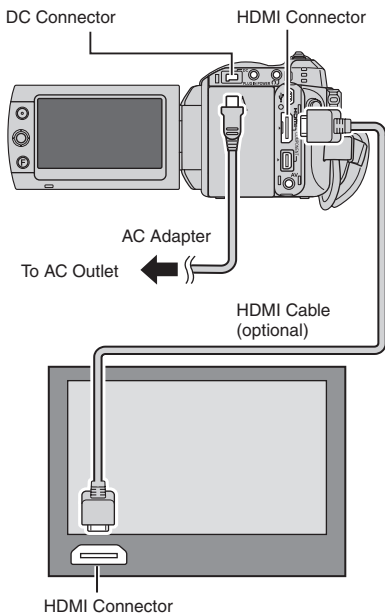
This camera is designed to be used with high-definition or NTSC-type color television signals. It cannot be used with a television of a different standard.

Connection with TV

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

Preparation: Turn off all units.

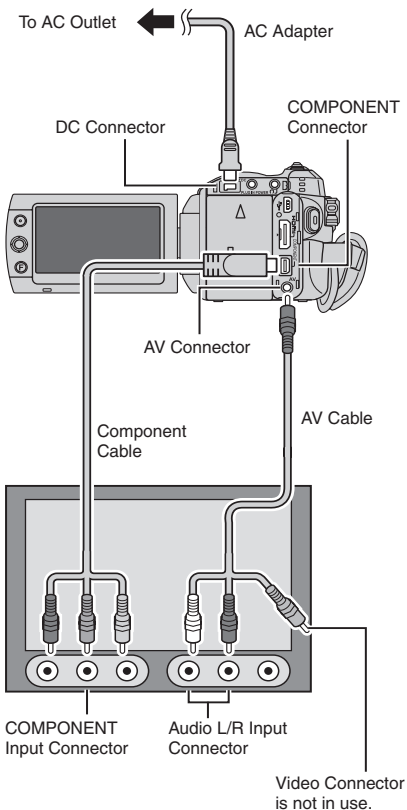
■ To connect using the HDMI connector



NOTE

Change the settings in [HDMI OUTPUT], [HDMI COLOR SETTING] or [HDMI ENHANCE SETTING] according to the connection. (☞ p. 70)

■ To connect using the COMPONENT connector

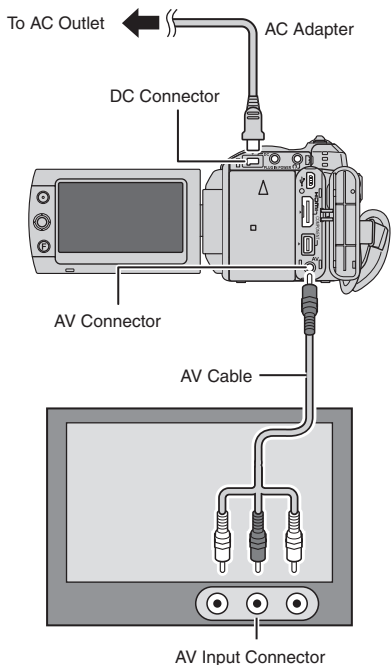


NOTE

Change the settings in [COMPONENT OUTPUT] according to the connection. (☞ p. 70)

Watching Images on TV (Continued)

■ To connect using the AV connector



NOTE

Change the settings in [VIDEO OUTPUT] to suit the screen size of your television. (☞ p. 70)

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. (☞ p. 29, 30)

■ To display camera's on-screen display on TV

Set [DISPLAY ON TV] to [ON]. (☞ p. 69)

NOTE

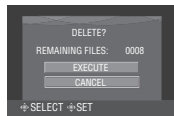
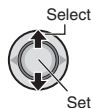
When the video was recorded with x.v.Color™ set to [ON], change the x.v.Color™ setting on TV. For details, refer to the TV's instruction manual.

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 to use the medium again. (p. 71)

4 Select [EXECUTE].



■ To exit the screen

Press the **FUNCTION** button.

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.

Preparation:

- Select or mode.
- Select the playback mode.

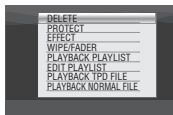
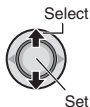
The following illustrations of display screens are examples of when performing [DELETE].

Deleting/Protecting the Currently Displayed File

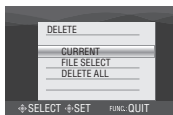
1



2 Select [DELETE] or [PROTECT].



3 Select [CURRENT].



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

Managing Files (Continued)

Deleting/Protecting Files



After performing steps 1-2 (☞ p. 37)

3 Select [FILE SELECT].



4 Select the desired file.



- The  (deletion) or  (protection) 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



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



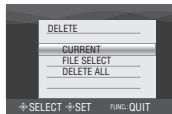
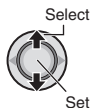
■ To exit the screen

Press the **FUNCTION** button.

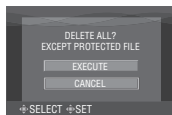
Deleting/Protecting All Files

After performing steps 1-2 (☞ p. 37)

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



4 Select [EXECUTE].



■ To exit the screen

Press the **FUNCTION** button.

■ To release protection

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

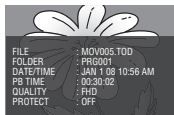
■ To release protection of all files

- 1) In step 3, select [CANCEL ALL].
- 2) Select [EXECUTE].

Viewing File Information

Preparation:

- For **MOVIE** mode: Pause the playback. Otherwise, select the file on the index screen.
- For **PHOTO** mode: Play back the still image. Otherwise, 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 (☞ p. 67)

● QUALITY:

Image quality (☞ p. 66, 67)

● PROTECT:

File protection status (☞ p. 37)

■ To turn off the file information display

Press the **AUTO/INFO** button again.

Histogram – **PHOTO** mode only

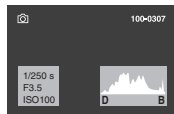
A histogram is a graph indicating the image's brightness.

By checking the image and its histogram, you can see the exposure level pattern and the overall tone reproduction.

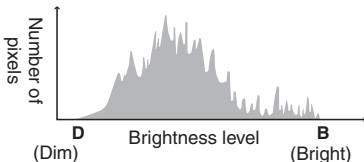
Preparation:

Play back the still image.

Press twice.



- A larger number of pixels in the center 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 the **AUTO/INFO** button a few times.

NOTE

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

Managing Files (Continued)

Changing the Event Registration of Video Files after Recording

—  mode only

Preparation:

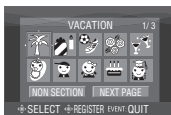
- Select  mode.
- Select the playback mode.

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.

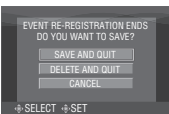
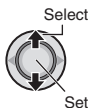


- To select other files, repeat this step.
- If you slide the zoom lever towards **T**, the preview screen is displayed. Sliding the zoom lever towards **W** returns to the index screen.

4



5 Select [SAVE AND QUIT].



■ To cancel the event registration

Select [DELETE AND QUIT].

To Extract a Still Image File from a Video File — mode only

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

Preparation:

- Select  mode.
- Select the 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 ( p. 68) cannot be used to extract images.

DPOF Print Setting – mode only

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

Preparation:

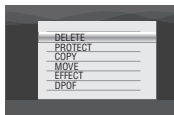
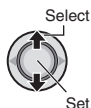
- Select  mode.
- Select the playback mode.
- Set [REC MEDIA FOR IMAGE] to [SD].
( p. 68)

Setting Files Individually

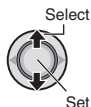
1



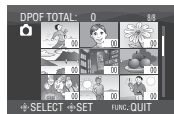
2 Select [DPOF].



3 Select [SELECT IMAGES].

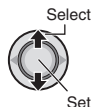


4 Select the desired file.



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.)

6



To exit the screen

Press the **FUNCTION** button.

To cancel the selection

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

To confirm DPOF settings

In step **3**, select [CHECK SETTINGS].

- 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**, select [RESET].
- 2) Select [EXECUTE].

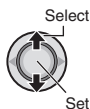
Managing Files (Continued)

Setting All Files Together (One Print for Each)

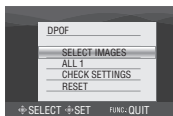
1



2 Select [DPOF].



3 Select [ALL1].



4 Select [EXECUTE].



■ To exit the screen

Press the **FUNCTION** button.

■ To reset DPOF settings

- 1) In step **3**, select [RESET].
- 2) Select [EXECUTE].

Playlists – mode only

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

Preparation:

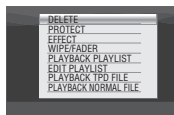
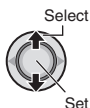
- Select  mode.
- Select the playback mode.

Creating Playlists

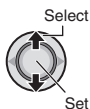
1



2 Select [EDIT PLAYLIST].



3 Select [NEW LIST].

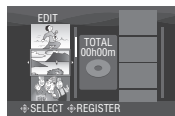


4 Select an item and display files.



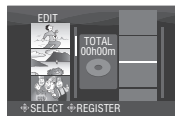
- **[IMPORT FROM EVENT]:**
Search for an event and display the corresponding files listed by recording date.
Select the event.
- **[IMPORT FROM DATE]:**
Display all the files in the medium listed by recording date.
- **[ALL SCENES]:**
Display all files individually.

5 Select the file to add to playlist.



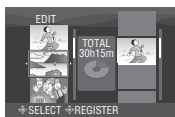
- Files recorded in 1440 CBR video picture quality are displayed with a 1440 CBR icon.
- When you select [IMPORT FROM EVENT]/[IMPORT FROM DATE], you can preview scenes. Select the file and press the **INDEX** button. When the index screen of individual scenes appears, select the file.
To return to previous screen, press the **INDEX** button.

6 Select the insertion point.

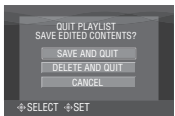


- To add other files, repeat steps 5 and 6.
- To delete a registered scene, select the registered file.

7



8 Select [SAVE AND QUIT].



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

Playlists – mode only (Continued)

NOTES

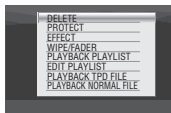
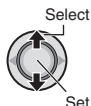
- A maximum of 99 playlists can be created.
- Each playlist can consist of a maximum of 99 scenes.
- If you delete the original files, the corresponding files are also deleted from the playlist.

Playing Back Playlists

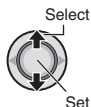
1



2 Select [PLAYBACK PLAYLIST].



3 Select the playlist that you want to play back.



■ To exit the screen

Press the **FUNCTION** button.

■ 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) Select the desired scene.

Other Operations of Playlists

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

Preparation:

Perform steps **1-2**. (☞ p. 43)

Adding/Deleting Files in Playlist

3 Select [EDIT].

4 Select the playlist you want to edit.

To add or delete files, follow the steps **5** to **8** in "Creating Playlists". (☞ p. 43)

Changing Playlist Names

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

3 Select [RENAME].

4 Select the desired playlist.

5 Select the desired letter.

- 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 [←] or [→] and press down the set lever to move the cursor to the letter, then select [CLE] and press down the set lever.

6 Select [↔].

Deleting Playlist

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

3 Select [DELETE].

4 Select a playlist you want to delete.

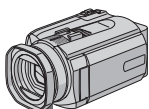
To delete all playlists at once, select [DELETE ALL].

5 Press down the set lever.

6 Select [EXECUTE].

Copying Files

Types of Copying and Connectable Device



The Camera

You can copy still images between the HDD and microSD card with this camera alone. (☞ p. 51)



DVD Burner (CU-VD40)

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. (☞ p. 49)



PC

You can copy video/still image files on this camera onto your PC. For details, refer to PC OPERATION section. (☞ p. 52 to 65)

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.

• 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" ☞ p. 47, 49)

- Playback the disc using a DVD burner.*

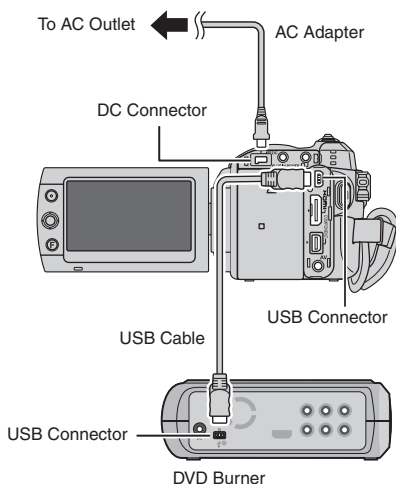
- Playback on a PC.*

* The disc must first be finalized on the camera.

Connection with a DVD Burner

Preparation:

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





NOTES

- Turn the DVD burner on first, then turn the camera on.
- Use the USB cable that came with the DVD burner.

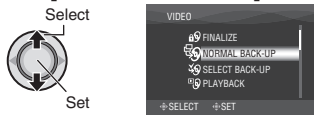
Backup All Files

Preparation:

- Connect the camera to the DVD burner.
- 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.

• [UNSAVED SCENES/FILES NOT BACKED-UP]:

Files that have never been copied to a DVD disc are automatically selected and copied.

- **[ALL]:** All files in the recording medium are copied.



3 Select the desired menu.

• [CONTINUE TO COPY]:

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

• [FORMAT]:

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



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

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



- The files are copied on the disc. When [COMPLETED] appears, press down the set lever to complete the operation.
- When [COMPLETED. CHANGE DISC] appears, change the disc. Remaining files are copied on the second disc.
- To cancel the copying, select [STOP].

■ To return to the top screen

Press the **MENU** button, then select [YES].

■ To finalize the disc after copy is finished

- 1) Connect the camera to the DVD burner.
- 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.
- 2) Turn the DVD burner on first, then turn the camera on.
- 3) Select [PLAYBACK].
- 4) Select the desired folder.
- 5) Select the desired file.
To return to the previous screen, press the **INDEX** button.

Copying Files (Continued)

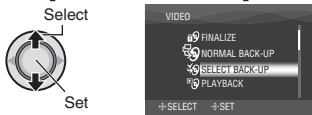
Select Files for Backup

Preparation:

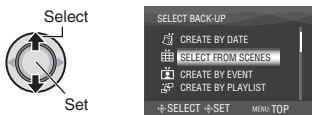
- Connect the camera to the DVD burner.
- Select or mode.

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) Select the desired file. To select other files, repeat this process.
- 2) Press the **INDEX** button then go to step 4.

• [CREATE BY EVENT*]:

Files are sorted according to event. Relevant files are displayed in a list. Select the event.

• [CREATE BY PLAYLIST*]:

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

- 1) Select the desired list. To select other lists, repeat this process.
- 2) Move the set lever to > twice.

• [CREATE BY DATE]:

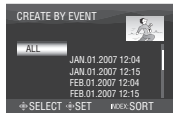
Files are sorted according to the date on which they were recorded. Relevant files are displayed in a list. Select the recording date.

* Not available in mode.

To preview scenes, press the **INDEX** button. (The index screen of individual scenes appears.) Select the file.

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

3 Select [ALL].



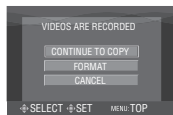
4 Select the desired menu.

• [CONTINUE TO COPY]:

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

• [FORMAT]:

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



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

By selecting [EXECUTE AND FINALIZE], the disc is finalized 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 the **MENU** button, then select [YES].

■ To finalize the disc after copy is finished

- 1) Connect the camera to the DVD burner.
(☞ p. 46)
- 2) Turn on the camera.
- 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.
(☞ p. 46)
- 2) Turn the DVD burner on first, then turn the camera on.
- 3) Select [PLAYBACK].
- 4) Select the desired folder.
- 5) Select the desired file. To return to previous screen, press the **INDEX** button.

NOTE

In case of [CREATE BY PLAYLIST], date/time on the file information display shows the date of copying the file, not of the actual recording.

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

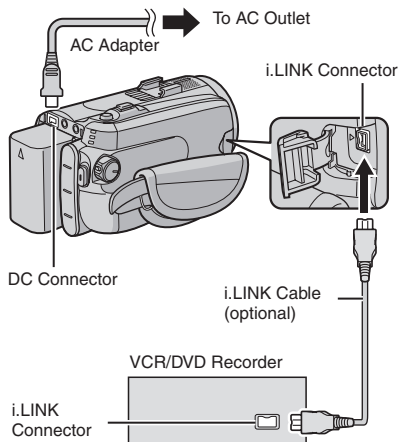
You can connect the camera to a VCR or DVD recorder, and dub the camera's files directly onto those devices.

Connection with a VCR/DVD Recorder

You can connect using either the i.LINK connector or AV connector.

Preparation: Turn off all units.

■ To connect using the i.LINK connector (digital dubbing)

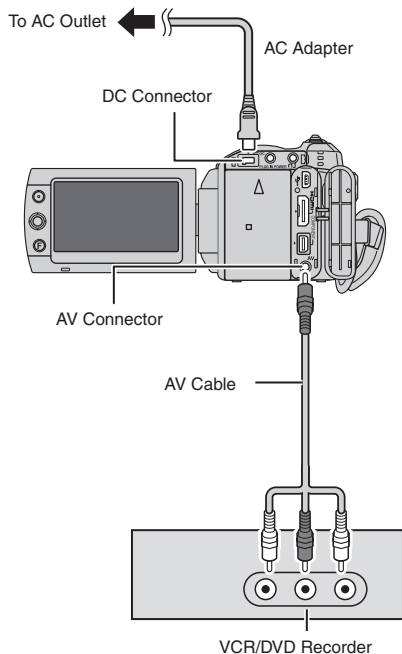


NOTES

- Be sure to use the optional JVC VC-VDV206U or VC-VDV204U i.LINK cable depending on the connector type (4 or 6 pins) of the VCR/DVD recorder.
- To dub videos in high-definition quality:
 - Connect a device that supports high-definition quality videos.
 - Use the i.LINK connector.
 - Set the [i.LINK OUTPUT (DUB)] to [1440 CBR]. (☞ p. 70)
 - Make a playlist consisted of 1440 CBR video only, and dub the playlist. (☞ p. 50)
- To dub videos in standard quality:
 - Use the i.LINK connector.
 - Set the [i.LINK OUTPUT (DUB)] to [DV]. (☞ p. 70)

Copying Files (Continued)

■ To connect using the AV connectors (analog dubbing)



Dubbing Operation

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

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

2 Start playback on the camera.

- To play back videos
- To play back playlists

- 1) Press the **FUNCTION** button.
- 2) Select [DUBBING PLAYBACK].
- 3) Move the set lever to >. ^{*1}
- 4) Select [START PLAYBACK]. (A black screen is displayed for 5 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 a TV connected to the VCR/DVD recorder.

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, effects and wipe/fader effects 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/Moving Still Image Files

You can copy or move still image files between the HDD and microSD card.

Preparation:

- Select  mode.
- Select the playback mode.
- Make sure that microSD card is inserted in the microSD slot.
- Make sure that enough free space is left in the copy/move destination medium.

1



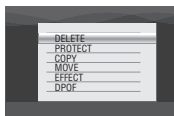
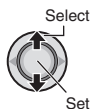
2 Select [COPY] or [MOVE].

• [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 this to transfer the selected files.

1) Select the desired file.

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

2) Press the **FUNCTION** button.

• [ALL]:

Select this to transfer all files in the recording medium.

6 Select [EXECUTE].



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

■ To exit the screen

Press the **FUNCTION** button, then select [EXECUTE].

■ To stop the file transfer

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

File Backup on a Windows® PC

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

You can back up your files on your PC with a simple one-touch operation, edit your files on your PC, and also create discs.

Even if you do not install the software, you can still back up your files on your PC.

(☞ p. 57)

System Requirements

OS: Either one of the following OS should be pre-installed (32-bit):

- Windows® XP Home Edition (SP2)
- Windows® XP Professional (SP2)
- Windows Vista® Home Basic
- Windows Vista® Home Premium

CPU:

- Intel® Pentium® 4, at least 3.2 GHz (Intel® Core™ Duo 1.66 GHz or more recommended)
- Intel® Pentium® M, at least 1.8 GHz

RAM:

- [XP] At least 512 MB (1 GB or more recommended)
- [Vista] At least 1 GB (2 GB or more recommended)

Free hard disk space:

- At least 750 MB for installation
- For creating Blu-ray disc, at least 30 GB (60 GB or more recommended)

Connector:

USB 2.0 connector

Sound card:

Direct Sound 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

Supported media:

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

For the compatible drives:

http://jp.cyberlink.com/english/products/powerproducer/4/comp_dvd_drive.jsp

For the compatible BD drives:

http://jp.cyberlink.com/english/products/powerproducer/4/comp_nextgen_drives.jsp

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 PC (CPU: Intel® Core™ 2 Duo, memory: 2 GB or more).

Software Installation

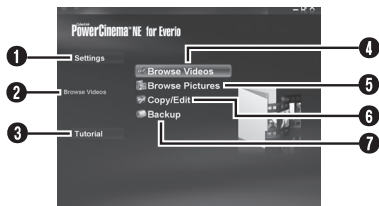
The following software is included in the CD-ROM that came with your camera.

CyberLink BD Solution

Comprehensive application software that consists of the following 3 kinds of 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.



- 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. (p. 58)
- 5 Plays back still image files on the PC. (p. 58)
- 6 Creates discs/Edits files. (p. 59)
- 7 Backs up camera files onto the PC. (p. 56)

● PowerProducer 4 NE

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

● PowerDirector 6 NE

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

NOTE

If the recorded video will be edited with the software in the supplied CD-ROM, set x.v.Color™ to [OFF] before recording.

Digital Photo Navigator 1.5

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

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

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.

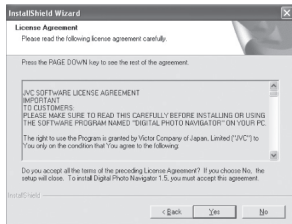
After a moment, the [SETUP] screen appears. If the [SETUP] screen does not appear, double-click the CD-ROM icon in [My Computer].

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.



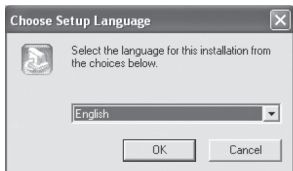
3 Click [Yes].



Continued on next page

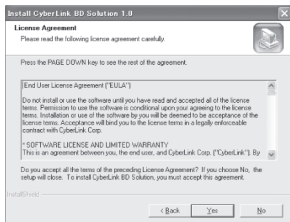
File Backup on a Windows® PC (Continued)

- 4** Select the desired language and click [OK].



- 5** Click [Yes].

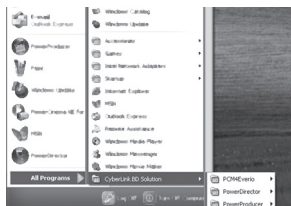
The software installation starts.



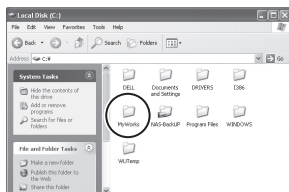
- 6** Click [Finish].

- When installation is completed

The installed software is displayed in [All Programs] – [CyberLink BD Solution].



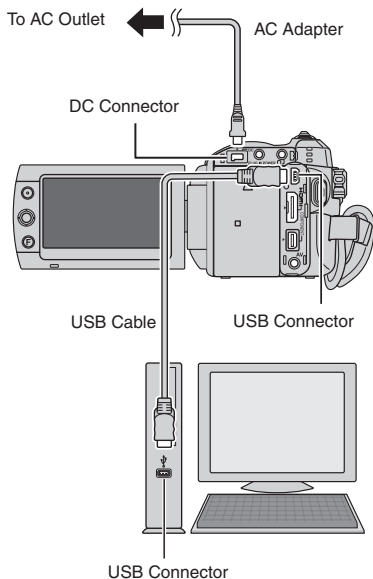
The backup destination folder [MyWorks] for files is created on the hard disk drive that has the most free space.



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/PC power.

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

- 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

- Never disconnect the USB cable while the access/charge lamp on the camera lights or blinks.
- Do not turn off the camera when the USB cable is connected, to prevent malfunctions of the PC.
- Connect the camera directly to the PC, not through a hub.
- Do not use an extension USB cable.
- When you copy files from the PC to the recording medium on the camera, do not include any other files than those recorded on the camera.
- Do not delete, move, or rename the files and folders in the camera from the PC.

File Backup on a Windows® PC (Continued)

File Backup on the PC

This method uses the software on the CD-ROM to back up files onto your PC. Video files that have never been backed up onto the PC are automatically selected and backed up.

Preparation:

- Install the software from the provided CD-ROM.
- Connect the camera to the PC.

1 Set the camera's power/mode switch to 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.
- Connect the camera to the PC.

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

2 On the camera, select **[BACK UP]**.



3 On the PC, Click **[EVERIO_HDD]** or **[EVERIO_SD]**.



When the progress bar disappears, the process is complete.

NOTE

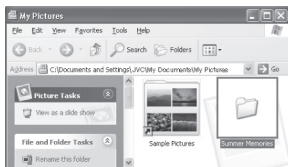
When backup is performed, folders for each medium (HDD or microSD) are created in the [MyWorks] folder (p. 54), and the files are backed up inside those folders. (If backup is performed from more than one camera HDD, individual HDD folders are created.)

File Backup on the PC without Using Software

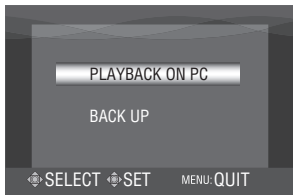
Preparation:

Connect the camera to the PC with the USB cable. (▶ p. 55)

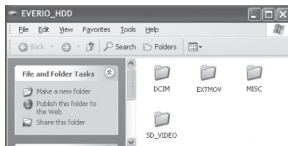
- 1 On the PC, create a folder to back up files into.
- 2 Set the camera's power/mode switch to ON.



- 3 On the camera, select [PLAYBACK ON PC].



- 4 On the PC, Double-click [EVERIO_HDD] or [EVERIO_SD].



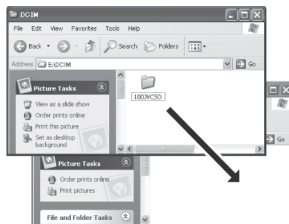
- 5 Select the folder that you want to back up, and drag & drop it into the folder you created in step 1.

- **SD_VIDEO:**

Folder that contains video files. If you want to back up files individually, open this folder, and drag & drop files 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, see page 64.

Other Windows® PC Operations

Playing Back Files on the PC

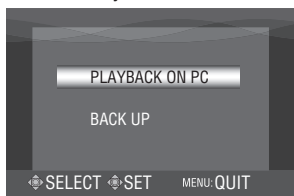
Preparation:

- Install the software.
- Connect the camera to the PC.

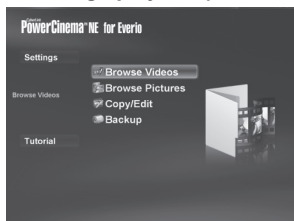
1 Set the camera's power/mode switch to ON.

2 On the camera, select [PLAYBACK ON PC].

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.



If you click Sort by/Filter by/View by, searching options are displayed.

● 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.

● View by:

You can change the number of thumbnails on a screen.

For more information on detailed operations of the software, refer to their Read me (p. 60) or CyberLink web site. (p. 53)

Creating Discs/Editing Files

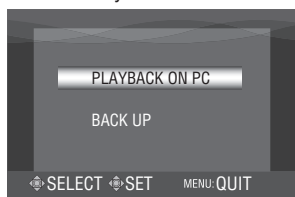
Preparation:

- Install the software.
- Connect the camera to the PC.

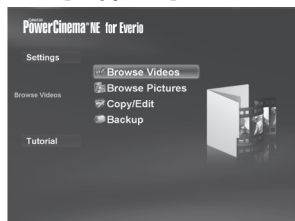
1 Set the camera's power/mode switch to ON.

2 On the camera, select [PLAYBACK ON PC].

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.

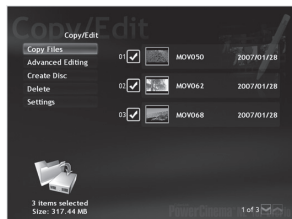
The mark appears in the check box. To select other files, repeat this step.



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 the software, refer to their Read me (p. 60) or CyberLink web site. (p. 53)

Other Windows® PC Operations (Continued)

NOTES

- You can use following discs:
 - BD-RE, BD-R
 - DVD-R/DVD+R (Unused discs)
 - DVD-RW/DVD+RW (They need to be formatted before recording. Formatting deletes all content recorded on the disc.)
 - CD-R/RW
- DVD-RAM discs cannot be used.
- 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.
- The PC must be equipped with a compatible drive and player software to play back the created disc.

Getting More Use of the Software

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

PowerCinema NE for Everio

- 1 Double-click [PowerCinema NE for Everio] icon on the desktop.
- 2 Click [Tutorial].

PowerProducer 4 NE

- 1 Select [CyberLink BD Solution] – [PowerProducer] from [All Programs].
- 2 Click [User's Guide] or [Readme].

PowerDirector 6 NE

- 1 Select [CyberLink BD Solution] – [PowerDirector] 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 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/>

File Backup on a Macintosh

If the software on the provided 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 (Intel® Core™ Duo 1.66 GHz or more recommended.)
- USB 2.0 connector is required.

OS:

Mac OS X (10.4.4 to 10.4.11, 10.5.1)

RAM:

At least 512 MB

(1 GB or more recommended)

Software Installation

Preparation:

Quit any other software you are using.

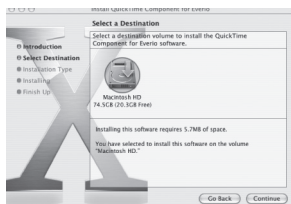
- 1 Load the provided CD-ROM into the PC.
- 2 Double-click the CD-ROM icon.
- 3 Double-click the QuickTime Component for Everio icon.



4 Click [Continue].

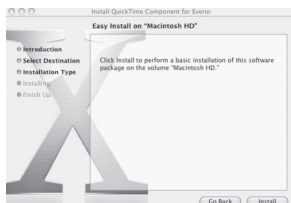


5 Click [Agree] and click [Continue].

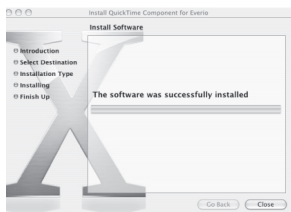


6 Click [Install].

The software installation starts.



7 Click [Close].

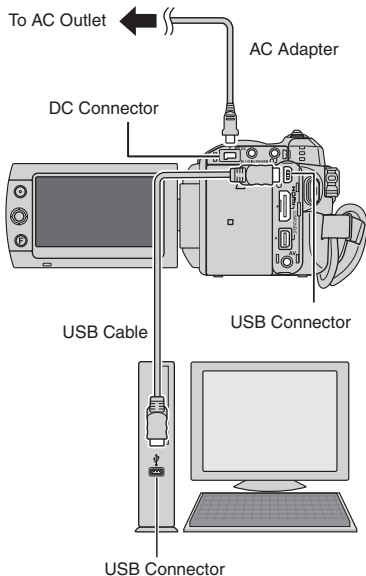


File Backup on a Macintosh (Continued)

Connecting the Camera to the Macintosh

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.

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 computer.

NOTES

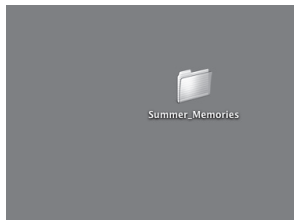
- Never disconnect the USB cable while the access/charge lamp on the camera lights or blinks.
- Do not turn off the camera when the USB cable is connected, to prevent malfunctions of the computer.
- Connect the camera directly to the computer, not through a hub.
- Do not use an extension USB cable.
- When you copy files from the computer to the recording medium on the camera, do not include any other files than those recorded on the camera.
- Do not delete, move, or rename the files and folders in the camera from the computer.

File Backup on the Macintosh

Preparation:

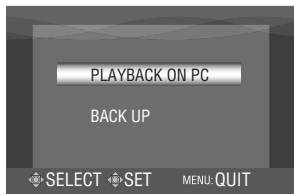
Connect the camera to the computer with the USB cable. (☞ p. 64)

- 1 On the computer, create a folder to back up files into.



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

- 3 On the camera, select [PLAYBACK ON PC].



- 4 On the computer, double-click [EVERIO_HDD] or [EVERIO_SD].



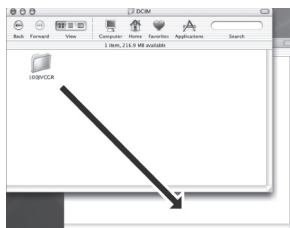
- 5 Select the folder that you want to back up, and drag & drop it into the folder you created in step 1.

- **SD_VIDEO:**

Folder that contains video files. If you want to back up files individually, open this folder, and drag & drop files 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.



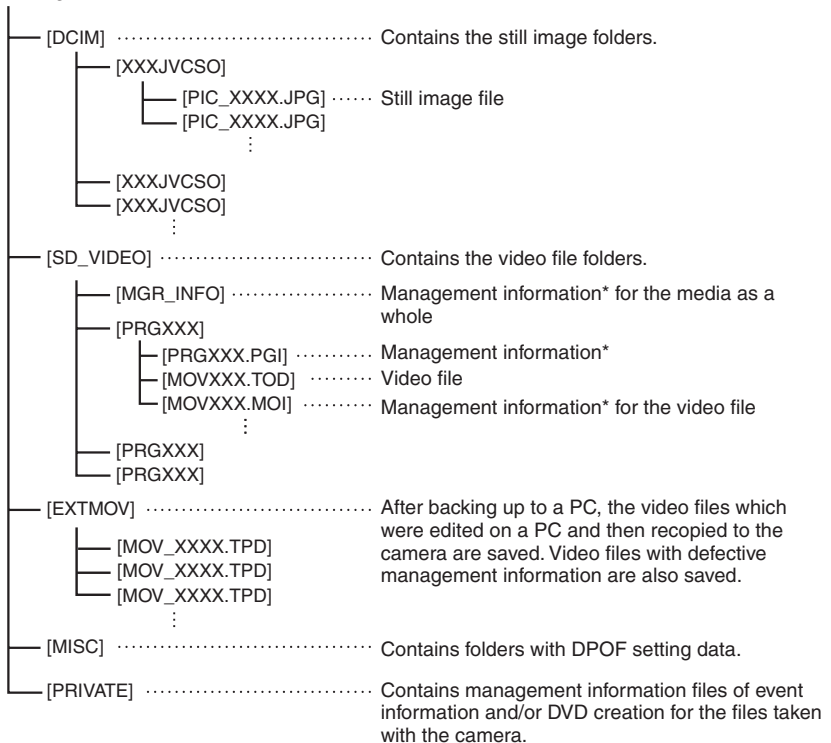
NOTE

For further details on the use of folders, see page 64.

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®.

Customer Support Information

Contact us for information on the provided software

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

JVC

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

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

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 | 9:00 am to 5:00 pm | +49-700-462-92375 | +49-241-70525-25 |
| Taiwan | Mandarin | 9:00 am to 6:00 pm | +886-2-8667-1298 ext. 333 | +886-2-8667-1300 |
| Japan | Japanese | 10:00 am to 5:00 pm | +81-3-3516-9555 | — |

Paid voice support

| Location | Language | Lines are open (Mon. to Fri.) | URL |
|----------|----------|-------------------------------|---|
| U.S.A. | English | 1:00 pm to 10:00 pm 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/ |

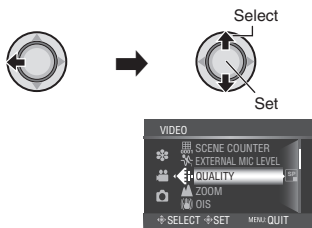
Changing the Menu Settings

1 Select the menu mode.



2 Select the desired first menu item.

- : VIDEO
- : IMAGE
- : GENERAL
- : OUTPUT SETTING
- : MEDIA



3 Select the desired second menu item.

For details on each menu, see below.



4 Select the desired setting.














■ To return to the previous screen

Move the set lever to \leftarrow .









■ To exit the screen










Press the **MENU** button.

| Menus | Settings: [] = Factory-preset |
|--|---|
| <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-right: 10px;">VIDEO</div> <div> <p>\leftarrow QUALITY Sets the picture quality for videos.</p> </div> </div> | <p>[FHD]: Record in 1920 x 1080i (full high-definition), VBR (Variable Bit Rate).</p> <p>SP: Record in 1440 x 1080i (high-definition), VBR (Variable Bit Rate). Select this to record in the higher picture quality.</p> <p>LP: 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 in high-definition using the i.LINK connector.</p> <p>NOTE If you switch the quality settings between FHD/SP/LP and 1440 CBR, a new file management folder is created in the HDD or microSD card. (SP and LP files are stored in same folders.) 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 on page 77.</p> |

| Menus | | Settings: [] = Factory-preset |
|-------|--|--|
| VIDEO |  ZOOM Sets the maximum zoom ratio. | [10X] / 40X / 200X NOTE Optical zoom is used up to 10X. Digital zoom is used from more than 10X up to the selected zoom ratio. |
| |  OIS Compensates for hand shake. | OFF: Disables the function. [ON]: Activates the function. NOTES <ul style="list-style-type: none"> • Complete stabilization 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 color tones appear grayish. | OFF: Disables the function. [AGC]: Electrically brightens the scene in dark place. AUTO: Automatically brightens the scene when it is dark. (Becomes brighter than AGC) |
| |  WIND CUT Reduces noise caused by wind. | [OFF]: Disables the function. ON: Activates the function. |
| |  REC MEDIA FOR VIDEO Sets the recording medium for videos. | [HDD] / SD NOTE When set to [SD], video picture quality will be automatically set to [SP]. |
| |  SCENE COUNTER Displays the scene counter. | OFF: Disables the function. [ON]: Activates the function. |
| |  EXTERNAL MIC LEVEL Displays the input level when the external microphone (optional) is connected. | OFF: Disables the function. [ON]: Activates the function. |
| |  x.v.Color Records video in the color range suitable for viewing in an x.v.Color™ compliant TV. | [OFF]: Disables the function. ON: Activates the function. NOTE It is recommend to set x.v.Color™ to [OFF] before the recording if the recorded video will be edited with a software. |
| IMAGE |  QUALITY Sets the picture quality for still images. | [FINE] / STANDARD |
| |  IMAGE SIZE Selects the picture size for still images. | [1920 x 1080] / 1440 x 1080 / 1024 x 768 / 640 x 480 |
| |  GAIN Sets the ISO setting to increase the sensitivity in dark conditions. | [AUTO] / 100 / 200 / 400 |







Changing the Menu Settings (Continued)

| Menus | | Settings: [] = Factory-preset |
|---|--|--|
| IMAGE |  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"> • You can confirm the countdown on the camera screen. • You can also use this to prevent vibration by the hand. |
| |  REC MEDIA FOR IMAGE Sets the recording medium for still images. | <p>[HDD] / SD</p> |
| GENERAL |  LANGUAGE Sets the display language. (→ p. 17) | <p>[ENGLISH] You have a choice of 21 languages.</p> |
| |  CLOCK ADJUST Sets the time. (→ p. 17) | <p>DATE / TIME</p> |
| |  DATE DISPLAY STYLE Sets the date and time display format. | <p>DATE STYLE: [month.day.year] / year.month.day / day.month.year TIME: 24h / [12h]</p> |
| |  DATE/TIME Displays the current time on the LCD monitor. | <p>[AUTO]: The date/time appears for approx. 5 seconds in the following cases.</p> <ul style="list-style-type: none"> • When the power/mode switch is set from OFF to ON • When playback starts <p>ON: The date/time is always displayed. OFF: The date/time does not appear.</p> |
|  PRESET Returns all the camera settings to their default values. | <p>EXECUTE: Performs this function. [CANCEL]: Returns to the menu screen without executing reset.</p> | |

| Menus | Settings: [] = Factory-preset |
|---|--|
|  BRIGHT Sets the brightness of the LCD monitor. | Adjust the brightness of the display by moving the set lever to < / >, then press down. |
|  MONITOR BACKLIGHT Enables you to adjust the brightness of backlight on the monitor. | BRIGHTER / STANDARD / [AUTO] NOTE When you select [AUTO], the brightness will automatically be set to [BRIGHTER] when you use the camera outdoors and to [STANDARD] when you use the camera indoors. |
|  DROP DETECTION Prevents damage to the HDD by turning off the power automatically when it is detected that the camera dropped. | OFF: Disables the function. [ON]: Activates the function. To turn the camera on when the drop detection worked, set the power/mode switch to OFF , and to ON again. CAUTION Setting this function to off increases the risks of damaging the built-in hard disk if the camera is accidentally dropped. |
|  FOCUS ASSIST When this function is used, the outline of the focused object is displayed in the selected color. | [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 a microSD card is in the camera, demonstration will not take place even if this mode is set to [ON]. |
|  OPERATION SOUND Turns the operation sound on/off. | OFF: Turns off the operation sound. [MELODY]: The melody sounds when operations are performed. |
|  DISPLAY Displays the on-screen display. | OFF: Turns off the on-screen display. [ON]: Turns on the on-screen display. |
|  DISPLAY ON TV Displays 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 connector, the camera's on-screen display is not displayed on the TV, even if this setting is [ON]. |

Changing the Menu Settings (Continued)

| Menus | | Settings: [] = Factory-preset |
|-------------------------|---|--|
| ⇒ OUTPUT SETTING | → VIDEO OUTPUT Set the aspect (16:9/4:3) to the screen of the connected television when outputting videos from the AV connector. | [16:9] / 4:3 |
| | → COMPONENT OUTPUT Sets the definition of the video output from the COMPONENT connector. | [480i] : Outputs at 480i. 1080i : Outputs at 1080i. |
| | → HDMI OUTPUT Sets the definition of the video output from the HDMI connector. | [AUTO1] : The definition that best suits the connected device is automatically selected: 480i, 480p, 1080i or 1080p*. AUTO2 : The definition that best suits the connected device is automatically selected: 480i, 480p or 1080i. 480p : Outputs at 480p. Select when the video is not projected correctly. * Playback mode only |
| | ⚙️ HDMI COLOR SETTING Sets the video format of the video output from the HDMI connector. | [AUTO] : Select this under normal circumstances. RGB : Select this when the video is not projected correctly. |
| | ⚙️ HDMI ENHANCE SETTING Automatically adjusts the image quality (depth of color, dark color 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) Sets the video output according to the device connected or picture quality of the copied files when using the i.LINK connector to copy files. | DV : Outputs FHD/SP/LP/1440 CBR videos. Select this when copying with a device that supports DV input. [1440 CBR] : Outputs 1440 CBR videos only. Select this when copying video that was recorded with [1440 CBR] set in [QUALITY]. |

| Menus | Settings: [] = Factory-preset |
|---|---|
|  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. | 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. |
|  FORMAT HDD Ensures stable speeds and operation when accessing the hard disk drive. | EXECUTE: Performs this function. Select [OK] when completed. [CANCEL]: Cancels this function. NOTES <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 hard disk of the camera by your PC. |
|  FORMAT SD CARD You have to format newly purchased microSD cards with this camera before using them. This will also ensure stable speeds and operation when accessing the microSD card. | EXECUTE: Performs this function. Select [OK] when completed. [CANCEL]: Cancels this function. NOTES <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 microSD card in the camera by your PC. |
|  DELETE DATA ON HDD When you dispose of the camera, perform this to make it difficult to recover data on the HDD. | Connect the AC adapter. EXECUTE: Performs this function. Select [OK] when completed. [CANCEL]: Cancels this function. NOTE In addition to this operation, it is recommended that you use a commercially available data erasing software to eliminate the risk of data recovery. |
|  VIDEO NO. RESET  IMAGE NO. RESET By resetting the file number (name), a new folder is made. The new files will be stored in the new folder. It is convenient to separate the new files from previously recorded files. | EXECUTE: Performs this function. Select [OK] when completed. [CANCEL]: Cancels this function. |

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. (☞ p. 76)
- If the problem persists, please consult your nearest JVC dealer.

| Trouble | | Action |
|-----------|---|--|
| Card | Cannot insert the microSD card. | <ul style="list-style-type: none"> ● Check that the microSD card is facing the right direction. |
| | No power is supplied. | <ul style="list-style-type: none"> ● Connect the AC adapter correctly. ● Recharge the battery. |
| Power | After the low temperature message is displayed, the power turns off when the camera warms up. | <ul style="list-style-type: none"> ● When the camera has warmed up after being cold, the camera may switch itself off to check it is operating correctly. |
| | There is a sound when turning on/off the power. | <ul style="list-style-type: none"> ● When you turn on/off the power, the lens cover opens/closes automatically and this causes a sound. This is not a malfunction. |
| Recording | Recording cannot be performed. | <ul style="list-style-type: none"> ● Set the power/mode switch to ON. ● Press the PLAY/REC button to select the recording mode. |
| | Recording stops by itself. | <ul style="list-style-type: none"> ● If the camera temperature increases, REC flashes in the LCD monitor. If the temperature continues to increase, operation stops automatically to protect the HDD. ● Move to a place where the camera is not affected by excessive sound or vibration. ● Recording stops automatically after 12 hours of continuous recording. |
| | The focus is not adjusted automatically. | <ul style="list-style-type: none"> ● Clean any dirt or water droplets from the lens. ● Set focus to the automatic mode. ● If you are recording in a dark place or a subject that has no contrast between dark and light, adjust the focus manually. |
| | The recorded subject is too dark. | <ul style="list-style-type: none"> ● Use backlight compensation or Nightlive. ● Set the brightness to the [+] side. ● For videos, set [GAIN UP] in the video menu to [AGC] or [AUTO]. ● For still images, set [GAIN] in the image menu to [AUTO] or [400]. |

| | Trouble | Action |
|-----------|---|--|
| Recording | The recorded subject is too bright. | <ul style="list-style-type: none"> ● Set the backlight compensation to [OFF] if it is being used. ● Set the brightness to the [-] side. |
| | Cannot use spot exposure control. | <ul style="list-style-type: none"> ● Keep the zoom ratio below 10X. |
| | The color of the recorded subject looks strange. | <ul style="list-style-type: none"> ● If there are numerous light sources etc. behind the subject, set the white balance to [MWB]. |
| | Bright vertical lines appear on recorded images. | <ul style="list-style-type: none"> ● This type of phenomenon may occur when shooting a subject illuminated by bright light. This is not a malfunction. |
| | Digital zoom does not work. | <ul style="list-style-type: none"> ● Change [ZOOM] in the video menu to [40x] or [200x]. |
| | White balance setting cannot be activated. | <ul style="list-style-type: none"> ● This cannot be used if [SEPIA] or [MONOTONE] are selected as effects. ● Do not use [TWILIGHT] from program AE. |
| | The continuous shooting speed is slow. | <ul style="list-style-type: none"> ● The continuous shooting speed will drop after continuous shots. ● Continuous shooting speed may drop depending on the recording media or under certain recording conditions. |
| | The date/time does not appear. | <ul style="list-style-type: none"> ● Set [DATE/TIME] in the general menu to [ON]. |
| | A function cannot be activated. | <ul style="list-style-type: none"> ● Check the indication that represents that function. ● If the indication is flashing or off, you have selected two functions that cannot be used together. Choose which of the functions to use. |
| | Video movement appears jerky/like it is frame dropping. | <ul style="list-style-type: none"> ● Deactivate Nightalive, [SHUTTER SPEED] or [EFFECT]. |
| Displays | The indication display flashes or goes out. | <ul style="list-style-type: none"> ● You have selected two functions that cannot be used together. Choose which of the functions to use. |
| | The LCD monitor appears blank. | <ul style="list-style-type: none"> ● Operate the camera. (When using the AC adapter, if the camera is not operated for a certain length of time it will enter sleep mode, the video/still image mode lamp lights, and the LCD backlight turns off.) |
| | The remaining battery display is not correct. | <ul style="list-style-type: none"> ● Fully charge the battery, run it down, and then recharge it again. ● If the camera is used for long periods of time in high or low temperatures, or if the battery is repeatedly charged, the amount of remaining battery may not be displayed correctly. |

Troubleshooting (Continued)

| Trouble | | Action |
|----------|--|---|
| Displays | The LCD monitor display is uneven. | <ul style="list-style-type: none"> ● If the LCD monitor or surrounding parts have been pressed, remove your hand and leave the camera for a short while. (Applying pressure causes image unevenness.) |
| | Images on the LCD monitor appear dark or whitish. | <ul style="list-style-type: none"> ● Adjust the brightness and angle of the LCD monitor. ● The LCD monitor appears dark when used in cold places. This is not a malfunction. ● The LCD monitor may be reaching the end of its service life. Consult your nearest JVC dealer or the JVC customer service. |
| | The LCD monitor is difficult to see. | <ul style="list-style-type: none"> ● The LCD monitor may be difficult to see if used in bright areas such as under direct sunlight. |
| Playback | The same scene appears stopped for a long time. | <ul style="list-style-type: none"> ● Replace the microSD card. (If there are scratches etc. on the microSD card, the camera will have difficulty reading the data, and this phenomenon may occur. The camera will try to play back as much as possible, but if this condition continues, the camera will not be able to play back the video and it will automatically stop.) ● Perform cleanup or formatting. |
| | Video movement appears jerky. | |
| | Sound or video are interrupted. | <ul style="list-style-type: none"> ● Sometimes playback is interrupted at the connecting section between two scenes. |
| | Noise can be heard. | <ul style="list-style-type: none"> ● Do not move the camera suddenly during recording. (If the camera is moved suddenly during recording, the driving sound (hum) of the hard disk may have been recorded.) |
| | Images look unnatural on the TV (long and thin etc.) | <ul style="list-style-type: none"> ● Change [VIDEO OUTPUT] in the output setting menu to match your TV. |
| | A part of the TV screen appears to be shaking. | <ul style="list-style-type: none"> ● Change [HDMI OUTPUT] in the output setting menu to [AUTO]. |
| | Cannot find a recorded video. | <ul style="list-style-type: none"> ● Select [PLAYBACK TPD FILE] in the function menu, then search the video file on the index screen. (Video files that have damaged management information or video files that were written back from a computer can be played.) |
| | The color of images looks strange. | <ul style="list-style-type: none"> ● When recording the white balance was not correctly adjusted ● When the video was recorded with x.v.Color™ set to [ON], change the setting as desired on TV. |

| Trouble | | Action |
|--|--|--|
| Playback | Some functions cannot be used when playing back a backup DVD through a DVD burner connected to the camera. | <ul style="list-style-type: none"> ● The following functions cannot be used for a backup DVD. <ul style="list-style-type: none"> [When playing back video] <ul style="list-style-type: none"> - Special playback (forward slow motion, reverse slow motion, frame-by-frame forward, frame-by-frame back) - Saving still images from video playback - Search index by date - Playback effects - Playback zoom (remote control function) [When playing back still image] <ul style="list-style-type: none"> - Rotate 90 degrees - INFO button (file information, histogram) - Playback effects - Playback zoom (remote control function) |
| | When playing back video, mosaic-type noise may occur on the playback screen. | <ul style="list-style-type: none"> ● Mosaic-type noise may occur when recording under the following conditions. <ul style="list-style-type: none"> - When there is a complicated pattern in the background - If the camera is moved around a lot, or moved quickly - When recording a subject that moves quickly (especially when recording in [LP] mode) |
| Dubbing | High-definition dubbing cannot be performed to a HDV device. | <ul style="list-style-type: none"> ● Check all of the following. <ul style="list-style-type: none"> - Record with [QUALITY] in the video menu set to [1440 CBR]. - Create a playlist, then dub the playlist. (Dubbing cannot be done for each video file.) - When dubbing, set [i.LINK OUTPUT (DUB)] in the output setting menu to [1440 CBR]. |
| | When connected with an i.LINK cable, the camera does not operate if controls are attempted from the PC etc. | <ul style="list-style-type: none"> ● Operate the camera. (The camera cannot be operated from the PC.) |
| | When dubbing a playlist, some videos cannot be played back. | <ul style="list-style-type: none"> ● When dubbing high-definition videos to a connected HDV device, do not include [FHD] or [SP] quality videos in the playlist. (When the playlist is being played back, these videos will not be played.) ● Set [i.LINK OUTPUT (DUB)] in the output setting menu to [DV], and dub to a DV camera or DVD recorder using standard quality dubbing. ● Connect using a audio/video cable, and dub to an analog device using standard quality dubbing. |
| When dubbing, the connected video device does not start recording automatically. | <ul style="list-style-type: none"> ● Operate the video device manually to start and stop recording. | |

Troubleshooting (Continued)

| Trouble | | Action |
|----------------|---|---|
| Other problems | The camera operates slowly when switching between video mode and still image mode, or when switching the power on or off. | <ul style="list-style-type: none"> Copy all files from the media onto your computer, and erase the files from the media. (If there are many still images (more than 1,000 files) on the media, it takes time for the camera to process the files.) |
| | The camera gets hot. | <ul style="list-style-type: none"> This is not a malfunction. |
| | The lamp does not flash during battery charging. | <ul style="list-style-type: none"> Check the remaining battery charge. (When the battery is fully charged, the lamp does not flash.) When recharging in either a hot or cold environment, ensure that battery is being charged within the permitted temperature range. (If the battery is being recharged outside the permitted temperature range, recharging may stop to protect the battery.) |
| | The remote control doesn't work. | <ul style="list-style-type: none"> Replace the batteries. Set [REMOTE] in the general menu to [ON]. The remote control may not operate outdoors or in places exposed to strong light. |

■ The following phenomena are not malfunctions.

- LCD monitor momentarily becomes red or black when sunlight is recorded.
- Black spots, or red, green, or blue spots appear on the LCD monitor.
(The LCD monitor contains 99.99% effective pixels, but 0.01% or fewer pixels may be ineffective.)

■ Maintaining HDD Performance

Periodically perform [CLEAN-UP HDD].

■ If a malfunction occurs in the HDD

- Perform [CLEAN-UP HDD].
- If this does not solve the malfunction, perform [FORMAT HDD]. (All data is deleted.)
- If this does not solve the problem, perform the disc check function from a PC after formatting.
- If this does not solve the problem, contact the JVC customer service for repairs.

■ To reset the camera

- Set the power/mode switch to **OFF** and remove the power supply (battery pack or AC adapter) from the camera, then reattach it.
- Execute [PRESET] in the general menu. (☞ p. 68)

Warning Indications

| Indication | Meaning/Action |
|---|---|
| HARD DISK DRIVE IS FULL | <ul style="list-style-type: none"> ● Erase files. Move onto media such as a computer. |
| MEMORY CARD IS FULL | <ul style="list-style-type: none"> ● Erase files. Move onto media such as a computer. Replace with a new microSD card. |
| COMMUNICATING ERROR | <ul style="list-style-type: none"> ● Detach the battery pack once and re-attach it firmly. |
| INCOMPATIBLE FORMAT | <ul style="list-style-type: none"> ● Remove and re-insert the microSD card. |
| UNSUPPORTED FILE! | <ul style="list-style-type: none"> ● Use a supported file format. |
| NO SUPPORTED FILES | <ul style="list-style-type: none"> ● Record some still images. |
| NUMBER OF FOLDERS OVERFLOW | <ul style="list-style-type: none"> ● Perform the following operations in order. <ol style="list-style-type: none"> ① Backup files onto a PC etc. ② Select [FORMAT HDD] in the media menu. (For microSD cards, select [FORMAT SD CARD].) ③ Select [EXECUTE]. ④ While holding down the event button, press the set lever. |
| POWER NOT ON OR USB DEVICE NOT COMPATIBLE | <ul style="list-style-type: none"> ● Check that the power of the connected USB device is on. |
| RECORDING FAILURE | <p>[microSD card]</p> <ul style="list-style-type: none"> ● Check whether the microSD card has been checked for operability. <p>[HDD]</p> <ul style="list-style-type: none"> ● Perform cleanup. ● Do not allow the camera to be subject to impact/vibrations. |
| RECORDING CANCELLED | <ul style="list-style-type: none"> ● Select [OK] and stop recording. ● Use the camera in areas where it will not be subject to impact/vibrations. |
| THIS FILE IS PROTECTED | <ul style="list-style-type: none"> ● Switch off the [PROTECT] function in the function menu. |
| NUMBER OF PRINTS ERROR | <ul style="list-style-type: none"> ● Set between 1-999 images. |
| EVENT LIST EMPTY | <ul style="list-style-type: none"> ● Set the event. |
| NO PLAYLIST | <ul style="list-style-type: none"> ● Create a playlist. |
| NO REGISTERED SCENES IN PLAYLIST SOME OF SCENES MAY NOT BE PLAYED BACK | |
| PROCESSING CANCELLED DUE TO LACK OF SPACE FOR OPERATION | <ul style="list-style-type: none"> ● Reduce the number of videos that can be registered to a playlist to less than 99 files. |

Warning Indications (Continued)

| Indication | Meaning/Action |
|--|---|
| MEMORY CARD ERROR! | <ul style="list-style-type: none"> ● Remove and re-insert the microSD card. (Multimedia cards cannot be used.) ● Remove any dirt from the microSD card terminals. ● Insert the microSD card before switching the power on. |
| HDD ERROR! | <ul style="list-style-type: none"> ● Perform cleanup or formatting. |
| RECORDING MAY NOT BE CORRECT ON THE MEMORY CARD | <ul style="list-style-type: none"> ● Check the operating procedure, and perform once again. |
| MEMORY CARD CANNOT BE PLAYED BACK CORRECTLY | |
| MAY NOT RECORD HARD DISK DRIVE CORRECTLY | |
| CANNOT PLAYBACK HARD DISK DRIVE CORRECTLY | |
| THIS CARD IS NOT FORMATTED | <ul style="list-style-type: none"> ● Perform formatting. |
| SET DATE/TIME! | <ul style="list-style-type: none"> ● Set the date and time. (If the display does not disappear after completing the settings, the clock battery is exhausted. Consult your nearest JVC dealer.) |
| VIDEO MANAGEMENT FILE IS BROKEN TO RECORD/PLAYBACK VIDEO, RECOVERY IS REQUIRED RECOVER? | <ul style="list-style-type: none"> ● Select [OK] to restore. |
| CANNOT USE IN VIDEO MODE | <ul style="list-style-type: none"> ● Set the video media in the video menu to [HDD]. ● Replace the microSD card. (Cards that have been recorded on using anything other than JVC high-definition hard disk movies cannot be used.) |

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. After wiping with the wet cloth, 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.
- Mold 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

- [GZ-HD5]** Approx. 6.9 W
- [GZ-HD6]** Approx. 7.1 W

Dimensions (W x H x D)

- [GZ-HD5]** 78 mm x 73 mm x 130 mm
(3-1/8" x 2-7/8" x 5-1/8")
- [GZ-HD6]** 79 mm x 73 mm x 138 mm
(3-1/8" x 2-7/8" x 5-7/16")

Weight

- [GZ-HD5]** Approx. 480 g (1.06 lbs) (incl. strap)
Approx. 565 g (1.25 lbs) (incl. battery
and strap)
- [GZ-HD6]** Approx. 505 g (1.12 lbs) (incl. strap)
Approx. 590 g (1.31 lbs) (incl. battery
and strap)

Operating temperature

0°C to 40°C (32°F to 104°F)

Operating humidity

35% to 80%

Storage temperature

-20°C to 50°C (-4°F to 122°F)

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

ø43.0 mm

LCD monitor

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

Speaker

Monaural

■ For video/audio

Format

SD-VIDEO

Recording/Playback format

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

Signal format

1080/60i

Recording mode (video)

- FHD: VBR, average of 26.6 Mbps
- SP: VBR, average of 19 Mbps
- LP: VBR, average of 11.1 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™ (V.1.3 with x.v.Color™)

Component output

- Y, Pb, Pr component output
- Y: 1.0 V (p-p), 75 Ω
- Pb/Pr: 0.7 V (p-p), 75 Ω

i.LINK output

4-pin (i.LINK/IEEE1394 compliant)

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

ø3.5 mm stereo mini jack

[GZ-HD6] Headphone


ø3.5 mm 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 (16.4 ft)

Operating temperature

0°C to 40°C (32°F to 104°F)

Dimensions (W x H x D)

42 mm x 14.5 mm x 91 mm
(1-11/16" x 5/8" x 3-5/8")

Weight

Approx. 30 g (0.07 lbs)
(incl. battery)

Design and specifications subject to change
without notice.

Approximate recording time (minutes) (for video)

| Recording medium \ Quality | HDD | | microSD Card |
|----------------------------|--------------------------|---------------------------|--------------|
| | [GZ-HD5] 60 GB | [GZ-HD6] 120 GB | 4 GB |
| FHD | 300 | 600 | – |
| SP | 420 | 840 | 25 |
| LP | 720 | 1440 | – |
| 1440 CBR | 300 | 600 | – |

Approximate number of storable images (for still image)

| Recording medium \ Image size/Quality | HDD | | microSD Card | | | | |
|---------------------------------------|--------------------------|---------------------------|--------------|------|------|------|------|
| | [GZ-HD5] 60 GB | [GZ-HD6] 120 GB | 512 MB | 1 GB | 2 GB | 4 GB | |
| 16:9 | 1920 x 1080 / FINE | 9999 | 9999 | 535 | 1065 | 2115 | 4220 |
| | 1920 x 1080 / STANDARD | 9999 | 9999 | 840 | 1670 | 3225 | 6445 |
| 4:3 | 1440 x 1080 / FINE | 9999 | 9999 | 705 | 1405 | 2785 | 5565 |
| | 1440 x 1080 / STANDARD | 9999 | 9999 | 1110 | 2205 | 4380 | 8750 |
| | 1024 x 768 / FINE | 9999 | 9999 | 1415 | 2810 | 5575 | 9999 |
| | 1024 x 768 / STANDARD | 9999 | 9999 | 2225 | 4115 | 8765 | 9999 |
| | 640 x 480 / FINE | 9999 | 9999 | 3465 | 6870 | 9999 | 9999 |
| | 640 x 480 / STANDARD | 9999 | 9999 | 6235 | 9999 | 9999 | 9999 |

Cautions

AC Adapter

When using the AC adapter in areas other than the USA

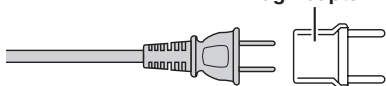
The provided AC adapter features automatic voltage selection in the AC range from 110 V to 240 V.

USING HOUSEHOLD AC PLUG ADAPTER

In case of connecting the unit's power cord to an AC wall outlet other than American National Standard C73 series type use an AC plug adapter, called a "Siemens Plug", as shown.

For this AC plug adapter, consult your nearest JVC dealer.

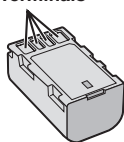
Plug Adapter



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:

Terminals



• 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 (140°F), 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 (50°F to 95°F). 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 of time.
- ... remove from charger or powered unit when not in use, as some machines use current even when switched off.

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.

Hard disk

- Do not use the unit where it is subject to vibrations or loud sounds.
- If you move the unit suddenly, the drop detection function may operate and the power may be turned off.

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.
- ... leave dust or metal objects adhered to the power plug or an AC wall outlet.
- ... insert any objects in the camera.

● 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 104°F) or extremely low (under 0°C or 32°F) temperatures.
- ... in places where air pressure is low (more than 3000 m (9870 ft) above the sea level).

● DO NOT leave the unit

- ... in places of over 50°C (122°F).
- ... 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.
- ... place the camera in dusty or sandy areas, such as on a beach.

● To prevent the unit from dropping,

- Attach the shoulder strap securely and fasten the grip belt securely.
- When using the camera with a tripod, attach the camera to the tripod securely.

If the camera drops, you may be injured and the camera may be damaged.

When a child uses the unit, there must be parental guidance.

Declaration of Conformity

Model Number : GZ-HD5U/GZ-HD6U

Trade Name : JVC

Responsible party : JVC AMERICAS CORP.

Address : 1700 Valley Road Wayne, N. J. 07470

Telephone Number : 973-317-5000

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not approved by JVC could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for help.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

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