PUB.DIM-763

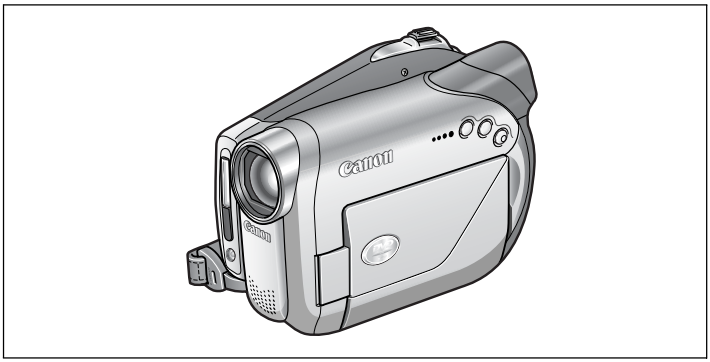
Canon

DVD Camcorder
Instruction Manual
English

Caméscope DVD
Manuel d'instruction
Français

Cámara DVD
Manual de Instrucciones
Español

DC22



PictBridge

Please read also the following instruction manual (electronic version on PDF file). For further details refer to the installation guide.
Veuillez lire aussi le manuel d'instruction suivant (version électronique sur fichier PDF). Pour d'autres détails référez-vous au guide d'installation.
Lea también el siguiente manual de instrucciones (versión electrónica en archivo PDF). Para mayores detalles, refiérase a la guía de instalación.

- **Digital Video Software**

NTSC

Important Usage Instructions

WARNING!

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

WARNING!

TO REDUCE THE RISK OF ELECTRIC SHOCK AND TO REDUCE ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

COPYRIGHT WARNING:

Unauthorized recording of copyrighted materials may infringe on the rights of copyright owners and be contrary to copyright laws.

DVD Camcorder, DC22 A systems

This device complies with Part 15 of the 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.

Note: This equipment has been tested and found to comply with the limits for 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 use 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.

The cable with the ferrite core provided with the digital video camcorder must be used with this equipment in order to comply with Class B limits in Subpart B of Part 15 of the FCC rules.
Do not make any changes or modifications to the equipment unless otherwise specified in the manual.
If such changes or modifications should be made, you could be required to stop operation of the equipment.

Canon U.S.A. Inc.
One Canon Plaza, Lake Success, NY 11042, U.S.A.
Tel No. (516)328-5600

CAUTION:
TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

Important Warning

CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

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 product.

IMPORTANT SAFETY INSTRUCTIONS

In these safety instructions the word “product” refers to the Canon DVD Camcorder DC22 A and all its accessories.

1 Read Instructions — All the safety and operating instructions should be read before the product is operated.

2 Retain Instructions — The safety and operating instructions should be retained for future reference.

3 Heed Warnings — All warnings on the product and in the operating instructions should be adhered to.

4 Follow Instructions — All operating and maintenance instructions should be followed.

5 Cleaning — Unplug this product from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. The product should be cleaned only as recommended in this manual.

6 Accessories — Do not use accessories not recommended in this manual as they may be hazardous.

7 Avoid magnetic or electric fields — Do not use the camera close to TV transmitters, portable communication devices or other sources of electric or magnetic radiation. They may cause picture interference, or permanently damage the camera.

8 Water and Moisture — Hazard of electric shock — Do not use this product near water or in rainy/moist situations.

9 Placing or Moving — Do not place on an unstable cart, stand, tripod, bracket or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product.
A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

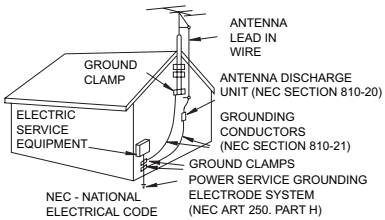
10 Power Sources — The CA-570 Compact Power Adapter should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. Regarding other power sources such as battery power, refer to instructions in this manual.

11 Polarization — The CA-570 Compact Power Adapter is equipped with a polarized 2-prong plug (a plug having one blade wider than the other).
The 2-prong polarized plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

12 Power Cord Protection — Power cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to plugs and the point from which the cords exit the product.

13 Outdoor Antenna Grounding — If an outside antenna is connected to the product, be sure the antenna is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI / NFPA No. 70—1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See figure 1.

Fig. 1 EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE



14 Lightning — For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, disconnect it from the wall outlet and disconnect the antenna. This will prevent damage to the product due to lightning and power-line surges.

15 Overloading — Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

16 Objects and Liquid Entry — Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Be careful not to spill liquid of any kind onto the product.

17 Servicing — Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

18 Damage Requiring Service — Disconnect this product from the wall outlet and all power sources including battery, and refer servicing to qualified service personnel under the following conditions:

a. When the power-supply cord or plug is damaged.
b. If any liquid has been spilled onto, or objects have fallen into, the product.
c. If the product has been exposed to rain or water.
d. If the product does not operate normally even if you follow the operating instructions. Adjust only those controls that are covered by the operation instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
e. If the product has been dropped or the cabinet has been damaged.
f. When the product exhibits a distinct change in performance. This indicates a need for service.

19 Replacement Parts — When replacement parts are required, be sure the service technician has used replacement parts that are specified by Canon or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

20 Safety Check — Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in safe operating order.

When replacement of the power supply is required, please return it to the responsible nearest Canon Service Center and please replace it with the same type number CA-570.

The Adapter can be used with a power supply between 100 and 240 V AC. For areas where 120 V AC power is not used, you will need a special plug adapter. Contact your nearest Canon Service Center for further information.

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

The Advantages of DVDs

RECORDING

With a DVD you just press the recording start/stop button and the camcorder will find the empty space on the disc (📖 30). Don't waste time fast forwarding and rewinding a tape to find from where to start a new recording.

Never worry about mistakenly recording over a precious memory!

PLAYING

Just select a scene from the index screen!

Just insert your finalized* disc into a DVD player and immediately find the scene you want to play back from the index (📖 33). No need to play the disc from the beginning or to run a tape forward and back to find the scene you want to see.

* Disc finalization is the processing of the free space (the unrecorded area) on the disc in order to make it playable on external DVD devices (📖 71).

SHARING YOUR VIDEOS

With the supplied software MyDVD for Canon** you can easily create copies of your DVDs to share with family and friends and transfer your recordings to a computer for further editing.

** Windows 2000/Me/XP systems only. The software is not compatible with Macintosh systems.

For inquiries regarding Roxio MyDVD for Canon, please contact directly the customer support centers of Sonic Solutions (📖 78).

An Introduction to DVDs

DVD discs are available in various types and two sizes (12 cm and 8 cm discs). This camcorder uses the following types of commercially available 8 cm mini DVD discs: DVD-R (one disc supplied with the camcorder), DVD-R DL* or DVD-RW discs.

Choose the Disc Type...

DVD-R

Discs can be recorded only once. Recordings cannot be edited or deleted.

DVD-R DL*

Discs can be recorded only once. Recordings cannot be edited or deleted.

DVD-RW

Discs can be initialized or recordings can be deleted to allow the discs to be recorded over numerous times.

...and the Disc Specification

VIDEO Mode (only)

Once finalized, DVD-R discs recorded in VIDEO mode can be played back in most common DVD players.

VIDEO Mode (only)

DVD-R DL* discs can only be played back with DVD players capable of reading dual-layered DVD discs.

VIDEO Mode

Once finalized, discs recorded in VIDEO mode can be played back in most common DVD players. However, in VIDEO mode recordings cannot be edited.

or

VR** Mode

You can easily edit the recordings. However, DVD-RW discs can only be played back with DVD players compatible with VR** mode.

* DL - Dual Layered.
**VR - Video Recording.

• Attempting to record or play with this camcorder DVD discs that were recorded, initialized or finalized with other digital devices can result in lost data.

DVD-R

Best for Compatibility

- **Available disc specifications:** VIDEO mode only.
- **Reusability:** Disc can be used only once. Recordings cannot be edited or deleted.
- **Finalization:** Once finalized, additional recordings cannot be made.
- **Compatibility:** A finalized DVD-R can be played back on most DVD devices.

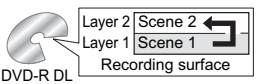
DVD-R discs recorded in VIDEO mode offer the best compatibility with external DVD devices.

DVD-R DL

Best for Recording Time

Dual-layered discs allow writing up to 80% more data (2.6 GB) on a single recording side according to DVD Forum specifications. Dual layered discs have two recording layers on a single recording side. The camcorder will record on the first layer until it is full and then continue on the second layer (as a separate scene).

- **Available disc specifications:** VIDEO mode only.
- **Reusability:** Disc can be used only once. Recordings cannot be edited or deleted.
- **Finalization:** Once finalized, additional recordings cannot be made. To finalize a dual layered disc the camcorder has to process both layers. Therefore, and depending on the amount of free space on the disc, this process may be lengthy.
- **Compatibility:** A finalized DVD-R DL can only be played back on DVD devices compatible with dual layered discs.
- During the playback of a recording spanning both layers, you may notice a brief stop at the point where the camcorder switches from Layer 1 to Layer 2.



DVD-RW

Best for Reusability

- **Available disc specifications:** VIDEO mode or VR mode.
  [VIDEO]: Offers a higher compatibility with external DVD devices. However, correct playback cannot be guaranteed with all external DVD devices.
  [VR]: Offers easy editing of the recordings with the camcorder.
- **Reusability:** Recordings can be deleted or the disc can be initialized in order to use it multiple times or to change the disc specification. Note that initializing a disc will erase all the recordings on the disc.
- **Finalization:** Even after a DVD-RW disc is finalized, additional recordings can be made. The way to do it depends on the disc specification used.
  [VIDEO]: You will need to unfinalize the disc first.
  [VR]: You can record additional scenes even without unfinalizing the disc.
- **Compatibility:** The compatibility of the disc depends on the disc specification used.
  [VIDEO]: A finalized DVD-RW in VIDEO mode can be played back on most DVD devices.
  [VR]: A DVD-RW in VR mode can only be played back on DVD devices compatible with VR mode.

Differences in Available Features Depending on the Disc

The camcorder's features and functions available will differ depending on the type of disc you use and the disc specification selected when initializing it.

Disc Type/Specification / Feature	DVD-R DVD-R DL	DVD-RW		🕮
	VIDEO mode	VIDEO mode	VR mode	
Editing scenes with this camcorder (deleting scenes, editing the Playlist)	–	–	●	63
Deleting a scene or still image immediately after recording it	–	●	●	64 67
Initializing the disc in order to use it again for recording	–	●	●	65
Giving a title to the disc	●	●	●	66
Finalizing the disc in order to play it with a DVD player	●	●	●[1]	71
Adding recordings to a disc already finalized	–	●[2]	●	72
Copying still images	●	●	●	68
Converting still images into Photomovie scenes	●	●	●	68
Editing scenes on a computer	●	●	●	77

[1] Playback cannot be guaranteed with all external DVD devices.
[2] You will need to unfinalize the disc first.

• **Recommended Discs:** The camcorder's performance was tested with single-layered discs using the supplied discs and Hitachi-Maxell HG series DVD discs; and with dual-layered discs using Canon DVD-R DL54 discs and Verbatim DVD-R DL discs. For further details, contact directly the manufacturer's customer support center.
• For the highest compatibility with external DVD devices we recommend using the VIDEO mode.

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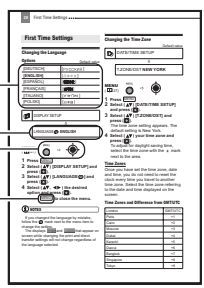
About this Manual

Thank you for purchasing the Canon DC22. Please read this manual carefully before you use the camcorder and retain it for future reference. Should your camcorder fail to operate correctly, refer to the *Troubleshooting* table (📖 90).

Conventions Used in the Manual

- IMPORTANT: Precautions related to the camcorder operation.
- NOTES: Additional topics that complement the basic operating procedures.
- POINTS TO CHECK: Restrictions that apply if the function described is not available in all operating modes (the operating mode to which the camcorder should be set, the type of disc required, etc.).
- 📖 : Reference page number.
- "Screen" refers to the LCD and the viewfinder screen.
- The photos included in the manual are simulated pictures taken with a still camera.



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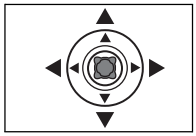
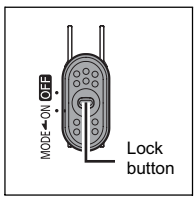
About the Multi Selector



Use the multi selector to select options in a menu and change settings.
Push the multi selector like a joystick up, down, left or right (▲/▼/◄/►) to select an item. In most places, press the multi selector itself (⊙) to make a selection or change a setting.
The display SET that appears in some menu screens refers to pressing the multi selector (⊙).

About the Power Switch



In addition to turning the camcorder on and off, the power switch also toggles the camcorder's operating mode.
To turn on the camcorder: Hold the lock button pressed down and move the power switch down to ON.
To change the operating mode: From the ON position, slide down the power switch momentarily towards MODE and release it. This action will toggle the operating mode between recording (CAMERA - red indicator) and playback (PLAY - green indicator).

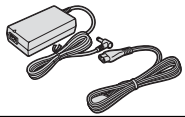
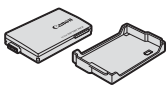
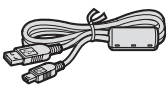
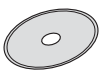
About the Operating Modes

The camcorder's operating mode is determined by the positions of the power switch and the 🎥/📷 switch. In the manual, CAMERA indicates that a function is available in the operating mode shown and CAMERA indicates that the function is not available. When no operating mode icons are given, the function is available in all operating modes.

Operating Mode	Operating Mode Indicator	🎥/📷 Switch	Icon Display	Operation	📖
CAMERA	CAMERA (Red)	🎥 (Movies)		Recording movies on the disc	30
PLAY	PLAY (Green)			Playing movies from the disc	33
CAMERA [1]	CAMERA (Red)	📷 (Still images)	or [2]	Recording still images on the memory card or disc	31
PLAY [1]	PLAY (Green)		or [2]	Viewing still images from the memory card or disc	35

[1] Functions available only for still images recorded on the disc will be marked with CAMERA and PLAY and functions available only for still images recorded on the memory card will be marked with CAMERA and PLAY instead.
[2] Depending on whether you choose to save the still images on the disc or memory card.

Supplied Accessories

CA-570 Compact Power Adapter (incl. power cord) 	BP-208 Battery Pack 	WL-D86 Wireless Controller	Lithium Button Battery CR2025 for Wireless Controller
MTC-100 Multi Cable	IFC-400PCU USB Cable 	Blank DVD-R Disc (8 cm Mini DVD)	DIGITAL VIDEO SOLUTION DISK Software CD-ROM* 
Roxio MyDVD for Canon Software CD-ROM			

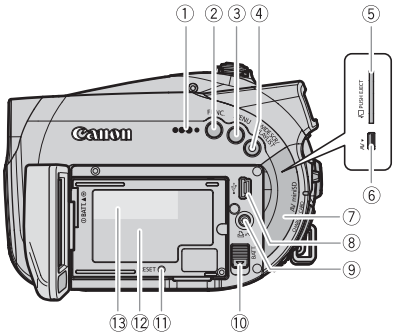
* Includes the electronic version of the *Digital Video Software* instruction manual on PDF file.

The serial number of this product can be found at the battery attachment unit of the camcorder. Write down the number and other information here and retain this book as a permanent record of your purchase to aid identification in case of theft.

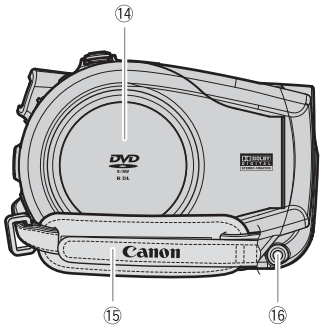
Date of Purchase: Model Name: DC22 A
Purchased From: Serial No.:
Dealer Address:
Dealer Phone No.:

Components Guide

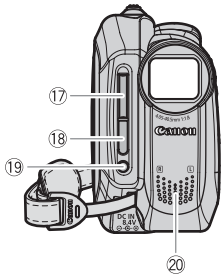
Left side view



Right Side View



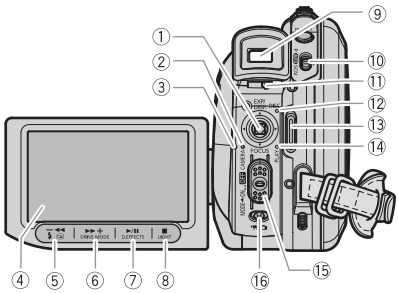
Front view



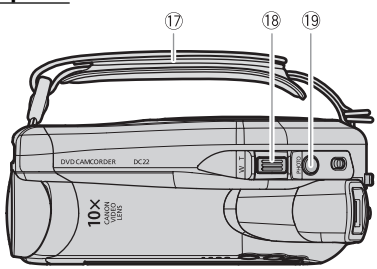
①	Speaker (📖 35)
②	FUNC. button (📖 27)
③	MENU button (📖 27)
④	WIDE SCR (widescreen) button (📖 31) / PLAYLIST button (📖 63)
⑤	Memory card slot (📖 24)
⑥	AV terminal (📖 74)
⑦	Terminal cover
⑧	USB terminal (📖 77)
⑨	(print/share) button (📖 80, 82, 85)
⑩	BATT. (battery release) switch (📖 21)
⑪	RESET button (📖 90)
⑫	Battery attachment unit (📖 21)
⑬	Serial number
⑭	Disc compartment cover (📖 25)
⑮	Grip belt (📖 22)
⑯	DC IN terminal (📖 21)
⑰	Flash (📖 58)
⑱	Remote sensor (📖 23)
⑲	LED light (📖 58)
⑳	Stereo microphone

Names of buttons and switches other than the multi selector are indicated within a "button" frame (for example [MENU]).

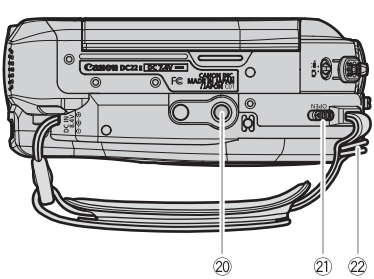
Back view



Top view



Bottom view



① Multi selector (📖 13)/
▲: EXP (exposure) (📖 49)/
DISP. (display) (📖 37)
▼: FOCUS (📖 50)

② CAMERA mode indicator (red) (📖 13)

③ CARD access indicator (📖 31) /
CHARGE indicator (📖 21)

④ LCD screen (📖 23)

⑤ ⮌ (record review) button (📖 31) /
ϟ (flash) button (📖 58) /
◀◀ (fast reverse) button (📖 34) /
Index screen – button (📖 33)

⑥ DRIVE MODE button (📖 55) /
▶▶ (fast forward) button (📖 34) /
Index screen + button (📖 33)

⑦ D.EFFECTS button (📖 59) /
▶/❚❚ (play/pause) button (📖 33)

⑧ LIGHT button (📖 58) /
■ (stop) button (📖 33)

⑨ Viewfinder (📖 22)

⑩ Mode switch (📖 46)

⑪ Dioptric adjustment lever (📖 22)

⑫ DISC access indicator (📖 30, 31)

⑬ Start/stop button (📖 30)

⑭ PLAY mode indicator (green) (📖 13)

⑮ Power switch (📖 13)

⑯ 🎥/📷 (movies/still images) switch (📖 13)

⑰ Grip belt (📖 22)

⑱ Zoom lever (📖 33)

⑲ PHOTO button (📖 31)

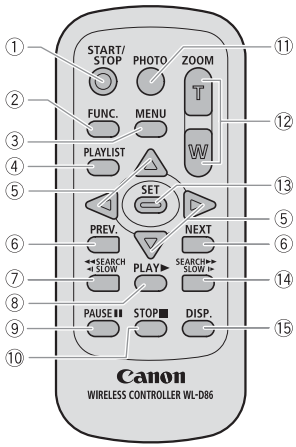
⑳ Tripod socket (📖 31)

㉑ OPEN (disc cover) switch (📖 25)

㉒ Strap mount

Names of buttons and switches other than the multi selector are indicated within a "button" frame (for example [MENU]).

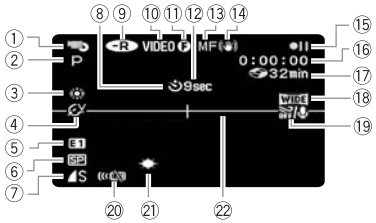
Wireless Controller WL-D86



① START/STOP button (📖 30)
② FUNC. button (📖 27)
③ MENU button (📖 27)
④ PLAYLIST button (📖 63)
⑤ Navigation buttons (▲/▼/◀/▶)
⑥ PREV./NEXT buttons: Scene skip (📖 34)/ Index screen page up/down (📖 33)
⑦ Reverse ◀◀ SEARCH button (📖 34) / Reverse ◀❙ SLOW button (📖 34)
⑧ PLAY ▶ button (📖 33)
⑨ PAUSE ❚❚ button (📖 33)
⑩ STOP ■ button (📖 33)
⑪ PHOTO button (📖 31)
⑫ Zoom buttons (📖 33)
⑬ SET button
⑭ Forward SEARCH ▶▶ button (📖 34) / Forward SLOW ❙▶ button (📖 34)
⑮ DISP. (on-screen display) button (📖 37)

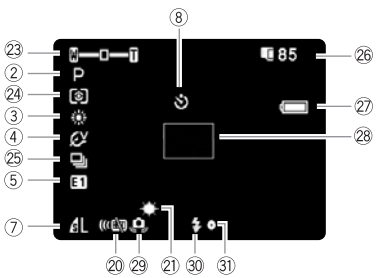
Screen Displays

CAMERA · Recording Movies



① Operating mode (📖 13)
② Recording program (📖 46)
③ White balance (📖 51)
④ Image effect (📖 52)
⑤ Digital effects (📖 59)
⑥ Recording mode (📖 44)
⑦ Still image quality/size (📖 53)
⑧ Self timer (📖 57)
⑨ Disc type -R DVD-R, -RDL DVD-R DL, -RW DVD-RW (📖 6)
⑩ Disc specification (VIDEO mode, VR mode) (📖 6)
⑪ Finalized disc mark (📖 71)
⑫ Recording reminder
⑬ Manual focus (📖 50)
⑭ Image stabilizer (📖 38)
⑮ Disc operation
⑯ Time code (hours : minutes : seconds)
⑰ Remaining recording time on disc (📖 30)
⑱ Widescreen mode (📖 31)
⑲ Wind screen (📖 39)
⑳ Remote sensor mode (📖 23)
㉑ LED light (📖 58)
㉒ Level marker (📖 41)
㉓ Zoom (📖 33), Exposure ⊶—I—o (📖 49)
㉔ Metering mode (📖 50)
㉕ Drive mode (📖 55)
㉖ Number of still images available
on the card, on the disc
㉗ Remaining battery charge
㉘ AF frame (📖 50)
㉙ Camcorder shake warning (📖 38)
㉚ Flash (📖 58)
㉛ AF/AE locked during still image recording (📖 31)

CAMERA · Recording Still Images



⑫ **Recording reminder**
The camcorder counts from 1 to 10 seconds when you start recording. This is helpful to avoid scenes that are too short.

⑮ **Disc operation**
● Record, ● ❚❚ Record pause,
▶ Playback, ❚❚ Playback pause,
▶▶ Fast playback,
◀◀ Fast reverse playback,
❙▶ Slow playback,
◀❙ Slow reverse playback,
❙❙▶ Frame advance,
◀❙❙ Frame reverse

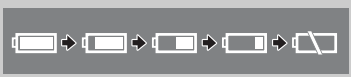
⑰ **Remaining recording time**
When there is no more disc space available, "END" will be displayed and the recording will stop.

㉖ **Number of still images available on the card/disc**
- flashing in red: No card
- in green: 6 or more images
- in yellow: 1 to 5 images
- in red: No more images can be recorded

• When viewing the still images, the display will always be in green.
• will be displayed instead of for still images on the disc.
• Depending on the recording conditions, the number of still images available displayed may not decrease even after a recording has been made, or may decrease by 2 still images at once.

Card/Disc Access Display
"▶" is displayed next to the number of images available while the camcorder is writing on the memory card or disc.

㉗ **Remaining battery charge**



• When "" starts flashing in red replace the battery pack with a fully charged one.
• When you attach an empty battery pack, the power may turn off without displaying "".
• Depending on the conditions under which the camcorder and the battery pack are used, the actual battery charge may not be indicated accurately.

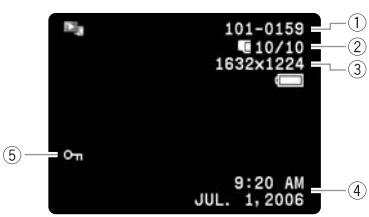
PLAY · Playing Movies (Index Screen)

① Current scene number
② Total number of scenes (📖 33)
③ Date and time of recording

PLAY · Playing Movies (During Playback)

① Disc operation
② Playback time (hours : minutes : seconds)
③ Scene number
④ Data code (📖 37)

PLAY · Viewing Still Images

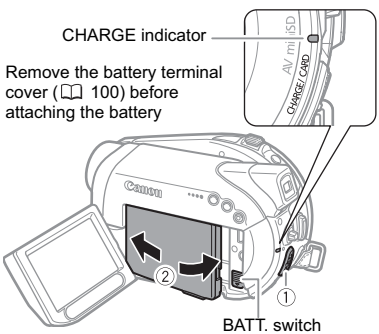


① Image number (📖 42)
② Current image / Number of images recorded on the card, recorded on the disc
③ Still image size
④ Data code (📖 37)
⑤ Image protection mark (📖 69)

Getting Started

Preparing the Power Supply

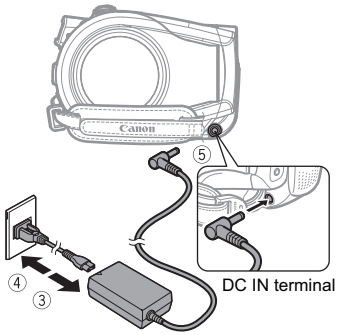
The camcorder can be powered with a battery pack or directly using the compact power adapter. Charge the battery pack before use.



1 Turn off the camcorder.

2 Attach the battery pack to the camcorder.

- Open the LCD panel.
- Slide in the connector end of the battery in the direction of the arrow and press it gently until it clicks.



3 Connect the power cord to the compact power adapter.

4 Plug the power cord into a power outlet.

5 Connect the compact power adapter to the camcorder's DC IN terminal.

- The CHARGE indicator starts flashing. The indicator will stay on when the charging is completed.
- You can also use the compact power adapter without attaching a battery pack.
- When the compact power adapter is connected, even if a battery is attached its power will not be consumed.

Recording Mode		Maximum Recording Time	Typical Recording Time*	Playback Time
XP	Viewfinder	70 min.	40 min.	90 min.
	LCD [NORMAL]	70 min.	40 min.	
	LCD [BRIGHT]	70 min.	40 min.	
SP	Viewfinder	80 min.	45 min.	100 min.
	LCD [NORMAL]	80 min.	45 min.	
	LCD [BRIGHT]	75 min.	45 min.	
LP	Viewfinder	90 min.	45 min.	110 min.
	LCD [NORMAL]	85 min.	45 min.	
	LCD [BRIGHT]	85 min.	45 min.	

* Approximate times for recording with repeated operations such as start/stop, zooming, power on/off.

ONCE THE BATTERY IS FULLY CHARGED

1 **Disconnect the compact power adapter from the camcorder.**
2 **Unplug the power cord from the power outlet and the compact power adapter.**

TO REMOVE THE BATTERY PACK

Slide down BATT. to release the battery pack, and pull out the battery pack holding it from the ridge on its bottom part.

Charging, Recording and Playback Times with the BP-208 Battery Pack

The charging time of the BP-208 battery pack is 155 min.

The recording and playback times given in the table on the previous page are approximate and vary according to the charging, recording or playback conditions.

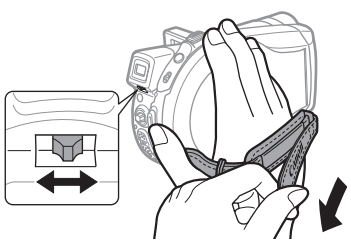
IMPORTANT

- Turn off the camcorder before connecting or disconnecting the compact power adapter. After you turn off the power switch to OFF important file allocation data is updated on the disc. Be sure to wait until the LCD display is completely off.
- You may hear some noise from the compact power adapter during use. This is not a malfunction.
- We recommend charging the battery pack in temperatures between 10 °C and 30 °C (50 °F and 86 °F). Outside the temperature range of 0 °C to 40 °C (32 °F to 104 °F), the charging will not start.
- Do not connect to the camcorder's DC IN terminal or to the compact power adapter any electrical equipment that is not expressly recommended for use with this camcorder.
- To prevent equipment breakdowns and excessive heating, do not connect the supplied compact power adapter to voltage converters for overseas travels or special power sources such as those on aircraft and ships, DC-AC inverters, etc.

NOTES

- If you connect a faulty power adapter or battery pack, the CHARGE indicator flashes rapidly (approx. twice per second) and the charging stops.
- The CHARGE indicator also serves as a rough estimate of the battery charge status.
  Continuously on: Battery fully charged.
  Flashes approx. twice per second: Battery over 50% charged.
  Flashes approx. once per second: Battery less than 50% charged.
- The charging time will vary depending on the surrounding temperature and the battery pack's initial charge condition.
- In cold places, the effective usage time of the battery will decrease.
- We recommend that you prepare battery packs 2 to 3 times longer than you think you might need.
- **U.S.A. and Canada only:** The lithium ion/polymer battery that powers this product is recyclable. Please call 1-800-8-BATTERY for information on how to recycle this battery.

Preparing the Camcorder

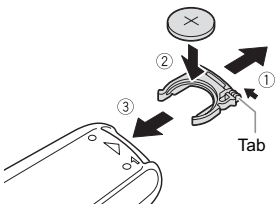


1 **Turn on the camcorder.**
The lens cover will open automatically.
2 **Adjust the viewfinder.**
Keep the LCD panel closed to use the viewfinder and adjust the dioptric adjustment lever as necessary.

3 Fasten the grip belt.
Adjust the grip belt so that you can reach the zoom lever with your index finger, and the start/stop button with your thumb.

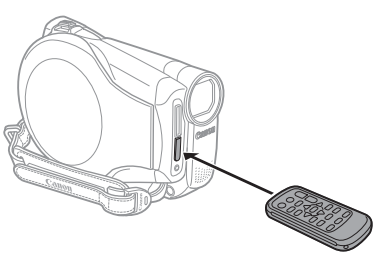
The Wireless Controller

Inserting the Battery (Lithium Button Battery CR2025)



1 Press the tab in the direction of the arrow and pull out the battery holder.
2 Place the lithium button battery with the + side facing up.
3 Insert the battery holder.

Using the Wireless Controller



Point the controller at the camcorder's remote sensor when you press the buttons.

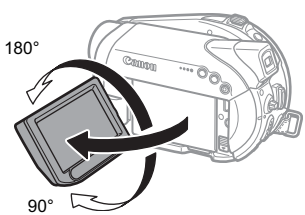
NOTES

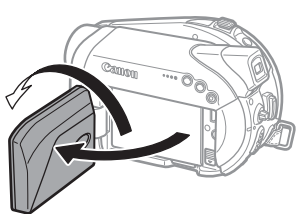
- The wireless controller may not work properly when the remote sensor is situated under strong light sources or direct sunlight.
- If the wireless controller does not work, check that [WL.REMOTE] is not set to [OFF] (📖 42).
- When the camcorder cannot be operated with the wireless controller, or when it can only be operated at a very close range, replace the battery.

Adjusting the LCD Screen

Rotating the LCD Panel

Open the LCD panel 90 degrees.
• You can rotate the panel 90 degrees downward.
• You can rotate the panel 180 degrees toward the lens (allowing the subject to monitor the LCD screen while you use the viewfinder). Rotating the panel 180 degrees is also useful if you wish to include yourself when recording with the self timer.





Subject can monitor the LCD screen

LCD Backlight

You can switch the brightness of the LCD screen to [NORMAL] or [BRIGHT].

MENU (📖 27)

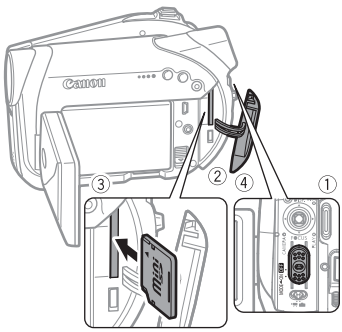
1. **Turn on the camcorder.**
2. **Press** [MENU].
3. **Select (▲▼) [DISPLAY SETUP] and press (◎).**
4. **Select (▲▼) [BACKLIGHT] and press (◎).**
5. **Select (▲▼) the desired option and press (◎).**
6. **Press** [MENU] **to close the menu.**

NOTES

- This setting does not affect the brightness of the recording or the viewfinder screen.
- Using the [BRIGHT] setting will shorten the effective usage time of the battery.

Inserting and Removing a Memory Card

Only miniSD cards can be used with this camcorder.



1. **Turn off the camcorder.**
2. **Open the memory card slot cover.**
3. **Insert the memory card straight all the way into the memory card slot.**
4. **Close the cover.**
   Do not force the cover closed if the memory card is not correctly inserted.

TO REMOVE THE MEMORY CARD

First push the memory card once to release it, and then pull the card out.

IMPORTANT

Make sure to initialize all memory cards before using them with this camcorder (📖 70).

NOTES

Performance cannot be guaranteed for all miniSD cards.

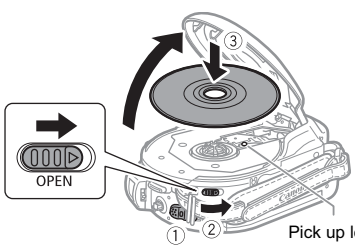
Inserting and Removing a Disc

Use only 8 cm (3 in.) mini DVD discs marked with the DVD-R logo (including DVD-R DL) or the DVD-RW logo. Refer also to *Recommended discs* (🕮 8).
Before inserting the disc be sure to check that the recording surface is clean. If necessary, use a soft lens-cleaning cloth to remove any fingerprints, dirt buildup or smudges from the disc surface.

Inserting the Disc

POINTS TO CHECK

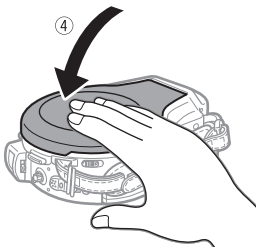
CAMERA | CAMERA | PLAY | PLAY (🕮 13)



1 Move the power switch to ON to set the camcorder in CAMERA mode.

2 Slide OPEN fully in the direction of the arrow and gently open the disc cover completely until it stops.
Retract the grip belt under the camcorder so it will not get in the way of the disc cover.

3 Insert the disc and press its center firmly until it clicks in place.
• Insert the disc with the recording side facing down (single sided discs – label side facing out).
• Be careful not to touch the recording surface of the disc or the pick up lens.



4 Close the disc cover.
Do not force the cover closed if the disc is not correctly inserted and firmly set in place.

When using DVD-R/DVD-R DL discs

You can start recording movies once the record pause ● ❚❚ indication appears.

When using a DVD-RW

You need to initialize new discs before you can start recording. The disc initialization screen will appear when a new DVD-RW is first inserted. It will not appear when inserting a disc already initialized. In that case, you can start recording once the record pause ● ❚❚ indication appears.

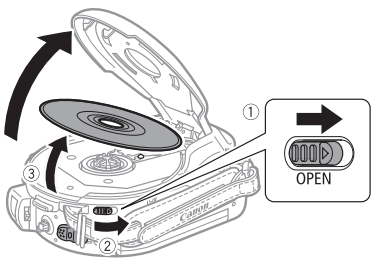
① Select (▲▼) the desired disc specification and press (⬡). For a comparison between the [VIDEO] and [VR] specifications, see *An Introduction to DVDs* (🕮 6).
② You will be asked to confirm the disc specification you selected. Select (▲▼) [YES] and press (⬡) to continue, or select [NO] and press (⬡) to return and select a different disc specification.
③ A confirmation message will appear on the screen. Select (▲▼) [YES] and press (⬡) to start the disc initialization.
• The disc initialization will take approximately one minute. Avoid

moving the camcorder while the operation is in progress.
• You can start recording movies once the record pause ● ❚❚ indication appears.

IMPORTANT

The process of recognizing a disc may take a moment. The display will move while the disc is being read. Wait until the camcorder finishes recognizing the disc before you start recording.

Removing the Disc



1 **Move the power switch to ON.**
2 **Slide [OPEN] fully in the direction of the arrow and gently open the disc cover completely until it stops.**
• Do not subject the camcorder to strong impacts while the DISC access indicator is on or flashing.
• Retract the grip belt under the camcorder so it will not get in the way of the disc cover.
• It may take a moment after sliding [OPEN] for the disc cover to open.
3 **Grab the edge of the disc and gently pull it out.**
Be careful not to touch the recording surface of the disc or the pick up lens.
4 **Close the disc cover.**

IMPORTANT

When you slide [OPEN] after making a recording, important file allocation data is updated on the disc before the disc cover opens. While the DISC access indicator is on or flashing do not subject the camcorder to shocks such as forcefully laying it on a table.

Using the Menus

Many of the camcorder's functions can be adjusted from the menus that open after pressing the MENU button (MENU) and the FUNC. button (FUNC.).

For details about the available menu options and settings, refer to *Options Lists - MENU/FUNC.* (📖 38).

Selecting a MENU Option

MENU (📖 27)

1 **Press** MENU.

2 **Select (▲▼) the desired menu from the left side column and press (◎).**
The title of the selected menu appears on top of the screen and under it the list of settings.

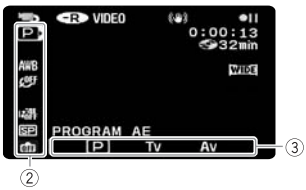
3 **Select (▲▼) the setting you want to change and press (◎).**
• The orange selection bar indicates the menu setting currently selected. Items not available appear in black.
• To return to the menu selection screen, select (▼) [RETURN] and press (◎).

4 **Select (▲▼) the desired option and press (◎) to save the setting.**

5 **Press** MENU.
You can press MENU to close the menu at any time.

Selecting a FUNC. Menu Option

FUNC. (📖 27)



1 **Press** FUNC.

2 **Select (▲▼) the icon of the function you want change from the left side column.**
Menu items not available will appear grayed out.

3 **Select (◀▶) the desired setting from the available options at the bottom bar.**
• The selected option will be highlighted in light blue.
• With some settings, you will need to make further selections (▲▼, ◀▶) and/or press (◎). Follow the additional operation guides that will appear on the screen (such as the SET icon, small arrows, etc.).

4 **Press** FUNC. **to save the settings and close the menu.**
You can press FUNC. to close the menu at any time.

First Time Settings

Changing the Language

Options ♦ Default value

[DEUTSCH]	[РУССКИЙ]
[ENGLISH]♦	[简体中文]
[ESPAÑOL]	[繁體中文]
[FRANÇAIS]	[한국어]
[ITALIANO]	[ภาษาไทย]
[POLSKI]	[日本語]

MENU (📖 27)

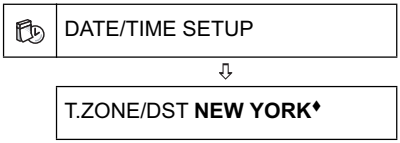
1. **Press [MENU].**
2. **Select (▲▼) [DISPLAY SETUP] and press (◯).**
3. **Select (▲▼) [LANGUAGE] and press (◯).**
4. **Select (▲▼, ◀▶) the desired option and press (◯).**
5. **Press [MENU] to close the menu.**

NOTES

- If you changed the language by mistake, follow the mark next to the menu item to change the setting.
- The displays SET and MENU that appear on screen while changing the print and direct transfer settings will not change regardless of the language selected.

Changing the Time Zone

♦ Default value



MENU (📖 27)

1. **Press [MENU].**
2. **Select (▲▼) [DATE/TIME SETUP] and press (◯).**
3. **Select (▲▼) [T.ZONE/DST] and press (◯).**
   The time zone setting appears. The default setting is New York.
4. **Select (▲▼) your time zone and press (◯).**
   To adjust for daylight saving time, select the time zone with the ☀ mark next to the area.

Time Zones

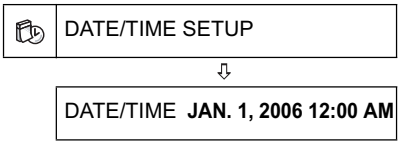
Once you have set the time zone, date and time, you do not need to reset the clock every time you travel to another time zone. Select the time zone referring to the date and time displayed on the screen.

Time Zones and Difference from GMT/UTC

London	GMT/UTC
Paris	+1
Cairo	+2
Moscow	+3
Dubai	+4
Karachi	+5
Dacca	+6
Bangkok	+7
Singapore	+8
Tokyo	+9

Sydney	+10
Solomon	+11
Wellington [WELLINGTN]	+12
Samoa	-11
Honolulu	-10
Anchorage	-9
Los Angeles [L.A.]	-8
Denver	-7
Chicago	-6
New York♦	-5
Caracas	-4
Rio de Janeiro [RIO]	-3
Fernando de Noronha [FERNANDO]	-2
Azores	-1

Setting the Date and Time



MENU (📖 27)

1 **Press** MENU.
2 **Select (▲▼) [DATE/TIME SETUP] and press (◎).**
3 **Select (▲▼) [DATE/TIME] and press (◎).**
The month is displayed in orange.
4 **Select (▲▼) the month and move (►) to the day setting.**
• The next part of the date/time is displayed in orange.
• Set the day, year, hours and minutes in the same way.
• If you do not need to change all settings, move (◄►) to a specific setting you want to change.
5 **Press** MENU **to close the menu and start the clock.**

IMPORTANT

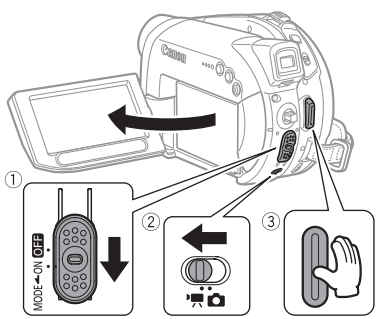
● When you do not use the camcorder for about 3 months, the built-in rechargeable lithium battery may discharge completely and the date and time setting may be lost. In such case, connect the compact power adapter to the camcorder, recharge the built-in lithium battery (📖 101) and set the time zone, date and time again.
● You can also change the date format (📖 43).

Recording

Recording Movies

Before You Begin Recording
Make a test recording first to check if the camcorder operates correctly. Since recordings made on a DVD-R or DVD-R DL disc cannot be deleted, we recommend you use a DVD-RW disc to make the test recordings.

CAMERA CAMERA | PLAY PLAY (📖 13)



1 Move the power switch to ON to set the camcorder in CAMERA mode.
The red CAMERA indicator will turn on.

2 Move the 🎥/📷 switch to the 🎥 (Movies) position.

3 Press Start/Stop to begin recording.
• The recording starts; press Start/Stop again to pause the recording.
• The DISC access indicator will flash while recording and will stay on briefly after pausing while the scene is recorded on the disc.

When you have finished recording

1 Remove the disc.

2 Turn off the camcorder.

3 Disconnect the power source and remove the battery pack.

4 Close the LCD panel.

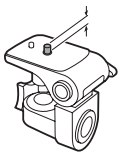
IMPORTANT

Avoid the following actions while the DISC access indicator is on or flashing. Failing to do so may result in permanent data loss.
- Do not subject the camcorder to vibrations or strong impacts.
- Do not open the disc cover and do not remove the disc.
- Do not disconnect the power source or turn off the camcorder.
- Do not change the operating mode.

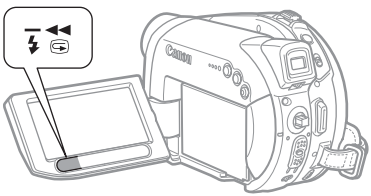
NOTES

● **About the recording time**: By changing the recording mode you can change the recording time available on the disc (📖 44).
● When recording in bright places it may be difficult to use the LCD screen. In such case, use the viewfinder instead.
● When recording in very loud places (such as fireworks shows or concerts), sound may become distorted or it may not be recorded at the actual levels. This is not a malfunction.
● **About the Power Save mode**: In order to save power when the camcorder is powered by a battery pack, the camcorder will automatically shut off if left without any operations for 5 minutes (📖 42). To restore the power, slide the power switch towards MODE and release it, or move the power switch to OFF and back to ON.
● **About the LCD and viewfinder screen**: The screens are produced using extremely high-precision manufacturing techniques, with more than 99.99% of the pixels operating to specification. Less than 0.01% of the pixels may occasionally misfire or appear as black, red, blue or green dots. This has no effect on the recorded image and does not constitute a malfunction.

● **When using a tripod**: Do not leave the viewfinder exposed to direct sunlight as it may melt (due to concentration of the light by the lens). Do not use tripods with fastening screws longer than 5.5 mm (0.2 inch). Doing so may damage the camcorder.



Reviewing the Last Scene Recorded



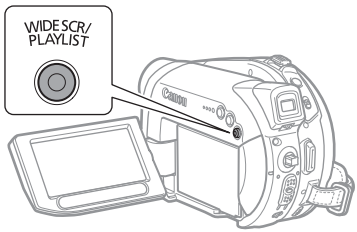
Press ⏎ (record review).
• The camcorder plays back the last scene and returns to record pause mode.
• While reviewing the scene, select (◀▶) the ⮌ icon and press (⏺) to return to the recording mode.
• While reviewing a scene immediately after recording it, you can also delete the scene by selecting (◀▶) the 🗑 icon (🕮 64).

Selecting the Aspect Ratio of your Recordings (16:9 Widescreen or 4:3)

You can select the aspect ratio of your recording to match your TV.

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (🕮 13)



Press WIDE SCR**.**
Repeatedly pressing WIDE SCR toggles between the widescreen (16:9) and normal (4:3) aspect ratios.

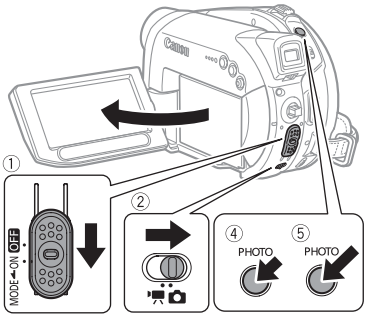
NOTES

● When recording in widescreen mode, with [IMG STAB] set to [OFF] (🕮 38), you can have a wider view angle.
● **Playing back a widescreen recording:** TV sets compatible with the Video ID-1 system will automatically switch to wide (16:9) mode. Otherwise, change the aspect ratio of the TV manually. To play back on a TV with normal aspect ratio (4:3) change the [TV TYPE] setting accordingly (🕮 43).

Recording Still Images

Before using a memory card for the first time, be sure to initialize it with this camcorder (🕮 70).

CAMERA | CAMERA | PLAY | PLAY (🕮 13)



1 Move the power switch to ON to set the camcorder in CAMERA mode.
The red CAMERA indicator will turn on.

2 Move the 🎥/📷 switch to the 📷 (Still images) position.

3 If necessary, change the media for recording the still images.
Refer to *Selecting the Media for the Still Images* (📖 32).

4 Press PHOTO halfway.
• Once the focus is automatically adjusted, ◉ will turn green and one or more AF frames appear.
• When you press PHOTO on the wireless controller, the still image is recorded immediately.

5 Press PHOTO fully.
The CARD access or DISC access indicator will flash as the image is being recorded.

IMPORTANT

Avoid the following actions while the disc/card access display (▶ 💿 or ▶ 🎴) appears on screen, and when either the DISC access or CARD access indicator is on or flashing. Failing to do so may result in permanent data loss.
- Do not subject the camcorder to vibrations or strong impacts.
- Do not open the disc cover or the memory card slot cover and do not remove the disc or memory card.
- Do not disconnect the power source or turn off the camcorder.
- Do not change the position of the 🎥/📷 switch or the operating mode.

NOTES

If the subject is not suitable for autofocus, ◉ turns yellow. Keep PHOTO pressed halfway and adjust the focus manually with the multi selector (◀▶).

Selecting the Media for the Still Images

You can record still images on the memory card or the disc. The default media for still images is the memory card. As long as you do not change the recording destination, still images will be recorded on the last selected media.

CAMERA | **CAMERA** | PLAY | PLAY (📖 13)

MENU (📖 27)

1 Press MENU.

2 Select (▲▼) [SYSTEM SETUP] and press (◉).

3 Select (▲▼) [MEDIA SEL. 📷] and press (◉).

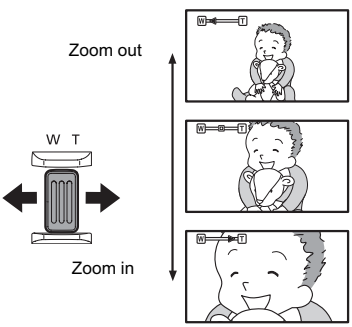
4 Select (▲▼) [DISC] or [CARD] and press (◉) to save the setting and close the menu.
When recording, the operating mode symbol will change to 📷 (DISC stills) or 📷 (CARD stills), depending on the media selected. In playback mode, the operating mode symbol will change to 🖼 (DISC stills) or 🖼 (CARD stills), respectively.

Zooming

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

CAMERA · : In addition to the 10x optical zoom, the 200x digital zoom is also available (📖 38).



10x Optical Zoom

Move the zoom lever toward W to zoom out (wide-angle). Move it toward T to zoom in (telephoto).
You can also change the zoom speed (📖 38). You can select one of three fixed zoom speeds or a variable speed that depends on how you operate the zoom lever: Press gently for a slow zoom; press harder for faster zooms.

NOTES

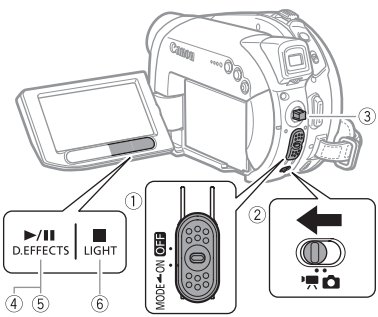
- You can also use the **T** and **W** buttons on the wireless controller. The zoom speed with the wireless controller will be the same as with the camcorder (when one of the fixed zoom speed levels is selected) or fixed at [SPEED 3] (when [VARIABLE] is selected).
- When set to [VARIABLE], the zoom speed will be faster in the record pause mode.
- Keep at least 1 m (3.3 ft.) to the subject. At wide-angle, you can focus on a subject as close as 1 cm (0.39 in.).

Playback

Playing Back Movies

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)



1. **Move the power switch to ON, then slide it down towards MODE and release it to set the camcorder in PLAY mode.**
   The green PLAY indicator will turn on.
2. **Move the /📷 switch to the (Movies) position.**
   The scene index screen appears with the selection frame on the first scene.
3. **Move (▲▼, ◀▶) the selection frame to the scene you want to play back.**
   Press + or − on the camcorder (NEXT or PREV. on the wireless controller) to move to the next/previous index page.
4. **Press ▶/II to begin the playback.**
   The playback will start from the scene selected and continue until the end of the last scene recorded.

DURING PLAYBACK

5. **Press ▶/II again to pause the playback.**

E

Basic Functions

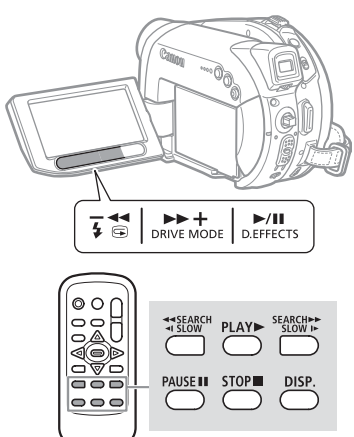
6 Press ■ to stop the playback and return to the scene index screen.

NOTES

- To use the viewfinder, close the LCD panel.
- When playing back a DVD-R DL (dual-layered) disc, you might notice a brief stop (approx. 1 second) at the point where the playback switches from Layer 1 to Layer 2.
- **About the screen display:** During playback, the recording's time code will be displayed at the upper right corner of the screen in hours : minutes : seconds. You can also choose to display instead the date and time when the scene was recorded and additional recording data (📖 37).
- As long as you don't turn off the camcorder you can resume playback from the point you stopped last.

Special Playback Modes

POINTS TO CHECK



▶▶ Fast Forward Playback / ◀◀ Fast Reverse Playback

During normal playback, press ▶▶ or ◀◀ on the camcorder (SEARCH ▶▶ or ◀◀ SEARCH on the wireless controller). Repeatedly press the button to increase the playback speed.
Fast playback: 5x → 15x → 25x the normal speed.

❚❚ Playback Pause

During normal playback, press ▶/❚❚ on the camcorder (PAUSE ❚❚ on the wireless controller).

❚▶ Slow Forward Playback / ◀❚ Slow Reverse Playback

During playback pause, press ▶▶ or ◀◀ on the camcorder (SLOW ❚▶ or ◀❚ SLOW on the wireless controller). Repeatedly press the button to increase the playback speed.
Slow playback: 1/16 → 1/8 → 1/4 the normal speed.

Skipping Scenes

During normal playback, push the multi selector (▶) on the camcorder (NEXT on the wireless controller) to skip to the beginning of the next scene. Push the multi selector (◀) on the camcorder (PREV. on the wireless controller) to return to the beginning of the current scene. Repeat to skip to the beginning of the previous scene.

NOTES

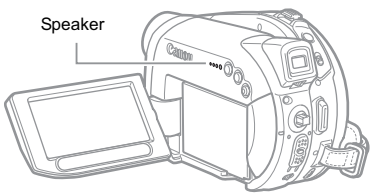
- There is no sound during special playback modes.
- During some special playback modes, you may notice some disturbances in the playback picture.
- Slow playback is not available with discs initialized in VIDEO mode.
- Depending on the recording, you might occasionally notice a brief stop of the picture or sound at the point where the scene changes.

E

Adjusting the Volume

The camcorder plays the sound with the built-in speaker. The volume will be muted when you close the LCD panel.

CAMERA | CAMERA | **PLAY** | PLAY (📖 13)



SYSTEM SETUP

⇩

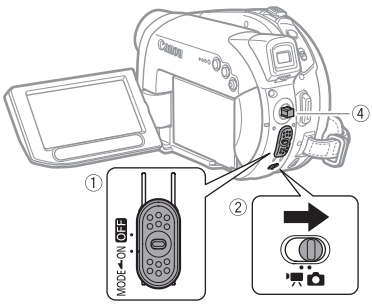
VOLUME

MENU (📖 27)

1 **Press MENU.**
2 **Select (▲▼) [SYSTEM SETUP] and press (⊙).**
3 **Select (▲▼) [VOLUME] and press (⊙).**
4 **Adjust (◀▶) the volume as desired and press (⊙).**
To turn off the volume completely, keep pressing (◀) until the volume icon changes to 🔇.
5 **Press MENU to save the setting and close the menu.**

Viewing Still Images

CAMERA | CAMERA | PLAY | **PLAY** (📖 13)



1 **Move the power switch to ON, then slide it down towards MODE and release it to set the camcorder in PLAY mode.**
The green PLAY indicator will turn on.
2 **Move the 🎥/📷 switch to the 📷 (Still images) position.**
3 **If necessary, change the media for the still images.**
Refer to *Selecting the Media for the Still Images* (📖 32).
4 **Use the multi selector (◀▶) to move between images.**

IMPORTANT

● The following may not be displayed correctly.
- Images not recorded with this camcorder.
- Images edited on or uploaded from a computer (except for the sample images for the Card Mix function).
- Images whose file names have been changed.

● Avoid the following actions while the disc/card access display (▶ 💿 or ▶ 🗂) appears on screen, and when either the DISC access or CARD access indicator is on or flashing. Failing to do so may result in permanent data loss.
- Do not subject the camcorder to vibrations or strong impacts.

Basic Functions

- Do not open the disc cover or the memory card slot cover and do not remove the disc or memory card.
- Do not disconnect the power source or turn off the camcorder.
- Do not change the position of the /📷 switch or the operating mode.

Slideshow

	SLIDESHOW

FUNC. (📖 27)

1 **Press [FUNC.].**
2 **Select (▲▼) [SLIDESHOW] and press ( ).**
3 **Select (◀▶) [START] and press ( ).**
• Images are played back one after another.
• Press [FUNC.] to stop the slideshow.

Index Screen

1 **Move the zoom lever toward W.**
The still images index screen appears.
2 **Select (▲▼, ◀▶) an image.**
• Move the cursor ☞ to the image you want to view.
• Press [+] or [−] on the camcorder ([NEXT] or [PREV.] on the wireless controller) to move to the next/previous index page.
3 **Move the zoom lever toward T.**
The index screen closes and the selected image is displayed.

Image Jump Function

You can also quickly locate a specific image without having to browse all of them one by one.

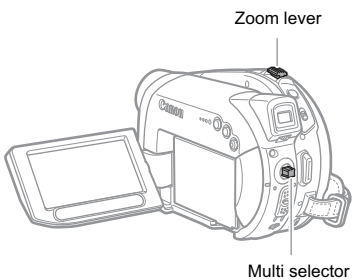
Push the multi selector (◀▶) and keep it pressed down.

Image numbers will quickly run in sequence. When you release the multi selector the image corresponding to the number selected will be displayed.

Magnifying the Still Image

During playback, still images can be magnified up to 5 times.

CAMERA CAMERA | PLAY PLAY (📖 13)



1 **Move the zoom lever toward T.**
• The image is magnified by 2 times and a frame appears indicating the position of the magnified area.
• To further enlarge the image, move the zoom lever toward T. To reduce the magnification to less than 2 times, move the zoom lever toward W.
• 🚫 will appear for images that cannot be enlarged.
2 **Select the part of the image to be magnified with the multi selector.**
• Move (▲▼, ◀▶) the frame to the part of the image you want to see enlarged.
• To cancel the magnification, move the zoom lever toward W until the frame disappears.

E

Selecting the Recording Data Display

The camcorder keeps a data code containing the recording date and time and other camera data such as shutter speed and exposure (f-stop). You can select the data to be displayed.

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

PLAY · 📷 : [DATE], [TIME], [DATE&TIME] only.

Options ♦ Default value

[DATE], [TIME]
Displays the date or time when the scene or still image was recorded.
[DATE & TIME]♦
Displays both the date and time of the recording.
[CAMERA DATA]
Displays the exposure (f-stop) and shutter speed used when recording the image.
[CAM.& D/T]
Displays the exposure, shutter speed, date and time of the recording.

DISPLAY SETUP

⇩

DATA CODE **DATE & TIME♦**

Selecting the Data Code

MENU (📖 27)

1 **Press** MENU.
2 **Select (▲▼) [DISPLAY SETUP] and press (◎).**
3 **Select (▲▼) [DATA CODE] and press (◎).**
4 **Select (▲▼) the desired option and press (◎).**
5 **Press** MENU **to close the menu.**

Turning the On-screen Displays On/Off

During playback, repeatedly press (▲) DISP. to turn the on-screen displays on/off in the following sequence:

All on-screen displays + data code display on
⇩
Only the data code display on
⇩
All on-screen displays off
↩

Basic Functions

Menu Options Lists

Menu items not available appear in black on the screen. For details about how to select an item, refer to *Using the Menus* (📖 27).

MENU Options

CAMERA SETUP

A.SL SHUTTER

CAMERA | CAMERA | PLAY | PLAY

Mode switch: P, SCN

[ON ON], [OFF OFF]

The camcorder automatically uses slow shutter speeds to obtain brighter recordings in places with insufficient lighting.

- The camcorder uses shutter speeds down to 1/30 (1/15 when recording still images).
- CAMERA · : Set the flash mode to (flash off).
- If a trailing afterimage appears, set the slow shutter to [OFF OFF].
- If (camcorder shake warning) appears, we recommend stabilizing the camcorder, for example, by mounting it on a tripod.

D.ZOOM

CAMERA | CAMERA | PLAY | PLAY

[OFF OFF], [40x 40X], [200x 200X]

Determines the operation of the digital zoom.

- When activated, the camcorder will switch automatically to the digital zoom when you zoom in beyond the optical zoom range.
- With the digital zoom the image is digitally processed, so the image resolution will deteriorate the more you zoom in.
- The digital zoom indicator will appear in light blue from 10x up to 40x and dark blue from 40x up to 200x.
- The digital zoom cannot be used with the [NIGHT] recording program (SCN) or with the multi-image screen.

AF AST LAMP

(📖 58)

CAMERA | CAMERA | PLAY | PLAY

[A AUTO], [OFF OFF]

ZOOM SPEED

CAMERA | CAMERA | PLAY | PLAY

[VAR. VARIABLE], [SPEED 3], [SPEED 2], [SPEED 1]

- When set to [VAR. VARIABLE] the zoom speed depends on how you operate the zoom lever: Press lightly for a slow zoom; press harder for faster zooms.
- The fastest zoom speed can be achieved with [VAR. VARIABLE]. Among the fixed zoom speeds, [SPEED 3] is the fastest and [SPEED 1] the slowest.

IMG STAB

CAMERA | CAMERA | PLAY | PLAY

Mode switch: P, SCN

[ON ON], [OFF OFF]

The image stabilizer compensates for camcorder shake even at full telephoto.

- The image stabilizer is designed to compensate for a normal degree of camcorder shake.

● The image stabilizer may not be effective when recording in dark places using the [NIGHT] recording program (SCN).
● The image stabilizer cannot be turned off when the mode switch is set to AUTO.
● We recommend setting the image stabilizer to [OFF] when using a tripod.

FOCUS PRI.

CAMERA | CAMERA | PLAY | PLAY

[ON ON], [OFF OFF]
The camcorder records the still image only after the focus has been adjusted.
● Set it to [OFF OFF] if you wish to record a still image as soon as you press PHOTO. When set to [OFF OFF], no focusing frame appears.
● Focus priority cannot be turned off when the mode switch is set to AUTO.
● In the [FIREWORKS] recording program (SCN) the setting is automatically set to [OFF OFF].

REVIEW

CAMERA | CAMERA | PLAY | PLAY

[OFF OFF], **[2s 2sec]**, [4s 4sec], [6s 6sec], [8s 8sec], [10s 10sec]
Selects the time to display a still image after it has been recorded on the memory card.
● You can erase (📖 67) or protect (📖 69) the image if you press FUNC. while you are reviewing the image (or immediately after recording it, if set to [OFF OFF]).
● This menu item will not be available when (continuous shooting), (high-speed continuous shooting) or (auto exposure bracketing) is selected.

WIND SCREEN

CAMERA | CAMERA | PLAY | PLAY

Mode switch: P, SCN
[A AUTO], [OFF OFF]
The camcorder automatically reduces the background sound of wind when recording outdoors.
● The wind screen cannot be turned off when the mode switch is set to AUTO.
● Some low-frequency sounds will be suppressed along with the sound of wind. When recording in surroundings unaffected by wind or if you want to record low-frequency sounds, we recommend setting the wind screen to [OFF OFF].

SELF TIMER (📖 57)

CAMERA | CAMERA | PLAY | PLAY

[ON ON], **[OFF OFF]**

DISC OPERATIONS

DISC INFO

CAMERA | CAMERA | PLAY | PLAY

Displays a screen where you can verify the details regarding the disc.
● The disc information includes the disc title, the disc type (DVD-R, DVD-R DL or DVD-RW), the disc specification (VIDEO mode or VR mode), and icons that indicate if the disc is finalized ( ) or protected ( ).

DISC INITIALIZE (📖 65)

CAMERA | CAMERA | PLAY | PLAY

[VIDEO], [VR], [CANCEL]

FINALIZE (📖 71)

[NO], [YES]

UNFINALIZE (📖 72)

[NO], [YES]

MOVIES ALL DEL (📖 64)

[NO], [YES]
This option is available only in the original index screen.

PLAYLST ALL DEL (📖 64)

[NO], [YES]
This option is available only in the playlist index screen.

DISC PROTECT (📖 65)

[NO], [YES]

PHOTOMOVIE (📖 68)

[NO], [YES]

DISC TITLE (📖 66)

STILL IMG OPER.

ORD.ALL ERASE (📖 89)

[NO], [YES]

ORD.ALL ERASE (📖 84)

[NO], [YES]

ERASE ALL IMAGES (📖 67)

[NO], [YES]

CARD INITIALIZE (📖 70)

[NO], [YES]

ALL COPY [➡] (📖 68)

[NO], [YES]

ALL COPY [➡] (📖 68)

[NO], [YES]

* The following options are available only when you press [MENU] in the index screen.

➡ PROTECT* (📖 69)

CAMERA CAMERA | PLAY **PLAY**

[NO], [YES]

➡ PRINT ORDER* (📖 88)

CAMERA CAMERA | PLAY **PLAY**

[NO], [YES]

➡ TRANSFER ORDER* (📖 84)

CAMERA CAMERA | PLAY **PLAY**

[NO], [YES]

DISPLAY SETUP

BRIGHTNESS

CAMERA CAMERA | PLAY PLAY

Adjusts the brightness of the LCD screen.

- Use the multi selector (◀▶) to adjust the brightness to your preference.
- Changing the brightness of the LCD screen does not affect that of the viewfinder or the recordings.

BACKLIGHT (📖 24)

CAMERA CAMERA | PLAY PLAY

[NORMAL], [BRIGHT]

- The setting will automatically change to [BRIGHT] when powering the camcorder with the compact power adapter.

LCD MIRROR

CAMERA CAMERA | PLAY PLAY

[ON], [OFF]

When the LCD panel is rotated 180 degrees to face the subject, most screen displays will disappear and the image displayed will be as if the subject was looking at a mirror.

TV SCREEN

CAMERA CAMERA | PLAY PLAY

[ON], [OFF]

When set to [ON], the camcorder's on-screen displays will appear also on the screen of a connected TV or monitor.

- You can also operate this function pressing [DISP.] on the wireless controller.

DATA CODE (📖 37)

CAMERA CAMERA | **PLAY** PLAY

[DATE], [TIME], **[DATE & TIME]**, [CAMERA DATA], [CAM. & D/T]

CAMERA CAMERA | PLAY **PLAY**

[DATE], [TIME], **[DATE & TIME]**

LEVEL MARKER

CAMERA CAMERA | PLAY PLAY

[ON], **[OFF]**

A horizontal line will appear at the center of the screen. You can frame the picture by referring to the level marker. The level marker will not appear on the recorded picture.

LANGUAGE (📖 28)

CAMERA CAMERA | PLAY PLAY

[DEUTSCH], **[ENGLISH]**, [ESPAÑOL], [FRANÇAIS], [ITALIANO], [POLSKI], [РУССКИЙ], [简体中文], [繁體中文], [한국어], [ภาษาไทย], [日本語]

DEMO MODE

CAMERA CAMERA | PLAY PLAY

[ON ON], [OFF OFF]
The demonstration mode displays the camcorder's main features. It starts automatically when the camcorder is powered with the power adapter if you leave it turned on without loading a recording media for more than 5 minutes.
● To cancel the demo mode once it started, press any button, turn off the camcorder or load a recording media.

SYSTEM SETUP

MEDIA SEL. (📖 32)

CAMERA CAMERA | PLAY PLAY

[CARD], [DISC]

WL.REMOTE

CAMERA CAMERA | PLAY PLAY

[ON ON], [OFF OFF]
Allows the camcorder to be operated with the wireless controller.

VOLUME (📖 35)

CAMERA CAMERA | PLAY PLAY

BEEP

CAMERA CAMERA | PLAY PLAY

[HIGH VOLUME],
[LOW VOLUME], [OFF OFF]
A beep will accompany some operations like turning on the camcorder, the self-timer countdown, etc. It also serves as a warning beep under unusual conditions.

POWER SAVE

CAMERA CAMERA | PLAY PLAY

[ON ON], [OFF OFF]
In order to save power when the camcorder is powered by a battery pack, it will automatically shut off if left without any operation for five minutes. Approximately 30 seconds before the camcorder shuts off, the message "⚠AUTO POWER OFF" will appear.

FILE NOS.

CAMERA CAMERA | PLAY PLAY

[RESET], **[CONTINUOUS]**
Select the image numbering method to be used on a new memory card or disc.
Images are automatically assigned consecutive image numbers from 0101 to 9900, and stored in folders containing up to 100 images. Folders are numbered from 101 to 998.
[RESET]: Image numbers will restart from 101-0101 every time you insert a new memory card or disc.
[CONTINUOUS]: Image numbers will continue from the number following that of the last image recorded with the camcorder.
● If the recording media you insert already contains an image with a larger number, a new image will be assigned a

number one higher than that of the last image on the memory card or disc.
● We recommend using the [CONTINUOUS] setting.
● The setting is common to the memory card and the disc.

TV TYPE

CAMERA | CAMERA | PLAY | PLAY

[4:3 NORMAL TV], **[16:9 WIDE TV]**
In order to display the picture in full and in the correct aspect ratio, select the setting according to the type of television to which you will connect the camcorder.
[NORMAL TV]: TV sets with 4:3 aspect ratio.
[WIDE TV]: TV sets with 16:9 aspect ratio.
• When the TV type is set to [NORMAL TV], if you play back a recording made in widescreen (16:9) the picture displayed on the LCD screen will be smaller than the full display area.

DATE/TIME SETUP

CAMERA | CAMERA | PLAY | PLAY

T.ZONE/DST (📖 28)

DATE/TIME (📖 29)

DATE FORMAT

[Y.M.D (2006.1.1 AM 12:00)],
[M.D,Y (JAN. 1, 2006 12:00 AM)],
[D.M.Y (1.JAN.2006 12:00 AM)]
Changes the date format for on-screen displays and for date printing.

LINE-IN MODE

LINE-IN MODE (📖 75)

CAMERA | CAMERA | PLAY | PLAY

[➡ S VIDEO], [➡ VIDEO]

FUNC. Menu Options

Recording programs (📖 46)

CAMERA | CAMERA | PLAY | PLAY

Mode switch: P
[P PROGRAM AE],
[Tv SHUTTER-PRIO. AE],
[Av APERTURE-PRIO. AE]
Mode switch: SCN
[PORTRAIT], [SPORTS],
[NIGHT], [SNOW], [BEACH],
[SUNSET], [SPOTLIGHT],
[FIREWORKS]

Light metering mode (📖 50)

CAMERA | CAMERA | PLAY | PLAY

Mode switch: P
[EVALUATIVE],
[CENT.WEIGHT.AVERAGE],
[SPOT]

White balance (📖 51)

CAMERA | CAMERA | PLAY | PLAY

Mode switch: P
[AWB AUTO], [DAYLIGHT],
[SHADE], [CLOUDY],
[TUNGSTEN], [FLUORESCENT],
[FLUORESCENT H], [SET]

E

Advanced Functions

Image effect (📖 52)

CAMERA CAMERA | PLAY PLAY

Mode switch: P

[OFF IMAGE EFFECT OFF], [VIVID], [NEUTRAL], [LOW SHARPENING], [SOFT SKIN DETAIL], [CUSTOM]

Drive mode (📖 55)

CAMERA CAMERA | PLAY PLAY

Mode switch: P, SCN

[□ SINGLE], [CONT.SHOOT.], [HISPEED CONT.SH], [AEB], [STITCH AST]

Mode switch: AUTO

[□ SINGLE], [STITCH AST]

Digital effects (📖 59)

CAMERA CAMERA | PLAY PLAY

Mode switch: P, SCN

[OFF D.EFFECT OFF], [FADER], [EFFECT], [MULTI-S]*, [CARD MIX]

* Not available while using the [NIGHT] recording program.

CAMERA CAMERA | PLAY PLAY

Mode switch: P, SCN

[OFF D.EFFECT OFF], [E1 BLK&WHT]

Recording mode

CAMERA CAMERA | PLAY PLAY

[XP HIGH QUALITY], **[SP STANDARD PLAY]**, [LP LONG PLAY]

The table below gives the approximate recording times with a brand new DVD disc (on a single recording side).

Recording Mode	Disc Type	
	DVD-R, DVD-RW	DVD-R DL
XP	20 min.	36 min.
SP	30 min.	54 min.
LP	60 min.	108 min.

● Recording in LP mode gives you a longer recording time; however, depending on the condition of the disc (long usage, imperfections, etc.) the picture and sound recorded in LP mode may be distorted. We recommend using the XP or SP mode for important recordings.

● Depending on the recording mode, at the point where the scene changes you may notice brief disturbances in the playback picture or the time code may not be correctly updated.

● The camcorder uses a variable bit rate (VBR) when encoding the video data so the actual recording times will vary depending on the content of the scenes.

Still image recording (📖 54)

CAMERA CAMERA | PLAY PLAY

[OFF STILL I.REC OFF], [S FINE/640x480], [S NORMAL/640x480]

Still image size/quality (📖 53)

CAMERA CAMERA | PLAY PLAY

Size: **[L 1632x1224]**, [M 1280x960], [S 640x480]

Quality: [SUPER FINE], **[FINE]**, [NORMAL]

ADD TO PLAYLIST (📖 63)

CAMERA | CAMERA | **PLAY** | PLAY

[ALL SCENES], [ONE SCENE], [CANCEL]
Add a scene to the playlist. This option is available only from the original index screen.

MOVE (📖 63)

CAMERA | CAMERA | **PLAY** | PLAY

Move a scene in the playlist. This option is available only from the playlist index screen.

DIVIDE (📖 65)

CAMERA | CAMERA | **PLAY** | PLAY

Divide a scene.

DELETE (📖 63)

CAMERA | CAMERA | **PLAY** | PLAY

Delete a scene.

CONVERT TO SCENE (📖 68)

CAMERA | CAMERA | PLAY | **PLAY**

Convert a single still image into a 3-second scene.

COPY [🎞 ➡ 💿] (📖 68)

CAMERA | CAMERA | PLAY | **PLAY**

Copy a single still image from the memory card to the disc.

COPY [💿 ➡ 🎞] (📖 68)

CAMERA | CAMERA | PLAY | **PLAY**

Copy a single still image from the disc to the memory card.

IMAGE ERASE (📖 67)

CAMERA | **CAMERA** | PLAY | **PLAY**

Erase a still image.
CAMERA · 📷 : This option will appear only when the drive mode is set to [□ SINGLE] and you press FUNC. within the time set for the [REVIEW] option (or immediately after recording the still image, if set to [OFF OFF]).

SLIDESHOW (📖 36)

CAMERA | CAMERA | PLAY | **PLAY**

[CANCEL], [START]

PROTECT (📖 69)

CAMERA | CAMERA | PLAY | **PLAY**

[OFF], [ON]
Protect a still image on the memory card.

PRINT ORDER (📖 88)

CAMERA | CAMERA | PLAY | **PLAY**

[0] - [99] COPIES
Set a print order for a still image on the memory card.

TRANSFER ORDER (📖 84)

CAMERA | CAMERA | PLAY | **PLAY**

[OFF], [ON]
Set a transfer order for a still image on the memory card.

Using the Recording Programs

AUTO Auto

The camcorder adjusts the focus, exposure and other settings automatically, allowing you to just point and shoot.

P : Flexible Recording Programs

[P PROGRAM AE] (📖 47)

[Tv SHUTTER-PRIO. AE] (📖 48)

[Av APERTURE-PRIO. AE] (📖 48)

SCN: Special Scene Recording Programs

[PORTRAIT]
The camcorder uses a large aperture, achieving a focus on the subject while blurring other distracting details.

[SNOW]
Use this mode to record in bright ski resorts. It prevents the subject from being underexposed.

[SPOTLIGHT]
Use this mode to record spotlit scenes.

[SPORTS]
Use this mode to record sports scenes such as tennis or golf.

[BEACH]
Use this mode to record on a sunny beach. It prevents the subject from being underexposed.

[FIREWORKS]
Use this mode to record fireworks.

[NIGHT]
Use this mode to record in dimly lit places.

[SUNSET]
Use this mode to record sunsets in vibrant colors.

Selecting the Recording Program

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Move the mode switch between the recording categories.

AUTO Automatic mode
P Select one of the 3 Flexible recording programs (📖 46).
SCN Select one of the 8 Special Scene recording programs (📖 46).

To select a recording program

Set the mode switch to P or SCN.

FUNC. (📖 27)

FUNC. ⇨ Icon of the currently selected **Recording Program**

⇩

FUNC. ⇦ Desired option

NOTES

- Do not change the recording program while recording as the brightness of the image may change abruptly.
- [PORTRAIT]
  - The blur effect of the background increases the more you zoom in (**T**).
  - The picture may not appear smooth when played back.
- [SPORTS]
  - The picture may not appear smooth when played back.
- [NIGHT]
  - Moving subjects may leave a trailing afterimage.
  - Picture quality may not be as good as in other modes.
  - White points may appear on the screen.
  - Autofocus may not work as well as in other modes. In such case, adjust the focus manually.
- [SNOW]/[BEACH]
  - The subject may become overexposed on cloudy days or in shaded places. Check the image on the screen.
  - The picture may not appear smooth when played back.
- [FIREWORKS]
  - To avoid camcorder shake, we recommend using a tripod. Make sure to use a tripod especially in CAMERA · , as the shutter speed slows down.

P Programmed Auto Exposure

The camcorder automatically adjusts the aperture and shutter speed according to the subject to achieve the best exposure conditions. With [P PROGRAM AE], you can point and shoot as in AUTO mode, while still enjoying the option to manually adjust some settings.

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Mode switch: P

FUNC. (📖 27)

Select the recording program [P PROGRAM AE] as described in *Selecting the Recording Program* (📖 47).

NOTES

If the optimal exposure cannot be obtained, try the following actions.
- Manually adjust the exposure (📖 49).
- Change the light metering mode (📖 50).
- Use the flash (📖 58).
- Use the LED light (📖 58).

Tv Shutter-Priority AE

You can select a shutter speed, and the camcorder automatically sets the aperture setting most appropriate for the subject. Select a high shutter speed for recording fast moving subjects, and a slow shutter speed to add a motion blur to moving objects, enhancing the feel of movement of the image.

POINTS TO CHECK

CAMERA CAMERA | PLAY PLAY (📖 13)

Mode switch: P

Shutter speed guidelines

CAMERA · 🎥 CAMERA · 📷	1/8, 1/15, 1/30 1/2, 1/4, 1/8, 1/15, 1/30
For recording subjects in dark places.	
CAMERA · 🎥 CAMERA · 📷	1/60 1/60
For general recordings.	
CAMERA · 🎥 CAMERA · 📷	1/100 1/100
For recording indoor sports scenes.	
CAMERA · 🎥 CAMERA · 📷	1/250, 1/500, 1/1000 1/250, 1/500
For recording from within a car or train, or for recording moving subjects such as roller coasters.	
CAMERA · 🎥	1/2000
For recording outdoor sports such as golf or tennis on sunny days.	

FUNC. (📖 27)

1. **Select the recording program [Tv SHUTTER-PRIO.AE] as described in *Selecting the Recording Program* (📖 47).**
2. **Press (⊛).**
3. **Change (▲▼) the shutter speed and press (⊛) to save the setting.**

NOTES

- The shutter speed denominator flashes when the selected shutter speed is not appropriate for the recording condition. In such case, readjust the shutter speed.
- When using a slow shutter speed in dark places, you can obtain a brighter image, but the image quality may be lower, and the autofocus may not work well.
- Do not point the camcorder directly at the sun when the shutter speed is set to 1/1000 or higher.
- The picture may flicker when recording with high shutter speeds.
- **Recording movies under fluorescent lights:** In AUTO mode and when the recording program is set to [P PROGRAM AE] or [NIGHT] (SCN), the camcorder automatically detects the flicker of fluorescent lighting and adjusts the shutter speed accordingly. However, if the screen starts to flicker, select [Tv SHUTTER-PRIO.AE] and set the shutter speed to 1/100.

Av Aperture-Priority AE

You can select an aperture value, and the camcorder automatically sets the shutter speed most appropriate for the subject. Use low aperture values (large aperture) to blur the background for a portrait, or high aperture values (small aperture) to achieve a broad depth of field for recording landscapes.

POINTS TO CHECK

CAMERA CAMERA | PLAY PLAY (📖 13)

Mode switch: P

Available aperture values

[1.8], [2.0], [2.4], [2.8], [3.4], [4.0], [4.8], [5.6], [6.7], [8.0], [9.5], [11], [14], [16]

FUNC. (📖 27)

1. **Select the recording program [Av APERTURE-PRIO.AE] as described in *Selecting the Recording Program* (📖 47).**
2. **Press (◉).**
3. **Change (▲▼) the aperture value and press (◉) to save the setting.**
   Smaller aperture values (or f/ numbers) represent a larger lens opening, and vice versa.

NOTES

- Available aperture values vary depending on the zoom position.
- The aperture value flashes when the selected aperture is not appropriate for the recording condition. In such case, readjust the aperture.

Adjusting the Picture: Exposure, Focus and Color

E

Manual Exposure Adjustment

Adjust the exposure when a subject is underexposed (for example, when backlit subjects appear too dark in the image) or overexposed (for example, when recording subjects under very strong light and they appear too bright or glaring in the image).

POINTS TO CHECK

CAMERA CAMERA | PLAY PLAY (📖 13)

Mode switch: P, SCN (except for the [FIREWORKS] recording program).

1. **Press (▲) EXP.**
   - The exposure adjustment indicator ⊶—I—⊶ and the neutral value “±0” appear on the screen.
   - If you operate the zoom during exposure lock, the brightness of the image may change.
2. **Adjust (◀▶) the brightness of the image as required.**
   - The adjustment range and the length of the exposure adjustment indicator will vary depending on the brightness of the picture at the time you locked the exposure.
   - Pressing (▲) EXP again will cancel the exposure lock and return the camcorder to automatic exposure.

Light Metering Mode

You can select the light metering mode.

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Mode switch: P

Options ♦ Default value

[EVALUATIVE]♦
Appropriate for standard shooting conditions, including backlit scenes. The camcorder divides the picture into several areas and the light is measured in all of them to achieve the optimal exposure for the subject.
[CENT.WEIGHT.AVERAGE]
Averages the light metered from the entire screen, giving more weight to the subject in the center.
[SPOT]
Meters the area within the spot AE point frame. Use this setting to adjust the exposure to match the subject in the center of the screen.

FUNC. (📖 27)

FUNC. ⇨ Icon of the currently selected **Light Metering Mode**

⇩

FUNC. ⇦ Desired option

Automatic Focus Modes

You can change the AF (autofocus) frame selection mode.

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Options

9 Point AiAF (Mode switch: P, AUTO, SCN)
Depending on the shooting conditions, one or more AF frames out of the nine frames available are automatically selected and the focus is fixed on them. Four framing corners will appear on the screen when making the selection; they do not appear while actually recording.
Center point (Mode switch: P, SCN*)
The focus is automatically fixed to the center AF frame. This is convenient for making sure the focus is exactly where you want it. A single focusing frame appears in the center of the screen when making the selection; the frame will appear also while actually recording.

* Except for the [FIREWORKS] recording program.

Select (◀▶) the autofocus mode.

Manual Focus Adjustment

Autofocus may not work well on the following subjects. In such case, focus manually.

Reflective surfaces

Subjects with low contrast or without vertical lines

Fast Moving Subjects

Through dirty or wet windows

Night Scenes

POINTS TO CHECK

CAMERA CAMERA | PLAY PLAY (📖 13)

Mode switch: P, SCN

1 Adjust the zoom.
2 Press (▼) FOCUS.
"MF" appears.
3 Adjust (◀▶) the focus as required until the image appears focused.
Pressing (▼) FOCUS again will return to autofocus.

NOTES

- The camcorder will automatically return to autofocus when you set the mode switch to AUTO.
- Readjust the focus when you have turned off the camcorder.

Infinity Focus

Use this function when you wish to focus on faraway subjects such as mountains or fireworks.

CAMERA CAMERA | PLAY PLAY (📖 13)

Mode switch: P, SCN

1 Adjust the zoom.
2 Keep (▼) FOCUS pressed down for more than 2 seconds.
- ∞ appears.
- Pressing (▼) FOCUS again will return to autofocus.

NOTES

If you operate the zoom or the multi selector (◀▶) during infinity focus, ∞ changes to "MF" and the camcorder returns to manual focusing mode.

White Balance

You can choose one of the preset settings or set a custom white balance to obtain the setting best suited to your specific recording conditions.

POINTS TO CHECK

CAMERA CAMERA | PLAY PLAY (📖 13)

Mode switch: P

Options ♦ Default value

[AWB AUTO]♦
Settings are automatically set by the camcorder. Use this setting for outdoor scenes.
[☀ DAYLIGHT]
For recording outdoors on a bright day.
[SHADE]
For recording in shaded places.
[CLOUDY]
For recording on a cloudy day.
[TUNGSTEN]
For recording under tungsten and tungsten type (3-wavelength) fluorescent lighting.

[FLUORESCENT]
For recording under warm white, cool white or warm white type (3-wavelength) fluorescent lighting.
[FLUORESCENT H]
For recording under daylight or daylight type (3-wavelength) fluorescent lighting.
[SET]
Use the custom white balance setting to make white subjects appear white under colored lighting.

FUNC. (📖 27)

FUNC. ⇨ Icon of the currently selected **White Balance**

⇩

FUNC. ⇦ Desired option*

* When you select [SET], do not press FUNC. and continue instead with the procedure below.

To set the custom white balance

1. **Point the camcorder at a white object, zoom in until it fills the whole screen and press ( ).**
   Keep the camcorder zoomed at the white object until stops flashing.
2. **Press FUNC. to save the setting and close the menu.**

NOTES

- Depending on the type of fluorescent light, optimal color balance may not be obtained with [FLUORESCENT] or [FLUORESCENT H]. If the color looks unnatural, adjust it using [AUTO] or [SET].
- **When you have set the custom white balance:**
  - Depending on the light source, may keep flashing. The result will still be better than with [AUTO].
  - Reset the white balance when the lighting condition changes.
  - Turn off the digital zoom.
- The camcorder retains the custom white balance setting even if you turn it off.
- Custom white balance may provide better results in the following cases:
  - Changing lighting conditions
  - Close-ups
  - Subjects in a single color (sky, sea or forest)
  - Under mercury lamps and certain types of fluorescent lights

Image Effects

You can record with different color saturation and contrast effects.

POINTS TO CHECK

CAMERA CAMERA | PLAY PLAY (📖 13)

Mode switch: P

Options ♦ Default value

[**IMAGE EFFECT OFF**]♦
Records with no image enhancing effects.
[VIVID]
Emphasizes the contrast and color saturation.
[NEUTRAL]
Tones down the contrast and color saturation.
[LOW SHARPENING]
Records subjects with softened outlines.
[SOFT SKIN DETAIL]
Softens the details in the skin tone area for a more complimentary appearance. To obtain the best effect, use this setting when recording a person in close-up. Note that areas similar to the skin color may lack in detail.

[CUSTOM]

Allows you to adjust the brightness, contrast, sharpness, and color depth of the image.

[BRIGHTN.]: (–) Darker picture, (+) Brighter picture
[CONTRAST]: (–) Flatter picture, (+) More defined light and shade
[SHARPNESS]: (–) Vaguer outlines, (+) Sharper outlines
[COL.DEPTH]: (–) Shallower colors, (+) Richer color tonality

FUNC. (27)

FUNC. ⇨ Icon of the currently selected **Image Effect**

⇩

FUNC. ⇦ Desired option*

* When you select [CUSTOM], do not press FUNC. and continue instead with the procedure below.

To set the custom image effect

1. **Press (◉) and select (▲▼) the custom setting options.**
2. **Adjust (◀▶) each setting as desired and then press (◉) .**
3. **Press FUNC. to save the setting and close the menu.**

Still Image Recording Options

Selecting the Size and Quality of Still Images

Still images are recorded on the memory card or the disc using the JPEG (Joint Photographic Experts Group) compression. As a general rule select a larger image size for higher quality.

CAMERA | CAMERA | PLAY | PLAY (13)

Options

Approximate number of still images that can be recorded in different recording media with the following quality settings:
: [SUPER FINE], : [FINE], : [NORMAL]
The figures for DVD discs refer to a single recording side.

On a 32 MB memory card

Image Size			
L 1632x1224	20	30	55
M 1280x960	30	50	90
S 640x480	165	285	365

On a 128 MB memory card

Image Size			
L 1632x1224	85	135	250
M 1280x960	140	215	395
S 640x480	690	955	1,525

On a 512 MB memory card

Image Size			
L 1632x1224	350	545	1,000
M 1280x960	555	860	1,585
S 640x480	2,740	3,770	6,035

On a DVD-R or DVD-RW disc in VIDEO mode

Image Size			
L 1632x1224	1,010	1,560	2,865
M 1280x960	1,600	2,455	4,525
S 640x480	7,825	9,999	9,999

On a DVD-R DL disc in VIDEO mode

Image Size			
L 1632x1224	1,840	2,845	5,215
M 1280x960	2,925	4,470	8,235
S 640x480	9,999	9,999	9,999

On a DVD-RW disc in VR mode

Image Size			
L 1632x1224	1,025	1,590	2,915
M 1280x960	1,635	2,500	4,605
S 640x480	7,960	11,680*	19,470*

* This number is the number of images that can be recorded on the disc; however, the maximum number of remaining images displayed on the screen will be 9999.

♦ Default value

L	1632x1224/FINE♦

FUNC. (📖 27)

FUNC. ⇨ Icon of the currently selected **Image Quality/Size**

⇩

Desired image size*

⇩ ⇧

Press (⊙)

⇩ ⇧

FUNC. ⇦ Desired image quality*

* The number displayed on the right corner indicates the approximate number of images that can be recorded with the current quality/size setting.

NOTES

- Depending on the number of images on the memory card or disc (Windows: more than 1,800 images; Macintosh: more than 1,000 images), you may not be able to download images to a computer. Try using a card reader to download the still images recorded on the memory card.
- Connection to a PictBridge compatible printer will not work when the memory card contains more than 1,800 images. For best performance, we recommend to keep the number of images on the memory card under 100.

Capturing a Still Image while Recording Movies

While you are recording a movie on the disc you can simultaneously capture the same picture as a still image on the memory card. The size of the still image will be **S** 640x480 and cannot be changed, but the image quality can be selected.

CAMERA CAMERA | PLAY PLAY (📖 13)

♦ Default value

OFF	STILL I. REC OFF♦

FUNC. (📖 27)

FUNC. ⇨ Icon of the currently selected **Still Image Recording** option

⇩

FUNC. ⇦ Desired image quality

TO CAPTURE THE STILL IMAGE

While you are recording a movie, press PHOTO**.**

The still image is recorded on the memory card while the screen continues to show the video recording.

NOTES

- The still image cannot be recorded simultaneously on the disc.
- The still image cannot be recorded on the memory card while recording in widescreen or while a digital effect is activated.
- The quality of the still image is slightly lower than a still image of the same size recorded in CAMERA · mode.

Continuous Shooting and Exposure Bracketing

POINTS TO CHECK

CAMERA CAMERA PLAY PLAY (13)

Mode switch: P, SCN (except for the [FIREWORKS] recording program).

DRIVE MODE button

Options ♦ Default value

[SINGLE]♦
Records a single still image.
[CONT.SHOOT.](Continuous Shooting) [HISPEED CONT.SHOOT.](High-Speed Continuous Shooting)
Captures a series of still images as long as you hold PHOTO pressed down. For the number of frames per second, refer to the table below.
[AEB] (Auto Exposure Bracketing)
The camcorder records a still image in three different exposures (dark, normal, light in 1/2 EV steps), allowing you to choose the shot you like the best.

1 Press DRIVE MODE repeatedly to cycle between the drive modes.

2 Press PHOTO halfway to activate the autofocus.

Continuous Shooting/High-Speed Continuous Shooting

3 Press PHOTO fully and hold it pressed down.

A series of still images will be recorded as long as you hold the button pressed.

Auto Exposure Bracketing

3 Press PHOTO fully.

Three still images in different exposures will be recorded on the memory card.

Maximum number of continuous shots at one time:

Still Image Size	Frames per Second			Maximum Number of Continuous Shots
	Normal speed	High speed	Using the Flash	
L 1632x1224	2.5 frames	3.8 frames	2.1 frames	10 images
M 1280x960	3.0 frames	5.0 frames	2.1 frames	10 images
S 640x480	3.0 frames	5.0 frames	2.1 frames	60 images

These figures are approximate and vary with the recording conditions and subjects.
The actual number of frames per second will be lower when " " (camcorder shake warning) is displayed on the screen.

NOTES

- The drive mode can also be selected from the FUNC. menu (📖 27).
- DRIVE MODE cannot be used while the FUNC. menu is being displayed.

Creating Panoramic Images

You can shoot a series of overlapping images and merge them on a computer into one large panoramic image using the supplied software (PhotoStitch). For further details about the procedure refer to the software's instruction manual on the supplied software CD-ROM.

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Mode switch: P, SCN

♦ Default value

□	SINGLE♦

FUNC. (📖 27)

FUNC. ⇨ Icon of the currently selected **Drive Mode**

⇩

STITCH AST

⇩

Press (⊙)

The Stitch Assist screen appears.

FROM THE STITCH ASSIST SCREEN

1 Select (◀▶) the direction in which you will take the sequence of still images.

2 Select the recording program and zoom on the subject.

- The manual focus and manual exposure adjustment cannot be used with the Stitch Assist mode.
- Once the sequence has started, you cannot change the recording program or zoom.

3 Press PHOTO to record the first image.

The number of images recorded so far and the direction and number of the next image appear below the image.

4 Record the next image so that it overlaps a portion of the previous one. Repeat this step until you complete the panoramic image.

- Try to include a distinctive item (landmark, etc.) in the overlapping portion. Minor discrepancies in the overlapping area can be corrected with the software.
- You can retake an image using the multi selector (◀▶) to cancel the image recorded last and return to the previous one.
- Up to 26 images can be recorded.

5 Press FUNC. after the last image.

NOTES

- Compose each image so that it overlaps 30 to 50% of the adjoining image. Try to keep the vertical misalignment within 10%.
- Do not include a moving subject in the overlapping portion.
- Do not try to stitch images that include both distant and close subjects. They may appear warped or doubled up.

Other Recording Options

Self Timer

POINTS TO CHECK

CAMERA CAMERA | PLAY PLAY (📖 13)

CAMERA · : Set the camcorder in record pause mode.

MENU (📖 27)

MENU ⇨ CAMERA SETUP
⇩
SELF TIMER
⇩
MENU ⇦ ON ⏲

⏲ appears.

CAMERA · :

Press Start/Stop.

The camcorder starts recording after a 10-second countdown (2 seconds when using the wireless controller). The countdown appears on the screen.

CAMERA · :

Press PHOTO, first halfway to activate the autofocus and then fully to record the still image.

The camcorder will record the still image after a 10-second countdown (2 seconds when using the wireless controller). The countdown appears on the screen.

NOTES

Once the countdown has begun, you can press Start/Stop (when recording movies) or press PHOTO fully (when recording still images) to cancel the self timer. The self timer will also be canceled if you turn off the camcorder.

LED Light

You can turn on the LED light (assist lamp) at any time regardless of the recording program.

CAMERA CAMERA | PLAY PLAY (📖 13)

LIGHT button

Press [LIGHT].

- ☼ appears on the screen.
- Press [LIGHT] again to turn the LED light off.

Flash

You can use the built-in flash for recording still images in dark places. The flash is equipped with the red-eye reduction function.

POINTS TO CHECK

CAMERA CAMERA | PLAY PLAY (📖 13)

Select a recording program other than [FIREWORKS] (SCN).

Options ♦ Default value

ϟA (auto)♦
The flash fires automatically according to the brightness of the subject.
(red-eye reduction, auto)
The flash fires automatically according to the brightness of the subject. The assist lamp lights up to reduce the red-eye effect.
ϟ (flash on)
The flash always fires.
(flash off)
The flash does not fire.

ϟ (flash) button

1 Press [ϟ] (flash button).

- Repeatedly pressing [ϟ] will cycle between the flash modes.
- The display ϟA disappears after 4 seconds.

2 Press [PHOTO], first halfway to activate the autofocus and then fully to record the still image.

NOTES

- The practical range of the flash is approx. 1 to 2 m (3.3 to 6.6 ft.). The range depends on the recording conditions.
- The range of the flash decreases in continuous shooting mode.
- For the red-eye reduction to be effective, the subject needs to look at the assist lamp. The degree of reduction depends on the distance and on each individual.
- The red-eye reduction mode cannot be used in Stitch Assist mode.
- The flash will not fire in the following cases:
  - When you manually adjust the exposure in ϟA (auto) or (red-eye reduction) mode.
  - During auto exposure bracketing.
- The flash mode cannot be selected when the exposure is locked, or after the first still image in Stitch Assist mode.
- **About the AF-Assist Lamp:** While you press [PHOTO] halfway, if the subject is too dark the assist lamp may light up briefly in order to enable the camcorder to focus more accurately (AF-assist lamp). You can also set [AF AST LAMP] to [OFF OFF] so the assist lamp does not light up.
  - The camcorder may not be able to focus even if the AF-assist lamp is on.
  - The brightness of the AF-assist lamp could be an inconvenience. Consider turning it off in public places such as restaurants or theaters.

Digital Effects

[FADER] Faders

Begin or end scenes with a fade to or from black. You can preview the effect on the display.

F1 [FADE-T] (fade trigger)	F6 [PUZZLE]
F2 [WIPE]	F7 [ZIGZAG]
F3 [CORNER] (corner wipe)	F8 [BEAM]
F4 [JUMP]	F9 [TIDE]
F5 [FLIP]	

[EFFECT] Effects

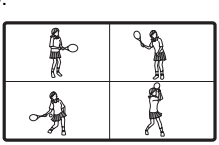
Add flavor to your recordings. Sound will be recorded normally. You can preview the effect on the display.

E1 [BLK&WHT] (black and white)	E6 [CUBE]
E2 [SEPIA]	E7 [WAVE]
E3 [ART]	E8 [COLOR M.] (color mask)
E4 [MOSAIC]	E9 [MIRROR]
E5 [BALL]	

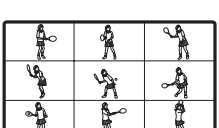
[MULTI-S] Multi-Image Screen (📖 60)

Captures moving subjects as a sequence of 4, 9 or 16 still images and displays them as one split screen. Sound will be recorded normally.

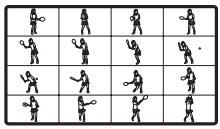
4 split images



9 split images



16 split images



[CARD MIX] Card Mix (📖 61)

Combines a still image from the memory card with your recording.

NOTES

- When you are not using the digital effect, select [D.EFFECT OFF].
- The camcorder retains the setting last used even if you turn off the digital effects or change the recording program. However, you will need to select again the still image for the Card Mix effect.

Selecting a Fader / Effect

POINTS TO CHECK

CAMERA CAMERA | PLAY PLAY (📖 13)

Mode switch: P, SCN

CAMERA : Only the [E1 BLK&WHT] effect is available. Faders are not available.

♦ Default value

OFF	D.EFFECT OFF♦

FUNC. (📖 27)

Setting

FUNC. ⇨ Icon of the currently selected **Digital Effect**

⇩

FADER

or

EFFECT

⇩

Press (⊙)

⇩

Desired fader/effect.

⇩

FUNC.** ⇦ Press (⊙)*

* You can preview the effect on the screen before pressing (⊙).
** The icon of the selected effect appears.

Applying

D.EFFECTS button

1 Press D.EFFECTS to activate the fader/effect.
- To fade in, press D.EFFECTS before you start recording, then press Start/Stop to start recording.
- To fade out, press D.EFFECTS while recording, then press Start/Stop to pause the recording.

2 Press D.EFFECTS again to deactivate the fader/effect.

Using the Multi-Image Screen

POINTS TO CHECK

CAMERA CAMERA | PLAY PLAY (📖 13)

Mode switch: P, SCN (except for the [NIGHT] recording program).

Options

[S.SPEED]	
Select how fast the images will be captured.	
[MANUAL]:	One image will be added to the split screen every time you press D.EFFECTS. Hold D.EFFECTS pressed down for more than 1 second to delete images from the split screen.
[FAST]:	Every 4 frames
[MOD.]:	Every 6 frames
[SLOW]:	Every 8 frames
[S.SPLIT]	
Select how many images in the split screen: [4], [9], [16].	

♦ Default value

OFF	D.EFFECT OFF♦

FUNC. (📖 27)

Setting

FUNC. ⇨ Icon of the currently selected **Digital Effect**

⇩

MULTI-S

TO CHANGE THE MULTI-IMAGE SETTINGS

1 Select (▲▼) [S.SPEED] and then select (◀▶) the desired transition speed.

2 Select (▲▼) [S.SPLIT] and select (◀▶) the desired number of split images then press (⊙).

3 Press FUNC.
▦ appears.

Applying

D.EFFECTS button

1 **Press** D.EFFECTS **to capture the images.**
2 **Press** Start/Stop **to record the multi-image screen displayed.**

Combining Images (Card Mix)

You can choose one of the sample images (including picture frames, backgrounds and animations) from the collection on the supplied DIGITAL VIDEO SOLUTION DISK and combine it with your live video recording to add a note of playfulness to your movies.

Card Chroma Key [CARD CHROMA]

Combines frames with your recordings. The live video recording will appear instead of the blue area of the card mix image.

Mix level adjustment: Blue area of the still image.

Card Luminance Key [CARD LUMI.]

Combines illustrations or titles with your recordings. The live video recording will appear instead of the light area of the card mix image.

Mix level adjustment: Light area of the still image.

Camera Chroma Key [CAM. CHROMA]

Combines backgrounds with your recordings. Record your subject in front of a blue background and any part of your subject that is not blue will appear superimposed on the picture with the card mix image serving as background.

Mix level adjustment: Blue area of the live video recording.

Card Animation [C. ANIMATION]

Combines animations with your recordings. You can choose from three types of card animation effects.

• [CORNER]: The animation appears on the upper left and the lower right corner of the screen.
• [STRAIGHT]: The animation appears on the top and bottom of the screen and moves right and left.
• [RANDOM]: The animation moves randomly on the screen.

Mix level adjustment: Blue area of the card animation image.

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Upload to the memory card a sample image from the supplied DIGITAL VIDEO SOLUTION DISK software CD-ROM. Refer to *Adding Still Images from your Computer to the Memory Card* in the electronic instruction manual (PDF file) included on the same CD-ROM.

Mode switch: P, SCN

♦ Default value

D.EFFECT OFF	D.EFFECT OFF♦

FUNC. (📖 27)

FUNC. ⇨

Setting

FUNC. ⇨ Icon of the currently selected **Digital Effect**

⇩

CARD MIX

TO SET THE CARD MIX

1. **Select (▲▼) [IMAGE SELECT] and then select (◀▶) the still image you want to combine.**
2. **Select (▲▼) [MIX TYPE] and set (◀▶) a mix type appropriate for the image you selected.**
   If you selected [C.ANIMATION], select (▲▼) [ANIMAT.TYPE] and set (◀▶) the animation type preferred.
3. **If you want to adjust the mix level, select (▲▼) [MIX LEVEL] and set (◀▶) the level preferred.**
4. **Press (⬡) to save the settings and press FUNC. to close the menu.**
   appears.

Applying

D.EFFECTS button

Press D.EFFECTS.

- changes to green and the combined image appears.
- Still images cannot be recorded on the memory card while the Card Mix function is activated.

Editing the Scenes

Creating a Playlist

Create a playlist to easily edit your movies. Include in your playlist only the scenes you prefer or change the order in which they will be played back, without affecting your original recordings. After you add scenes to the playlist you will have two types of index screens: The original index screen (for the original recordings) and the playlist index screen.

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Disc type: DVD-RW initialized in VR mode.

Adding Scenes to the Playlist

Options

[ALL SCENES]
Adds all scenes in the original index screen to the playlist.
[ONE SCENE]
Adds only the selected scene to the playlist.
[CANCEL]
Returns to the original index screen.

From the original index screen, select (▲▼, ◀▶) the scene to add to the playlist. To add all scenes there is no need to select any particular scene.

FUNC. (📖 27)

FUNC. ⇨ ADD TO PLAYLIST

⇩

Desired option

⇩

YES

When the operation is completed “ADDED TO PLAYLIST” will be displayed. Press PLAYLIST to check the scenes in the playlist index screen.

Moving Scenes in the Playlist

From the original index screen, press PLAYLIST. From the playlist index screen, select (▲▼, ◀▶) the scene to move.

FUNC. (📖 27)

FUNC. ⇨ MOVE

⇩

Move (▲▼, ◀▶) the orange marker to the new position of the scene and press (●).

⇩

YES

Deleting Scenes

You can delete those scenes that you are not interested in keeping. Remember that when you delete scenes in the playlist, you do not affect your original recordings; However, when you delete an original recording, it will be deleted also from the playlist.

IMPORTANT

- Be careful when deleting original recordings. Once deleted, an original scene cannot be recovered.
- Do not change the position of the power switch or the ▶■/📷 switch while the scene is being deleted.

NOTES

- Scenes cannot be deleted when the disc is protected (📖 65).
- You may not be able to delete scenes shorter than 5 seconds.

Deleting a Single Scene

POINTS TO CHECK

CAMERA | CAMERA | **PLAY** | PLAY (📖 13)

Disc type: -RW DVD-RW initialized in VR mode.

From the original index screen, select (▲▼, ◀▶) the scene to delete. To delete a scene only in the playlist, press [PLAYLIST] first, and then select the scene.

FUNC. (📖 27)

[FUNC.] ⇨ DELETE ⇩ YES

Deleting a Scene Just After Recording

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Disc type: -RW DVD-RW discs (VIDEO or VR mode).

[⮌] button

1. **Immediately after recording a scene, press [⮌] (record review).**
2. **While reviewing the scene, select (◀▶) 🗑 and press (●).**
3. **Select (◀▶) [YES] and press (●).**

NOTES

You will not be able to delete the last scene if after the scene was recorded you changed the operating mode, turned off the camcorder or removed the disc.

Deleting All Scenes

POINTS TO CHECK

CAMERA | CAMERA | **PLAY** | PLAY (📖 13)

Disc type: -RW DVD-RW initialized in VR mode.

To delete all the scenes from the original index screen follow the procedure below. This will delete also the whole playlist. If you only want to delete all the scenes from the playlist (without affecting the original recordings), press [PLAYLIST] first and then continue as follows.

MENU (📖 27)

[MENU] ⇨ DISC OPERATIONS ⇩ MOVIES ALL DEL* ⇩ [MENU] ⇦ YES

* When you are deleting the playlist, this menu option will be replaced by [PLAYLST ALL DEL].

Dividing a Scene

You can divide your recordings in order to leave only the best parts and later cut out the rest. Remember that when you divide scenes in the playlist, you do not affect your original recordings.

NOTES

Photomovie scenes and scenes created by converting single still images (📖 68) cannot be divided.

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Disc type: DVD-RW initialized in VR mode.

From the original index screen, select (▲▼, ◀▶) the scene to divide. To divide a scene only in the playlist, press [PLAYLIST] first, and then select the scene.

FUNC. (📖 27)

[FUNC.] ⇨ DIVIDE

⇩

Playback of the scene begins. Press (●) at the point where you want to divide the scene. *

⇩

DIVIDE

⇩

YES

* You can use the following icons and the special playback modes (📖 34) to bring the scene to a precise point.

⏮/⏭: Skip to the beginning of the current/next scene.

◀||/||▶: One frame reverse/advance.

Disc Options

Protecting the Disc

You can protect the whole disc to prevent the accidental erasure of important recordings.

IMPORTANT

Initializing the disc (📖 65) will permanently erase all recordings, even if the disc is protected.

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Disc type: DVD-RW initialized in VR mode.

MENU (📖 27)

[MENU] ⇨ DISC OPERATIONS

⇩

DISC PROTECT

⇩

[MENU] ⇦ YES

Initializing the Disc

You need to initialize a DVD-RW disc when first inserting it into the camcorder and you may have to initialize a disc if you get the “DISC ERROR” message. You can also choose to initialize the disc if you wish to erase all the recordings on the disc or in order to change the disc specification.

IMPORTANT

- Initializing the disc will permanently erase all recordings, even if the disc is protected. The lost original recordings cannot be recovered.
- Initialize all DVD-RW discs before using them with this camcorder.

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Disc type: DVD-RW discs (VIDEO or VR mode).

Options

[VIDEO] mode
Most DVD players will play the disc, but except for the disc title, the recordings cannot be edited with the camcorder.
[VR] mode
You will have the option to edit the recordings with the camcorder, but the disc can only be played in VR mode-compatible DVD players and computer DVD drives.

MENU (📖 27) → MENU → ⇨

MENU ⇨ DISC OPERATIONS
⇩
DISC INITIALIZE
⇩
VIDEO
or
VR
⇩
YES
⇩
MENU* ⇦ YES

* Close the menu only after the screen display returns to the [DISC OPERATIONS] menu.

Changing the Disc Title

Before you finalize your disc, you can give it a title. The disc title will be displayed on the index screen when playing the finalized disc in most DVD players.

CAMERA | CAMERA | PLAY | PLAY (📖 13)

MENU (📖 27) → MENU → ⇨

MENU ⇨ DISC OPERATIONS
⇩
DISC TITLE
⇩
Enter the title
(up to 20 characters).*
⇩
SET
⇩
MENU ⇦ YES

* Select one character at a time and press (●) to add it to the title. Select [BACKSPACE] and press (●) to delete the character to the left of the cursor's position.

Still Image Options

Erasing Still Images

You can erase still images recorded on the memory card or on the disc (DVD-RW only).

IMPORTANT

Be careful when erasing images. Erased images cannot be recovered.

NOTES

Protected images on the memory card and images on a protected disc cannot be erased.

Erasing a Single Image

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Disc type: DVD-RW initialized in VR mode.

FUNC. (📖 27)

FUNC. ⇨ IMAGE ERASE

⇩

FUNC. ⇦ ERASE

Erasing a Single Image Just After Recording

You can erase the still image recorded last while reviewing it within the time set for the [REVIEW] option (or immediately after recording it, if [REVIEW] is set to [OFF OFF]).

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Disc type: DVD-RW discs (VIDEO or VR mode).

FUNC. (📖 27)

While reviewing the image immediately after recording:

FUNC. ⇨ IMAGE ERASE

⇩

FUNC. ⇦ ERASE

Erasing All Images

The following procedure will erase all the non-protected still images from the currently selected media (will not erase images with the 🔑 mark).

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Disc type: DVD-RW initialized in VR mode.

MENU (📖 27)

MENU ⇨ STILL IMG OPER.

⇩

ERASE ALL IMAGES

⇩

MENU ⇦ YES

Copying Still Images

You can copy still images recorded on the memory card to the disc (for example, to add them to a Photomovie scene (🕮 68)), or from the disc to the memory card (for example, to set print orders for a DPOF compatible printer (🕮 88)).

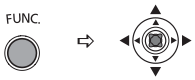
Copying a Single Image

POINTS TO CHECK

CAMERA | CAMERA | PLAY | **PLAY** (🕮 13)

Select as the media for the still images, the media from where you want to copy images.

FUNC. (🕮 27)



FUNC. ⇨ COPY [➡]
(card to disc)

or

COPY [➡]
(disc to card)

⇩

FUNC. ⇦ EXECUTE

Copying All Images

POINTS TO CHECK

CAMERA | CAMERA | PLAY | **PLAY** (🕮 13)

Select as the media for the still images, the media from where you want to copy images.

MENU (🕮 27)

MENU ⇨ STILL IMG OPER.

⇩

ALL COPY [➡] *
(card to disc)

or

ALL COPY [➡] *
(disc to card)

⇩

MENU ⇦ YES

* The total size of all image files on the source media and the space available on the destination media will be displayed.

NOTES

- Still images not recorded with this camera may not be copied correctly.
- When there is not enough available space on the destination media, the operation will be terminated without copying all the image files.
- The copy operation may take a moment to complete depending on the number and total size of the image files.

Converting Still Images into Photomovie Scenes

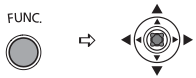
Still images are recorded using JPEG compression, but a DVD player only recognizes the MPEG standard. Thus, to play back your still images with your DVD player, first you need to create a Photomovie scene – a slide show of all still images on the disc, where each image will be displayed for approx. 3 seconds.

Converting a Single Image

CAMERA | CAMERA | PLAY | **PLAY** (🕮 13)

Select (◀▶) the still image you want to convert to a scene.

FUNC.
(📖 27)



FUNC. ⇨ CONVERT TO SCENE
⇩
FUNC. ⇦ EXECUTE

Converting All Images

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

If you want to include in your Photomovie scene still images recorded on the memory card, copy them to the disc in advance (📖 68).

MENU
(📖 27)

MENU ⇨ DISC OPERATIONS
⇩
PHOTOMOVIE
⇩
MENU ⇦ YES

NOTES

- If the disc becomes full while creating a Photomovie scene, the operation will be canceled.
- This function does not affect the original still images.

Protecting Still Images on the Memory Card

You can protect still images recorded on the memory card from accidental erasure.

IMPORTANT

Initializing the memory card (📖 70) will permanently erase all recorded still images, even the protected ones.

Protecting a Single Image

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

CAMERA · : You can protect the still image recorded last while reviewing it within the time set for the [REVIEW] option (or immediately after recording it, if [REVIEW] is set to [OFF OFF]).

FUNC.
(📖 27)

FUNC. ⇨ PROTECT
⇩
FUNC. ⇦ ON*

appears and the image cannot be erased.

* To cancel the image protection, select [OFF] instead.

Protecting Still Images from the Index Screen

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Move the zoom lever toward **W** to enter the still image index screen.

MENU
(📖 27)

MENU ⇨ STILL IMG OPER.
⇩
➡ PROTECT
⇩
Bring (▲▼, ◀▶) the cursor ☞ to the image you want to protect and press (⬚).*
MENU** ⇦ Repeat this step to protect additional images.

* appears on protected images. Press (⬚) to cancel the protection.
**After closing the menu the camcorder returns to the index screen.

Initializing the Memory Card

Initialize a new memory card when first inserting it into the camcorder. You may have to initialize a card if you get the "CARD ERROR" message or you may choose to do so to erase all data recorded on it.

IMPORTANT

- Initializing the memory card will erase all still images, even the protected ones. The original still images cannot be recovered.
- Initialize all memory cards before using them with this camcorder.

CAMERA CAMERA | PLAY **PLAY** (📖 13)

MENU (📖 27)

MENU ⇨ STILL IMG OPER.
⇩
CARD INITIALIZE
⇩
YES
⇩
MENU ⇦ YES

Finalizing the Disc

To play the disc you recorded on a DVD player, a computer's DVD drive or other digital device, you need to finalize it first. You do not need to finalize the disc to play back your recordings with the camcorder connected to the TV.

To view your still images on a DVD player you will need to convert them to Photomovie scenes beforehand (🕮 68).

IMPORTANT

- **Be sure to finalize the disc in normal room temperatures. If the procedure was not completed correctly due to high temperature, let the camcorder cool off before resuming operation.**
- **Place the camcorder on a table or other stable surface before starting the procedure. Subjecting the camcorder even to slight impacts (for example to place it on a table or to disconnect the AV cable) after the finalization process started may result in permanent data loss.**
- Always power the camcorder using the compact power adapter. The operation cannot be started if the camcorder is powered only with the battery pack.
- Avoid the following actions while the operation is in progress. Failing to do so can interrupt the process and result in permanent data loss.
  - Do not move the camcorder.
  - Do not disconnect the compact power adapter.
- Depending on the type of disc and the disc specification, after finalizing the disc you may not be able to initialize the disc, edit your recordings or add new recordings to the disc.
- Do not finalize with this camcorder discs that were not recorded using it.

NOTES

The time required to complete the operation will vary depending on the recording conditions and the remaining free space on the disc.

Finalizing the Disc

The length of the finalization process depends on the scenes recorded and the remaining free space on the disc.

CAMERA | CAMERA | PLAY | PLAY (🕮 13)

MENU (🕮 27)

MENU ⇨ DISC OPERATIONS

⇩

FINALIZE

⇩

MENU* ⇦ YES

* During the disc finalization a progress bar is displayed. Close the menu only after the screen display returns to the [DISC OPERATIONS] menu.

Restrictions after Disc Finalization

	Additional Recordings	Edit Recordings	Initializing the Disc	Unfinalizing the Disc
DVD-R/DVD-R DL in VIDEO mode	–	–	–	–
DVD-RW in VIDEO mode	●*	–	●	●
DVD-RW in VR mode	●	●	●	–

* You will need to unfinalize the disc first.

Playing Back your Disc on a DVD Player or a Computer's DVD Drive

After finalizing the disc you can play it on DVD players compatible with the type of disc you used (DVD-R, DVD-R DL or DVD-RW). For details about disc compatibility refer to the instruction manual of the DVD player or DVD drive.

On a DVD Player

1. **Turn on the TV and DVD player.**
2. **Insert a finalized disc in the DVD player.**
3. **Select the scene you want to play from the index screen.**

On a Computer's DVD Drive

1. **Insert a finalized disc in the DVD drive.**
2. **Run the DVD playback software.**
   - Refer also to the instruction manual and help modules of your DVD playback software.
   - To view still images recorded on the disc, close first any DVD playback software that may be running.

NOTES

- DVD-RW discs recorded in VR mode can only be played on VR mode-compatible DVD players.
- Depending on your DVD device you may not be able to play the disc.
- In order to view the still images recorded on the disc in a DVD player, you have to convert individual images to scenes, or create a Photomovie scene (📖 68) before finalizing the disc. The resolution of Photomovie scenes will be lower than that of the original still images.
- In order to play the disc on a computer you need to have DVD playback software installed and running. Also, in order to play back a DVD-R DL you must have a DVD drive capable of reading dual-layered DVD discs.

Unfinalizing the Disc - Additional Recordings on a Finalized Disc

Unfinalize a disc to allow recording additional movies on the disc even after it was finalized.

POINTS TO CHECK

CAMERA | CAMERA | PLAY | PLAY (📖 13)

Disc type: -RW DVD-RW initialized in VIDEO mode.

IMPORTANT

- **Be sure to unfinalize the disc in normal room temperatures. If the procedure was not completed correctly due to high temperature, let the camcorder cool off before resuming operation.**
- **Place the camcorder on a table or other stable surface before starting the procedure. Subjecting the camcorder even to slight impacts (for example to place it on a table or to disconnect the AV cable) after the unfinalization process started may result in permanent data loss.**
- Always power the camcorder using the compact power adapter. The operation cannot be started if the camcorder is powered only with the battery pack.
- Avoid the following actions while the operation is in progress. Failing to do so can interrupt the process and result in permanent data loss.
  - Do not move the camcorder.
  - Do not disconnect the compact power adapter.
- Only discs that were finalized using this camcorder can be unfinalized with it.

	Disc Can Be Unfinalized
DVD-R/DVD-R DL in VIDEO mode	–
DVD-RW in VIDEO mode	●
DVD-RW in VR mode	– You can record additional scenes even without unfinalizing the disc

MENU
(📖 27)

MENU ⇨ DISC OPERATIONS

⇩

UNFINALIZE

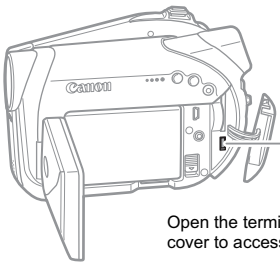
⇩

MENU* ⇦ YES

* During the disc unfinalization a progress bar is displayed. Close the menu only after the screen display returns to the [DISC OPERATIONS] menu.

Connecting to a TV or VCR

Connection Diagrams

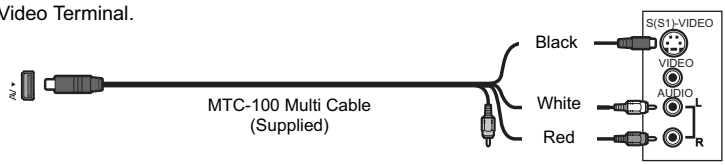


AV Terminal
- When connecting the MTC-100 Multi Cable to the camcorder, make sure to insert the cable straight and in the correct direction - aligning the ▲ marks on the cable's connector and on the AV terminal.
- Sound from the built-in speaker will be muted while the MTC-100 Multi cable is connected to the camcorder.

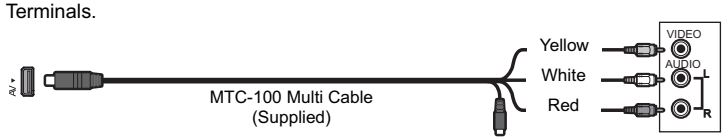
If your TV or VCR is equipped with an S-Video terminal use connection type **1**, otherwise connect using the AV terminals (connection type **2**).

Terminal on the Camcorder	Connecting Cable	Terminal on the Connected Device

1 Output connection (Signal Flow ➡) to a TV or VCR with S-Video Terminal.
Input connection (Signal Flow ⬅) from a TV, VCR or other analog video source with S-Video Terminal.



2 Output connection (Signal Flow ➡) to a TV or VCR with AV Terminals.
Input connection (Signal Flow ⬅) from a TV, VCR or other analog video source with AV Terminals.



Selecting the Type of TV

CAMERA CAMERA | PLAY PLAY (📖 13)

Before connecting the camcorder, select the [TV TYPE] setting according to the TV set to which you will connect the camcorder - [WIDE TV]: TV sets with 16:9 aspect ratio or [NORMAL TV]: TV sets with 4:3 aspect ratio (📖 43).

Playback on a TV Screen

1. **Connect the camcorder to the TV following one of the connection diagrams shown in the previous section *Connection Diagrams* (📖 74).**
2. **On a TV: Set the input selector to VIDEO. On a VCR: Set the input selector to LINE (IN).**
3. **Play back the movies (📖 33) or still images (📖 35).**

NOTES

- Turn off all the devices before starting the connections.
- We recommend powering the camcorder using the compact power adapter.
- Picture quality is better when connecting to a TV using the S-Video terminal - connection type 1 (📖 74).

Recording to a VCR

You can copy your recordings by connecting the camcorder to a VCR or a digital video device. Connect the camcorder to the VCR following one of the connection diagrams shown in the previous section *Connection Diagrams* (📖 74).

CAMERA CAMERA | PLAY PLAY (📖 13)

MENU (📖 27) MENU ⇨

1. **Connected device: Load a blank cassette and set the device to record pause mode.**
2. **This camcorder: Locate the scene you wish to copy and pause playback shortly before the scene.**
3. **This camcorder: Resume the movie playback.**
4. **Connected device: Begin recording when the scene you wish to copy appears. Stop recording when copying is complete.**
5. **This camcorder: Stop playback.**

NOTES

- We recommend powering the camcorder using the compact power adapter.
- By default, the on-screen displays will be embedded in the output video signal, but you can change the displays with (▲) DISP. (📖 37).

Video Input Recording

You can input video from an external device and record it on the disc in the camcorder.

Selecting the type of Connection

Connect the camcorder to the analog input source following one of the connection diagrams shown in the previous section *Connection Diagrams* (📖 74).

CAMERA CAMERA | PLAY PLAY (📖 13)

MENU (📖 27) MENU ⇨

MENU ⇨ LINE-IN MODE

⇩

Desired connection type*

⇩

Press (⊙) to display the video input screen.

* Select the setting according to the type of connection used.
[➡S VIDEO]: Connection type **1**.
[➡VIDEO]: Connection type **2**.

From the Video Input Screen

The following icons are displayed at the bottom of the video input screen:

🔊: Adjust the speaker volume (will not affect the recording).

XP/SP/LP: Select the recording mode.

●/●II: Start recording/pause the recording.

⮌: Terminate the video input and return to PLAY mode.

1 **This camcorder: Change the recording settings as necessary.**
2 **Connected device: Load the recorded cassette or disc and start playback.**
3 **This camcorder: Select (◀▶) the ● icon. When the scene you wish to record appears, press (⊙).**
Recording starts.
4 **This camcorder: To pause the recording, select (◀▶) the ●II icon and press (⊙).**
In record pause mode, select (◀▶) ● and press (⊙) to resume recording.

To stop recording

5 **This camcorder: In record pause mode, select (◀▶) the ⮌ icon and press (⊙).**
6 **Connected device: Stop the playback.**

IMPORTANT

- Video input that includes copyright signals (for example digital content designated as “copy once” or copy protected) cannot be recorded. The video input will be recorded normally until the point a copyright signal is detected.
- Depending on the analog signal sent from the connected device the input image may be distorted or not be displayed at all (for example, video input that includes anomalous signals such as ghost signals).

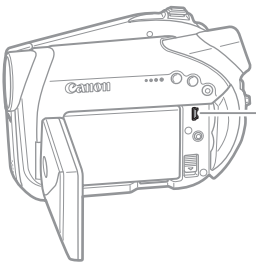
NOTES

We recommend powering the camcorder with the compact power adapter.

Connecting to a Computer

E

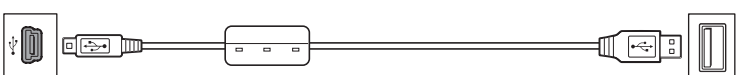
PC Connection Diagrams



	USB Terminal • Open the LCD panel to access.

Terminal on the Camcorder	Connecting Cable	Terminal on the Connected Device

1 Output connection (Signal Flow ➡) to a PC or PictBridge compatible printer with an USB port.



USB Cable (Supplied)

Transferring Recordings – MyDVD for Canon

Windows users only:
With the supplied USB cable and the MyDVD for Canon software you can transfer the movies and still images you recorded, from the disc to a computer and easily edit them. Please note that with MyDVD for Canon you can read 8 cm DVD-R DL discs, but the software does not support writing on dual-layered discs (neither with an external DL drive nor with the camcorder itself).

For further details about using MyDVD for Canon, refer also to the software's tutorial and help modules.

MyDVD for Canon

One-touch dubbing (Windows XP only)
Insert a blank DVD-R/-RW in your computer's DVD drive (with writing capabilities), connect the camcorder and with only pressing the 🖶 (print/share) button, create a copy of your DVD you can instantly share (🕮 80).
Transfer recordings to your computer
You can transfer your recordings to edit them on your computer (🕮 81).
Create a backup disc of your DVD
Transfer your recordings to the computer and even if your computer does not have a DVD drive with writing capabilities, use your camcorder itself to create a copy of your DVD (🕮 81)

• North America
Web Based Service: http://support.roxio.com
Phone assistance: 866-279-7694 (toll free) or 905-482-5555 (Canada only), 9:00 A.M. to 6:00 P.M., U.S Pacific Time - excluding Weekend and Holidays

• Europe
Web Based Service:
Germany
http://www.roxio.com/en/support/de/emc/index.jhtml
France
http://www.roxio.com/en/support/fr/emc/index.jhtml
U.K
http://www.roxio.com/en/support/uk/
Phone assistance: Germany 0900-1735096; France 0892-460909; U.K 0906-7320288, 1:00 P.M. to 10:00 P.M., GMT - excluding Weekend and Holidays

• China/Taiwan
Web Based Service:
http://www.sonictaiwan.com/support/techsupport.aspx
sonicsupport@gil.com.tw
Phone assistance: 02-2658-8765 (Taiwan)

System Requirements

• Operating System:
Microsoft Windows 2000, Windows Me, Windows XP
• Minimum Hardware:
Pentium III 1 GHz or higher (1.5 GHz or greater, recommended)
128 MB RAM (256 MB or greater, recommended)
10 GB hard drive space (20 GB or greater, recommended)
Video adapter and display supporting at least 1024 x 768 resolution, 16 bit color
• Software Requirements:
Microsoft Windows Media Player 9 or later
• Internet connection (for user registration).

IMPORTANT

● After installing MyDVD for Canon you will need an Internet connection to complete the user registration. Without completing the online user registration, you will not be able to use any of the software's functions.

● For support concerning MyDVD for Canon:
Canon Inc. and the Canon related customer support centers do not provide support concerning MyDVD for Canon. For any questions or technical issues regarding the software, its installation and operation, please contact directly Sonic Solutions customer support representatives or access online the Internet pages listed in the information box above.
● Operation may not work correctly depending on the specifications and settings of your computer.

Installing MyDVD for Canon

1 Turn on the computer and start up Windows.

2 Insert the Roxio MyDVD for Canon Software CD-ROM into the computer's CD or DVD drive.
• The Setup Wizard will launch automatically.
• If you do not have Windows Media Player 9 or later installed, click "OK" on the setup window that appears and install the latest version of Windows

Media Player following the instructions on the screen.
• If the Setup Wizard does not start automatically:
① Windows 2000/Me: Double-click on the desktop's "My Computer" icon. Windows XP: Form the Start menu, select "My Computer".
② Right-click on the CD-ROM or DVD drive where you inserted the software disc and select "Open".
③ Double-click on the "SETUP.EXE" file. (Note that depending on the computer's settings the ".EXE" suffix may not be displayed).

3 In the Setup Wizard screen click "Next".

4 Read the license agreement. If you agree, select "I accept the terms in the License Agreement" and click "Next".

5 Enter the user information and click "Next".
The serial number will already be filled in.

6 Click on the "Typical" installation.
You can also select "Custom" to select the programs installed and the installation folder, or "Complete" to install all the program's features.

7 Click "Install" to begin the installation.

8 When the "Setup Wizard Completed" screen appears, click "Finish".

9 Read the latest "Readme" file and click "Yes" to restart the computer.

Completing the User Registration

1 After the computer has restarted, remove the Roxio MyDVD for Canon Software CD-ROM from the drive and double-click on the desktop's "MyDVD" icon.

2 Connect to the Internet to complete the user registration online.
Without completing the online user registration you will not be able to use any of the software's functions.

3 Click "Next" to start the registration.

4 Enter the user information and select your country/region from the selection box.

5 Click on "Privacy Policy" to read the terms. If you agree to the terms, check the box "I have read and agree to the terms of the Privacy Policy" and click "Register Now".
After the user registration is completed automatically, the initial screen of MyDVD for Canon will be displayed.

NOTES

Depending on the speed of your Internet connection, the user registration may take some time.
If you cannot connect to the Internet the user registration will not be completed. Without completing the online user registration you will not be able to use any of the software's functions.

Connecting the Camcorder

You need to install the software and register online only the first time you connect the camcorder to the computer. From the second time on, just connect the camcorder to the computer.

1 Connect the compact power adapter to the camcorder.

2 Turn on the camcorder and set it to PLAY mode.

3 Connect the camcorder to the computer using the USB cable. Refer to *PC Connection Diagrams* (77).

IMPORTANT

● During the following operations, even if you connect the camcorder to the computer it will not be recognized.
- Deleting all scenes
- Protecting the disc

- Setting the disc title
- Initializing the disc
- Finalizing or Unfinalizing the disc

● Check the orientation of the USB cable and make sure you connect it properly.
● If you use discs other than the recommended DVD discs you may get an error message on the computer indicating that the disc cannot be read or that the camcorder is not ready.

NOTES

DVD copies and DVD backup discs created with MyDVD for Canon cannot be unfinalized using the camcorder.

One-Touch Dubbing (Windows XP only)

POINTS TO CHECK

● This function requires a computer equipped with a DVD drive with writing capabilities.
● If MyDVD for Canon is running, close the program first.

1 Insert the finalized disc you wish to copy into the camcorder.

2 Insert a brand new DVD-R or DVD-RW disc into the computer's DVD drive.

• The 🖧 (print/share) button will light up in blue.
• To make a copy of a disc recorded in VR mode, be certain to insert a DVD-RW disc into the computer's DVD drive.

3 Press 🖧.

• The 🖧 button will flash while the copying is in progress, and will go off once the copy is completed.
• The copied disc will be finalized and automatically ejected from the drive.

IMPORTANT

● DVD-R/RW discs can be copied to 12 cm or 8 cm DVD-R/RW discs. DVD-R DL discs can only be copied to 12 cm DVD-R/RW discs.
● If you did not complete the online user registration beforehand, you will not be able to use One-Touch Dubbing.
● Operation may not work properly if you connect more than one Canon camcorder to the computer at the same time.

NOTES

● **If the operation is interrupted:**
"OPERATION CANCELED" will be displayed on the camcorder's screen. The message disappears when you remove the disc or run MyDVD for Canon.
● When the DISC access indicator is on or flashing do not perform the following actions. Doing so may result in permanent data loss.
- Do not subject the camcorder to vibrations or strong impacts.
- Do not open the disc cover and do not remove the disc.
- Do not disconnect the USB cable.
- Do not turn off the camcorder or the computer.
- Do not change the position of the 🎥/📷 switch or the operating mode.

● You need to have DVD playback software installed in your computer in order to play the disc.
● We recommend powering the camcorder using the compact power adapter while it is connected to the computer.
● Refer also to the computer's instruction manual.
● For further details about restrictions when using MyDVD for Canon, refer also to the "README" section in the software's help modules.
● The following recordings cannot be transferred to the computer using MyDVD for Canon:
- Recordings made in LP mode in widescreen (16:9 aspect ratio) on a DVD-RW initialized in VR mode.
- Photomovie scenes created with this camcorder.

● Depending on the number and length of the scenes recorded, the One-Touch Dubbing may take some time.
● In the following cases, the 🖧 button will not light up in step 2 and you cannot use the One-Touch Dubbing function:
- The online user registration was not completed correctly.
- MyDVD for Canon is still running.

- A finalized disc is not inserted in the camcorder.
- A brand new disc is not inserted in the computer's DVD drive.
- The disc in the camcorder is a DVD-RW recorded in VR mode but the disc in the computer's DVD drive is a DVD-R disc.
- The disc in the computer's DVD-drive is a dual-layered disc.

● If none of the previous applies but [ ] still does not light up, look for the icon in the computer's desktop toolbar. If does not appear, disconnect the USB cable from both, the camcorder and the computer. Restart the computer and turn the camcorder off and then on again. Then, connect the camcorder to the computer again.

Transferring Recordings to the Computer

1 Insert the source disc into the camcorder.
You can use any disc regardless of whether it is finalized or not.

2 Run MyDVD for Canon.

3 Click on the "DVD-Video" option in the New Project tab.

4 Check that the DISC access lamp is not on or flashing and click on the "Open Disc" icon.

5 Click on the "Import" button.
Thumbnails of the imported scenes and still images will be displayed in the video project screen.

6 To save the project, click on "Save Project" from the Project Tasks palette.
The scenes and still images displayed in the main screen will be saved.

IMPORTANT

The following recordings cannot be transferred to the computer using MyDVD for Canon:
- Recordings made in LP mode in widescreen (16:9 aspect ratio) on a DVD-RW initialized in VR mode.
- Photomovie scenes created with this camcorder.

Creating Backup Copies of your DVD

1 Insert a finalized disc into the camcorder.

2 Run MyDVD for Canon.

3 Click on the "Make a Backup DVD" option in the New Project tab.

4 Select the camcorder as the "Device to read from".

5 Select the computer's DVD drive (with writing capabilities) as the "Device to write to".
If your computer is not equipped with a DVD drive with writing capabilities, select the camcorder also as the "Device to write to".

6 Check that the DISC access lamp is not on or flashing and click on the "Copy" button.

7 Follow the indications on the screen.
If you selected the camcorder itself as the "Device to write to", after the camcorder finishes reading the original disc, remove it and insert a brand new DVD-R or DVD-RW disc into the camcorder.

8 When the "Your disc was created successfully" screen appears, click "OK".
The copied disc will be finalized and automatically ejected from the drive.

IMPORTANT

● To make a copy of a disc recorded in VR mode, be certain to insert a DVD-RW disc into the computer's DVD drive.
● The software does not support writing on dual-layered discs.
● Always use a brand new disc as the target disc in the computer's DVD drive or the camcorder.
● If you are using a computer's DVD drive to make the backup copy you can also use a fully erased DVD-RW disc. To fully erase a DVD-RW disc you will need DVD authoring software.

● When you are using a DVD-RW disc as the source disc, if the tray of a DVD drive other than that selected in step 5 opens when you need to insert the target disc, some recordings on the source disc may be lost. Click on “Cancel” and restart the computer.

Transferring Still Images – Direct Transfer

With the supplied USB cable and Digital Video Software, you can transfer still images to a computer by simply pressing the 凸 ⇝ (print/share) button.

Preparations

The first time you connect the camcorder to the computer, you need to install the software and set the auto-launch setting. From the second time on, you will only need to connect the camcorder to the computer to transfer images.

1 **Install the supplied Digital Video Software.**
See *Installing the Software* in the *Digital Video Software* instruction manual (electronic version on PDF file).

2 **Set the camcorder to PLAY · 📷 mode.**

3 **Connect the camcorder to the computer using the USB cable.**
See *Connecting the Camcorder to a Computer* in the *Digital Video Software* instruction manual (electronic version on PDF file).

4 **Set the auto-launch setting.**
• See *Starting CameraWindow* (Windows) or *Auto-downloading* (Macintosh) in the *Digital Video Software* instruction manual (electronic version on PDF file).
• The direct transfer menu appears on the camcorder screen and the 凸 ⇝ button lights up.

IMPORTANT

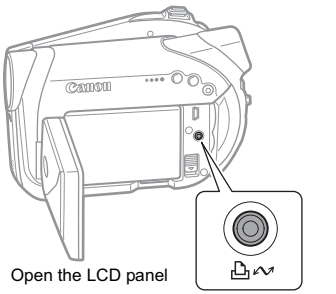
● Correct performance cannot be guaranteed for discs recorded on another digital device and inserted in this camcorder.
● When the DISC or CARD access indicator is on or flashing do not perform the following actions. Doing so may result in permanent data loss.
- Do not subject the camcorder to vibrations or strong impacts.
- Do not open the disc cover/memory card slot cover and do not remove the disc or memory card.
- Do not disconnect the USB cable.
- Do not turn off the camcorder or the computer.
- Do not change the position of the 🎥/📷 switch or the operating mode.
● Operation may not work correctly depending on the software and the specifications/settings of your computer.
● If you wish to use the image files on your computer, make copies of them first, and use the copied file, retaining the original.
● During the following operations, even if you connect the camcorder to the computer it will not be recognized.
- Protecting the disc
- Initializing the disc
- Finalizing or Unfinalizing the disc
- Erasing all still images from the disc or card
- Copying still images between the disc and card
- Erasing all transfer orders
- Erasing all print orders

NOTES

● We recommend powering the camcorder using the compact power adapter while it is connected to the computer.
● Refer also to the computer’s instruction manual.
● Users of Windows XP and Mac OS X:
Your camcorder is equipped with the standard Picture Transfer Protocol (PTP) allowing you to download still images (JPEG only) by simply connecting the camcorder to a computer via USB cable without installing the software from the DIGITAL VIDEO SOLUTION DISK.

Transferring Images

[ALL IMAGES...]
Transfers all images to the computer.
[NEW IMAGES...]
Transfers only those images that have not yet been transferred to the computer.
[TRANSFER ORDERS...]
Transfers images with transfer orders to the computer. Transfer orders (84) are only available for images recorded on the memory card.
[SELECT & TRANSFER...]
Allows you to select the still image you want to transfer to the computer.
[WALLPAPER...]
Allows you to select the still image you want to transfer and set it as your computer's desktop background.



Open the LCD panel

(print/share) button

1 Select (▲▼) a transfer option.

2 Press .

[ALL IMAGES] [NEW IMAGES] [TRANSFER ORDERS]:

- The images are transferred and displayed on the computer.
- The camcorder returns to the transfer menu once the transfer is complete.
- To cancel the transfer, select (◀▶) [CANCEL] and press ( ) or press MENU.

If you select [SELECT & TRANSFER] or [WALLPAPER]

3 Select (◀▶) the image you wish to transfer.

4 Press .

- [SELECT & TRANSFER]: The selected image is transferred and displayed on the computer. To continue transferring, select another image.
- [WALLPAPER]: The selected image is transferred to the computer and displayed as the desktop's background.
- The button will flash while the images are being transferred.
- Press MENU to return to the transfer menu.

NOTES

- You can press ( ) to transfer the images, instead of the button. With [ALL IMAGES], [NEW IMAGES] or [TRANSFER ORDERS], a confirmation message appears. Select [OK] and press ( ).
- When the camcorder is connected to the computer and the image selection screen is displayed, press MENU to return to the transfer menu.
- Even when still images recorded on the disc are correctly transferred to the computer, they will still be marked as images not yet transferred ("NEW IMAGES").

Transfer Order Settings

Out of the still images recorded on the memory card, you can mark the ones you want to transfer to the computer with a transfer order. These transfer order settings are compatible with the Digital Print Order Format (DPOF) standards. Up to 998 images can be selected.

Selecting Still Images to Transfer (Transfer Order)

Do not connect the USB cable to the camcorder while setting the transfer orders.

CAMERA | CAMERA | PLAY | **PLAY** (📖 13)

FUNC. (📖 27)

FUNC. ⇨ TRANSFER ORDER

⇩

FUNC. ⇦ ON*

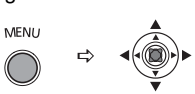
* To cancel a transfer order, select [OFF] instead.

Setting Transfer Orders from the Index Screen

CAMERA | CAMERA | PLAY | **PLAY** (📖 13)

Move the zoom lever toward **W** to enter the still image index screen.

MENU (📖 27)



MENU ⇨ STILL IMG OPER.

⇩

➡ TRANSFER ORDER

⇩

Bring (▲▼, ◀▶) the cursor ☞ to the image you want to transfer and press (●).*

MENU** ⇦ Repeat this step to set transfer orders for additional images.

* appears on images marked with a transfer order. Press (●) to cancel the transfer order.

**After closing the menu the camcorder returns to the index screen.

Erasing All Transfer Orders

CAMERA | CAMERA | PLAY | **PLAY** (📖 13)

MENU (📖 27)

MENU ⇨ STILL IMG OPER.

⇩

ORD.ALL ERASE

⇩

MENU ⇦ YES

Connecting to a Printer

Printing Still Images – Direct Print

The camcorder can be connected to any PictBridge compatible printer. You can use the print order settings for direct printing of still images recorded on the memory card (📖 88).

Canon printers: SELPHY CP and SELPHY DS printers and PIXMA printers marked with the PictBridge logo.

PictBridge

Connecting the Camcorder to the Printer

CAMERA | CAMERA | PLAY | PLAY (📖 13)

1. **Insert the memory card or disc containing the still images you want to print.**
2. **Turn on the printer.**
3. **Select as the media for the still images, the media from where you want to print the images.**
4. **Connect the camcorder to the printer using the supplied USB cable. Refer to *PC Connection Diagrams* (📖 77).**
   - appears and changes to . The symbol will not appear if the memory card or disc contains still images that cannot be viewed with this camcorder.
   - The (print/share) button lights up and the current print setting will be displayed for approx. 6 seconds.

IMPORTANT

- If continues to flash (for more than 1 minute) or if does not appear, the camcorder is not correctly connected to the printer. In such case, disconnect the cable from the camcorder and the printer. Turn them both off and then on again and reconnect the camcorder to the printer.
- During the following operations, even if you connect a printer to the camcorder it will not be recognized.
  - Deleting all scenes
  - Protecting the disc
  - Setting the disc title
  - Initializing the disc
  - Finalizing or Unfinalizing the disc
  - Erasing all still images from the disc or card
  - Copying still images between the disc and card
  - Erasing all transfer orders
  - Erasing all print orders
- Correct performance cannot be guaranteed when printing images from a disc recorded on another digital device and inserted in this camcorder.

NOTES

- will appear for images that cannot be printed.
- We recommend powering the camcorder using the compact power adapter.
- Refer also to the printer's instruction manual.

Printing with the (Print/Share) Button

You can print a still image without changing the settings by simply pressing the (print/share) button.

1. **Select (◀▶) the still image you wish to print.**
2. **Press (print/share).**
   - Printing starts. The button flashes and stays on when the printing is completed.
   - To continue printing, select (◀▶) another still image.

Printing after Selecting the Print Settings

You can select the number of copies and other settings for printing. The setting options vary depending on your printer model.

1. **Press ( ).**
   - The print setting menu appears.
   - Depending on the printer, the message “BUSY.” may appear before the camcorder displays the print setting menu.
2. **Select the print settings (86).**
3. **Select (▲▼, ◄►) [PRINT] and press ( ).**
   - Printing starts. The print setting menu disappears when the printing is completed.
   - To continue printing, select (◄►) another still image.

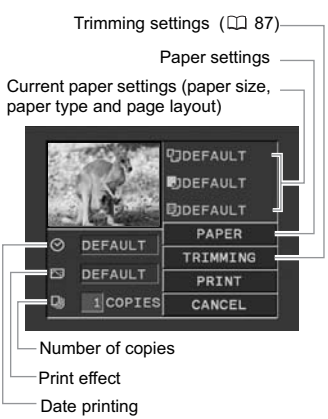
IMPORTANT

- The following still images may not be correctly printed with a PictBridge compatible printer.
  - Images created or changed on a computer and transferred to the memory card.
  - Images recorded with the camcorder but edited on a computer.
  - Images on the memory card whose file names were changed.
  - Images copied from the memory card to the disc.
  - Images not recorded with this camcorder.
- Observe the following precautions during printing:
  - Do not turn off the camcorder or the printer.
  - Do not change the position of the / switch.
  - Do not disconnect the USB cable.
  - Do not remove the disc or memory card.
- If the message “BUSY.” does not disappear, disconnect the USB cable from both the camcorder and the printer and then reconnect them again.

NOTES

- **To Cancel the Printing:** Press ( ) while printing. A confirmation screen appears. Select [OK] and press ( ). With Canon’s PictBridge compatible printers, the printing will stop immediately (even if not completed) and the paper will be fed through.
- **Printing Errors:** If an error occurs while printing, an error message appears (97).
  - Canon’s PictBridge compatible printers: Resolve the error. When printing does not resume automatically, select [CONTINUE] and press ( ). If [CONTINUE] cannot be selected, select [STOP], press ( ) and retry printing. Refer also to the printer’s instruction manual for details.
  - If the error still persists and printing does not restart, disconnect the USB cable and turn the camcorder off. Turn it on again, set it to PLAY · mode and reconnect the cable.
- **When you have finished printing:** Disconnect the cable from the camcorder and printer and turn off the camcorder.

Print Settings



Options

[PAPER]
[PAPER SIZE] Available paper sizes vary depending on the printer model. [PAPER TYPE] Select [PHOTO], [FAST PHOTO] or [DEFAULT]. [PAGE LAYOUT] Select [DEFAULT] or one of the following available page layouts. [BORDERED]: Prints the whole image area almost exactly as the recorded still image. [BORDERLESS]: Enlarges the center portion of the still image to fit the width/ height ratio of the selected paper size. The top, bottom and sides of the still image may be slightly trimmed out. [2-UP], [4-UP], [8-UP], [9-UP], [16-UP]: Prints multiple small copies of the same still image on one sheet of paper. **Canon printers:** You can also use the specially designed Photo Stickers sheets.
[Date print]
Select [ON], [OFF] or [DEFAULT].
[Print Effect]
The print effect can be used with printers compatible with the Image Optimize function to achieve higher quality prints. Select [ON], [OFF] or [DEFAULT]. **Canon PIXMA/SELPHY DS printers:** You can also select [VIVID], [NR] and [VIVID+NR].
[Number of Copies]
Select 1-99 copies.

1 In the print setting menu, select (▲▼, ◄►) the setting you want to change and press ( ).

2 Select (▲▼) a setting option and press ( ).

NOTES

- Print setting options and [DEFAULT] settings vary depending on the printer model. For details, refer to the printer's instruction manual.
- **Canon PIXMA/SELPHY DS Printers:** To print multiple small copies on a single print (2-, 4-, 9- or [16-UP]), set [PAPER SIZE] to [10 x 14.8 cm] or [9 x 13 cm].
- **Canon PIXMA/SELPHY CP Printers:** To print multiple small copies on a single print ([8-UP]), set [PAPER SIZE] to [CREDITCARD].

Trimming Settings

Set the print style before changing the trimming settings.

1 In the print setting menu, select (▲▼, ◄►) [TRIMMING] and press ( ).

The trimming frame appears.

2 Change the size of the trimming frame.

- Move the zoom lever toward **T** to shrink the frame, and toward **W** to enlarge it. Press ( ) to change the orientation of the frame (portrait/ landscape).
- To cancel the trimming settings, move the zoom lever toward **W** until the trimming frame disappears.

3 Move (▲▼, ◀▶) the trimming frame.
Pressing MENU brings you back to the print settings menu.

NOTES

● About the color of the trimming frame:
- White: No trimming settings.
- Green: Recommended trimming size. (The trimming frame may not appear in green depending on the image size, paper size or borders settings.)

● The trimming setting applies only to one image.
● The trimming setting is canceled in the following cases:
- When you turn off the camcorder.
- When you disconnect the USB cable.
- When you expand the trimming frame beyond its maximum size.
- When you change the [PAPER SIZE] setting.

Print Order Settings

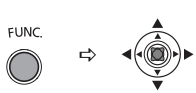
Out of the still images recorded on the memory card, you can mark the ones you want to print and set the desired number of copies as a print order. These print order settings are compatible with the Digital Print Order Format (DPOF) standards and can be used for printing on DPOF compatible printers (🕮 85). Up to 998 still images can be selected.

Selecting Still Images for Printing (Print Order)

Do not connect the USB cable to the camcorder while setting the print orders.

CAMERA | CAMERA | PLAY | **PLAY** (🕮 13)

FUNC. (🕮 27)



FUNC. ⇨ PRINT ORDER

⇩

FUNC. ⇦ Select (◀▶) the number of copies (0 - 99) and press (●).*

* To cancel the print order, set the number of copies to 0.

Setting Print Orders from the Index Screen

CAMERA | CAMERA | PLAY | **PLAY** (🕮 13)

Move the zoom lever toward **W** to enter the still image index screen.

MENU (🕮 27)

MENU ⇨ STILL IMG OPER.

⇩

➡ PRINT ORDER

⇩

Bring (▲▼, ◀▶) the cursor ☞ to the image you want to print and press (●).

⇩

MENU** ⇦ Set (▲▼) the desired number of copies and press (●).* Repeat these steps to set print orders for additional images.

* 🖶 and the number of copies appear on images marked with a print order. To cancel the print order set (▲▼) the number of copies to 0.
**After closing the menu the camcorder returns to the index screen.

Erasing All Print Orders

CAMERA | CAMERA | PLAY | PLAY (📖 13)

MENU (📖 27)

MENU ⇨ STILL IMG OPER.

⇩

ORD.ALL ERASE

⇩

MENU ⇦ YES

Printing

	➡ PRINT

MENU (📖 27)

1 **Connect the printer to the camcorder. Refer to *PC Connection Diagrams* (📖 77).**

2 **Press MENU, select (▲▼) [➡ PRINT] and press (⊛).**
- The print setting menu appears.
- The error message "SET PRINT ORDER" appears if you connect a printer with direct print function and select [➡ PRINT] without having set any print orders.

3 **Select (▲▼, ◀▶) [PRINT] and press (⊛).**
Printing starts. The print setting menu disappears when the printing is completed.

NOTES

- Depending on the connected printer, you can change some print settings before step 3 (📖 86).
- **Cancel Printing/Printing Errors** (📖 86)
- **Restarting Printing:** Press MENU and select [➡ PRINT]. Select [RESUME] in the print setting menu and press (⊛). The remaining images will be printed.
Printing cannot be restarted when the print order settings have been changed or if you deleted a still image with print order settings.

Troubleshooting

If you have a problem with your camcorder, refer to this checklist. Consult your dealer or a Canon Service Center if the problem persists.

Power Source

Problem	Solution	🕮
• Camcorder will not turn on. • The camcorder switches off by itself. • The disc compartment cover will not open. • LCD/viewfinder switches on and off.	Battery pack is exhausted. Replace or charge the battery pack.	21
	Attach the battery pack correctly.	
Battery pack will not charge.	Charge the battery pack in temperatures between 0 °C and 40 °C (32 °F and 104 °F).	–
	Battery packs become hot with use and may not charge. The charging will start once the battery pack temperature is below 40 °C (104 °F).	–
	The battery pack is damaged. Use a different battery pack.	–

Recording/Playback

Problem	Solution	🕮
Buttons will not work.	Turn on the camcorder.	–
	Load a disc.	25
Abnormal characters appear on the screen. The camcorder does not operate properly.	Disconnect the power source and reconnect it after a short time. If the problem still persists, disconnect the power source and press the RESET button with a pointed item. Pressing the RESET button resets all settings.	–
" ⌀ " flashes on the screen.	Load a disc.	25
" ⚠ " flashes on the screen.	Battery pack is exhausted. Replace or charge the battery pack.	21
The wireless controller will not work.	Set [WL.REMOTE] to [ON].	42
	The battery of the wireless controller is exhausted. Replace the battery.	23
Video noise appears on screen.	When using the camcorder in a room where a plasma TV is located, keep a distance between the camcorder and the plasma TV.	–
Video noise appears on the TV screen.	When using the camcorder in a room where a TV is located, keep a distance between the compact power adapter and the power or antenna cables of the TV.	–
Even without a disc loaded, when closing the disc compartment cover a motor sound can be heard.	The camcorder is checking if a disc is loaded or not. This is not a malfunction.	–

Problem	Solution	🕮
The disc cannot be ejected.	Turn off the camcorder, disconnect the compact power adapter and remove the battery pack. Restore the power supply and try again.	–
	The camcorder has exceeded its operational temperature. Disconnect the compact power adapter and remove the battery pack and let the camcorder cool down before resuming use.	
The disc cannot be recognized.	The disc is dirty. Clean the disc with a soft lens-cleaning cloth. If the problem persists replace the disc.	100
	The disc is not correctly loaded. Check the disc.	25
The camcorder vibrates.	Depending on the condition of the disc, the camcorder might vibrate occasionally. This is not a malfunction.	–
• The disc's rotation can be faintly heard. • Occasionally the operation sound can be heard.	The disc is activated from time to time. This is not a malfunction.	–
After using the camcorder for a long time the lights up in red.	This is not a malfunction. Turn the camcorder off and let it cool for a while before resuming operation.	–

Recording

Problem	Solution	🕮
"ϟ" flashes red on the screen.	The camcorder malfunctions. Consult a Canon Service Center.	–
Image will not appear on the screen.	Set the camcorder to CAMERA.	30
"SET THE TIME ZONE, DATE AND TIME" appears on the screen.	Set the time zone, date and time.	28
	Recharge the built-in lithium battery and set the time zone, date and time.	101
Pressing the start/stop button will not start recording.	Set the camcorder to CAMERA.	30
	Load a recommended disc.	25
	The disc is full ("END" flashes on the screen). Delete some recordings (DVD-RW in VR mode) to free some space or replace the disc.	25 63
	The camcorder has exceeded its operational temperature. Disconnect the compact power adapter and remove the battery pack and let the camcorder cool down before resuming use.	–
	Cancel the disc protection.	65
	Unfinalize the disc (DVD-RW in VIDEO mode).	72
Even after stopping recording, the disc access indicator does not go off.	The scene or still image is being recorded on the disc. This is not a malfunction.	30 31
The point where the start/stop button was pressed does not match the beginning/end of the recording.	There is a slight interval between pressing the start/stop button and the actual start of the recording on the disc. This is not a malfunction.	–

Problem	Solution	🕮
The recording suddenly stops shortly after starting recording.	The disc is dirty. Clean the disc with a soft lens-cleaning cloth. If the problem persists replace the disc.	100
	The camcorder has exceeded its operational temperature. Disconnect the compact power adapter and remove the battery pack and let the camcorder cool down before resuming use.	–
Camcorder will not focus.	Autofocus does not work on that subject. Focus manually.	50
	Adjust the viewfinder with the dioptric adjustment lever.	22
	Lens is dirty. Clean the lens with a soft lens-cleaning cloth. Never use tissue paper to clean the lens.	102
Sound is distorted.	When recording near loud sounds (such as fireworks or concerts), sound may become distorted. This is not a malfunction.	–
A vertical light bar appears on the screen.	Bright light in a dark scene may cause a vertical light bar (smear) to appear. This is not a malfunction.	–
Viewfinder picture is blurred.	Adjust the viewfinder with the dioptric adjustment lever.	22

Playback/Editing

Problem	Solution	🕮
Pressing the playback button does not start playback.	Check that the disc contains recorded scenes.	–
	Load a disc.	25
	Set the camcorder to PLAY.	33
	You may not be able to play with this camcorder discs recorded or edited with other DVD recorders or computer DVD drives.	–
	If using a single-sided disc, check that the disc is inserted with the label side facing up.	25
	The camcorder has exceeded its operational temperature. Disconnect the compact power adapter and remove the battery pack and let the camcorder cool down before resuming use.	–
During playback there is video noise, the sound is distorted or the disc cannot be read.	The disc is dirty. Clean the disc with a soft lens-cleaning cloth.	100
	You may not be able to play with the camcorder discs recorded or edited with other DVD recorders or computer DVD drives.	–
Cannot add scenes to the playlist.	The disc is full (“ END” flashes on the screen). Delete some recordings to free some space.	63
	You cannot add more than 999 scenes to the playlist.	–
Cannot divide the scene.	You cannot edit or delete scenes on a disc that was protected in another digital device.	–
Cannot edit the disc title.	You cannot add a title to a DVD-R/DVD-R DL disc after it was finalized.	71
	Unfinalize the disc first (DVD-RW in VIDEO mode).	72
	You may not be able to edit the title if you entered it with another digital device.	–
	Remove the disc protection.	65

Problem	Solution	🕮
Cannot create a Photomovie scene.	There are no still images recorded on the disc.	–
	The disc is full (“ END” flashes on the screen). Delete some recordings (DVD-RW in VR mode) to free some space.	63
Cannot edit or delete scenes.	Remove the disc protection.	65
	You cannot edit or delete scenes on a disc that was protected with another digital device.	–
	Scenes cannot be deleted in a DVD-R/DVD-R DL disc or a DVD-RW disc recorded in VIDEO mode.	–
Cannot finalize the disc.	You cannot finalize a disc (DVD-R/DVD-R DL or DVD-RW) recorded in VIDEO mode if it contains only still images. Record at least one scene before finalizing the disc.	30 71
No sound from the built-in speaker.	Open the LCD panel.	–
	Speaker volume is turned off. Adjust the volume from the [SYSTEM SETUP] menu in PLAY mode.	35
The keys on the wireless controller do not function.	Check that you did not lay the camcorder so the multi selector’s button is pressed down. Place the camcorder upright.	–

Playing Back the Disc in an External DVD Device

External DVD device refers to DVD players, DVD recorders, computer’s DVD drives and other digital devices.

Problem	Solution	🕮
There is a brief stop between scenes.	Depending on the DVD player, there might be a very short stop between scenes during playback.	–
Disc is running, but image will not appear on the TV screen.	TV/VIDEO selector on the TV is not set to VIDEO. Set the selector to VIDEO.	74
	You attempted to play back or dub an incompatible disc. Stop playback/dubbing.	–
The disc cannot be recognized by the device. Or, even though the disc is read, cannot play back the disc or the picture is distorted.	The disc is dirty. Clean the disc with a soft lens-cleaning cloth.	100
	The disc has not been finalized.	71
	DVD-RW discs in VR mode can only be played back with VR mode-compatible DVD players. Refer to the instruction manual of your DVD device.	–
Cannot edit my recordings or add recordings to the disc with the DVD device.	It may not be possible to edit or add recordings with an external DVD recorder on a disc recorded with this camcorder.	–
When writing on a disc in this camcorder recordings transferred from a computer, an error message appears.	The camcorder has exceeded its operational temperature. Disconnect the compact power adapter and remove the battery pack and let the camcorder cool down before resuming use.	–

Memory Card Operation

Problem	Solution	🕮
Memory card cannot be inserted.	Memory card was not facing the correct direction. Turn the memory card over and reinsert it.	24
Memory card cannot be recorded.	Memory card is full. Erase still images to free some space or replace the memory card.	67
	Memory card was not initialized. Initialize the memory card.	70
	The folder and file numbers have reached their maximum value. Set [FILE NOS.] to [RESET] and insert a new memory card.	42
Memory card cannot be played back.	Insert a memory card.	24
	Set the camcorder to PLAY·📷.	35
	Make sure the memory card is selected as the media for still images.	32
Image cannot be erased.	Image is protected. Cancel the protection.	69
"🗎" flashes in red.	Card error occurred. Turn off the camcorder. Remove and reinsert the memory card. Initialize the memory card if flashing persists.	70

Printing

Problem	Solution	🕮
The printer is not operating even though the camcorder and printer are correctly connected.	1. Set the camcorder to PLAY·📷. 2. Disconnect and reconnect the USB cable. 3. Turn off the printer and turn it back on.	–

List of Messages

Message	Explanation	🕮
SET THE TIME ZONE, DATE AND TIME	You have not set the time zone, date and time. This message appears each time you turn the power on until you set the time zone, date and time.	28
CHANGE THE BATTERY PACK	Battery pack is exhausted. Replace or charge the battery pack.	21
TEMPERATURE TOO HIGH CANNOT RECORD	The camcorder has exceeded its operational temperature. Disconnect the compact power adapter and remove the battery and let the camcorder cool down before resuming use.	–
TEMPERATURE TOO HIGH CANNOT REMOVE DISC		
CANNOT RECORD CHECK THE DISC	There is a problem with the disc. Replace the disc.	25
	This message can also appear if condensation has formed. Wait until the camcorder dries completely before resuming use.	102
	The disc's recording surface may be dirty or scratched.	–

Message	Explanation	🕮
REACHED THE MAXIMUM NUMBER OF SCENES	The maximum number of scenes has been reached. Delete some recordings (DVD-RW in VR mode) to free some space or replace the disc.	25 63
CANNOT PLAY DISC	The disc is dirty or you attempted to play back a disc type not supported (not DVD-R/RW).	–
	This message can also appear if condensation has formed. Wait until the camcorder dries completely before resuming use.	102
CANNOT EDIT DISC	There are no scenes to edit or the recording is damaged.	–
	This message can also appear if condensation has formed. Wait until the camcorder dries completely before resuming use.	102
CANNOT DIVIDE THE SCENE	Photomovie scenes cannot be divided.	68
	You may not be able to divide very short scenes.	–
	Scenes cannot be divided when the disc already contains 999 scenes.	–
	You may not be able to further divide scenes shorter than 5 seconds that were created by dividing a previous scene.	–
PLEASE USE ONLY THE RECOMMENDED DISCS	The dual layered disc you inserted cannot be used with this camcorder.	8
DISC IS FINALIZED CANNOT RECORD	You cannot record additional scenes on a finalized DVD-R/ DVD-R DL disc.	–
	You cannot record additional scenes or unfinalize a DVD-RW disc in VIDEO mode that was finalized with another digital device.	–
UNFINALIZE THE DISC	You cannot record additional scenes or convert still images to a Photomovie scene on a finalized DVD-RW in VIDEO mode. Unfinalize the disc first.	72
DISC IS PROTECTED	The disc is protected. Replace the disc or remove the disc protection.	65
CANNOT READ THE DISC CHECK THE DISC	Disc could not be read. Try cleaning it or replace the disc.	100
	This message can also appear if the camcorder has exceeded its operational temperature. Disconnect the power adapter and remove the battery and let the camcorder cool down before resuming use.	–
	This message can also appear if condensation has formed. Wait until the camcorder dries completely before resuming use.	102
	The disc may not be loaded correctly. Try removing the disc and reinserting it.	25
• ACCESS ERROR • DISC ACCESS FAILURE CHECK THE DISC	There was an error when reading the disc or attempting to write onto it. Try cleaning the disc or replace it.	100
	This message can also appear if condensation has formed. Wait until the camcorder dries completely before resuming use.	102
	The disc may not be loaded correctly. Try removing the disc and reinserting it.	25
DISC COVER IS OPEN	Verify the disc is correctly inserted and close the disc cover.	25

Message	Explanation	🕮
NO DISC	No disc is loaded. Insert a disc.	25
	This message can also appear if condensation has formed. Wait until the camcorder dries completely before resuming use.	102
	You inserted a disc recorded in a different Television System (PAL or SECAM).	–
LOADING THE DISC	The disc is being read. Wait before you start recording.	–
AVOID MOVING THE CAMCORDER	Try not to move the camcorder while the image is being recorded.	–
UNABLE TO RECOVER DATA	Could not recover a corrupted file.	–
	This message can also appear if condensation has formed. If you suspect condensation is the reason, do not initialize the disc and wait until the camcorder dries completely before resuming use.	102
DISC FULL	The disc is full (“ END” flashes on the screen) . Delete some recordings (DVD-RW in VR mode) to free some space or replace the disc.	25 63
NO CARD	Memory card not is inserted into the camcorder.	24
NO IMAGES	No images are recorded on the memory card.	–
CARD ERROR	A memory card error occurred. The camcorder cannot record or display the image. The error may be temporary. If the message disappears after 4 seconds and “ ” flashes red, turn the camcorder off, remove the card and reinsert the card. If “ ” changes to green, you can continue recording/playback.	–
CARD FULL	Memory card is full. Erase some images to free some space or replace the memory card.	67
NAMING ERROR	The folder and file numbers have reached their maximum value. Set the [FILE NOS.] option to [RESET] and initialize the disc or memory card, erase all the images on the memory card or replace the disc.	–
UNIDENTIFIABLE IMAGE	The image file is corrupted or it was saved using a compression method other than that compatible with this camcorder (JPEG).	–
TRANSFER ORDER ERROR	You attempted to set more than 998 transfer orders.	84
TOO MANY STILL IMAGES DISCONNECT USB CABLE	Disconnect the USB cable and decrease the number of still images on the memory card or disc to less than 1800. Images cannot be erased from a DVD-R/DVD-R DL or DVD-RW disc recorded in VIDEO mode. If a dialog appeared on the computer screen, close it and then reconnect the USB cable.	–

E

Direct Print Related Messages

NOTES

About Canon PIXMA/SELPHY DS Printers: If the printer's error indicator flashes or an error message appears on the printer's operation panel, refer to the printer's instruction manual.

Message	Explanation
PAPER ERROR	There is a problem with the paper. Wrong paper size is inserted or the ink cannot be used with the selected paper. Or, if the paper output tray is closed, open it to print.
NO PAPER	Paper is not correctly inserted or there is no paper.
PAPER JAM	The paper jammed during printing. Select [STOP] to cancel printing. After removing the paper, set some paper again and retry printing.
INK ERROR	There is a problem with the ink.
NO INK	The ink cartridge is not inserted or is out of ink.
LOW INK LEVEL	The ink cartridge needs to be replaced soon. Select [CONTINUE] to restart printing.
INK ABSORBER FULL	Select [CONTINUE] to resume printing. Consult a Canon Service Center (refer to the list included with the printer) to replace the ink absorber.
• FILE ERROR • CANNOT PRINT!	You attempted to print an image that was recorded with another camcorder, with a different compression, or was edited on a computer.
COULD NOT PRINT X IMAGES	You attempted to use the print order settings to print X images that were recorded with another camcorder, with a different compression or were edited on a computer.
SET 🖶PRINT ORDER	No still image on the memory card has been marked with a 🖶 print order.
🖶PRINT ORDER ERROR	You attempted to set more than 998 still images in the print order.
CANNOT TRIM	You attempted to trim an image that was recorded with another camcorder.
READJUST TRIMMING	You changed the print style after you set the trimming settings.
PRINTER ERROR	Cancel printing. Turn off the printer and turn it back on. Check the printer status. If the error still persists, refer to the printer's instruction manual and contact the appropriate customer support center or service center.
PRINT ERROR	Cancel printing, disconnect the USB cable and turn off the printer. After a while, turn the printer back on and reconnect the USB cable. Check the printer status. When you are printing using the 🖶 button, check the print settings.
HARDWARE ERROR	Cancel printing. Turn off the printer and turn it back on. Check the printer status. If the printer is equipped with a battery, it might be exhausted. In such case, turn off the printer, replace the battery and turn it back on.
COMMUNICATION ERROR	The printer is experiencing a data transfer error. Cancel printing, disconnect the USB cable and turn off the printer. After a while, turn the printer back on and reconnect the USB cable. When you are printing using the 🖶 button, check the print settings. Or, you attempted to print from a memory card that contains a large number of images. Reduce the number of images.
CHECK PRINT SETTINGS	The print setting cannot be used for printing with the 🖶 button.

Message	Explanation
INCOMPATIBLE PAPER SIZE	The paper settings of the camcorder conflict with the printer's settings.
PRINTER IN USE	The printer is in use. Check the printer status.
PAPER LEVER ERROR	Paper lever error occurred. Adjust the paper selection lever to the proper position.
PRINTER COVER OPEN	Close the printer cover securely.
NO PRINTHEAD	No print head is installed in the printer or the print head is defective.

Handling Precautions

Camcorder

● Do not subject the camcorder to vibrations or strong impacts while the DISC access indicator is on or flashing. The data may not be correctly recorded on the disc, and the recording may be permanently lost.
● Do not touch the pick up lens.
● Do not carry the camcorder by the LCD panel or the disc cover. Be careful when closing the LCD panel.
● Do not leave the camcorder in places subject to high temperatures (like the inside of a car under direct sunlight), or high humidity.
● Do not use the camcorder near strong electric or magnetic fields such as above TVs, near plasma TVs or mobile phones.
● Do not point the lens or viewfinder at strong light sources. Do not leave the camcorder pointed at a bright subject.
● Do not use or store the camcorder in dusty or sandy places. The camcorder is not waterproof – avoid also water, mud or salt. If any of the above should get into the camcorder it may damage the camcorder and/or the lens. Be sure to close the disc compartment cover after use.
● Be careful of heat generated by lighting equipment.
● Do not disassemble the camcorder. If the camcorder does not function properly, consult qualified service personnel.
● Handle the camcorder with care. Do not subject the camcorder to shocks or vibration as this may cause damage.

Battery Pack

DANGER!
Treat the battery pack with care.
• Keep it away from fire (or it might explode).
• Do not expose the battery pack to temperature higher than 60 °C (140 °F). Do not leave it near a heater or inside a car in hot weather.
• Do not try to disassemble or modify it.
• Do not drop or knock it.
• Do not get it wet.

● Charged battery packs continue to discharge naturally. Therefore, charge them on the day of use, or the day before, to ensure a full charge.
● Attach the terminal cover whenever a battery pack is not in use. Contact with metallic objects may cause a short circuit and damage the battery pack.
● Dirty terminals may cause a poor contact between the battery pack and the camcorder. Wipe the terminals with a soft cloth.
● Since storing a charged battery pack for a long time (about 1 year) can shorten its lifecycle or affect performance, we recommend to discharge the battery pack fully and to store it in a dry place at temperatures no higher than 30 °C (86 °F). If you do not use the battery pack for long periods, charge and discharge it fully at least once a year. If you have more than one battery pack, perform these precautions at the same time for all battery packs.
● Although the battery pack's operating temperature range is from 0 °C to 40 °C (32 °F to 104 °F), the optimal range is from 10 °C to 30 °C (50 °F to 86 °F). At cold temperatures, performance will temporarily decline. Warm it in your pocket before use.

● Replace the battery pack if the usable time after full charge diminishes substantially at normal temperatures.

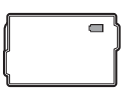
About the battery terminal cover

The battery terminal cover has a [▭]-shaped hole. This is useful when you wish to differentiate between charged and uncharged battery packs.

Back side of the battery pack

Terminal cover attached
Charged

Uncharged



Mini DVD Disc

The recording surface of DVD discs is extremely delicate. If handled or stored in an incorrect manner, the camcorder may stop recognizing or may not be able to play back the disc. Be sure to observe the following precautions when storing/handling your discs.

● **Always remove the disc from the camcorder after you finish recording**.
● Do not store the camcorder with a disc left inside.
● Keep the disc clean of dust, dirt or smudges. Even very small smudges or particles of dust can lead to problems when recording or playing back the disc. Carefully inspect the recording surface of the disc before inserting it in the camcorder. If the disc gets dirty use a dry, soft lens-cleaning cloth to remove any fingerprints, dirt buildup or smudges from the disc surface. Clean the disc in a radial motion from its center outwards.
● Never use a chemically treated cloth or flammable solvents such as paint thinner to clean the disc.
● Do not bend, scratch or wet the disc and do not subject it to strong shocks.
● Do not attach any labels or stickers on the disc surfaces. The disc may not rotate in a stable manner and this may cause malfunctions.
● To protect the disc, return it to its case for storage.
● When writing on the label side of the disc, avoid hard tip pens. Use waterproof soft-tipped felt pens instead.
● Moving a disc rapidly between hot and cold temperatures may cause condensation to form on its surfaces. If condensation forms on the disc, put it aside until the water droplets have evaporated completely.
● Never expose the disc to direct sunlight and do not store it in places subject to high temperatures or high humidity.
● Always finalize a disc before inserting it into an external DVD device. Failing to do so can result in the loss of the recorded data.

Memory Card

● We recommend saving backups of memory card images on your computer. Image data may be corrupted or lost due to memory card defects or exposure to static electricity. Canon Inc. makes no warranties for corrupted or lost data.
● Do not turn off the camcorder, disconnect the power source or remove the memory card while the CARD access indicator is flashing.
● Do not use memory cards in places subject to strong magnetic fields.

● Do not leave memory cards in places subject to high humidity and high temperature.
● Do not disassemble, bend, drop, or subject memory cards to shocks and do not expose them to water.
● Do not touch or expose the terminals to dust or dirt.
● Check the direction before inserting the memory card. Forcing a memory card into the slot if it is not correctly oriented may damage the memory card or the camcorder.
● Do not attach any labels or stickers on the memory card.
● When you erase image files or initialize the memory card, only the file allocation table is altered and the data itself is not actually deleted. Take the necessary precautions when you dispose of the memory card, for example by physically damaging it to prevent the leakage of private data.

Lithium Button Battery

WARNING!
- The battery used in this device may present a fire or chemical burn hazard if mishandled. Do not recharge, disassemble, heat above 100 °C (212 °F) or incinerate the battery.
- Replace the battery with a CR2025 made by Panasonic, Hitachi Maxell, Sony, Sanyo, or with Duracell2025. Use of other batteries may present a risk of fire or explosion.
- Dispose of the used battery according to applicable recycling regulations.

● Do not pick up the battery using tweezers or other metal tools as this will cause a short circuit.
● Wipe the battery with a clean dry cloth to ensure proper contact.
● Keep the battery out of the reach of children. If swallowed, seek medical assistance immediately. The battery case may break and the battery fluids may cause internal damage.
● Do not disassemble, heat or immerse the battery in water to avoid the risk of explosion.

Built-in Rechargeable Lithium Battery

The camcorder has a built-in rechargeable lithium battery to keep the date/time and other settings. The built-in lithium battery is recharged while you use the camcorder, however, it will become totally discharged if you do not use the camcorder for about 3 months.

To recharge the built-in lithium battery:
Connect the compact power adapter to the camcorder and leave it connected for 24 hours with the power switch set to OFF.

Maintenance/Others

Storage

● If you do not intend to use the camcorder for a long time, store it in a place free of dust, in low humidity, and at temperatures not higher than 30 °C (86 °F).

Cleaning

Camcorder Body

● Use a soft, dry cloth to clean the camcorder body. Never use chemically treated cloth or volatile solvents such as paint thinner.

Pick Up Lens

● Remove any dust or dirt particles using a non-aerosol type blower brush. Never touch the pick up lens directly to clean it.

Lens and Viewfinder

● If the lens surface is dirty, the autofocus may not work properly.
● Remove any dust or dirt particles using a non-aerosol type blower brush.
● Use a clean, soft lens-cleaning cloth to gently wipe the lens or viewfinder. Never use tissue paper.

LCD Screen

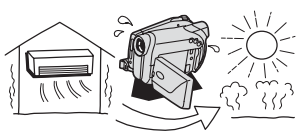
● Clean the LCD screen using a clean, soft lens-cleaning cloth.
● Condensation may form on the surface of the screen when the temperature changes suddenly. Wipe it with a soft dry cloth.

Condensation

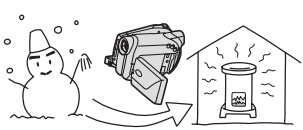
Moving the camcorder rapidly between hot and cold temperatures may cause condensation (water droplets) to form on its internal surfaces. Stop using the camcorder if condensation is detected. Continued use may damage the camcorder.

Condensation may form in the following cases:

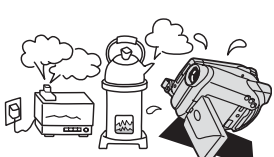
When the camcorder is moved from an air-conditioned room to a warm, humid place



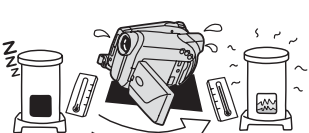
When the camcorder is moved from a cold place to a warm room



When the camcorder is left in a humid room



When a cold room is heated rapidly



To avoid condensation

- Do not expose the camcorder to sudden or extreme changes in temperature.
- Unload the disc, place the camcorder in an airtight plastic bag and let it adjust to temperature changes slowly before removing it from the bag.

When condensation is detected

- The camcorder automatically shuts off. If a disc is loaded, remove the disc immediately and leave the disc cover open. Leaving the disc in the camcorder may damage it.
- A disc cannot be loaded when condensation is detected.

Resuming use

- The precise time required for water droplets to evaporate will vary depending on the location and weather conditions. As a general criterion, wait for 2 hours before resuming use of the camcorder.

Using the Camcorder Abroad

Power Sources

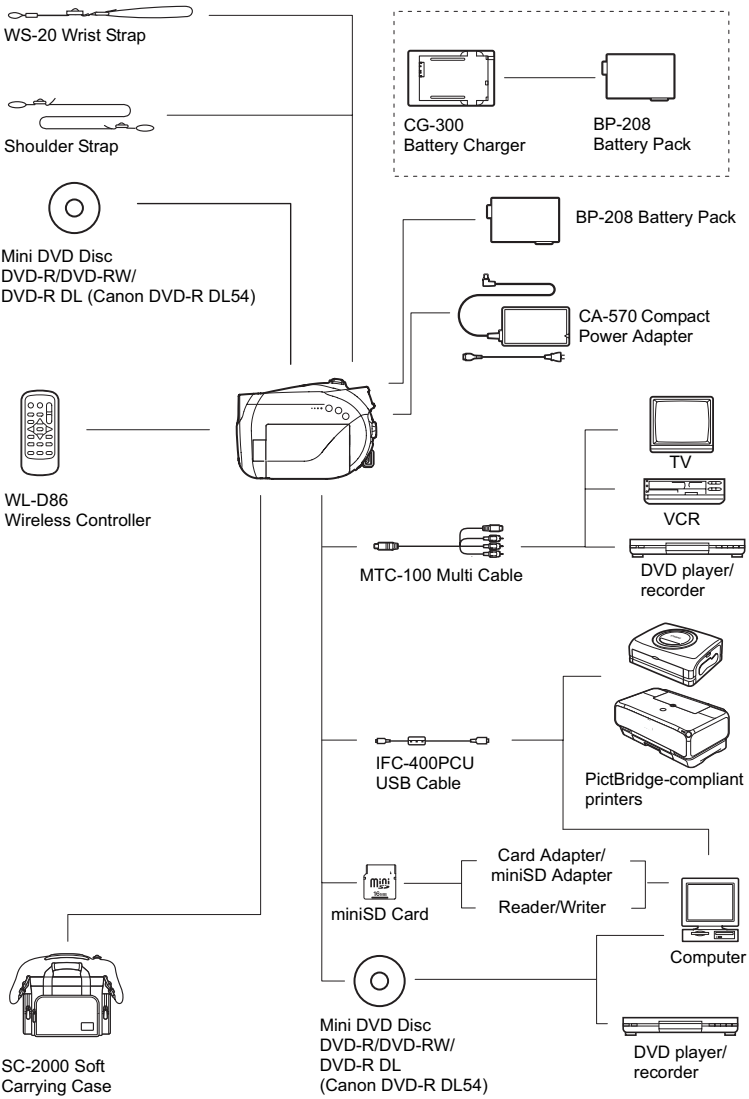
You can use the compact power adapter to operate the camcorder and to charge battery packs in any country with power supply between 100 and 240 V AC, 50/60 Hz. Consult the Canon Service Center for information on plug adapters for overseas use.

Playback on a TV Screen

You can only play back your recordings on TVs compatible with the NTSC system. The NTSC system is used in the following countries/areas:

American Samoa, Antigua, Aruba, Bahamas, Barbados, Bermuda, Bolivia, Canada, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guam, Guatemala, Greenland, Haiti, Honduras, Jamaica, Japan, Korea, Mexico, Micronesia, Myanmar, Nicaragua, Panama, Peru, Philippines, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Surinam, Taiwan, Trinidad and Tobago, USA, Venezuela, Virgin Islands.

System Diagram (Availability differs from area to area)



E

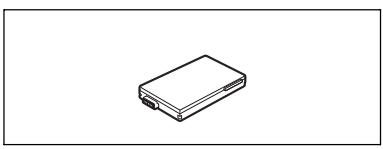
Optional Accessories

Call or visit your local retailer/dealer for genuine Canon video accessories. You can also obtain genuine accessories for your Canon camcorder by calling: 1-800-828-4040, Canon U.S.A. Information Center.

Use of genuine Canon accessories is recommended.
This product is designed to achieve excellent performance when used with genuine Canon accessories. Canon shall not be liable for any damage to this product and/or accidents such as fire, etc., caused by the malfunction of non-genuine Canon accessories (e.g., a leakage and/or explosion of a battery pack). Please note that this warranty does not apply to repairs arising out of the malfunction of non-genuine Canon accessories, although you may request such repairs on a chargeable basis.

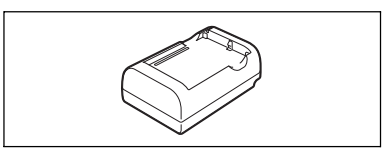
Battery Packs

When you need extra battery packs, select only the BP-208 battery pack.



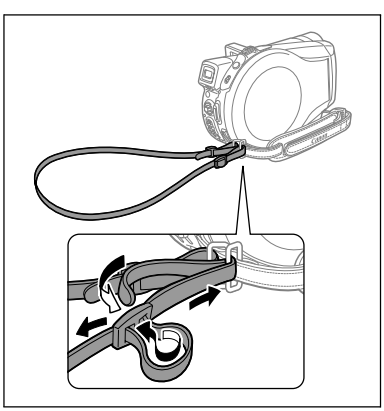
CG-300 Battery Charger

Use the battery charger for charging the battery packs. It plugs directly into a power outlet without a cable.
Charging Time: 105 min.
Charging time varies according to the charging condition.

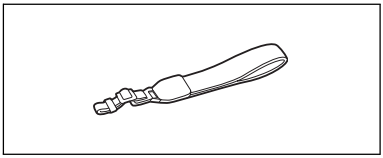


Shoulder Strap

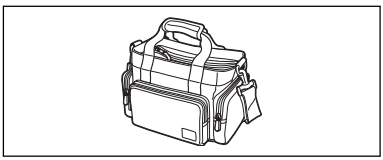
You can attach a shoulder strap for more security and portability.
Pass the ends through the strap mount and adjust the length of the strap.



WS-20 Wrist Strap
Use this for extra additional protection for active shooting.



SC-2000 Soft Carrying Case
A handy camcorder bag with padded compartments and plenty of space for accessories.



This mark identifies genuine Canon video accessories. When you use Canon video equipment, we recommend Canon-brand accessories or products bearing the same mark.

Product Codes

Provided Accessories

CA-570 Compact Power Adapter	8468A002AA
BP-208 Battery Pack	0802B002AA
WL-D86 Wireless Controller	D83-0722-000
MTC-100 Multi Cable	D82-0790-000
IFC-400PCU USB Cable	C84-1245-000

Optional Accessories

CG-300 Battery Charger	0784B002AA
WS-20 Wrist Strap	3118A002AA (D81-0190-202)
SC-2000 Soft Carrying Case	9389A001AA

Specifications

E

DC22

System

Disc Recording System	Movies	DVD-VIDEO (VIDEO mode) DVD-VR (VR mode) only with 8 cm DVD-RW Video Compression: MPEG2 Audio Compression: Dolby Digital 2ch
	Still Images	Exif 2.2** compliant with JPEG compression
Television System	EIA standard (525 lines, 60 fields) NTSC color signal	
Image Sensor	1/3.9-inch CCD, approx. 2,200,000 pixels Effective pixels: Movies Still images	 16:9 (Image stabilizer [ON]): approx. 1,380,000 16:9 (Image stabilizer [OFF]): approx. 1,500,000 4:3 recordings: approx. 1,230,000 approx. 2,000,000
Compatible Media	8 cm (3 in.) mini DVD discs marked with the DVD-R, DVD-R DL or DVD-RW logo	DVD R DVD R DL DVD RW
Maximum Recording Time	1.4 GB single sided 8 cm mini DVD disc: XP: approx. 20 min., SP: approx. 30 min., LP: approx. 60 min. 2.6 GB single sided dual-layered 8 cm mini DVD disc: XP: approx. 36 min., SP: approx. 54 min., LP: approx. 108 min.	
LCD Screen	2.7 in., wide, TFT color, approx. 123,000 pixels	
Viewfinder	0.27 in., wide, TFT color, approx. 123,000 pixels	
Microphone	Stereo electret condenser microphone	
Lens	f=4.05-40.5 mm, F/1.8-2.8, 10x power zoom 35 mm equivalent: Movies Still images	 16:9 (Image stabilizer [ON]): 43.3-433 mm 16:9 (Image stabilizer [OFF]): 41.6-416 mm 4:3 recordings: 48.7-487 mm 38.1-381 mm
Lens Configuration	11 elements in 9 groups	
AF system	TTL autofocus, manual focusing possible	
Minimum Focusing Distance	1 m (3.3 ft.); 1 cm (0.39 in.) on maximum wide angle	
White Balance	Auto white balance, preset white balance (DAYLIGHT, SHADE, CLOUDY, TUNGSTEN, FLUORESCENT, FLUORESCENT H) or custom white balance	
Minimum Illumination	1.0 lx ([NIGHT] recording program (SCN), Shutter speed at 1/2) 14 lx (Auto mode, Auto slow shutter [ON], Shutter speed at 1/30)	
Recommended Illumination	More than 100 lx	
Image Stabilization	Electronic	

Memory Card

Recording Media	miniSD Card*
Size of Still Images	1632 x 1224, 1280 x 960, 640 x 480 pixels
File Format	Design rule for Camera File system (DCF), Exif 2.2** compliant, DPOF compliant
Image Compression Method	JPEG (compression: Super Fine, Fine, Normal)

* This camcorder has been tested with miniSD cards up to 1 GB. Performance cannot be guaranteed for all miniSD cards.
** This camcorder supports Exif 2.2 (also called "Exif Print"). Exif Print is a standard for enhancing the communication between camcorders and printers. By connecting to an Exif Print-compliant printer, the camcorder's image data at the time of shooting is used and optimized, yielding extremely high quality prints.

Input/Output Terminals

AV Terminal	10-pin multiconnector; Input / Output Video: 1 Vp-p / 75 ohms unbalanced S-Video: Luminance (Y) signal: 1 Vp-p / 75 ohms Chrominance (C) signal: 0.286 Vp-p / 75 ohms Audio: Output: –10 dBV (47 kohm load) / 3 kohm or less Input: –10 dBV / 40 kohm or more
USB Terminal	mini-B

Power/Others

Power supply (rated)	7.4 V DC (battery pack), 8.4 V DC (compact power adapter)
Power consumption (SP mode, AF on)	4.5 W (viewfinder), 4.5 W (LCD screen [NORMAL])
Operating temperature	0 – 40 °C (32 – 104 °F)
Dimensions (W x H x D)	51 x 91 x 126 mm (2.0 x 3.6 x 5.0 in.) excluding the grip belt
Weight (camcorder body only)	410 g (14.5 oz.)

CA-570 Compact Power Adapter

Power supply	100 – 240 V AC, 50/60 Hz
Power consumption	17 W
Rated output	8.4 V DC, 1.5 A
Operating temperature	0 – 40 °C (32 – 104 °F)
Dimensions	52 x 90 x 29 mm (2.1 x 3.5 x 1.1 in.)
Weight	135 g (4.8 oz.)

BP-208 Battery Pack

Battery type	Rechargeable Lithium Ion Battery
Rated voltage	7.4 V DC
Operating temperature	0 – 40 °C (32 – 104 °F)
Battery capacity	850 mAh
Dimensions	39 x 8 x 63 mm (1.5 x 0.31 x 2.5 in.)
Weight	40 g (1.4 oz.)

Weight and dimensions are approximate. Errors and omissions excepted. Subject to change without notice.

E

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U.S.A.

CANON CONSUMER DIGITAL VIDEO EQUIPMENT LIMITED WARRANTY FOR THE UNITED STATES

The warranty set forward below is given by Canon U.S.A., Inc. with respect to equipment purchased in the United States. The limited warranty is only effective upon presentation of your Bill of Sale or other proof of purchase. Canon consumer DVD equipment is warranted under normal, non-commercial, personal use, against defective materials or workmanship as follows:
Parts: Defective parts will be exchanged for new parts or comparable rebuilt parts for a period of ONE YEAR from the date of original purchase, except for a defective Video Head, which will be exchanged for a period of three months from the date of purchase.
Labor: For a period of ONE YEAR from the date of original purchase, labor will be provided free of charge by our factory service centers or designated service facilities located in the United States.
When returning equipment under this warranty, you must pre-pay the shipping charges, and you must enclose the Bill of Sale or other proof of purchase with a complete explanation of the problem. During your ONE-YEAR warranty period, repairs will be made and the equipment return-shipped to you free of charge. After your warranty period is over, you will be given an estimate of the cost of repair and an opportunity to approve or disapprove of the repair expense before it is incurred. If you approve, repairs will be made and the equipment return-shipped to you. (shipping charges apply). If you disapprove, we will return-ship the equipment at no charge to you.

Non-Canon brand peripheral equipment and software which may be distributed with Canon DVD camcorders are sold "AS IS" without warranty of any kind by CUSA, including any implied warranty regarding merchantability or fitness for a particular purpose. The sole warranty with respect to such non-Canon brand items is given by the manufacturer or producer thereof.
CUSA shall have no responsibility under this limited warranty for use of Canon DVD Camcorders in conjunction with incompatible peripheral equipment and incompatible software.

In order to obtain warranty service, contact the authorized Canon retail dealer from whom you purchased the DVD Camcorder or call the CANON INFORMATION CENTER AT 1-800-828-4040). You will be directed to the nearest service facility for your product.

This Limited Warranty covers all defects encountered in normal use of the equipment and does not apply in the following cases:

A) Loss or damage to the equipment due to abuse, mishandling, accident, improper maintenance, or failure to follow operating instructions;
B) If the equipment is defective as a result of leaking batteries, sand, dirt or water damage;
C) If defects or damages are caused by the use of unauthorized parts or by service other than our authorized agent;
D) If the equipment is used for commercial or industrial use.

This Limited Warranty does not cover cabinet (exterior finish), DVD discs, nor does it apply to equipment purchased outside the United States. This warranty does not cover units sold to rental firms, military operations, hotels, schools, hospitals or for other commercial, industrial, or institutional applications. These uses are covered only by such specific warranty as Canon may issue with such sales.
This Limited Warranty does not apply to accessories or consumables for the DVD Camcorder, which are sold "AS IS", without warranty of any kind by CUSA.
Please retain this warranty card and your Bill of Sale as a permanent record of your purchase. This card is most important in order to be sure you are contacted right away should there be a safety inspection, modification or product recall under applicable laws or regulations.

NO IMPLIED WARRANTY, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE APPLIES TO THIS EQUIPMENT AFTER THE APPLICABLE PERIOD OF EXPRESS WARRANTY OR GUARANTY, EXCEPT AS MENTIONED ABOVE, GIVEN BY ANY PERSON, FIRM OR CORPORATION WITH RESPECT TO THIS EQUIPMENT SHALL BIND THE UNDERSIGNED. (SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU). CUSA SHALL NOT BE LIABLE FOR LOSS OF REVENUES OR PROFITS, EXPENSE FOR SUBSTITUTE EQUIPMENT OR SERVICE, STORAGE CHARGES, LOSS OF DATA, OR ANY OTHER SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY THE USE, MISUSE OR INABILITY TO USE THE DV CAMCORDER, REGARDLESS OF THE LEGAL THEORY ON WHICH THE CLAIM IS BASED, AND EVEN IF CUSA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. NOR SHALL RECOVERY OF ANY KIND AGAINST CUSA BE GREATER THAN THE PURCHASE PRICE OF THE DV CAMCORDER SOLD BY CUSA AND CAUSING THE ALLEGED DAMAGE. WITHOUT LIMITING THE FOREGOING, YOU ASSUME ALL RISK AND LIABILITY FOR LOSS, DAMAGE OR INJURY TO YOU AND YOUR PROPERTY AND TO OTHERS AND THEIR PROPERTY ARISING OUT OF USE, MISUSE OR INABILITY TO USE THE DV CAMCORDER NOT CAUSED DIRECTLY BY THE NEGLIGENCE OF CUSA. (SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU).THIS WARRANTY SHALL NOT EXTEND TO ANYONE OTHER THAN THE ORIGINAL PURCHASER OF THIS EQUIPMENT OR THE PERSON FOR WHOM IT WAS PURCHASED AS A GIFT.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.
CANON U.S.A., INC.

CANADA

CANON CONSUMER DIGITAL VIDEO EQUIPMENT LIMITED WARRANTY

The limited warranty set forth below is given by Canon Canada Inc. (“Canon Canada”) with respect to Canon DVD equipment purchased in Canada. This limited warranty is only effective upon presentation of a bill of sale or other proof of purchase for this Canon digital video equipment to a Canon Service Facility when repairs are required.
Canon consumer video digital equipment is warranted under normal, non-commercial, personal use, against defective materials or workmanship as follows:
Parts: Defective parts will be exchanged for new parts or, at Canon Canada’s option, comparable rebuilt parts for a period of one year from the date of original purchase, except Video Heads which will be exchanged for a period of 3 months from the date of purchase.
Labour: For a period of one year from the date of original purchase, labour will be provided free of charge by our Canon Service Facilities in Canada.
This limited warranty covers all defects except where:
(a) The loss or damage to the product results from:
- i) accident, natural disaster, mishandling, abuse, neglect, unauthorized product modification or failure to follow instructions contained in the instruction manual;
- ii) the use of accessories, attachments, products, supplies, parts or devices with this Canon product that do not conform to Canon specifications or that cause abnormally frequent service problems;
- iii) repairs or services performed by any party other than a Canon Service Facility;
- iv) defective batteries or any exposure to water, sand or dirt;
- v) shipping (claim must be presented to the shipper);

(b) Any serial number on the video equipment is altered or removed.
(c) The digital video equipment is used for commercial, professional or industrial purposes.
This limited warranty does not cover the cabinet (exterior finish) of the DVD equipment, DVD discs, nor does it apply to DVD equipment purchased outside Canada.

TO OBTAIN WARRANTY SERVICE

Ship your Canon digital video equipment in its original carton, box or equivalent, properly packed, fully insured with shipping charges prepaid, together with a copy of your bill of sale or other proof of purchase and a description of the problem to any of the Canon Service Facilities in Canada.

LIMITATIONS

Except as otherwise required by applicable legislation, this warranty is in lieu of all other warranties, conditions, guarantees or representations, express or implied, statutory or otherwise, relative to this Canon product, including implied warranties or conditions of merchantability or fitness for a particular purpose.
Canon Canada assumes no liability for special, consequential or incidental damages or loss that may arise, whether on account of negligence or otherwise, from the use, misuse or inability to use this Canon product (including loss of profit, revenue, discs or enjoyment) or from failure to conform to any express or implied warranties, conditions, guarantees or representations. Any recovery under this limited warranty shall not exceed the purchase price of the product. Canon Canada does not assume or authorize any other person to assume for Canon Canada any other liability with respect to this Canon product.
This warranty does not extend to any person other than the original purchaser of this Canon product or the person for whom it was purchased as a gift and states your exclusive remedy.

NOTICE TO CONSUMER

If you plan to take important videos or if the product has not been used for some time, please check all functions with the instruction book before using it.

Canon

CANON INC.

U.S.A.	**CANON U.S.A., INC. NEW JERSEY OFFICE** 100 Jamesburg Road, Jamesburg, NJ 08831 USA **CANON U.S.A., INC. CHICAGO OFFICE** 100 Park Blvd., Itasca, IL 60143 USA **CANON U.S.A., INC. LOS ANGELES OFFICE** 15955 Alton Parkway, Irvine, CA 92618 USA **CANON U.S.A., INC. HONOLULU OFFICE** 210 Ward Avenue, Suite 200, Honolulu, HI 96814 USA
	● **If you have any questions, call the Canon U.S.A. Information Center toll-free at 1-800-828-4040 (U.S.A. only).**
CANADA	**CANON CANADA INC. NATIONAL HEADQUARTERS** 6390 Dixie Road, Mississauga, Ontario L5T 1P7 **CANON CANADA INC. CALGARY** 2828, 16th Street, N.E. Calgary, Alberta T2E 7K7 **CANON CANADA INC. MONTREAL** 5990 Côte de Liesse, Quebec H4T 1V7
	● **If you have any questions, call the Canon Canada Information Center toll-free at 1-800-828-4040 (CANADA only).**
	● **Si vous avez des questions, veuillez téléphoner sand frais au Canada 1-800-828-4040 (CANADA seulement).**
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	CANON U.S.A., INC. NEW JERSEY OFFICE 100 Jamesburg Road, Jamesburg, NJ 08831 USA
CENTRO Y SURAMÉRICA	**CANON LATIN AMERICA, INC.** 703 Waterford Way Suite 400 Miami, FL 33126 USA
ASIA	**CANON HONGKONG COMPANY LTD.** 19/F, The Metropolis Tower, 10 Metropolis Drive, Hunghom, Kowloon, Hong Kong

The information on this manual is verified as of July 1st, 2006.
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La información de este manual fue verificada el 1 de julio de 2006.

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