

Canon

PUB. DIM-0949-000

VIXIA
HFS20

VIXIA
HFS21

VIXIA
HFS200



HD Camcorder
Instruction Manual

English

Caméscope HD
Manuel d'instruction

Français

Videocámara HD
Manual de Instrucciones

Español

NTSC



HD VIXIA HD

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.

HD Camcorder, VIXIA HF S20 A / VIXIA HF S21 A / VIXIA HF S200 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.

Use of shielded cable is required to comply with class B limits in Subpart B of Part 15 of 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.

WARNING:

To reduce the risk of electric shock, do not expose this product to dripping or splashing.

The Mains plug is used as the disconnect device. The Mains plug shall remain readily operable to disconnect the plug in case of an accident.

CAUTION:

- Danger of explosion if the wrong type of batteries are attached. Use only the same type of batteries.
- Do not expose batteries or product to excessive heat such as the inside of a car under direct sunlight, fire, etc.

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 HD Camcorder VIXIA HF S20 A / VIXIA HF S21 A / VIXIA HF S200 A and all its accessories.

- 1 Read these instructions.
- 2 Keep these instructions.
- 3 Heed all warnings.
- 4 Follow all instructions.
- 5 Do not use this apparatus near water.
- 6 Clean only with dry cloth.
- 7 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 8 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 9 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 10 Only use attachments/accessories specified by the manufacturer.
- 11 Unplug this apparatus during lightning storms or when unused for long periods of time.
- 12 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 13 Read Instructions — All the safety and operating instructions should be read before the product is operated.
- 14 Retain Instructions — The safety and operating instructions should be retained for future reference.
- 15 Heed Warnings — All warnings on the product and in the operating instructions should be adhered to.
- 16 Follow Instructions — All operating and maintenance instructions should be followed.
- 17 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.
- 18 Accessories — Do not use accessories not recommended in this manual as they may be hazardous.
- 19 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.
- 20 Water and Moisture — Hazard of electric shock — Do not use this product near water or in rainy/moist situations.

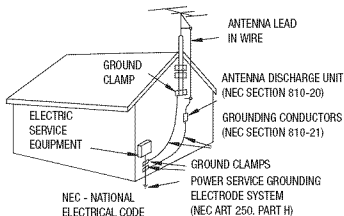
- 21 **Placing or Moving** — Do not place on an unstable cart, stand, tripod, bracket or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces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



- 22 **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.
- 23 **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.
- 24 **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.

- 25 **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



- 26 **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.
- 27 **Overloading** — Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
- 28 **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.
- 29 **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.

- 30 **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:
- When the power-supply cord or plug is damaged.
 - If any liquid has been spilled onto, or objects have fallen into, the product.
 - If the product has been exposed to rain or water.
 - 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.
 - If the product has been dropped or the cabinet has been damaged.
 - When the product exhibits a distinct change in performance. This indicates a need for service.
- 31 **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.
- 32 **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.
- 33 **Heat** — The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

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 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.

Model Name: VIXIA HF S20 A / VIXIA HF S21 A / VIXIA HF S200 A

Date of Purchase: Serial No.:

Purchased From:

Dealer Address:

Dealer Phone No.:

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- This device incorporates exFAT technology licensed from Microsoft.
- ANY USE OF THIS PRODUCT OTHER THAN CONSUMER PERSONAL USE IN ANY MANNER THAT COMPLIES WITH THE MPEG-2 STANDARD FOR ENCODING VIDEO INFORMATION FOR PACKAGED MEDIA IS EXPRESSLY PROHIBITED WITHOUT A LICENSE UNDER APPLICABLE PATENTS IN THE MPEG-2 PATENT PORTFOLIO, WHICH LICENSE IS AVAILABLE FROM MPEG LA, L.L.C., 250 STEELE STREET, SUITE 300, DENVER, COLORADO 80206.
- This product is licensed under AT&T patents for the MPEG-4 standard and may be used for encoding MPEG-4 compliant video and/or decoding MPEG-4 compliant video that was encoded only (1) for a personal and non-commercial purpose or (2) by a video provider licensed under the AT&T patents to provide MPEG-4 compliant video. No license is granted or implied for any other use for MPEG-4 standard.



Exciting Features and New Functions



High-Definition Video



Your camcorder's full high-definition image sensor (Full HD CMOS) captures video at a resolution of 1,920 x 1,080 pixels². Videos are then recorded in the memory in high definition, using AVCHD specifications³.

With your new HD camcorder, capturing the special moments in your life with amazing image quality and in lifelike vibrant colors is easy and fun!



HF521/S20 Dual Flash Memory

You can record in the built-in memory or on commercially available memory cards (📖 36).

Relay Recording



The memory almost full? Use the double memory card slot to keep on recording video without interruption (📖 39).

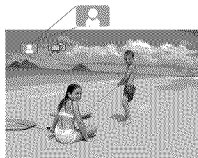
¹ "Full HD 1080" refers to Canon camcorders compliant with high-definition video composed of 1,080 vertical pixels (scanning lines).

² Video is recorded at this resolution only when the recording mode is set to MXP or FXP mode. In other recording modes, the picture is recorded at 1,440 x 1,080 pixels.

³ AVCHD is a standard for recording high-definition video. With AVCHD specifications, the video signal is recorded using MPEG-4 AVC/H.264 compression and the audio signal is recorded in Dolby Digital.

Smart AUTO (43)

Smart AUTO automatically selects the best scene mode for the scene you want to shoot. You get spectacular recordings every time without worrying about settings.



Just point the camcorder and it will automatically select the best settings for your subject

Video Snapshot (69)

Shoot or capture short scenes and arrange them into a video clip set to your favorite background music.



Face Detection (67)

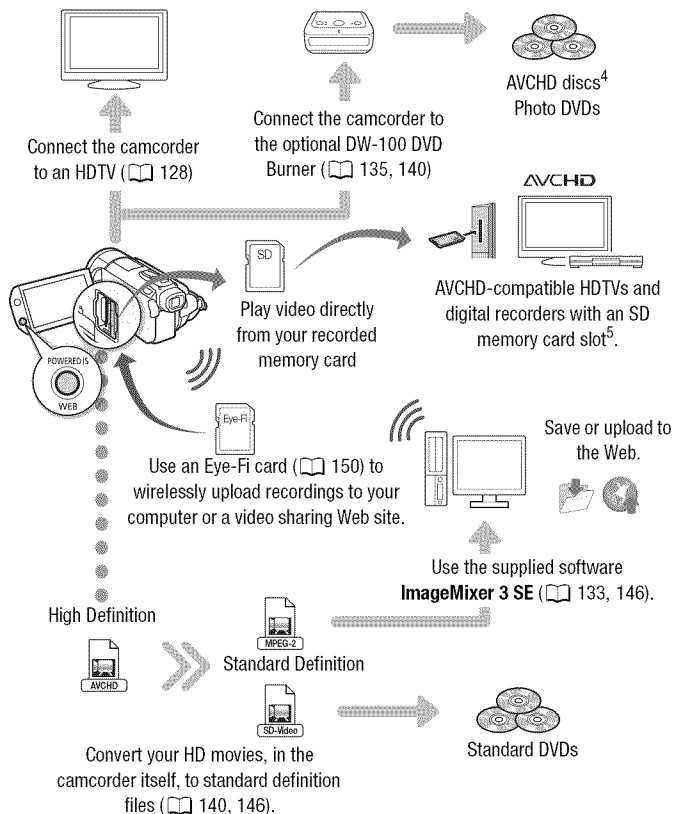
The camcorder automatically detects people's faces and adjusts the focus and other settings accordingly for beautiful results.

Image Stabilization



Dynamic IS (64) compensates for camcorder shake when you shoot video while walking. Powered IS (65) will produce stable shots when you zoom in on distant subjects (full telephoto).

Enjoying your Recordings on Other Devices



⁴ AVCHD discs containing scenes recorded in MXP mode cannot be created with the optional DW-100 DVD burner. Use the supplied software **ImageMixer 3 SE** to back up such scenes.

⁵ Refer to the instruction manual of the device. Depending on the device used, correct playback may not be possible even if the device is AVCHD-compatible. In such case, play back the recordings on the memory card using the camcorder.

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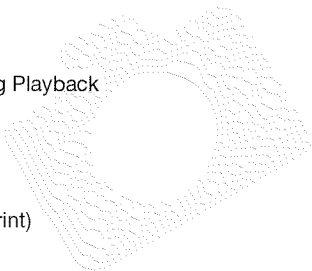
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About this Manual


Thank you for purchasing the Canon VIXIA HF S21 / VIXIA HF S20 / VIXIA HF S200. 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 *Troubleshooting* (📖 175).


Conventions Used in this Manual



-  **IMPORTANT:** Precautions related to the camcorder's operation.
-  **NOTES:** Additional topics that complement the basic operating procedures.
-  **POINTS TO CHECK:** Restrictions or requirements regarding the function described.
-  Reference page number within this manual.

To complete some operations you will need to refer also to other instruction manuals. This will be indicated with the following icons:

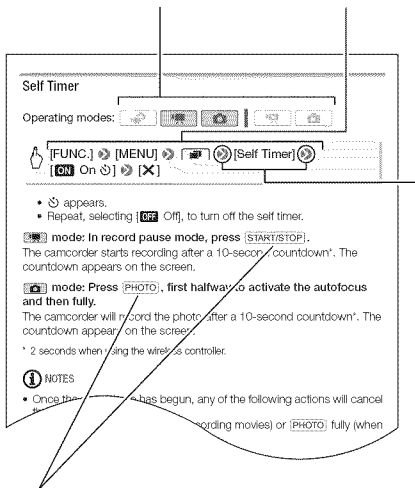
 Refer to the 'Photo Applications' Instruction Manual, included as a PDF file in the supplied Camcorder Supplemental Disc.


 Refer to the instruction manual of the optional DW-100 DVD Burner.


- **HF S21/S20**: Text that applies only to the model(s) shown in the icon.
- The following terms are used in this manual:
When not specified as “memory card” or “built-in memory”, the term “memory” by itself refers to both.
“Screen” refers to the LCD and the viewfinder screen (**HF S21** only).
“Scene” refers to one movie unit from the point you press the  button to start recording until you press again to pause the recording.
- The photos included in this manual are simulated pictures taken with a still camera. Unless indicated otherwise, illustrations and menu icons refer to the **HF S21**.

 indicates that a function is available in the operating mode indicated and  indicates that the function is not available. For a detailed explanation refer to *Operating Modes* (30).

Brackets [] are used to refer to control buttons and menu options you will touch on the screen and to other onscreen messages and displays.

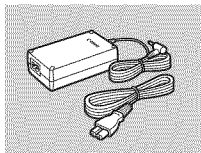


The names of physical buttons and switches on the camcorder are indicated within a “button” frame. For example .

The  arrow is used to abbreviate menu selections. For a detailed explanation on how to use the menus, refer to *Using the Menus* (32). For a concise summary of all available menu options and settings, refer to the appendix *Menu Options Lists* (152).

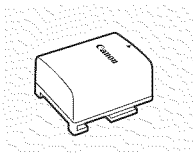
Supplied Accessories and CD-ROMs

The following accessories are supplied with the camcorder:



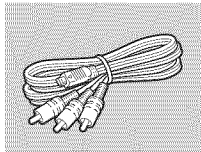
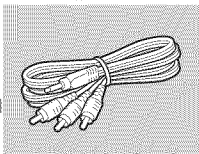
▶ CA-570 Compact Power Adapter
(incl. power cord)

BP-808 Battery Pack ◀



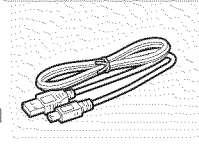
▶ WL-D89 Wireless Controller
(incl. CR2025 lithium button battery)

STV-250N Stereo Video Cable ◀
Yellow • Red • White plugs



▶ CTC-100/S Component Cable
Red • Green • Blue plugs

IFC-300PCU USB Cable ◀



The following CD-ROMs and software are supplied with the camcorder:

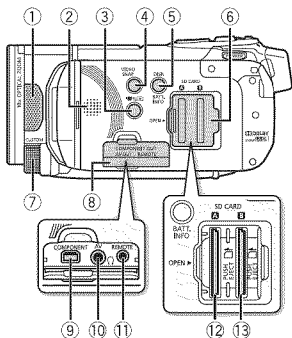
- **PIXELA Application - Disc 1 CD-ROM*** and 'PIXELA Applications' Installation Guide
 - ImageMixer 3 SE Transfer Utilities – Software for saving and transferring movies and music files you can use as background music.
- **PIXELA Application - Disc 2 CD-ROM***
 - ImageMixer 3 SE Video Tools – Software for managing, editing, and playing back movies.
- **Photo Applications Ver.34.0*/Music Data Disc CD-ROM** (referred in the manual as the Camcorder Supplemental Disc). Contains the following components.
 - Photo Application - Software for saving, managing, and printing photos*.
 - Music files that can be used as background music during playback**.

* The CD-ROM includes the instruction manual of the software (on PDF file).

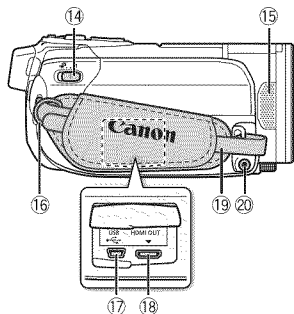
** These music files are for exclusive use with the supplied software **ImageMixer 3 SE**. The disc cannot be played back on CD players. For more details, refer to 'ImageMixer 3 SE Software Guide' (PDF file).

Names of Parts

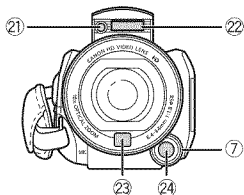
Left side view



Right side view

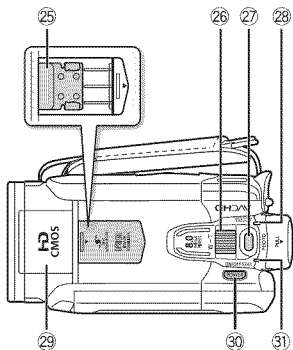


Front view



- ① Stereo microphone (L) (83)
- ② Speaker (51)
- ③ (camera/play) button (31)
- ④ VIDEO SNAP (video snapshot) button (69)
- ⑤ DISP. (onscreen display) button (97)/
BATT. INFO button (174)
- ⑥ Double memory card slot cover
- ⑦ CUSTOM dial (89)
- ⑧ Terminal cover
- ⑨ COMPONENT OUT terminal (125, 127)
- ⑩ AV OUT terminal (125, 127)/
⌋ (headphones) terminal (85)
- ⑪ REMOTE (zoom remote controller) terminal (90)
- ⑫ Memory card slot **A** (37)
- ⑬ Memory card slot **B** (37)
- ⑭ Mode switch (30)
- ⑮ Stereo microphone (R) (83)
- ⑯ Strap mount (25)
- ⑰ USB terminal (125, 128)
- ⑱ HDMI OUT terminal (125, 126)
- ⑲ Grip belt (25)
- ⑳ MIC terminal (88)
- ㉑ Mini video light (82)
- ㉒ Flash (111)
- ㉓ Instant AF sensor (157)
- ㉔ CUSTOM button (89)

Top view

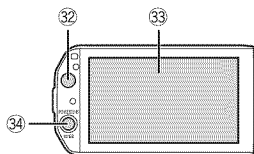


- 25 Mini advanced shoe (86)
- 26 Zoom lever (46)
- 27 PHOTO button (42, 108)
- 28 ACCESS indicator (42, 59, 108)
- 29 Pop-up flash (111) and mini video light (82)
- 30 POWER button
- 31 ON/OFF (CHG) (charge) indicator:
Green – ON
Orange – Standby (47)
Red – Charging (22)
- 32 Remote sensor (25)
- 33 LCD touch screen (26, 29)
- 34 POWERED IS button (65)/
WEB button (146)
- 35 DC IN terminal (22)
- 36 Viewfinder* (28)
- 37 START/STOP button (42, 59)

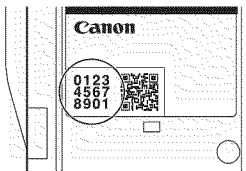
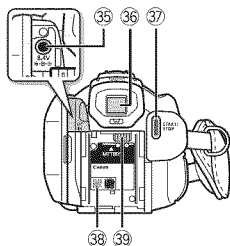
38 Serial number

The serial number label is located inside the battery attachment unit. Remove the battery pack to find it.

LCD panel



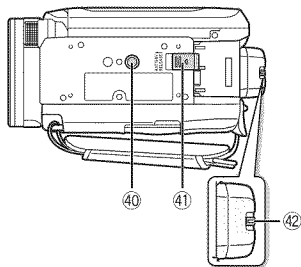
Back view



- 38 Battery attachment unit (22)

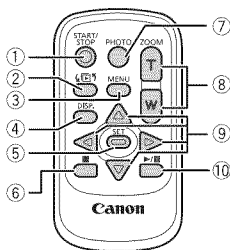
* **HFS21** only.








Bottom view



- ④⑩ Tripod socket (195)
- ④① BATTERY RELEASE switch (23)
- ④② Dioptic adjustment lever* (28)
- * **HFS21** only.

Wireless Controller WL-D89



- ① START/STOP button (42, 59)
- ②  (index selection) button (53)
Press and hold for more than 2 seconds to switch between shooting and playback mode.
- ③ MENU button (33, 156)
- ④ DISP. (onscreen display) button (97)
- ⑤ SET button
- ⑥  (stop) button (49)
- ⑦ PHOTO button (42, 108)
- ⑧ Zoom buttons (46)
- ⑨ Navigation buttons ( /  /  / )
- ⑩  (play/pause) button (49)



Preparations

This chapter describes basic operations, such as using the touch panel, navigating the menus, and first time settings to help you learn more about your camcorder.

Getting Started

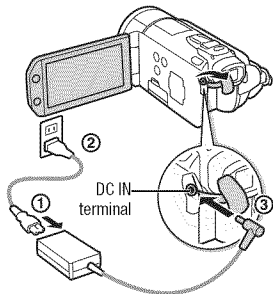
Charging the Battery Pack

The camcorder can be powered with a battery pack or directly using the compact power adapter. The first time you use a battery pack, fully charge it and then use the camcorder until the battery pack is completely exhausted. Doing so will ensure that the remaining recording time will be displayed accurately.

For approximate charging times and recording/playback times with a fully charged battery pack, refer to *Charging, Recording and Playback Times* (📖 203).

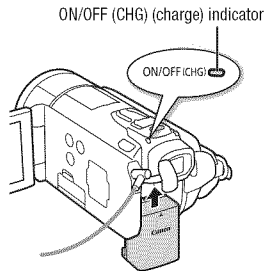
- 1 Connect the power cord to the compact power adapter.
- 2 Plug the power cord into a power outlet.
- 3 Connect the compact power adapter to the camcorder's DC IN terminal.
- 4 Attach the battery pack to the camcorder.

Press the battery pack softly into the battery attachment unit and slide it up until it clicks in place.



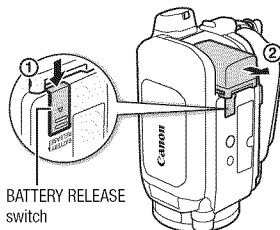
5 Charging will start when the camcorder is turned off.

- If the camcorder was on, the green ON/OFF (CHG) indicator will go out when you turn off the camcorder. After a moment, the ON/OFF (CHG) indicator will start flashing in red (battery pack charging). The red ON/OFF (CHG) indicator will go out when the battery pack is fully charged.
- If the indicator flashes quickly, refer to *Troubleshooting* (📖 175).



To remove the battery pack

- 1 Slide **BATTERY RELEASE** in the direction of the arrow and hold it pressed down.
- 2 Slide the battery pack in the direction of the arrow and then pull it out.



! IMPORTANT

- Turn off the camcorder before connecting or disconnecting the compact power adapter. After pressing **POWER** to turn off the camcorder, important data is updated in the memory. Be sure to wait until the green ON/OFF (CHG) indicator goes out.
- 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), 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.

i NOTES

- The battery pack will be charged only when the camcorder is off.
- If remaining battery time is an issue, you can power the camcorder using the compact power adapter so the battery pack will not be consumed.
- Charged battery packs continue to discharge naturally. Therefore, charge them on the day of use, or the day before, to ensure a full charge.
- We recommend that you prepare battery packs to last 2 to 3 times longer than you think you might need.
- **USA and Canada only:** The Lithium ion/polymer battery that powers the product is recyclable. Please call 1-800-8-BATTERY for information on how to recycle this battery.

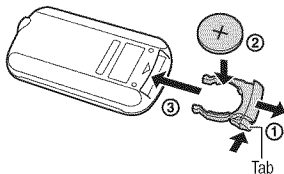


Preparing the Accessories

Wireless Controller

First, insert the supplied CR2025 lithium button battery into the wireless controller.

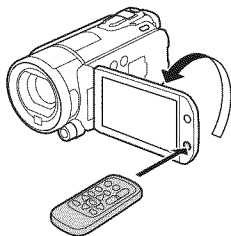
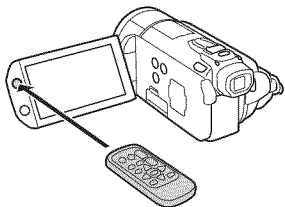
- 1 Press the tab in the direction of the arrow and pull out the battery holder.
- 2 Place the lithium button battery with the + side facing up.
- 3 Insert the battery holder.



To use the wireless controller

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

You can rotate the LCD panel 180 degrees to use the wireless controller from the front of the camcorder.



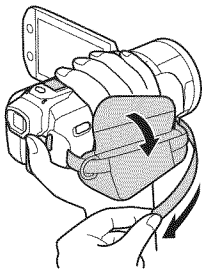
i NOTES

- The wireless controller may not work properly when the remote sensor is situated under strong light sources or direct sunlight.

Grip Belt and Straps

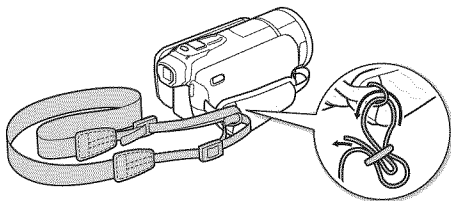
Fasten the grip belt.

Adjust the grip belt so that you can reach the zoom lever with your index finger, and the **START/STOP** button with your thumb.



To attach an optional shoulder strap

Pass the ends of the shoulder strap through the strap mount on the grip belt and adjust the length of the strap.

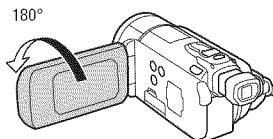
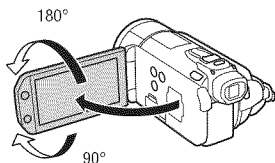


Adjusting the LCD Screen and (HFS21 only) Using the Viewfinder

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. Rotating the LCD panel 180 degrees can be useful in the following cases:
 - **HFS21** To allow the subject to monitor the LCD screen while you use the viewfinder.
 - To include yourself in the picture when recording with the self timer.
 - To allow the camcorder to be operated with the wireless controller from the front.



Subject can monitor the LCD screen
(**HFS21** You can use the viewfinder
at the same time)

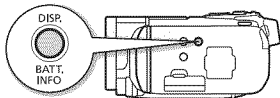
NOTES

- **About the LCD and viewfinder* screens:** 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.

* **HFS21** only.

LCD Backlight





When recording in bright places it may be difficult to use the LCD screen. Turn on the LCD backlight to make it brighter.



With the camcorder on, hold **DISP** pressed down for more than 2 seconds.

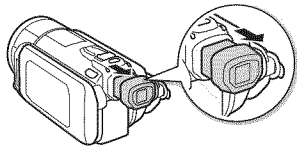
Repeat this action to switch the LCD backlight between off (normal) and on (bright). **HFS21** This changes the brightness of both the LCD and viewfinder screen.

NOTES

- The LCD backlight does not affect the brightness of the recordings.
- Using the bright setting will shorten the effective usage time of the battery pack.
- You can further adjust the brightness of the LCD screen with the   [LCD Brightness] setting, or dim it with the   [LCD Screen Dimmer] setting to use in places where the light from the LCD screen can be a nuisance.

HFS21 Using the Viewfinder

If it is difficult to use the LCD screen even after turning on the LCD backlight, you can use the viewfinder. You can also use the viewfinder when you rotate the LCD panel 180° to let the subject watch the recording.



To use the viewfinder, hold out both sides of the viewfinder firmly and pull it out until it clicks.

- You can close the LCD panel or rotate it toward the subject as you prefer.
- Adjust the viewfinder as necessary with the dioptic adjustment lever.
- The LCD backlight setting is common to the LCD screen and the viewfinder.

i NOTES

- **HFS21** For details about how to take care of the viewfinder, refer to *Handling Precautions* (📖 194), *Cleaning* (📖 199).

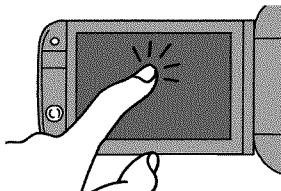
Basic Operation of the Camcorder

Using the Touch Screen

The control buttons and menu items that appear on the touch screen change dynamically depending on the operating mode and the task you are performing. With the intuitive touch screen interface you have all the controls at your fingertips.

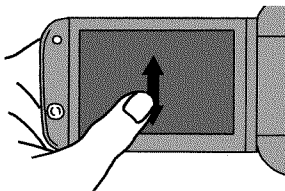
Touch

Touch a menu item to select it, or a control button to perform the corresponding action. For some functions, such as Touch & Track (📖 68) and face detection (📖 67), you can touch a subject that appears on the touch screen to select it and have the camcorder choose the optimal settings.



Drag

Swipe your finger up and down or left and right across the screen to scroll menus, to browse through index screen pages or to adjust slider controls (for example, to adjust the volume).



! IMPORTANT











- The camcorder uses a pressure-sensitive touch screen. Press firmly when using touch operations.
- In the following cases, you may not be able to perform touch operations correctly.
 - Operating the touch screen with wet or gloved hands or using your fingernails or other hard-tipped objects such as ballpoint pens.
 - Applying excessive force or forcefully scratching the touch screen.
 - Attaching commercially available screen protectors or adhesive film onto the touch screen's surface.

- For details about how to take care of the touch screen, refer to *Handling Precautions* (📖 194), *Cleaning* (📖 199).

Operating Modes


Recording

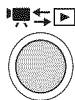
When recording video or photos, the camcorder's operating mode is determined by the position of the mode switch and the onscreen control buttons.


Operating mode	Mode switch	Onscreen icon	Operation
Dual Shot	Record video and take photos easily, letting the camcorder take care of all the settings – Great for beginners or if you just prefer not to bother with detailed camcorder settings.		
			Easy recording of movies and photos (📖 42).
Flexible recording	Use one of the dedicated recording modes to enjoy full access to the menus and advanced functions and change the camcorder's settings to your preference.		
			Touch [ >] to record movies (📖 59).
			Touch [ >] to record photos (📖 108).








* The mode icon displayed will change according to the optimal mode selected by the Smart AUTO function (📖 43).

Playback


Press the camera/play button  to switch the camcorder between camera (recording) mode and playback mode. The playback mode you switch into depends on the initial recording mode.




You can press  when the camcorder is off to turn it on directly in playback mode.

Initial mode	Operating mode	Operation
Press  in  or  mode.		Playing back movies ([Original] index screen) (📖 49).
Press  in  mode.		Viewing photos ([Photos] index screen) (📖 104).

NOTES

- When switching to a playback mode, the memory selected for playback will be the same currently used for recording.
- You can also press and hold  on the wireless controller for more than 2 seconds to switch between recording and playback mode.



Using the Menu

Many of the camcorder's functions can be adjusted from the FUNC. panel and the setup menus. In  mode, however, menus cannot be accessed and, except in a few cases, most menu settings will return to their default values.

For details about the available menu options and settings, refer to the appendix *Menu Options Lists* (📖 152).

Operating modes:    |  



The FUNC. Panel and Edit Panel


In  and  mode, the FUNC. panel shows a convenient overview of frequently used shooting functions. Touch [FUNC.] to access the FUNC. panel and then touch the function you want to set or adjust. You may need to drag your finger up and down along the scroll bar to find the control button of the desired function.

Touch the control button of the desired function



Drag your finger up and down along the scroll bar to display the rest of the panel



In  and  mode, touch [Edit] to display a similar panel containing the various operations that are available after selecting one or more scenes or photos (for example, deleting, adding scenes to the playlist, protecting photos, etc.). Touch the control button of the desired operation.

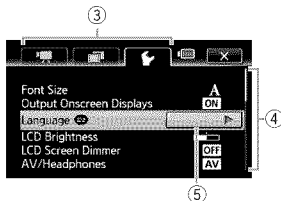
Example of the Edit panel in  mode

Touch the control button of the desired operation





The Setup Menu

- 1  or  mode only: Touch [FUNC.]
- 2 Touch [MENU] to open the setup menus.
You can also press [MENU] on the wireless controller to open the setup menus.



- 3 Touch the tab of the desired menu.
- 4 Drag your finger up and down along the scroll bar to bring the setting you want to change into the orange selection bar. Menu items not available appear grayed out.
- 5 When the desired menu item is in the orange bar, touch inside the frame on the right.
- 6 Touch the desired option and touch [X].
You can touch [X] to close the menu at any time.

NOTES

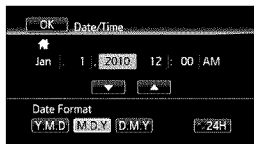
- A small font size is used in menu screens so you can see the options currently selected. You can enlarge the font size by setting   [Font Size] to [A Large] but only the icons of the currently selected options will appear on the screen.

First Time Settings

Setting the Date and Time

You will need to set the date and time of the camcorder before you can start using it. The [Date/Time] screen will appear automatically when the camcorder's clock is not set.

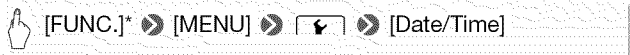
When the [Date/Time] screen appears, the year will be selected.



- 1 Touch a field you want to change (year, month, day, hours or minutes).
- 2 Touch [▲] or [▼] to change the field as necessary.
- 3 Set the correct date and time by changing all the fields in the same way.
- 4 Touch [Y.M.D], [M.D.Y] or [D.M.Y] to select the date format you prefer.
- 5 Touch [24H] to use 24-hour clock or leave this control unchecked to use 12-hour clock (AM/PM).
- 6 Touch [OK] to start the clock and close the setup screen.

NOTES

- 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, recharge the built-in lithium battery (197) and set the time zone, date and time again.
- To change the date and time later on (not during the initial setup), open the [Date/Time] screen from the setup menus:



* Only when performing the procedure in a recording mode.

Changing the Language

The default language of the camcorder is English. You can set it to one of 22 other languages.

Operating modes: 



* Only when performing the procedure in a recording mode.

NOTES

- Some control buttons, such as [ZOOM], [FUNC.] or [MENU], will appear in English regardless of the language selected.

Changing the Time Zone







Change the time zone to match your location. The default setting is New York.

Operating modes: 

- 1 Open the [Time Zone/DST] screen.




* Only when performing the procedure in a recording mode.



- 2 Touch [] to set the home time zone, or [] to set the time zone of your destination when you are traveling.
- 3 Touch [] or [] to set the desired time zone. If necessary, touch [] to adjust for daylight saving time.
- 4 Touch [] to close the menu.

Using a Memory Card

Memory Cards Compatible for Use with the Camcorder

You can use commercially available  SDHC (SD high capacity) memory cards and  SD memory cards with this camcorder. However, depending on the memory card, you may not be able to record movies. Refer to the table below.

As of October 2009, the movie recording function has been tested using SD/SDHC memory cards made by Panasonic, Toshiba and SanDisk.

Memory card	Capacity	SD Speed Class	Recording movies
 SD memory cards	64 MB or less	—	—
	128 MB or more	—	●*
		CLASS② CLASS④ CLASS⑥ CLASS⑩	●
 SDHC memory cards	Over 2 GB	CLASS② CLASS④ CLASS⑥ CLASS⑩	●

* Depending on the memory card used, it may not be possible to record movies.

About the SD Speed Class:

The SD Speed Class is a standard that indicates the minimum guaranteed data transfer speed of SD/SDHC memory cards. When you buy a new memory card, look for the Speed Class logo on the package. We recommend using memory cards rated Speed Class 4, 6 or 10.

Eye-Fi Cards

This product is not guaranteed to support Eye-Fi card functions (including wireless transfer). In case of an issue with an Eye-Fi card, please check with the card manufacturer.

Also note that an approval is required to use Eye-Fi cards in many countries or regions. Without approval, use of the card is not permitted. If it is unclear whether the card has been approved for use in the area, please check with the card manufacturer.

Inserting and Removing a Memory Card

Make sure to initialize (📖 40) all memory cards before using them with this camcorder.

1 Turn off the camcorder.

Make sure the ON/OFF (CHG) indicator is off.

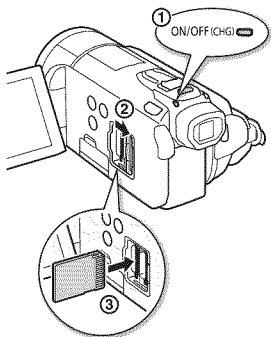
2 Open the double memory card slot cover.

3 Insert the memory card into one of the memory card slots.

- You can also use two memory cards, one in each memory card slot.
- Insert the memory card straight, with the label facing the front of the camcorder, all the way into the memory card slot until it clicks.
- To use the wireless communication features of an Eye-Fi card, insert it into memory card slot **B**. Be sure you understand the information provided in *Eye-Fi Cards* (📖 36) before using an Eye-Fi card.

4 Close the double memory card slot cover.

Do not force the cover closed if the memory card is not correctly inserted.



To remove the memory card

Push the memory card once to release it. When the memory card springs out, pull it all the way out.

! IMPORTANT

- Memory cards have front and back sides that are not interchangeable. Inserting a memory card facing the wrong direction can cause a malfunction of the camcorder. Be sure to insert the memory card as described in step 3.

Selecting the Memory for the Recordings




You can select to record your movies and photos in the built-in memory or on a memory card. The default memory for recording both is the built-in memory (**HFS21/S20**) or memory card **A** (**HFS200**).

Operating modes:    |  



POINTS TO CHECK

- Be sure you understand the information provided in *Eye-Fi Cards* (36) before using an Eye-Fi card.

HFS21/S20

 [FUNC.] ➤ [MENU] ➤  ➤
[Rec Media for Movies] or [Rec Media for Photos] ➤
 (built-in memory), [**A**] (memory card **A**) or [**B**]
(memory card **B**)* ➤ [**X**]

HFS200

 [FUNC.] ➤ [MENU] ➤  ➤
[Rec Media for Movies] or [Rec Media for Photos] ➤
[**A**] (memory card **A**) or [**B**] (memory card **B**)* ➤ [**X**]



* When selecting the memory, you can check the approximate available recording time/number of photos, based on currently used settings.

NOTES

- Select to record movies in the built-in memory (**HFS21/S20** only) or memory card **A** if you later want to convert the movies to standard definition in order to upload them to the Web or to create standard DVDs.

Relay Recording of Movies

You can activate the relay recording so if the memory you are using becomes full while recording movies, the recording will continue uninterrupted on a memory card.

When recording on memory card **A**, you can use memory card **B** for relay recording (**A** → **B**). **HFS21/S20** only: When recording in the built-in memory, you can choose to use only memory card **A** for relay recording ( → **A**), or use both memory cards ( → **A** → **B**).

Operating modes:



1 Insert a memory card that contains no video recordings into the card slot of the memory card you want to use for relay recording.

- When relay recording from the built-in memory (**HFS21/S20** only): memory card slot **A** or both memory card slots.
- When relay recording from memory card **A**: memory card slot **B** only.

2 Activate the relay recording.



* The approximate available recording time will now reflect the combined space in the memories used for relay recording.

NOTES

- **HFS21/S20** You cannot use relay recording from the built-in memory to memory card **B**. When using a single memory card, be sure to insert it into memory card slot **A**.
- Any of the following actions will deactivate the relay recording function:
 - Turning off the camcorder.
 - Opening the double memory card slot cover.
 - Changing the position of the mode switch.
 - Changing the camcorder's operating mode.
 - Changing the memory used for recording movies.

Initializing the Built-in Memory (HFS21/S20 only) or Memory Card

Initialize memory cards when you use them with this camcorder for the first time. You can also initialize a memory card or the built-in memory (HFS21/S20 only) to permanently delete all the recordings it contains.

HFS21/S20 At the time of purchase, the built-in memory comes pre-initialized and contains music files for use as background music during playback.








Operating modes: 

1 Power the camcorder using the compact power adapter.

Do not disconnect the power source or turn off the camcorder until the initialization is completed.

2 Initialize the memory.

HFS21/S20

 [FUNC.]* ➤ [MENU] ➤  ➤ [Initialize  / ] ➤
[ Built-in Mem.], [ Mem. Card A] or [ Mem. Card B]
➤ [Initialize] ➤ [Complete Initialization]* ➤ [Yes]** ➤ [OK]
➤ [X]

HFS200

 [FUNC.]* ➤ [MENU] ➤  ➤ [Initialize ] ➤
[ Mem. Card A] or [ Mem. Card B] ➤ [Initialize] ➤
[Complete Initialization]* ➤ [Yes]** ➤ [OK] ➤ [X]

* Touch this option if you want to physically erase all the data rather than just clear the file allocation table of the memory.

** If you selected the [Complete Initialization] option, you can touch [Cancel] to cancel the initialization while it is in progress. All recordings will be erased and the memory can be used without any problem.

IMPORTANT

- Initializing the memory will permanently erase all recordings. Lost original recordings cannot be recovered. Make sure you save important recordings in advance using an external device (📖 130).
- Initializing a memory card will permanently erase any music files you may have transferred to the card. (**HFS21/S20** The music files that come pre-installed in the built-in memory will be restored after it is initialized.)
 - Windows users: Use the supplied software **ImageMixer 3 SE** to transfer music files from the supplied Camcorder Supplemental Disc to a memory card after it is initialized. For details, refer to the 'ImageMixer 3 SE Software Guide' (PDF file).
 - Mac OS users: Use Finder to transfer music files from the [MUSIC] folder on the supplied Camcorder Supplemental Disc to a memory card after it is initialized. Refer to *About the music files* (📖 212) for the folder structure of the memory card.
- At the time of purchase, Eye-Fi cards contain the necessary network configuration software. Be sure to install the software and complete the required configuration setup before you initialize the Eye-Fi card prior to using it with this camcorder.
- **HFS21/S20** Initializing the built-in memory using the [Complete Initialization] option can take some time (about 1.5 hours).



Dual Shot Mode

This chapter covers how to easily record video and photos in the all-automatic Dual Shot mode, and how to use basic shooting functions like zoom and Quick Start. To enjoy full access to menus and more advanced functions, refer to the relevant chapters for video (📖 59) and photos (📖 108).

Basic Recording

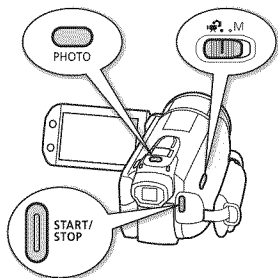
Shooting Video and Taking Photos in Dual Shot Mode

Operating modes:    |  

1 Set the mode switch to .

2 Turn on the camcorder.

- By default, movies and photos are recorded in the built-in memory (HFS21/S20 only) or on memory card **A** (HFS200). You can select the memory that will be used to record movies and photos (📖 38).
- Please read the IMPORTANT section (📖 44) before using an Eye-Fi card.



To record video

Press **START/STOP** to begin recording.

Press **START/STOP** again to pause the recording.

To take photos

1 Press **PHOTO** halfway.

Once the focus is automatically adjusted,  will turn green and one or more AF frames will appear.








2 Press **PHOTO** fully.

The ACCESS indicator will flash as the photo is being recorded.


When you have finished recording

- 1 Make sure that the ACCESS indicator is off.
- 2 Turn off the camcorder.
- 3 Close the LCD panel.


























About Dual Shot

- Only the following functions are available in  mode.
 - Zoom ( 46).
 - Quick Start ( 47).
 - Video snapshot ( 69).
 - Advanced image stabilization modes ( 64) to shoot video while walking or to stabilize the shot while zooming in on faraway subjects (telephoto).
 - Face detection ( 67) to get beautiful shots of people every time, tracking the subject even if the person moves.
 - Touch & Track ( 68) to track other moving subjects, keeping them in focus and using the best settings to record them.







About the Smart AUTO mode

When shooting in  mode, the camcorder will automatically detect certain characteristics of the subject, background, lighting conditions, etc. It will then adjust various settings (focus, exposure, color, image stabilization, image quality, among others), selecting the best settings for the scene you want to shoot. The Smart AUTO mode icon will change to one of the following icons.

Smart AUTO icons

Background → (color of the icon)	Bright (grey)	Blue skies (light blue)	Vivid colors (green/red)	Sunsets (orange)
Subject ↓				
People (stationary)	 ()	 ()	 ()	—
People (moving)	 ()	 ()	 ()	—
Subjects other than people, such as landscapes	 ()	 ()	 ()	
Close objects	 ()	 ()	 ()	—

The icon in parentheses appears under backlight conditions.











Background → (color of the icon)		Dark (dark blue)	
Subject ↓		Spotlight	Night scene
People (stationary)		—	—
People (moving)		—	—
Subjects other than people, such as landscapes			
Close objects		—	—

! IMPORTANT

- Observe the following precautions while the ACCESS indicator is on or flashing. Failing to do so may result in permanent data loss or damage to the memory.
 - Do not open the double memory card slot cover.
 - Do not disconnect the power source or turn off the camcorder.
 - Do not change the camcorder's operating mode.

- Be sure to save your recordings regularly (📖 130), especially after making important recordings. Canon shall not be liable for any loss or corruption of data.
- When recording photos on an Eye-Fi card in memory card slot **B**, photos will be uploaded automatically if you are within the range of a configured network. Always verify that Eye-Fi cards have been approved in the country/region of use. See also *Using an Eye-Fi card* (📖 150).



NOTES

- **About the Power Save mode:** If  ➤ [Power Saving Mode] ➤ [Auto Power Off] is set to **[ON On]**, the camcorder will shut off automatically to save power when it is powered by a battery pack and is left without any operation for 5 minutes. Press **[POWER]** to turn on the camcorder.
- When recording in bright places, it may be difficult to use the LCD screen. In such cases, you can turn on the LCD backlight (📖 27) or adjust the brightness of the LCD screen with the  ➤ [LCD Brightness] setting. **[HFS21]** You can also use the viewfinder (📖 28).
- **When taking photos:**
 - If the subject is not suitable for autofocus,  turns yellow. Set the camcorder to  mode and adjust the focus manually (📖 76).
 - When the subject is too bright, [Overexp.] will flash on the screen. In such case, use the optional 58 mm ND4-L or ND8-L filter.
- Under certain conditions, the Smart AUTO icon that appears on the screen may not match the actual scene. Especially when shooting against orange or blue backgrounds, the Sunset or one of the Blue Skies icons may appear and the colors may not look natural. In such case, we recommend recording in **M** manual mode (📖 59, 108).
- In  mode, menus cannot be accessed but the following settings can be changed in advance, before setting the mode switch to .
 - / menu: [AF mode], [Auto Slow Shutter], [POWERED IS Button].
 -  menu: [Video Snapshot Length], [Rec Media for Movies], [Recording Mode], [Rec Media for Photos], [Photo Size/Quality], [Simultaneous Recording].
 -  menu: All settings.

Zooming

Operating modes:    |  

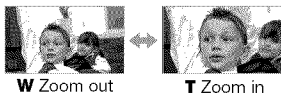
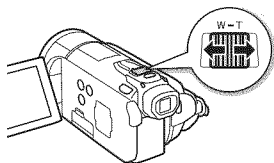
There are three ways you can zoom in and out: using the zoom lever on the camcorder, using the zoom buttons on the wireless controller or using the zoom controls on the touch screen.

In addition to the 10x optical zoom, in  mode, you can turn on the 200x digital zoom with the  ➤ [Digital Zoom] setting.

Using the Zoom Lever or Wireless Controller

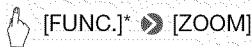
Move the zoom lever toward **W** (wide angle) to zoom out. Move it toward **T** (telephoto) to zoom in.


- By default, the zoom lever operates at a variable speed – press gently for a slow zoom; press harder for faster zooms.
- You can also use the zoom buttons on the wireless controller.



Using the Touch Screen's Zoom Controls

- 1 Display the zoom controls on the touch screen.



* Not necessary in  mode.

- The zoom controls appear on the left side of the screen.








2 Touch the zoom controls to operate the zoom.

Touch anywhere within the **W** area to zoom out or anywhere within the **T** area to zoom in. Touch closer to the center for a slow zoom; touch closer to the **W/T** icons for faster zooms.



3 Touch [X] to hide the zoom controls.

NOTES

- Keep at least 1 m (3.3 ft.) away from the subject. At full wide angle, you can focus on a subject as close as 1 cm (0.39 in.).
- In  or  mode, you can also set  /   [Zoom Speed] to one of three constant speeds (3 is the fastest, 1 the slowest).
- When [Zoom Speed] is set to [VAR Variable]:
 - When you use the **T** and **W** buttons on the wireless controller, the zoom speed will be constant at  Speed 3].
 - The zoom speed will be faster in record pause mode than when actually recording, except when pre-recording ( 66) is activated.

Quick Start Function

When you close the LCD panel with the camcorder on, the camcorder enters the standby mode. In standby mode the camcorder consumes only about 1/3 the power used when recording, saving energy when you are using a battery pack. Additionally, when you open the LCD panel or pull out the viewfinder (**HFS21** only), the camcorder is ready to start recording in approximately 1 second*, allowing you to record the subject right away.

* The actual time required varies depending on the shooting conditions.

Operating modes:    |  

1 With the camcorder on and in a recording mode, close the LCD panel.

A beep will sound and the green ON/OFF (CHG) indicator will change to orange to indicate the camcorder entered standby mode.




2 When you wish to resume recording, open the LCD panel.

- The ON/OFF (CHG) indicator turns back green and the camcorder is ready to record.
- **HFS21** You can also pull out the viewfinder to start recording with the LCD panel closed. Restore the viewfinder to its original position to set the camcorder to standby mode.

IMPORTANT

- Do not disconnect the power source during standby mode (while the ON/OFF (CHG) indicator is lit in orange).

NOTES

- The camcorder will not enter standby mode if the LCD panel is closed while the ACCESS indicator is on or flashing, while a menu is being displayed, or while the viewfinder is pulled out (**HFS21** only). The camcorder may also not enter standby mode if the LCD panel is closed while the double memory card slot cover is open or when the battery charge is too low. Check that the ON/OFF (CHG) indicator changes to orange.
- **About standby mode and auto power off:**
 - The camcorder will power off automatically if left in standby mode for 10 minutes. Press **POWER** to turn on the camcorder.
 - You can select the length of time until shut-off or turn off the Quick Start function altogether with the   [Power Saving Mode]  [Quick Start (Standby)] setting.
 - The usual 5-minute auto power off setting of [Power Saving Mode] is not applicable while the camcorder is in standby mode.
- Changing the position of the mode switch while the camcorder is in standby mode will reactivate the camcorder in the operating mode selected.




Video


This chapter covers functions related to movies, including playback, advanced shooting, advanced functions and playlist and scene operations. For details about basic video shooting, refer to *Dual Shot Mode* (42).

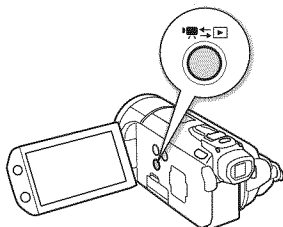
Basic Playback

Playing Back the Video

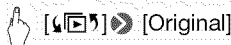
Operating modes:    |  

1 Press .

You can also press and hold  on the wireless controller for more than 2 seconds to switch between shooting and playback mode.

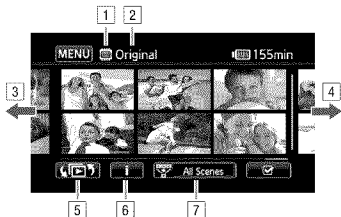


2 Open the [Original] index screen, if it is not displayed.



3 Look for the scene you want to play back.

Move the zoom lever toward **W** to show 15 scenes per page; move it toward **T** to show 6 scenes per page.

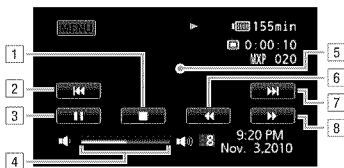


- 1 Memory being read.
- 2 Index screen currently displayed.
- 3 Drag your finger left for the next index page*.
- 4 Drag your finger right for the previous index page*.
- 5 Select a different index screen to read different content or from a different memory (📖 53).
- 6 Scene's timeline (📖 91) and recording information.
- 7 Narrow down the scenes shown in the index screen (📖 56).

* While browsing through index pages, a scroll bar will appear at the bottom of the screen for a few seconds. When you have a large number of scenes it may be more convenient to drag your finger along the scroll bar.

4 Touch the desired scene to play it back.

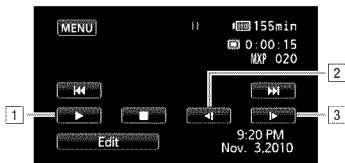
- Playback will start from the scene selected and continue until the end of the last scene in the index screen.
- Touch the screen during playback to display the playback controls.



- 1 Stop the playback.
- 2 Jump to the beginning of the scene. Double-tap to jump to the previous scene.
- 3 Pause the playback.
- 4 Drag your finger left and right along the volume bar to adjust the volume.
- 5 Touch anywhere else to hide the playback controls.
- 6 Fast playback backward*.
- 7 Jump to the next scene.
- 8 Fast playback forward*.

* Touch several times to increase the playback speed to approximately 5x → 15x → 60x the normal speed. During fast playback, touch anywhere on the screen to return to normal playback.

During playback pause:



- 1 Resume playback.
- 2 Slow playback backward*.
- 3 Slow playback forward*.

* Touch several times to increase the playback speed 1/8 → 1/4 the normal speed. During slow playback, touch anywhere on the screen to return to playback pause.

! IMPORTANT

- Observe the following precautions while the ACCESS indicator is on or flashing. Failing to do so may result in permanent data loss.
 - Do not open the double memory card slot cover.
 - Do not disconnect the power source or turn off the camcorder.
 - Do not change the camcorder's operating mode.
- You may not be able to play back with this camcorder movies recorded on a memory card using another device.

i NOTES


- Depending on the recording conditions, you may notice brief stops in video or sound playback between scenes.
- During fast/slow playback, you may notice some anomalies (blocky video artifacts, banding, etc.) in the playback picture.
- The speed indicated on the screen is approximate.
- Slow reverse playback will look the same as continuous frame reverse.

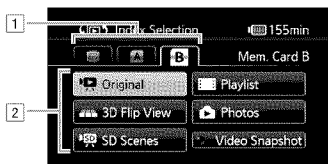
The Index Selection Screen: Selecting the Content to Play Back

From the index selection screen you can select the content you want to play back (original scenes, playlist, or photos, for example). You can also select the memory from which you want to play back your recordings.

Operating modes:    |  

In any index screen, touch .

During single photo view, touch the screen once to display the controls then touch  to open the [Photos] index screen.



- 1 Touch the tab of the desired memory: built-in memory (HF521/S20 only), memory card **A** or memory card **B**.
- 2 Touch a control button to select the content you want to play back.

Options

[Original] Original movies as you recorded them.

[Playlist] Scenes that were added to the playlist (📖 98) and may have been rearranged to your liking.

[3D Flip View] See the following section (📖 55).

[Photos] Display the photo index screen.

[SD Scenes] (HFS21/S20 Only when a memory card is selected)
Scenes that were converted to standard definition to upload them to the Web (📖 146) or to create standard DVD discs (📖 140). Touch [SD Scenes] and then [For Web (MPEG-2)] or [For DVD (SD-VIDEO)] as necessary.

[Video Snapshot] To display only video snapshot scenes. Touch this control button first and then [Original] or [Playlist] as necessary.

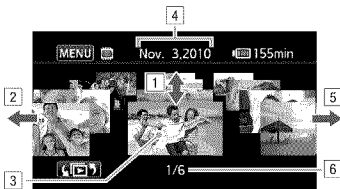
NOTES

- Fast/slow playback modes are not available for scenes converted to standard definition. Scenes in the [SD Scenes] index screens can only be played back at normal speed.

3D Flip View is a fun way to display your video recordings (original scenes) in a 3D layout, organized by recording date.

In any index screen, touch [📺] ➤ [3D Flip View].

During single photo view, touch the screen once to display the controls then touch [📺] to open the [Photos] index screen.




- 1 Drag your finger up and down to browse through the scenes recorded in the displayed date.
- 2 Drag your finger left to go to the next date with recordings.
- 3 Touch the scene in the front to play it back.
- 4 Currently selected recording date.
- 5 Drag your finger right to go to the previous date with recordings.
- 6 Current scene / Total number of scenes recorded on the selected date.

Narrowing Down the Scenes Shown in the Index Screen

From the [Original] index screen, you can narrow down the scenes shown, leaving only scenes that were recorded on a specific date or only those scenes in which people's faces were detected.

Operating modes:    |  

Showing Only Scenes that Contain People's Faces

This will narrow down the scenes shown in the [Original] index screen, leaving only scenes that were recorded using face detection ( 67) and in which people's faces were detected.

- 1 Open the [Original] index screen, if it is not displayed.



- 2 Narrow down the scenes shown.

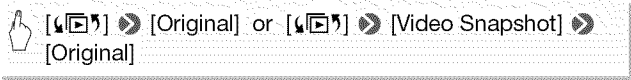


- [Faces] appears instead of [All Scenes]. To show all scenes again, touch [Faces] and then [All Scenes].

Showing Only Scenes Recorded on a Specific Date

This will narrow down the scenes shown in the [Original] or [Video Snapshot] → [Original] index screen, leaving only scenes that were recorded on the date you choose.

- 1 Open the [Original] or [Video Snapshot] → [Original] index screen.



2 Open the calendar screen.



- Dates that contain scenes (that is, movies were recorded on that date) appear in black against a silver background. Dates without recordings appear grayed out.
- Touch [◀] or [▶] to jump to the previous/next calendar month that contains recordings.

3 Touch the desired date.

The selected date appears instead of [All Scenes]. To show all scenes again, touch [📅 (the date displayed on the screen)] and then [All Scenes].

NOTES

- You can change on what day to start the week for the calendar display with the [📅] [Calendar Start Day] setting.

Deleting Scenes

You can delete those scenes that you are not interested in keeping. Deleting scenes allows you also to free up space on the memory. See also *Deleting Scenes from the Playlist* (📖 99).

Operating modes:    |  

1 Open the index screen that contains the scenes you want to delete.

- [Original] or [Video Snapshot] → [Original] index screen: To delete all the scenes recorded on a specific date, narrow down the scenes shown to scenes recorded on that date (📖 56).

2 Touch [🗑️] to open the scene selection screen.

3 Touch on the individual scenes you want to delete.

- A checkmark ✓ will appear on scenes selected. Touch a selected scene again to remove the checkmark.
- To select all the scenes at once: Touch [Select All] instead of touching individual scenes. (Remove in advance any checkmarks from scenes you may have selected individually.)

4 Delete the scenes.



* Touch [Stop] to interrupt the operation while it is in progress. Some scenes may be deleted nevertheless.

! IMPORTANT



- Be careful when deleting original recordings. Once deleted, original scenes cannot be recovered.
- Save copies of important scenes before deleting them (📖 133).
- Observe the following precautions while the ACCESS indicator is on or flashing (while scenes are being deleted).
 - Do not open the double memory card slot cover.
 - Do not disconnect the power source or turn off the camcorder.
 - Do not change the camcorder's operating mode.

i NOTES

- Deleting a scene from the [Original] index screen also deletes that scene from the playlist.
- To delete all movies and make all recordable space available again you may prefer to initialize the memory (📖 40).

Advanced Functions


Shooting Video in **M** Manual Mode

When the mode switch is set to **M** (Manual mode), you can enjoy full access to the menus and manually adjust the exposure, focus, white balance and many more of the camcorder's settings to your preference. Even in  mode, though, the camcorder can help you with the settings. For example, by using Special Scene recording programs ( 61).

Operating modes:    |  

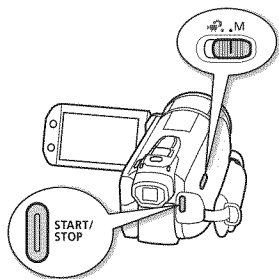
1 Set the mode switch to **M**.

2 Turn on the camcorder.


By default, movies are recorded in the built-in memory (**HFS21/S20** only) or on memory card **A** (**HFS200**). You can select the memory that will be used to record movies ( 38).

3 Press **START/STOP** to begin recording.




Press **START/STOP** again to pause the recording.



IMPORTANT

- Observe the following precautions while the ACCESS indicator is on or flashing. Failing to do so may result in permanent data loss or damage to the memory.
 - Do not open the double memory card slot cover.
 - Do not disconnect the power source or turn off the camcorder.
 - Do not change the camcorder's operating mode.
- Be sure to save your recordings regularly ( 130), especially after making important recordings. Canon shall not be liable for any loss or corruption of data.

NOTES

- The zoom, Quick Start function, power saving modes, etc. operate the same way in  mode as in  mode. For details, refer to *Dual Shot Mode* ( 42).


Selecting the Video Quality (Recording Mode)

The camcorder offers 5 recording modes. Changing the recording mode will change the recording time available on the memory. Select MXP or FXP mode for better movie quality; select LP mode for longer recording times. The following table gives approximate recording times.

Operating modes:    |  

 [FUNC.]  [MENU]    [Recording Mode] 
Desired recording mode  [X]

NOTES

- Scenes recorded in MXP mode cannot be saved onto AVCHD discs using the optional DW-100 DVD Burner. Use the supplied software **ImageMixer 3 SE** to back up such scenes.
- The camcorder uses a variable bit rate (VBR) to encode video so the actual recording times will vary depending on the content of the scenes.
- The camcorder retains the last setting used even if you set the camcorder to  mode.

Approximate recording times

◆ Default value

Recording mode →	MXP ¹	FXP ¹	XP+	SP [◆]	LP
Memory ↓					
4 GB Memory card	20 min.	30 min.	40 min.	1 hr. 10 min.	1 hr. 30 min.
8 GB Memory card	40 min.	1 hr.	1 hr. 25 min.	2 hr. 20 min.	3 hr.
16 GB Memory card	1 hr. 25 min.	2 hr. 5 min.	2 hr. 50 min.	4 hr. 45 min.	6 hr. 5 min.
32 GB Memory card/ HFS20 Built-in memory ²	2 hr. 55 min.	4 hr. 10 min.	5 hr. 45 min.	9 hr. 35 min.	12 hr. 15 min. ³
HFS21 64 GB Built-in memory ²	5 hr. 55 min.	8 hr. 20 min.	11 hr. 30 min.	19 hr. 10 min. ³	24 hr. 30 min. ³

¹ Recorded in 1,920 x 1,080 resolution. Movies recorded using other recording modes are recorded in 1,440 x 1,080 resolution.

² HFS21/S20 At the time of purchase, the built-in memory contains about 75 MB of music files.

³ A single scene can be recorded continuously for 12 hours; at that point, the camcorder will stop for about 3 seconds before resuming recording.

Special Scene Recording Programs

Recording in a very bright ski resort or capturing the full colors of a sunset or a fireworks display becomes as easy as selecting a Special Scene recording program.

Operating modes:



[FUNC.] ➤ [Rec. Programs] ➤ [Portrait] ➤

Desired recording program ➤ [X]

Options (♦ Default value)

[👤 **Portrait**]♦ The camcorder uses a large aperture, to achieve a sharp focus on the subject while blurring the background.



[🏊 **Sports**] To record sports scenes such as tennis or golf.



[🌃 **Night Scene**] To record nightscapes with lower noise.



[❄️ **Snow**] To record in bright ski resorts without the subject being underexposed.



[🏖️ **Beach**] To record on a sunny beach without the subject being underexposed.



[🌅 **Sunset**] To record sunsets in vibrant colors.



[🌑 **Low Light**] To record in low-light situations.













[🎯 **Spotlight**] To record spotlit scenes.




[ **Fireworks**] To record fireworks.



NOTES

- [ Portrait]/[ Sports]/[ Snow]/[ Beach]: The picture may not appear smooth during playback.
- [ Portrait]: The blur effect of the background increases the more you zoom in (**T**).
- [ Snow]/[ Beach]: The subject may become overexposed on cloudy days or in shaded places. Check the image on the screen.
- [ Low Light]:
 - 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.
- [ Fireworks]:
 - To avoid camcorder blur (blur due to the camcorder moving) we recommend using a tripod.
 - In [ mode, slower shutter speeds are used so blur is more likely to occur. Stabilize the camcorder, for example, by mounting it on a tripod.

Cinema Mode: Giving a Cinematic Look to your Recordings

Give your recordings a cinematic look by using the [ Cine Mode] recording program. Combine this recording program with the 24 fps progressive frame rate [**PF24** PF24] or [**24F** 24F] to get the enhanced effect of the 24p Cinema Mode.



Operating modes:



To set the [Cine Mode] recording program

 [FUNC.] ➤ [Rec. Programs] ➤ [Cine Mode] ➤ [X]

Operating modes:



To change the frame rate

 [FUNC.] ➤ [MENU] ➤  ➤ [Frame Rate] ➤
[PF24 PF24] or [24F 24F] ➤ [X]

NOTES


- Movies recorded with the [24F 24F] frame rate cannot be converted to standard definition using the camcorder. If you want to upload your movies to video sharing Web sites, set the frame rate to [PF24 PF24] or convert the movies to standard definition using the supplied software ImageMixer 3 SE.


Advanced Image Stabilization



The image stabilizer reduces camcorder blur (blur due to the camcorder moving) so you can get nice, stable shots. Select the image stabilization mode according to the shooting conditions.



Operating modes:




 [FUNC.] ➤ [Image Stabilizer] ➤ Desired IS mode ➤ [X]

Options (♦ Default value in  mode)

[ Dynamic]♦ ( mode only) Compensates for a higher degree of camcorder shake, such as when shooting while walking, and is more effective as the zoom approaches full wide angle.




[ Standard], [ On] Compensates for a lower degree of camcorder shake, such as when shooting while remaining stationary, and is suitable for shooting natural-looking scenes. Use this setting when recording movies with the optional Wide-converter or Tele-converter.

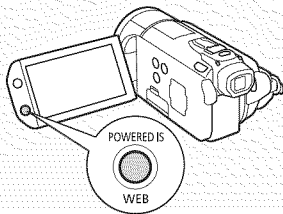
[ Off] Use this setting when the camcorder is mounted on a tripod.

Powered IS




When shooting video, you can use Powered IS to make the image stabilization even more powerful. Powered IS is most effective when you are stationary and zooming in on far subjects using high zoom ratios (the more you approach the telephoto end). Holding the LCD panel with your left hand will add to the stability of the shot.

Press and hold **POWERED IS** as long as you want to activate Powered IS.

-  appears in yellow, while Powered IS is activated.
- You can change the operation of the **POWERED IS** button (long press or toggle on/off) with the   [**POWERED IS Button**] setting.



NOTES

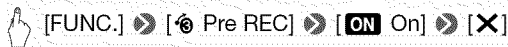
- If the degree of camcorder shake is too high, the image stabilizer may not be able to fully compensate.
- Powered IS is not available in  mode.
- For surveying and following shots, when you pan the camcorder from side to side or tilt it up and down, we recommend setting the IS mode to [ Dynamic] or [ Standard].


Pre-Recording

The camcorder will start recording 3 seconds before you press **[START/STOP]**, ensuring you do not miss important shooting opportunities. This is especially useful when it is difficult to predict when to start recording.

Operating modes:    |  

1 Activate the pre-recording function.




-  appears.
- Repeat, selecting **[OFF]** Off], to turn off pre-recording.

2 Press **[START/STOP]**.

The scene recorded in the memory will start 3 seconds before **[START/STOP]** was pressed.

NOTES

- While pre-recording is activated, the camcorder will not emit any notification sounds.
- The camcorder will not record the full 3 seconds prior to pressing **[START/STOP]** if the button was pressed within 3 seconds of having turned on pre-recording or having finished the previous recording.
- Any of the following actions will deactivate the pre-recording function.
 - Leaving the camcorder without any operation for 5 minutes.
 - Pressing  or **[VIDEO SNAP]**.
 - Changing the position of the mode switch.
 - Changing the camcorder's operating mode.
 - Setting the camcorder to standby mode.
 - Changing any of the setup menu settings or changing the following settings in the FUNC. panel: [Rec. Programs], [White Balance], [AGC Limit], [Digital Effect] or [Image Stabilizer].

Face Detection

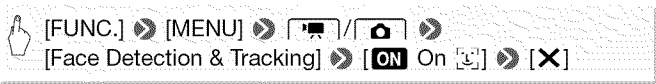
The camcorder automatically detects people's faces and uses this information to select the optimal settings for beautiful videos and photos.

Operating modes:    |  

POINTS TO CHECK

- Select a recording program other than [🌃 Night Scene], [💧 Low Light] or [🎆 Fireworks].

By default, face detection is activated. If the function was turned off, perform the following procedure to turn it on.



To select the main subject

If there is more than one person in the picture, the camcorder will automatically select one person it determines is the main subject. The main subject is indicated by a white face detection frame and the camcorder will optimize the settings for that person. Other faces will have gray frames.

Touch a different face on the touch screen to optimize the camcorder's settings for that person.



NOTES


- The camcorder may mistakenly detect the faces of non-human subjects. In such case, turn face detection off.
- In certain cases, faces may not be detected correctly. Typical examples include:
 - Faces extremely small, large, dark or bright in relation to the overall picture.
 - Faces turned to the side, at a diagonal or partially hidden.

- Face detection cannot be used when the shutter speed used is slower than 1/30 (1/24 if the frame rate is set to [PF24 PF24] or [24F 24F]) or when the digital zoom is activated at more than 40x zoom (dark blue area on the zoom bar).
- When face detection is activated, the slowest shutter speed used by the camcorder is 1/30 (1/24 if the frame rate is set to [PF24 PF24] or [24F 24F]).

Touch & Track

When recording people, face detection (📖 67) will track the main subject and adjust the optimal settings. But also when recording other moving subjects such as your pet, a moving vehicle or people not facing the camera directly, you can use Touch & Track to keep your subject in focus and achieve the best results.

Operating modes:    |  

- 1 Make sure face detection is activated (📖 67).
- 2 Point the camcorder at a moving subject and touch the subject on the touch screen.
 - A white double frame will appear around the subject and track it as it moves.
 - Touch [Cancel 

NOTES

- In certain cases, Touch & Track may not be able to track the subject. Typical examples include:
 - Subjects extremely small or large in relation to the overall picture.
 - Subjects too similar to the background.
 - Subjects lacking sufficient contrast.
 - Fast moving subjects.
 - When shooting indoors with insufficient lighting.

Video Snapshot

Record a series of short scenes or capture short scenes from a movie you have previously recorded. Play your video snapshot scenes set to your favorite music (📖 93) to create your own fun music video. You will be surprised how by changing the background music, you can give your scenes an entirely new feel.




Recording Video Snapshot Scenes

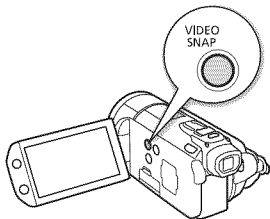
Operating modes:    |  

1 Press **VIDEO SNAP**.

- A blue border appears on the screen.
- Press **VIDEO SNAP** again to return to normal video recording mode.

2 Press **START/STOP**.

- By default, the camcorder records for about 4 seconds (the blue frame serves as a visual progress bar) and then automatically returns to record pause mode. You can change the length of video snapshot scenes with the   [Video Snapshot Length] setting.
- When the camcorder stops recording, the screen will momentarily turn black as if a camera shutter had released.
- In index screens, video snapshot scenes are indicated with the  mark.

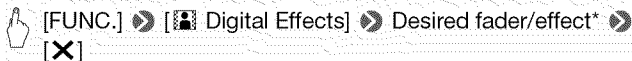


NOTES

- Changing the camcorder's operating mode will deactivate the video snapshot mode.

Digital Effects

Operating modes:



* You can preview the digital effect on the screen.

- The icon of the selected digital effect appears in green. Effects are applied immediately.

To fade in/out

Press **[START/STOP]** in record pause mode (●||) to start recording with a fade in. Press **[START/STOP]** while recording (●) to fade out and pause the recording.


Options (♦ Default value)

[OFF Off]♦ Select this setting when you do not intend to use the digital effects.

[E1 Black & White]* Records movies and photos in black and white.

[E2 Sepia]* Records movies and photos in sepia tones for an “old” look.

[F1 Fade Trigger/Once], **[F1 Fade Trigger/Always]**, **[F2 Wipe/Once]**, **[F2 Wipe/Always]** Select one of the faders to begin or end a scene with a fade from or to a black screen. You can choose to activate the fader only once, or every time you press **[START/STOP]** to begin or end a scene.

* Only these digital effects are available in  mode.

NOTES

- When you apply a fader, not only the picture but also the sound will fade in or out. When you apply an effect, the sound will be recorded normally.
- Faders cannot be used when recording video snapshot scenes or when pre-recording is activated.

Manually Setting the Shutter Speed or Aperture

[P Programmed AE] is the default automatic exposure (AE) recording program; using it, you can change functions like the white balance or image effects. Select one of the other AE recording programs to control the shutter speed or aperture.

Operating modes:





[FUNC.] ➤ [Rec. Programs] ➤ [Tv Shutter-Pri. AE] or [Av Aperture-Pri. AE] ➤ Drag your finger left and right along the dial to set the desired shutter speed (Tv) or aperture value (Av) ➤ [X]

Options (♦ Default value)

- [P Programmed AE]♦** The camcorder automatically adjusts the aperture and shutter speed to obtain the optimal exposure for the subject.
- [Tv Shutter-Pri. AE]** Set the shutter speed value. The camcorder automatically sets the appropriate aperture value.
- [Av Aperture-Pri. AE]** Set the aperture value. The camcorder automatically sets the appropriate shutter speed.

NOTES

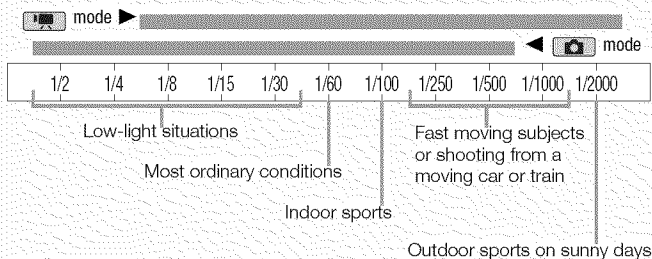
- [TV Shutter-Pri. AE]:
 - On screen only the denominator is displayed – [TV 250] indicates a shutter speed of 1/250 second, etc.
 - In  mode, when the frame rate is set to [PF24 PF24] or [24F 24F], the shutter speeds available will be the following: 1/6, 1/12, 1/24, 1/48, 1/60, 1/100, 1/250, 1/500, 1/1000 and 1/2000.
 - When recording in dark surroundings, you can obtain a brighter picture by using slow shutter speeds; however, image quality may not be as good and autofocus may not work well.
 - The image may flicker when recording with fast shutter speeds.
 - **Recording movies under fluorescent lights:** If the screen starts to flicker, select [TV Shutter-Priority AE] and set the shutter speed to 1/100.
- [Av Aperture-Priority AE]: The actual range of values available for selection will vary depending on the initial zoom position.
- When setting a numeric value (aperture or shutter speed), the number displayed will flash if the aperture value or shutter speed is not appropriate for the recording conditions. In such case, select a different value.
- During exposure lock, the aperture value/shutter speed cannot be changed. Set the aperture value or shutter speed before manually adjusting the exposure.
- This function can also be assigned to the custom key/dial ( 89).

Shutter Speed and Aperture Value Guidelines



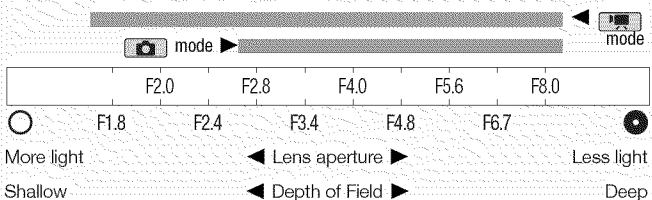
With slower shutter speed you can add a nice motion blur and sense of movement.

With faster shutter speeds you can “freeze the action” for powerful images of moving subjects.



With small aperture values only the subject is in focus and the background is softly blurred. Great for portraits or to isolate a single object.

With large aperture values every part of the image is clearly in focus. Good for landscapes and architectural shots.



Manual Exposure Adjustment

At times, backlit subjects may appear too dark (underexposed) or subjects under very strong lights may appear too bright or glaring (overexposed). To correct this, you can adjust the exposure manually or use the Touch AE function to automatically set the optimal exposure for the subject you select. This is convenient when the brightness of the subject you want to shoot is noticeably brighter/darker than the general brightness of the image.

Operating modes:    |  


POINTS TO CHECK

- Select a recording program other than [ Fireworks].

1 Open the exposure adjustment screen.




2 Touch a subject that appears inside the frame.

- The Touch AE mark () will flash and the exposure will be adjusted automatically so the area you touched will be correctly exposed. You have the option to further adjust the exposure manually as necessary. Depending on the subject, you may want to use the [Highlights] setting as described below.
- You can touch [**M**] instead to adjust the exposure manually without activating the Touch AE function.
- The manual adjustment dial appears and the adjustment value is set at ± 0 .
- Touch [**M**] again to return the camcorder to automatic exposure.


3 Drag your finger up and down along the dial to set the exposure adjustment value.

The adjustment range may vary depending on the initial brightness of the image, and some values may be grayed out.

4 Touch [**X**] to lock the exposure at the selected value.

During exposure lock,  and the selected exposure adjustment value will appear on the screen.

To adjust the Touch AE function for highlights (Highlight AE)





Certain subjects, like clouds or white objects, are easily overexposed and can end up appearing as bright areas where all detail is lost. Using the [Highlights] setting, you can touch the brightest area inside the  frame and the camcorder will automatically make corrections so that area is not overexposed. When you touch a dark area in the picture or the highlights are too bright, the camcorder may not be able to correctly adjust the exposure.

After step 1 above:





* Touch [Normal] to return the camcorder to normal Touch AE settings.

NOTES

- This function can also be assigned to the custom key/dial ( 89).
- If the recording program is changed during exposure lock, the camcorder will return to automatic exposure.
- When shooting subjects with a strong light source behind them, the camcorder automatically corrects for the backlight. You can turn off the automatic backlight correction with the  /   [Auto Backlight Correction] setting.

Using the Zebra Pattern

You can use the zebra pattern to identify areas that might be overexposed, so you can correct the exposure appropriately. The camcorder offers two levels of zebra pattern: With  100% only areas that will lose detail in the highlight areas will be identified, while  70% will identify also areas that are dangerously close to losing detail.



* Touch again to turn off the zebra pattern.

- The zebra pattern will appear on the overexposed areas of the picture.


NOTES

- Using the zebra pattern will not affect your recordings.

Automatic Gain Control (AGC) Limit

When recording in dark surroundings, the camcorder will automatically increase the gain to try to get a brighter picture. However, using higher gain values may result in more noticeable video noise. You can select the AGC limit to curb the amount of noise by setting the maximum gain value to be used. The smaller the AGC limit, the picture will be darker but will have less the noise.

Operating modes:    |  

 [FUNC.] ➤ [AGC AGC Limit] ➤ [M Manual]* ➤
Drag your finger left and right along the dial to set the AGC
limit ➤ [X]

* Touch [A Automatic] to remove the limit for the automatic gain control.

- The AGC limit selected appears on the screen.




NOTES

- This function can also be assigned to the custom key/dial ( 89).

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 wet windows
- Night scenes

Operating modes:    |  


POINTS TO CHECK

- Adjust the zoom before you start the procedure.







1 Open the manual focus screen.



2 Touch a subject that appears inside the frame.

- The Touch AF mark () will flash and the focusing distance will be adjusted automatically. You have the option to further adjust the focus manually as necessary.
- You can touch **[MF]** instead to adjust the focus manually without activating the Touch AF function.
- The manual focus controls and the current focusing distance appear (for reference only).
- Touch **[MF]** again to return the camcorder to autofocus.


3 Touch and hold or to adjust the focus.

- You can use the peaking function ( 78) to help you adjust the focus manually in a more precise manner.
- The center of the screen will be magnified to help you focus more easily. You can also turn off this function with the   [Focus Assistance] setting.
- The focusing distance displayed will change as you adjust the focus. You can change the units used for the distance display with the   [Distance Units] setting.
- If you wish to focus on faraway subjects such as mountains or fireworks, touch and hold  until the focusing distance changes to ∞ .

4 Touch to lock the focus at the selected distance.

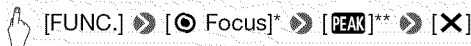
During manual focus, **[MF]** will appear on the screen.

NOTES

- While the optional Wide-converter or Tele-converter is attached, the focusing distance displayed will be incorrect.
- This function can also be assigned to the custom key/dial ( 89).

Using the Peaking Function

Peaking can help you achieve correct focus when focusing manually. While peaking is activated, the outlines of subjects that are properly in focus are emphasized and shown in color. You can use the black and white setting to create an even stronger contrast, making it even easier to verify if the subject is in focus.



* Touch [👆] to select the peaking settings as described below.

**Touch again to turn off the peaking function.

- The outlines of subjects correctly in focus will be shown in color.

To turn the image to black and while using peaking



To select the color of the peaking outlines



NOTES

- Using the peaking function will not affect your recordings.


White Balance


The white balance function helps you to accurately reproduce colors under different lighting conditions so that white objects will always look truly white in your recordings.

Operating modes:    |  

POINTS TO CHECK


- Select a recording program other than the Special Scene recording programs.

 [FUNC.] ➤ [WB White Balance] ➤ Desired option* ➤ [X]









* When you select [ Custom WB], Set the custom white balance with the following procedure before touching [X].

To set the custom white balance







Point the camcorder at a white object, so it fills the whole screen, and touch [Set WB].

When the adjustment is completed,  stops flashing and disappears. The camcorder will retain the custom white balance even if you turn it off.

Options (♦ Default value)

- [ **Automatic**][♦] The camcorder automatically sets the white balance for natural looking colors.
- [ **Daylight**] To record outdoors on a bright day.
- [ **Shade**] To record in shaded places.
- [ **Cloudy**] To record on a cloudy day.
- [ **Fluorescent**] To record under warm white, cool white or warm-white-type (3-wavelength) fluorescent lighting.
- [ **Fluorescent H**] To record under daylight or daylight-type (3-wavelength) fluorescent lighting.
- [ **Tungsten**] To record under tungsten and tungsten-type (3-wavelength) fluorescent lighting.
- [ **Custom WB**] Use the custom white balance setting to make white subjects appear white under colored lighting.






NOTES

- **When you select the custom white balance:**
 - Set   [Digital Zoom] to **[OFF Off]**.
 - Reset the white balance when you change locations or the lighting or other conditions change.
 - Depending on the light source,  may keep flashing. The result will still be better than with [AWB Automatic].
- 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
- Depending on the type of fluorescent light, optimal color balance may not be obtained with  [Fluorescent] or  [Fluorescent H]. If the color looks unnatural, select [AWB Automatic] or  [Custom WB].

Digital Tele-Converter

Using the digital tele-converter, you can digitally increase the focal length of the camcorder by a factor of approx. 1.7 and record the enlarged image at full HD resolution.

Operating modes:    |  

 [FUNC.]  [ZOOM]  []* (digital tele-converter)  [X]

* Touch again to deactivate the digital tele-converter.

- The center of the screen will be enlarged approximately 1.7 times.

NOTES

- You can attach the optional TL-H58 Tele-converter and use it in conjunction with this function to increase the effect.
- The digital tele-converter cannot be turned on while recording.
- While the digital tele-converter is activated, photos cannot be recorded simultaneously at [LW 3264x1840] size.

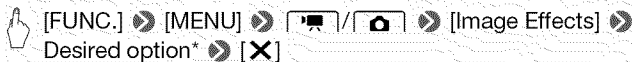
Image Effects

You can use the image effects to change the color saturation and contrast to record movies and photos with special color effects.

Operating modes:    |  

POINTS TO CHECK

- Select a recording program other than the Special Scene recording programs.



* When you select [**E**c Custom Effect], set the custom image effect with the following procedure before touching [**X**].

To set the custom image effect






- 1 Touch [**+**1], [**-**1] or [**0**] to set the desired [Color Depth] level.
- 2 Touch [**◀**] or [**▶**] to select [Sharpness], [Contrast] and [Brightness] and adjust their levels the same way.

Options (♦ Default value)


- [**OFF** Off]♦ Records with no image enhancing effects.
- [**E**v Vivid] Emphasizes the contrast and color saturation.
- [**E**N Neutral] Tones down the contrast and color saturation.
- [**E**LS Low Sharpening] Records subjects with softened outlines.
- [**E**SD 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.
- [**E**c Custom Effect] Allows you to adjust the color depth, brightness, contrast, and sharpness of the image.
 - [Color Depth]: (**-**1) Shallower, (**+**1) Richer.
 - [Sharpness]: (**-**1) Softer, (**+**1) Sharper.
 - [Contrast]: (**-**1) Softer, (**+**1) Sharper.
 - [Brightness]: (**-**1) Darker, (**+**1) Brighter.

Mini Video Light

You can turn on the mini video light to shoot video or take photos in dark places.

Operating modes:    |  



- The mini video light pops up and lights up and  appears on the screen.
- Repeat, selecting **[OFF Off]**, to turn off the mini video light and gently press the pop-up mini video light to close it.



NOTES

- We recommend not using the mini video light while the optional Wide-converter or Tele-converter is attached; its shadow can appear on the screen.

Using an External Video Light

You can use the optional VL-5 Video Light or VFL-2 Video Flash Light when you need a video light that is stronger than the built-in mini video light.

Attach the optional video light to the mini advanced shoe.

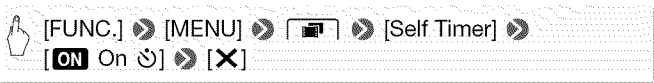
- Refer to *Using the Mini Advanced Shoe* ( 86).
-  appears when you turn on the optional video light (ON or AUTO). For details about using the optional video light, refer to the instruction manual of the accessory used.

NOTES


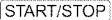
- When an optional video light is attached to the mini advanced shoe, the built-in mini video light will be disabled. To use the built-in mini video light, turn off the optional video light.

Self Timer



Operating modes:    |  



-  appears.
- Repeat, selecting [**OFF** Off], to turn off the self timer.

 **mode:** In record pause mode, press .



The camcorder starts recording after a 10-second countdown*. The countdown appears on the screen.

 **mode:** Press , first halfway to activate the autofocus and then fully.

The camcorder will record the photo after a 10-second countdown*. The countdown appears on the screen.

* 2 seconds when using the wireless controller.

NOTES

- Once the countdown has begun, any of the following actions will cancel the self timer.
 - Pressing  (when recording movies) or  fully (when recording photos).
 - Turning off the camcorder.
 - Changing the camcorder's operating mode.
 - Setting the camcorder to standby mode.

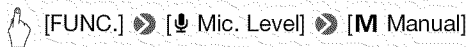
Audio Recording Level

You can adjust the audio recording level of the built-in or an external microphone. You can display the audio level indicator while recording.

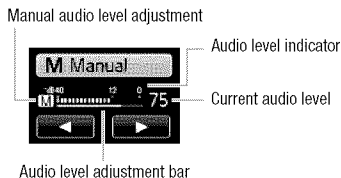
Operating modes:    |  

Manual Adjustment of the Audio Recording Level

1 Open the manual audio recording level adjustment screen.



- The audio level indicator and current audio recording level will appear on the screen.
- Touch [**A** Automatic] to return the camcorder to automatic audio recording levels.



2 Touch and hold [◀] or [▶] to adjust the audio recording level as necessary.

As a guideline, adjust the audio recording level so that the audio level meter will go to the right of the -12 dB mark (yellow area) only occasionally.




3 Touch [X] to lock the audio recording level at the current level.

To display the audio level indicator



Usually, the audio level indicator will be displayed only after activating the manual adjustment of the audio recording level. You can choose to display it also when the audio level is adjusted automatically.




NOTES

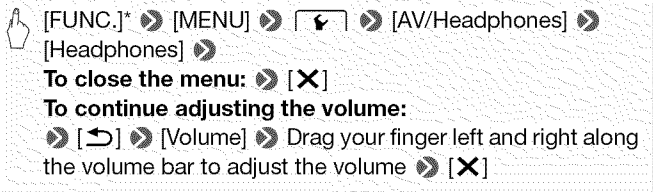
- When the audio level meter reaches the red point (0 dB), the sound may be distorted.
- If the audio level is too high and the sound gets distorted, activate the microphone attenuator with the   [Microphone Attenuator] setting (or [Surround Mic Attenuator] when the optional SM-V1 Surround Microphone is attached to the camcorder).
- We recommend using headphones to check the sound level while adjusting the audio recording level or when the microphone attenuator is activated.
- This function can also be assigned to the custom key/dial ( 89).














Using Headphones

Use headphones for playback or to check the audio level while recording. The headphones are connected to the AV OUT/ terminal, which is used for both the headphones and the audio/video output. Before connecting the headphones, follow the procedure below to change the function of the terminal from AV output to  (headphones) output.

Operating modes: *   |  

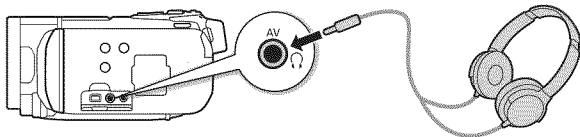
* Headphones can be used also in  mode but the function of the terminal cannot be changed in this mode. Change the setting in advance in one of the other operating modes.






 [FUNC.]*  [MENU]    [AV/Headphones] 
[Headphones] 
To close the menu:  [X]
To continue adjusting the volume:
   [Volume]  Drag your finger left and right along the volume bar to adjust the volume  [X]

* Only when performing the procedure in  mode.



-  appears.





To adjust the volume during playback

In  mode, and in  mode during slideshow playback, adjust the headphones volume the same way you adjust the speaker's volume ( 51).


IMPORTANT

- When using headphones, make sure to lower the volume to an appropriate level.
- Do not connect the headphones to the AV OUT/ terminal if the  icon does not appear on the screen. The noise output in such case may be harmful to your hearing.


NOTES

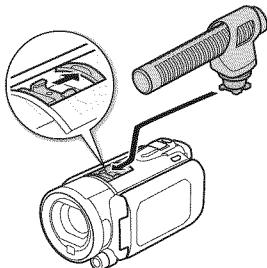
- Use commercially available headphones with a \varnothing 3.5 mm minijack.
- Even if [AV/Headphones] was set to [ Headphones] in a playback mode, the function of the AV OUT/ terminal will return automatically to AV output when you turn off the camcorder.

Using the Mini Advanced Shoe

Using the mini advanced shoe, you can attach to the camcorder a range of optional accessories to expand its functionality. For details about optional accessories available for use with your camcorder, refer to *Accessories* ( 201). For details about how to attach and use the accessories, refer also to the instruction manual of the accessory used.

- 1 Retract the mini advanced shoe cover in the direction of the arrow.
- 2 Attach the optional accessory to the mini advanced shoe.

When a compatible accessory is attached to the mini advanced shoe,  will appear on the screen.



Example: Attaching an optional DM-100 Directional Stereo Microphone.

NOTES

- Accessories designed for the Advanced Accessory Shoe cannot be used with this camcorder. Look for video accessories bearing this logo to ensure compatibility with the **mini advanced shoe**.



Using an External Microphone

When recording in very quiet surroundings, the built-in microphone may pick up the sound of the camcorder's internal machinery. In such case, we recommend using an external microphone.


Using the SM-V1 Surround Microphone or DM-100 Directional Stereo Microphone

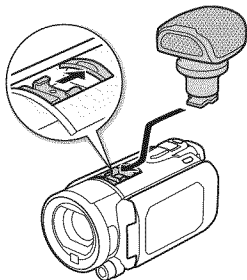
Using the SM-V1 you can add a sense of depth and presence to your recordings with 5.1ch surround sound. Using the DM-100 you can accurately record audio coming directly from the direction you are recording.

Operating modes:    |  

Attach the optional SM-V1 Surround Microphone or DM-100 Directional Stereo Microphone to the mini advanced shoe.

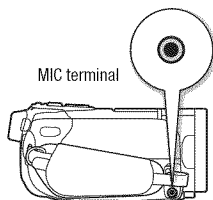
Refer to *Using the Mini Advanced Shoe* (86).

“” appears. For details about using the optional external microphone, refer to the instruction manual of the accessory used.








Using other microphones

You can also use commercially available microphones. Connect the external microphone to the MIC terminal. Use commercially available condenser microphones with their own power supply. You can connect almost any stereo microphone with a \varnothing 3.5 mm plug but audio recording levels may vary.



NOTES

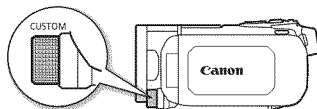
- **Playing back recordings made with the optional SM-V1 Surround Microphone:** You can enjoy 5.1ch surround sound playback on HDTVs compatible with 5.1ch surround sound connected to the camcorder using an HDMI cable. Audio output from the AV OUT/ terminal (including headphone output) will be converted to 2ch stereo. The camcorder's built-in speaker is monaural.
- When an external microphone is connected to the camcorder,  [Wind Screen] will automatically be set to [OFF Off ].
- When using the optional SM-V1 Surround Microphone, change the microphone's directionality mode with the  [Surround Mic Directionality] setting.
- If the audio level is too high and the sound gets distorted, adjust the audio recording level manually (83) or activate the microphone attenuator with the  [Microphone Attenuator] setting (or [Surround Mic Attenuator] when the optional SM-V1 Surround Microphone is attached to the camcorder).

Using the Custom Key and Dial

You can assign to the **CUSTOM** button and dial one of five frequently used functions. You can then adjust the selected function using the **CUSTOM** button and dial, without having to access any menus.

To select the function of the custom key using the menu

Operating modes: 



To select the function of the custom key using the custom key

- 1 Press and hold **CUSTOM** for about 2 seconds.

The icons of the functions that can be assigned to the custom key appear in a row.

- 2 Turn the custom dial to select the desired function and press **CUSTOM**.

Options ^(♦ Default value)

- [OFF Off]** Use this setting if you do not intend to use the custom key and dial.
- [Focus]♦** Manual focus (📖 76). Press **[CUSTOM]** to turn the manual focus on/off and turn the dial to adjust the focus.
- [Exposure]** Manual exposure adjustment (📖 74). Press **[CUSTOM]** to turn the manual exposure on/off and turn the dial to compensate the exposure.
- [Tv / Av]** Press **[CUSTOM]** when the recording program is set to **[Tv Shutter-Pri. AE]** to display the shutter speed dial, and turn the dial to select the shutter speed. Press **[CUSTOM]** when the recording program is set to **[Av Aperture-Pri. AE]** to display the aperture dial, and turn the dial to select the aperture value (📖 71).
- [Mic. Level]*** Adjust the audio recording level (📖 83). Press **[CUSTOM]** to turn the manual adjustment of the recording level on/off and turn the dial to adjust the audio recording level.
- [AGC AGC Limit]*** Press **[CUSTOM]** to turn the AGC limit on/off and turn the dial to select the maximum value for the automatic gain control (📖 76).

* Available only in  mode.

Using a Zoom Remote Controller

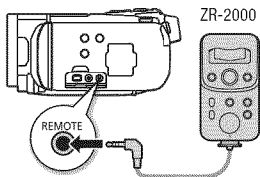
You can attach the optional ZR-2000 or ZR-1000 Zoom Remote Controller to the camcorder to use certain functions while viewing the picture on an external monitor without touching the camcorder. This is particularly useful while the camcorder is mounted on a tripod and you want to ensure maximum stability of a shot.

Operating modes:



Connect the optional ZR-2000 or ZR-1000 Zoom Remote Controller to the REMOTE terminal on the camcorder.

For details about using the zoom remote controller, refer to the instruction manual of the ZR-2000 or ZR-1000.




Functions Available with the Zoom Remote Controller

Using the ZR-2000 or ZR-1000: turning the power on/off, starting/stopping a recording, zoom, focus adjustment and displaying on-screen displays on an external monitor.


Using the ZR-2000 only: switching between autofocus and manual focus, Push AF*, focus assistance (MAGNIFYING button), and peaking (PEAKING button).

* The Push AF function allows you to switch to autofocus temporarily during manual focus.

NOTES

- In  mode, the only available functions are turning the power on/off, starting/stopping a recording, and zoom.

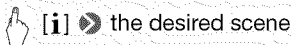
Selecting the Playback Starting Point

If you have a very long scene, you may want to start playing back the scene from a certain point. You can use the movie timeline to break the scene to segments at fixed time intervals ranging from 6 seconds to 6 minutes. If you recorded movies using face detection ( 67), you can display the scene divided into segments every time the camcorder registered a change in the main subject of the scene.

Operating modes:    |  

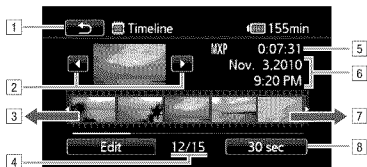
- 1 Open the [Original] or [Playlist] index screen.

2 Open the scene's [Timeline] screen.



The [Timeline] screen appears. The large thumbnail will show the first frame of the scene. Below it, the timeline ruler shows frames taken from the scene at fixed intervals.

3 Touch the desired frame in the timeline ruler to start playing back the scene from that point.

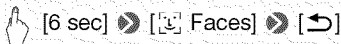


- 1 Touch twice to return to the index screen.
- 2 Previous/next scene.
- 3 Drag your finger left along the ruler to display the next 5 frames.
- 4 Current scene / Total number of scenes.
- 5 Scene's recording mode and length.
- 6 Recording date and time.
- 7 Drag your finger right along the ruler to display the previous 5 frames.
- 8 Currently selected interval between frames (or [F] Faces).

To change the interval between frames



To display changes in the scene's main subject



- The timeline ruler will show frames taken from the scene every time the main subject detected by the camcorder changed.

NOTES

- For a single scene, up to 100 changes in main subject will appear in the [Timeline] screen when [F] Faces] is selected.

Playing Back Scenes Set to Background Music

You can play back video snapshot scenes, scenes in the playlist and photo slideshows set to background music (instead of the original sound). You can use one of the supplied music tracks or connect an external audio player to use your favorite songs as background music.

Operating modes:    |  

Using One of the Supplied Music Tracks as Background Music

The supplied Camcorder Supplemental Disc contains 3 music tracks you can use as background music. **HFS21/S20**: The music files comes pre-installed in the built-in memory.

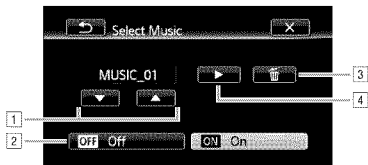
POINTS TO CHECK

- To play back scenes or a slideshow of photos recorded on one of the memory cards, you will need to transfer the music tracks to the corresponding memory card in advance. For details, refer to the 'ImageMixer 3 SE Software Guide' (PDF file).
- 1 Open the [Playlist], [Video Snapshot] → [Original]/[Playlist] or [Photos] index screen.

2 Open the music track selection screen.



* Touch [OFF Off] to play back the scenes with the sound recorded originally or to play back the photo slideshow without any music.



- 1 Select the desired music track.
- 2 Play back the original sound (no background music).
- 3 Delete the music track selected.
- 4 Listen to the music track selected. Touch again (■) to stop the playback.

3 Back in the index screen, touch a scene to start the playback set to the selected music track.

In mode, touch a photo to go to single photo view and continue with the slideshow procedure (116).

To delete a music track

In the music track selection screen, touch [▲] or [▼] to select the track you want to delete.



Using an External Audio Player for Background Music

Use your favorite songs as background music by connecting an external player.

POINTS TO CHECK

- You will need a commercially available audio cable with at least one mini-stereo plug (to connect to the MIC terminal on the camcorder); the other end will depend on external player used).
- 1 Open the [Playlist], [Video Snapshot] → [Original]/[Playlist] or [Photos] index screen.
 - 2 Activate the external audio input.





- 3 Connect the external player to the camcorder's MIC terminal.
- 4 Adjust the audio input as necessary.
 - Start the music playback on the external player and adjust its volume according to the onscreen indications. When the audio input is in the correct range, stop the music playback and touch [X] on the camcorder.
 - Touch [External Player Link] to link the video playback to the start/end of the music from the external player.

Playback with the video/slideshow linked to the external audio

- 5 Start the music playback on the external player.
 - Playback will start from the first scene or photo in the index screen.
 - When the external audio input stops, the video playback will pause. When the external audio input is restored, video playback will resume automatically.
 - When you play back the slideshow linked to the external audio, the photos will be displayed continuously until the music stops. When the external audio input stops, the slideshow will stop as well.

Playback with the video not linked to the external audio

5 Back in the index screen, touch a scene to start the video playback.


In  mode, touch a photo to go to single photo view and continue with the slideshow procedure ( 116).

6 Start the music playback on the external player.

IMPORTANT

- If you use copyrighted songs and music tracks in your video creations, remember that music under copyright may not be used without permission from the copyright holder, except for cases permitted under applicable laws, such as for personal use. Make sure to follow applicable laws when using music files.

NOTES

- You can also add to the playlist just the video snapshot scenes you want to watch and arrange their playback order.
- Initializing a memory card will permanently erase any music files you may have transferred to the card. (**HFS21/S20** The music files that come pre-installed in the built-in memory will be restored after it is initialized.)
 - Windows users: Use the supplied software **ImageMixer 3 SE** to transfer music files from the supplied Camcorder Supplemental Disc to a memory card after it is initialized. For details, refer to the 'ImageMixer 3 SE Software Guide' (PDF file).
 - Mac OS users: Use Finder to transfer music files from the [MUSIC] folder on the supplied Camcorder Supplemental Disc to a memory card after it is initialized. Refer to *About the music files* ( 212) for the folder structure of the memory card.
- Transfer music files to the memory card that contains the recordings you want to play back with background music.
- **About video playback linked to the external player:**
 - In some cases, the video playback may not be correctly linked to the external player. For example, if the volume of external player is too low or if the audio signal contains a lot of noise, etc.
 - When you connect the MIC terminal to the audio outputs on the external player and cannot adjust the strength of the signal, the camcorder will automatically decrease the volume of the external player when the audio signal is too loud.

Onscreen Displays and Data Code

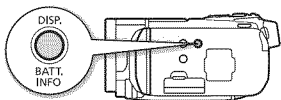
You can turn most onscreen displays on or off.


Operating modes:    |  

Repeatedly press **[DISP.]** to turn the onscreen displays on/off in the following sequence:

 ,  mode:

- All displays on
- Most displays off*



 mode**:

- All displays on
- Only data code on
- All displays off

 mode**:





- All displays on
- Only recording date and time on
- All displays off

* Pressing **[DISP.]** will turn off most of the icons and displays that appear automatically but will not remove onscreen displays that were turned on manually (for example, onscreen markers or the audio level meter).

**Touch the screen to display the playback controls.

About the Data Code

With every scene or photo recorded, the camcorder keeps a data code (date/time of recording, information about the camera setup, etc.). In

 mode, this information is displayed within the Exif information panel while the playback controls are displayed on the screen; in  mode, you can select the information to be displayed with the   [Data Code] setting.

Playlist and Scene Operations

Editing the Playlist: Adding, Deleting, Moving and Playing Back

Create a playlist to play back only the scenes you prefer and in the order of your choice. You can play back the scenes in the playlist using your favorite song as background music (📖 93).

Operating modes:    |  

Adding Scenes to the Playlist

- 1 **Open the [Original] or [Video Snapshot] → [Original] index screen.**
To add to the playlist all the scenes recorded on a specific date, narrow down the scenes shown to scenes recorded on that date (📖 56).
- 2 **Touch [👉] to open the scene selection screen.**
- 3 **Touch on the individual scenes you want to add to the playlist.**
 - A checkmark ✓ will appear on scenes selected. Touch a selected scene again to remove the checkmark.
 - To select all the scenes at once: Touch [Select All] instead of touching individual scenes. (Remove in advance any checkmarks from scenes you may have selected individually.)
- 4 **Add the scenes to the playlist.**



- Scenes are added to the playlist on the same memory they are recorded on.

NOTES

- Deleting or moving scenes in the playlist will not affect the original recordings.
- Scenes that were edited using the supplied software **ImageMixer 3 SE** and were then written back to the camcorder cannot be added to the playlist.

- You can copy scenes from the built-in memory (**HFS21/S20** only) or from memory card **A** to memory card **B** (📖 130) to include in that memory card's playlist also scenes that were originally recorded in other memories.

Deleting Scenes from the Playlist

Deleting scenes from the playlist will not affect your original recordings.

1 Open the [Playlist] index screen.

You can touch [📷] ➤ [Video Snapshot] ➤ [Playlist] to open the playlist of video snapshot scenes.

2 To delete a single scene, touch [i] and touch the scene you want to delete.

- The [Timeline] screen appears.
- This step is not necessary to delete the entire playlist.

3 Delete the scenes from the playlist.



* If you selected to delete all the scenes in the playlist, touch [Stop] to interrupt the operation while it is in progress. Some scenes will be deleted nevertheless.

Moving Scenes in the Playlist

Move the scenes in the playlist to play them back in the order of your choice.

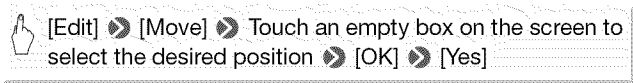
1 Open the [Playlist] index screen.

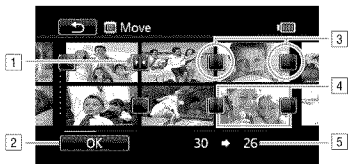
You can touch [📷] ➤ [Video Snapshot] ➤ [Playlist] to open the playlist of video snapshot scenes.

2 Touch [i] and touch the scene you want to move.

The [Timeline] screen appears.

3 Move the scene.





- 1 Destination icon.
- 2 Move the scene to the position indicated by the destination icon.
- 3 Touch an empty box to select it as the destination.
- 4 Scene selected to be moved.
- 5 Original position of the scene and currently selected destination.


Capturing Photos and Video Snapshot Scenes from a Movie

You can capture video snapshot scenes, single photos or a series of continuous photos from a previously recorded scene. For example, you may want to print photos from video recorded at a party or create a small video clip using video snapshot scenes from the highlights of an event.

Operating modes:    |  

Capturing a Video Snapshot Scene

- 1 Open the index screen that contains the scene from which you want to capture the video snapshot scene.
- 2 Play back the desired scene.
- 3 Press **START/STOP** to capture the video snapshot scene.

The camcorder captures the video snapshot scene for about 4 seconds (the blue frame serves as a visual progress bar), and then enters playback pause mode. You can change the length of video snapshot scene you capture with the  [Video Snapshot Length] setting.


- 4 Touch **[■]** to return to the index screen.

NOTES

- A video snapshot scene can be captured only during playback; it cannot be captured during playback pause mode.
- The captured video snapshot scene is saved to the same memory that contains the source scene.
- Video snapshot scenes cannot be captured from any of the following types of scenes.
 - Scenes shorter than 1 second
 - Scenes that were edited using the supplied software **ImageMixer 3 SE** and were then written back to the camcorder.
- When the source scene is itself a video snapshot scene, you may not be able to capture a video snapshot scene depending on the length of the source scene and the length currently selected for video snapshot scenes.
- When you start capturing a video snapshot scene less than 1 second from the end of the scene, the video snapshot scene will be captured starting from the beginning of the following scene.
- During the playback of video snapshot scenes captured from a previously recorded movie, you may notice some anomalies in the picture/sound at the point where the playback switches to a new scene.

Capturing Photos

You can capture a single photo or a series of photos. The size of the captured photos will be [MW 1920x1080] and it cannot be changed, but you can select the photo quality.

Please read the IMPORTANT section ( 102) before using an Eye-Fi card.

Operating modes:



To select the photo capture settings



* The number displayed indicates the approximate number of photos that can be recorded with the current quality setting.


To capture the photos

- 1 Play back the scene from which you want to capture the photo.
- 2 Pause the playback at the point you want to capture.
- 3 Press **[PHOTO]** fully.


To capture a photo sequence, hold **[PHOTO]** pressed down. The scene will be played back by frames and each frame captured as a separate photo.

- 4 Touch **[■]** to return to the index screen.

IMPORTANT

- When capturing photos on an Eye-Fi card in memory card slot **B**, photos will be uploaded automatically if you are within the range of a configured network. Always verify that Eye-Fi cards have been approved in the country/region of use. See also *Using an Eye-Fi card* ( 150).

NOTES

- The data code of the photos will reflect the date and time of recording of the original scene.
- Photos captured from a scene with a lot of fast movement may be blurred.
- Photos will be recorded on the memory selected for recording photos.
-  Photo Sequence:
 - Up to 100 photos can be captured at a time.
 - The photo sequence capture will stop when the end of the scene is reached (playback will pause at the beginning of the following scene).
 - Photos will be captured at intervals of 1/30 second (1/24 second, if the scene was recorded at a frame rate of **[PF24 PF24]** or **[24F 24F]**).

Dividing Scenes

You can divide scenes (original scenes only) in order to leave out the best parts and later cut out the rest.

Operating modes:    |  

- 1 Open the **[Original]** index screen.

- 2 Select the scene you want to divide and touch it to start playing it back.
- 3 Pause the playback at the point where you want to divide the scene.
- 4 Open the scene division screen.




5 Bring the scene to a precise point, if necessary.

- During playback pause: Touch [▶] to play back the scene. Touch [◀|||] or [|||▶] to jump a frame backward/forward.
- During playback: Touch [|||] to pause the playback. Touch [◀◀] or [▶▶] for fast playback backward/forward.

6 Divide the scene.

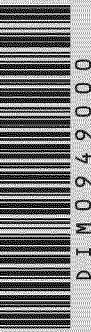


- The video from the division point to the end of the scene will appear as a new scene in the index screen.

 NOTES

- When advancing/reversing frames while dividing the scenes, the interval between frames is about 0.5 seconds.
- If the scene cannot be divided at the point where you paused the playback, advance/reverse a frame and then divide the scene.
- During the playback of a scene that was divided, you may notice some anomalies in the picture/sound at the point where the scene was cut.
- The following scenes cannot be divided:
 - Video snapshot scenes and other scenes that are too short (less than 3 seconds).
 - Scenes that were edited using the supplied software **ImageMixer 3 SE** and were then written back to the memory.
- Scenes cannot be divided within 1 second from the beginning or the end of the scene.

Canon



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- For support concerning the supplied PIXELA applications, please call PIXELA customer support (details in the 'PIXELA Applications' Installation Guide).
- Pour le support technique concernant les logiciels PIXELA fournis, veuillez appeler le service clientèle de PIXELA (les détails se trouvent dans le Guide d'installation 'PIXELA Applications').
- Para soporte relacionado las aplicaciones de PIXELA suministradas, llame al centro de atención al cliente de PIXELA (vea los detalles en la Guía de instalación 'PIXELA Applications').

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