

Canon

PUB. DIE-0383-000

HD Camcorder

Instruction Manual

VIXIA
HFR20

VIXIA
HFR21

VIXIA
HFR200



NTSC



HDMI AVCHD

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 R21 A / VIXIA HF R20 A / VIXIA HF R200 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

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 R21 A / VIXIA HF R20 A / VIXIA HF R200 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 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 9 Only use attachments/accessories specified by the manufacturer.
- 10 Unplug this apparatus during lightning storms or when unused for long periods of time.
- 11 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.

CA-110 identification plate is located on the bottom.

While using the compact power adapter, do not wrap it or cover it with a piece of cloth, and do not place it in confined narrow spaces.

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

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- Other names and products not mentioned above may be trademarks or registered trademarks of their respective companies.
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- 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



1



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!



HFR21/HFR20 Dual Flash Memory

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

Decoration (📖 97)



You can add flare to your movies by adding text, stamps or even freehand illustrations.

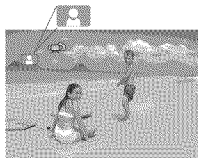
¹ "Full HD 1080" refers to Canon camcorders compliant with high-definition video composed of 1,080 vertical pixels (scanning lines).

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 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 (📖 68)

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



Face Detection (📖 66)

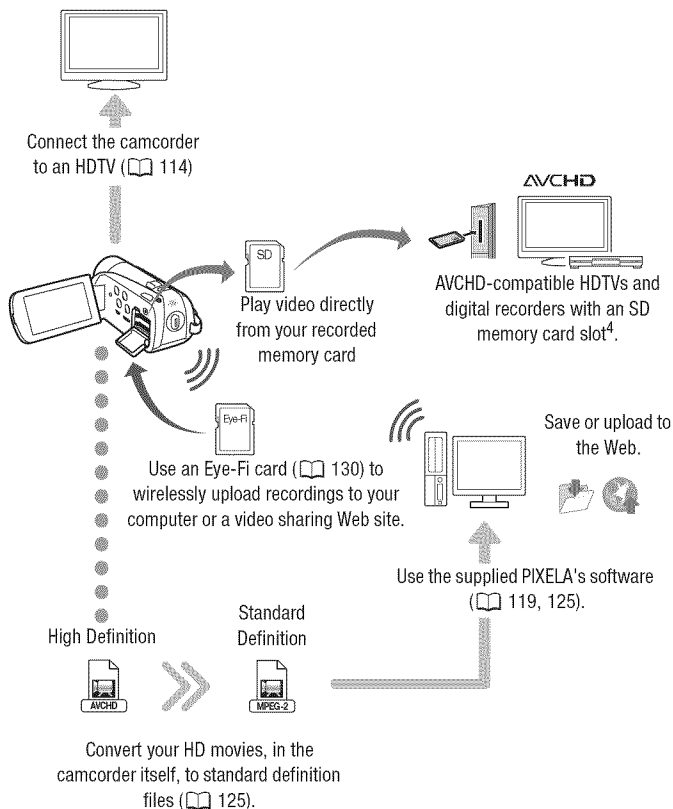
The camcorder automatically detects people's faces and adjusts the focus and other settings accordingly for beautiful results.

Image Stabilization



Dynamic IS (📖 64) compensates for camcorder shake when you shoot video while walking.

Enjoying your Recordings on Other Devices



⁴ Refer to the instruction manual of the device compatible with the type of card memory used. 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.

Table of contents

■ Introduction

- 6 Exciting Features and New Functions
- 14 About this Manual
- 16 Getting to Know the Camcorder**
- 16 Supplied Accessories and CD-ROMs
- 18 Names of Parts

■ Preparations

21 Getting Started

- 21 Charging the Battery Pack
- 24 Preparing the Accessories
- 27 Adjusting the Position and Brightness of the LCD Screen

29 Basic Operation of the Camcorder

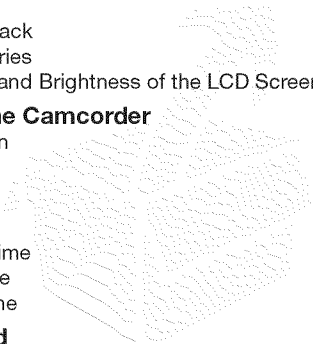
- 29 Using the Touch Screen
- 30 Operating Modes
- 32 Using the Menus

34 First Time Settings

- 34 Setting the Date and Time
- 35 Changing the Language
- 35 Changing the Time Zone

36 Using a Memory Card

- 36 Memory Cards Compatible for Use with the Camcorder
- 38 Inserting and Removing a Memory Card
- 39 Selecting the Memory for the Recordings
- 40 Relay Recording of Movies
- 41 Initializing the Memory



■ Smart AUTO Mode

43 Basic Recording

- 43 Shooting Video and Taking Photos in Smart AUTO Mode
- 47 Zooming
- 49 Quick Start Function

■ Video

50 Basic Playback

- 50 Playing Back the Video
- 54 3D Flip View
- 54 The Index Selection Screen: Selecting the Content to Play Back
- 56 Date Index Screen and Gallery Screen
- 56 Deleting Scenes

58 Advanced Functions

- 58 Shooting Video in Flexible Recording Mode
- 59 Selecting the Video Quality (Recording Mode)
- 60 Selecting the Frame Rate
- 61 Special Scene Recording Programs and Programmed AE
- 63 Cinema Mode: Giving a Cinematic Look to your Recordings
- 64 Image Stabilization
- 65 Pre-Recording
- 66 Face Detection
- 67 Touch & Track
- 68 Video Snapshot
- 69 Digital Effects
- 70 Manual Exposure Adjustment
- 71 Manual Focus Adjustment
- 72 Tele-macro
- 73 White Balance
- 74 Self Timer
- 75 Audio Recording Level
- 77 Using Headphones
- 80 Selecting the Playback Starting Point
- 82 Playing Back Scenes or Slideshow Set to Background Music

- 87 Onscreen Displays and Data Code
- 87 Rating Scenes
- 90 Gallery and Scene Operations**
- 90 Managing Stories
- 94 Capturing Video Snapshot Scenes and Photos from a Movie
- 96 Dividing Scenes
- 97 Decorating Scenes

■ Photos

- 103 Basic Playback**
- 103 Viewing Photos
- 105 Deleting Photos
- 107 Additional Functions**
- 107 Taking Photos in Flexible Recording Mode
- 108 Selecting Photo Size
- 109 Slideshow

■ External Connections

- 111 Terminals on the Camcorder**
- 112 Connection Diagrams
- 114 Playback on a TV Screen**
- 116 Saving and Sharing Your Recordings**
- 116 Copying Recordings to a Memory Card
- 119 Saving Recordings on a Computer
- 122 Saving Movies onto Standard-Definition Discs (DVD)
- 123 Copying Recordings to an External Video Recorder
- 125 Uploading Movies to Video Sharing Web Sites

■ Additional Information

132 Appendix: Menu Options Lists

132 FUNC. Panel

136 Setup Menus

147 Appendix: Onscreen Icons and Displays

152 Trouble?

152 Troubleshooting

159 List of Messages

166 Do's and Don'ts

166 Handling Precautions

170 Maintenance/Others

171 Using the Camcorder Abroad

172 General Information

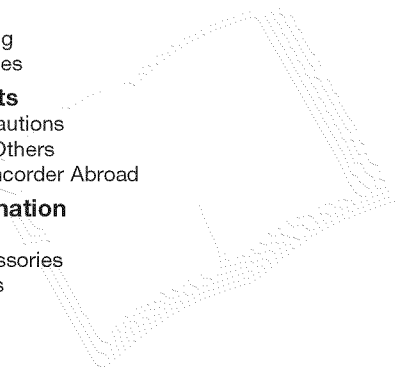
172 Accessories

173 Optional Accessories

176 Product Codes

177 Specifications









182 Index





About this Manual

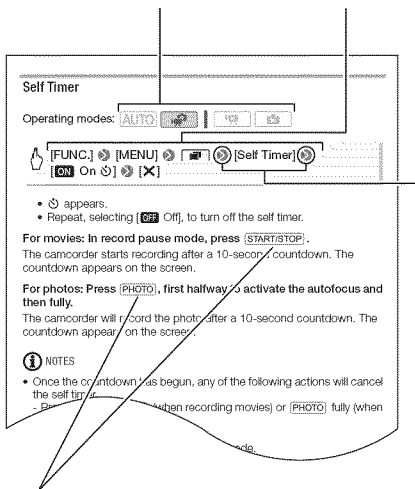
Thank you for purchasing the Canon VIXIA HF R21 / VIXIA HF R20 / VIXIA HF R200. Please read this manual carefully before you use the camcorder and retain it for future reference. Should your camcorder fail to operate correctly, refer to *Troubleshooting* (📖 152).


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.
-  **HFR21/HFR20:** Text that applies only to the model(s) shown in the icon.
- When you see the  icon, you will need to refer also to the 'Photo Application' Instruction Manual, included as a PDF file in the supplied Camcorder Supplemental Disc, to complete the operation.
- 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 screen.
 - “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 .

 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.

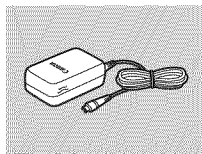


The names of physical buttons and switches on the camcorder are indicated within a “button” frame. For example .

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* (□ 132).

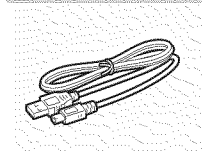
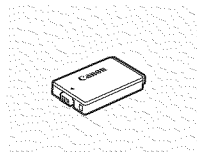
Supplied Accessories and CD-ROMs

The following accessories are supplied with the camcorder:



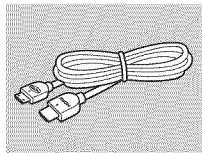
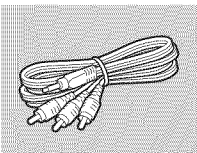
▶ CA-110 Compact Power Adapter*

BP-110 Battery Pack ◀



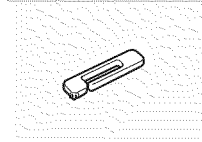
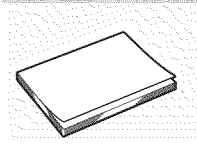
▶ IFC-300PCU/S USB Cable

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



▶ HTC-100/S HDMI Cable


◀ Quick Guide



▶ Stylus Pen

* CA-110E including power cord, in Asia.

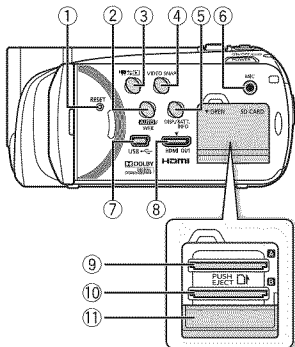
The following CD-ROMs and software are supplied with the camcorder:

- **PIXELA's Transfer Utility** CD-ROM¹ and Installation Guide for PIXELA's software
 - PIXELA's Transfer Utility - Software for saving and transferring movies and music files you can use as background music.
- **PIXELA's VideoBrowser** CD-ROM¹
 - PIXELA's VideoBrowser - Software for managing, editing, and playing back movies.
-  **Instruction Manual/Photo Applications Ver.35¹/Music Data/Image Mix Data** CD-ROM (referred to in this manual as "Camcorder Supplemental Disc")
 - Instruction Manual - The full-version instruction manual of the camcorder (this PDF file).
 - Photo Application - Software for saving, managing, and printing photos.
 - Music data - Music files that can be used as background music during playback. These music files are for exclusive use with the supplied PIXELA's software. The disc cannot be played back on CD players.
 - Image mix data - Image files that can be used to mix with live video for the image mix function.

¹ The CD-ROM includes the instruction manual of the software (on PDF file).

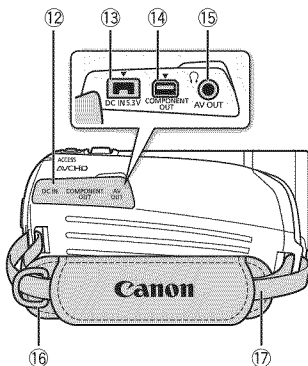
Names of Parts

Left side view

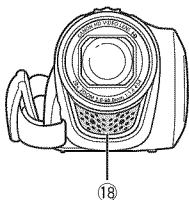


- 1 RESET button (156)
- 2 **AUTO** button (30)/**HFR21**/**HFR20** WEB button (125)
- 3 (camera/play) button (31)
- 4 VIDEO SNAP (video snapshot) button (68)
- 5 DISP. (onscreen display) button (87)/
BATT. INFO button (151)
- 6 MIC terminal (79)
- 7 USB terminal (111, 114)
- 8 HDMI OUT terminal (111, 112)
- 9 Memory card slot **A** (38)
- 10 Memory card slot **B** (38)
- 11 Double memory card slot cover
- 12 Terminal cover
- 13 DC IN terminal (21)
- 14 COMPONENT OUT terminal (111, 113)
- 15 AV OUT terminal (111, 113)/
 (headphones) terminal (77)
- 16 Strap mount (25)
- 17 Grip belt (24)

Right side view

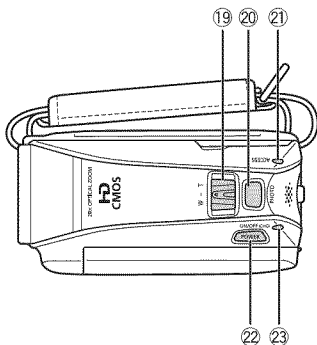


Front view

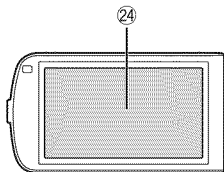


- ⑱ Stereo microphone (75)
- ⑲ Zoom lever (47)
- ⑳ PHOTO button (43, 107)
- ㉑ ACCESS indicator (43, 58, 107)
- ㉒ POWER button
- ㉓ ON/OFF (CHG) (charge) indicator:
Green – ON
Orange – Standby (49)
Red – Charging (21)
- ㉔ LCD touch screen (27, 29)

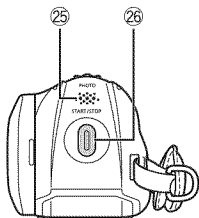
Top view



LCD panel



Back view

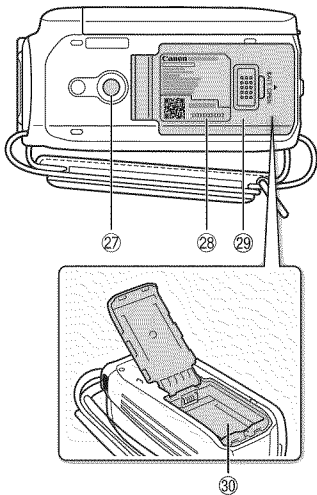


- 25 Speaker (49 52)
- 26 START/STOP button (43, 58)
- 27 Tripod socket (167)
- 28 **Serial number**

The serial number label is located on the battery compartment cover.



Bottom view



- 29 Battery compartment cover (21)
- 30 Battery compartment (21)



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 or if you have not used the battery pack for an extended period of time, 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 the tables on page 173.

- 1 Plug the compact power adapter into a power outlet.**

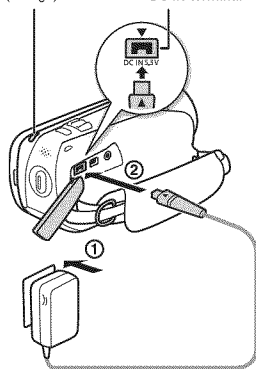
For Asia only: Connect the power cord to the compact power adapter.

- 2 Connect the compact power adapter to the camcorder's DC IN terminal.**

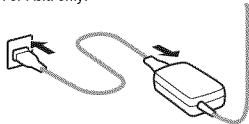
When connecting the compact power adapter's cable to the camcorder, make sure to align the triangle marks on the cable's connector and on the camcorder's terminal (▶◀).

ON/OFF (CHG)
(charge) indicator

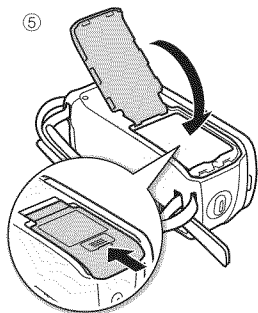
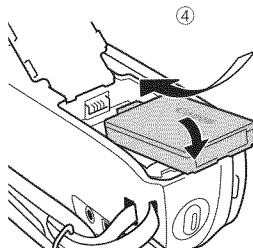
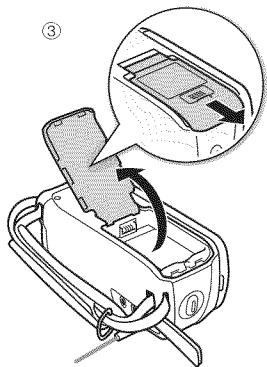
DC IN terminal



For Asia only:

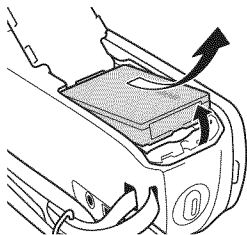


- 3 Slide the battery compartment cover away from the lens and open it.
- 4 Insert the battery pack all the way into the compartment and press gently until it clicks.
- 5 Close the cover and slide it toward the lens until you hear a click.
- 6 Charging will start when the camcorder is turned off.
 - 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* (152).



To remove the battery pack

- 1 Slide the battery compartment cover away from the lens and open it.
- 2 Raise the edge of the battery pack in the direction of the arrow and pull out the battery pack.
- 3 Close the cover and slide it toward the lens until you hear a click.



! 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.
- 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.
- We recommend charging the battery pack in temperatures between 10 °C and 30 °C (50 °F and 86 °F). Outside the temperature range of approximately 0 °C to 40 °C (32 °F to 104 °F), charging will not start. Also, when the battery itself is outside the temperature range of approximately 0 °C to 40 °C (32 °F to 104 °F), charging will not start.
- During charging, if you disconnect the compact power adapter from the DC IN terminal or unplug it from the power outlet, make sure the ON/OFF (CHG) indicator has gone out before connecting or plugging the compact power adapter again.

- 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.

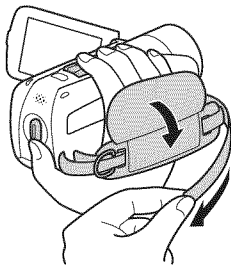


Preparing the Accessories

Grip Belt

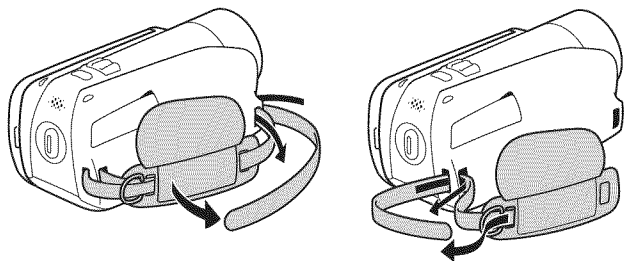
Fasten the grip belt.

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

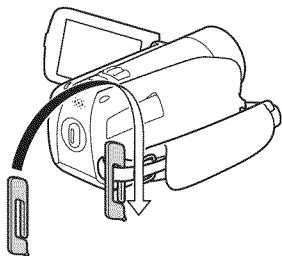


To remove the grip belt

- 1 Lift the padded handgrip's flap and detach the strap from the Velcro pad.
- 2 Pull the strap to remove it first from the front bracket on the camcorder, then to unthread it from the handgrip and finally to remove it from the rear bracket on the camcorder.



Stylus Pen

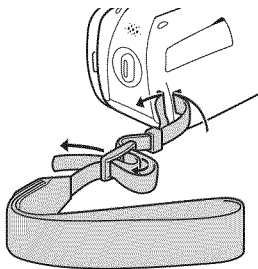


Straps

To attach an optional wrist strap

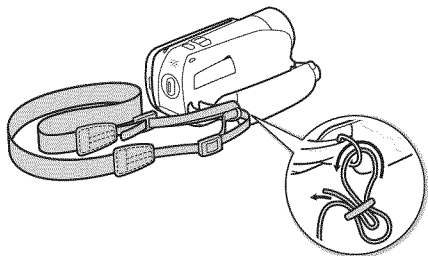
Pass the attaching end of the wrist strap through the rear bracket on the camcorder, thread the wrist strap through the loop and fasten.

You can also attach the wrist strap to the strap mount on the grip belt to use both for extra convenience and protection.



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.

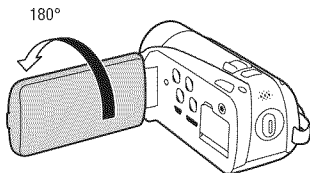
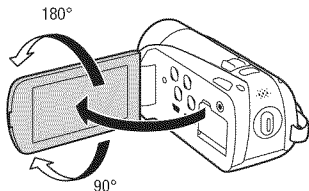


Adjusting the Position and Brightness of the LCD Screen

Rotating the LCD Panel

Open the LCD panel 90 degrees.

- You can rotate the panel 90 degrees downward.
- You can rotate the panel 180 degrees toward the lens. Rotating the LCD panel 180 degrees can be useful when you wish to include yourself in the picture when recording with the self timer.



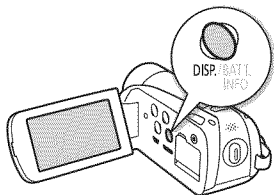
Subject can monitor the LCD screen

i NOTES

- **About the LCD screen:** The screen is 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.

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).
- If **[]** **[]** **[]** [LCD Screen Dimmer] is set to **[ON]** On, pressing **[DISP.]** for more than 2 seconds will turn off the screen dimmer and return the LCD screen to its previous brightness setting.

i 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.

Basic Operation of the Camcorder

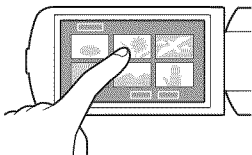
Using the Touch Screen

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. You can easily operate the touch screen using your finger or the supplied stylus pen. With the intuitive touch screen interface you have all the controls at your fingertips.

Touch

Press firmly on an element displayed on the touch screen.

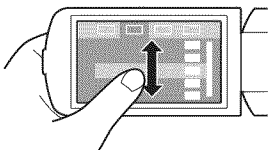
Used to start playing back a scene in an index screen, to select a setting from the menus, to select the subject whom the camcorder will recognize as the main subject of the scene, etc.



Drag

While applying pressure, swipe your finger up and down or left and right across the screen.

Used to scroll menus, to browse through index screen pages or to adjust slider controls like the volume.



! IMPORTANT

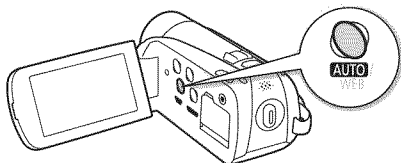
- **The camcorder uses a pressure-sensitive touch screen. Press firmly when using touch operations.**
- If you press the touch screen hard, the area pressed may appear white or black. This is a characteristic of the touch screen and will not cause a malfunction. Also, this will not affect your recordings.




- 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 other than the stylus pen, 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.

Operating Modes

Recording



The camcorder offers two basic modes for recording video and photos: Smart AUTO (AUTO) mode for beginners or if you just prefer not to bother with detailed camcorder settings, and flexible recording () mode, which lets you change the camcorder's settings to your preference. Press the AUTO button to switch the camcorder to AUTO mode and press the button again to switch back to mode. In either mode, you can record movies by pressing [START/STOP] or take photos by pressing [PHOTO].

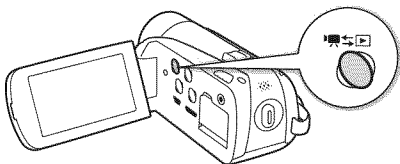












Operating mode	Onscreen icon	Operation
AUTO	 AUTO*	Easy recording of movies and photos (43).
		Recording of movies (58) and photos (107) while enjoying full access to the menus and advanced functions.

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

Playback

Press the  (camera/play) button to switch the camcorder between camera (recording) mode and playback mode. You can press  when the camcorder is off to turn it on directly in playback mode.



Operating mode	Onscreen icon	Operation	
		Press 	Playing back movies ( 50).
		Press  , touch  and then  Photos]	Viewing photos ( 103).

NOTES


- When switching to a playback mode, the memory selected for playback will be the same currently used for recording.


Using the Menus

Many of the camcorder's functions can be adjusted from the FUNC. panel and the setup menus. In **AUTO** mode, however, most menu 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* (📖 132).



The FUNC. Panel and Edit Panel

In **AUTO** 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 the screen to find the control button of the desired function.

FUNC. panel in  mode

Touch the control button of the desired function




In  and  mode, touch [Edit] to display a similar panel containing the various operations that are available and then touch the control button of the desired operation.

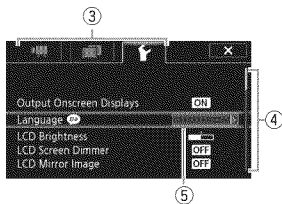
Edit panel in  mode

Touch the control button of the desired operation



The Setup Menu

- 1  mode only: Touch [FUNC.]
- 2 Touch [MENU] to open the setup menus.
- 3 Touch the tab of the desired menu.
- 4 Drag your finger up and down to bring the setting you want to change into the orange selection bar.



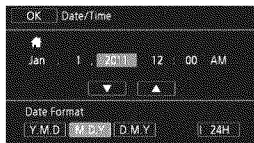
- Menu items not available appear grayed out.
 - When the desired menu item appears, you can touch it to bring it down to the orange bar.
- 5 When the desired menu item is inside the selection bar, touch the orange frame on the right.
 - 6 Touch the desired option and touch [X].
You can touch [X] to close the menu at any time.

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 (169) 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  mode.

Using a Memory Card

Memory Cards Compatible for Use with the Camcorder

You can use commercially available Secure Digital (SD) 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 2010, the movie recording function has been tested using SD/SDHC/SDXC 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	—	●*
CLASS 2 CLASS 4 CLASS 6 CLASS 10		●	
 SDHC memory cards	Over 2 GB	CLASS 2 CLASS 4 CLASS 6 CLASS 10	●
 SDXC memory cards	Over 32 GB	CLASS 4 CLASS 6 CLASS 10	●

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

NOTES

- **About the SD Speed Class:** The SD Speed Class is a standard that indicates the minimum guaranteed data transfer speed of SD/SDHC/SDXC 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.

SDXC Memory Cards

Use SDXC memory cards only with SDXC-compatible devices, such as SDXC-compatible digital recorders, computers and card readers. The table below summarizes compatibility by computer operating system, as of October 2010. For the latest information, however, contact the computer, operating system or memory card manufacturer.

Compatible operating systems for SDXC memory cards

Operating system	Compatibility
Windows 7	Compatible
Windows Vista	Compatible (requires Service Pack 1 or later)
Windows XP	Compatible (requires Service Pack 3 and KB955704 update)
Mac OS X	Not compatible

IMPORTANT

- If you use an SDXC memory card with a computer OS that is not SDXC-compatible, you may be prompted to format the memory card. In such case, **cancel the operation to prevent data loss**.
- After repeatedly recording, deleting and editing scenes (fragmented memory), it will take longer to write data on the memory and recording may stop. Save your recordings and initialize the memory.

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.

IMPORTANT

- Do not insert an Eye-Fi card into card slot **A**. Doing so may cause a malfunction with the card's wireless communication functionality.

Inserting and Removing a Memory Card

Make sure to initialize (📖 41) all memory cards before using them with this camcorder.

1 Turn off the camcorder.

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

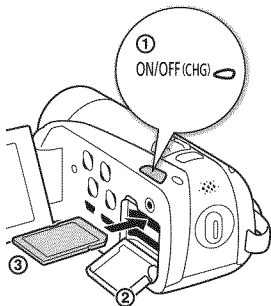
2 Open the double memory card slot cover.

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 up, 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* (📖 37) 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 (**HFR21/HFR20**) or on a memory card. The default memory for recording both is the built-in memory (**HFR21/HFR20**) or memory card **A** (**HFR200**).

Operating modes: **AUTO**  |  



POINTS TO CHECK

- Be sure you understand the information provided in *Eye-Fi Cards* (book 37) before using an Eye-Fi card.

HFR21/HFR20

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

HFR200

 [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, based on currently used settings.

NOTES

- **HFR21/HFR20** Select to record movies in the built-in memory or memory card **A** if you later want to convert the movies to standard definition in order to upload them to the Web.

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 automatically on a memory card.

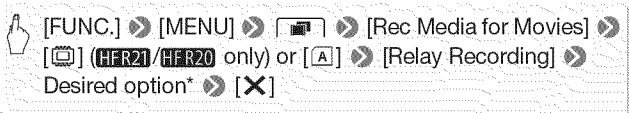
When recording on memory card **A**, you can use memory card **B** for relay recording (**A** → **B**). **HFR21/HFR20** only: When recording in the built-in memory, you can choose to use only memory card **A** for relay recording (**[]** → **A**), or use both memory cards (**[]** → **A** → **B**).

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 (**HFR21/HFR20** 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.

i NOTES

- **HFR21/HFR20** 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**.
- There will be a momentary stop in the scene at the point where the recording switched to a different memory.
- Any of the following actions will deactivate the relay recording function:
 - Turning off the camcorder.
 - Opening the double memory card slot cover.
 - Changing the camcorder's operating mode.
 - Changing the memory used for recording movies.

Initializing the Memory

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 (HFR21/HFR20 only) to permanently delete all the recordings it contains. HFR21/HFR20 At the time of purchase, the built-in memory comes pre-initialized and contains music files for use as background music during playback. It also contains images used for the image mix function.








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.

HFR21/HFR20

 [FUNC.]¹ ➤ [MENU] ➤  ➤ [Initialize / ] ➤
[ Built-in Mem.], [ Mem. Card A] or [ Mem. Card B]
➤ [Initialize] ➤ [Complete Initialization]² ➤ [Yes]³ ➤ [OK]
➤ [X]

HFR200

 [FUNC.]¹ ➤ [MENU] ➤  ➤ [Initialize ] ➤
[ Mem. Card A] or [ Mem. Card B] ➤ [Initialize] ➤
[Complete Initialization]² ➤ [Yes]³ ➤ [OK] ➤ [X]

¹ Only when performing the procedure in  mode.

² Touch this option if you want to physically erase all the data rather than just clear the file allocation table of the memory.

³ 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 (📖 116).
- Initializing a memory card will permanently erase any music and image files you may have transferred to the card. (HFR21/HFR20 The music and image files that come pre-installed in the built-in memory will be restored after it is initialized.)
 - Windows users: Use the supplied software PIXELA's **Transfer Utility** or **VideoBrowser** to transfer music files from the supplied Camcorder Supplemental Disc to a memory card after it is initialized. For details, refer to the Software Guide (PDF file) of the supplied software.
 - 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* (📖 181) 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. Initializing the card will erase the software contained in the card.



Smart AUTO Mode

This chapter covers how to easily record video and photos in Smart AUTO 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 (📖 58) and photos (📖 107).

Basic Recording

Before you begin recording, make a test recording first to check that the camcorder is operating correctly.

Shooting Video and Taking Photos in Smart AUTO Mode

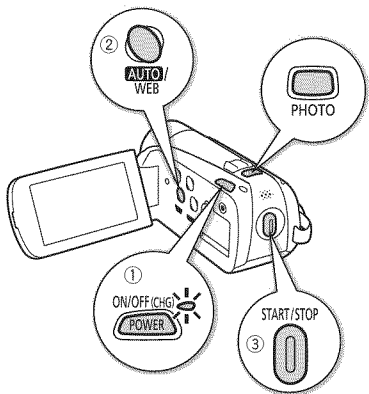
With Smart AUTO mode, you can take great-looking videos and photos by letting the camcorder automatically adjust settings based on the recording situation.

Operating modes: **AUTO**  |  

1 Turn on the camcorder.

- By default, movies and photos are recorded in the built-in memory (**HFR21/HFR20** only) or on memory card **A** (**HFR200**). You can select the memory that will be used to record movies and photos (📖 39).
- Please read the **IMPORTANT** section (📖 46) before using an Eye-Fi card.

2 Press **AUTO**.



To record video

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

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

To take photos

- 3 Press **PHOTO** halfway.

If the subject is not in focus,  will flash in yellow. Adjust the camcorder's position and press **PHOTO** halfway again. Once the focus is automatically adjusted,  will turn green and one or more AF frames will appear.








- 4 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 the Smart AUTO mode

- Only the following functions are available in this mode.
 - Zoom ( 47).
 - Quick Start ( 49).
 - Video snapshot ( 68).
 - Image stabilization modes ( 64).
 - Face detection ( 66) to get beautiful shots of people every time, tracking the subject even if the person moves.
 - Touch & Track ( 67) to track other moving subjects, keeping them in focus and using the best settings to record them.
 - Decorating scenes ( 97).








- When shooting in **AUTO** 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 (gray)	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.

* When "T" appears in the icon, this indicates that tele-macro ( 72) has been activated.











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	 	—	—

* When "T" appears in the icon, this indicates that tele-macro ( 72) has been activated.

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 ( 116), 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 when the camcorder is in playback mode 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* ( 131).




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.
- 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 using the **[P Programmed AE]** recording program ( 61).
- In **[AUTO]** mode, the setup menus cannot be accessed and there is limited access to the FUNC. panel. However, the following settings can be changed in advance, before pressing **[AUTO]**.
 - FUNC. panel: [Decoration], [ZOOM], [Image Stabilizer].
 -  menu: [Auto Slow Shutter]
 -  menu: [Video Snapshot Length], [Rate Scenes (Recording)], [Rec Media for Movies], [Recording Mode], [Rec Media for Photos], [Photo Aspect Ratio]
 -  menu: All settings.

Zooming


Operating modes:   |  

The camcorder offers three types of zoom - optical, advanced and digital. For optical zoom, the camcorder uses the optical magnification ratio of the lens. For advanced zoom, the camcorder processes the image beyond the range of the optical zoom to obtain a larger zoom without any deterioration in image quality. For digital zoom, the image is processed digitally so image quality will deteriorate the more you zoom in.

In  mode, select the type using the   [Zoom Type] setting. In **AUTO** mode, [Zoom Type] will be set to [Advanced]. A summary of the zoom types is given in the table below.

[Optical] ¹	[Advanced]	[Digital]
20x	28x ²	400x

¹ When taking photos, only optical zoom is available.

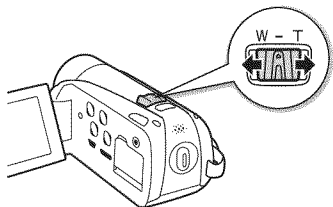
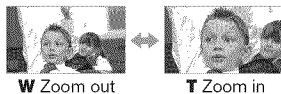
² 24x when [Image Stabilizer] (FUNC. panel) is set to  Dynamic].

There are two ways you can zoom in and out: using the zoom lever on the camcorder or using the zoom controls on the touch screen.

Using the Zoom Lever

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.



1 Display the zoom controls on the touch screen.



- 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.).
- When using tele-macro ( 72) and the camcorder is at full telephoto, you can focus on a subject as close as 40 cm (1.3 ft.).
- When recording at maximum advanced zoom, the video quality is equivalent to high definition.
- In  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]**, the zoom speed will be faster in record pause mode than when actually recording, except when pre-recording ( 65) 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, 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.

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, or while a menu is being displayed. The camcorder may also not enter standby mode if the LCD panel is closed 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  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.



Video


This chapter covers functions related to movies, including playback, advanced shooting, advanced functions and scene operations. For details about basic video shooting, refer to *Smart AUTO Mode* (📖 43).

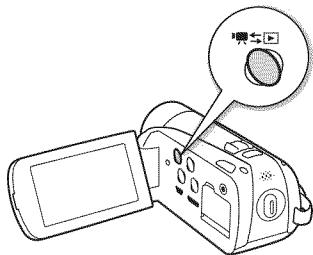
Basic Playback

Playing Back the Video

To play back scenes based on their rating, see *Playing Back Scenes by Rating* (📖 89).

Operating modes:   |  

1 Press .



2 Open the date 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.



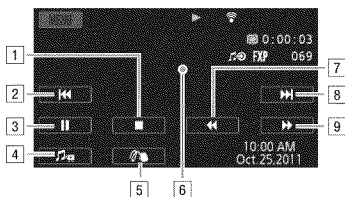
- 1 Memory being read.
- 2 Recording date.
- 3 Drag your finger left for the next index page*.
- 4 Drag your finger right for the previous index page*.
- 5 Select a different index screen to read different content or from a different memory (📖 54).
- 6 3D Flip View (📖 54)
- 7 [Edit] panel
- 8 Timeline (📖 80)
- 9 Divider indicating a change of recording date.

* 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 for a few seconds.

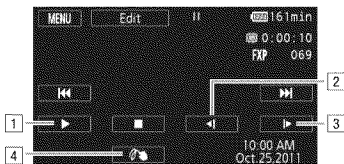
During playback:



- 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 Touch to show volume and audio balance controls. Drag your finger left and right along the bar to adjust. For [Music Balance], adjust toward [🔊] to increase the level of the original audio; adjust toward [🎵] to increase the level of background music. Set the level in the middle for an equal mix of both.
- 5 Decorate scenes (📖 97).
- 6 Touch anywhere else to hide the playback controls.
- 7 Fast playback backward*.
- 8 Jump to the next scene.
- 9 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*.
- 4 Decorate scenes (📖 97).

* Touch repeatedly 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.

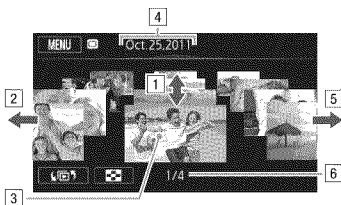
i NOTES

- 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.

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

In the date index screen, touch [📅].

To return to the date index screen, touch [🏠].



- 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.

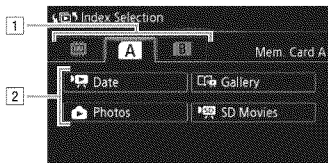
The Index Selection Screen: Selecting the Content to Play Back

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

Operating modes: [AUTO] [📷] | [📺] [📹]

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 (**HFR21/HFR20** only), memory card **A** or memory card **B**.
- 2 Touch a control button to select the content you want to play back.

Options

[**Date**] Scenes in the date index screen are organized by recording date.

[**Gallery**] Scenes in the gallery screen are organized by various groups, or “stories” (90). Touch [Gallery] and then the desired story.

[**Photos**] Display the photo index screen.

[**SD Movies**] **HFR21/HFR20** only. When a memory card is selected, displays scenes that were converted to standard definition to upload them to the Web (125).

NOTES

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

Date Index Screen and Gallery Screen

From the index selection screen, you can choose two methods to display scenes. Touch [📅 Date] to display the date index screen, which groups scenes by recording date. Touch [📖 Gallery] to display the gallery screen, which organizes scenes by various groups, or “stories”.



Gallery screen with [Unsorted] selected

The gallery screen, by default, contains two groups that are divided as follows.

[Unsorted]: For your regular scenes.

[Video Snapshot]: For video snapshot scenes.

Drag your finger left and right to show the next or previous story. To view your regular scenes, select [Unsorted]. To view your video snapshot scenes, select [Video Snapshot]. You can even create new stories that contain movies of your choosing and you can arrange their order to your liking (📖 90).

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 and Stories from the Gallery* (📖 90).

Operating modes:   |  

- 1 In the date index screen, open the screen that contains the scenes you want to delete.

To delete all the scenes recorded on a specific date, select the index page that contains scenes from that date.

- 2 Touch [Edit] ➤ [Delete].

3 Touch the desired option.

If you selected [Select], touch the scenes to delete and then touch [OK]. A checkmark ✓ will appear on selected scenes. Touch a selected scene again to remove the checkmark. You can also touch [Remove All] to remove all checkmarks.

4 Touch [Yes] ➤ [OK].

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

Options

[Date] Deletes all scenes recorded on the date displayed on the control button.

[Select] Deletes all scenes that you select.

[All Scenes] Deletes all scenes.

To delete scenes during playback

1 Touch the screen to display the playback controls.

2 Delete the scene.



! IMPORTANT



- Be careful when deleting original recordings. Once deleted, original scenes cannot be recovered.
- Save copies of important scenes before deleting them (📖 116).
- 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 gallery screen or date index screen will delete that scene permanently from the camcorder.
- To delete all movies and make all recordable space available again you may prefer to initialize the memory (📖 41).





Advanced Functions

Shooting Video in Flexible Recording Mode

When the camcorder is in  (flexible recording) 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. The camcorder can even help you with the settings, for example, when you use Special Scene recording programs ( 61).

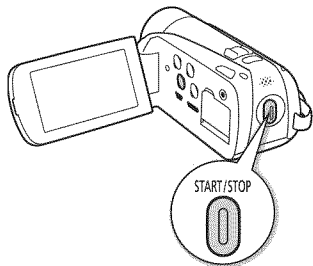
Operating modes:   |  

1 Turn on the camcorder.

By default, movies are recorded in the built-in memory ( only) or on memory card  (). You can select the memory that will be used to record movies ( 39).

2 Press to begin recording.

Press  again to pause the recording.



Reviewing Your Recording

You can play back the last scene recorded to check it. The camcorder will play back the last 4 seconds of the scene but without sound.




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 (📖 116), especially after making important recordings. Canon shall not be liable for any loss or corruption of data.

i NOTES

- The zoom, Quick Start function, power saving modes, etc. operate the same way in  mode as in **AUTO** mode. For details, refer to *Smart AUTO Mode* (📖 43).

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: **AUTO**  |  



i NOTES

- Scenes recorded in MXP mode cannot be saved onto AVCHD discs. Save such scenes onto Blu-ray discs or use the supplied PIXELA's **VideoBrowser** to back up such scenes. If you use PIXELA's **VideoBrowser**, however, scenes will be converted to FXP mode quality.
- 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 **AUTO** 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/ HFR20 Built-in memory ²	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/ HFR21 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

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 HFR21/HFR20 At the time of purchase, the built-in memory contains about 70 MB of music files and 5 MB of image 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.

Selecting the Frame Rate

Select the frame rate before you make a recording to match your creative intent. Changing the frame rate will change the “feel” of your recordings, for example, by giving them a more cinematic look.

Operating modes:   |  

 [FUNC.]  [MENU]    [Frame Rate] 
Desired frame rate  [X]

Options (♦ Default value)

[60i 60i (Standard)]♦ 60 fields per second, interlaced. This is the default setting and is suitable for most situations.

[PF30 PF30] 30 frames per second, progressive. Use this frame rate to easily edit your recordings, for example, to post them on the Web. Using this frame rate, video is recorded as 60i.

[PF24 PF24] 24 frames per second, progressive. Using this frame rate will give your recordings a cinematic look. When combined with the [Cine Mode] recording program (63), the cinematic look will be enhanced. Using this frame rate, video is recorded as 60i.

NOTES


- When the frame rate is set to [PF30 PF30] or [PF24 PF24], you cannot take photos.

Special Scene Recording Programs and Programmed AE

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.

On the other hand, you can select the Programmed AE (AE: auto exposure) recording program. With this recording program, the camcorder automatically adjusts the shutter speed and aperture while you are able to adjust the other settings.

Operating modes:   |  

 [FUNC.] > [Rec. Programs] > [Portrait]* >
Desired recording program > [X]

* To set the Programmed AE recording program, select [P Programmed AE] instead and then touch [X]. The rest of the procedure is not necessary.

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.
 - When taking photos, 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] to get the enhanced effect of the 24p Cinema Mode.



Operating modes: **AUTO** [] | [] []






 [FUNC.] > [Rec. Programs] > [ Cine Mode] > []

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. In **AUTO** mode, this function is set to [ Standard] and cannot be changed.

Operating modes: **AUTO** [] | [] []




* Available for movies only.

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

Options (♦ Default value)

- [ Dynamic]** 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]♦** 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.

NOTES

- If the degree of camcorder shake is too high, the image stabilizer may not be able to fully compensate. The image stabilizer may not be able to successfully eliminate all blur if the camcorder or subject is moving too much.
- The image stabilizer may not work well on subjects with low contrast, with a recurring repetitive pattern or without vertical lines.
- When [Image Stabilizer] is set to [ Dynamic], if the background's movement does not appear natural, select [ Standard] or [ Off].


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: **AUTO**  |  

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 **[VIDEO SNAP]**.
 - Changing the camcorder's operating mode.
 - Setting the camcorder to standby mode.
 - Opening the setup menus or using the following functions in the FUNC. panel: [Rec. Programs], [Decoration], [White Balance], [Image Stabilizer], [Digital Effects] or [Review Recording].

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.

 [FUNC.] > [MENU] >  > [Face Detection & Tracking] > [ON On ] > [X]

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. Touching a subject will activate Touch & Track ( 67).



Main subject

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 when the digital zoom is activated at more than 80x zoom.
- 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]).

Touch & Track

When recording people, face detection (📖 66) 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 (📖 66).**
- 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 ] to remove the frame and cancel the tracking.

NOTES

- If there is more than one subject on the screen that have similar characteristics, such as color, the camcorder might track a subject different from the intended one. In such case, touch the desired main subject again.
- 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 (82) 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

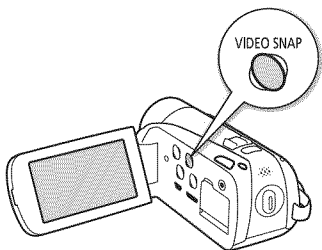
Operating modes: **AUTO**  |  

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 to 2 or 8 seconds with the   [Video Snapshot Length] setting.
- When the camcorder stops recording, the screen will momentarily turn black as if a camera shutter had released.

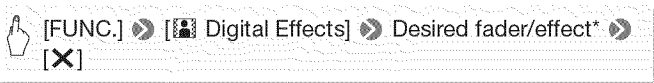


NOTES

- 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.

[B&W] Black & White ♦ Records movies and photos in black and white.

[SEPIA] 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 when taking photos.

NOTES

- By default, the camcorder fades from or to a black screen but you can change it to a white screen using the > [Fader Setting] setting.
- 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.

Manual Exposure Adjustment

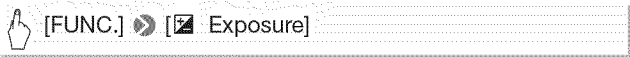
At times, backlit subjects may appear too dark (underexposed) or subjects under very strong lights may appear too bright or glaring (overexposed). To correct this, you can adjust the exposure manually or use the Touch AE function to automatically set the optimal exposure for the subject you select. This 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.
- The manual adjustment dial appears and the adjustment value is set at ± 0 .
- Touch [**M**] to return the camcorder to automatic exposure.


3 Touch [] and [] to further adjust the exposure.

- The adjustment range may vary depending on the initial brightness of the image, and some values may be grayed out.
- Alternatively, you can drag your finger left and right along the dial.

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.

NOTES

- 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.

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:   |  

* Available for movies only.


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.

- 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 [X] 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.

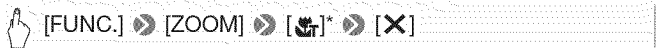
Tele-macro

You can take close-up shots of nearby subjects by using tele-macro. You can create shots in which a small subject is in focus but the background is blurred, thereby emphasizing the subject.

Operating modes:   |  


POINTS TO CHECK

- Select a recording program other than [🎆 Fireworks].



- * Touch again to deactivate tele-macro.
- The camcorder will zoom to full telephoto automatically.

NOTES

- Any of the following actions will deactivate tele-macro.
 - Turning off the camcorder.
 - Changing the camcorder's operating mode.
 - Zooming out toward wide angle.
 - Setting the recording program to [ Fireworks].
- Tele-macro cannot be activated or deactivated while recording.
- You can focus on a subject as close as 40 cm (1.3 ft.) at full telephoto.


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)









- [AWB Automatic]**  The camcorder automatically sets the white balance for natural looking colors.
- [ Daylight]** To record outdoors.
- [ 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

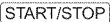
- **When you select the custom white balance:**
 - Set   [Zoom Type] to a setting other than [Digital].
 - Reset the white balance when you change locations or the lighting or other conditions change.
 - Depending on the light source,  may keep flashing. The result will still be better than with [AWB 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

Self Timer

Operating modes:   |  

 [FUNC.]  [MENU]    [Self Timer] 
[ON] On   [X]

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

For movies: In record pause mode, press .

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

For photos: Press **[PHOTO]**, 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.

NOTES

- Once the countdown has begun, any of the following actions will cancel the self timer.
 - Pressing **[START/STOP]** (when recording movies) or **[PHOTO]** 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.

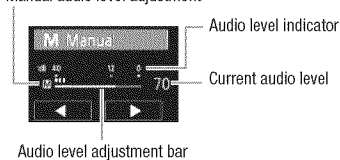
Operating modes: **AUTO**  |  

- 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.

Manual audio level adjustment



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 only occasionally.
- If the [🔊] [Audio Mix] setting is [ON] On, an audio level indicator for the built-in microphone (INT) and external audio source (EXT) will be displayed.

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.
- We recommend using headphones to check the sound level while adjusting the audio recording level or when the microphone attenuator is activated.

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.

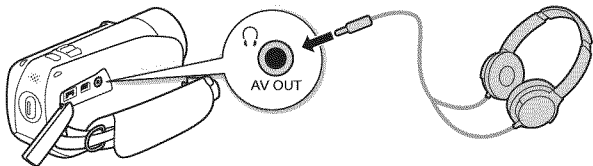
Operating modes:   |  

* Headphones can be used also in  mode but the function of the terminal cannot be changed. Change the setting in advance in  mode.



 [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, you can adjust the headphone's volume the same way you adjust the speaker's volume (📖 52).

! 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.

i NOTES

- Use commercially available headphones with a Ø 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.

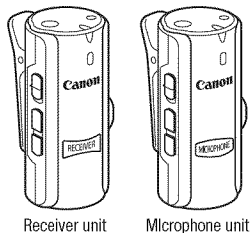
Using an External Microphone

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, such as the optional WM-V1 Wireless Microphone.

Operating modes:   |  

Using the WM-V1 Wireless Microphone

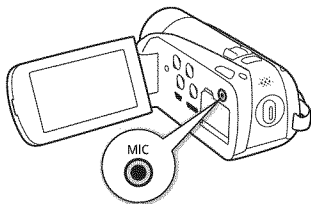
With the WM-V1 Wireless Microphone, you can record audio in a variety of situations. After you affix the microphone unit to the subject, sound is transmitted to the receiver unit connected to the camcorder's MIC terminal. This will allow you to record sound that is difficult to pick up by the camcorder's built-in microphone alone. You can also combine the sound from the wireless microphone and built-in microphone as you record.



For details on operating the WM-V1 Wireless Microphone, refer to the wireless microphone's instruction manual.

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.



Selecting the Type of Audio Input

Perform the following after connecting the external microphone or audio device to the MIC terminal.



Options (♦ Default value)

[LINE External Audio] For audio input from an external audio source.







[MIC Microphone]♦ For a microphone connected to the camcorder.

Mixing Audio While Recording

You can combine the sound recorded from the external audio source (**EXT**) with the sound recorded from the built-in microphone (**INT**). You can adjust the balance so that the sound recorded from one microphone is a higher level than the sound recorded from the other microphone. Perform the following after connecting the external microphone or audio device to the MIC terminal.



NOTES

- When an external microphone is connected to the camcorder,   [Wind Screen] will automatically be set to **[OFF]** Off .
- If the audio level is too high and the sound gets distorted, turn on the microphone attenuator with the   [Microphone Attenuator] setting or adjust the audio recording level manually ( 75).

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.

Operating modes:   |  

- 1 Open the date 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.

To change the interval between frames



Playing Back Scenes or Slideshow Set to Background Music

You can play back scenes in the date index screen, stories in the gallery and photo slideshows set to background music. You can use one of the supplied music tracks or connect an external audio player to use your favorite songs as background music. You can also mix the original sound with the background music and even adjust the balance of their audio levels.






Operating modes:   |  





Using One of the Supplied Music Tracks as Background Music

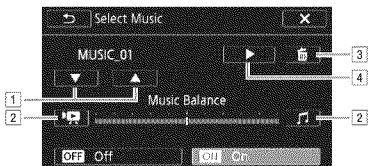
The supplied Camcorder Supplemental Disc contains 3 music tracks you can use as background music. **HFR21/HFR20**: The music files come pre-installed in the built-in memory.

POINTS TO CHECK

- To play back scenes, stories 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 Software Guide (PDF file) of the supplied software.
- 1 Open the date index screen, gallery screen, or photo index screen.
 - 2 Open the music track selection screen.

 [MENU] >  /  > [Select Music] > [ON On] > [▲] or [▼] to select the desired music track >  or  to adjust the audio balance > [X]

- For scenes, you can adjust the audio during playback using the following procedure. Touch the screen to display the playback controls and then touch . Then, touch  or  to adjust the balance. When finished, touch .



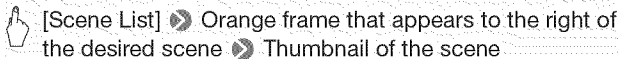
- 1 Select the desired music track.
- 2 Adjust toward [🔊] to increase the level of the original audio; adjust toward [🎵] to increase the level of background music. Set the level in the middle for an equal mix of both.
- 3 Delete the music track selected.
- 4 Listen to the music track selected. Touch again (■) to stop the playback.

To play back scenes from the date index screen

- 3 Touch a scene.

To play back from a particular scene in a story


- 3 Select the story that contains the scenes to play back.
Drag your finger right/left to bring the desired story to the front.
- 4 Play back the scenes.



To play back scenes by rating in a story

- 3 Select the story that contains the scenes to play back.
Drag your finger right/left to bring the desired story to the front.

4 Play back the scenes with a particular rating.

 [Story Details] ➤ [Play by Rating] ➤ Desired rating marker corresponding to the rating of the scenes to play back ➤ [↶] ➤ Thumbnail of the scene

To play back a slideshow from the photo index screen

- 3 Touch a photo to go to single photo view and continue with the slideshow procedure (📖 109).

To delete a music track

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

 [🗑️] ➤ [Yes]

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 date index screen, gallery screen, or photo index screen.
 - 2 Activate the external audio input.

 [MENU] ➤  /  ➤ [External Audio Input] ➤ [ON] On  

- 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 or gallery screen, touch a scene or story to start the video playback.

In  mode, touch a photo to go to single photo view and continue with the slideshow procedure ( 109).

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

- Initializing a memory card will permanently erase any music files you may have transferred to the card. (HFR21/HFR20 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 PIXELA's **Transfer Utility** or **VideoBrowser** to transfer music files from the supplied Camcorder Supplemental Disc to a memory card after it is initialized. For details, refer to the Software Guide (PDF file) of the supplied software.
 - 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* (📖 181) 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: **AUTO**  |  

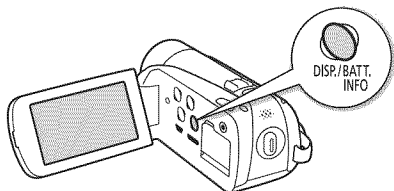
Repeatedly press **[DISP.]** to turn the onscreen displays on/off in the following sequence:

 mode:

- All displays on
- Most displays off*

 and  modes**:




- Only data code on
- All displays on



* 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.). You can select the information to be displayed with the /  **[Data Code]** setting.

Rating Scenes

You can assign a rating to the scenes you record. Later, you can choose just the scenes of a particular rating to play back or edit.

Rating Scenes Right After Recording

You can rate your scenes immediately after recording them. Doing so will allow you to assign a rating while the scene is still fresh in your memory.

Operating modes:   |  

 [FUNC.] ➤ [MENU] ➤ [] ➤
[Rate Scenes (Recording)] ➤ [**ON** On] ➤ [**X**]

- Select [**OFF** Off] to deactivate rating scenes after recording.

After you finish recording a scene, you can select one of the following rating marks for the scene.

[★★★★], [★★★], [★★•], [★••]: Rates the scene with three, two or one star, respectively.

[••••]: Leaves the scene unrated. If [Rate Scenes (Recording)] is set to [**OFF** Off], all recorded scenes will be unrated.

[----]: Rates the scene with a [----] rating.

Rating Scenes in the Gallery

Operating modes:   |  

- 1 From the gallery screen, select the story that contains the scenes to rate.

Drag your finger right/left to bring the desired story to the front.


- 2 Touch [Scene List].


- 3 When the desired scene appears in the orange bar, touch the frame on the right side.

- You can drag your finger up and down to browse through the scene list.
- The [Edit Scene] screen will appear.

- 4 Select the desired rating for the scene.

The selected rating mark will be highlighted.



- 5 Touch [].

- The [Scene List] screen appears and the scene will have the selected rating.
- To return to the gallery screen, touch [] again.

Rating Scenes During Playback

- 1 Play back from the gallery the story that contains the scenes you want to rate.
- 2 During playback of a scene you want to rate, pause the playback and rate the scene.



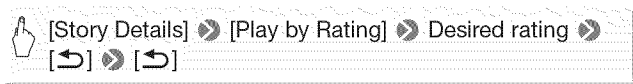
- 3 Touch  to resume the playback and rate other scenes in the same way or touch  to return to the gallery.

Playing Back Scenes by Rating

You can play back scenes that have a particular rating.

Operating modes:   |  

- 1 From the gallery screen, select the story that contains the scenes to play back.
Drag your finger right/left to bring the desired story to the front.
- 2 Select a rating.



- 3 Touch the story's thumbnail.
If the story does not contain scenes of the selected rating, a message will be displayed. Touch [OK] to return to the gallery screen.

Canon

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CANADA	<p>CANON CANADA INC 6390 Dixie Road, Mississauga, ON L5T 1P7</p> <ul style="list-style-type: none">❖ If you have any questions, call the Canon Canada Information Center toll free (in Canada only) at 1-800-OK-CANON (1-800-652-2666)❖ Si vous avez des questions, veuillez téléphoner 1-800-OK-CANON (1-800-652-2666, sans frais au Canada seulement)
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CENTRO Y SURAMÉRICA	<p>CANON LATIN AMERICA, INC 703 Waterford Way, Suite 400, Miami, FL 33126 USA</p>
ASIA	<p>CANON HONGKONG COMPANY LTD 19/F, The Metropolis Tower, 10 Metropolis Drive, Hunghorn, Kowloon, Hong Kong Tel +852 5191 2333, Fax +852 2428 5963</p>

For support concerning the supplied PIXELA's software, please call PIXELA customer support (details in the Installation Guide for PIXELA's software)