JVC

HD MEMORY CAMERA

Detailed User Guide

GZ-HM960/GZ-HM860

Everio

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● Refer to the operating instructions found in the animation on the Detailed User Guide.

Shooting Tips

**Basic Way to Hold a Camcorder
~ Recording Stable Images ~**

This is the standard way of shooting while standing up.
Be sure to master this basic technique in order to achieve stable images.

■ **[Getting Ready]**

1 Open your feet to the width of your shoulders.
2 Keep the elbow of your right arm, which is holding the camcorder, close to your side.
3 Hold the LCD monitor with your left hand and adjust the angle accordingly.

**Extending Your Hands to Shoot
~ High-Angle Shooting ~**

Extend your hand when your subject is being hidden behind a crowd of people.

■ **[Getting Ready]**

1 Open your feet to the width of your shoulders.
2 Extend your right hand and hold the camcorder over your head.
3 Hold the LCD monitor with your left hand and adjust the angle accordingly.

Caution :

● Use this way of shooting only as a last resort as it is difficult to achieve stable images.
● Set to the wide angle as much as possible as the image will be prone to camera shake.
● Be considerate. Do not inconvenience the people around you.

Squatting and Shooting at Eye Level

Staying low is a common position to take when shooting small children. By recording from the eye level of the child, you can capture all his cute expressions clearly.

■ **[Getting Ready]**

1 Kneel down with your left knee while keeping your right foot on the ground.
2 Place the elbow of your right arm, which is holding the camcorder, on your right knee.
3 Hold the LCD monitor with your left hand and adjust the angle accordingly.

Panning

● Refer to the operating instructions found in the animation on the Detailed User Guide.
Use this method to shoot a wide angle of view.

■ **[Getting Ready]**

1 Shoot by rotating your body instead of moving your arms while keeping the basic way of holding a camcorder as stated above.
2 Stand facing the direction where the rotation will stop.
3 Twist your upper body to the direction where recording will start.
4 Press the start button and record for 2 seconds, then slowly twist back your body to face the front.
Record for another 2 seconds while facing the front, then press the stop button.
(The 90 degrees rotation should take about 5 seconds, giving the feeling of a slow motion.)

5

Holiday Season/Christmas

Record the happy Christmas celebration with your family!

Photo by 101st CAB, Wings of Destiny
Creative Commons Attribution-No Derivative Works 3.0

Decorating the Tree and Preparing the Dinner

The decoration of tree and preparation of dinner are part of the joy of Christmas. Be sure to record these happy family times!

■ Decorating the tree

A tree is the most important thing to bring out the mood of Christmas. Simply the scene of all family members engaging in the decorating of a fir tree with various colorful ornaments is full of the feeling of happiness.

■ Preparing the Dinner

Photo by Manicosity
Creative Commons Attribution-No Derivative Works 3.0
Record the scenes as everyone helps to prepare the feast of the night. You can film the mother who is cooking, the children who are helping, and of course, the process of making a cake!

Recording the Christmas Party

Photo by InnerSpirit
Creative Commons Attribution-No Derivative Works 3.0
After all preparations, it is finally the Christmas party itself.
Not only should you record the candle-blowing scene, but also the smiles of the family while being surrounded by good food, or even the father who is slightly drunk from champagne!

Finding the Presents

For children, the greatest joy of Christmas is receiving presents the next morning.
Their expression of delight when finding a present next to their pillow is a recording opportunity not to be missed. Get ready to shoot before the children wake up!

Wedding

Create an awesome wedding video for the bride and groom!

Discussing and Planning Before the Event

Before the day of the wedding reception, it is important to discuss with the bride and groom about various details such as the order of the ceremony and whether there are any entertainment programs or change of clothes. By understanding the preferences of the bride and groom, you will be able to shoot more appropriately.

■ Finding out the route of entrance

The highlight of a wedding reception is the entrance of the bride and groom. Find out which door they will enter from and the route they will take from the person-in-charge of the wedding hall in advance. Set up the tripod at a place where you can follow the couple using zoom without having to move around.

■ Number of times and timing of clothes-changing

Find out the timing of any changing of clothes so as to capture the scene well when the bride and groom enter again.
You can also make use the time while the bride and groom are changing to record comments of well wishes from the guests.

Finding the Right Angle to Capture Both Bride and Groom

■ Composing the picture with the groom in front and the guests at the back

The main characters of a wedding are of course the bride and groom. Record their expressions clearly during the toast, speech, entertainment programs, and other scenes.
Another recommendation is to capture the face shots of the guests, then pan towards the groom. Picture composition containing the crowd of guests only lacks fun, so be sure to pay attention to the shooting angle and size.

Recording the Expressions and Comments of Guests

■ Setting the shot from eye level to chest level

You can record comments from the guest by going around asking, "Please say a few words for the bride and groom".
This can be done at the guests' waiting room, when the bride and groom are changing, or during the entertainment programs.

Closing Up on the Bride's Face During the Thank You Speech

■ Touching highlight scene

The climax of the event finally comes during the bride and groom's thank you speech and presentation of flowers. The touching words of appreciation from the bride and tears of joy from the parents are scenes that must not be missed.
Start by closing up on the bride's face using zoom. As the tears start to form in the bride's eyes, continue shooting for a little longer. Then, slowly zoom out to the wide angle to show the parents who are moved by the speech.

Advanced Operation with Two Camcorders

If video-editing is to be done, record using two camcorders so that a video with varying scenes can be created. You can try asking a close friend who has a camcorder at home.

Set the borrowed camcorder on a tripod to focus on taking close-up shots of the bride and groom. In this way, the other camcorder can be moved around to record other scenes, enabling an interesting video with changing scenes to be created through editing and compilation.

As most people own at least a digital camera nowadays, even if you are really unable to find an extra camcorder, inserting still pictures to the video at various points is also a good way to add variety. Do give it a try!

■ <Camcorder 1>
Closing up on the bride and groom all the time

■ <Camcorder 2>
Recording the congratulatory messages from friends at the same time

Travel

Capture all the good times of your domestic or overseas trips!

Bringing the Necessary Equipment

The necessary things to bring on a trip depends on your traveling purpose and the destination.

For overseas trips in particular, you have to think about what to bring in accordance to the local conditions.

Here are some suggestions for your consideration.

■ Camcorder

Think about how many hours of shooting you will usually perform in a day. Be sure to prepare enough recording medium especially for long overseas trips.

If you are recording in SD cards, get ready the sufficient number of cards, including some for backup.

■ Battery Pack

Prepare a battery pack that is ready for double the expected recording time in a day. For example, if you plan to record for 2 hours a day, prepare a battery pack that is ready for 4 hours (actual recording time).

For a day trip, you can prepare a battery with low capacity but for a long trip, do prepare a few batteries with high capacities.

■ AC Adapter

The JVC AC adapter supports voltages from 100 V to 240 V, and hence can be used anywhere in the world.

Bring along the adapter if you are traveling for a long time. Charge the battery pack while sleeping so that you can record with full battery power the next day.

■ Power Plug Adapter

The shape of the power plug varies according to countries. Be sure to check the shape of the power plug beforehand, and bring the appropriate power plug adapter.

"Charging the Battery Pack Overseas" (☞ p. 39)

■ **Battery Charger**

Recording cannot be performed when an AC adapter is connected to the camcorder for battery charging.
You can bring an additional battery charger to charge battery packs if you plan to use the camcorder for recording at night. You can also charge multiple battery packs by using both the battery charger and this camcorder at the same time.

■ **Tripod**

A tripod is an essential item to take stable images. Select an appropriate tripod in accordance to your purpose and style of traveling, such as a compact one to be used on a table or one that is at least 1 m tall.

Recording the Excitement Before Departure

It may be a little abrupt to start your travel video at the destination suddenly.
Record also the preparations prior to departure if it is a family trip, or the time when everyone is gathered at the meeting place if you are traveling with your friends.
For overseas trips, taking a shot of the signs and displays at the airport of the flight you are taking may be useful for future reference.

Using Pan at the Places of Interest

Tourists spots with beautiful scenery or historical sites are places that you would certainly want to record.
To capture the magnificence of a scene which cannot be fitted into a single frame, try the panning technique.
Refer to the "Shooting Tips" found in this website on how to use panning effectively.
In addition, you may also like to take a shot of the signs or monuments that can often be found at the tourist spots.

Showing Everyone Having a Good Time

When taking a video, it is rather dull to shoot only the scenery or historical sites.
Talk about your feelings while recording the breath-taking scenery of an attraction so that it will be an interesting scene to view later.

Amusement Park

Take more shots of the smiling faces of everyone in the family!

Taking Videos or Still Images According to the Attraction

You may choose to take videos all the time. However, you may want to take some still images too.
The following section explains the scenarios suitable for taking videos or still images.

■ Scenarios suitable for taking videos

Scenarios with changes in body movement are suitable for taking videos.
This includes situations where there are rapid changes in facial expressions or voices of surprise and delight.
*Some amusement parks do not allow passengers to perform any recording. Be sure to check beforehand.
[Examples]

● Merry-go-round, go kart, coffee cup, etc.

■ Scenarios suitable for taking still images (photos)

Scenarios with little movement of the subject are suitable for taking still images.
Try to take the still images from an angle such that the surroundings can be seen clearly.
[Examples]

● Carousal, ferris wheel, fun bicycle rides, etc.

Inducing Responses by Calling Out

Videos with no waving of hands nor laughter are not only dull when you view them later, but also put the capability of the audio-recording function of the camcorder to a waste.
When recording, induce more reactions by enthusiastically waving your hands or shouting out "Is it fun?" and the like.

Capturing the Best Moment in a Video as a Still Image

Shots with the eyes closed are often taken by accident. To reduce such mistakes, make use of the function to capture still images from videos.
As videos are actually continuous recording of 60 still images within 1 minute, using this function allows you to select the best moment and save it as a still image.
"Capturing a Still Image in the Video during Playback" (☞ p. 88)

Photo by just that good guy jim
Video Playback in Progress

Photo by talk rhubarb
Capturing a Still Image

Photo by just that good guy jim
Video Playback in Progress

Advanced Operation with Backlight Compensation

When the subject's face is in backlight or when the expression cannot be seen clearly, the Intelligent Auto function of this unit automatically increases its brightness for recording.
If Intelligent Auto fails to function as expected or if the brightness correction is insufficient, you can increase the brighness by using backlight compensation in the Manual mode.
"Setting Details" (☞ p. 53)

■ **<Without backlight compensation>**

■ **<With backlight compensation>**

Precautions on Playing Back 3D Images (for GZ-HM960)

Images recorded in 2D mode can be converted to 3D and played back on this unit. You can enjoy realistic and powerful 3D images by playing back on a 3D compatible TV. Before use, please read the following precautions to ensure safe and comfortable viewing of the 3D images.

Playing Back 3D Images

This unit makes use of the misalignment between the images that enter the left and right eyes to create the 3D effect during 3D playback. As the images that enter the left and right eyes are different, fatigue may be experienced. In addition, depending on the content of the video, an illusion of movement may be experienced and result in motion sickness.

3D Display on the LCD Monitor

3D images are supported by the LCD monitor. Press the "3D" button to change the display on the LCD monitor between 3D and 2D.

● 3D effect appears stronger when viewed at approximately 30 cm from the front.

● 3D effect may be weak if viewed from an angle other than the front.

● The LCD monitor appears darker when 3D images are displayed. Change the display to 2D when it is difficult to see, such as when using this unit outdoors.

Caution : ───

● Viewing of 3D images is not recommended for people with medical history of photosensitivity, with heart diseases, feel unwell, suffer from lack of sleep, suffer from fatigue, or are drunk.

Medical conditions may worsen.

● If you have vision problems such as short-sightedness, long-sightedness, varying vision in the left and right eyes, or astigmatism, it is recommended to correct your vision by wearing glasses, etc.
Stop viewing of 3D images if you see double images.

3D images may appear differently for different people. Correct your vision appropriately before viewing the 3D images.

● Stop viewing of 3D images if you experience fatigue or discomfort.

Continual viewing of the 3D images may result in health problems.
Take an adequate rest.
Viewing of 3D images in an environment where shaking of the monitor is expected, such as while riding in a vehicle or during walking, may result in fatigue or discomfort.

● If you experience fatigue or discomfort while viewing 3D images on the LCD monitor, set the display to 2D.

Continual viewing of the 3D images may result in health problems.

● Rest well after viewing 3D images.

After viewing 3D images, check that you do not experience fatigue or discomfort before driving, etc.

● Take a break every 30 to 60 minutes when viewing 3D images.

Long periods of viewing may cause visual fatigue.

● Keep a distance of at least 3 times the effective height of the screen when viewing of the 3D images on a 3D compatible TV.

Viewing of the 3D images from a distance shorter than the recommended distance may cause visual fatigue.

TV Size	Recommended Distance
54"	Approx. 2.0 m (6'6-3/4")
50"	Approx. 1.9 m (6'2-3/4")
46"	Approx. 1.7 m (5'6-7/8")
42"	Approx. 1.6 m (5'3")

● Viewing of 3D images is only recommended for ages 5 to 6 and above.

Guardians should pay close attention to children as health problems may result if fatigue and discomfort are not noticed immediately.

3D Effect Mechanism
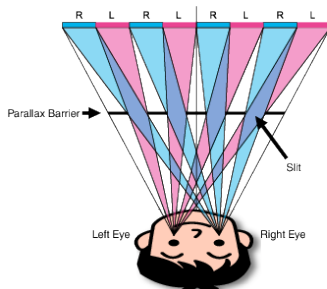
3D images on the LCD monitor of this unit are displayed using the parallax barrier system. Placed in front of an image source, a parallax barrier consists of a series of slits arranged alternately for the left and right eyes, allowing each eye to see a different image when viewing from a distance, thus creating the 3D effect. As such, 3D effect may appear weak depending on the angle of viewing.

Verifying the Accessories

If any of the items are missing or defective, consult your JVC dealer or the nearest JVC service center.

Illustration	Description
	AC Adapter AC-V11U (for GZ-HM860) ● Connects to this unit to charge the battery pack. It can also be used when recording or playing back videos indoors.
	AC Adapter AP-V30U (for GZ-HM960) ● Connects to this unit to charge the battery pack. It can also be used when recording or playing back videos indoors.
	Battery Pack BN-VG114U ● Attaches to this unit to supply power.
	Remote Control RM-V760U ● Operates certain functions from a distance.
	HDMI Mini Cable ● Connects this unit to a TV to play back recorded images on the TV in a better quality.
	AV Cable ● Connects this unit to a TV to play back recorded images on the TV.
	USB Cable (Type A - Mini Type B) ● Connects this unit to a computer.
	Core Filter (Large)×2 (for AV Cable and optional Component Cable) Core Filter (Small) (for AC Adapter) ● The core filter reduces interference when this unit is connected to other devices.
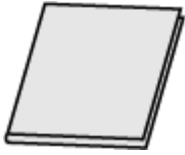
	Basic User Guide ● Read well and keep in a safe place where it can be accessed easily when necessary.

Memo :

● SD cards are sold separately.

"Types of Usable SD Card" (☞ p. 17)

"Using an Eye-Fi Card" (☞ p. 18)

● When using the AC adapter overseas, please prepare a commercially available converter plug for the country or region of visit.

"Charging the Battery Pack Overseas" (☞ p. 39)

Attaching the Core Filter

Attach the core filter to the power cord of the AC adapter, AV Cable and optional Component Cable as shown in the illustration.
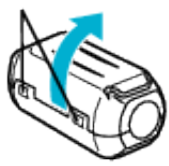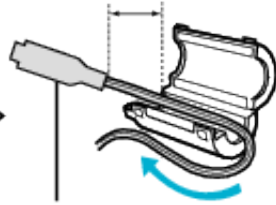The core filter reduces interference when this unit is connected to other devices.

Charging the Battery Pack
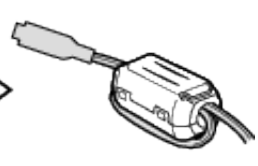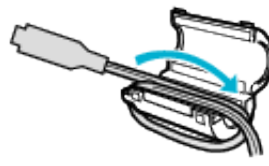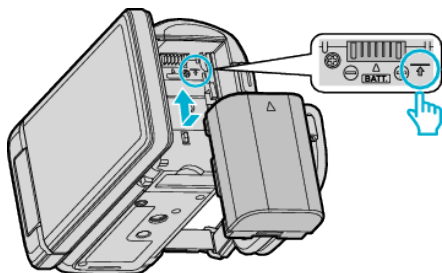
Charge the battery pack immediately after purchase and when the remaining battery power is low.
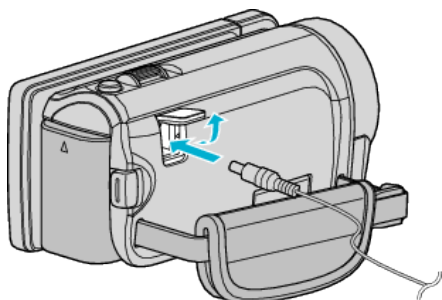The battery pack is not charged at the time of purchase.

1   Attach the battery pack.

● Align the top of the battery with the mark on this unit, and slide in until the battery clicks into place.

2   Connect the AC adapter to the DC connector.

* The AC adapter shown in the illustration is AC-V11U.

3   Plug in the power.

AC Adapter
To AC Outlet
(110 V to 240 V)
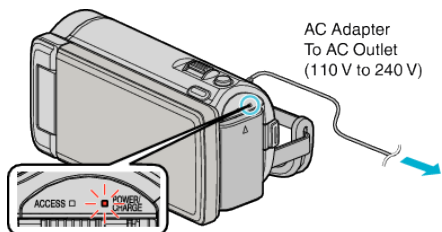
● The charging lamp blinks when charging is in progress.
It goes out when charging is finished.

Caution :

Be sure to use JVC battery packs.

● If you use any other battery packs besides JVC battery packs, safety and performance cannot be guaranteed.

● Charging time: Approx. 2 h 30 m (using supplied battery pack)
The charging time is when the unit is used at 25°C. If the battery pack is charged outside the room temperature range of 10°C to 35°C, charging may take a longer time or it may not start. The recordable and playable time may also be shortened under some usage conditions such as at low temperature.

Be sure to use the supplied JVC AC adapter.

● If you use any other AC adapters besides the supplied JVC AC adapter, malfunctions may occur.

Rechargeable Batteries：

● When using the battery in a low temperature environment (10°C or below), the operating time may be shortened, or it may not function properly. When using this unit outdoors in the winter weather, warm the battery, such as by placing it in the pocket, before attaching it. (Keep away from direct contact with a warm pack.)

● Do not expose the battery to excessive heat, such as direct sunlight or fire.

● After removing the battery, store it in a dry place between 15°C to 25°C.

● Keep a 30 % battery level (▭) if the battery pack is not to be used for a long period of time. In addition, fully charge and then fully discharge the battery pack every 6 months, then continue to store it at a 30 % battery level (▭).

Memo :

● You can connect this unit to the AC adapter to record for long hours indoors.
(Battery charging begins when the LCD monitor is closed.)

Detaching the Battery Pack
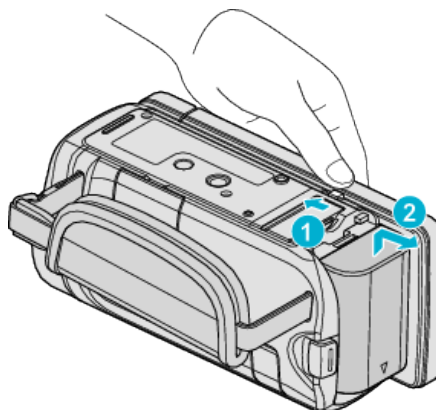
Slide the battery release lever to detach the battery from this unit.

Approximate Battery Charging Time (Using AC Adapter)

Battery Pack	Charging Time
BN-VG114U (Supplied)	2 h 30 m
BN-VG121U	3 h 30 m
BN-VG138U	6 h 10 m

● When the battery life is reached, the recording time becomes shorter even if the battery pack is fully charged.
(Replace the battery pack with a new one.)

* The charging time is when the unit is used at 25°C. If the battery pack is charged outside the room temperature range of 10°C to 35°C, charging may take a longer time or it may not start. The recordable and playable time may also be shortened under some usage conditions such as at low temperature.

Grip Adjustment
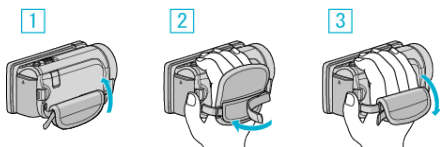
1 Pull back the pad
2 Adjust the length of the belt
3 Attach the pad

Caution :

● Be sure to fasten the grip belt properly.
If the belt is loose, this unit may drop and result in injuries or damages.

Inserting an SD Card

When a commercially available SD card is inserted, recordings can still be made to the card without stopping when the remaining recording time on the built-in memory runs out.
"Types of Usable SD Card" (☞ p. 17)
"Using an Eye-Fi Card" (☞ p. 18)
"Approximate Video Recording Time" (☞ p. 73)

1 Close the LCD monitor.
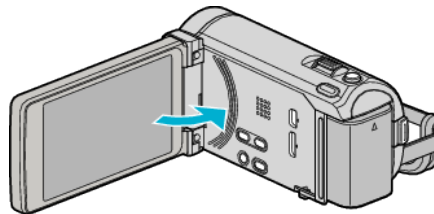
2 Open the cover.
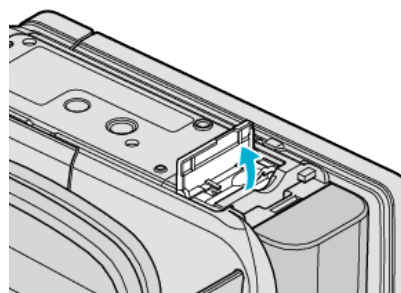
3 Insert an SD card.
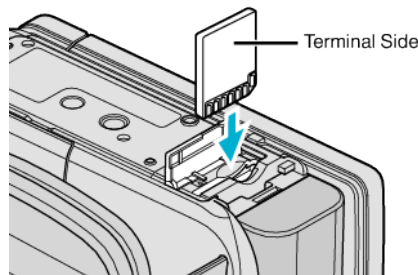
Terminal Side

● Insert with the terminal side facing outward.

Warning
● Make sure not to insert the card in the wrong direction. It may cause damage to the unit and card.
● Turn off the power of this unit before inserting or removing a card.
● Do not touch the metal contact area when inserting the card.

Memo :

● When "SEAMLESS RECORDING" is set to "ON", recordings can still be made to the SD card without stopping when the remaining recording time on the built-in memory runs out.

● Both videos and still images can be recorded on one SD card. It is recommended to confirm the video operation of the SD card before usage.

"SEAMLESS RECORDING" (☞ p. 130)

● To record to the card, it is necessary to perform media settings.
When no card is available, set media settings to "BUILT-IN MEMORY" for recording.

"REC MEDIA FOR VIDEO" (☞ p. 145)
"REC MEDIA FOR IMAGE" (☞ p. 145)

● To use cards that have been used on other devices, it is necessary to format (initialize) the card using "FORMAT SD CARD" from media settings.

"FORMAT SD CARD" (☞ p. 155)

Removing the Card

Push the SD card inward once, then pull it out straight.
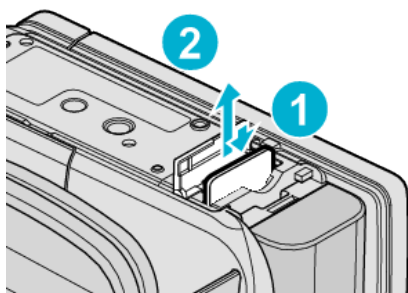
Types of Usable SD Card

The following SD cards can be used on this unit.
Operations are confirmed on the SD cards from the following manufacturers.

● Panasonic
● TOSHIBA
● SanDisk
● Eye-Fi

SD Card

● This unit supports 256 MB to 2 GB SD cards.
● Use a Class 4 or higher compatible SD card (2 GB) for video recording.

SDHC Card

● Use a Class 4 or higher compatible SDHC card (4 GB to 32 GB) for video recording.

SDXC Card

● Use a Class 4 or higher compatible SDXC card (Max. 64 GB).

Memo :

● Using SD cards (including SDHC/SDXC cards) other than those specified above may result in recording failure or data loss.
● To record videos with "VIDEO QUALITY" set to "UXP", use of a Class 6 compliant SDHC/SDXC card is recommended.
● Class 4 and Class 6 are guaranteed to have a minimum transfer rate of 4 MB/s and 6 MB/s respectively during reading or writing of data.
● You can also use a Class 10 compliant SDHC/SDXC card.
● Both videos and still images can be recorded on one SD card. It is recommended to confirm the video operation of the SD card before usage.
● To protect the data, do not touch the terminals of the SD card.

When your computer cannot recognize the SDXC card

Confirm and update the OS of your computer.

Windows XP / Windows XP SP1	Necessary to update to SP2 or higher.
Windows XP SP2 / Windows XP SP3	Necessary to download the update software. (KB955704) http://www.microsoft.com/downloads/details.aspx?FamilyID=1cbe3906-ddd1-4ca2-b727-c2dff5e30f61&displaylang=en
Windows Vista	Necessary to update to SP1 or higher.
Windows Vista SP1 / Windows Vista SP2	Necessary to download the update software. (KB975823) ● 32 bit version http://www.microsoft.com/downloads/en/details.aspx?FamilyID=2d1abe01-0942-4f8a-abb2-2ad529de00a1 ● 64 bit version http://www.microsoft.com/downloads/en/details.aspx?FamilyID=7d54c53f-017c-4ea5-ae08-34c3452ba315
Windows 7	Necessary to download the update software. (KB976422) ● 32 bit version http://www.microsoft.com/downloads/en/details.aspx?FamilyID=3ee91fc2-a9bc-4ee1-aca3-2a9aff5915ea ● 64 bit version http://www.microsoft.com/downloads/en/details.aspx?FamilyID=73f766dd-7127-4445-b860-47084587155f
Mac OS X 10.4 Tiger / Mac OS X 10.5 Leopard	Not compatible.
Mac OS X 10.6 Snow Leopard	Necessary to update to 10.6.5 or later.

Using an Eye-Fi Card

Eye-Fi is an SD memory card with wireless LAN function.
Using an Eye-Fi card, you can transfer videos and still images to a computer or the web. (A broadband wireless LAN environment is required.)
Use of Eye-Fi card may be illegal and prohibited in countries and regions where it has not been approved by competent authorities. Please contact Eye-Fi support for the details of approved countries and regions.

Types of Cards

The following Eye-Fi cards can be used on this unit.
Eye-Fi X2 Series
● Eye-Fi Connect X2
● Eye-Fi Explore X2
● Eye-Fi Pro X2

Using the Eye-Fi Card

Make settings on the Eye-Fi card with Eye-Fi Center.
For how to install and operate the Eye-Fi Center, refer to its instruction manual.
● Recorded videos and still images are automatically transferred. (The files already transferred earlier are not transferred again.)

Memo :
● You cannot transfer files during the recording mode, editing and formatting of the card.
● You cannot transfer video files larger than 2 GB. (as of December, 2010)
● Transfer may take long or be interrupted depending on the connection conditions.

Icon	Description
📶	Identifying the Eye-Fi card
📶	Ready for transfer from the Eye-Fi card
📶	Transferring from the Eye-Fi card (animated)

● We recommend using the AC adapter when transferring files of large size.
● If it doesn't operate properly, first make use of Eye-Fi Helper to confirm that the settings of the Eye-Fi card are correct. In addition, try the data transfer by inserting the Eye-Fi card into other equipment such as a computer.
● Do not use the camcorder in places where wireless use is prohibited such as on a plane.
● Before deleting a file, check that you have transferred it to a computer or uploaded it to a video sharing website.
● For the latest information on the Eye-Fi card, refer to the website of Eye-Fi, Inc.

http://www.eye.fi/

Using the Touch Screen

Icon operation buttons, thumbnails, and menu items are displayed on the touch screen according to the mode in use.
● There are two ways to operate the touch screen, namely "tap" and "drag". The following are some examples.

A Tap the displayed button (icon) or thumbnail (file) on the touch screen to make selection.
B Drag the thumbnails on the touch screen to search for the desired file.
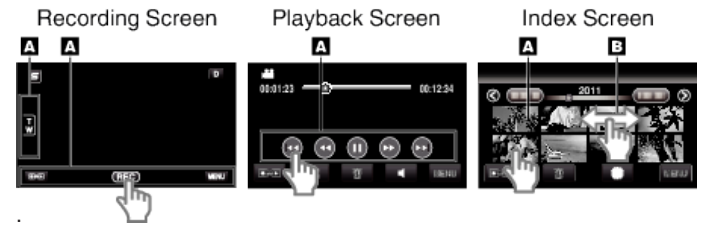
Memo :
● The touch screen of this unit is pressure-sensitive. When the touch screen does not respond smoothly, apply slightly more force to your fingertip.
● Tap the buttons (icons) on the touch screen accurately. The buttons may not respond if they are not tapped on the right area.
● Do not press or rub with excessive force.
● If you apply a protect sheet or a sticker, the touch screen may not respond smoothly.
● Do not operate the touch screen using an object with a sharp or hard tip.
● Pressing two or more places at a time may cause a malfunction.
● Perform "TOUCH SCREEN ADJUST" if the reactive area of the screen is misaligned with the touched area. (Adjust by lightly tapping with a corner of an SD card, etc. Do not press with an object with a sharp tip or do not press hard.)
"TOUCH SCREEN ADJUST" (☞ p. 149)

Names of Buttons and Functions on the LCD Monitor

The following screens are displayed during the video and still image modes, and operate as the touch screens.

Recording Screen (Video/Still Image)
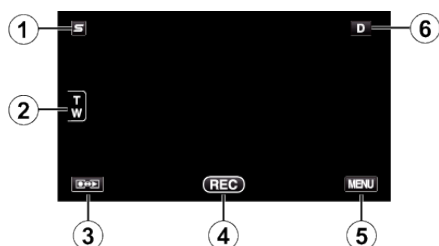
1 Face Short Cut Menu Button

- Displays a short cut screen of face recognition functions.

"Operating the Face Short Cut Menu" (☞ p. 122)

2 Zoom Button

"Zooming" (☞ p. 44)

3 Recording/Playback Mode Button

- Switches between recording and playback modes.

4 Recording Start/Stop Button

- ▣: Video Recording Start Button
- ●‖: Video Recording Stop Button
- ◌: Still Image Recording Button

5 Menu Button

"Operating the Menu" (☞ p. 121)

6 Display Button

Some displays disappear after approximately 3 seconds.
Use the **D** button to change the displays as shown below.

- Tap **D** button
  Displays appear for approximately 3 seconds with every tap.
- Tap and hold **D** button
  Displays are fixed such that they do not disappear. After setting, the display button changes from **D** to **D♪**.
  Tap **D♪** to release the displays.

Playback Screen (Video)

1 Recording/Playback Mode Button

- Switches between recording and playback modes.

2 Index Screen Button

"Operation Buttons for Video Playback" (☞ p. 74)

3 Delete Button

"Deleting the Currently Displayed File" (☞ p. 85)

4 Volume Adjustment Button
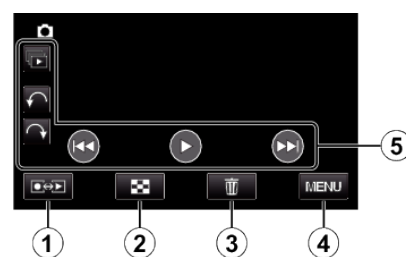
"Adjusting the Volume of Videos" (☞ p. 75)

5 Menu Button

"Operating the Menu" (☞ p. 121)

6 Operation Buttons

"Operation Buttons for Video Playback" (☞ p. 74)

Playback Screen (Still Image)

1 Recording/Playback Mode Button

- Switches between recording and playback modes.

2 Index Screen Button

"Operation Buttons for Still Image Playback" (☞ p. 77)

3 Delete Button

"Deleting the Currently Displayed File" (☞ p. 85)

4 Menu Button

"Operating the Menu" (☞ p. 121)

5 Operation Buttons

"Operation Buttons for Still Image Playback" (☞ p. 77)

Index Screen
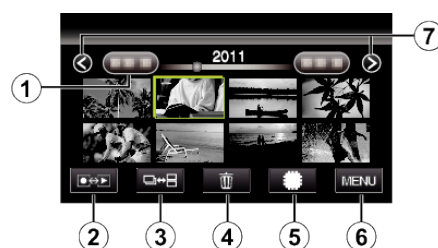
1 Date Button

"Operation Buttons for Video Playback" (☞ p. 74)
"Operation Buttons for Still Image Playback" (☞ p. 77)

2 Recording/Playback Mode Button

- Switches between recording and playback modes.

3 Index Screen Switching Button (Still image only)

"Operation Buttons for Still Image Playback" (☞ p. 77)

4 Delete Button

"Deleting Selected Files" (☞ p. 85)

5 Playback Media Button

- Switches between SD card and built-in memory.

6 Menu Button

"Operating the Menu" (☞ p. 121)

7 Page Forward/Back Button

"Operation Buttons for Video Playback" (☞ p. 74)
"Operation Buttons for Still Image Playback" (☞ p. 77)

Menu Screen

VIDEO

SCENE SELECT

FOCUS

FOCUS ASSIST

FOCUS ASSIST COLOR

- *5*
- *4*
- *3*
- *1*
- *2*
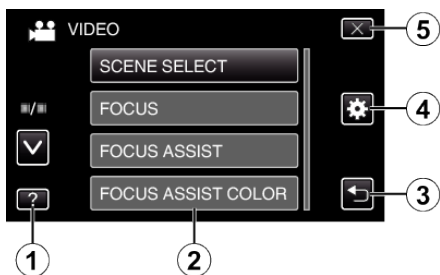
1 Help Button

2 Menu Items

3 Return Button

4 Common Menu Button

5 Close Button

"Operating the Menu" (☞ p. 121)

Clock Setting

The "SET DATE/TIME!" screen appears when you turn on this unit for the first time after purchase, when it has not been used for a long time, or when the clock is not set yet.
Set the clock before recording.

1 Open the LCD monitor.
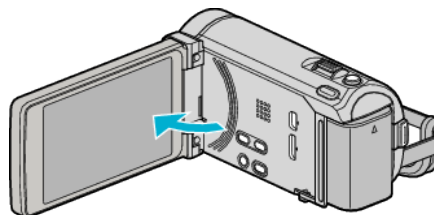
- The unit turns on.
- When the LCD monitor is closed, the unit turns off.

2 Tap "YES" when "SET DATE/TIME!" is displayed.

SET DATE/TIME!

YES   NO

3 Set the date and time.
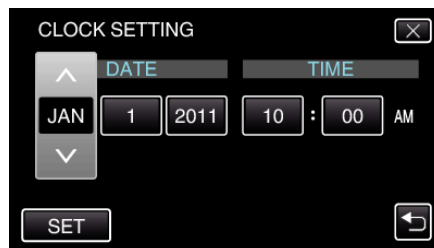
CLOCK SETTING

DATE   TIME

JAN   1   2011   10 : 00   AM

SET

- When the year, month, day, hour, or minute item is tapped, "∧" and "∨" will be displayed.
- Tap ∧ or ∨ to adjust the year, month, day, hour, and minute.

4 After setting the date and time, tap "SET".

5 Select the region where you live and tap "SAVE".

CLOCK/AREA SETTING

GMT

SAVE
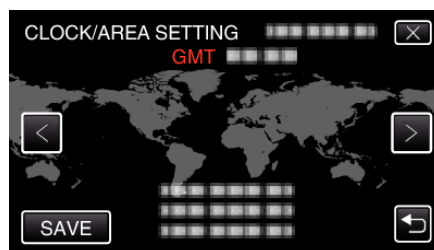
- The city name and time difference are displayed.
- Tap < or > to select the city name.

Memo :

- The clock can be reset again later.
"Resetting the Clock" (☞ p. 21)
- When using this unit overseas, you can set it to the local time for recording.
"Setting the Clock to Local Time when Traveling" (☞ p. 39)
- "SET DATE/TIME!" is displayed when you turn on this unit after it has not been used for a prolonged period.
Connect the AC adapter for more than 24 hours to charge the internal clock battery of this unit before setting the clock.

Resetting the Clock

Set the clock with "CLOCK ADJUST" from the menu.

1 Tap "MENU".

2 Tap "⚙".

3 Tap "CLOCK ADJUST".
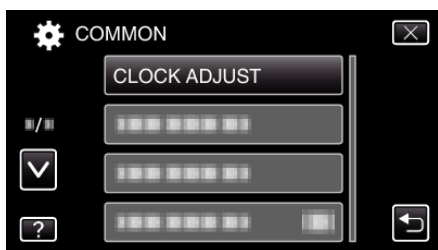
● Tap ∧ or ∨ to move upward or downward for more selection.

4 Tap "CLOCK SETTING".
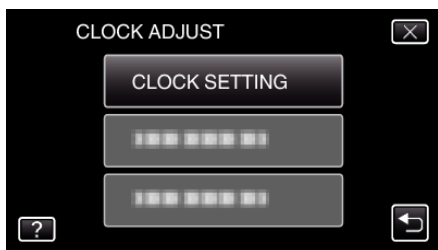
5 Set the date and time.
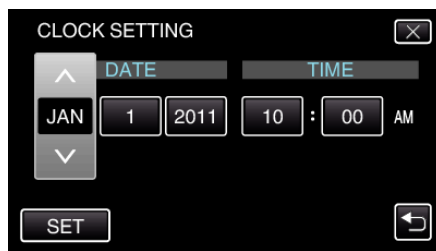
● When the year, month, day, hour, or minute item is tapped, "∧" and "∨" will be displayed.

● Tap ∧ or ∨ to adjust the year, month, day, hour, and minute.

6 After setting the date and time, tap "SET".

7 Select the region where you live and tap "SAVE".
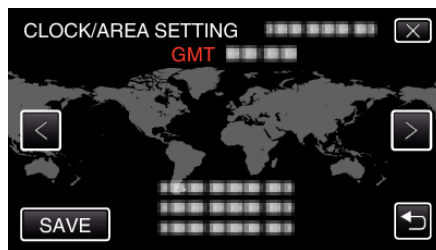
● The city name and time difference are displayed.

● Tap < or > to select the city name.

Changing the Display Language

The language on the display can be changed.

1 Tap "MENU".

2 Tap "⚙".

* Tap ∧ or ∨ to move upward or downward for more selection.

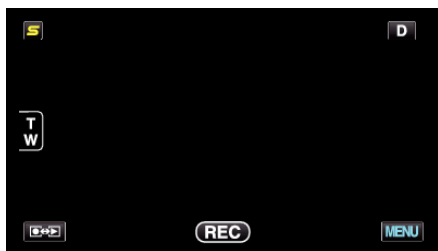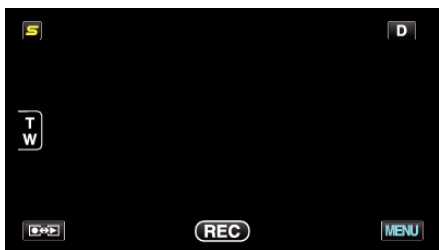*3* Tap "LANGUAGE".
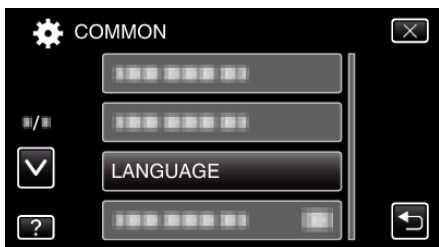
* Tap ∧ or ∨ to move upward or downward for more selection.

4 Tap to the desired language.
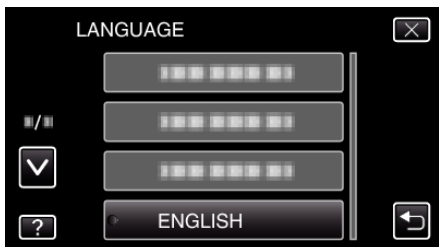
* Tap ∧ or ∨ to move upward or downward for more selection.

Holding this Unit

When holding this unit, keep your elbows close to your sides to prevent camera shake.

Caution :

● Be careful not to drop this unit during transportation.
● Guardians should pay close attention when this unit is being used by children.

Memo :

● If camera shake is excessive, use the digital image stabilizer.

"Reducing Camera Shake" (☞ p. 64)

Tripod Mounting

This unit can be mounted on a tripod (or monopod). This is useful for preventing camera shake and recording from the same position.
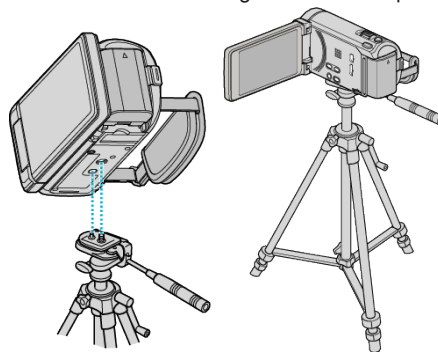
● To prevent this unit from falling off, check the tripod mounting screw holes and positioning holes on the unit carefully before mounting, and turn the screws until they are fastened firmly.

Caution :

● To prevent injuries or damages which may result if this unit falls off, read the instruction manual of the tripod (or monopod) to be used and make sure that it is securely attached.

Memo :

● It is recommended to use a tripod or monopod when recording in conditions prone to camera shake (such as in dark places or when zoomed to the telephoto end).
● Set the digital image stabilizer to (OFF) when using a tripod for recording.

"Reducing Camera Shake" (☞ p. 64)

Using the Remote Control

You can operate this unit from a distance away using the supplied remote control.
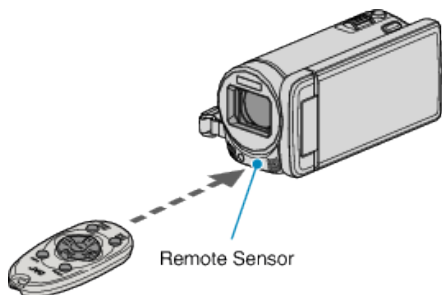
Remote Sensor

Memo :
● Point the remote control toward the sensor directly and use it within 5 m from this unit.
● The transmitted beam may not be effective or may cause incorrect operation when the sensor is directly exposed to sunlight or powerful lighting.

Preparing the Remote Control

CR2025

Using the Remote Control for the First Time

Pull out the insulation sheet
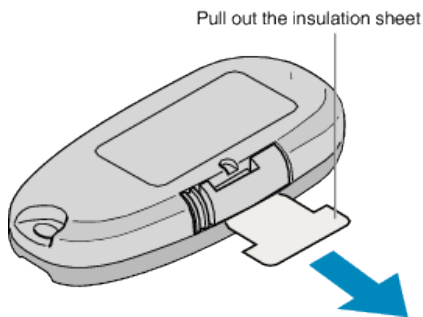
● A button battery (CR2025) is included inside the remote control at the time of purchase.
Remove the insulation sheet before use.

Reinserting the Battery

Button Battery
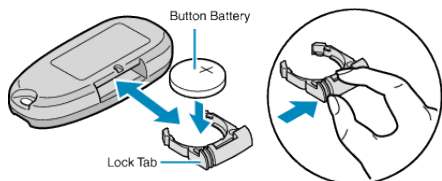
Lock Tab

● Pull out the battery holder by pressing the lock tab.
● Insert the button battery with the + side facing upward.

Operation Buttons on Remote Control Unit

1 Recording Start/Stop Button
2 Still Image Button
3 Zoom Button
4 Basic Playback Operations
5 Index Button
6 Info Button
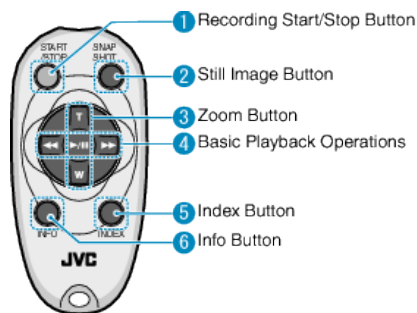
1 Recording Start/Stop Button
● Starts/stops video recording.

2 Still Image Button
● Takes a still image.

3 Zoom Button
● T: Zooms in
● W: Zooms out

4 Basic Playback Operations

Operation Button	Description
Playback/Pause Button ▶ / ❚❚	● Starts/pauses playback of videos or slideshows.
Left Button ◀◀	● Moves the cursor to the left. ● Performs reverse search during playback.
Right Button ▶▶	● Moves the cursor to the right. ● Performs forward search during playback.
T Button **T**	● Turns up (+) the volume during video playback.
W Button **W**	● Turns down (-) the volume during video playback.

5 Index Button
● Stops playback and returns to index screen.

6 Info Button
● Recording: Displays the remaining time (for video only) and battery power.
● Playback: Displays file information such as recording date.

Using Bluetooth-compliant Devices

This unit is equipped with Bluetooth function.
You can do the following using a Bluetooth-compliant device via wireless connection.

Capabilities of Bluetooth-compliant Devices

Capability	Bluetooth-compliant Device
Control the camcorder	● Smartphone
Monitor the image during recording	● Smartphone
Import recorded still images	● Smartphone ● BIP/OPP-compliant device (such as some mobile phones)
Record the location information *1	● Smartphone ● GPS Receiver
Transfer recorded videos	● Smartphone (Android 2.1 or higher compatible devices only)
Listen to audio sound/Record audio sound	● Headset

*1 The recorded location information can be used on the software provided with this unit. For more information, refer to "MediaBrowser Help".

Using a Bluetooth-compliant Device

1 For smartphones, install its exclusive application.

2 Register (pair) a device.

"Registering a Bluetooth-compliant Device" (☞ p. 25)

3 Connect the Bluetooth-compliant device to the camcorder.

"Connecting to a Registered Bluetooth-compliant Device" (☞ p. 27)

4 Perform some rehearsals (test recordings) before the actual shooting.

5 Perform the actual shooting (operations).

Improving the Communication

1 Some connected devices may not be able to support the capabilities of this unit.

● Verify the compatibility before using.

2 Make sure that there are no obstacles between the Bluetooth-compliant device and the camcorder.

● Position the Bluetooth-compliant device such that it can be seen by the camcorder.
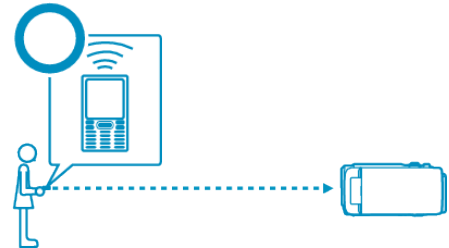
● Any obstacles or human subjects between the Bluetooth-compliant device and the camcorder will interrupt the communication.
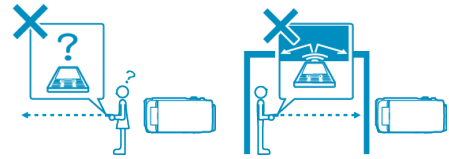
● When using a headset, use it while facing this unit directly.
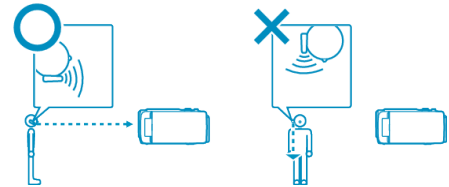
3 Make use of the Bluetooth-compliant device as near to the camcorder as possible.

● Although connections within a range of 10 m may be supported by this unit, the nearer the device, the better the communication.

*If the communication is weak, data transfer may take a longer time or there may be noise in the audio sound.

Compliant Bluetooth Devices

This unit can be connected to the following Bluetooth-compliant devices for use.
Refer to the instruction manual of the device, except smartphones, to check its Bluetooth profile.

Device Selection (Bluetooth setting on this unit)	Target Device/Compliant Profile
Smartphone	• Android Smartphone (Android 2.1 or higher, with Bluetooth SPP profile) • BlackBerry Bold • Touch Diamond • Touch Pro
BIP/OPP	BIP (Basic Imaging Profile, Imaging Responsor) OPP (Object Push Profile, Push Server)
GPS Receiver	SPP (Serial Port Profile, Device B)
Headset 1	HSP (Headset Profile, HS)

• For details, refer to the following homepage.

http://www.jvc-victor.co.jp/english/download/bluetooth/index.html

Caution :

• Operation is not guaranteed on all devices.
• Communication may not be carried out properly near radio equipment or broadcasting stations. In this case, change the location accordingly.
• Radio wave interference by wireless LAN equipment
Wireless LAN equipment makes use of the same frequency bandwidth (2.4 GHz) as that of the Bluetooth devices. Using this product near such equipment may cause radio wave interference, and result in a drop in communication speed or connection failure. In this case, turn off the power of devices that are not in use.

Registering a Bluetooth-compliant Device

In order to use a Bluetooth-compliant device with this unit, it is necessary to perform registration (pairing) on this unit.

■ Searching for Bluetooth-compliant Devices to Register

1 Tap "MENU".
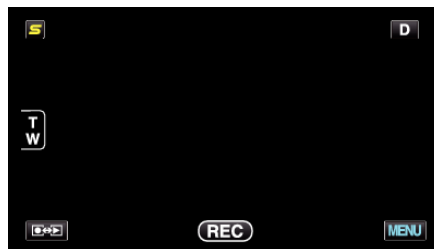
2 Tap "⚙".

3 Tap "Bluetooth".
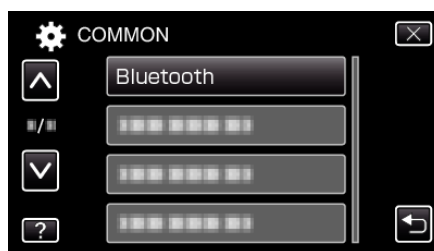
4 Tap "REGISTER DEVICE".
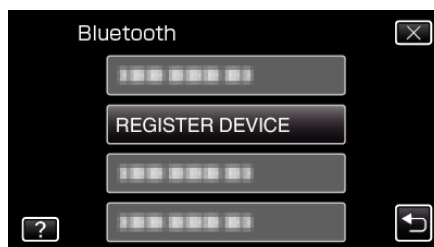
5 Tap "SEARCH FOR DEVICE".

6 Select to enable search for the device to register and tap "OK".

25

- The system starts to search for Bluetooth-compliant devices in the area that can be registered.
- The method of setting varies with the device. Refer also to the instruction manual of the device.

7 Tap the device to register.
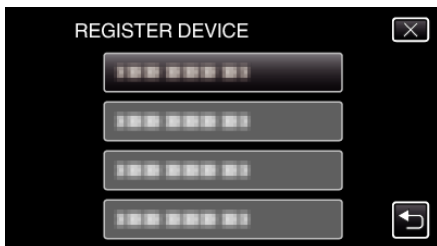
REGISTER DEVICE

- If the device to register cannot be found, check the device settings again and restart search.
- If the device name cannot be acquired, the Bluetooth device address (BD address) will appear instead.
- Characters in the device name that cannot be displayed are shown as □.

8 Tap "YES".

REGISTER THE FOLLOWING DEVICE?

YES   NO

- If authentication of the device is necessary, the passkey entry screen will appear.
- If authentication of the device is not necessary, the passkey entry screen will not appear.

9 Enter the passkey for the device to register.

PASSKEY:

1 2 3 DELETE
4 5 6
7 8 9
SET 0 CANCEL

- Tap on a numeric character to enter it.
- Tap "DELETE" to clear the last numeric character.
- After input of the numeric characters is complete, tap "SET".
- The number of digits in a passkey varies with the device to register.
- A passkey is also known as a "PIN code".
- For details on the passkey, refer to the instruction manual of the device to register.
- After registration of the device is complete, tap "OK".

■ **Responding to Registration Requests from Bluetooth-compliant Devices**

1 Tap "MENU".

2 Tap "⚙".

3 Tap "Bluetooth".

COMMON
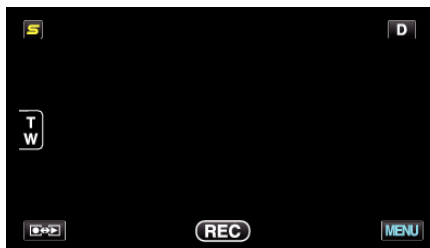
Bluetooth

4 Tap "REGISTER DEVICE".
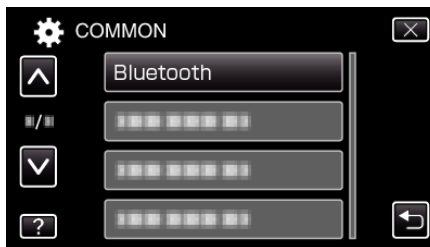
Bluetooth

REGISTER DEVICE

5 Tap "WAIT FOR DEVICE".
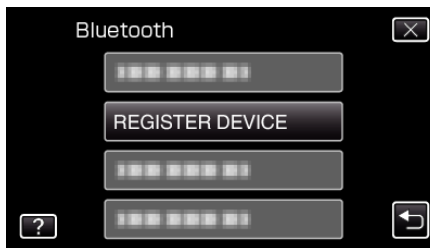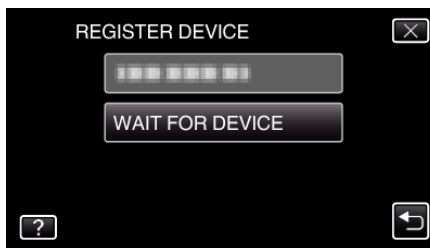
REGISTER DEVICE

WAIT FOR DEVICE

6 Tap "OK" when "WAIT FOR REQUEST FROM Bluetooth DEVICEALL CURRENT CONNECTIONS WILL BE DISCONNECTED" is displayed.

WAIT FOR REQUEST FROM
Bluetooth DEVICE
ALL CURRENT CONNECTIONS
WILL BE DISCONNECTED

OK   RETURN
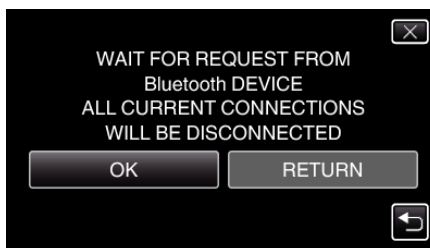
- This unit goes into a standby mode to wait for registration requests from Bluetooth-compliant devices. Perform the registration settings on the device to register.

● The method of setting varies with the device. Refer also to the instruction manual of the device.

7 Tap "YES".

REGISTER THE FOLLOWING DEVICE?

YES　　　NO

● If authentication of the device is necessary, the passkey entry screen will appear.
● If authentication of the device is not necessary, the passkey entry screen will not appear.

8 Enter the passkey for the device to register.
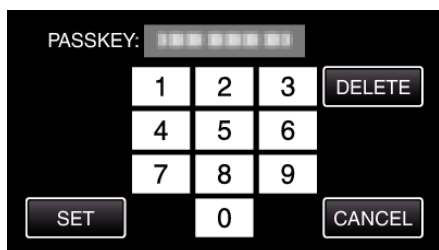
PASSKEY:

1	2	3	DELETE
4	5	6	
7	8	9	
SET	0		CANCEL

● Tap on a numeric character to enter it.
● Tap "DELETE" to clear the last numeric character.
● After input of the numeric characters is complete, tap "SET".
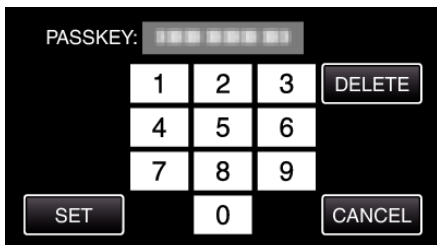● The number of digits in a passkey varies with the device to register.
● A passkey is also known as a "PIN code".
● For details on the passkey, refer to the instruction manual of the device to register.
● After registration of the device is complete, tap "OK".

Memo :
● Registration may fail depending on the device you are using. In addition, connection may fail to establish even if the device is registered.
● Results of device search vary according to the selected device, condition of signals, and position of the device.
● The auto power off, power-saving, and demo modes are not available during registration of a Bluetooth device.

Deleting Registered Devices

You can delete a registered device by selecting "DELETE DEVICE" in step 4.

Connecting to a Registered Bluetooth-compliant Device

To use a Bluetooth-compliant device on this unit, it is necessary to establish connection with the device after registering it.
To establish connection with a Bluetooth-compliant device, make use of the menu to set the connection with the device to ON.

1 Tap "MENU".

2 Tap "🔧".

3 Tap "Bluetooth".

COMMON
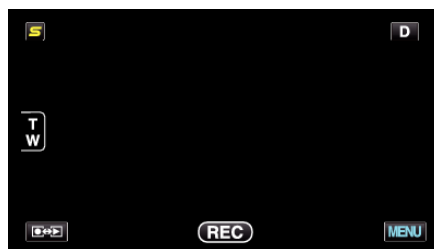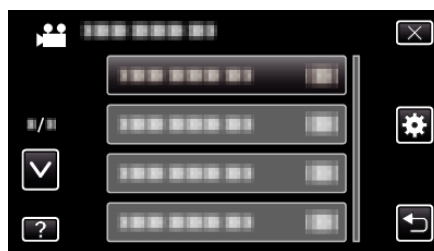
Bluetooth

4 Tap "CONNECT".

Bluetooth
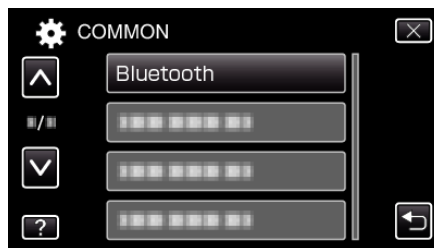
CONNECT

5 Tap the device to connect.

CONNECT

SMARTPHONE	NO
GPS RECEIVER	NO
HEADSET 1	NO
HEADSET 2	NO
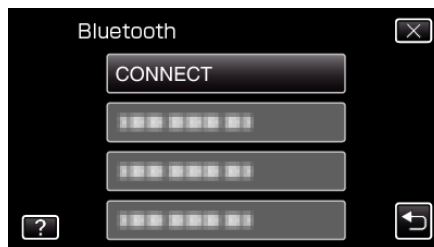
● When a device with the "OFF" icon is tapped, the icon changes to "ON", and an icon indicating the radio reception status is displayed.
● When a device with the "ON" icon is tapped, it gets disconnected and the icon changes to "OFF".
● When an unregistered item is selected, a screen to select device will appear.

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Caution :

- If connection cannot be established with a device, check the registered devices and register again.
- Up to two Bluetooth devices can be connected to this unit.
- Sending or receiving of audio data using the headset is not possible in the still image recording mode.
- When "FACTORY PRESET" in the COMMON (basic settings) menu is executed, all information of the registered Bluetooth-compliant devices will be erased.
- The auto power off, power-saving and demo modes are not available when a Bluetooth device is connected.

About Disconnections :

Connection of this unit with the Bluetooth-compliant device will be cut off automatically in the following cases.

- When the power of this unit is turned off
- When this unit is connected to a DVD writer or PC with a USB cable
- When time-lapse shooting is performed
- When "FACTORY PRESET" in the COMMON (basic settings) menu is executed

Memo :

- When communication with the connected device fails, this unit will disconnect the device after about 10 seconds.

Indications when a Bluetooth-compliant Device is Connected

You can check the Bluetooth connection status on the recording screen.

	Display Icon	Description
①	GPS Communication Status	Displays the communication status with the GPS. The icon will appear blinking if location information cannot be acquired from the GPS.
②	Radio Reception Status	Displays the radio reception status of the Bluetooth connection.
③	Bluetooth Microphone Volume	Displays the microphone's volume level when the Bluetooth microphone is enabled.

Memo :

- The radio reception status is only a guide. It is not displayed in real-time.
- Indications may not be updated according to the condition of signals. The response is especially slow when the radio reception status changes from weak to strong.
- The radio reception status is not displayed during BIP/OPP connection.
- As communication with the connected device is necessary to retrieve radio reception status, the status may not be updated if communication is interrupted suddenly such as by turning off the power.

Table of Compatible Connections

Connection Case	Case 1	Case 2	Case 3	Case 4	Case 5
Headset 1	✓	✓	-	✓	-
Headset 2	✓	-	✓	-	✓
GPS Receiver	-	✓	✓	-	-
BIP/OPP	-	-	-	-	-
Smartphone	-	-	-	✓	✓

Changing the Settings of a Registered Bluetooth-compliant Device

You can change the settings of a registered Bluetooth-compliant device. The audio settings of the headsets may also be changed.

1 Tap "MENU".
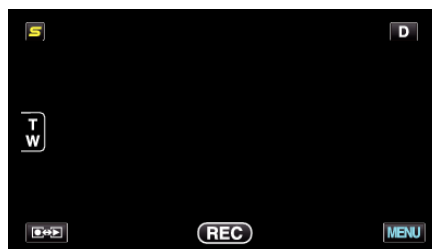
2 Tap "✿".
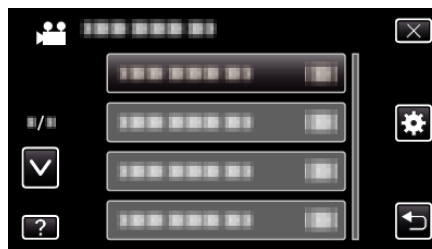
3 Tap "Bluetooth".
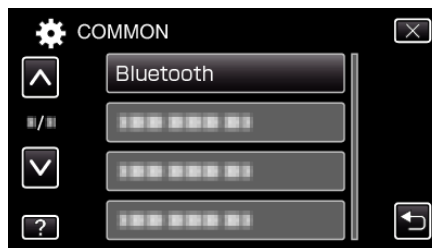
4 Tap "CHANGE SETTINGS".

5 Tap the desired device.

Smartphone	Changes the mobile phone to be used as smartphone.
GPS Receiver	Changes the device to be used as GPS receiver.
Headset 1/ Headset 2	Changes the device to be used as headset 1 or headset 2. Audio settings ("EARPHONES AUDIO", "MIC AUDIO") may also be turned ON/OFF. EARPHONES AUDIO 1/2: Selects whether to output the headset microphone input from the headset earphones. ● Microphone audio of the camera will be output from the earphones even when this is set to "OFF". ● "EARPHONES AUDIO 1/2" is common for headset 1 and headset 2. ON/OFF cannot be set separately. MIC AUDIO: Selects ON/OFF for the headset microphone input.

Memo :

● The connection setting becomes "OFF" after the device is changed. Change the setting to "ON" from the menu.

"Connecting to a Registered Bluetooth-compliant Device" (☞ p. 27)

Transferring Still Images to a Bluetooth-compliant Device

When Bluetooth connection is established with a BIP/OPP-compliant device, you can transfer recorded still image data to this device.

1 Select still image mode.
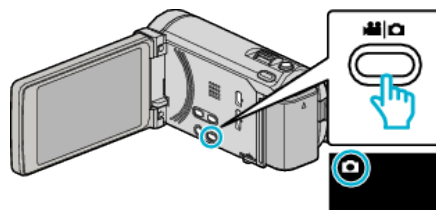
2 Tap ●↔▶ to select the playback mode.
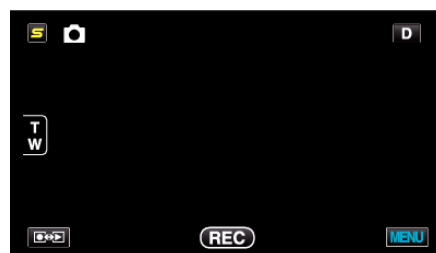
3 Tap "MENU".

4 Tap "STILL IMAGE TRANSFER".

5 Set the connected device to the data reception mode.

● For detailed operating instructions, refer to the instruction manual of the connected device.

6 Check to ensure that the image to be transferred is correct and tap "YES".

● The image to be transferred appears on this screen.

● Tap ◄◄ / ►► to select the previous or next file.

7 Confirm the destination to transfer to and tap "TRANSFER".

● To reduce the image for transferring, tap "SHRINK AND TRANSFER".

● To change the destination to transfer to, tap "CHANGE DESTINATION".

● After image transfer is complete, tap "EXIT".

● To continue to transfer more images, tap "SEND OTHER IMAGES".

● "DEVICE IS NOT SET" appears when the destination to transfer to is not set.
Tap "SET" and select the device to transfer to.

Memo :
● If the connected device is compliant with both BIP and OPP, BIP connection takes priority.
Selection of connection is not possible. OPP connection will only take place if BIP connection fails.

● Before starting image transfer, be sure to turn on the Bluetooth connectivity of the connected device and set it to the data reception mode.
Transmission will fail if the Bluetooth connectivity is set after image transfer starts.

● To transfer still images to a smartphone, make use of an application software for smartphones.
(When a registered smartphone is selected as the destination to transfer to, the smartphone setting is canceled and it is necessary to make the setting once more.)

"Operation Using a Smartphone" (☞ p. 30)

● Only one still image can be transferred at a time. To transfer more still images, tap "SEND OTHER IMAGES" and select another image.

● Still images cannot be transferred from the connected device to the camcorder.

● Depending on the specifications of the connected device, you may not be able to see or edit the file even if it is transferred successfully.
To see or edit the file on the connected device, refer to the instruction manual of the connected device for the compatible image size and transfer using "SHRINK AND TRANSFER".

About BIP Connection :
● The conditions (image size, data size) for still image transfer are obtained from the connected device.
Still images are then transferred as follows according to the obtained conditions.
(1) If the image size meets the conditions, the image will be transferred without any changes.
(2) If the image size is too big, the image will be reduced to VGA (640×480) or FWVGA (854×480).
(3) If the data size is too big, the image will also be reduced to VGA (640×480) or FWVGA (854×480).

About OPP Connection :
● Still image transfer may fail even if the connected device is compliant with OPP connection.
It depends on the file format that can be received by the device.

● When "SHRINK AND TRANSFER" is selected, the still image to transfer will be reduced to the following sizes.
- For still images with 4:3 aspect ratio: VGA (640×480)
- For still images with 16:9 aspect ratio: FWVGA (854×480)

Operation Using a Smartphone

You can use a smartphone as a remote control for this unit using the pre-installed application on the phone.
This unit supports the following smartphones.
● Android Smartphone (Android 2.1 or higher, with Bluetooth SPP profile)
● BlackBerry Bold
● Touch Diamond
● Touch Pro

Memo :
● Operation is not guaranteed on all devices.
● For details, refer to the following homepage.

http://www.jvc-victor.co.jp/english/download/bluetooth/index.html

● Application Software for Android Smartphone
- For downloads, refer to the following.

http://www.jvc-victor.co.jp/english/download/bluetooth/index.html

● Application Software for Android Smartphone
- For operating instructions, refer to the following.

"Bluetooth Application for Smartphones" (☞ p. 31)

● Application Software for BlackBerry Bold / Touch Diamond / Touch Pro
- For downloads and operating instructions, refer to the following.

http://www.jvc-victor.co.jp/english/download/bluetooth/index.html

Caution :
● When a smartphone is used as a remote control, the simultaneous still image recording function on this unit will be disabled.

● Bluetooth capabilities are limited during HDMI connection in the 3D mode. Set this unit to the 2D mode in this case. (for GZ-HM960)

Memo :
● Data packet charges may be incurred when using GPS.

● When the smartphone is connected to other Bluetooth-compliant devices, connection of the phone with this unit may fail.

● When the smartphone is connected to this unit, connection of the phone with other Bluetooth-compliant devices may fail.

● Disconnection may occur due to requests from the smartphone. Restart the application on the phone if it is disconnected.

Bluetooth Application for Smartphones

Capabilities of this Application

By installing this application on a smartphone, you can connect the smartphone to this camera via Bluetooth connection and make use of the following functions.

1 Operate with a smartphone - Remote control function

You can use a smartphone as a remote control for this unit.

2 Record and display location information - GPS function

You can obtain the GPS location information with a smartphone, and add this information to the image data recorded by this camera.

● The location information is sent only in the video/still image recording mode.
● By recording videos/still images with location information, you can display the information during playback.

Caution : ────────────────────────────

● Packet communication fees may be incurred when the GPS function is used.

3 Display the camera's screen on a smartphone - MONITOR function

Images on the camera during the video recording mode can be displayed on a smartphone as a series of continuous still images.

4 Import recorded images to a smartphone - CAPTURE function

Images recorded on the camera can be resized and imported to a smartphone as still images.

● This function is available in the video/still image playback mode.

5 Import recorded videos to a smartphone - Video transfer function

Videos recorded on the camera can be resized and imported to the smartphone.

● This function is available in the video playback mode.

Operating Conditions

To use this application, your smartphone has to meet the following requirements.

[1] OS: Android 2.1 or higher
[2] Supports Bluetooth function and the Serial Port Profile (SPP)
[3] Supports GPS function
[4] Able to connect to the internet or "Android Market™" (required for software installation)

Terms Used in this Guide : ──────────────────────

● In this guide, operations on the touch panel are described as "tap".
● While the names of the buttons on a smartphone are written as "MENU" or "RETURN", they may vary according to the smartphone in use.

Refer also to the instruction manual of your smartphone.

Installing the Application from Android Market

1 Tap [Market] on the home screen.

2 Search for the "Everio Controller" application.

3 Tap on the "Everio Controller" application.

● The detailed information of the application is displayed.

4 Tap [FREE]→[OK].

● For applications that access data or functions of this unit, a screen that shows the data or functions that will be used is displayed. After checking, tap [OK].
● Downloading starts.
● After downloading is complete, Install_End appears on the status bar at the top of the screen.
The installed application will be added to the application list automatically.

Deleting Applications

[1] Tap [Market] on the home screen.
[2] Press the menu button and tap [My apps].

● A list of previously downloaded applications is displayed.

[3] Tap on the "Everio Controller" application.
[4] Tap [Uninstall], then tap [OK].

Memo : ────────────────────────────

The specifications of Android Market™ are subject to changes without prior notice.
For operating details, refer to the help file of Android Market™.

Preparing for Bluetooth Connection

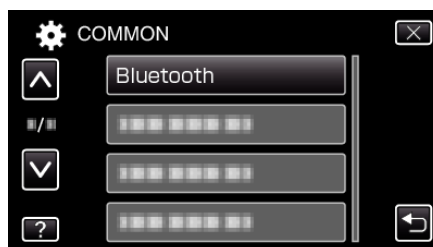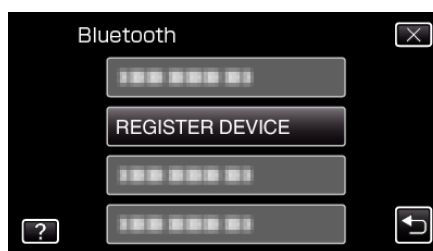*1* Tap "MENU".
(Operation on this camera)
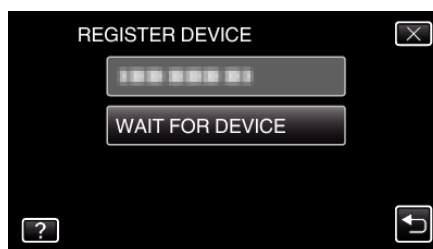

2 Tap "⚙".
(Operation on this camera)

3 Tap "Bluetooth".
(Operation on this camera)

4 Tap "REGISTER DEVICE".
(Operation on this camera)

5 Tap "WAIT FOR DEVICE".
(Operation on this camera)

6 Tap "OK" when "WAIT FOR REQUEST FROM Bluetooth DEVICEALL CURRENT CONNECTIONS WILL BE DISCONNECTED" is displayed.
(Operation on this camera)

- When "WAITING FOR REQUEST FROM THE DEVICE" appears, perform the following operations on the smartphone.

7 Press the "MENU" button on the home screen, then tap [Settings]>[Wireless & networks]>[Bluetooth settings].
(Operation on the smartphone)

8 Tap [Bluetooth] to add a check mark.
(Operation on the smartphone)

- The Bluetooth function turns on.
- A search for Bluetooth devices starts, and the detected Everio model name appears in the list.
- If the device does not appear in the list, tap [Scan for devices] and search again.

9 Tap the Everio model name.
(Operation on the smartphone)

- Pairing starts.

10 Tap "YES".
(Operation on this camera)

Starting/Exiting the Application

Starting the Application

1 Tap "MENU".
(Operation on this camera)

2 Tap "❀".
(Operation on this camera)
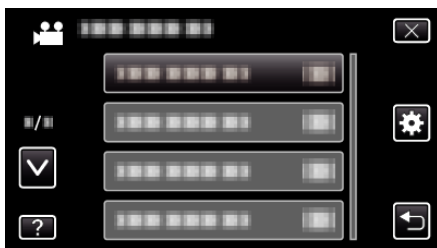
3 Tap "Bluetooth".
(Operation on this camera)
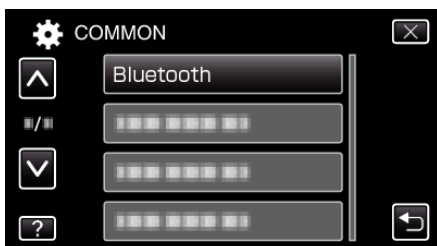
4 Tap "CONNECT".
(Operation on this camera)
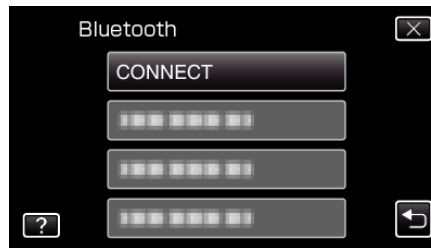
5 Tap "SMARTPHONE".
(Operation on this camera)

6 Select and tap on the smartphone to connect to from the list.
(Operation on this camera)
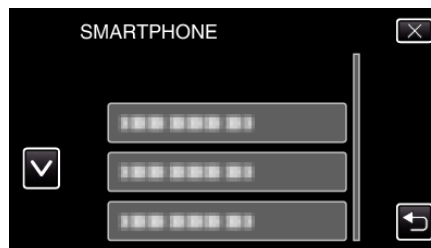
- Check that the icon changes to "ON". (The icon changes between "ON" and "OFF" with every tap.)
- To select again, select from "CHANGE SETTINGS".

"Changing the Settings of a Registered Bluetooth-compliant Device"
(☞ p. 28)

7 Tap "✕" to exit the menu.
(Operation on this camera)

8 Tap "Everio Controller" on the application list.
(Operation on the smartphone)

9 Tap the model name of the camera in use.
(Operation on the smartphone)

Exiting the Application

1 Press the "RETURN" button.
(Operation on the smartphone)

2 Tap "OK".
(Operation on the smartphone)

Caution :

- Be sure to exit the application using the above procedure.

Displays on the Screen

Video Recording Mode

Video Playback Mode

Still Image Recording Mode

Still Image Playback Mode

33

Names of Buttons and Functions

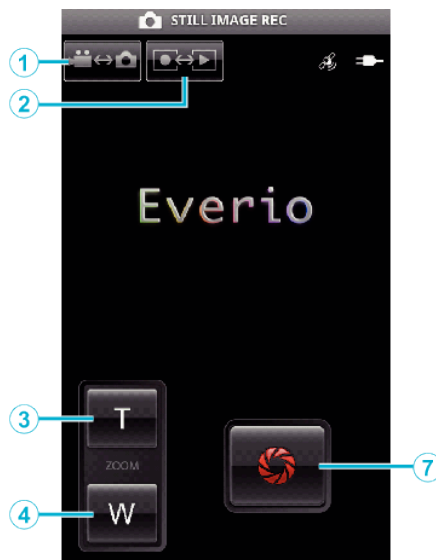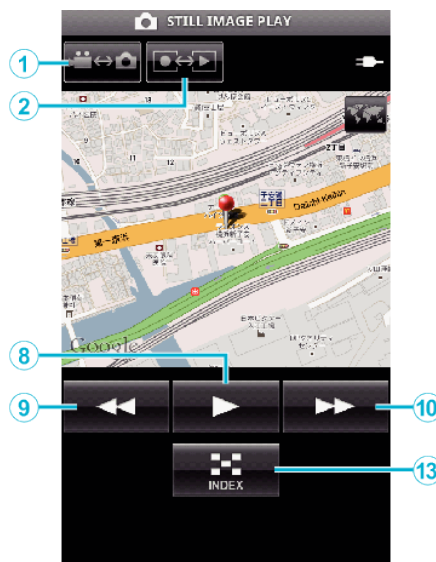|	Name of Button	Function	Mode			
			Video		Still Image	
			Recording	Playback	Recording	Playback
①	Video/Still Image Mode *1	Switches between video and still image modes.	✓	✓	✓	✓
②	Recording/Playback Mode *1	Switches between recording and playback modes.	✓	✓	✓	✓
③	Zoom (T)	Zooms to the T (telephoto) end.	✓	-	✓	-
④	Zoom (W)	Zooms to the W (wide angle) end.	✓	-	✓	-
⑤	Record	Starts video recording.	✓	-	-	-
⑥	Stop	Stops video recording.	✓	-	-	-
⑦	Shutter	Takes a still image.	-	-	✓	-
⑧	▶ (Play) *2	Starts playback of the selected video or still image. During video/still image playback: Starts/pauses playback.	-	✓	-	✓
⑨	◀◀ (Rewind)	During index screen display: Moves the cursor to the left.	-	✓	-	✓
		During video playback: Performs reverse search. During still image playback: Returns to the previous image.	-	✓	-	✓
⑩	▶▶ (Fast Forward)	During index screen display: Moves the cursor to the right.	-	✓	-	✓
		During video playback: Performs forward search. During still image playback: Advances to the next image.	-	✓	-	✓
⑪	◀◀| (Reverse Skip)	During video playback: Returns to the beginning of the scene.	-	✓	-	-
⑫	▶▶| (Forward Skip)	During video playback: Advances to the next video.	-	✓	-	-
⑬	Index	During playback: Returns to the index screen.	-	✓	-	✓
⑭	SNAP SHOT *3	During video playback: Captures a still image from the video when this is tapped while playback is paused.	-	✓	-	-

*1 Switching of modes cannot be performed during video recording.
*2 If location information is recorded in the video or still image, the location
will be displayed on the map.
*3 Captured still images are stored in the same media as the original image.
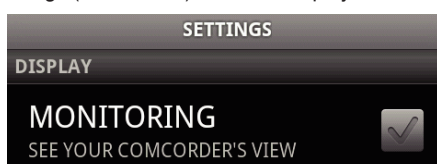
Operating Details

**Displaying Camera's Screen on Smartphone
- MONITOR Function**

1   Switch to the video recording mode.

2   Press the "MENU" button to display the settings (SETTINGS) button.

3   Tap the settings (SETTINGS) button to display the settings menu.

4   Tap [MONITORING] to display a check mark in the checkbox.

5   Press the "RETURN" button to exit the settings menu.
   ● The camera's screen appears on the smartphone.

Canceling the Monitor Display :

● Remove the check mark from the checkbox in step 4.
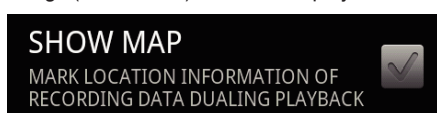
Memo :

● Images are displayed as a series of continuous still images.

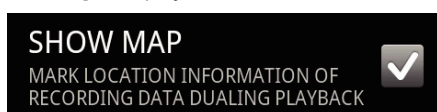**Displaying the Map During Video or Still Image Playback**

1   Switch to the video playback mode.

2   Press the "MENU" button to display the settings (SETTINGS) button.

3   Tap the settings (SETTINGS) button to display the settings menu.

4   Tap [SHOW MAP] to display a check mark in the checkbox.

5   Press the "RETURN" button to exit the settings menu.
   ● When a video or still image is played back, a map will be displayed based on the recorded location information.

Canceling the Map Display :

● Remove the check mark from the checkbox in step 4.

Memo :

● This function is also available in the still image playback mode.
● To display the map, it is necessary to activate location information transmission during video or still image recording.
● During video playback, the map changes (moves) together with the changes in location information.
● To display the map, internet connection is required. (Packet communication fees may be incurred.)

Recording Location Information

1   Switch to the video recording mode.

2   Press the "MENU" button to display the settings (SETTINGS) button.

3   Tap the settings (SETTINGS) button to display the settings menu.

4   Tap [SEND LOCATION INFO] to display a check mark in the checkbox.

5   Press the "RETURN" button to exit the settings menu.

Canceling Location Information Transmission :

● Remove the check mark from the checkbox in step 4.

Memo :

● This function is not available if there is no GPS function in the smartphone.
● By default, the location information will be transmitted every 1 second. You can change the transmission interval from the settings menu.
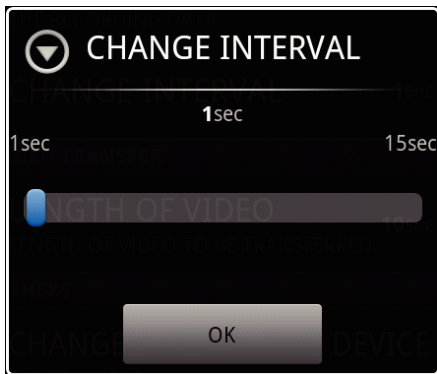
Changing the Transmission Interval

1   Switch to the video recording mode.

2   Press the "MENU" button to display the settings (SETTINGS) button.

3   Tap the settings (SETTINGS) button to display the settings menu.

4   Tap [CHANGE INTERVAL] to display the setting window.

5 Move the slide bar in the setting window to the right and left to change the interval.

6 Tap [OK] to complete the setting.

7 Press the "RETURN" button to exit the settings menu.

Canceling the Setting :
● Press the "RETURN" button in step 6

Memo :
● This function is not available if there is no GPS function in the smartphone.

Displaying Google Map™ :
When "Map" is tapped, a map will be displayed on the full screen.
● For operating instructions of the map, refer to the instruction manual of the smartphone.
● To cancel the magnified display of the map, press the "RETURN" button.

Transferring Videos to a Smartphone

1 Switch to the video playback mode.

2 Tap ◄◄/►► to select the video to transfer.

3 Tap ► to start playback.

4 Tap ► at the scene to start transferring to pause playback.

5 Press the "MENU" button to display the transfer (VIDEO TRANSFER) button, then tap on it.

6 Move the slide bar in the setting window to the right and left to select the length of the video.
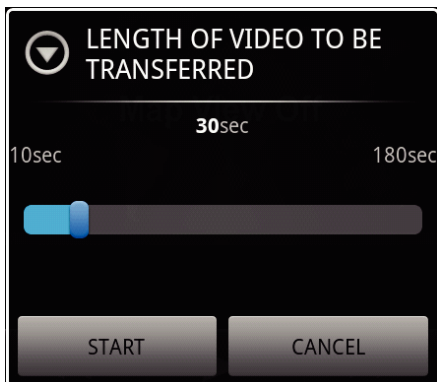

Memo :
● The length of video that can be transferred is limited.
By default, it is set to 10 seconds.
You can set the time between 10 seconds to 180 seconds.

7 Tap [START].
● Preparation for the transfer starts on the camera, and the transferring starts when preparation is done.
● A progress status is displayed when transferring starts on the smartphone.

● After transferring is complete, a window to select the data processing method appears.
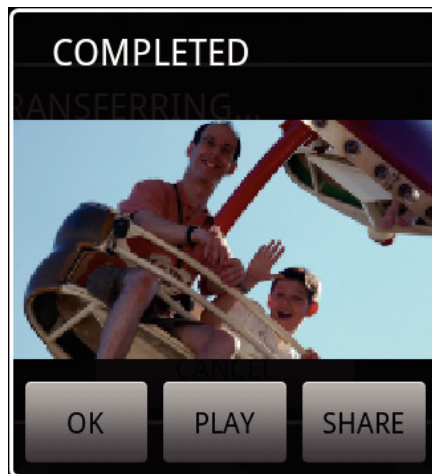
8 Tap [OK] to complete the transfer.

Checking the Transferred Video :
● Tap [PLAY] in step 8 to play back the transferred video.

Uploading the Transferred Video to Youtube, etc. :
● Tap [SHARE] in step 8 to display the list of destinations (services) to upload to.
Tap the desired service to start the uploading process.
● To make use of a service, it is necessary to perform registration beforehand.

Canceling the Transfer :
● Tap [CANCEL] in step 7 during transferring.

Transferring Still Images to a Smartphone

1 Switch to the video or still image playback mode.

2 Tap ◄◄/►► to select the still image to transfer.

3 Tap ► to start playback.
* For still image playback, proceed to step 5.

4 For video playback, tap ► at the scene to transfer to pause playback.

5 Press the "MENU" button to display the transfer (CAPTURE) button.

6 Tap the transfer (CAPTURE) button to display the settings menu.
● Preparation for the transfer starts on the camera, and the transferring starts when preparation is done.
● A progress status is displayed when transferring starts on the smartphone.
● After transferring is complete, a window to select the data processing method appears.

7 Tap [OK] to complete the transfer.

Checking the Transferred Still Image：

● Tap [PLAY] in step 7 to play back the transferred still image.

Uploading the Transferred Still Image：

● Tap [SHARE] in step 7 to display the list of destinations (services) to upload to.
  Tap the desired service to start the uploading process.

● To make use of a service, it is necessary to perform registration beforehand.

Canceling the Transfer：

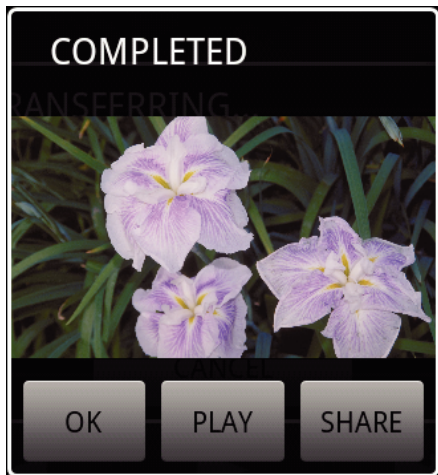● Tap [CANCEL] in step 6 during transferring.

Changing the Connected Camera

1 Press the "MENU" button to display the settings (SETTINGS) button.
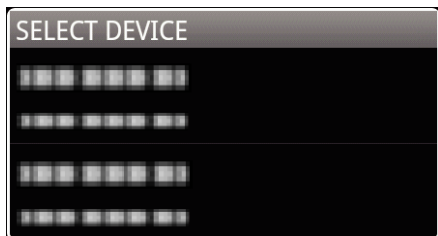

2 Tap the settings (SETTINGS) button to display the settings menu.

3 Tap [CHANGE CONNECTING DEVICE] to display the setting window.

4 Tap [OK] in the setting window.

● The connection gets disconnected, and a device selection window appears.

5 Tap on the device to connect to from the list displayed in the device selection window.

● The selected device gets connected.

* It is necessary to perform pairing beforehand for the camera to change to.

Canceling the Setting：

● Tap [CANCEL] in step 4.

Changing the Software's Background Color

1 Press the "MENU" button to display the settings (SETTINGS) button.

2 Tap the settings (SETTINGS) button to display the settings menu.

3 Tap [BACKGROUND COLOR] to display the setting window.
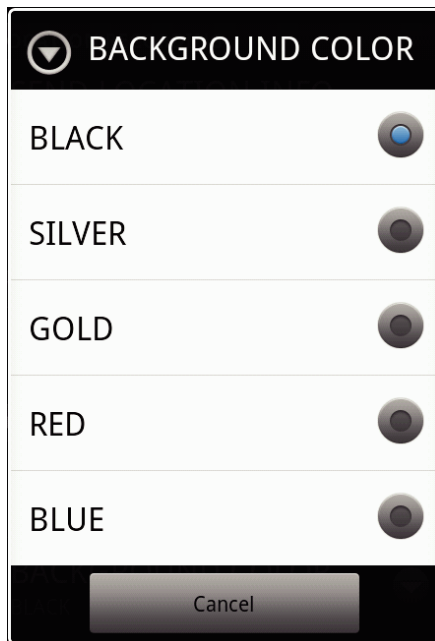
4 Tap the desired color in the background color setting window.

5 Press the "RETURN" button once.

● The background changes to the selected color.

Canceling the Setting：

● Tap [CANCEL] in step 4.

Settings Menu

You can display the settings menu by pressing the "MENU" button.

Troubleshooting

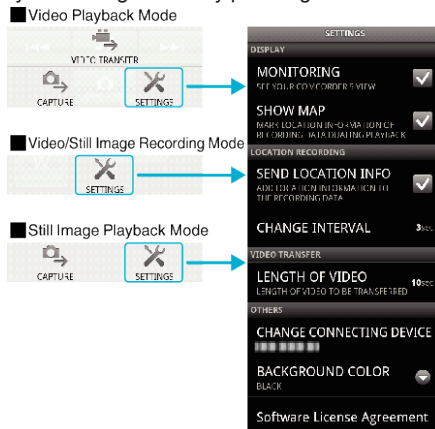| Trouble	Reason and Action
Unable to connect to camera.	● Check that there are no obstacles between the device and the camera. ● Perform registration (pairing) of the Bluetooth device again. ● Delete the registered camera in the smartphone, then execute pairing again. ● Turn off the Bluetooth setting of the smartphone, then turn it on again. ● Reset the software in the smartphone.
Operations do not work.	● Check that there are no obstacles between the device and the camera. ● Operations may not work depending on the mode or when the menu is displayed on the camera. ● Check the status and mode of the camera. ● Operations do not work when the camera is in the quick restart standby mode.
The image from the camera does not appear.	● The image appears only during the video recording mode. ● The image will not appear if the MONITOR function is not turned on. ● Restart the application if the Bluetooth connection gets disconnected.
Monitor image does not get updated when the MONITOR function is being used.	● Restart the MONITOR application and connect to Bluetooth again. ● Depending on the state of the camera, the updating speed of the MONITOR image may drop such that the changes cannot be seen. ● When connected to another Bluetooth device other than the smartphone, disconnect the device.
The progress bar does not show any progression during CAPTURE or video transfer.	● When connected to another Bluetooth device other than the smartphone, disconnect the device.
The message "THE DESTINATION TO SAVE THE DATA IS RUNNING OUT OF MEMORY" appears.	● This message appears when data cannot be written to the built-in memory of the smartphone. Check whether the SD card has been inserted into the smartphone correctly and that there is enough space left in the card. * For details on the smartphone's memory and SD card, refer to the instruction manual of the smartphone.
Unable to transfer still image/video to the smartphone.	● Files cannot be transferred when the HDMI cable is connected. Disconnect the HDMI cable before transferring.

Radio Waves Used by this Product

This product makes use of radio waves in the ISM band (2.4 GHz).
Although a radio station license is not required for using this product, please take note of the following.

■ Do not use this product near the following places.

● Industrial, scientific, or medical equipment, such as microwave ovens and pacemakers
● In-plant radio stations for detecting moving objects, such as those employed in the manufacturing lines of plants (radio station license required)
● Specified low-power radio stations (radio station license not required)
● Wireless LAN equipment

Equipment such as the above mentioned devices makes use of the same frequency bandwidth as that of Bluetooth.
Using this product near the above equipment may cause radio wave interference, and result in communication failure or a drop in communication speed.

■ Avoid using this product near a TV or radio set.

TV or radio sets make use of a radio wave frequency bandwidth that is different from that of Bluetooth, and therefore has no effect on communication by this product or the TV/radio set.
However, when a TV/radio set is placed close to a Bluetooth product, electromagnetic waves emitted by the Bluetooth product may cause noise to occur in the sound or images of the TV/radio.

■ Radio signals are unable to penetrate through reinforced steel, metal, or concrete.

The radio waves used by this product are unable to penetrate through reinforced steel, metal, or concrete materials.
Communication cannot be established if two rooms or floors are separated by these materials.
*Communication also gets weaker when there are human subjects or parts of the body in between the Bluetooth devices. Make sure that there are no obstructions in between the devices when in use.

Using this Unit Overseas

The shape of the power outlet varies according to countries and regions.
To charge the battery pack, you need a converter plug that matches the shape of the outlet.
"Charging the Battery Pack Overseas" (☞ p. 39)
Change the date and time display to the local time by selecting your travel destination in "AREA SETTING" of "CLOCK ADJUST".
"Setting the Clock to Local Time when Traveling" (☞ p. 39)
When "ON" is selected in "DST SETTING" of "CLOCK ADJUST", the time is set 1 hour ahead.
"Setting Daylight Saving Time" (☞ p. 40)

Charging the Battery Pack Overseas

The shape of the power outlet varies according to countries and regions.
To charge the battery pack, you need a converter plug that matches the shape of the outlet.

A	B	BF	C	O

North America		Europe		Oceania		Middle East	
United States	A	Iceland	C	Australia	O	Israel	C
Canada	A	Ireland	C	Guam	A	Iran	C
Mexico	A	United Kingdom	B.BF	Tahiti	C	Kuwait	B.C
		Italy	C	Tonga	O	Jordan	B.BF
Asia		Austria	C	New Zealand	O		
India	B.C.BF	Netherlands	C	Fiji	O	**Africa**	
Indonesia	C	Canary Islands	C			Algeria	A.B.BF.C
Singapore	B.BF	Greece	C	**Latin**		Egypt	B.BF.C
Sri Lanka	B.C.BF	Switzerland	C	Argentina	O	Guinea	C
Thailand	A.BF.C	Sweden	C	Colombia	A	Kenya	B.C
South Korea	A.C	Spain	A.C	Jamaica	A	Zambia	B.BF
China	A.B.BF.C.O	Denmark	C	Chile	B.C	Tanzania	B.BF
Japan	A	Germany	C	Haiti	A	Republic of South Africa	
Nepal	C	Norway	C	Panama	A		B.C.BF
Pakistan	B.C	Hungary	C	Bahamas	A	Mozambique	C
Bangladesh	C	Finland	C	Puerto Rico	A	Morocco	C
Philippines	A.BF.O	France	C	Brazil	A.C		
Vietnam	A.C	Belgium	C	Venezuela	A		
Hong Kong Special		Poland	B.C	Peru	A.C		
Administrative Region	B.BF	Portugal	B.C				
Macau Special		Romania	C				
Administrative Region	B.C						
Malaysia	B.BF.C						

Setting the Clock to Local Time when Traveling

Change the date and time display to the local time by selecting your travel destination in "AREA SETTING" of "CLOCK ADJUST".
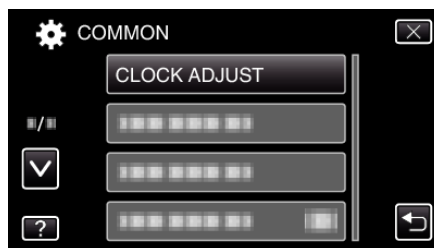Restore the region settings after you returned from the trip.
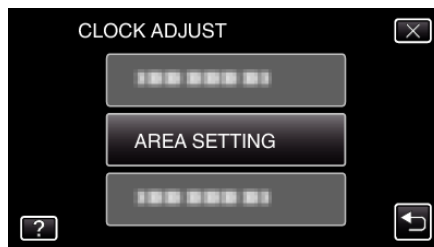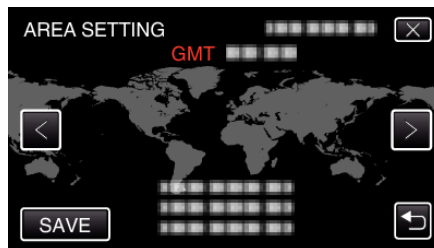
1 Tap "MENU".
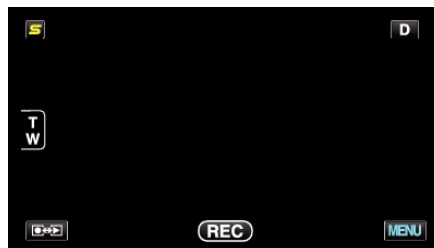
2 Tap "⚙".

3 Tap "CLOCK ADJUST".

● Tap ∧ or ∨ to move upward or downward for more selection.

4 Tap "AREA SETTING".

5 Select the area you are traveling to and tap "SAVE".

● The city name and time difference are displayed.
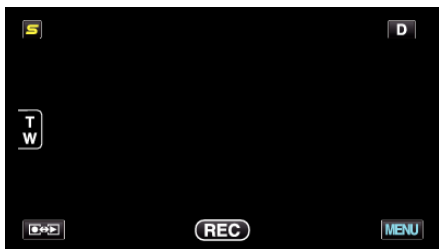● Tap < or > to select the city name.

Memo :

● Setting "AREA SETTING" changes the clock time such that time difference is accounted for.
After returning to your country, re-select the region that was set initially to restore the original clock settings.

Setting Daylight Saving Time

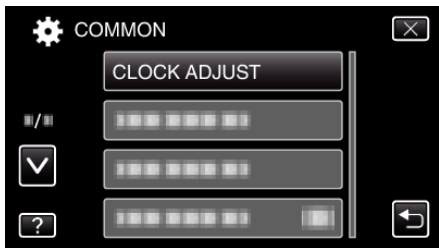When "ON" is selected in "DST SETTING" of "CLOCK ADJUST", the time is set 1 hour ahead.

1 Tap "MENU".

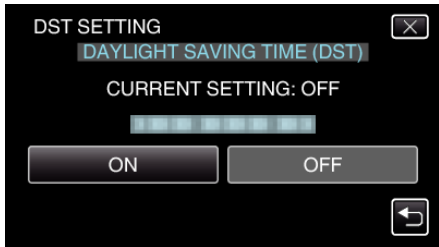*2* Tap "⚙".

3 Tap "CLOCK ADJUST".

● Tap ∧ or ∨ to move upward or downward for more selection.

4 Tap "DST SETTING".

5 Tap "ON".

Memo :
● What is daylight saving time?
  Daylight saving time is the system of setting the clock 1 hour ahead for a fixed period in summer.
  It is used mainly in the Western countries.
● Restore the daylight saving time settings after you returned from the trip.

Optional Accessories

You can record for a longer time by using the optional battery pack.

Product Name	Description
Battery Pack ● BN-VG114U ● BN-VG121U ● BN-VG138U	● Provides a longer recording time. It can also be used as a spare battery pack.
Battery Charger ● AA-VG1	● Enables the battery pack to be charged without using this unit.
Component Cable ● QAM1266-001	● For viewing in high picture quality. ● Consult your nearest JVC service center.
HDMI Cable ● VX-HD310 ● VX-HD315 ● VX-HD320 ● VX-HD330	● For viewing in high picture quality. ● Transmits video, audio, and control signals between devices.

Memo :
● The above optional accessories may not be supported in some regions.
● For more information, refer to the catalog.
● BN-VG114U is the same battery pack that comes with this unit.

Approximate Recording Time (Using Battery)

■ **3D Display on LCD Monitor (for GZ-HM960)**

Battery Pack	Actual Recording Time	Continuous Recording Time
BN-VG114U (Supplied)	35 m	1 h
BN-VG121U	50 m	1 h 30 m
BN-VG138U	1 h 30 m	2 h 45 m

■ **2D Display on LCD Monitor (for GZ-HM960)**

Battery Pack	Actual Recording Time	Continuous Recording Time
BN-VG114U (Supplied)	40 m	1 h 10 m
BN-VG121U	1 h	1 h 45 m
BN-VG138U	1 h 40 m	3 h 5 m

■ **2D Display on LCD Monitor (for GZ-HM860)**

| Battery Pack	Actual Recording Time	Continuous Recording Time
BN-VG114U (Supplied)	40 m	1 h 15 m
BN-VG121U	1 h 5 m	1 h 55 m
BN-VG138U	1 h 55 m	3 h 25 m

- The above are values when "LIGHT" is set to "OFF" and "MONITOR BRIGHTNESS" is set to "3" (standard).
- The actual recording time may be shorter if zooming is used or if recording is stopped repeatedly.
  (It is recommended to prepare battery packs ready for three times the expected recording time.)
- When the battery life is reached, the recording time becomes shorter even if the battery pack is fully charged.
  (Replace the battery pack with a new one.)

Taking Videos in Intelligent Auto Mode

You can record without worrying about the setting details by using the Intelligent Auto mode. Settings such as exposure and focus will be adjusted automatically to suit the shooting conditions.
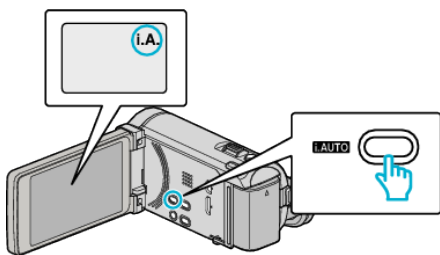
● In case of specific shooting scenes such as person etc., its icon is displayed on the screen.
● Before recording an important scene, it is recommended to conduct a trial recording.
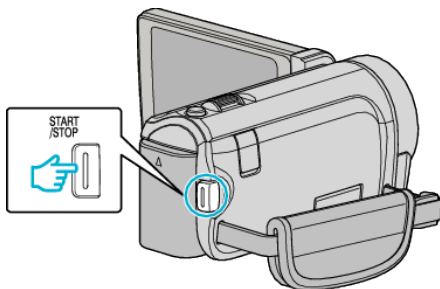
1 Open the LCD monitor and select the video mode.
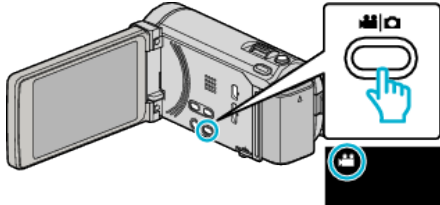
● The video mode icon appears.

2 Check if the recording mode is Intelligent Auto.

● If the mode is M Manual, press the i.AUTO button to switch.
The mode changes between Intelligent Auto and Manual with every press.

3 Start recording.

● Press again to stop.
● Some displays disappear after approximately 3 seconds.
Use the D button to change the displays.
"Operation Buttons for Video Recording" (☞ p. 43)

Memo :

● 3D images are supported by the LCD monitor of this unit. This allows you to check the 3D effect while recording. To switch to 3D mode, refer to "Playing Back 3D Images". (for GZ-HM960)

"Playing Back 3D Images (for GZ-HM960)" (☞ p. 76)

● When recording in 3D mode, the image is recorded in 2D even though the display on the LCD monitor is 3D. (for GZ-HM960)

Indications During Video Recording
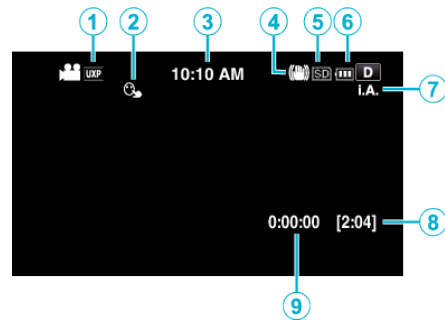
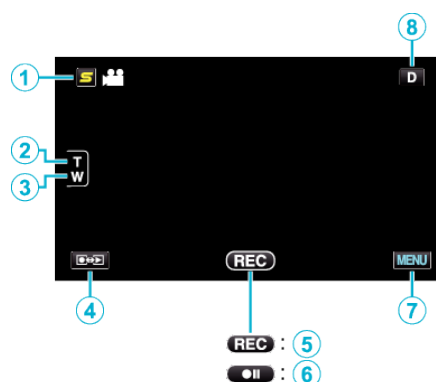|	Display Icon	Description
①	Video Quality	Displays the icon of the "VIDEO QUALITY" setting selected in the recording menu. "VIDEO QUALITY" (☞ p. 129)
②	TOUCH PRIORITY AE/AF	Displays the setting of "TOUCH PRIORITY AE/AF". By default, it is set to "FACE TRACKING" . "Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)" (☞ p. 61)
③	Time	Displays the current time. "Clock Setting" (☞ p. 20)
④	Image Stabilizer	Sets whether to reduce camera shake. "Reducing Camera Shake" (☞ p. 64)
⑤	Recording Media	Displays the icon of the media where videos are recorded to. The recording media can be changed. "REC MEDIA FOR VIDEO" (☞ p. 145)
⑥	Battery Indicator	Displays the approximate remaining battery power. Details of the battery power can be displayed by pressing the INFO button. "Remaining Recording Time/Battery Power" (☞ p. 72)
⑦	Recording Mode	Press the i.AUTO button to switch the recording mode between **i.A.** (Intelligent Auto) and M (Manual).
⑧	Remaining Recording Time	Displays the remaining time for video recording.
⑨	Scene Counter (Recorded Time)	Displays the elapsed time of the video that is currently being recorded.

■ Scenes of Intelligent Auto

Display Icon	Description
(icon)	Captures one's skin beautifully.
(icon)	Allows people to be captured naturally.
(icon)	Focuses at a far distance and captures a sharp image with vivid colors.
(icon)	Records with minimal noise in the overall image.
(icon)	Allows night scenes to be captured accurately with minimal noise in the overall image.
(icon)	Prevents colors from fading even when recording in a bright environment.
(icon)	Records while focusing on a near object.
(icon)	Reproduces the green color of trees vividly.
(icon)	Reproduces the colors of sunset naturally.
(icon)	Adjusts settings so that the subject does not appear too dark due to backlight.
(icon)	Allows people to be captured naturally with minimal noise in the overall image.
(icon)	Records while focusing on a near object even in a dark environment.

Memo :

● Scenes can be detected according to the shooting conditions and automatically adjusted in Intelligent Auto mode.
● Some functions may not work properly depending on the shooting conditions.

Operation Buttons for Video Recording

	Operation Button	Description
①	Face Short Cut Menu Button	Displays a short cut screen of face recognition functions. "Operating the Face Short Cut Menu" (☞ p. 122)
②/③	T/W Zoom	Allows the same functions as the zoom lever to be performed. Camera shake that often occurs when using the zoom lever can be minimized. "Zooming" (☞ p. 44)
④	Recording/ Playback Mode	Switches between recording and playback modes.
⑤/⑥	Recording Start 🔴REC Record-Standby ●II	Functions as the START/STOP button.
⑦	MENU	Displays the various menus of video recording. "Operating the Menu" (☞ p. 121)
⑧	Display Button **D**	Some displays disappear after approximately 3 seconds. Use the **D** button to change the displays as shown below. ● Tap **D** button Displays appear for approximately 3 seconds with every tap. ● Tap and hold **D** button Displays are fixed such that they do not disappear. After setting, the display button changes from **D** to **D𝓁**. Tap **D𝓁** to release the displays.

Useful Settings for Recording

- When "QUICK RESTART" is set to "ON", this unit turns on immediately if you open the LCD monitor within 5 minutes after the power is turned off by closing the monitor.

"QUICK RESTART" (☞ p. 147)

- When "AUTO POWER OFF" is set to "ON", this unit turns itself off automatically to conserve power when it is not operated for 5 minutes. (only when using the battery pack)

"AUTO POWER OFF" (☞ p. 146)

- When "TOUCH PRIORITY AE/AF" is set to "FACE TRACKING", this unit detects faces and automatically adjusts its brightness and focus to record the faces more clearly.

"Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)" (☞ p. 61)

- If the remaining space on the built-in memory runs out while "SEAMLESS RECORDING" is set to "ON", recording continues after switching to the SD card.

"SEAMLESS RECORDING" (☞ p. 130)

Caution :

- Do not expose the lens to direct sunlight.
- Do not use this unit in the rain, snow, or places with high humidity like the bathroom.
- Do not use this unit in places subject to excessive humidity or dust, as well as places exposed to steam or smoke directly.
- Do not remove the battery pack, AC adapter, or SD card when the access lamp is lighted. The recorded data may become unreadable.

"ACCESS (Access) Lamp" (☞ p. 156)

- This unit is a microcomputer-controlled device. Electrostatic discharge, external noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such a case, turn off the power, then remove the AC adapter and battery pack. This unit will be reset.
- Make a backup of important recorded data.
  It is recommended to copy your important recorded data to a DVD or other recording media for storage.
 JVC will not be responsible for any lost data.

Memo :

- Check the remaining recording time in the media before you start shooting. If there is not enough space, move (copy) the data to a computer or disc.
- When there are many files in the media, it may take time for them to be displayed on the playback screen. Wait for a while as the access lamp appears blinking, which indicates normal operation.
- Do not forget to make copies after recording!
- Recording stops automatically as it cannot be performed for 12 or more consecutive hours according to specifications.
  (It may take some time to resume recording.)
- For long recordings, the file is split into two or more files if the size exceeds 4 GB.
- You can connect this unit to the AC adapter to record for long hours indoors.
- Depending on the shooting conditions, the four corners of the screen may appear dark, but this is not a malfunction. In this case, change the shooting conditions by moving the zoom lever, etc.

Zooming

The angle of view can be adjusted using zoom.

- Use the W end (wide angle end) to shoot a wider field of view.
- Use the T end (telephoto end) to magnify the subject for shooting.

Wide Angle   Telephoto
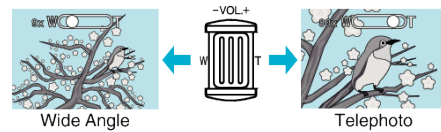
Memo :

- When digital zoom is used, the image becomes grainy as it is digitally enlarged.
- The zoom ratio range can be changed.

"ZOOM" (☞ p. 130)

Capturing Still Images During Video Recording

Still images can be captured by pressing the SNAPSHOT button while in the video mode (standby or recording).
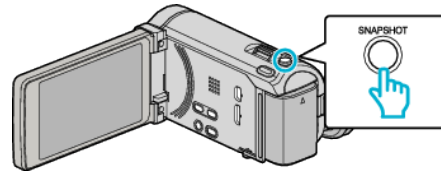
- "PHOTO" lights up on the screen when a still image is being captured.

PHOTO

- The still images captured during video recording are saved to the destination set in "REC MEDIA FOR IMAGE".

Memo :

- The size of the still image that is captured in the video mode is 1920 x 1080.
- Operation is invalid under the following conditions:
  - when menu is being displayed
  - when remaining recording time or battery power is being displayed
  - when TIME-LAPSE RECORDING is in use
  - when "FACE SUB-WINDOW" is set
  - when "ANIMATION EFFECT" is set
  - when "HIGH SPEED RECORDING" is set

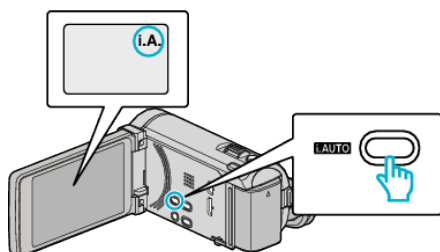## Taking Still Images in Intelligent Auto Mode

You can record without worrying about the setting details by using the Intelligent Auto mode.

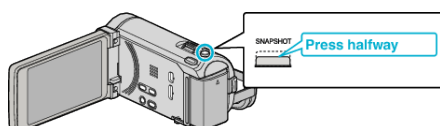*1* Open the LCD monitor and select the still image mode.
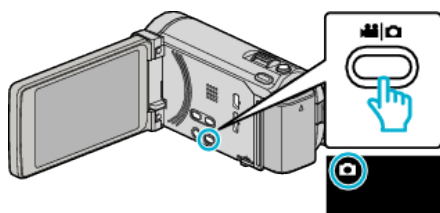
- The still image mode icon appears.

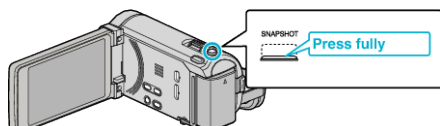*2* Check if the recording mode is Intelligent Auto.

- If the mode is ▒ Manual, press the i.AUTO button to switch. The mode changes between Intelligent Auto and Manual with every press.

3 Set the focus on the subject.

- When focused, the focus icon lights up in green.

4 Take a still image.

- PHOTO lights up when a still image is being captured.
- Some displays disappear after approximately 3 seconds. Use the **D** button to change the displays.

"Operation Buttons for Still Image Recording" (☞ p. 46)

Memo :

- 3D images are supported by the LCD monitor of this unit. This allows you to check the 3D effect while recording. To switch to 3D mode, refer to "Playing Back 3D Images". (for GZ-HM960)

"Playing Back 3D Images (for GZ-HM960)" (☞ p. 78)

- When recording in 3D mode, the image is recorded in 2D even though the display on the LCD monitor is 3D. (for GZ-HM960)
- Continuous recording of still images (continuous shooting) can be performed on this unit.

"CONT. SHOOTING SPEED" (☞ p. 136)

Indications During Still Image Recording
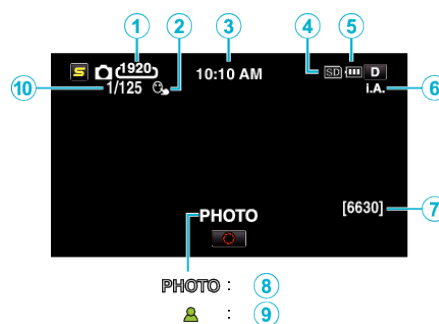
	Display Icon	Description
①	Image Size	Displays the icon of the image size. ● The size of still images can be changed. "IMAGE SIZE" (☞ p. 137)
②	TOUCH PRIORITY AE/AF	Displays the setting of "TOUCH PRIORITY AE/AF". By default, it is set to "FACE TRACKING". "Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)" (☞ p. 61)
③	Time	Displays the current time. "Clock Setting" (☞ p. 20)
④	Recording Media	Displays the icon of the media where still images are recorded to. The recording media can be changed. "REC MEDIA FOR IMAGE" (☞ p. 145)
⑤	Battery Indicator	Displays the approximate remaining battery power. Details of the battery power can be displayed by pressing the INFO button. "Remaining Recording Time/Battery Power" (☞ p. 72)
⑥	Recording Mode	Press the i.AUTO button to switch the recording mode between **i.A.** (Intelligent Auto) and ▒ (Manual). "Scenes of Intelligent Auto" (☞ p. 43)
⑦	Remaining Number of Shots	Displays the remaining number of shots for still image recording.
⑧	Recording in Progress	"PHOTO" appears when a still image is being captured.
⑨	Focus	Lights up in green when focused.
⑩	Shutter Speed	Displays the shutter speed.

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Operation Buttons for Still Image Recording

	Operation Button	Description
①	Face Short Cut Menu Button	Displays a short cut screen of face recognition functions. "Operating the Face Short Cut Menu" (☞ p. 122)
②/③	T/W Zoom	Allows the same functions as the zoom lever to be performed. Camera shake that often occurs when using the zoom lever can be minimized. "Zooming" (☞ p. 47)
④	Recording/ Playback Mode	Switches between recording and playback modes.
⑤	Snapshot	Functions as the SNAPSHOT button. However, focus cannot be set by pressing halfway.
⑥	MENU	Displays the various menus of still image recording. "Operating the Menu" (☞ p. 121)
⑦	Display Button **D**	Some displays disappear after approximately 3 seconds. Use the **D** button to change the displays as shown below. • Tap **D** button Displays appear for approximately 3 seconds with every tap. • Tap and hold **D** button Displays are fixed such that they do not disappear. After setting, the display button changes from **D** to **D𝒍**. Tap **D𝒍** to release the displays.

Useful Settings for Recording

● When "AUTO POWER OFF" is set to "ON", this unit turns itself off automatically to conserve power when it is not operated for 5 minutes. (only when using the battery pack)

"AUTO POWER OFF" (☞ p. 146)

● When "TOUCH PRIORITY AE/AF" is set to "FACE TRACKING", this unit detects faces and automatically adjusts its brightness and focus to record the faces more clearly.

"Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)" (☞ p. 61)

Caution :

● Do not expose the lens to direct sunlight.

● Do not use this unit in the rain, snow, or places with high humidity like the bathroom.

● Do not use this unit in places subject to excessive humidity or dust, as well as places exposed to steam or smoke directly.

● Do not remove the battery pack, AC adapter, or SD card when the access lamp is lighted. The recorded data may become unreadable.

"ACCESS (Access) Lamp" (☞ p. 156)

● This unit is a microcomputer-controlled device. Electrostatic discharge, external noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such a case, turn off the power, then remove the AC adapter and battery pack. This unit will be reset.
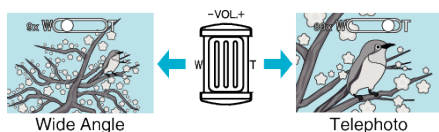
Memo :

● Before recording an important scene, it is recommended to conduct a trial recording.

● The digital image stabilizer does not work when recording still images.

● Depending on the shooting conditions, the four corners of the screen may appear dark, but this is not a malfunction. In this case, change the shooting conditions by moving the zoom lever, etc.

Zooming

The angle of view can be adjusted using zoom.

● Use the W end (wide angle end) to shoot a wider field of view.
● Use the T end (telephoto end) to magnify the subject for shooting.

Wide Angle   Telephoto

● The following zoom options are available:
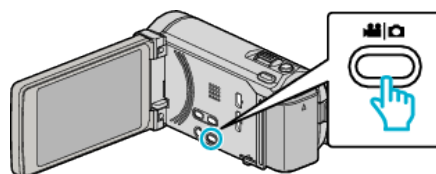 - Optical Zoom (1 - 10x)

Memo :
● Only optical zoom is available in the still image recording mode.

Manual Recording

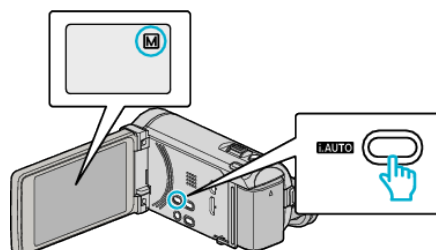You can adjust settings, such as brightness and shutter speed, by using the manual mode.
Manual recording can be set for both video and still image modes.

1 Open the LCD monitor and select the video or still image mode.

● The video 📹 or still image 📷 icon appears.

2 Select the Manual recording mode.

● If the mode is **i.A.** Intelligent Auto, press the i.AUTO button to switch to M Manual.
  The mode changes between Intelligent Auto and Manual with every press.

3 Tap "MENU".
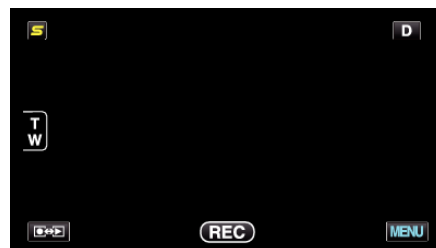
4 Tap the item to set manually.

VIDEO

SCENE SELECT   OFF
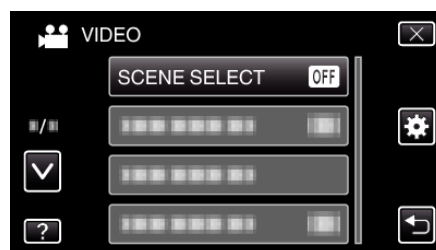
● For details on the various manual settings, refer to "Manual Recording Menu".

Memo :
● The manual settings are displayed only in the manual mode.

Manual Recording Menu

The following items can be set.

Name	Description
SCENE SELECT	● Recordings that suit the shooting conditions can be performed easily. "Scene Selection" (☞ p. 48)
FOCUS	● Use manual focus if the subject is not focused automatically. "Adjusting Focus Manually" (☞ p. 49)
FOCUS ASSIST	● Focused subject is outlined in color for more precise focus. "Using Focus Assist" (☞ p. 50)
FOCUS ASSIST COLOR	● Sets the color of the outline of a focused object when Focus Assist is used. "FOCUS ASSIST COLOR" (☞ p. 125)
BRIGHTNESS ADJUST	● Overall brightness on the screen can be adjusted. ● Use this when recording in a dark or bright location. "Adjusting Brightness" (☞ p. 50)
SHUTTER SPEED	● Shutter speed can be adjusted. ● Use this when shooting a fast-moving subject or to emphasize the subject's movement. "Setting Shutter Speed" (☞ p. 51)
APERTURE PRIORITY	● You can adjust the aperture to capture an image with only the subject in focus while blurring the surroundings. "Setting Aperture" (☞ p. 51)
WHITE BALANCE	● Overall color on the screen can be adjusted. ● Use this when the color on the screen appears differently from the actual color. "Setting White Balance" (☞ p. 52)
BACKLIGHT COMP.	● Corrects the image when the subject appears dark due to backlight. ● Use this when shooting against the light. "Setting Backlight Compensation" (☞ p. 53)
TELE MACRO	● Use this to take close-up (macro) shots of the subject. "Taking Close-up Shots" (☞ p. 54)

Scene Selection

Common scenes that are often encountered can be recorded with the most suitable settings.

1 Tap "MENU".
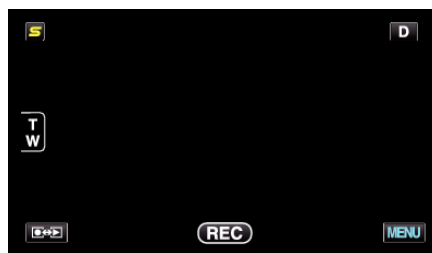
2 Tap "SCENE SELECT".
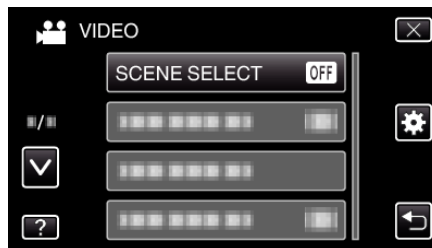
● Tap ∧ or ∨ to move upward or downward for more selection.
● Tap ✕ to exit the menu.
● Tap � to return to the previous screen.

3 Tap the appropriate scene.
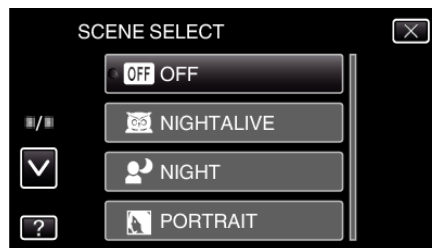
● Tap "OFF" to cancel the selection.
● Tap ∧ or ∨ to move upward or downward for more selection.
● Tap ✕ to exit the menu.
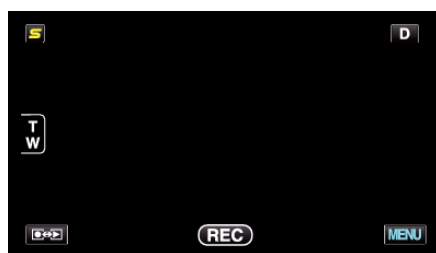● Tap ↰ to return to the previous screen.

*The image is only an impression.

Setting	Effect
🌙 NIGHTALIVE	Increases gain and brightens the scene automatically using a slow shutter when the surrounding is dark. To prevent camera shake, use a tripod.
🌃 NIGHT	Captures night scenes naturally.
👤 PORTRAIT	Blurs the background to bring out the people in the picture.
🏃 SPORTS	Captures fast-moving subjects clearly in every single frame.
⛷ SNOW	Prevents the subject from appearing too dark when recording snow scenes on a sunny day.
🔦 SPOTLIGHT	Prevents the human subject from appearing too bright under light.

Memo :
- All scenes of "SCENE SELECT" cannot be set during "TIME-LAPSE RECORDING".

Adjusting Focus Manually

Set this when the focus is not clear in Intelligent Auto or when manual focusing is desired.

1 Tap "MENU".

2 Tap "FOCUS".
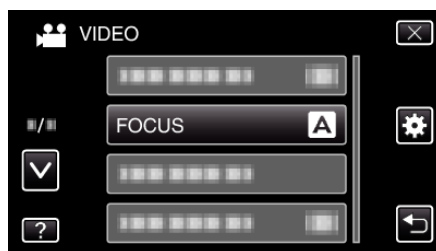
- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
- Tap ↰ to return to the previous screen.

3 Tap "MANUAL".
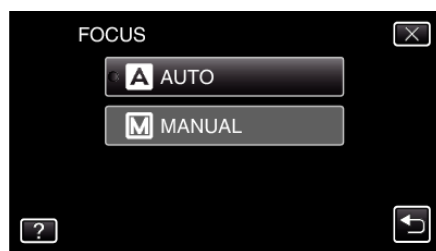
4 Adjust the focus.
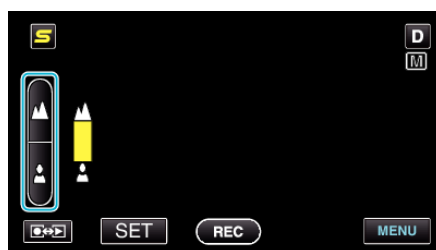
- Tap ▲ to focus on a distant subject.
- Tap ♦ to focus on a near subject.

5 Tap "SET" to confirm.
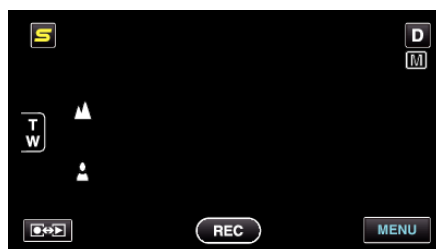
- When focus is confirmed, the focusing frame disappears and ▲ and ♦ are displayed. (The icons may appear blinking.)

Memo :
- A subject that is focused at the telephoto (T) end remains in focus when it is zoomed out to the wide angle (W) end.

Using Focus Assist

Focused subject is outlined in color for more precise focus.
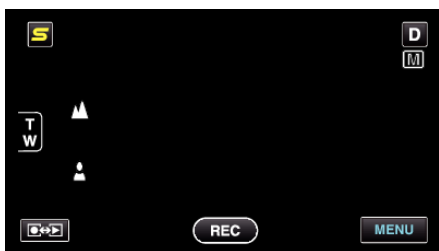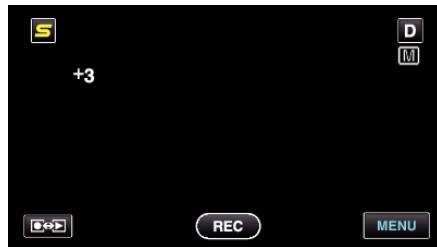
1 Tap "MENU".
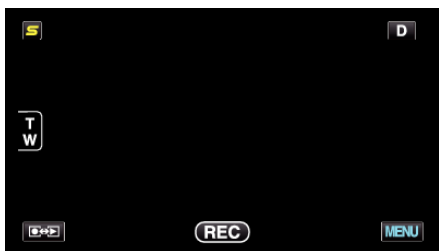
2 Tap "FOCUS ASSIST".

- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
- Tap ⟲ to return to the previous screen.

3 Adjust the focus.

- Tap ▲ to focus on a distant subject.
- Tap ▲ to focus on a near subject.

4 Tap "SET" to confirm.

Memo :

- The image becomes black and white while the outline of the focused object is displayed in the selected color. Change outline color if it becomes difficult to see.

"FOCUS ASSIST COLOR" (☞ p. 125)

Adjusting Brightness

You can adjust the brightness to your preferred level.

1 Tap "MENU".
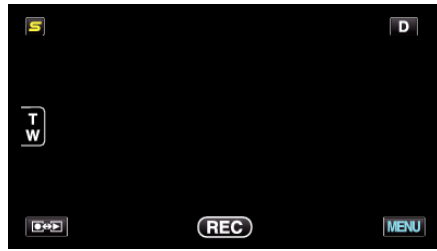
2 Tap "BRIGHTNESS ADJUST".

- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
- Tap ⟲ to return to the previous screen.

3 Tap "MANUAL".
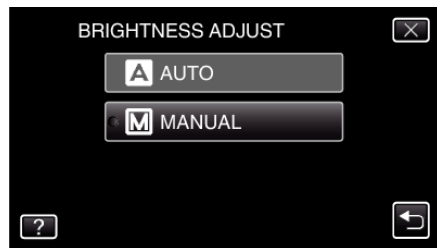
4 Adjust the brightness value.

- Compensation range during video recording: -6 to +6
- Compensation range during still image recording: -2.0 to +2.0
- Tap ∧ to increase the brightness.
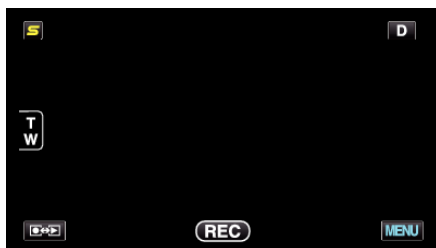- Tap ∨ to decrease the brightness.

5 Tap "SET" to confirm.

Memo :

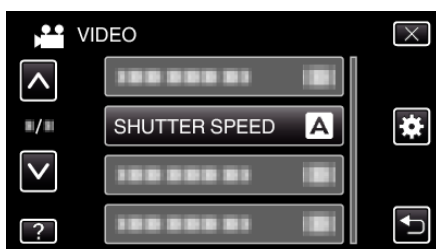- Settings can be adjusted separately for videos and still images.

Setting Shutter Speed

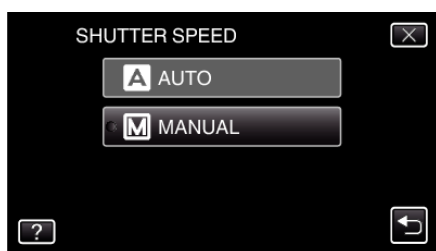You can set the shutter speed to suit the type of subject.
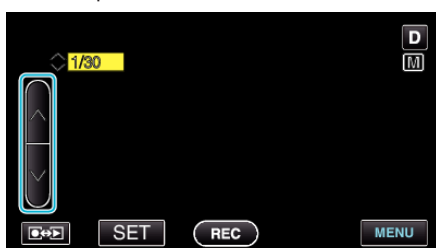
1 Tap "MENU".

2 Tap "SHUTTER SPEED".

- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
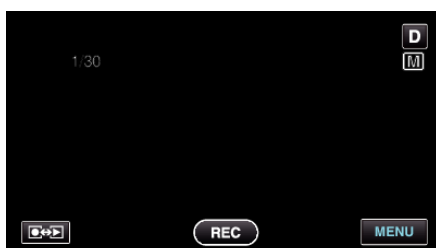- Tap ↰ to return to the previous screen.

3 Tap "MANUAL".

4 Adjust the shutter speed.

- Shutter speed can be set from 1/2 to 1/4000.
  (Up to 1/500 for still image.)
- Tap ∧ to increase the shutter speed.
- Tap ∨ to decrease the shutter speed.

5 Tap "SET" to confirm.

Memo :
- Settings can be adjusted separately for videos and still images.
- While fast-moving subjects can be captured clearly by increasing "SHUTTER SPEED", the screen appears darker. When recording in dark places such as indoors, check the brightness of the LCD monitor and set "SHUTTER SPEED" accordingly.
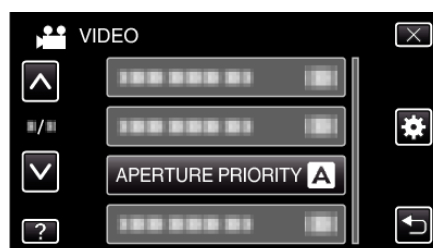
Setting Aperture

You can adjust the aperture to capture an image with only the subject in focus.
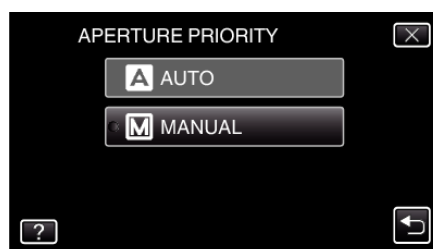
1 Tap "MENU".
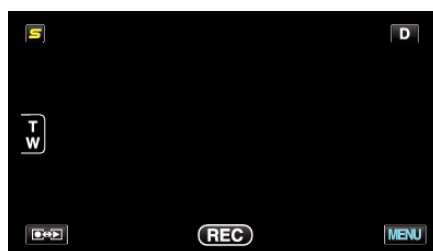
2 Tap "APERTURE PRIORITY".

- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
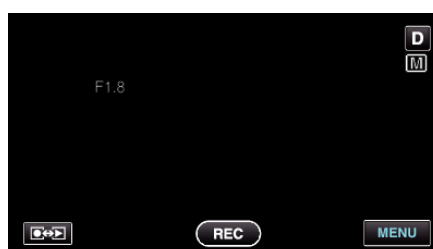- Tap ↰ to return to the previous screen.

3 Tap "MANUAL".

4 Adjust the aperture.

- Aperture can be set from F1.2 to F5.6.
- If you want the background to be in focus as well (larger aperture value), tap ∧.
- If you want the background to appear blurry (smaller aperture value), tap ∨.

5 Tap "SET" to confirm.

Memo :
- Settings can be adjusted separately for videos and still images.
- When zoomed to the telephoto end, setting the aperture to the minimum value (F1.2) does not stop it down all the way. In this case, the aperture value is set according to the zoom and indicated in yellow. Set the zoom to the wide angle end to enable the aperture to be stopped down all the way.

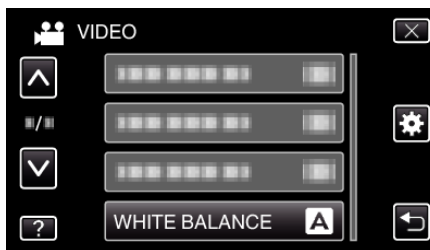● The larger the aperture value, the darker the subject appears.

Setting White Balance

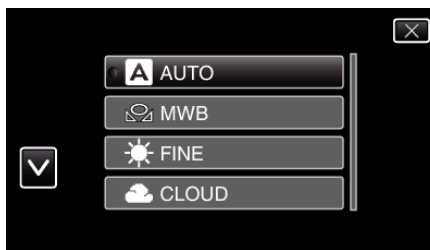You can set the color tone to suit the light source.

1 Tap "MENU".
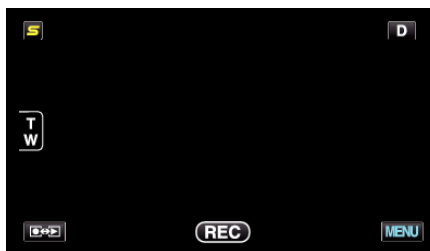
2 Tap "WHITE BALANCE".

● Tap ∧ or ∨ to move upward or downward for more selection.
● Tap ✕ to exit the menu.
● Tap ↰ to return to the previous screen.

3 Tap the appropriate shooting environment.

● Tap ∧ or ∨ to move the cursor.

Setting	Details
AUTO	Adjusts automatically to the natural colors.
MWB	Use this when the problem of unnatural colors is not resolved.
FINE	Set this when shooting outdoors on a sunny day.
CLOUD	Set this when shooting on a cloudy day or inside a shade.
HALOGEN	Set this when shooting under illumination such as a video light.
MARINE:BLUE	Set this when shooting the sea at deep water area (water appears blue) using an optional marine case.
MARINE:GREEN	Set this when shooting the sea at shallow water area (water appears green) using an optional marine case.

Using MWB

1 Hold a sheet of plain white paper in front of the lens so that the white paper fills the screen.

2 Tap "MWB" and keep touching while the icon appears and blinks.

3 Release your touch after the menu disappears and ꙮ lights up.
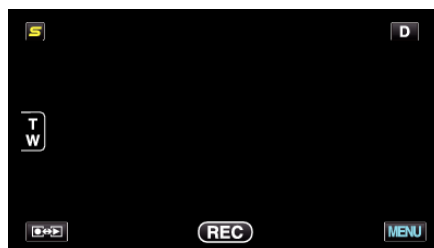
Memo :

● The setting will not change if "MWB" is being tapped too fast (less than 1 second).
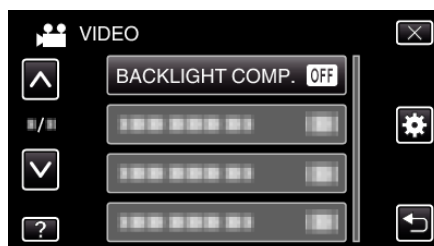
Setting Backlight Compensation

You can correct the image when the subject appears too dark due to backlight.
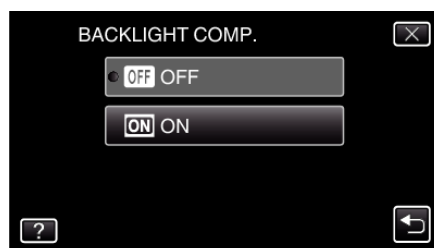
1 Tap "MENU".

2 Tap "BACKLIGHT COMP.".

● Tap ∧ or ∨ to move upward or downward for more selection.

● Tap ✕ to exit the menu.

● Tap � to return to the previous screen.

3 Tap "ON".
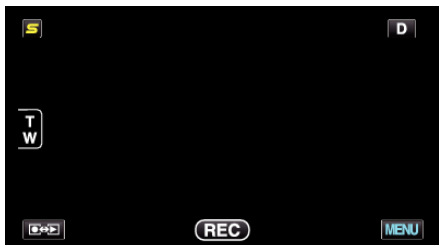

● After setting, the backlight icon appears.

Taking Close-up Shots

You can take close-up shots of an object using the tele macro function.

*The image is only an impression.

1 Tap "MENU".

2 Tap "TELE MACRO".

- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
- Tap ↰ to return to the previous screen.

3 Tap "ON".

- After setting, the tele macro icon 🔍 appears.

| Setting	Details
OFF	Enables close-up shots up to 1 m at the telephoto (T) end. Enables close-up shots up to 5 cm at the wide angle (W) end.
ON	Enables close-up shots up to 60 cm at the telephoto (T) end. Enables close-up shots up to 5 cm at the wide angle (W) end.

Caution :
- When you are not taking close-up shots, set "TELE MACRO" to "OFF". Otherwise, the image may be blur.

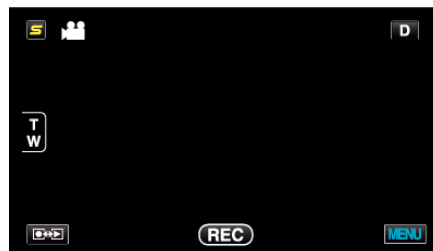## Creating Animation Effects (ANIMATION EFFECT)

You can add various effects to videos to create a different atmosphere from the usual recording.

1 Open the LCD monitor and select the video mode.
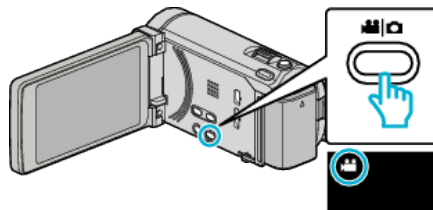
- The video mode icon appears.

2 Tap "MENU".

3 Tap "ANIMATION EFFECT".
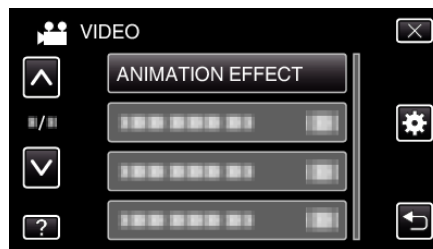
- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
- Tap ↰ to return to the previous screen.
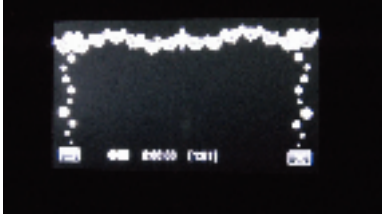
4 Select a desired effect and tap "SET".
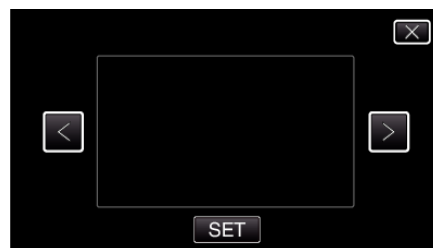
- Tap < or > to select an item.
- To select another effect, tap ↰. To cancel the effect, tap ✕.

Memo :
- After setting the animation effect, press the START/STOP button on this unit to start recording.

During Setting	After Setting	Note
		Animation (effect) appears when smiles are detected.
		Animation (effect) appears when smiles are detected.
		Animation (effect) appears when smiles are detected.
		Animation (effect) appears when smiles are detected.
		Animation (effect) appears when the screen is touched.

Registering Human Face Personal Authentication Information

By registering the face of a person beforehand, focus and brightness can be adjusted automatically by the face tracking function. Up to 6 faces, together with names and priority levels, can be registered.
It is recommended to register the faces that are often being recorded by this camera beforehand.

1 Select video or still image mode.
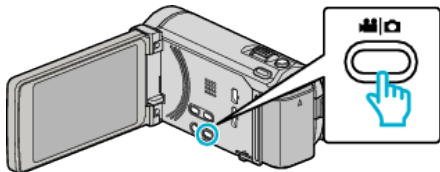
● The video or still image mode icon appears.

2 Tap "MENU".

3 Tap "FACE REGISTRATION".

● Tap ∧ or ∨ to move upward or downward for more selection.
● Tap ✕ to exit the menu.
● Tap ↰ to return to the previous screen.

4 Tap "REGISTER NEW FACE".
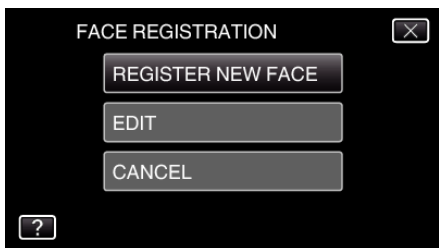
5 Point the camera toward the human subject.
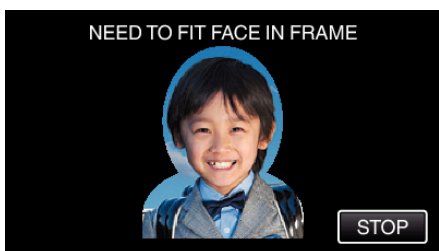
● Information is collected before face registration recording. The frame appears blinking while information is being collected.
● Adjust to fit the face within the frame while it is blinking. The frame stops blinking and lights up after information collection is complete.
● To cancel the registration, tap "STOP".
When "CANCEL FACE RECOGNITION?" appears, tap "YES" to return to the normal recording mode.

6 Tap "RECORD" and record the face from the front.

● A face is captured to be used on the face registration index screen.
● Other than tapping "RECORD", you can also record by pressing the SNAPSHOT button fully.
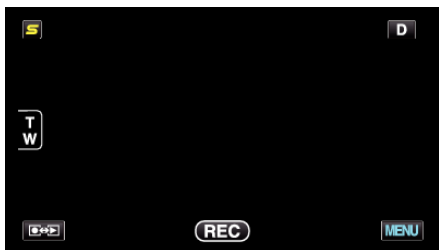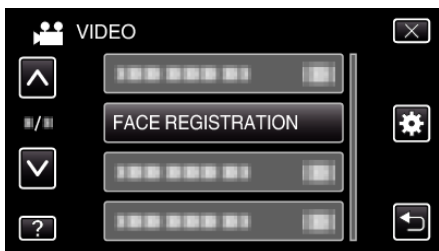● A sound can be heard when recording is complete.
● To cancel the registration, tap "STOP".
When "CANCEL FACE RECOGNITION?" appears, tap "YES" to return to the normal recording mode.

7 Tap "YES" to continue recording.
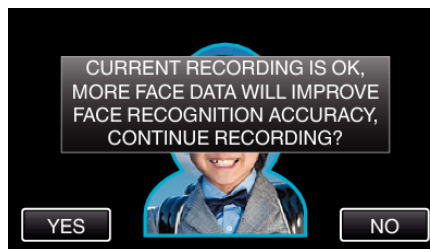
● To proceed to collect face information in the four directions of up, down, left, and right, tap "YES". It is recommended to continue recording to increase the accuracy of face recognition.
● To end face registration recording, tap "NO". Go to step 10.

8 Rotate the face slowly in four directions to register the face information.

● Rotate the face slowly while looking at the camera. A sound can be heard when recording is complete for each direction. (4 times in total) Repeat the step until recording (registration) is complete for all directions.
● Registration of the four directions may fail depending on the shooting environment. In this case, tap "STOP" to cancel recording, then tap "NO" and go to step 10.
● If the face cannot be properly recognized during recording, register the face again.

9 Face the camera with a smiling face.

● Recording starts automatically. Using the smile % display as a reference, smile such that the value is as high as possible.
● A sound can be heard when recording is complete.
● To cancel recording of smiling face and proceed to enter a name, tap "STOP", then tap "NO" and go to step 10.

10 Tap "OK".
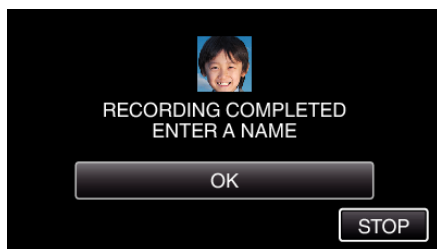
- Tapping "OK" registers the recorded face and the screen for entering a name appears.
- To cancel the registration, tap "STOP".
  When "CANCEL FACE RECOGNITION?" appears, tap "YES" to return to the normal recording mode.

11 Tap on the on-screen keyboard to enter a name, then tap "REG.".
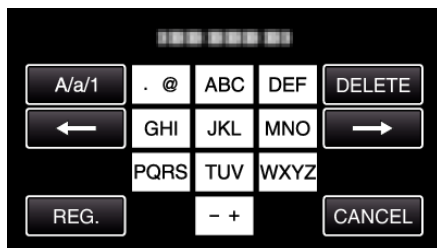
- Tap "DELETE" to delete a character.
- Tap "CANCEL" to exit.
- Tap "A/a/1" to select character input type from upper case letter, lower case letter, and number.
- Tap ← or → to move one space to the left or right.
- Up to 8 characters can be entered.
- How to input characters
  Example: To enter "KEN"
  Tap "JKL" 2 times → Tap "DEF" 2 times → Tap "MNO" 2 times

12 Tap the desired priority level, then tap "REG.".
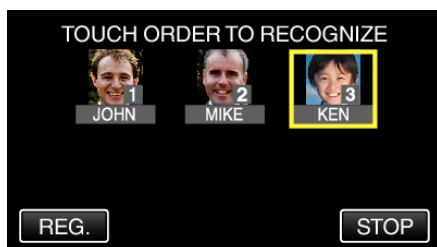
- Upon registration, the last number is assigned as the priority level. During face detection, the subject with the highest priority (lowest number) will be detected.
- You can change the priority level of a subject by tapping on the number.
  Example: To change the priority level of number 3 to number 1, tap number 1. The priority level of the registered subject becomes number 1, while the priority levels of the original number 1 and the ones below drop by one place. (In this example, the original number 1 becomes number 2, and the orignal number 2 becomes number 3.)
- When "REG." is tapped, the registration complete screen appears.
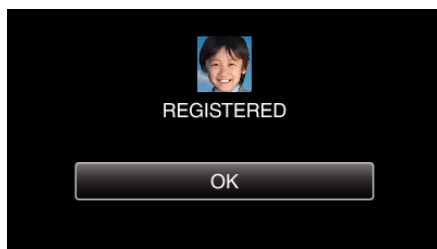
- Tap "OK" to complete the registration.
- You can edit registered face information in "EDIT".

Memo :
- Faces may not be registered correctly in the following cases:
  - when the face appears either too small or too large compared to the frame
  - when it is too dark or too bright
  - when the face appears horizontal or slanted
  - when a part of the face is hidden
  - when there are multiple faces within the frame
- To increase the accuracy of face recognition, fit only one face within the frame and register in a bright environment.
- Faces may not be recognized correctly depending on the shooting conditions and environment. In this case, register the face again.
- Faces may not be recognized correctly during recording if the face recognition level is low. In this case, register the face again.
- Face tracking, face sub-window, and name display may not work properly depending on the registered faces, shooting conditions (distance, angle, brightness, etc.), and expressions.
- Face tracking, face sub-window, and name display may not work properly for people with similar facial features, such as siblings, parents, children, etc.

Setting SMILE%/NAME DISPLAY

"SMILE%/NAME DISPLAY" allows you to set the items to display when faces are detected.
This item is only displayed when "TOUCH PRIORITY AE/AF" is set to "FACE TRACKING".
"Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)" (☞ p. 61)

1 Open the LCD monitor and select the video or still image mode.
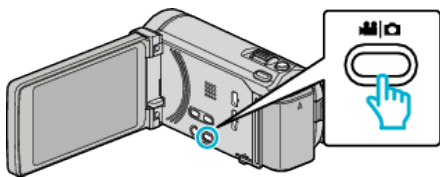
● The video or still image mode icon appears.

2 Tap "MENU".

3 Tap "SMILE%/NAME DISPLAY".

4 Tap the desired setting.

Setting	Details
OFF	Displays only the frames when faces are detected.
ON	Displays the frames, names, and smile levels (%) when faces are detected.

● Frame: Appears around detected faces.
  Name: Appears for faces that are registered.
  Smile level: Appears in value (0 % - 100 %) for detected smiles.

Memo :

● The camera is able to detect up to 16 faces. Smile levels will be displayed for up to 3 of the largest faces displayed on the screen.

● Some faces may not be detected depending on the shooting environment.

● You can register personal authentication information like face, name, and priority level of person before recording.

● Up to 3 registered names will be displayed according to the priority level.

"Registering Human Face Personal Authentication Information" (☞ p. 56)

● "SMILE%/NAME DISPLAY" is set to "ON" when the demo mode is activated.

"DEMO MODE" (☞ p. 148)

Editing the Registered Face Information

Editing Registered Face Information

You can change the name, priority level, and face information that are registered.

1 Tap "MENU".
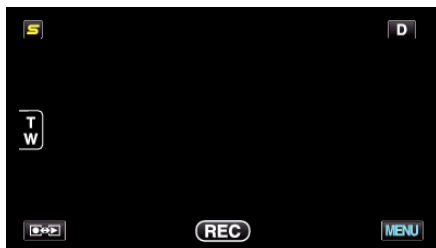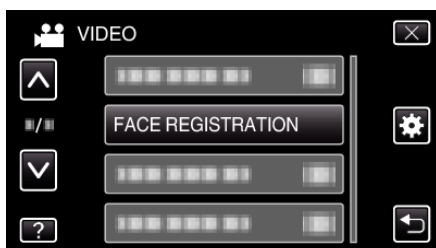
2 Tap "FACE REGISTRATION".

- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
- Tap ↰ to return to the previous screen.

3 Tap "EDIT".
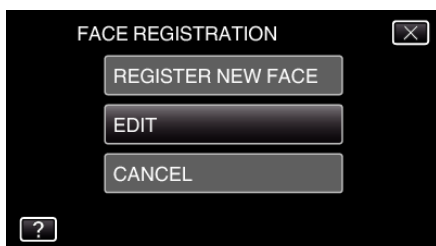
4 Tap the person to edit.
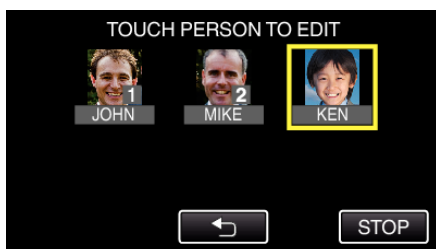
5 Tap the item to edit.
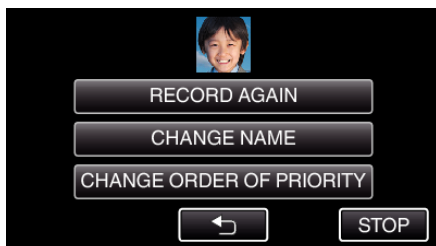
- If you select "RECORD AGAIN", proceed to step 5 in ""Registering Human Face Personal Authentication Information" (☞ p. 56) ".
- If you select "CHANGE NAME", proceed to step 11 in ""Registering Human Face Personal Authentication Information" (☞ p. 57) ".
- If you select "CHANGE ORDER OF PRIORITY", proceed to step 12 in ""Registering Human Face Personal Authentication Information" (☞ p. 57) ".

"Registering Human Face Personal Authentication Information" (☞ p. 56)

Canceling (Deleting) Registered Face Information

You can cancel (delete) the face information that is registered.

1 Tap "MENU".

2 Tap "FACE REGISTRATION".

- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
- Tap ↩ to return to the previous screen.

3 Tap "CANCEL".
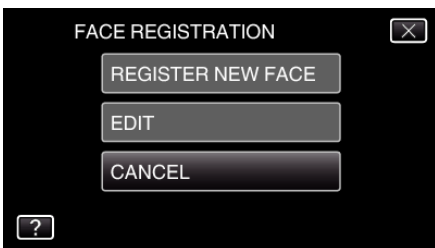
4 Tap the person to cancel registration of.
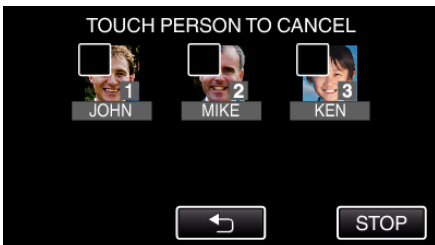
- 🗑 appears on the selected person.
- To remove 🗑 from a person, tap on the person again.

5 Tap "SET".

6 Tap "YES".

- Tap "YES" to delete the face information of the selected person.
- Tap "NO" to return to the previous screen.
- Tap "OK" when the deletion complete screen appears.
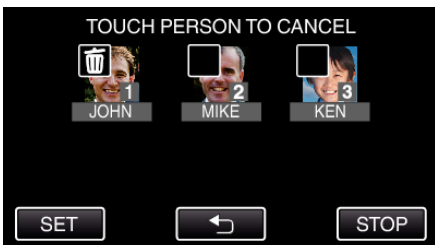
Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)

"TOUCH PRIORITY AE/AF" is a function that adjusts focus and brightness based on a tapped position.
By registering the face of a person beforehand, you can enable tracking of the person even without specific selection during recording.
This function is available for both videos and still images.

● You can set this function by pressing the AF button too. (for GZ-HM860)

"AF Button (for GZ-HM860)" (☞ p. 156)

1 Select video or still image mode.
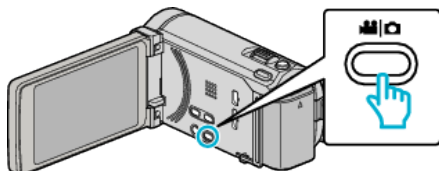
● The video or still image mode icon appears.

2 Tap "MENU".
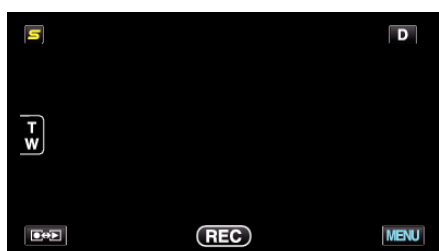
3 Tap "TOUCH PRIORITY AE/AF".
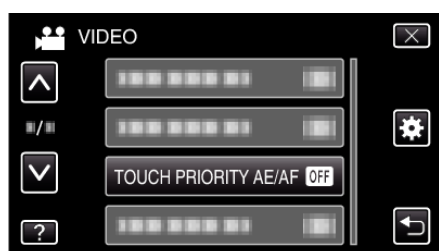
● Tap ∧ or ∨ to move upward or downward for more selection.
● Tap ✕ to exit the menu.
● Tap ↺ to return to the previous screen.

4 Tap the desired setting.

FACE TRACKING   COLOR TRACKING   AREA SELECT

● Focus and brightness will be adjusted automatically based on the tapped position (face/color/area). A blue frame appears around the selected subject (face/color), while a white frame appears around the selected area.
● To reset, tap the desired position (face/color/area) again.
● To cancel "FACE TRACKING", tap the blue frame.
● To cancel "COLOR TRACKING", tap the blue frame.
● To cancel "AREA SELECT", tap the white frame.

| Setting	Details
OFF	Deactivates the function.
FACE TRACKING	😊 appears on the screen. Recording is performed while tracking and automatically adjusting the tapped face (subject) with appropriate focus and brightness. In addition, a blue frame appears around the tapped face (subject). (When the face of a person is registered, it becomes the main subject and the blue frame appears even without specific selection.)
COLOR TRACKING	COLOR appears on the screen. Recording is performed while tracking and automatically adjusting the tapped color (subject) with appropriate focus and brightness. In addition, a blue frame appears around the tapped color (subject).
AREA SELECT	↳ appears on the screen. Recording is performed while automatically adjusting the tapped area (fixed position) with appropriate focus and brightness. In addition, a white frame appears around the tapped area.

Memo :
● When "TOUCH PRIORITY AE/AF" is set, "FOCUS" will be set to "AUTO" automatically.
● If the camera loses track of a subject, tap the subject again.
● Settings are canceled when zoom operation is performed. ("AREA SELECT" only)
● When "FACE TRACKING" is set after face registration, the blue frame appears around the face with the highest priority registered.
● When recording registered faces using "FACE TRACKING", focus and brightness will be adjusted automatically even without specific selection. In addition, registered faces may be tracked back again even if they are lost. Therefore, it is recommended to register the faces that are often being recorded by this camera beforehand.

"Registering Human Face Personal Authentication Information" (☞ p. 56)

● When "COLOR TRACKING" is set, the targeted subject (color) may change if similar colors are detected. In this case, tap the subject again. The targeted subject (color) may also be tracked back again if it appears in the center of the screen within a specific time.

Caution :
● Subjects near the sides of the LCD monitor may not respond or be recognized when tapped. In this case, move the subject to the center and tap again.
● "COLOR TRACKING" may not function properly in the following cases:
  - when recording subjects with no contrast
  - when recording subjects that are moving at high speed
  - when recording in a dark place
  - when the surrounding brightness changes
● When "FACE TRACKING" is set, the subject may be lost if the camera is moved vertically or horizontally very fast. For unregistered faces, they cannot be tracked back again. To track back the subject, tap on it again. For registered faces, focus and brightness will be adjusted automatically even without specific selection. In addition, registered faces may be tracked back again even if they are lost. Therefore, it is recommended to register the faces that are often being recorded by this camera beforehand.

"Registering Human Face Personal Authentication Information" (☞ p. 56)

Capturing Smiles Automatically (SMILE SHOT)

"SMILE SHOT" automatically captures a still image upon detection of a smile.
This function is available for both videos and still images.

1 Select video or still image mode.
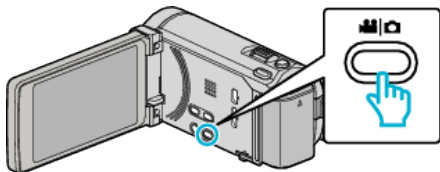
- The video or still image mode icon appears.

2 Tap "MENU".
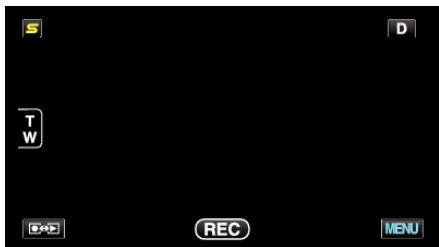
3 Tap "SMILE SHOT".

- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
- Tap ↰ to return to the previous screen.

4 Tap "ON".
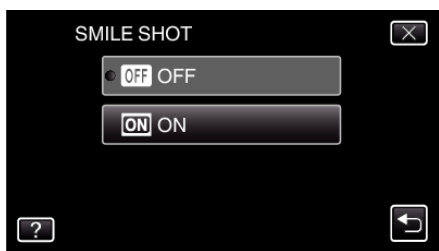
5 Point the camera toward the human subject.

- A still image is automatically captured when smiles are detected.
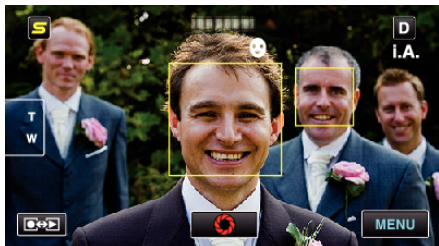
- PHOTO lights up when a still image is being captured.
- You can display the name and smile level (%) together with the frame by setting "SMILE%/NAME DISPLAY" in the menu to "ON" before recording.
  "Setting SMILE%/NAME DISPLAY" (☞ p. 58)

Memo :

- This function may not work properly depending on the shooting conditions (distance, angle, brightness, etc.) and the subject (direction of face, smile level, etc.). It is also difficult to detect a smile in backlight.
- After a smile is detected and captured, it takes time before the next recording may be performed.
- "SMILE SHOT" does not work in the following cases:
  - when menu is being displayed
  - when remaining recording time or battery power is being displayed
  - when "FACE SUB-WINDOW" is set
  - when "ANIMATION EFFECT" is set

"Recording while Displaying a Magnified View of a Selected Face (FACE SUB-WINDOW)" (☞ p. 63)
"Creating Animation Effects (ANIMATION EFFECT)" (☞ p. 54)

Caution :

- When "TOUCH PRIORITY AE/AF" is set to "AREA SELECT" or "COLOR TRACKING", "SMILE SHOT" does not work.
- If appropriate results cannot be obtained, record with "SMILE SHOT" set to "OFF".

Recording while Displaying a Magnified View of a Selected Face (FACE SUB-WINDOW)

You can record while viewing both the overall image of the scene and magnified image of a subject's expression. Frames appear around the faces that can be magnified. Tap a frame to track and magnify the face in a sub-window.

1 Open the LCD monitor and select the video mode.
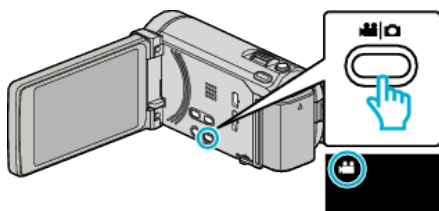
● The video mode icon appears.

2 Tap "MENU".
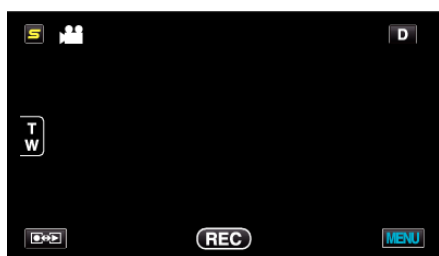
3 Tap "FACE SUB-WINDOW".

4 Tap on the frame of the face to magnify.
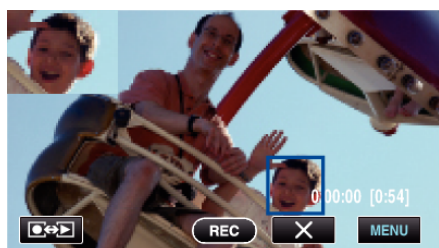
● When the face within a frame is tapped, it is displayed in a sub-window. The display position of the sub-window is set automatically according to the position of the tapped face.

● The frame of the tapped face changes to blue.

● When the tapped face disappears from the screen, the sub-window disappears too. When the face reappears on the screen., the sub-window is displayed again automatically.

● To exit "FACE SUB-WINDOW", tap "✕".

Caution :

● Take note of the following when "FACE SUB-WINDOW" is set.
  - Functions such as digital zoom, zoom operation on the touch screen, simultaneous still image recording, "TIME-LAPSE RECORDING", "HIGH SPEED RECORDING", and "AUTO REC" are not available.
  - Settings such as "FOCUS" and "BRIGHTNESS ADJUST" are set to "AUTO" automatically.
  - If "TOUCH PRIORITY AE/AF" is set to FACE TRACKING, appropriate focus and brightness will be adjusted for the person displayed in the sub-window.
  - "ANIMATION EFFECT" is not available.

● The sub-window display will also be recorded.

Memo :

● When a face is magnified and displayed in the sub-window, only the name of the person will be displayed.

● The face sub-window mode is canceled when the power is turned off.

● Frames do not appear around the faces in the face sub-window mode as easily as in the other modes. They appear around the faces that can be magnified only. The frames do not appear in the following cases:
  - when the face of the subject is extremely small
  - when the surrounding is too dark or too bright
  - when the face appears horizontal or slanted
  - when the face appears bigger than the sub-window (such as when it is zoomed in)
  - when a part of the face is hidden

"Registering Human Face Personal Authentication Information" (☞ p. 56)

Reducing Camera Shake

When the image stabilizer is set, camera shake during recording can be effectively reduced.

1 Open the LCD monitor and select the video mode.
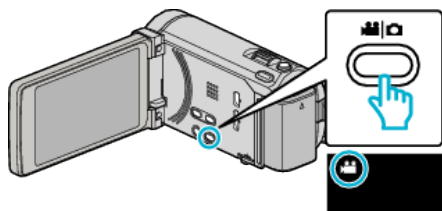
2 Tap "MENU".
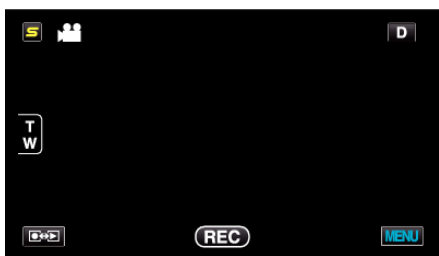
3 Tap "DIS" (image stabilizer).
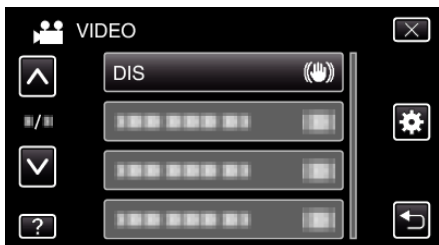
● Tap ∧ or ∨ to move upward or downward for more selection.

● Tap ✕ to exit the menu.

● Tap ⤺ to return to the previous screen.

4 Tap the desired setting.

Setting	Details
OFF	Deactivates image stabilizer.
ON	Reduces camera shake under normal shooting conditions.
ON (AIS)	Reduces camera shake more effectively when shooting bright scenes on the wide angle end. Only on the wide angle end (approx. 5x).

Setting the Enhanced AIS Mode

The area of correction in the enhanced AIS mode is greater than that in the AIS mode. Camera shake can be reduced more effectively even when recording is performed by zooming from wide angle to telephoto, or moving together with the subject.
Set the enhanced AIS mode as follows.

1 Assign "DIS" to the USER button.
"Setting the USER Button" (☞ p. 71)
2 Press and hold the USER button.

● The Enhanced AIS mode is set and (((⋓))₊₂ is displayed. The mode is canceled when the button is released.
To perform recording in the Enhanced AIS mode, press the record button while holding the USER button. The mode is canceled when recording is stopped.

Memo :

● It is recommended to set the image stabilizer to "OFF" when shooting a subject of little movement with the unit on a tripod.

● Complete stabilization may not be possible if camera shake is excessive.

● This setting is effective for video recording only.

Taking Videos in iTunes Format

By recording with the EXPORT setting turned on, you can transfer the videos to Apple's software iTunes when this unit is connected to a PC.
"LIB." is displayed when recording videos in iTunes format.
Use the provided software to transfer the videos.
"Installing the Provided Software (Built-in)" (☞ p. 114)

Memo : ─────────────────────────────────────

For more information on iTunes and iPod, please visit the following website.
http://www.apple.com/itunes/

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1 Select video mode.
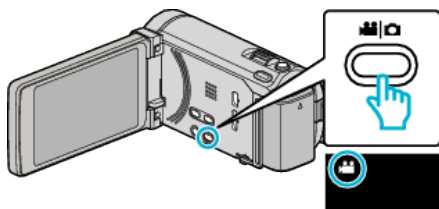
- The video mode icon appears.

2 Tap "MENU".

3 Tap "EXPORT SHOOTING".
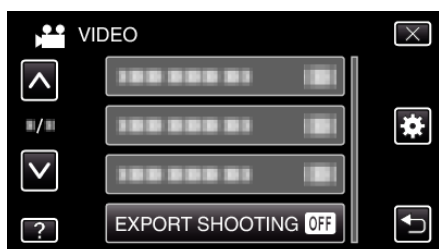
4 Tap "ON".
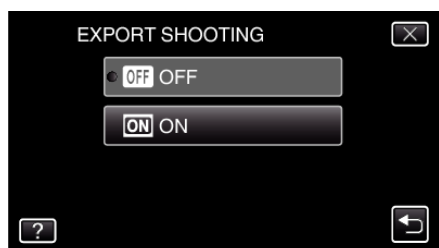
- When set to "ON", a "LIB." mark appears on the screen.
- To cancel this setting, set to "OFF".

5 Start recording.
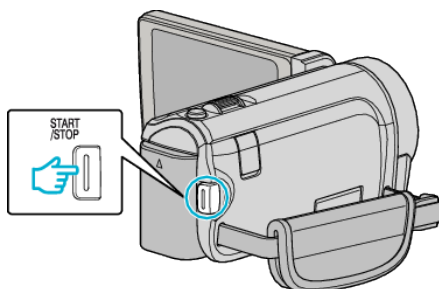
- Press again to stop.

Memo : ─────────────────────────────────────

- "EXPORT SHOOTING" is not available when "TIME-LAPSE RECORDING" is set.

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Transferring Recorded Videos to iPod

You can export videos to iTunes using the provided software Everio MediaBrowser 3 BE.
Install the software on your PC and connect this unit to the PC.

- For details on how to use the software, refer to the help file.
- For details on transferring files to iPod, refer to the help file of iTunes.

"Installing the Provided Software (Built-in)" (☞ p. 114)
"Backing Up All Files" (☞ p. 115)

Trouble with Exporting Files to iTunes

- Refer to "Q&A", "Latest Information", "Download Information", etc. in "Click for Latest Product Info" in the help file of the provided software Everio MediaBrowser 3 BE.

Slow-motion (High-speed) Recording

You can record videos in slow-motion by increasing the recording speed to emphasize the movements, and play back the slow-motion video smoothly. This is a handy function for checking movements, such as golf swings.

Recording Speed	300 fps
Image Size	720×480
Maximum Recording Time	144 m
Maximum Playback Time	12 h
Image Size when Connected to Monitor	1,920×1,080

1 Open the LCD monitor and select the video mode.
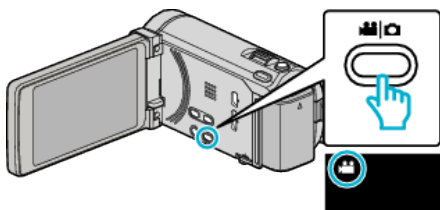
● The video mode icon appears.

2 Tap "MENU".
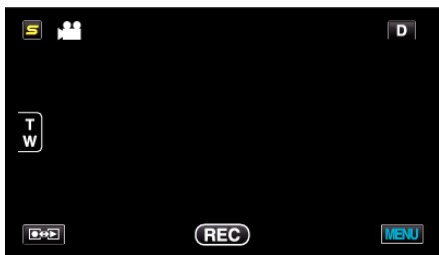
3 Tap "HIGH SPEED RECORDING".

4 Tap "ON".

● When "ON" is tapped, 300 frames can be recorded in 1 second.
● To cancel high-speed recording, tap "OFF".

5 Start recording.
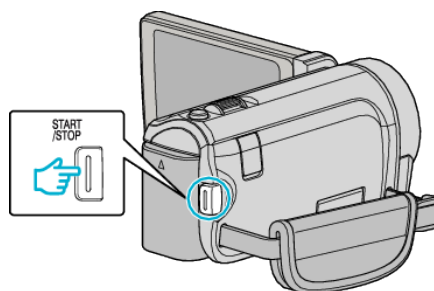
● Press the START/STOP button again to stop recording.
● Settings of high-speed recording are not saved when the power is turned off.

Memo :
● Images may appear grainier than other videos. The image displayed on the LCD monitor during recording also may also appear grainier.
● Audio sound is not recorded together with the video.
● When high-speed recording is enabled, only the optical zoom can be used. However, zooming cannot be performed after recording starts.
● The playback time will be 5 times of the actual recorded time. (Example: If the recorded time is 1 minute, the playback time will be 5 minutes.)
● During high-speed recording, "TOUCH PRIORITY AE/AF" is set to "OFF". In addition, as "DIS" is set to "OFF", it is recommended that a tripod be used, and recording be performed in a bright location with the subject magnified as much as possible.

"Tripod Mounting" (☞ p. 22)

Recording at Intervals (TIME-LAPSE RECORDING)

Enables the changes of a scene that occur slowly over a long period to be shown within a short time by taking frames of it at a certain interval.
This is useful for making observations such as the opening of a flower bud.

1 Open the LCD monitor and select the video mode.
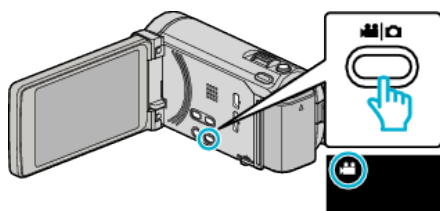
- The video mode icon appears.

2 Tap "MENU".
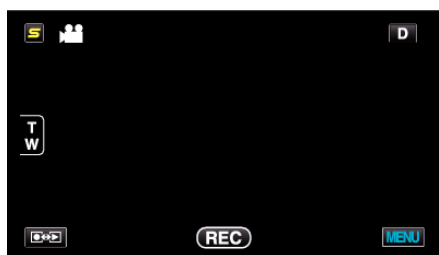
3 Tap "TIME-LAPSE RECORDING".

- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
- Tap ↩ to return to the previous screen.

4 Tap to select a recording interval (1 to 80 seconds).
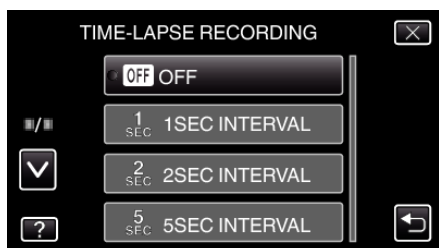
- The greater the number of seconds, the longer the recording interval.
- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
- Tap ↩ to return to the previous screen.

5 Start recording.
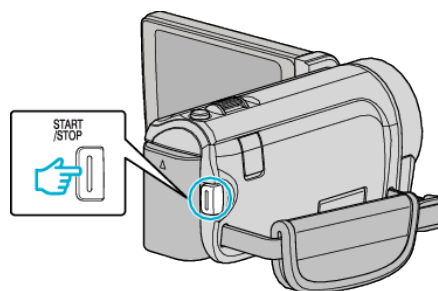
- A frame is taken at intervals of the selected period.
- When the recording interval is set to "20SEC INTERVAL" or higher, this unit switches to the power-saving mode between recordings.
  At the next point to record, the power-saving mode will be turned off and recording will start automatically.
- Press the START/STOP button again to stop recording.

Indications During Time-Lapse Recording
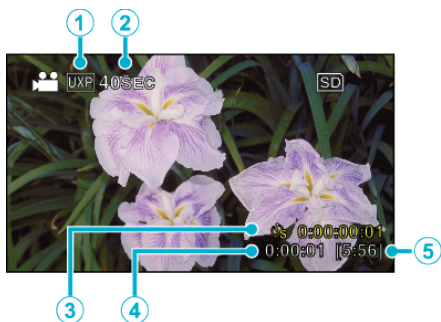
	Display	Description
①	Video Quality	Displays the icon of the video quality that is set.
②	Speed Indicator	Displays the recording interval that is set.
③	Recorded Time	Displays the actual recorded time of the video. Recorded time increases in units of frames.
④	Actual Elapsed Time	Displays the actual elapsed time after recording starts.
⑤	Remaining Recording Time	Remaining time left to record with the currently selected video quality.

Time-Lapse Setting

The greater the number of seconds, the longer the recording interval.

Setting	Details
OFF	Deactivates the function.
1SEC INTERVAL	Takes a frame at 1-second intervals. Recorded videos will be played back at 30 times speed.
2SEC INTERVAL	Takes a frame at 2-second intervals. Recorded videos will be played back at 60 times speed.
5SEC INTERVAL	Takes a frame at 5-second intervals. Recorded videos will be played back at 150 times speed.
10SEC INTERVAL	Takes a frame at 10-second intervals. Recorded videos will be played back at 300 times speed.
20SEC INTERVAL	Takes a frame at 20-second intervals. Recorded videos will be played back at 600 times speed.
40SEC INTERVAL	Takes a frame at 40-second intervals. Recorded videos will be played back at 1 200 times speed.
80SEC INTERVAL	Takes a frame at 80-second intervals. Recorded videos will be played back at 2 400 times speed.

Caution :

- Audio cannot be recorded during time-lapse recording.
- Zooming, simultaneous still image recording, and image stabilizer are not available in time-lapse recording.
- When recording is stopped with the recorded time less than "0:00:00:17" , the video will not be saved.
- Seamless recording is disabled in time-lapse recording.

Memo :

- Settings of time-lapse recording are not saved when the power is turned off.
- Recording stops automatically 99 hours after it is started.
- Make use of a tripod and AC adapter for time-lapse recordings with long intervals.
  It is also recommended to fix the focus and white balance manually.

"Tripod Mounting" (☞ p. 22)
"Adjusting Focus Manually" (☞ p. 49)
"Setting White Balance" (☞ p. 52)

Recording Automatically by Sensing Movements (AUTO REC)

This function enables the unit to record automatically by sensing the changes in subject's movement (brightness) within the red frame displayed on the LCD monitor. (AUTO REC)
It can be set for both video and still image modes.

1 Select video or still image mode.
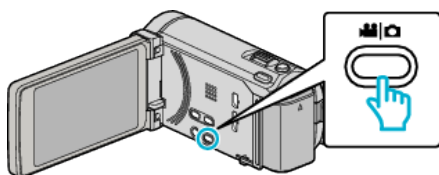
● The video or still image mode icon appears.

2 Compose the picture according to the subject.

● Adjust the angle of view with the zoom, etc.

3 Tap "MENU".
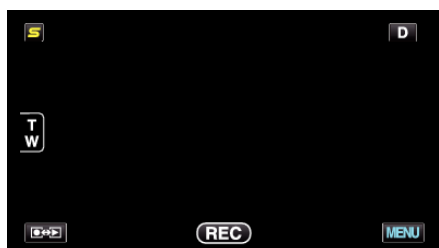
4 Tap "AUTO REC".

● Tap ∧ or ∨ to move upward or downward for more selection.
● Tap ✕ to exit the menu.
● Tap ↩ to return to the previous screen.

5 Tap "ON".
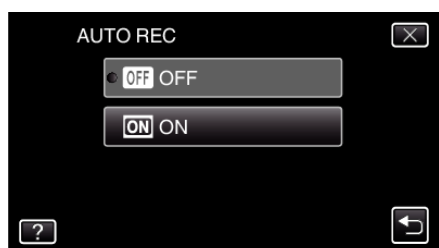
6 Recording starts automatically when the subject within the red frame moves.
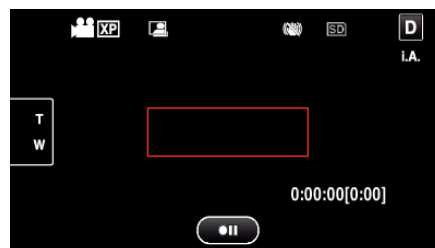
● A red frame appears 2 seconds after the menu display disappears.
● For video recording, recording continues while there are still movements of the subject (changes in brightness) within the red frame. When there are no more movements of the subject (changes in brightness) within the red frame, recording will stop in 5 seconds.
● To stop video recording manually, press the START/STOP button. However, as the "AUTO REC" setting remains at "ON" even after the video recording is stopped, recording starts again when movements of the subject (changes in brightness) are detected within the red frame. To cancel "AUTO REC", set it to "OFF".

Caution :

● The only manual recording setting available is "TELE MACRO". The rest are all set to "AUTO".
● Digital zoom, image stabilizer, self-timer, and continuous shooting are not available after "AUTO REC" is set.
● "AUTO REC" cannot be used together with "TIME-LAPSE RECORDING". When both are set, priority is given to "TIME-LAPSE RECORDING".
● "IMAGE SIZE" cannot be changed after "AUTO REC" is selected. Set it before selecting "AUTO REC".
● The auto power off and power-saving modes are not available after "AUTO REC" is set.

Memo :

● Recording stops when there are no changes for 5 seconds during video recording.
● Settings of "AUTO REC" are not saved when the power is turned off.
● Recording may not start when the movements of the subject within the red frame are too fast or the changes in brightness are too small.
● Recording may start due to changes in brightness even if there is no movement within the red frame.
● While zooming, recording cannot be started.

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Taking Group Shots (Self-timer)

The 10-second self-timer and Face Detection self-timer are convenient functions for taking group photos.
The 2-second self-timer is useful for preventing camera shake caused by pressing the shutter button.

Memo :
When shooting a photo using the self-timer function, use of a tripod is recommended.
"Tripod Mounting" (☞ p. 22)

Using the 2-/10-second Self-timer

1 Select still image mode.
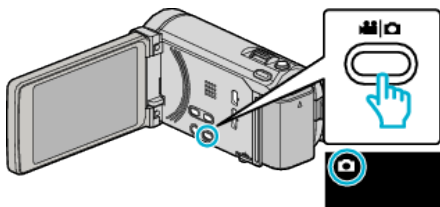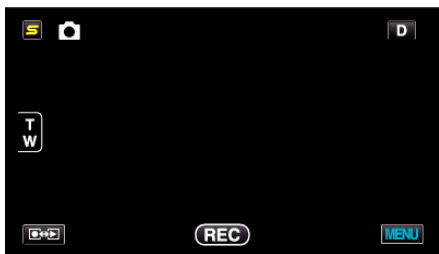
● The still image mode icon appears.

2 Tap "MENU".

3 Tap "SELF-TIMER".

● Tap ∧ or ∨ to move upward or downward for more selection.
● Tap ✕ to exit the menu.
● Tap ⤺ to return to the previous screen.

4 Tap "2SEC" or "10SEC".

5 Set the focus on the subject.
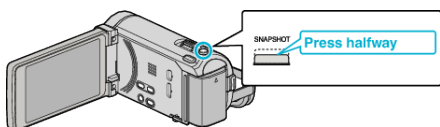
● When focused, the focus icon lights up in green.

6 Take a still image.
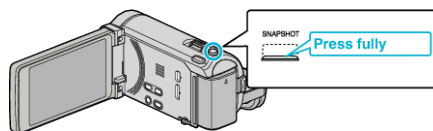
● A timer appears and countdown to shooting starts.
● To stop the self-timer, press the SNAPSHOT button again.

Using the Face Detection Self-timer

Pressing the SNAPSHOT button starts face detection, and shooting is performed three seconds after another person enters the frame.
This function is useful when you want to include the photographer in the group photo.

1 Select still image mode.
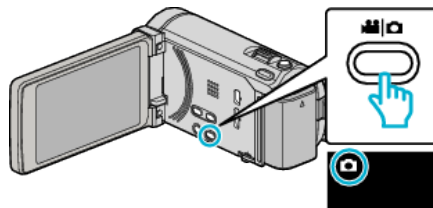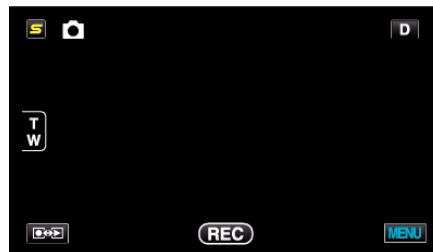
● The still image mode icon appears.

2 Tap "MENU".

3 Tap "SELF-TIMER".

● Tap ∧ or ∨ to move upward or downward for more selection.
● Tap ✕ to exit the menu.
● Tap ⤺ to return to the previous screen.

4 Tap "FACE DETECTION".

5 After making sure that everyone is facing the camera, press the SNAPSHOT button.
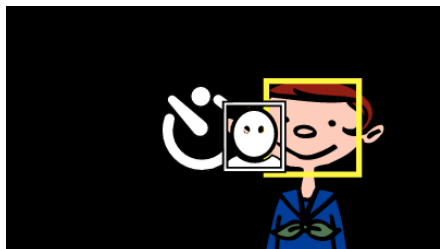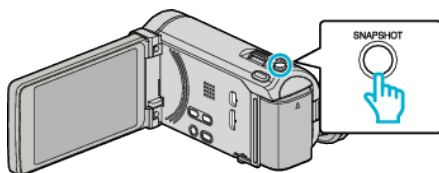
- Frames appear around the faces of the subjects.
- Pressing the SNAPSHOT button again starts the 10-second self-timer.

6 The photographer enters the frame.

Photographer
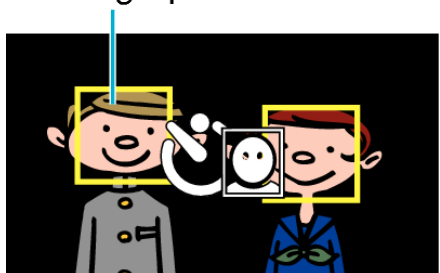
- The shutter is released three seconds after the photographer enters the frame.
- To stop the self-timer, press the SNAPSHOT button again.

Memo :
- The "FACE DETECTION" function may fail to detect faces depending on the shooting environment.

Setting the USER Button

By assigning one of manual adjustment functions that you frequently use to the USER button, you can access the function quickly.

Assigning a Function to the USER Button

1 Select video or still image mode.
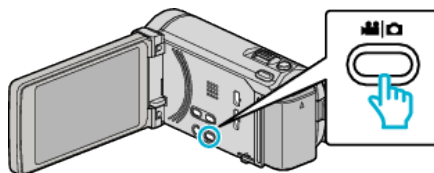
- The video or still image mode icon appears.

2 Tap "MENU".
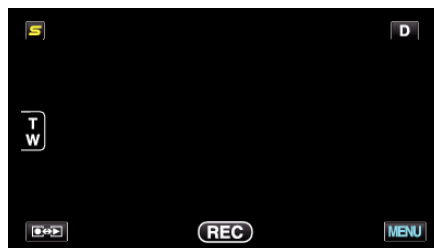
3 Tap "USER BUTTON SETTING".
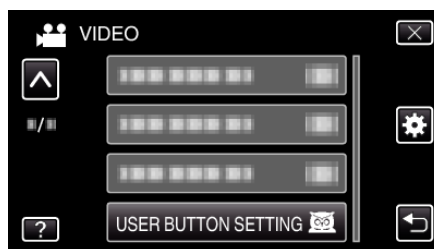
- Tap ∧ or ∨ to move upward or downward for more selection.
- Tap ✕ to exit the menu.
- Tap �⅁ to return to the previous screen.

4 Select the desired function.
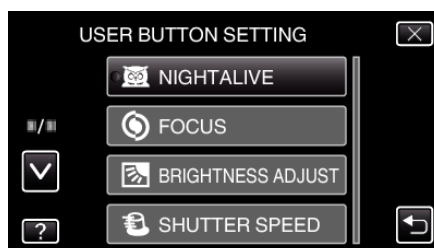
You can select one of the following functions.
- NIGHTALIVE
- TOUCH PRIORITY AE/AF (for GZ-HM960)
- FOCUS
- BRIGHTNESS ADJUST
- SHUTTER SPEED
- APERTURE PRIORITY
- BACKLIGHT COMP.
- WHITE BALANCE
- FOCUS ASSIST
- FLASH (still image mode)
- SHUTTER MODE
- CONT. SHOOTING SPEED
- DIS (video mode)
- SELF-TIMER (still image mode)

Making Adjustments with the USER Button

Operate as follows.

■ Functions with settings that change (or turn ON/OFF) with every press
(NIGHTALIVE, BACKLIGHT COMP., DIS, SELF-TIMER, SHUTTER MODE, CONT. SHOOTING SPEED, FOCUS ASSIST, FLASH)

Press the USER button to change the setting.

■ Functions with manual adjustments
(FOCUS, BRIGHTNESS ADJUST, SHUTTER SPEED, APERTURE PRIORITY)

Press the USER button to switch between automatic and manual.
For details on manual adjustments, refer to "Manual Recording" (☞ p. 47) .
"Manual Recording" (☞ p. 47)

■ Functions with a selection menu
(TOUCH PRIORITY AE/AF, WHITE BALANCE)

1) Press the USER button.
2) Tap the desired function to set.

Memo : ─────────────────────────────────
● The USER button is invalid when the menu is displayed.

Remaining Recording Time/Battery Power

You can check the remaining video recording time on the built-in memory and SD card as well as the remaining battery power.

1 Open the LCD monitor and select the video or still image mode.
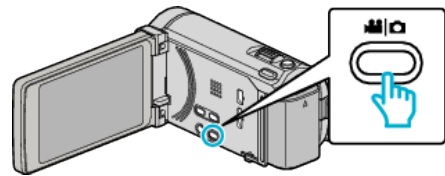
● The video or still image mode icon appears.

2 Press the INFO button.
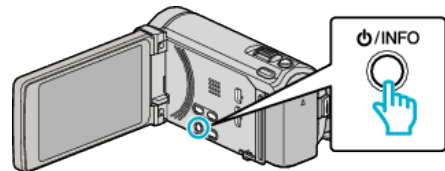
● If in the still image mode, go directly to step 4.

3 Display the remaining recording time.

● The remaining recording time is displayed only in the video recording mode.
● Press the INFO button to check the remaining recording time of each recording media.
● To display the remaining battery power, tap ▭.
● Tap ⤺ to return to the recording mode.
● To exit the display, tap ✕.

4 Display the remaining battery power.
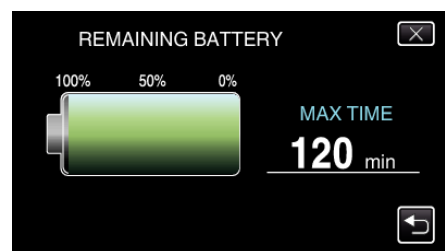
● For video recording, tap ⤺ to return to the remaining recording time display. For still image recording, tap to return to the recording mode.
● To exit the display, press the INFO button or tap ✕.
● Remaining battery power will not be displayed when the AC adapter is connected.

Memo : ─────────────────────────────────
● You can change to the desired video quality by tapping on it from the remaining recording time display.

Approximate Video Recording Time

Quality	Built-in Memory	SDHC/SDXC Card					
	16 GB	4 GB	8 GB	16 GB	32 GB	48 GB	64 GB
UXP	1 h 20 m	20 m	40 m	1 h 20 m	2 h 50 m	4 h 20 m	5 h 50 m
XP	2 h	30 m	1 h	2 h	4 h 10 m	6 h 10 m	8 h 20 m
SP	2 h 50 m	40 m	1 h 20 m	2 h 50 m	5 h 50 m	8 h 40 m	11 h 50 m
EP	7 h	1 h 40 m	3 h 40 m	7 h 10 m	14 h 50 m	21 h 50 m	29 h 50 m

● The actual recording time may shorten depending on the shooting environment.

Approximate Number of Still Images (Unit: Number of Shots)

Image Size	Built-in Memory	SDHC Card			
	16 GB	4 GB	8 GB	16 GB	32 GB
3,968×2,976 (4:3)	2,200	500	1,100	2,300	4,700
2,656×1,992 (4:3)	4,900	1,200	2,600	5,200	9,999
2,304×1,728 (4:3)	6,500	1,700	3,400	6,900	9,999
1,600×1,200 (4:3)	9,999	3,500	7,100	9,999	9,999
640×480 (4:3)	9,999	9,999	9,999	9,999	9,999
1,920×1,080 (16:9)	9,999	3,200	6,700	9,999	9,999

Approximate Recording Time (Using Battery)
■ **3D Display on LCD Monitor (for GZ-HM960)**

Battery Pack	Actual Recording Time	Continuous Recording Time
BN-VG114U (Supplied)	35 m	1 h
BN-VG121U	50 m	1 h 30 m
BN-VG138U	1 h 30 m	2 h 45 m

■ **2D Display on LCD Monitor (for GZ-HM960)**

Battery Pack	Actual Recording Time	Continuous Recording Time
BN-VG114U (Supplied)	40 m	1 h 10 m
BN-VG121U	1 h	1 h 45 m
BN-VG138U	1 h 40 m	3 h 5 m

■ **2D Display on LCD Monitor (for GZ-HM860)**

Battery Pack	Actual Recording Time	Continuous Recording Time
BN-VG114U (Supplied)	40 m	1 h 15 m
BN-VG121U	1 h 5 m	1 h 55 m
BN-VG138U	1 h 55 m	3 h 25 m

● The above are values when "LIGHT" is set to "OFF" and "MONITOR BRIGHTNESS" is set to "3" (standard).
● The actual recording time may be shorter if zooming is used or if recording is stopped repeatedly.
  (It is recommended to prepare battery packs ready for three times the expected recording time.)

Playing Back Videos

You can select and play back the recorded videos from an index screen (thumbnail display).

1 Select video mode.
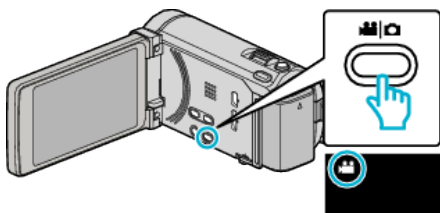
2 Tap ◉↔▶ to select the playback mode.

3 Tap on the file to start playback.

- Tap ⬢/SD to select the media for playback.
- Tap ❚❚ to pause.
- Tap ▦ to return to the index screen.

Operation Buttons for Video Playback

During Index Screen Display

	Display	Description
①	Date	Moves to the previous/next date
②	<	Displays the previous index screen (thumbnail display) ● You can perform the same operation with the zoom lever.
③	>	Displays the next index screen (thumbnail display) ● You can perform the same operation with the zoom lever.
④	Thumbnail (File)	Tap on thumbnail - Starts playback Drag to right - Scrolls to the right to show the previous index screen (thumbnail display) Drag to left - Scrolls to the left to show the next index screen (thumbnail display)
⑤	Recording/ Playback Mode ◉↔▶	Switches between recording and playback modes.
⑥	🗑	Displays the index screen (thumbnail display) to perform deletion
⑦	⬢/SD	Switches between the index screen of the built-in memory and SD card
⑧	MENU	Displays the menu screen

During Video Playback
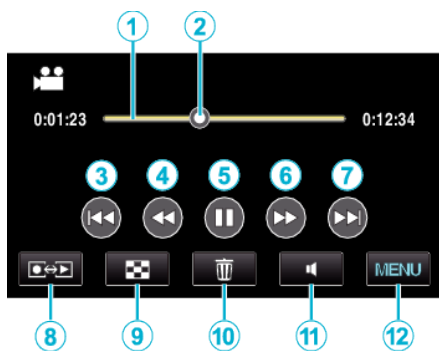
	Display	Description
①	Timeline Bar	Tap on a random position - Moves to the tapped position Drag playback point to the left or right - Starts playback from the new position
②	Pointer	Displays the current estimated playback position within the scene
③	⏮	Returns to the beginning of the scene
④	⏪	Reverse search
④	◀❙	Reverse slow-motion / Press and hold to start reverse slow playback
⑤	▶ / ❚❚	Playback/pause
⑥	⏩	Forward search
⑥	❙▶	Forward slow-motion / Press and hold to start slow playback
⑦	⏭	Advances to the next video
⑧	Recording/ Playback Mode	Switches between recording and playback modes.
⑨	▦	Stop (returns to index screen)
⑩	🗑	Displays the index screen (thumbnail display) to perform deletion
⑪	🔊	Volume adjustment
⑫	MENU	Displays the menu screen

Memo :
- Tap or drag on the operation area of the touch screen.
- Operations buttons on the touch screen disappear if the unit is not operated for about 5 seconds. Tap on the screen to display the operation buttons again.
- You can search for a specific file by the recording date.
"Date Search" (☞ p. 79)

Caution :
- Make a backup of important recorded data.
  It is recommended to copy your important recorded data to a DVD or other recording media for storage.
- This unit is a microcomputer-controlled device. Electrostatic discharge, external noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such a case, turn off the power, then remove the AC adapter and battery pack. This unit will be reset.

Adjusting the Volume of Videos

You can tap on the volume adjustment button to control the volume.

1 Tap 🔊.
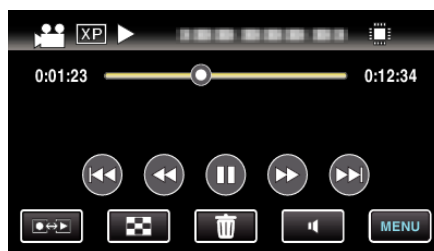
2 Tap "+" or "-".

- Volume can also be adjusted using the zoom lever during playback.

Turn down the volume ← → Turn up the volume
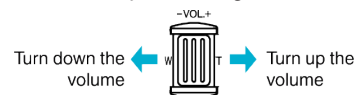
- Tap ✕ to exit volume adjustment.
- Volume adjustment is disabled when an AV cable (audio/video) or HDMI cable is connected.

Checking the Recording Date and Other Information

1 Pause the playback and press the INFO button.

You can display the recording date and duration of the selected file.

Playing Back 3D Images (for GZ-HM960)

Switch to the 3D mode by pressing the 3D button such that the button lights up.

● The mode changes between 3D and 2D with every press of the 3D button. When the 3D mode is activated, the button lights up.

Caution :

● To play back 3D images, refer also to "Precautions on Playing Back 3D Images".

"Precautions on Playing Back 3D Images (for GZ-HM960)" (☞ p. 12)

● Some subjects may appear unnatural when played back in 3D mode. Sometimes, the 3D effect may not even be seen. In this case, it is recommended to play back the video in 2D mode.

Memo :

● 3D images are supported by the LCD monitor of this unit. You can play back 3D images on the LCD monitor. If you are using a 3D compatible TV, you can also play back 3D images by connecting with an HDMI cable.

"Playing Back 3D Images (for GZ-HM960)" (☞ p. 80)

● When recording in 3D mode, the image is recorded in 2D even though the display on the LCD monitor is 3D.

● When 3D images are played back on a 3D compatible TV, the display on the LCD monitor is in 2D.

● When this unit is connected to a 3D compatible TV via an HDMI cable and set to the recording mode while in 3D mode, 3D images will appear on the TV.

● The 3D effect of 3D images may appear either too strong or too weak. In these cases, you can correct the 3D effect by adjusting the parallax (3D LEVEL ADJUST).

"3D LEVEL ADJUST (for GZ-HM960)" (☞ p. 148)

● Fatigue or discomfort may be experienced if you view 3D images for a long period of time. When viewing 3D images on this unit, a message will be displayed every 30 minutes. To turn off the message display, set "3D DISPLAY WARNING" to "OFF".

"3D DISPLAY WARNING (for GZ-HM960)" (☞ p. 150)

Playing a Video with Defective Management Information

The management information of a video may be damaged if recording is not performed correctly, such as turning off the power in the middle of recording. You can perform the following operations to play back the videos with defective management information.

1 Select video mode.
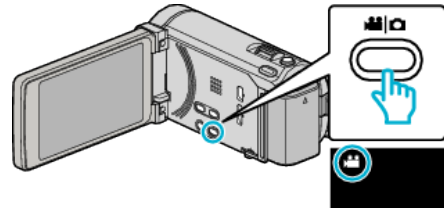
2 Tap ◉↔▶ to select the playback mode.
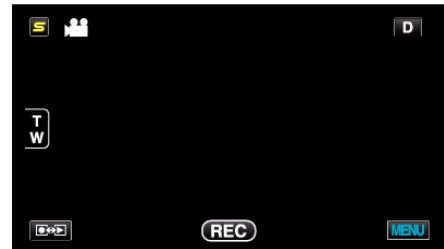
3 Tap "MENU".

4 Tap "PLAYBACK OTHER FILE".
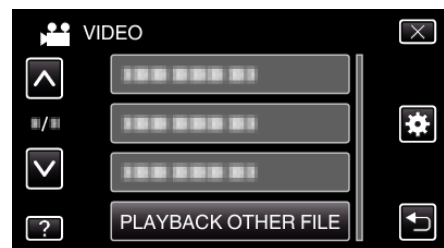
5 Tap on the file to start playback.

"Playing Back Videos" (☞ p. 74)

Memo :

● An MTS file is created in the EXTMOV folder when management information is corrupted.

● Depending on the condition of the damaged file, playback might fail or may not run smoothly.

Playing Back Still Images

You can select and play back the recorded still images from an index screen (thumbnail display).

1 Select still image mode.
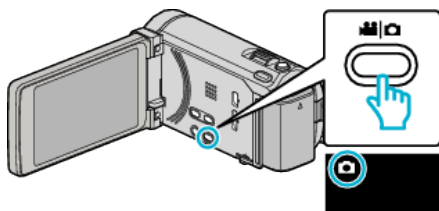
2 Tap ◉↔▶ to select the playback mode.
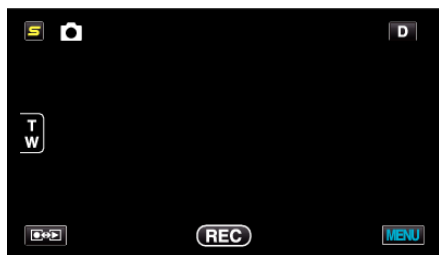
3 Tap on the file to start playback.

● Tap ✱/SD to select the media for playback.

● Tap ⊞ to return to the index screen.

● The ⊡↔⊟ button on the index screen is only displayed during still image playback. Still images that are recorded continuously within 2 seconds or with the continuous shooting mode will be grouped together and displayed with a green frame on a separate index screen.
The index screen changes between the normal index screen and group index screen with every tap of the ⊡↔⊟ button.

Operation Buttons for Still Image Playback

During Index Screen Display
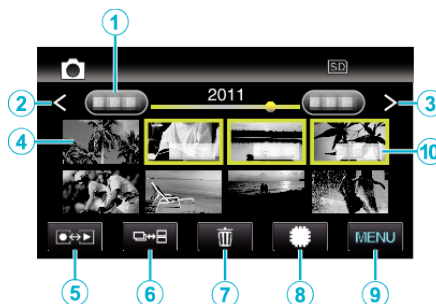
● Still images that are recorded continuously within 2 seconds or with the continuous shooting mode will be grouped together. Only the first recorded file is shown and the group is displayed with a green frame.

	Display	Description
①	Date	Moves to the previous/next date
②	<	Displays the previous index screen (thumbnail display) ● You can perform the same operation with the zoom lever.
③	>	Displays the next index screen (thumbnail display) ● You can perform the same operation with the zoom lever.
④	Thumbnail (File)	Tap on thumbnail - Starts playback Drag to right - Scrolls to the right to show the previous index screen (thumbnail display) Drag to left - Scrolls to the left to show the next index screen (thumbnail display)
⑤	Recording/ Playback Mode ◉↔▶	Switches between recording and playback modes.
⑥	⊡↔⊟	Still images that are recorded continuously within 2 seconds or with the continuous shooting mode will be grouped together and displayed with a green frame on a separate index screen. The index screen changes between the normal index screen and group index screen with every tap of the button.
⑦	🗑	Displays the index screen (thumbnail display) to perform deletion
⑧	✱/SD	Switches between the index screen of the built-in memory and SD card
⑨	MENU	Displays the menu screen
⑩	Recording Date	Recording date (only displayed on the first file of each date)

During Still Image Playback
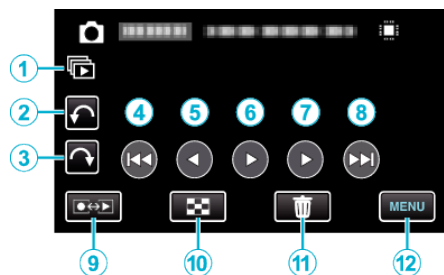
	Display	Description
①	▣	Continuous playback of grouped files (such as still images captured by continuous shooting).
②	↶	Rotates to the left (rotates by -90° with each tap)
③	↷	Rotates to the right (rotates by 90° with each tap)
④	◀◀	Returns to the previous still image
⑤	◀	Reverse playback during slideshow
⑥	▶ / ❚❚	Starts/pauses slideshow "Slideshow Playback" (☞ p. 78)
⑦	▶	Normal playback during slideshow
⑧	▶▶	Advances to the next still image
⑨	Recording/ Playback Mode ◉⟷▶	Switches between recording and playback modes.
⑩	▦	Returns to index screen
⑪	🗑	Displays the index screen (thumbnail display) to perform deletion
⑫	MENU	Displays the menu screen

Memo :
● Tap or drag on the operation area of the touch screen.
● Operations buttons on the touch screen disappear if the unit is not operated for about 5 seconds. Tap on the screen to display the operation buttons again.
● You can rotate a still image 90° to the right or left during playback. Rotation applies to the on-screen display only.
● You can search for a specific file by the recording date. This is useful when searching from a large number of files.
"Date Search" (☞ p. 79)

Caution :
● This unit is a microcomputer-controlled device. Electrostatic discharge, external noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such a case, turn off the power, then remove the AC adapter and battery pack. This unit will be reset.

Playing Back 3D Images (for GZ-HM960)

Switch to the 3D mode by pressing the 3D button such that the button lights up.

● The mode changes between 3D and 2D with every press of the 3D button. When the 3D mode is activated, the button lights up.

Caution :
● To play back 3D images, refer also to "Precautions on Playing Back 3D Images".
"Precautions on Playing Back 3D Images (for GZ-HM960)" (☞ p. 12)
● Some subjects may appear unnatural when played back in 3D mode. Sometimes, the 3D effect may not even be seen. In this case, it is recommended to play back the video in 2D mode.

Memo :
● 3D images are supported by the LCD monitor of this unit. You can play back 3D images on the LCD monitor. If you are using a 3D compatible TV, you can also play back 3D images by connecting with an HDMI cable.
"Playing Back 3D Images (for GZ-HM960)" (☞ p. 80)
● When recording in 3D mode, the image is recorded in 2D even though the display on the LCD monitor is 3D.
● When 3D images are played back on a 3D compatible TV, the display on the LCD monitor is in 2D.
● When this unit is connected to a 3D compatible TV via an HDMI cable and set to the recording mode while in 3D mode, 3D images will appear on the TV.
● The 3D effect of 3D images may appear either too strong or too weak. In these cases, you can correct the 3D effect by adjusting the parallax (3D LEVEL ADJUST).
"3D LEVEL ADJUST (for GZ-HM960)" (☞ p. 148)
● Fatigue or discomfort may be experienced if you view 3D images for a long period of time. When viewing 3D images on this unit, a message will be displayed every 30 minutes. To turn off the message display, set "3D DISPLAY WARNING" to "OFF".
"3D DISPLAY WARNING (for GZ-HM960)" (☞ p. 150)

Slideshow Playback

Still images can be played back in a slideshow.
Tap ▶ during still image playback to start the slideshow.
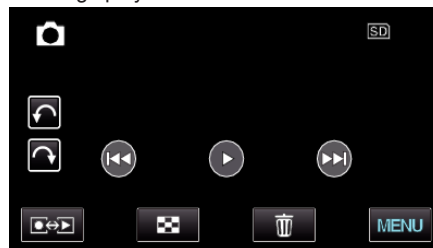
"Operation Buttons for Still Image Playback" (☞ p. 77)
Memo :
● Effects can be added to the transitions in slideshow playback. (for GZ-HM860)
"SLIDE SHOW EFFECTS (for GZ-HM860)" (☞ p. 141)

Searching for a Specific Video/Still Image

When there is a large number of recorded videos and still images, it is difficult to look for the desired file from the index screen.
Use the search function to find the file you want.
"To search by recording dates" (☞ p. 79)

Date Search

You can search and play videos or still images according to recording dates.

1 Tap "MENU".

- Tap ▓/**SD** to select the media for playback.
- Searching can be performed in both the video and still image modes. *The image shows the video mode.

2 Tap "SEARCH DATE".
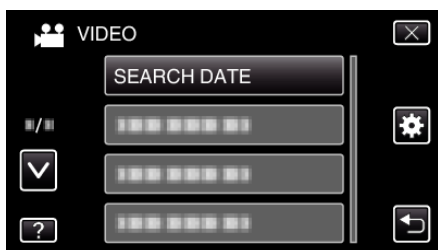
3 Tap a recording date, then tap "NEXT".
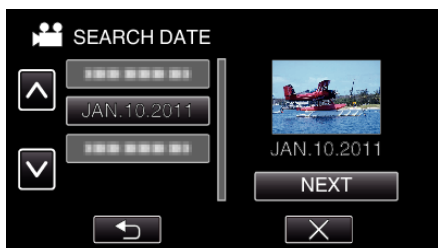
- Tap again to cancel the selected date.

4 Tap on the file to start playback.

- You can select videos in the video mode and still images in the still image mode.
- Only the files recorded on the selected date are displayed.
- Tap ✕ to stop searching and return to the index screen (thumbnail display).

Deleting Files of a Selected Date :

Tap 🗑 on the index screen (thumbnail display) to delete unwanted files.
"Deleting Unwanted Files" (☞ p. 85)

Connecting to and Viewing on TV

You can connect this unit to a TV for playback. Select the most suitable way of connecting to the TV based on the image to view (3D/2D image).

- Refer also to the instruction manual of the TV in use.

"Playing Back 3D Images (for GZ-HM960)" (☞ p. 80)
"Playing Back 2D Images (for GZ-HM960/GZ-HM860)" (☞ p. 82)

Unnatural Displays on TV

Trouble	Action
Images do not appear on the TV properly.	• Disconnect the cable and connect again. • Turn off and on this unit again. • Images may not appear properly when the remaining battery power is low. Use an AC adapter. • When connected via the component connector, check if the setting of "COMPONENT OUTPUT" in the connection settings menu suits the connected TV. (Set to "1080i" by default) "COMPONENT OUTPUT" (☞ p. 151)
Images are projected vertically on the TV.	• Set "VIDEO OUTPUT" in the "COMMON" menu to "4:3". "VIDEO OUTPUT" (☞ p. 151)
Images are projected horizontally on the TV.	• Adjust the TV's screen accordingly.
The color of images looks strange.	• If the video was recorded with "x.v.Color" set to "ON", set the x.v.Color setting of the TV to on. "x.v.Color" (☞ p. 131) • Adjust the TV's screen accordingly.
3D images are not displayed in 3D. (for GZ-HM960)	• Set "HDMI OUTPUT" in the "COMMON" menu to "CERTAIN TV TYPES". "HDMI OUTPUT" (☞ p. 152)
Double images are seen. (for GZ-HM960)	• Double images of the subject may be seen depending on the scene. It may also become difficult to see the images after adjusting the parallax manually or changing the video quality on TV. In this case, it is recommended to play back the video in 2D mode. (For details, refer to the instruction manual of the TV.)
HDMI-CEC functions do not work properly, and the TV does not work in conjunction with this unit.	• TVs may operate differently depending on the specifications, even if they are HDMI-CEC compliant. Therefore, the HDMI-CEC functions of this unit cannot be guaranteed to operate in combination with all the TVs. In such cases, set "HDMI CONTROL" to "OFF". "HDMI CONTROL" (☞ p. 153)
The language on the display changed.	• It may occur when you connect this unit to a TV with different language setting using an HDMI mini cable.

Caution :

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

**Memo :**

- Fatigue or discomfort may be experienced if you view 3D images for a long period of time. When viewing 3D images on this unit, a message will be

displayed every 30 minutes. To turn off the message display, set "3D DISPLAY WARNING" to "OFF". (for GZ-HM960)

"3D DISPLAY WARNING (for GZ-HM960)" (☞ p. 150)

● If the left and right images of an object close to the camera do not appear to be in alignment, or the 3D effect of a distant object is weak, you can change the way they appear to the eye by adjusting the parallax. (for GZ-HM960)

"3D LEVEL ADJUST (for GZ-HM960)" (☞ p. 148)

Playing Back 3D Images (for GZ-HM960)

If you are using a 3D compatible TV, you can play back 3D images by connecting to the HDMI connector.

● Use a High Speed HDMI mini cable as the HDMI mini cable when not using the provided one.

● Refer also to the instruction manual of the TV in use.

1 Connect to a TV.

TV

To HDMI Mini Connector

HDMI Connector Input
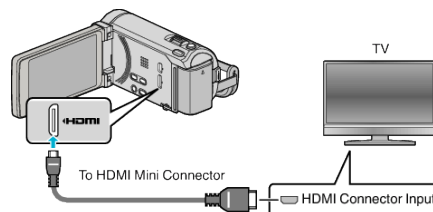
● Turn off the camcorder by pressing the ⏻ button for about 2 seconds.

2 Connect the AC adapter to this unit.
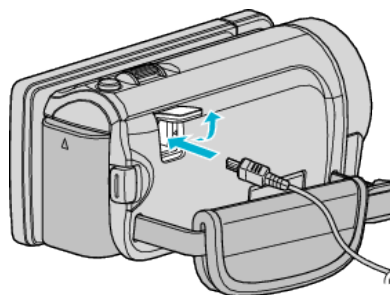
AC Adapter
To AC Outlet
(110 V to 240 V)

3 Press the external input button on the TV to switch to the input from this unit via the connected connector.

External Input

4 Play back a file.

2011

"Playing Back Videos" (☞ p. 74)
"Playing Back Still Images" (☞ p. 77)

Caution :

● To play back 3D images, refer also to "Precautions on Playing Back 3D Images".

"Precautions on Playing Back 3D Images (for GZ-HM960)" (☞ p. 12)

● If you experience fatigue or discomfort while viewing 3D images, it is recommended to play back in 2D mode.

"HDMI OUTPUT" (☞ p. 152)

Memo :

● When connected to the TV via the provided HDMI mini cable, images and sounds may not be output properly depending on the TV connected.
In such cases, perform the following operations.
1) Disconnect the HDMI mini cable and connect it again.
2) Turn off and on this unit again.

● Do not disconnect the HDMI cable when "SEAMLESS REC CTRL", "COPY", "MOVE", or "UPLOAD SETTINGS" are in use. The process may be aborted.

● If 3D images cannot be seen properly, change the setting in "HDMI OUTPUT". Refer also to the instruction manual of the TV in use.

"HDMI OUTPUT" (☞ p. 152)

● When connected to a 3D compatible TV in the recording mode, images are output in "SIDE-BY-SIDE OUTPUT" regardless of the "HDMI OUTPUT" setting.

● The displayed 3D images may vary depending on the size of the TV connected.

● For questions about the TV or method of connection, contact your TV's manufacturer.

Operating in Conjunction with TV via HDMI

Connecting this unit to an HDMI-CEC-enabled TV using the HDMI cable allows linked operations with the TV to be performed.

● HDMI-CEC (Consumer Electronics Control) is an industry standard that enables interoperability between HDMI-CEC compliant devices that are connected via HDMI cables.

Memo :

● Not all HDMI-control devices comply with the HDMI-CEC standard. The HDMI control function of this unit will not work when connected to these devices.

● This unit is not guaranteed to operate with all HDMI-CEC-enabled devices.

● Depending on the specifications of each HDMI-CEC-enabled device, some functions may not work with this unit. (For details, refer to the instruction manual of your TV.)

● Unintended operations may occur with some connected devices. In these cases, set "HDMI CONTROL" to "OFF".

"HDMI CONTROL" (☞ p. 153)

Preparations

● Connect an HDMI cable between this unit and the TV.

"Playing Back 3D Images (for GZ-HM960)" (☞ p. 80)
"Connecting via the HDMI Mini Connector" (☞ p. 82)

● Turn on the TV and set the HDMI-CEC related setting to "ON". (For details, refer to the instruction manual of the TV.)

● Turn on this unit and set "HDMI CONTROL" in the "COMMON" menu to "ON".

"HDMI CONTROL" (☞ p. 153)

Operation Method 1

1 Turn on this unit.

2 Select the playback mode.

3 Connect the HDMI cable.

● TV turns on automatically and switches to HDMI input mode when this unit is turned on.

Operation Method 2

1 Turn off the TV.

● This unit turns off automatically.

Memo :

● Depending on the TV connected, the display language of this unit will automatically switch to the language that is selected for the TV when this unit is turned on.
(This is applicable only if this unit supports the language selected for the TV.) To use this unit with a language that differs from the display language of the TV, set "HDMI CONTROL" to "OFF".

● The display language of the TV will not switch automatically, even if the display language of this unit is changed.

● These functions may not work correctly when devices such as amplifier and selector are connected. Set "HDMI CONTROL" to "OFF".

● If HDMI-CEC does not work properly, turn off and on this unit again.

Playing Back 2D Images (for GZ-HM960/GZ-HM860)

The image quality on TV varies with the type of TV and the connecting cable. Select the connector that best suits your TV.

● Refer also to the instruction manual of the TV in use.

"Connecting via the HDMI Mini Connector" (☞ p. 82)
"Connecting via the Component Connector" (☞ p. 83)
"Connecting via the AV Connector" (☞ p. 84)

Connecting via the HDMI Mini Connector

If you are using an HDTV, you can play back in HD quality by connecting to the HDMI connector.

● Use a High Speed HDMI mini cable as the HDMI mini cable when not using the provided one.
● Refer also to the instruction manual of the TV in use.

1 Connect to a TV.

● Turn off the camcorder by pressing the ⏻ button for about 2 seconds.

2 Connect the AC adapter to this unit.
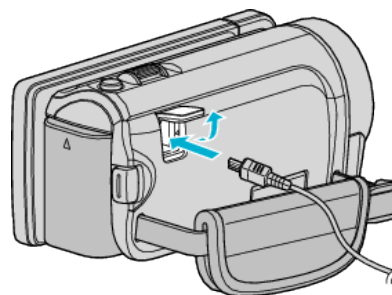
AC Adapter
To AC Outlet
(110 V to 240 V)

* The AC adapter shown in the illustration is AC-V11U.

3 Press the external input button on the TV to switch to the input from this unit via the connected connector.

External Input

4 Play back a file.

"Playing Back Videos" (☞ p. 74)
"Playing Back Still Images" (☞ p. 77)

Memo :

● Change the settings in "HDMI OUTPUT" according to the connection.

"HDMI OUTPUT" (☞ p. 152)

● When connected to the TV via the HDMI mini cable, images and sounds may not be output properly depending on the TV connected.
In such cases, perform the following operations.
1) Disconnect the HDMI mini cable and connect it again.
2) Turn off and on this unit again.

● For questions about the TV or method of connection, contact your TV's manufacturer.

Operating in Conjunction with TV via HDMI

Connecting this unit to an HDMI-CEC-enabled TV using the HDMI cable allows linked operations with the TV to be performed.

● HDMI-CEC (Consumer Electronics Control) is an industry standard that enables interoperability between HDMI-CEC compliant devices that are connected via HDMI cables.

Memo :

● Not all HDMI-control devices comply with the HDMI-CEC standard. The HDMI control function of this unit will not work when connected to these devices.

● This unit is not guaranteed to operate with all HDMI-CEC-enabled devices.

● Depending on the specifications of each HDMI-CEC-enabled device, some functions may not work with this unit. (For details, refer to the instruction manual of your TV.)

● Unintended operations may occur with some connected devices. In these cases, set "HDMI CONTROL" to "OFF".

"HDMI CONTROL" (☞ p. 153)

Preparations

● Connect an HDMI cable between this unit and the TV.

"Playing Back 3D Images (for GZ-HM960)" (☞ p. 80)
"Connecting via the HDMI Mini Connector" (☞ p. 82)

● Turn on the TV and set the HDMI-CEC related setting to "ON". (For details, refer to the instruction manual of the TV.)

● Turn on this unit and set "HDMI CONTROL" in the "COMMON" menu to "ON".

"HDMI CONTROL" (☞ p. 153)

Operation Method 1

1 Turn on this unit.

2 Select the playback mode.

3 Connect the HDMI cable.

● TV turns on automatically and switches to HDMI input mode when this unit is turned on.

Operation Method 2

1 Turn off the TV.

● This unit turns off automatically.

Memo :

● Depending on the TV connected, the display language of this unit will automatically switch to the language that is selected for the TV when this unit is turned on.
(This is applicable only if this unit supports the language selected for the TV.) To use this unit with a language that differs from the display language of the TV, set "HDMI CONTROL" to "OFF".

● The display language of the TV will not switch automatically, even if the display language of this unit is changed.

● These functions may not work correctly when devices such as amplifier and selector are connected. Set "HDMI CONTROL" to "OFF".

● If HDMI-CEC does not work properly, turn off and on this unit again.

Connecting via the Component Connector

You can connect this unit to the component connector of a TV to play back videos in analog high-definition quality.

● Refer also to the instruction manual of the TV in use.
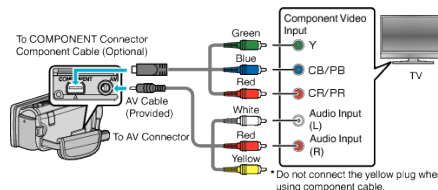
1 Connect to a TV.

● Turn off the camcorder by pressing the ⏻ button for about 2 seconds.

2 Connect the AC adapter to this unit.
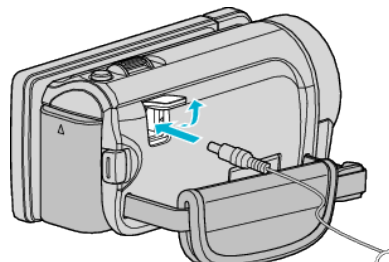
AC Adapter
To AC Outlet
(110 V to 240 V)

* The AC adapter shown in the illustration is AC-V11U.

3 Press the external input button on the TV to switch to the input from this unit via the connected connector.

4 Play back a file.

"Playing Back Videos" (☞ p. 74)
"Playing Back Still Images" (☞ p. 77)

Memo :

● When playing back in HD quality, set "COMPONENT OUTPUT" in the common menu to "1080i".

● The video is output in standard quality if the setting remains at "480i".

"COMPONENT OUTPUT" (☞ p. 151)

● For questions about the TV or method of connection, contact your TV's manufacturer.

Connecting via the AV Connector

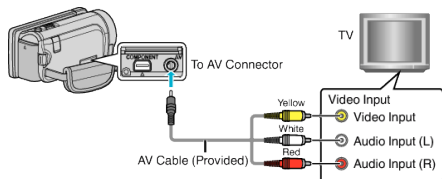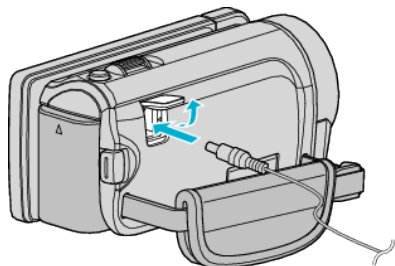By connecting the supplied AV cable to the AV connector, videos can be played back on a TV.

● Refer also to the instruction manual of the TV in use.

1 Connect to a TV.

● Turn off the camcorder by pressing the ⏻ button for about 2 seconds.

2 Connect the AC adapter to this unit.

AC Adapter
To AC Outlet
(110 V to 240 V)

* The AC adapter shown in the illustration is AC-V11U.

3 Press the external input button on the TV to switch to the input from this unit via the connected connector.

4 Play back a file.

"Playing Back Videos" (☞ p. 74)
"Playing Back Still Images" (☞ p. 77)

Memo :

● For questions about the TV or method of connection, contact your TV's manufacturer.

Playing Back a DVD or Blu-ray Disc Created on this Unit

BD/DVDs created using the backup function on this unit can be played back on TV using an optional DVD writer (DVDs only) with playback function (CU-VD50U) or a normal BD/DVD player. DVDs can also be played back on this unit by connecting the optional DVD writer with playback function.

Playback Device	DVD (DVD-Video format)	DVD (AVCHD format)	Blu-ray Disc
DVD writer connected to this unit	✓	✓	-
External Blu-ray drive connected to this unit	✓	✓	✓
DVD player/ DVD recorder	✓	✓*	-
Blu-ray player/ Blu-ray recorder	✓	✓*	✓*
DVD writer with playback function (CU-VD50U)	✓	✓	-

*Only for AVCHD compatible devices

Caution :

● DVDs that are created in AVCHD format cannot be played back on DVD players with standard quality. You may not be able to remove the disc from the player.

Deleting Unwanted Files

Delete unwanted videos and still images when the space in the recording media is running out.
The capacity of the recording media can be restored after deleting the files.
"Deleting the Currently Displayed File" (☞ p. 85)
"Deleting Selected Files" (☞ p. 85)

Memo :
● Deleted files cannot be restored.
● Files that are protected cannot be deleted.
Release protection before deleting the file.
"Protecting Files" (☞ p. 86)
● Be sure to back up important files on a computer.
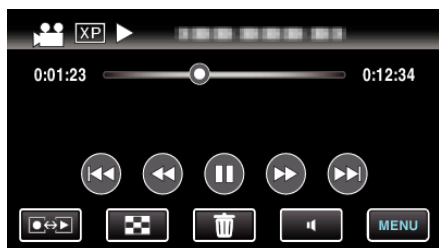"Backing Up All Files" (☞ p. 115)

Deleting the Currently Displayed File

Deletes the currently displayed file.

Caution :
● Deleted files cannot be restored.

1 Tap 🗑.

● While the video mode is shown in the image, the same operations apply for the still image mode.

2 Tap "YES".
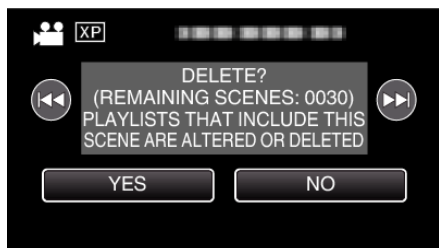
● Tap ⏮ / ⏭ to select the previous or next file.
● When no file remains, the screen returns to the index screen.

Deleting Selected Files

Deletes the selected files.

Caution :
● Deleted files cannot be restored.

1 Select video or still image mode.
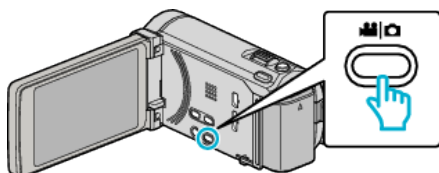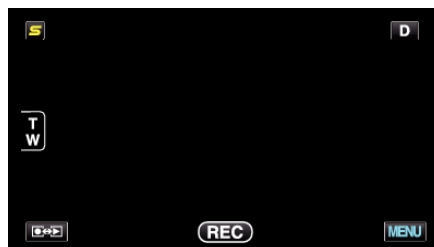
2 Tap 🔄 to select the playback mode.

● While the video mode is shown in the image, the same operations apply for the still image mode.

3 Tap 🗑.

4 Tap on the files to delete.

● ✓ appears on the selected files.
To remove ✓ from a file, tap on the file again.
● Tap "SEL ALL" to select all files.
● Tap "REL ALL" to release all selections.

● Still images that are recorded continuously within 2 seconds or with the continuous shooting mode will be grouped together. Only the first recorded file is shown and the group is displayed with a green frame. When this is tapped, an index screen of the grouped files appears. Tap on the files to delete, then tap "↩".

5 Tap "SET".

6 Tap "EXECUTE" to confirm the deletion.

DELETE?

REMAINING SCENES:0030
PLAYLISTS THAT INCLUDE THIS
SCENE ARE ALTERED OR DELETED

EXECUTE   QUIT

RETURN

- After deleting is complete, tap "OK".
- To cancel the deletion, tap "QUIT".

Protecting Files

Prevent important videos/still images from being deleted accidently by protecting them.
"Protecting/Releasing Protection of the Currently Displayed File"
(☞ p. 86)
"Protecting/Releasing Protection of Selected Files" (☞ p. 86)

Caution :
- When the recording media is formatted, even the protected files will be deleted.

Protecting/Releasing Protection of the Currently Displayed File

Protects or releases protection of the currently displayed file.

1 Tap "MENU".

XP ▶

0:01:23   0:12:34

⏮ ◀◀ ⏸ ▶▶ ⏭

MENU
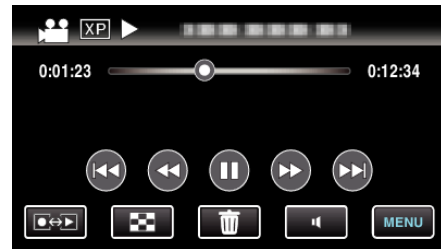
2 Tap "PROTECT/CANCEL".

VIDEO   ✕

▮/▮   PROTECT/CANCEL   ⚙

∨

?

3 Tap "YES".

XP

⏮   PROTECT?   ⏭

YES   NO

- Tap ⏮ / ⏭ to select the previous or next file.
- After setting, tap "OK".

Protecting/Releasing Protection of Selected Files

Protects or releases protection of the selected files.

1 Select video or still image mode.
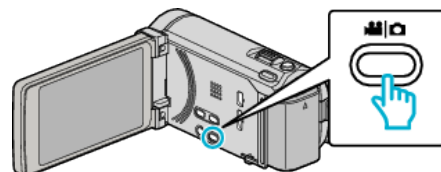
2 Tap ⬕↔▶ to select the playback mode.
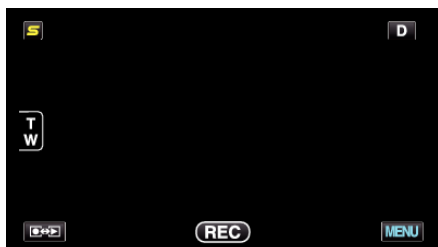
3 Tap "MENU".

4 Tap "PROTECT/CANCEL".
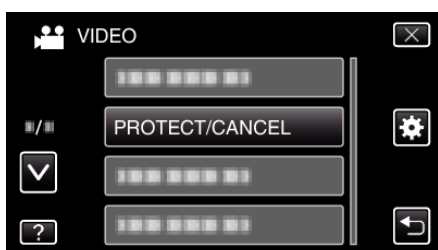
5 Tap on the files to protect or release protection of.

- ✓ appears on the selected files.
  To remove ✓ from a file, tap on the file again.
- ⚷ and ✓ are displayed on the files that are already protected.
  To release protection of a file, tap on the file such that ✓ is removed.
- Tap "SEL ALL" to select all files.
- Tap "REL ALL" to release all selections.

- Still images that are recorded continuously within 2 seconds or with the continuous shooting mode will be grouped together. Only the first recorded file is shown and the group is displayed with a green frame. When this is tapped, an index screen of the grouped files appears. Tap on the files to protect or release protection of, then tap "↰".
- When using an Eye-Fi card, if the transfer mode of Eye-Fi Helper is set to "Selective Share" or "Selective Transfer", 📶 will be displayed.

6 Tap "SET" to complete the setting.

- Protect marks ⚷ appear on the selected files.
  Protect marks ⚷ disappear from the deselected files.

Capturing a Still Image in the Video during Playback

You can capture still images of the scenes you like in the recorded videos.

1 Select video mode.
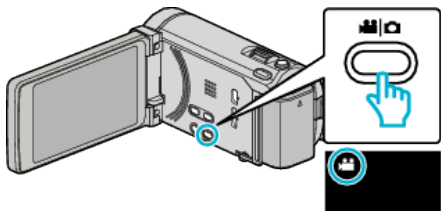
2 Tap ●↔▶ to select the playback mode.
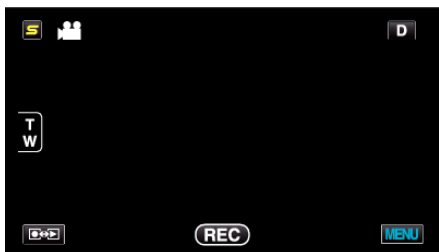
3 Tap on the desired video.

4 Tap pause ❚❚ at the desired scene during playback.

- After pausing the video, you can fine-tune the point to capture by tapping forward slow-motion ❚▶ and reverse slow-motion ◀❚.

5 Capture a still image.
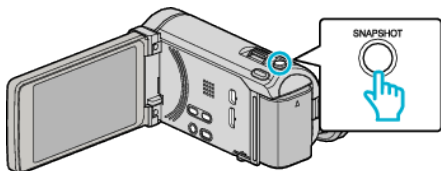
Memo :

- Still images are captured with a size of 1920×1080.
- Captured still images are stored in the media where the video is being played back from.

Combining Videos Recorded by Seamless Recording

Videos that are recorded on two separate media and with "SEAMLESS RECORDING" in the video recording menu enabled can be combined into a single video.
"SEAMLESS RECORDING" (☞ p. 130)

1 Select video mode.
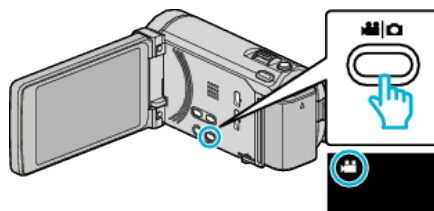
2 Tap ●↔▶ to select the playback mode.
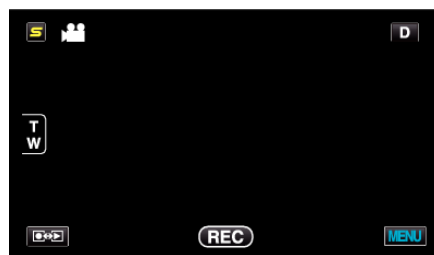
3 Tap "MENU".

4 Tap "SEAMLESS REC CTRL".
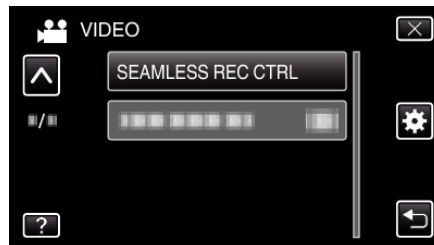
5 Tap "COMBINE SCENES".

- This unit starts a search to detect seamless videos.
  Combining cannot be performed if no seamless videos are found.

6 Tap "YES".
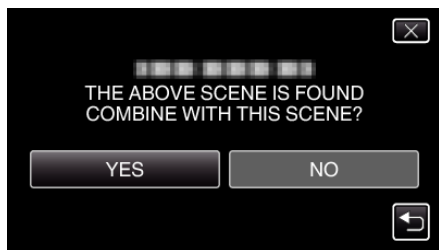
7 Tap the media to store to.
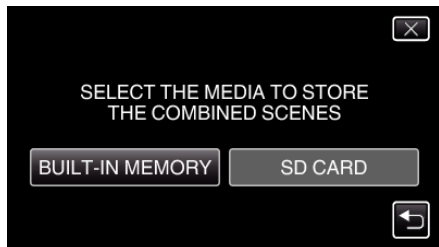
8 Tap "YES".
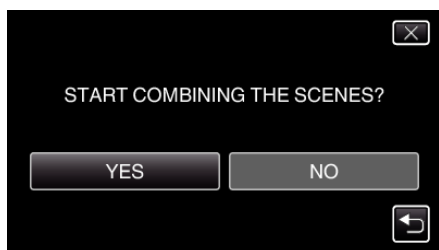
- Combining of the videos starts.
- After videos are combined, tap "OK".

Memo :

- Seamless videos cannot be combined if there is not enough free space in the built-in memory or SD card. Check the amount of remaining free space before combining.

How to Enable Seamless Video Recording Again

To start seamless recording again after the previous session is complete, it is necessary to combine seamless videos, or delete the combination information of the seamless videos.
To delete the combination information of seamless videos, select "DEL COMBINED SCENES" in step 5.

Capturing a Required Part in the Video (TRIMMING)

Select the required part of a video and save it as a new video file.

- The original video remains in its existing location.

1 Select video mode.
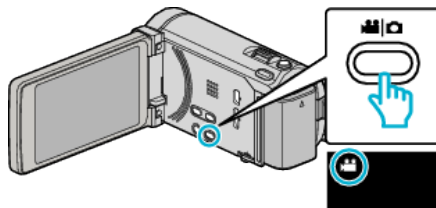
2 Tap ▣◀▶ to select the playback mode.
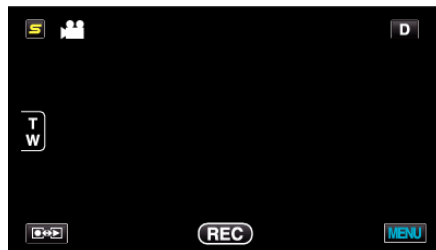
3 Tap "MENU".

4 Tap "TRIMMING".
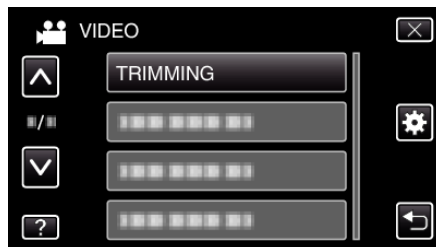
5 Tap the video to edit.

6 Tap ❚❚ to pause playback at the desired start point, then tap "A".
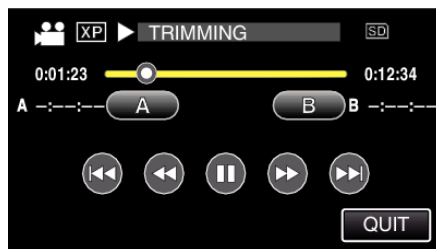
- When "A" is tapped, the start point is set.
- After setting the start point, tap ▶ to continue playback.

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7 Tap ❙❙ to pause playback at the desired end point, then tap "B".
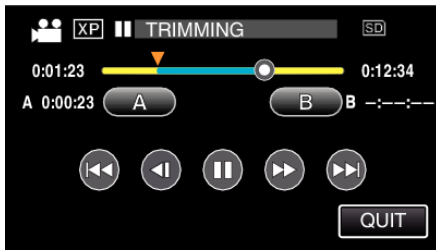
- When "B" is tapped, the end point is set.
- To reset the start or end point, tap "A" or "B" at the desired scene (position).

8 Tap "SET".
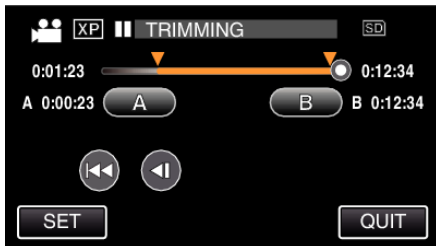
- When "SET" is tapped, the trimming area is confirmed.

9 Tap "YES".

- After copying, tap "OK".
- When copying finishes, the copied file is added to the index screen.

Memo :
- The division point may deviate slightly from the selected scene.

Capturing Videos for Uploading to YouTube

Capture and copy a part of a recorded video (maximum 15 minutes) for uploading to YouTube, and save it as a YouTube video.
When capturing videos for YouTube, the duration cannot be longer than 15 minutes.

1 Select video mode.
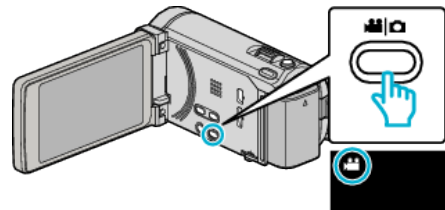
2 Tap ⬤↔▶ to select the playback mode.
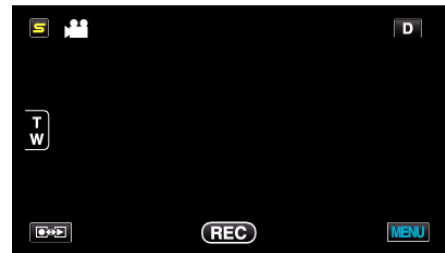
3 Tap "MENU".

4 Tap "UPLOAD SETTINGS".
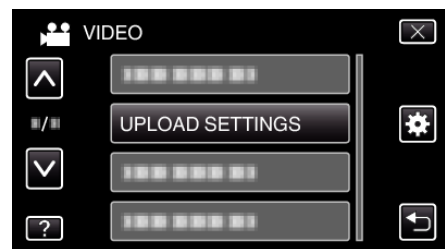
5 Tap the video to edit.
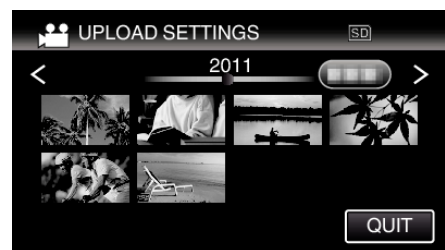
6 Tap "TRIM".

- When trimming is not necessary, tap "DO NOT TRIM".
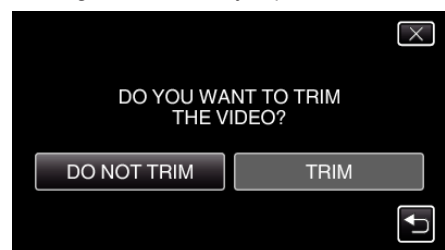
- If the selected video is more than 15 minutes, trimming is necessary.

7 Tap ❙❙ to pause playback at the desired start point, then tap "A".
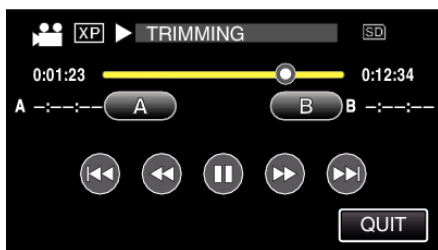
0:01:23   0:12:34
A –:––:–– A   B B –:––:––

QUIT

8 Tap ❙❙ to pause playback at the desired end point, then tap "B".

0:01:23   0:12:34
A 0:00:23 A   B B –:––:––

QUIT
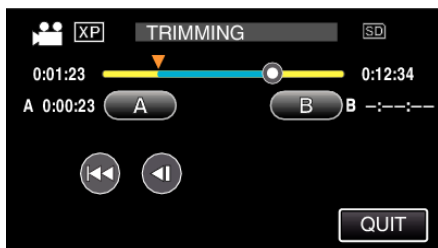
- To reset the start or end point, tap "A" or "B" at the desired scene (position).
- When capturing videos for YouTube, the duration cannot be longer than 15 minutes.

9 Tap "SET".
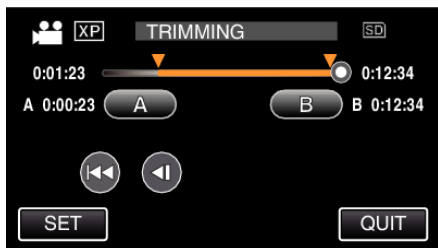
0:01:23   0:12:34
A 0:00:23 A   B B 0:12:34

SET   QUIT

10 Tap "YES".

DO YOU WANT TO CAPTURE
SELECTED RANGE?
(TO UPLOAD TO VIDEO
SHARING SITES)

YES   NO
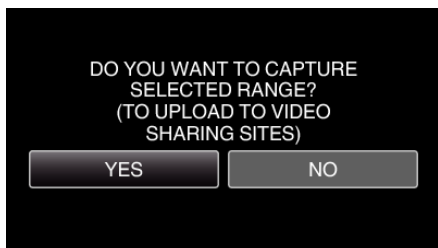
- After copying, tap "OK".
- When copying finishes, the copied file is added to the index screen.
- To exit upload settings, tap "STOP" on the upload settings screen.

Memo :
- The division point may deviate slightly from the selected scene.

Uploading Videos to YouTube

You can upload your videos to YouTube using the provided software Everio MediaBrowser 3 (3 BE). Install the software on your PC and connect this unit to the PC.

- For details on how to use the software, refer to the help file.

"Installing the Provided Software (Built-in)" (☞ p. 114)
"Connecting this Unit to PC" (☞ p. 115)

Trouble with Uploading Videos :
- Check if you have created an account with YouTube. (You need a YouTube account to upload files to YouTube.)
- Refer to "Q&A", "Latest Information", "Download Information", etc. in "Click for Latest Product Info" in the help file of the provided software Everio MediaBrowser 3 (3 BE).

Preparing Videos to Transfer to iTunes

Set EXPORT attributes to the recorded videos by adding a "LIB." mark. When EXPORT attributes are set, the videos can be registered to iTunes easily using the supplied software on a PC.

1 Select video mode.

2 Tap ●↔▶ to select the playback mode.

T
W

●↔▶   REC   MENU

3 Tap "MENU".

2011
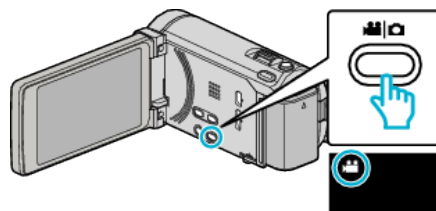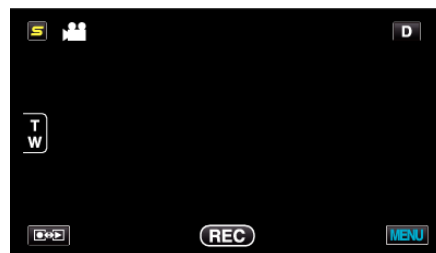
●↔▶   MENU

4 Tap "EXPORT SETTINGS".

VIDEO
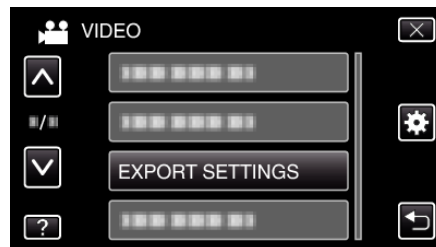
EXPORT SETTINGS

5 Tap the video to edit.

- "LIB." appears on the selected files.
  To remove "LIB." from a file, tap on the file again.
- To exit "EXPORT SETTINGS", tap "DONE".

- Tap "CHECK" to check the selected video.
  Tap the video to check on the screen that appears after tapping "CHECK". The beginning of the video (still image) is displayed. After setting the video, tap "LIB.".
  Tap "↰" to return to the "EXPORT SETTINGS" index screen.

6 After selecting all the files, tap "YES".

Memo :
- You can take videos in iTunes format by setting "EXPORT SHOOTING" before recording.
"Taking Videos in iTunes Format" (☞ p. 65)
- The format of recorded videos changes when they are transferred to a PC using the supplied software.
  Files that are stored on this unit will not be affected.
- The "LIB." mark does not appear on other index screens.

Transferring Converted Videos to iPod

You can export videos to iTunes using the provided software Everio MediaBrowser 3 BE.
Install the software on your PC and connect this unit to the PC.
- For details on how to use the software, refer to the help file.
- For details on transferring files to iPod, refer to the help file of iTunes.
"Installing the Provided Software (Built-in)" (☞ p. 114)
"Backing Up All Files" (☞ p. 115)
Trouble with Exporting Files to iTunes:
- Refer to "Q&A", "Latest Information", "Download Information", etc. in "Click for Latest Product Info" in the help file of the provided software Everio MediaBrowser 3 BE.

Creating Discs with a DVD Writer

You can copy the recorded files to discs or play back the created discs using an optional DVD writer.

Compatible DVD Writers

Product Name	Description
DVD Writer ● CU-VD3U	● Enables the images recorded on this unit to be copied to a DVD without using a PC.
DVD Writer ● CU-VD50U	● Creates DVDs and functions as an external DVD drive when connected to a PC. In addition, created DVDs can be played back by connecting the CU-VD50U to a TV.

Creating Discs with a DVD Writer

■ Preparing a DVD Writer

"Preparing a DVD Writer (CU-VD3U)" (☞ p. 93)
"Preparing a DVD Writer (CU-VD50U)" (☞ p. 94)

■ Copying to Discs

"Copying All Files" (☞ p. 95)
"Copying Files by Date" (☞ p. 96)
"Copying Selected Files" (☞ p. 97)

■ Other Operations

"Playing Back with a DVD Writer" (☞ p. 99)
"Finalizing Discs After Copying" (☞ p. 99)

Memo :
- When there are many files to back up, it may take time for the backup to be completed. Wait for a while as the access lamp appears blinking, which indicates normal operation.
- Date and time information as saved as subtitles in the created discs.

Changing the Media of the DVD Writer

Set the type of media according to the loaded DVD.

1 Prepare a DVD writer.

"Preparing a DVD Writer (CU-VD3U)" (☞ p. 93)
"Preparing a DVD Writer (CU-VD50U)" (☞ p. 94)

2 Tap "CHANGE REC. MEDIA" in the "BACK-UP" menu.
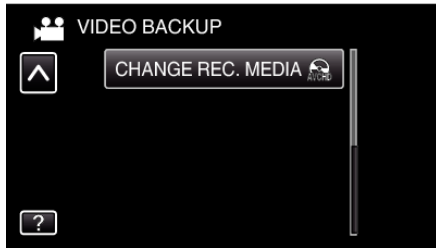
3 Tap "DVD(AVCHD)" or "DVD-Video".
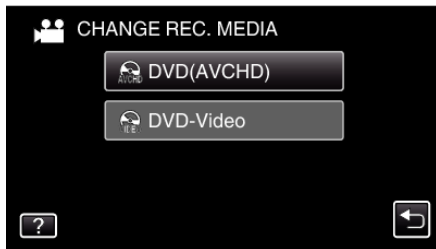
- The media changes to the tapped item. Select the appropriate setting according to the disc.
- Selecting "DVD(AVCHD)" enables you to save videos in a DVD in the high definition quality.
- Selecting "DVD-Video" enables you to save videos in a DVD after converting to the standard image quality.

Preparing a DVD Writer (CU-VD3U)

1 Connect the USB cable and the AC adapter.

- Turn off the camcorder by pressing the ⏻ button for about 2 seconds.
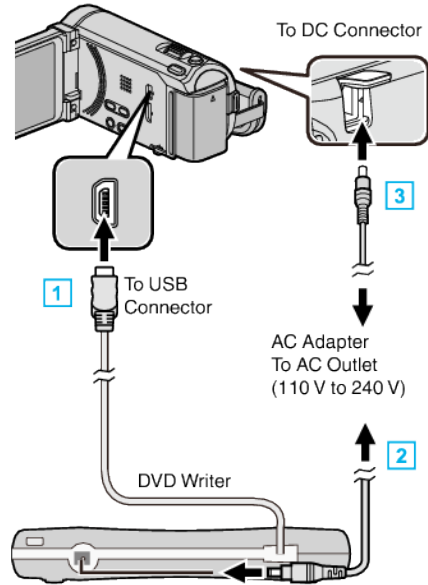
* The AC adapter shown in the illustration is AC-V11U.

☐ Connect the USB cable of the DVD writer to this unit.

② Connect the AC adapter of the DVD writer.

③ Connect the AC adapter to this unit.

- This unit powers on automatically when the AC adapter is connected.
- This unit turns on and the "BACK-UP" menu appears.
- While the USB cable is connected, the "BACK-UP" menu is displayed.
- Refer also to the instruction manual of the DVD writer.

2 Insert a new disc.
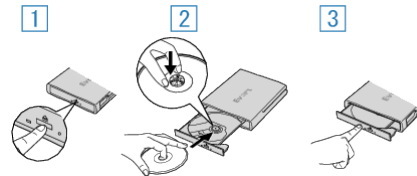
☐ Press the eject button to open the disc tray.

② Pull out the tray completely and load a new disc properly.

③ Push the disc tray in until it clicks into place.

Caution :

- Be sure to turn off the power when connecting the devices. Otherwise, electric shocks or malfunctions may occur.

Preparing a DVD Writer (CU-VD50U)

1 Connect the USB cable and the AC adapter.

● Turn off the camcorder by pressing the ⏻ button for about 2 seconds.
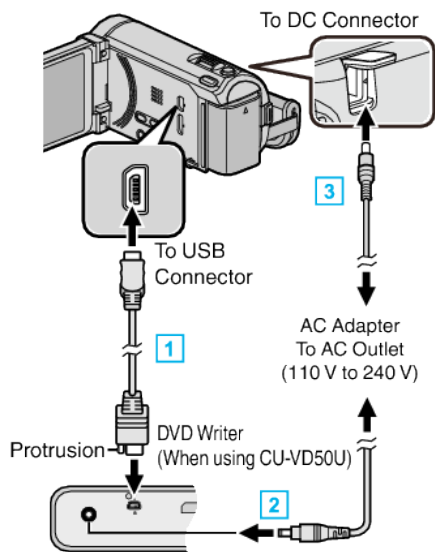
* The AC adapter shown in the illustration is AC-V11U.

1 Connect the USB cable provided with the DVD writer.
2 Connect the AC adapter of the DVD writer.
3 Connect the AC adapter to this unit.

● This unit powers on automatically when the AC adapter is connected.
● This unit turns on and the "BACK-UP" menu appears.
● While the USB cable is connected, the "BACK-UP" menu is displayed.
● Refer also to the instruction manual of the DVD writer.

2 Turn on the DVD writer and insert a new disc.
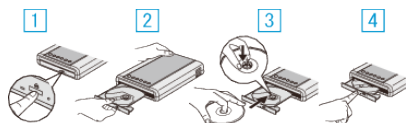
1 Press the power button to turn on the power.
2 Press the eject button to open the disc tray.
3 Pull out the tray completely and load a new disc properly.
4 Push the disc tray in until it clicks into place.

Caution :

● Be sure to turn off the power when connecting the devices.
Otherwise, electric shocks or malfunctions may occur.

Memo :

● All buttons on the DVD writer CU-VD50U, other than the power and eject buttons, will not work when connected to this unit.

Creating a Disc

1 Prepare a DVD writer.

● Insert a new disc into the DVD writer.
"Preparing a DVD Writer (CU-VD3U)" (☞ p. 93)
"Preparing a DVD Writer (CU-VD50U)" (☞ p. 94)

2 Copy files to the disc with the following methods.

"Copying All Files" (☞ p. 95)
"Copying Files by Date" (☞ p. 96)
"Copying Selected Files" (☞ p. 97)

Copying All Files

All videos or still images recorded on this unit will be copied.
You can also select and copy only the videos or still images that have never been copied.

1 Select video or still image mode.
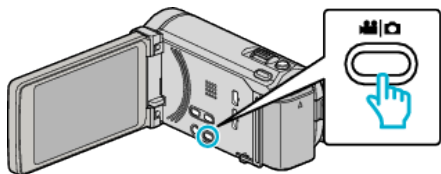
2 Tap "CREATE FROM ALL" (video) or "SAVE ALL" (still image).

● While the video mode is shown in the image, the same operations apply for the still image mode.

3 Tap on the media to copy.

4 Tap the desired method.

● While the video mode is shown in the image, the same operations apply for the still image mode.
● **"ALL SCENES" (video)/"ALL IMAGES" (still image):**
All videos or still images in this unit are copied.
● **"UNSAVED SCENES" (video)/"UNSAVED IMAGES" (still image):**
Videos or still images that have never been copied are automatically selected and copied.

5 Tap "EXECUTE".

● The number of discs required to copy the files is displayed.
Prepare the discs accordingly.

6 Tap "YES" or "NO". (🎥 mode only)

● When "YES" is selected, videos with similar recording dates are displayed in groups.
● When "NO" is selected, videos are displayed according to recording dates.

7 Tap "EXECUTE".

● When "INSERT NEXT DISC" appears, change the disc.

8 After copying, tap "OK".

9 Press and hold the ⏻ button for 2 seconds or more to turn off this unit and disconnect the USB cable.

Caution :
● Do not turn off the power or remove the USB cable until copying is complete.
● Files that are not on the index screen during playback cannot be copied.

Memo :
● To check the created disc, refer to ""Playing Back with a DVD Writer" (☞ p. 99) ".
"Playing Back with a DVD Writer" (☞ p. 99)

When "DO YOU WANT TO FINALIZE?" appears

This appears when "AUTO FINALIZE" in the "COMMON" menu is set to "OFF".
"AUTO FINALIZE" (☞ p. 153)
● To play back on other devices, tap "YES".
● To add more files to the DVD later, tap "NO".

Memo :
● When two or more DVDs are created simultaneously, all the discs other than the last one will be finalized automatically even when "AUTO FINALIZE" is set to "OFF".
● You can finalize a DVD even when "FINALIZE" is selected in the "BACK-UP" menu.
"Finalizing Discs After Copying" (☞ p. 99)
● DVD-Video discs will be finalized automatically regardless of the "AUTO FINALIZE" setting.
● To play back a BD-R disc on other devices, select "FINALIZE" after creating the disc.
(The "AUTO FINALIZE" function in the "COMMON" menu can only be used for creating DVDs.)

Copying Files by Date

Videos or still images are sorted and copied according to the date on which they were recorded.

1 Select video or still image mode.

2 Tap "SELECT AND CREATE" (video) or "SELECT AND SAVE" (still image).

- While the video mode is shown in the image, the same operations apply for the still image mode.

3 Tap on the media to copy.

4 Tap "CREATE BY DATE" (video) or "SAVE BY DATE" (still image).

- While the video mode is shown in the image, the same operations apply for the still image mode.

5 Tap to select a recording date.

6 Tap "EXECUTE".

- The number of discs required to copy the files is displayed.

Prepare the discs accordingly.

7 Tap "YES" or "NO". (🎥 mode only)

CREATE BY DATE ✕

DO YOU WANT AN AUTOMATIC HEADLINE ON THE TOP MENU CREATED?

YES   NO

- When "YES" is selected, videos with similar recording dates are displayed in groups.
- When "NO" is selected, videos are displayed according to recording dates.

8 Tap "EXECUTE".

CREATE BY DATE ✕

REMAINING
DVD 2
DVD(DL)1

EXECUTE   STOP

- When "INSERT NEXT DISC" appears, change the disc.

9 After copying, tap "OK".

CREATE BY DATE

COMPLETED

OK

10 Press and hold the ⏻ button for 2 seconds or more to turn off this unit and disconnect the USB cable.

Caution :
- Do not turn off the power or remove the USB cable until copying is complete.
- Files that are not on the index screen during playback cannot be copied.

Memo :
- To check the created disc, refer to ""Playing Back with a DVD Writer" (☞ p. 99) ".

"Playing Back with a DVD Writer" (☞ p. 99)

When "DO YOU WANT TO FINALIZE?" appears

This appears when "AUTO FINALIZE" in the "COMMON" menu is set to "OFF".
"AUTO FINALIZE" (☞ p. 153)
- To play back on other devices, tap "YES".
- To add more files to the DVD later, tap "NO".

Memo :
- When two or more DVDs are created simultaneously, all the discs other than the last one will be finalized automatically even when "AUTO FINALIZE" is set to "OFF".
- You can finalize a DVD even when "FINALIZE" is selected in the "BACK-UP" menu.

"Finalizing Discs After Copying" (☞ p. 99)
- DVD-Video discs will be finalized automatically regardless of the "AUTO FINALIZE" setting.
- To play back a BD-R disc on other devices, select "FINALIZE" after creating the disc.
  (The "AUTO FINALIZE" function in the "COMMON" menu can only be used for creating DVDs.)

Copying Selected Files

Select and copy the desired videos or still images individually.

1 Select video or still image mode.

2 Tap "SELECT AND CREATE" (video) or "SELECT AND SAVE" (still image).

VIDEO BACKUP

SELECT AND CREATE
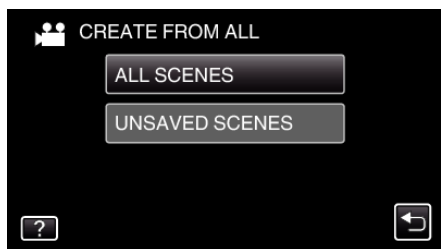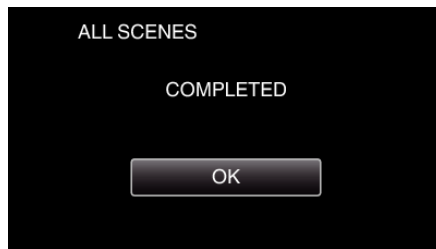
- While the video mode is shown in the image, the same operations apply for the still image mode.

3 Tap on the media to copy.

SELECT AND CREATE
SELECT THE MEDIA TO BACK UP

BUILT-IN MEMORY   SD CARD

4 Tap "SELECT FROM SCENES" (video) or "SELECT FROM IMAGES" (still image).

SELECT AND CREATE

CREATE BY DATE

SELECT FROM SCENES

- While the video mode is shown in the image, the same operations apply for the still image mode.

5 Tap on the videos or still images to copy.

SELECT FROM SCENES
2011

CHECK   QUIT

- A check mark appears on the selected file.
  To remove the check mark, tap on the file again.
- Tap "CHECK" to check the file.
- While the video mode is shown in the image, the same operations apply for the still image mode.

6 After selecting all the files, tap "SAVE".

SELECT FROM SCENES

2011

CHECK   QUIT   SAVE

- While the video mode is shown in the image, the same operations apply for the still image mode.

7 Tap "EXECUTE".

SELECT FROM SCENES

REQUIRED DISC SPACE
DVD:2 / DVD(DL):1
PREPARE AN EMPTY DISC

EXECUTE   RETURN

- The number of discs required to copy the files is displayed.
Prepare the discs accordingly.

8 Tap "YES" or "NO". (🎥 mode only)

SELECT FROM SCENES

DO YOU WANT AN AUTOMATIC
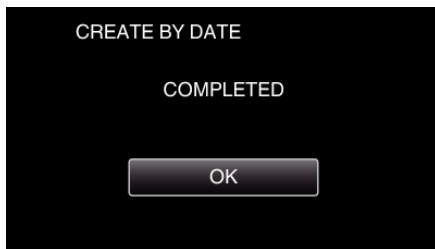HEADLINE ON THE TOP MENU
CREATED?

YES   NO

- When "YES" is selected, videos with similar recording dates are displayed in groups.
- When "NO" is selected, videos are displayed according to recording dates.

9 Tap "EXECUTE".

SELECT FROM SCENES

REMAINING
DVD   2
DVD(DL)1

EXECUTE   STOP

- When "INSERT NEXT DISC" appears, change the disc.

10 After copying, tap "OK".

SELECT FROM SCENES

COMPLETED

OK

11 Press and hold the ⏻ button for 2 seconds or more to turn off this unit and disconnect the USB cable.

Caution :
- Do not turn off the power or remove the USB cable until copying is complete.
- Files that are not on the index screen during playback cannot be copied.

Memo :

- To check the created disc, refer to ""Playing Back with a DVD Writer" (☞ p. 99) ".
"Playing Back with a DVD Writer" (☞ p. 99)

When "DO YOU WANT TO FINALIZE?" appears

This appears when "AUTO FINALIZE" in the "COMMON" menu is set to "OFF".
"AUTO FINALIZE" (☞ p. 153)
- To play back on other devices, tap "YES".
- To add more files to the DVD later, tap "NO".

Memo :
- When two or more DVDs are created simultaneously, all the discs other than the last one will be finalized automatically even when "AUTO FINALIZE" is set to "OFF".
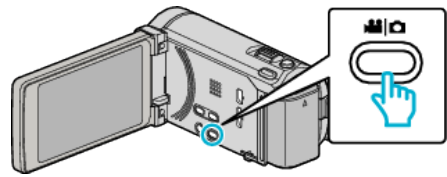- You can finalize a DVD even when "FINALIZE" is selected in the "BACK-UP" menu.

"Finalizing Discs After Copying" (☞ p. 99)
- DVD-Video discs will be finalized automatically regardless of the "AUTO FINALIZE" setting.
- To play back a BD-R disc on other devices, select "FINALIZE" after creating the disc.
  (The "AUTO FINALIZE" function in the "COMMON" menu can only be used for creating DVDs.)

Playing Back with a DVD Writer

You can play back the DVDs created on this unit.

1 Prepare a DVD writer.
- Insert the DVD to play back into the DVD writer.
  "Preparing a DVD Writer (CU-VD3U)" (☞ p. 93)
  "Preparing a DVD Writer (CU-VD50U)" (☞ p. 94)

2 Tap "PLAYBACK" in the BACK-UP menu.
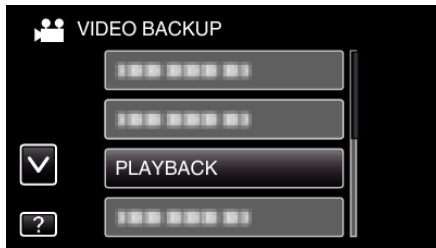
- An index screen (thumbnail display) of the videos in the disc appears.

3 Tap on the file to start playback.

- Tap "�" to return to the "BACK-UP" menu.
- For details on video playback, refer to ""Operation Buttons for Video Playback" (☞ p. 74) ".
  "Operation Buttons for Video Playback" (☞ p. 74)
- To exit, stop playback and turn off the camcorder by pressing the ⏻ button for about 2 seconds. Then, disconnect the USB cable.

Memo :
- When playing back a disc created in DVD-Video format, no information such as date and time will be displayed.
- Discs created with a DVD writer or external Blu-ray drive as well as files copied to an external hard disk drive can be converted to 3D for playback. (for GZ-HM960)

Finalizing Discs After Copying

Finalize the disc after copying is finished. This enables the disc to be played back using this unit, PC, DVD writer, DVD player, or external Blu-ray drive that supports the BD-MV and AVCHD formats.

1 Select video or still image mode.
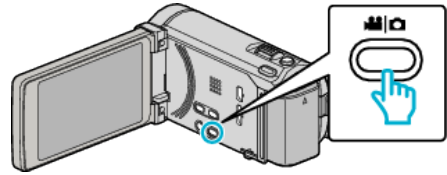
2 Tap "FINALIZE".
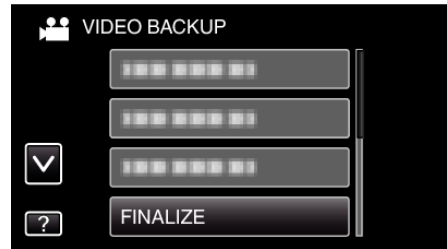
3 Tap "YES".
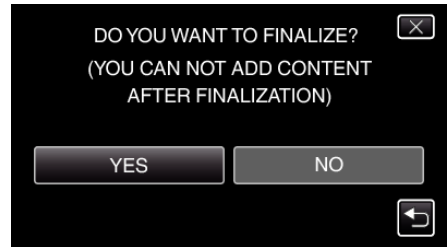
- After finalizing, tap "OK".

Creating Discs with an External Blu-ray Drive

You can copy the recorded files to discs or play back the created discs using an optional external Blu-ray drive.

Compatible External Blu-ray Drives

You can use BE08LU20 from LG. (as of December, 2010)

Creating Discs with an External Blu-ray Drive

■ Preparing an External Blu-ray Drive

"Preparing an External Blu-ray Drive" (☞ p. 100)

■ Copying to Discs

"Copying All Files" (☞ p. 101)
"Copying Files by Date" (☞ p. 102)
"Copying Selected Files" (☞ p. 103)
Select and copy the desired videos or still images individually.

■ Other Operations

"Playing Back with an External Blu-ray Drive" (☞ p. 104)

Memo :
- The recordable time on the disc varies according to the way of recording.
- When there are many files to back up, it may take time for the backup to be completed. Wait for a while as the access lamp appears blinking, which indicates normal operation.
- Date and time information as saved as subtitles in the created discs.

Changing the Media of the External Blu-ray Drive

Set the type of media according to the loaded Blu-ray disc or DVD.

1 Prepare an external Blu-ray drive.
- Insert a disc into the external Blu-ray drive.
  "Preparing an External Blu-ray Drive" (☞ p. 100)

2 Tap "CHANGE REC. MEDIA" in the "BACK-UP" menu.
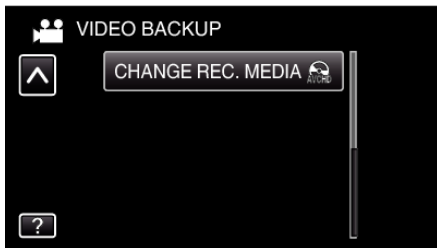
3 Tap "Blu-ray DISC", "DVD(AVCHD)", or "DVD-Video".

- The media changes to the tapped item. Select the appropriate setting according to the disc.
- Selecting "Blu-ray DISC" enables you to save videos in a Blu-ray disc in the high definition quality.
- Selecting "DVD(AVCHD)" enables you to save videos in a DVD in the high definition quality.
- Selecting "DVD-Video" enables you to save videos in a DVD after converting to the standard image quality.

Preparing an External Blu-ray Drive

Memo :
When connecting to the external Blu-ray drive, use a USB cable with Mini-A (Male) – B (Male) connectors.
The USB cable provided with this unit cannot be used.

- To use the USB cable provided with the external Blu-ray drive, purchase the USB extension cable.

Mini-A (Male) – A (Female)
(Part number: QAM0852-001)

1 Connect the USB cable and the AC adapter.

- Turn off the camcorder by pressing the ⏻ button for about 2 seconds.
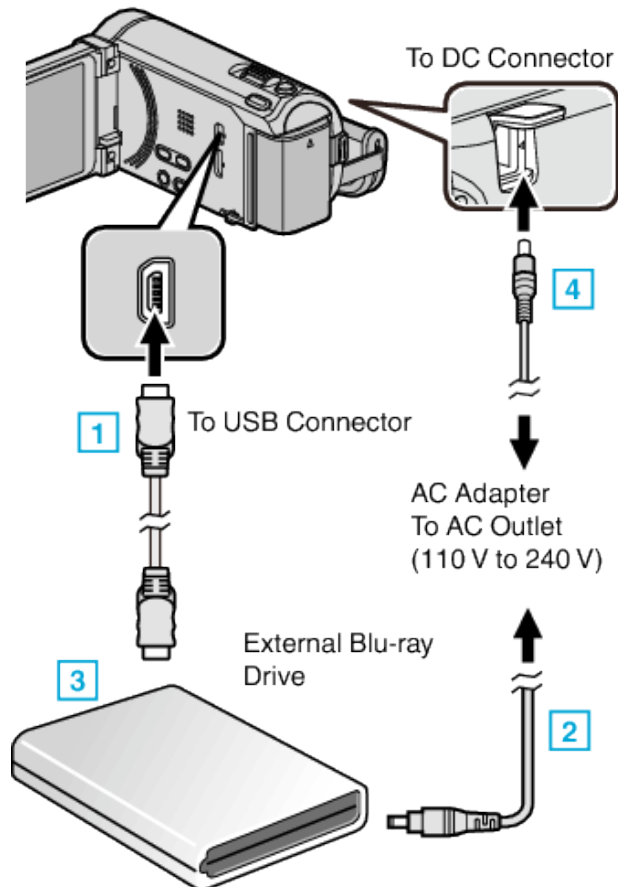
* The AC adapter shown in the illustration is AC-V11U.

1 Connect the USB cable of the external Blu-ray drive to this unit.
2 Connect the AC adapter of the external Blu-ray drive.
3 Turn on the external Blu-ray drive.
4 Connect the AC adapter to this unit.

- This unit powers on automatically when the AC adapter is connected.
- This unit turns on and the "BACK-UP" menu appears.
- While the USB cable is connected, the "BACK-UP" menu is displayed.
- Refer also to the instruction manual of the external Blu-ray drive.

2 Insert a new disc.

- Press the power button on the external Blu-ray drive to turn on the power.
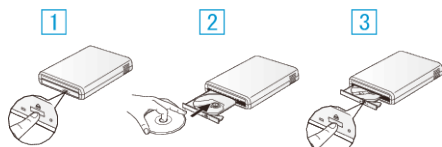
① Press the eject button to open the disc tray.
② Load a new disc properly.
③ Press the eject button to close the disc tray.

Caution :

- Be sure to turn off the power when connecting the devices. Otherwise, electric shocks or malfunctions may occur.

Creating a Disc

Creating a Disc

1 Prepare an external Blu-ray drive.

- Insert a new disc into the external Blu-ray drive.
"Preparing an External Blu-ray Drive" (☞ p. 100)

2 Copy files to the disc with the following methods.
"Copying All Files" (☞ p. 101)
"Copying Files by Date" (☞ p. 102)
"Copying Selected Files" (☞ p. 103)

Copying All Files

All videos or still images recorded on this unit will be copied.
You can also select and copy only the videos or still images that have never been copied.

1 Select video or still image mode.
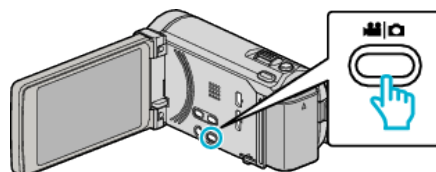
2 Tap "CREATE FROM ALL" (video) or "SAVE ALL" (still image).

3 Tap on the media to copy.

4 Tap the desired method.

- **"ALL SCENES" (video)/"ALL IMAGES" (still image):**
All videos or still images in this unit are copied.
- **"UNSAVED SCENES" (video)/"UNSAVED IMAGES" (still image):**
Videos or still images that have never been copied are automatically selected and copied.

5 Tap "EXECUTE".

101

ALL SCENES

REQUIRED DISC SPACE
DVD:2 / DVD(DL):1
PREPARE AN EMPTY DISC

EXECUTE   RETURN

- The number of discs required to copy the files is displayed. Prepare the discs accordingly.

6 Tap "YES" or "NO". (🎥 mode only)

ALL SCENES

DO YOU WANT AN AUTOMATIC
HEADLINE ON THE TOP MENU
CREATED?

YES   NO

- When "YES" is selected, videos with similar recording dates are displayed in groups.
- When "NO" is selected, videos are displayed according to recording dates.

7 Tap "EXECUTE".

ALL SCENES

REMAINING
DVD   2
DVD(DL)1

EXECUTE   STOP

- When "INSERT NEXT DISC" appears, change the disc.

8 After copying, tap "OK".

ALL SCENES

COMPLETED

OK

9 Press and hold the ⏻ button for 2 seconds or more to turn off this unit and disconnect the USB cable.

Caution :
- Do not turn off the power or remove the USB cable until copying is complete.
- Files that are not on the index screen during playback cannot be copied.

Memo :
- To check the created disc, refer to ""Playing Back with an External Blu-ray Drive" (☞ p. 104) ".

"Playing Back with an External Blu-ray Drive" (☞ p. 104)

Copying Files by Date

Videos or still images are sorted and copied according to the date on which they were recorded.

1 Select video or still image mode.

2 Tap "SELECT AND CREATE" (video) or "SELECT AND SAVE" (still image).

VIDEO BACKUP

SELECT AND CREATE

- While the video mode is shown in the image, the same operations apply for the still image mode.

3 Tap on the media to copy.

SELECT AND CREATE

SELECT THE MEDIA TO BACK UP

BUILT-IN MEMORY   SD CARD

4 Tap "CREATE BY DATE" (video) or "SAVE BY DATE" (still image).

SELECT AND CREATE

CREATE BY DATE

SELECT FROM SCENES

- While the video mode is shown in the image, the same operations apply for the still image mode.

5 Tap to select a recording date.

CREATE BY DATE

JAN.10.2011

QUIT

6 Tap "EXECUTE".

CREATE BY DATE

REQUIRED DISC SPACE
DVD:2 / DVD(DL):1
PREPARE AN EMPTY DISC

CHECK

EXECUTE   RETURN

- The number of discs required to copy the files is displayed.

Prepare the discs accordingly.

7 Tap "YES" or "NO". (📹 mode only)

```
CREATE BY DATE                    ✕

   DO YOU WANT AN AUTOMATIC
   HEADLINE ON THE TOP MENU
          CREATED?

      YES              NO

                                  ↩
```

- When "YES" is selected, videos with similar recording dates are displayed in groups.
- When "NO" is selected, videos are displayed according to recording dates.

8 Tap "EXECUTE".

```
   CREATE BY DATE                 ✕

         REMAINING
          DVD   2
          DVD(DL)1
       _____

      EXECUTE          STOP
```

- When "INSERT NEXT DISC" appears, change the disc.

9 After copying, tap "OK".

```
   CREATE BY DATE

       COMPLETED

          OK
```

10 Press and hold the ⏻ button for 2 seconds or more to turn off this unit and disconnect the USB cable.

Caution :

- Do not turn off the power or remove the USB cable until copying is complete.
- Files that are not on the index screen during playback cannot be copied.

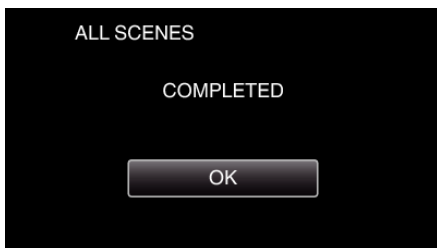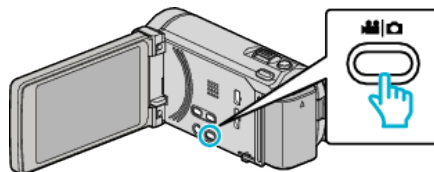**Memo :**

- To check the created disc, refer to ""Playing Back with an External Blu-ray Drive" (☞ p. 104) ".
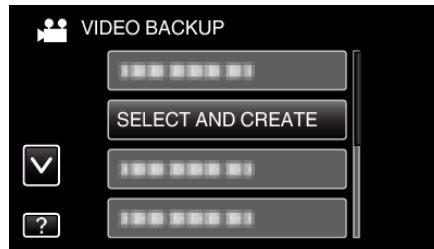
"Playing Back with an External Blu-ray Drive" (☞ p. 104)

Copying Selected Files

Select and copy the desired videos or still images individually.

1 Select video or still image mode.

2 Tap "SELECT AND CREATE" (video) or "SELECT AND SAVE" (still image).

```
   📹 VIDEO BACKUP

      ▦▦ ▦▦▦ ▦▯

      SELECT AND CREATE

   ∧  ▦▦ ▦▦▦ ▦▯

   ?  ▦▦ ▦▦▦ ▦▯
```

3 Tap on the media to copy.

```
   📹 SELECT AND CREATE

      SELECT THE MEDIA TO BACK UP

    BUILT-IN MEMORY    SD CARD

   ?                            ↩
```

4 Tap "SELECT FROM SCENES" (video) or "SELECT FROM IMAGES" (still image).

```
   📹 SELECT AND CREATE

        CREATE BY DATE

       SELECT FROM SCENES

   ?                            ↩
```

- While the video mode is shown in the image, the same operations apply for the still image mode.

5 Tap on the videos or still images to copy.

```
   📹 SELECT FROM SCENES
   ‹        2011    ▦▦▦    ›
   ☐    ☐    ☐    ☐

   ☐    ☐

     ↩    CHECK    QUIT
```

- A check mark appears on the selected file. To remove the check mark, tap on the file again.
- Tap "CHECK" to check the file.

6 After selecting all the files, tap "SAVE".

```
   📹 SELECT FROM SCENES
   ‹        2011    ▦▦▦    ›
   ✓    ☐    ☐    ✓

   ✓    ☐

     CHECK    QUIT    SAVE
```

7 Tap "EXECUTE".

SELECT FROM SCENES ✕

REQUIRED DISC SPACE
DVD:2 / DVD(DL):1
PREPARE AN EMPTY DISC

EXECUTE   RETURN

- The number of discs required to copy the files is displayed. Prepare the discs accordingly.

8 Tap "YES" or "NO". (🎥 mode only)

SELECT FROM SCENES ✕

DO YOU WANT AN AUTOMATIC HEADLINE ON THE TOP MENU CREATED?
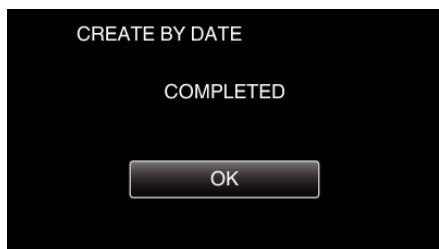
YES   NO

- When "YES" is selected, videos with similar recording dates are displayed in groups.
- When "NO" is selected, videos are displayed according to recording dates.

9 Tap "EXECUTE".

SELECT FROM SCENES ✕

REMAINING
DVD   2
DVD(DL)1

EXECUTE   STOP

- When "INSERT NEXT DISC" appears, change the disc.

10 After copying, tap "OK".

SELECT FROM SCENES

COMPLETED

OK

11 Press and hold the ⏻ button for 2 seconds or more to turn off this unit and disconnect the USB cable.

Caution :

- Do not turn off the power or remove the USB cable until copying is complete.
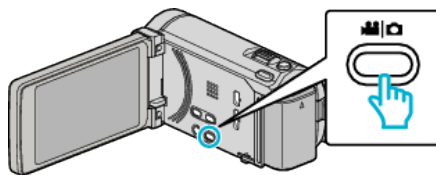- Files that are not on the index screen during playback cannot be copied.

Memo :

- To check the created disc, refer to ""Playing Back with an External Blu-ray Drive" (☞ p. 104) ".
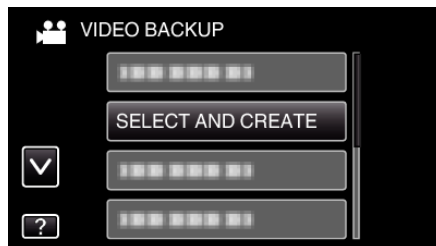
"Playing Back with an External Blu-ray Drive" (☞ p. 104)

Playing Back with an External Blu-ray Drive

You can play back the Blu-ray discs created on this unit.

1 Prepare an external Blu-ray drive.

- Insert the Blu-ray disc to play back into the external Blu-ray drive.

"Preparing an External Blu-ray Drive" (☞ p. 100)

2 Tap "PLAYBACK" in the BACK-UP menu.

VIDEO BACKUP

▮▮▮ ▮▮▮ ▮▮

▮▮▮ ▮▮▮ ▮▮

PLAYBACK

?   ▮▮▮ ▮▮▮ ▮▮
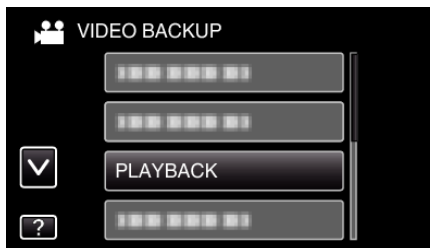
- An index screen (thumbnail display) of the videos in the disc appears.
- Tap "↰" to return to the "BACK-UP" menu.

3 Tap on the file to start playback.

PLAYBACK

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- For details on video playback, refer to ""Operation Buttons for Video Playback" (☞ p. 74) ".

"Operation Buttons for Video Playback" (☞ p. 74)

- To exit, stop playback and turn off the camcorder by pressing the ⏻ button for about 2 seconds. Then, disconnect the USB cable.

Memo :

- When playing back a disc created in DVD-Video format, no information such as date and time will be displayed.
- Discs created with a DVD writer or external Blu-ray drive as well as files copied to an external hard disk drive can be converted to 3D for playback. (for GZ-HM960)

Creating a Disc Using a Connected Blu-ray Recorder

You can create discs using a Blu-ray recorder by connecting it to this unit using a USB cable.

1 Open the LCD monitor.
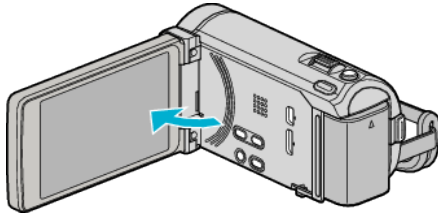
2 Connect to a Blu-ray recorder.
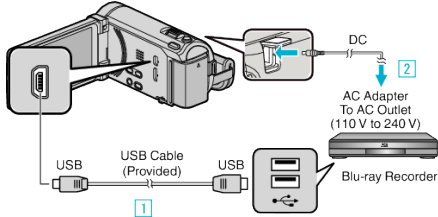
* The AC adapter shown in the illustration is AC-V11U.
A Connect using the provided USB cable.
B Connect the AC adapter to this unit.

● This unit powers on automatically when the AC adapter is connected.
● Be sure to use the supplied JVC AC adapter.
C The "SELECT DEVICE" screen appears.

3 Tap "CONNECT TO OTHER".

SELECT DEVICE
SELECT DEVICE
TYPE TO CONNECT

CONNECT TO OTHER

4 Tap the desired media.

CONNECT TO OTHER
SELECT MEDIA TO OPEN

BUILT-IN MEMORY   SD CARD

5 Perform dubbing on the Blu-ray recorder.

● Refer also to the instruction manual of the Blu-ray recorder.

Memo :
● The created discs are playable only on AVCHD compatible devices (such as Blu-ray recorders).

Dubbing Files to a Disc by Connecting to a DVD Recorder

You can dub videos in standard quality by connecting to a DVD recorder.
● Refer also to the instruction manuals of the TV and DVD recorder.

1 Connect to a DVD recorder.

To AV Connector   Yellow Video Input
COMPONENT AV   Video Input
                       White Audio Input (L)
AV Cable
(Provided)   Red Audio Input (R)

Record   VCR/DVD Recorder

To DC Connector   AC Adapter To AC Outlet
                       (110 V to 240 V)

* The AC adapter shown in the illustration is AC-V11U.
A Connect using the provided AV cable.
B Connect the AC adapter to this unit.

● This unit powers on automatically when the AC adapter is connected.
● Be sure to use the supplied JVC AC adapter.

2 Tap ●↔▶ to select the playback mode.

● The mode changes between recording and playback with every tap.

3 Prepare the TV/DVD recorder for recording.

● Switch to a compatible external input.
● Insert a disc (DVD-R, etc.) into the DVD recorder.

4 Prepare this unit for playback.

● Set "VIDEO OUTPUT" in the "COMMON" menu to the aspect ratio ("4:3" or "16:9") of the connecting TV.
"VIDEO OUTPUT" (☞ p. 151)

5 Start recording.

● Start playback on this unit and press the record button on the recorder.
"Playing Back Videos" (☞ p. 74)
● After playback is complete, stop the recording.

Dubbing Files to a VHS Tape by Connecting to a VCR

You can dub videos in standard quality by connecting to a VCR.

● Refer also to the instruction manuals of the TV and VCR.

1 Connect to a VCR/DVD recorder.
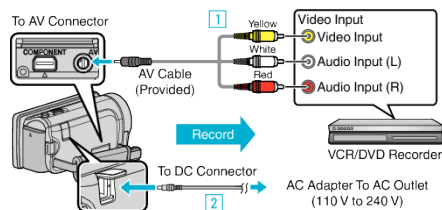
* The AC adapter shown in the illustration is AC-V11U.

① Connect using the provided AV cable.

② Connect the AC adapter to this unit.

● This unit powers on automatically when the AC adapter is connected.

● Be sure to use the supplied JVC AC adapter.

2 Tap ◉⟷▶ to select the playback mode.
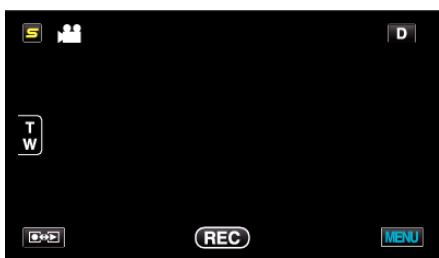
3 Prepare the TV/VCR for recording.

● Switch to a compatible external input.

● Insert a video tape.

4 Prepare this unit for playback.

● Set "VIDEO OUTPUT" in the "COMMON" menu to the aspect ratio ("4:3" or "16:9") of the connecting TV.

"VIDEO OUTPUT" (☞ p. 151)
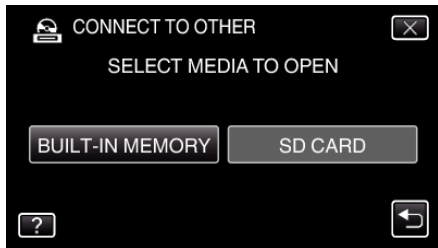
5 Start recording.

● Start playback on this unit and press the record button on the recorder.

"Playing Back Videos" (☞ p. 74)

● After playback is complete, stop the recording.

Using a USB External Hard Disk Drive

You can copy video and still image files to a USB external hard disk drive from this unit. You can also play the files in the USB external hard disk drive on this unit.

● Refer also to the instruction manual of the external hard disk drive.

Compatible External Hard Disk Drives

You can use the "LaCie Hard Disk Sleek black design USB2.0" series from LaCie.

Memo :

Before purchasing, check the compatible devices on the LaCie website.

● LaCie

http://www.lacie.com/home.htm?cc=1

● USB external hard disk drives up to 2 TB can be used.

Copying and Playback with a USB External Hard Disk Drive
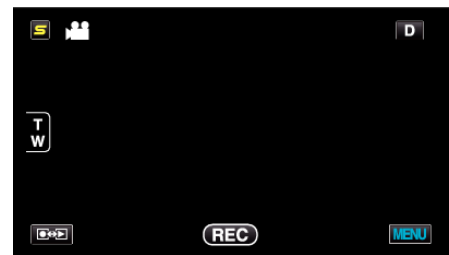
"Preparing a USB External Hard Disk Drive" (☞ p. 107)

"Copying All Files" (☞ p. 107)

"Playing Back Files in the USB External Hard Disk Drive" (☞ p. 108)

"Deleting Folders in the USB External Hard Disk Drive" (☞ p. 109)

Memo :

● Format the USB external hard disk drive when connecting it to this unit for the first time. (All data will be deleted.)

"Formatting the USB External Hard Disk Drive" (☞ p. 109)

● Refer to the help file of the provided Everio MediaBrowser 3 (3 BE) software when you use the PC to operate the data in the USB external hard disk drive directly copied from this unit.

● USB external hard disk drives with the capacity over 2 TB cannot be used.

● Copying may take time. (For example, saving 1 hour video in XP mode takes about 20 minutes.)

● When there are many files to back up, it may take time for the backup to be completed. Wait for a while as the access lamp appears blinking, which indicates normal operation.

● Sound or video may be interrupted during playback.

Caution :

● Do not connect a USB hub between this unit and the USB external hard disk drive.

● Disconnect the USB external hard disk drive when using other USB devices such as DVD writer, external Blu-ray drive, or another USB external hard disk drive.

● Avoid the following operations during copying and playing back.
  - Turning off the unit or the USB external hard disk drive.
  - Disconnecting the USB cable.

● Do not format the USB external hard disk drive using the PC. If you did, format again using this unit. (All the data in the USB external hard disk drive will be erased.)

● Avoid the following operations using the PC.
  - Deleting files or folders in the USB external hard disk drive.
  - Moving files or folders in the USB external hard disk drive.
  - Changing the name of files or folders in the USB external hard disk drive.
  These operations make the data impossible to be played back on this unit.

● When you use the PC to edit the data in the USB external hard disk drive, copy the data to the PC before editing. Editing the data in the USB external hard disk drive directly from the PC makes the data impossible to be played back on this unit.

Preparing a USB External Hard Disk Drive

Memo :

- When connecting to the external hard disk drive, use a USB cable with Mini-A (Male) – B (Male) connectors.
  The USB cable provided with this unit cannot be used.
- To use the USB cable provided with the external hard disk drive, purchase the following USB extension cable.

Mini-A (Male) – A (Female)
(Part number: QAM0852-001)

1 Connect the USB cable and the AC adapter.

- Turn off the camcorder by pressing the ⏻ button for about 2 seconds.
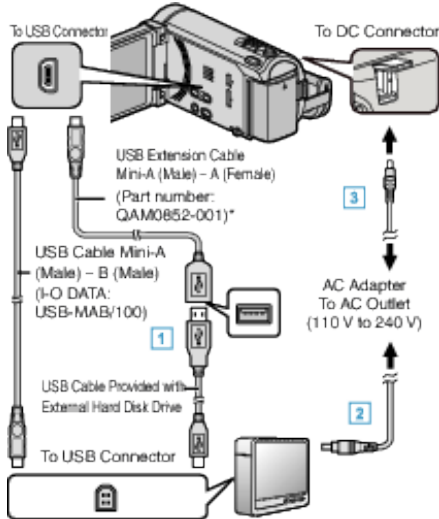
* The AC adapter shown in the illustration is AC-V11U.

① Connect the USB cable with the USB external hard disk drive.
② Connect the AC adapter of the USB external hard disk drive.
③ Connect the AC adapter to this unit.

- This unit powers on automatically when the AC adapter is connected.
- This unit turns on and the "BACK-UP" menu appears.
- While the USB cable is connected, the "BACK-UP" menu is displayed.
- Refer also to the instruction manual of the external hard disk drive.

2 Turn on the external hard disk drive.

Caution :

- Be sure to turn off the power when connecting the devices.
  Otherwise, electric shocks or malfunctions may occur.
- Do not connect a USB hub between this unit and the USB external hard disk drive.

Copying All Files

All videos or still images recorded on this unit will be copied.
You can also select and copy only the videos or still images that have never been copied.

1 Select video or still image mode.
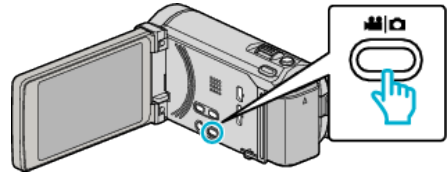
2 Tap "BACK UP".
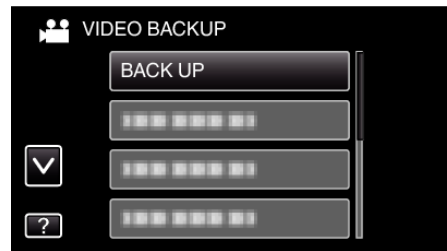
3 Tap on the media to copy.
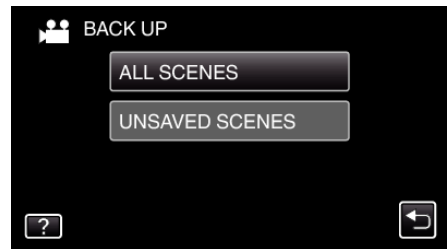
4 Tap the desired method.

- **"ALL SCENES" (video)/"ALL IMAGES" (still image):**

  All videos or still images in this unit are copied.

- **"UNSAVED SCENES" (video)/"UNSAVED IMAGES" (still image):**

  Videos or still images that have never been copied are automatically selected and copied.

5 Check that there is sufficient remaining space on the hard disk drive and tap "YES".

- Backup starts when "YES" is tapped.
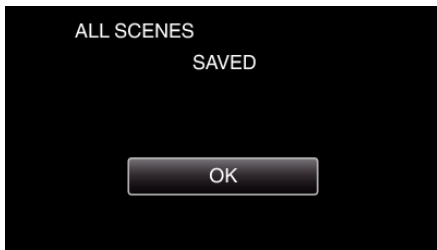
6 After copying, tap "OK".

ALL SCENES
SAVED

OK

7 Press and hold the ⏻ button for 2 seconds or more to turn off this unit and disconnect the USB cable.

Caution :

- Do not turn off the power or remove the USB cable until copying is complete.
- Files that are not on the index screen during playback cannot be copied.
- Copying may take time. (For example, saving 1 hour video in XP mode takes about 20 minutes.)

Playing Back Files in the USB External Hard Disk Drive

Videos or still images saved in an external hard disk drive can be played back on this unit.

1 Select video or still image mode.

2 Tap "PLAYBACK".
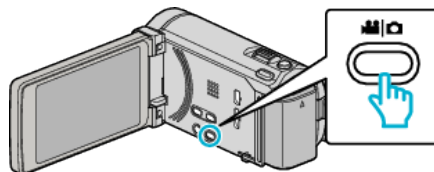
VIDEO BACKUP
PLAYBACK
?
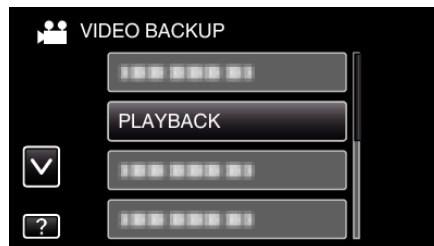
3 Tap on the folder to play back.
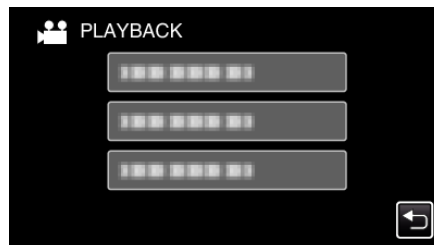
PLAYBACK

- Tap "↩" to return to the "BACK-UP" menu.

4 Tap on the file to play back.

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- Tap "↩" to return to the folder index screen.
- For details on video playback, refer to ""Operation Buttons for Video Playback" (☞ p. 74) ".

"Operation Buttons for Video Playback" (☞ p. 74)

- To exit, stop playback and turn off the camcorder by pressing the ⏻ button for about 2 seconds. Then, disconnect the USB cable.

Memo :

- Sound or video may be interrupted during playback.

Deleting Folders in the USB External Hard Disk Drive

Files that are copied to the external hard disk drive can be deleted.

Caution :

- Deleted files cannot be restored.
- Be sure to back up important files on a PC.

"Backing Up All Files" (☞ p. 115)

1 Select video or still image mode.
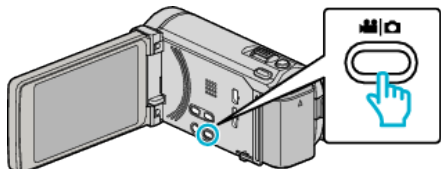
2 Tap "DELETE".
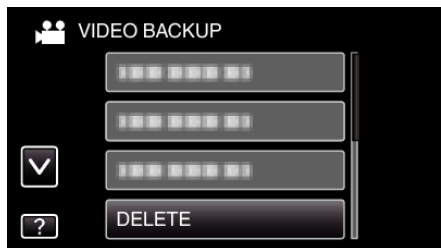
3 Tap on the folder to delete.
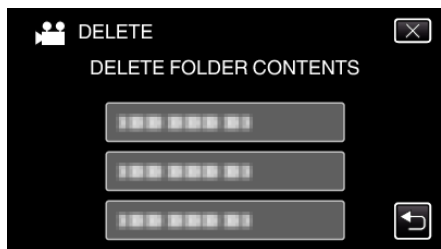
4 Tap "YES".
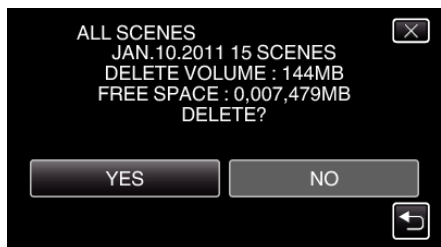
- After deleting, tap "OK".

Formatting the USB External Hard Disk Drive

All files on the external hard disk drive can be deleted.

Caution :

- All data on the external hard disk drive will be deleted when it is formatted. Copy all files on the card to a PC before formatting.

1 Select video or still image mode.
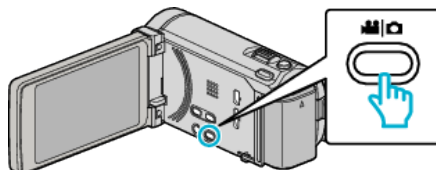
2 Tap "FORMAT".
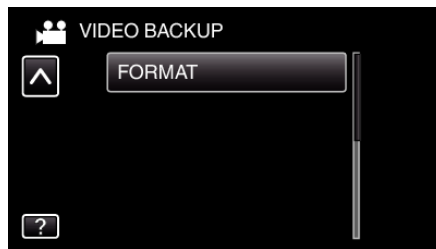
3 Tap "YES".
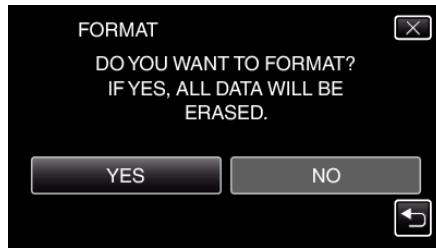
- After formatting, tap "OK".

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Importing Files from the USB External Hard Disk Drive

You can copy video files from a USB external hard disk drive to the built-in memory of this unit or an SD card.

1 Select video mode.
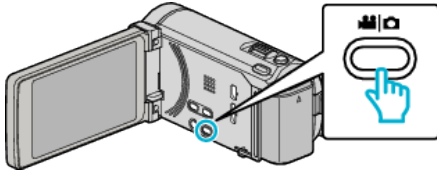
2 Tap "IMPORT FROM DEVICE" in "BACK-UP".

VIDEO BACKUP

IMPORT FROM DEVICE
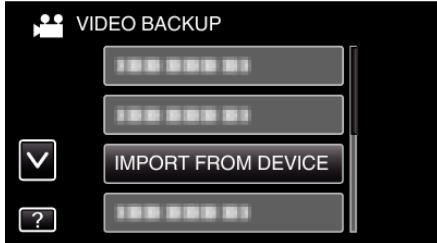
3 Tap "USB HDD→BUILT-IN MEM" or "USB HDD→SD".

IMPORT FROM DEVICE

SELECT COPY DIRECTION

USB HDD→BUILT-IN MEM   USB HDD→SD

● Files will be imported to the selected media.

4 Tap on the folder to import.

USB HDD→BUILT-IN MEM

SELECT FOLDER
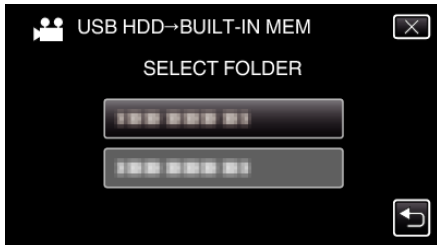
5 Tap on the files to import.

USB HDD→BUILT-IN MEM

2011

SEL ALL   REL ALL

● ✓ appears on the selected files.
To remove ✓ from a file, tap on the file again.
● Tap "SEL ALL" to select all files.
● Tap "REL ALL" to release all selections.
● "SET" is deactivated when no file is selected.

6 Tap "SET".

USB HDD→BUILT-IN MEM

2011

SEL ALL   REL ALL   SET

7 Tap "YES".

COPY ALL

COPY QUANTITY:0030

START COPY?

YES   NO

● Importing starts when "YES" is tapped.
● To cancel importing of files, tap "STOP", then tap "YES".

8 After importing, tap "OK".
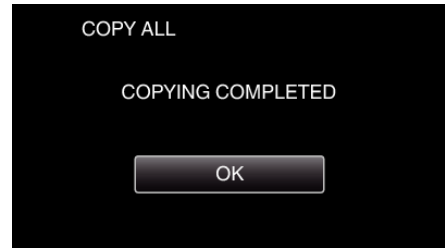
COPY ALL

COPYING COMPLETED

OK

9 Press and hold the ⏻ button for 2 seconds or more to turn off this unit and disconnect the USB cable.

Memo :
● Files that are saved to the USB external hard disk drive from other devices cannot be copied to this unit.

Copying Files to an SD Card

You can copy videos and still images from the built-in memory to SD card.
Copying still images to cards makes it convenient to bring them to the shop
for printing (developing).

Caution :
- Make sure that there is enough space left in the destination medium.
- Videos in the SD card cannot be copied to the built-in memory.
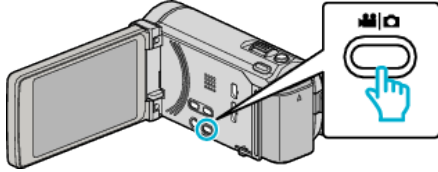
1 Select video or still image mode.

2 Tap ◉↔▶ to select the playback mode.

- The mode changes between recording and playback with every tap.

3 Tap "MENU".

4 Tap "COPY".

5 Tap on the files to copy.

- ✓ appears on the selected files.
  To remove ✓ from a file, tap on the file again.
- Tap "SEL ALL" to select all files.
- Tap "REL ALL" to release all selections.
- "SET" is deactivated when no file is selected.

6 Tap "SET".

7 Tap "YES".
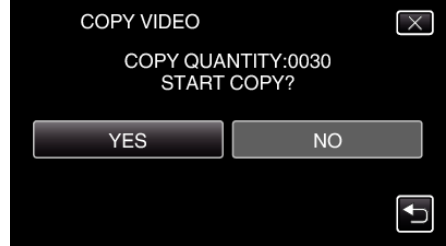
- Copying starts.
- After copying, tap "OK".

Moving Files to an SD Card

You can move videos and still images from the built-in memory to SD card. Files that are moved will be deleted from the built-in memory.
Moving still images to SD cards makes it convenient to bring them to the shop for printing (developing).

Caution :

● Make sure that there is enough space left in the destination medium.

● Videos in the SD card cannot be moved to the built-in memory.
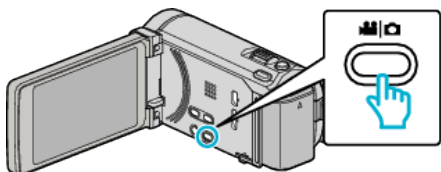
1 Select video or still image mode.

2 Tap ●↔▶ to select the playback mode.
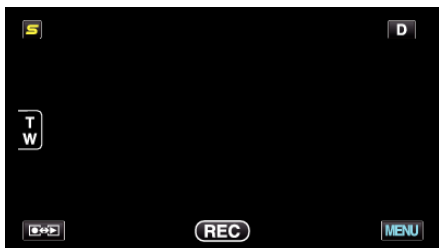
● The mode changes between recording and playback with every tap.

3 Tap "MENU".

4 Tap "MOVE".
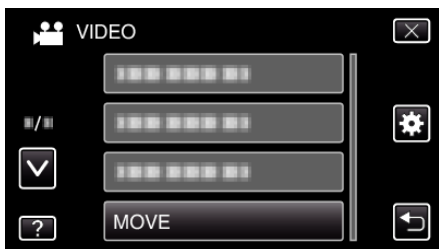
5 Tap on the files to move.

● ✓ appears on the selected files.
To remove ✓ from a file, tap on the file again.

● Tap "SEL ALL" to select all files.

● Tap "REL ALL" to release all selections.

● "SET" is deactivated when no file is selected.

6 Tap "SET".

7 Tap "YES".

● Moving of files starts.

● After moving, tap "OK".

Copying to Windows PC

You can copy files to a computer using the provided software.
DVDs can also be created using the computer's DVD drive.
If the provided software is not installed, this unit will be recognized as an external storage when connected.

Memo :

- To record to discs, a recordable DVD or Blu-ray drive is required for the computer in use.
- Still images cannot be recorded to discs using the provided software.

Trouble with Using the Provided Software Everio MediaBrowser 3 BE

Consult the customer service center below.

- Pixela User Support Center

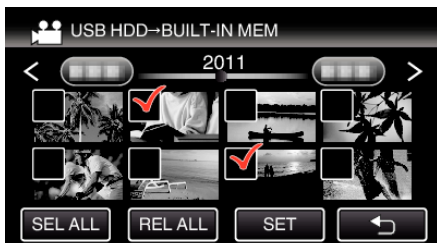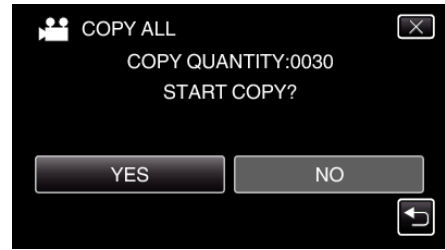| Telephone	USA and Canada (English): +1-800-458-4029 (toll-free) Europe (UK, Germany, France, and Spain) (English/German/French/Spanish): +800-1532-4865 (toll-free) Other Countries in Europe (English/German/French/Spanish): +44-1489-564-764 Asia (Philippines) (English): +63-2-438-0090 China (Chinese): 10800-163-0014 (toll-free)
Homepage	http://www.pixela.co.jp/oem/jvc/mediabrowser/e/

- For details on how to upload to YouTube or transfer files to iTunes, refer to "MediaBrowser Help" in the "Help" menu of Everio MediaBrowser 3 BE.
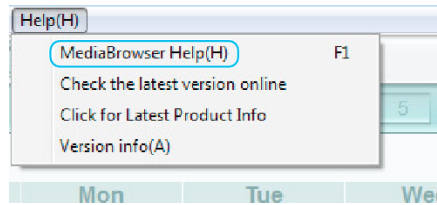
Verifying System Requirements (Guideline)

Right-click on "Computer" (or "My Computer") in the "Start" menu and select "Properties" to check the following items.

Windows Vista/Windows 7

- Refer to the operating instructions found in the animation on the Detailed User Guide.

Windows XP

- Refer to the operating instructions found in the animation on the Detailed User Guide.

|	Windows Vista/Windows 7	Windows XP
OS	Windows Vista 32/64-bit Home Basic or Home Premium (Pre-installed versions only) Service Pack 2 Windows 7 32/64-bit Home Premium (Pre-installed versions only)	Windows XP Home Edition or Professional (Pre-installed versions only) Service Pack 3
CPU	Intel Core Duo, CPU 1.66 GHz or higher (Intel Core 2 Duo, CPU 2.13 GHz or higher recommended)	Intel Core Duo, CPU 1.66 GHz or higher (Intel Core 2 Duo, CPU 2.13 GHz or higher recommended)
RAM	At least 2 GB	At least 1 GB
Video editing	Intel Core i7, CPU 2.53 GHz or higher recommended	Intel Core i7, CPU 2.53 GHz or higher recommended

■ Other requirements

Display: 1024×768 pixels or above (1280×1024 pixels or above recommended)
Graphic: Intel G965 or higher recommended

Memo :

- If your PC does not meet the above system requirements, operations of the provided software cannot be guaranteed.
- For more information, contact your PC's manufacturer.

Installing the Provided Software (Built-in)

You can display the recorded images in calendar format and perform simple editing using the provided software.

Preparations

Connect this unit to a computer with a USB cable.

1 Open the LCD monitor.
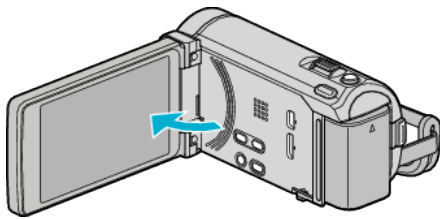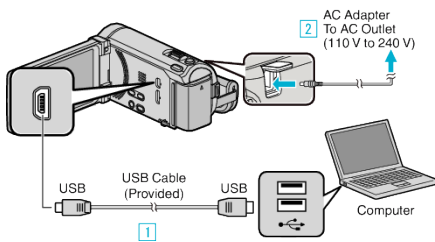
2 Connect the USB cable and the AC adapter.

AC Adapter
To AC Outlet
(110 V to 240 V)

USB   USB Cable
(Provided)   USB

Computer

* The AC adapter shown in the illustration is AC-V11U.

① Connect using the provided USB cable.
② Connect the AC adapter to this unit.
● This unit powers on automatically when the AC adapter is connected.
● Be sure to use the supplied JVC AC adapter.
③ The "SELECT DEVICE" menu appears.

3 Tap "CONNECT TO PC".

4 Tap "PLAYBACK ON PC".
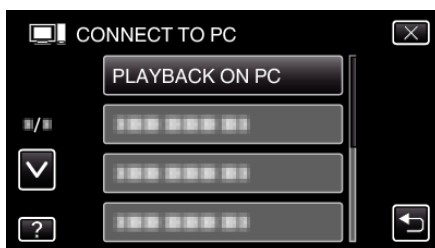
● Tap ✕ to exit the menu.
● Tap ⤺ to return to the previous screen.
● "Everio Software Setup" appears on the computer.
The subsequent operations are to be performed on the computer.

Memo :
● If "Everio Software Setup" doesn't appear, double-click "JVCCAM_APP" in "My Computer" or "Computer", then double-click "install.exe".
● If the auto play dialog box appears, select "Open folder to view files" and click "OK". Then, click "install.exe" in the folder.

Installation Procedure

■ Windows Vista/Windows 7
● Refer to the operating instructions found in the animation on the Detailed User Guide.

■ Windows XP
● Refer to the operating instructions found in the animation on the Detailed User Guide.

Backing Up All Files

Before making backup, make sure that enough free space is left in the computer's hard disk (HDD).

1 Open the LCD monitor.
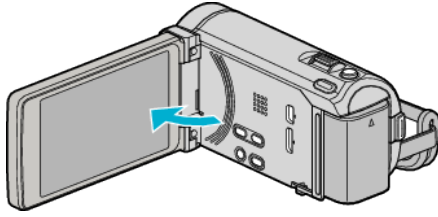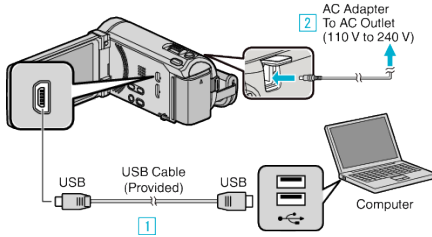
2 Connect the USB cable and the AC adapter.

AC Adapter
To AC Outlet
(110 V to 240 V)

USB Cable
(Provided)

USB   USB

Computer

* The AC adapter shown in the illustration is AC-V11U.

① Connect using the provided USB cable.

② Connect the AC adapter to this unit.

● This unit powers on automatically when the AC adapter is connected.

● Be sure to use the supplied JVC AC adapter.

③ The "SELECT DEVICE" menu appears.

3 Tap "CONNECT TO PC".

SELECT DEVICE

SELECT DEVICE
TYPE TO CONNECT

CONNECT TO PC

?

4 Tap "BACK UP".

CONNECT TO PC

BACK UP

?
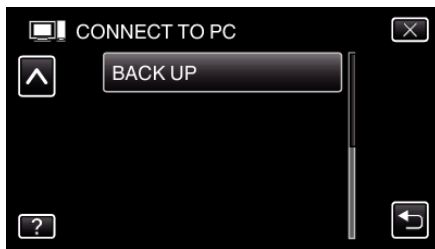
● Tap ✕ to exit the menu.

● Tap ⤺ to return to the previous screen.

● The provided software Everio MediaBrowser 3 (3 BE) starts up on the computer.
The subsequent operations are to be performed on the computer.

5 Select "Back-up".

① Click

Step 1   Volume Selection

② Click

Click "Next"

Click "All volume in camcorder"

6 Start backup.

Saving Destination (PC)

Step 2   Confirm
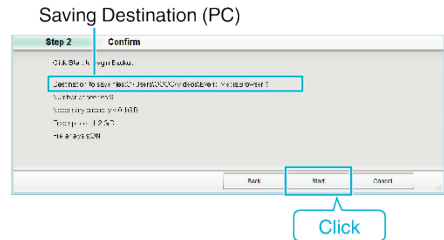
Click

● Backup starts.

7 After backup is complete, click "OK".

Everio MediaBrowser 3

Finished successfully.

OK

Click
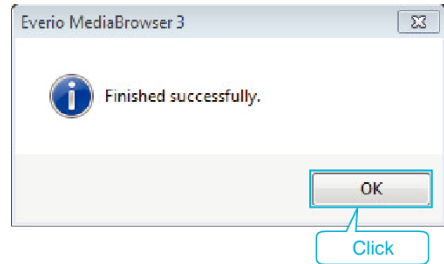
Memo :

● Before making backup, load the SD card in which the videos and still images are stored on this unit.

● If you encounter any problems with the provided software Everio MediaBrowser 3 (3 BE), please consult the "Pixela User Support Center".

Telephone	USA and Canada (English): +1-800-458-4029 (toll-free) Europe (UK, Germany, France, and Spain) (English/German/French/Spanish): +800-1532-4865 (toll-free) Other Countries in Europe (English/German/French/Spanish): +44-1489-564-764 Asia (Philippines) (English): +63-2-438-0090 China (Chinese): 10800-163-0014 (toll-free)
Homepage	http://www.pixela.co.jp/oem/jvc/mediabrowser/e/

● Delete unwanted videos before making backup.
It takes time to back up many videos.

"Deleting Unwanted Files" (☞ p. 85)

Disconnecting this Unit from Computer

1 Click "Safely Remove Hardware and Eject Media".

Safely Remove Hardware and Eject Media

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Click

2 Click "Safely Remove USB Mass Storage Device".

3 (For Windows Vista) Click "OK".

4 Disconnect the USB cable and close the LCD monitor.

Organizing Files

After backing up your files, organize them by adding labels such as "Family Trip" or "Athletic Meet".
This is useful not only for creating discs, but for viewing the files too.

1 Double-click on the Everio MediaBrowser 3 (3 BE) icon.

● The provided software starts up.

2 Display the month of the files to organize.
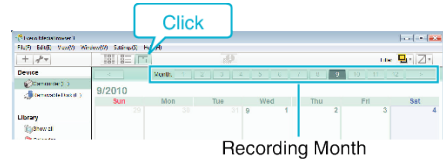
Recording Month

3 Create a user list.
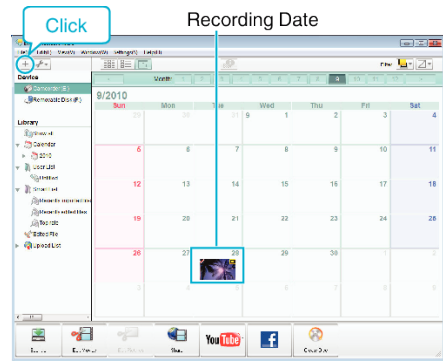
Recording Date

① Input the name of the new user list
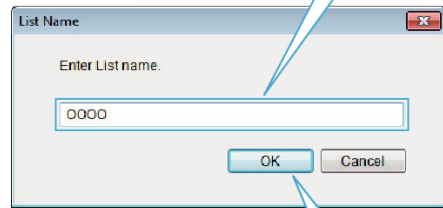
② Click

● A new user list is added to the user list library.

4 Click on the recording day.

● The thumbnails of the files recorded on the day are displayed.

Recording Date

5 Register files to the created user list.

User List   Thumbnails
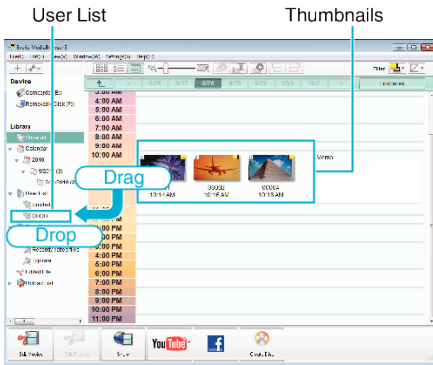
Identifying Video or Still Image :

● You can select files using the "SELECT" menu on the top right of the screen.

● Check the video/still image icon on the top right corner of the thumbnail.

Video

Still Image

Memo :

● If you encounter any problems with the provided software Everio MediaBrowser 3 (3 BE), please consult the "Pixela User Support Center".

Telephone	USA and Canada (English): +1-800-458-4029 (toll-free) Europe (UK, Germany, France, and Spain) (English/German/French/Spanish): +800-1532-4865 (toll-free) Other Countries in Europe (English/German/French/Spanish): +44-1489-564-764 Asia (Philippines) (English): +63-2-438-0090 China (Chinese): 10800-163-0014 (toll-free)
Homepage	http://www.pixela.co.jp/oem/jvc/mediabrowser/e/

Recording Videos to Discs

Copy the files that are arranged using the user list to DVDs.

1 Insert a new disc into the PC's recordable DVD or Blu-ray drive.

2 Select the desired user list.
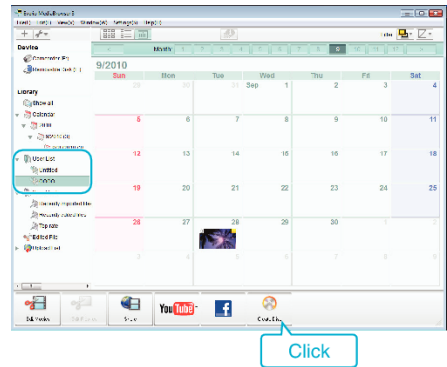
Click

3 Select the files to copy to disc in order.

Drag

Drop
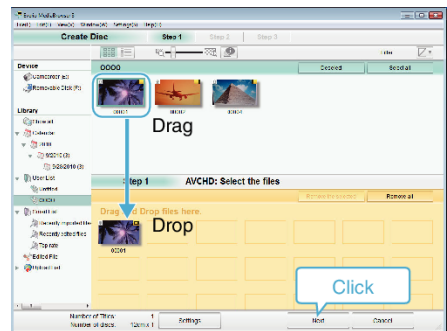
Click

● Click "Settings" to select the disc type.
Image quality is set to standard when DVD-Video is selected.

● Click "Select all" to select all the displayed files.

● After selecting, click "Next".

4 Set the title of the top menu of the disc.
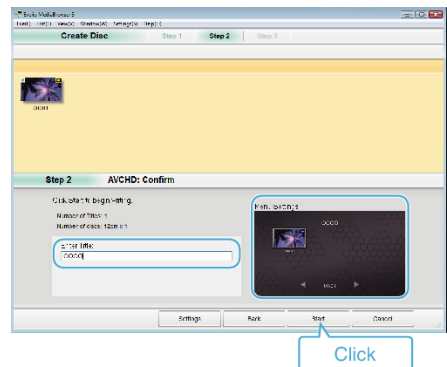
Click

● Click "Settings" to select the menu background.

● After setting, click "Start".

5 After copying is complete, click "OK".

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Memo :

● The following types of discs can be used on the provided software Everio MediaBrowser 3 (3 BE).
Everio MediaBrowser 3
-DVD-R
-DVD-R DL
-DVD-RW
-DVD+R
-DVD+R DL
-DVD+RW

Everio MediaBrowser 3 BE
-DVD-R
-DVD-R DL
-DVD-RW
-DVD+R
-DVD+R DL
-DVD+RW
-BD-R
-BD-R DL
-BD-RE
-BD-RE DL

● The following formats are supported by the provided software Everio MediaBrowser 3 (3 BE).
Everio MediaBrowser 3
-DVD-Video
-AVCHD

Everio MediaBrowser 3 BE
-Blu-ray
-DVD-Video
-AVCHD

● Use Everio MediaBrowser 3 BE Player to play back a Blu-ray or AVCHD disc. Refer to the help file of the provided Everio MediaBrowser 3 BE software to operate.

● Use Everio MediaBrowser 3 Player to play back an AVCHD disc. Refer to the help file of the provided Everio MediaBrowser 3 software to operate.

● To view the help file of Everio MediaBrowser 3 (3 BE), select "Help" from the Everio MediaBrowser 3 (3 BE)'s menu bar or press F1 on the keyboard.

● If you encounter any problems with the provided software Everio MediaBrowser 3 (3 BE), please consult the "Pixela User Support Center".

Telephone	USA and Canada (English): +1-800-458-4029 (toll-free) Europe (UK, Germany, France, and Spain) (English/German/French/Spanish): +800-1532-4865 (toll-free) Other Countries in Europe (English/German/French/Spanish): +44-1489-564-764 Asia (Philippines) (English): +63-2-438-0090 China (Chinese): 10800-163-0014 (toll-free)
Homepage	http://www.pixela.co.jp/oem/jvc/mediabrowser/e/

Backing Up Files Without Using Provided Software

Copy the files to a computer using the following method.

1 Open the LCD monitor.
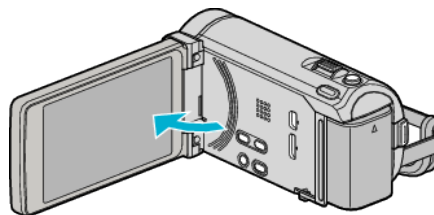
2 Connect the USB cable and the AC adapter.

* The AC adapter shown in the illustration is AC-V11U.

[1] Connect using the provided USB cable.

[2] Connect the AC adapter to this unit.

● This unit powers on automatically when the AC adapter is connected.

● Be sure to use the supplied JVC AC adapter.

[3] The "SELECT DEVICE" menu appears.

3 Tap "CONNECT TO PC".

4 Tap "PLAYBACK ON PC".
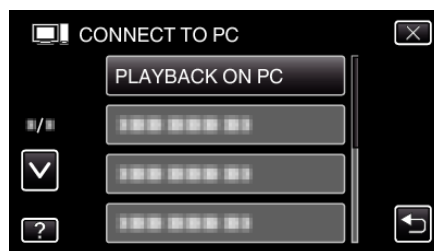
● Tap ✕ to exit the menu.

● Tap ↰ to return to the previous screen.

● Close the Everio MediaBrowser 3 BE program, if it starts.

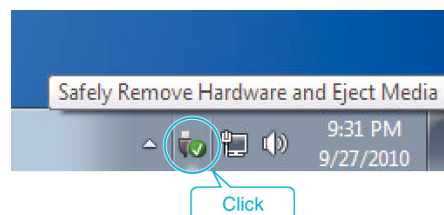● The subsequent operations are to be performed on the computer.

5 Select "Computer" (Windows Vista) / "My Computer" (Windows XP) / "Computer" (Windows 7) from the "Start" menu, then click on the "JVCCAM_MEM" or "JVCCAM_SD" icon.

● Open the folder with the desired files.

"List of Files and Folders" (☞ p. 119)

6 Copy the files to any folder in the computer (desktop, etc).

Caution :

● When the folders or files are deleted/moved/renamed in the computer, they cannot be played back on this unit anymore.

Memo :

● To edit/view the files, use a software that supports AVCHD (video)/JPEG (still image) files.

● The above operations on computer may vary with the system used.

Disconnecting this Unit from Computer

1 Click "Safely Remove Hardware and Eject Media".

Safely Remove Hardware and Eject Media

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Click

2 Click "Safely Remove USB Mass Storage Device".

3 (For Windows Vista) Click "OK".

4 Disconnect the USB cable and close the LCD monitor.

List of Files and Folders

Folders and files are created in the built-in memory and SD card as shown below.
They are created only when necessary.
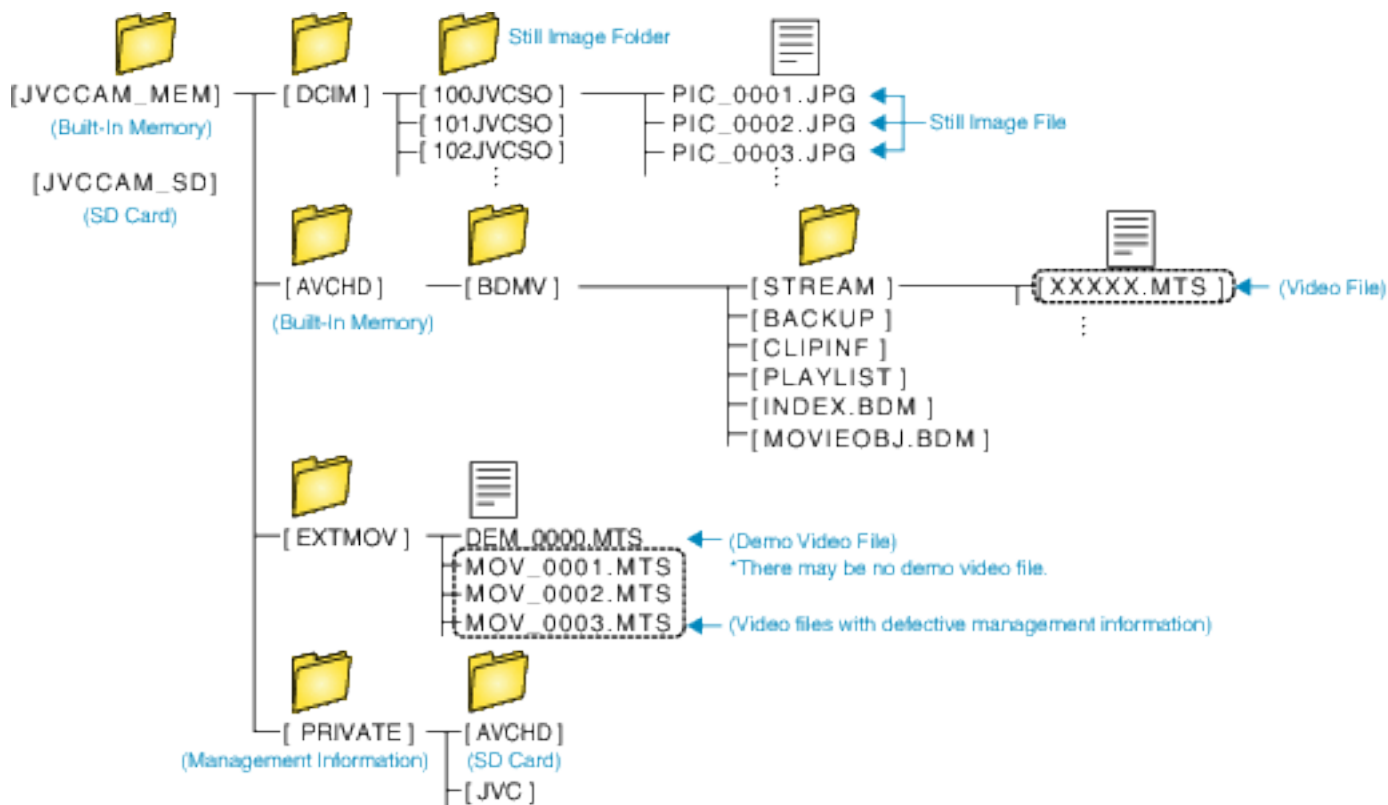
Still Image Folder

[JVCCAM_MEM] ─ [DCIM] ─┬ [100JVCSO] ──── PIC_0001.JPG ◄
(Built-In Memory)   ├ [101JVCSO]   PIC_0002.JPG ◄── Still Image File
                         ├ [102JVCSO]   PIC_0003.JPG ◄
[JVCCAM_SD]   ⋮
(SD Card)

                        ┌ [AVCHD] ── [BDMV] ──── [STREAM] ──────── [XXXXX.MTS] ◄── (Video File)
                        │ (Built-In Memory)   ├ [BACKUP]   ⋮
                        │   ├ [CLIPINF]
                        │   ├ [PLAYLIST]
                        │   ├ [INDEX.BDM]
                        │   └ [MOVIEOBJ.BDM]

                        ┌ [EXTMOV] ──┬ DEM_0000.MTS ◄── (Demo Video File)
                        │   ├ MOV_0001.MTS   *There may be no demo video file.
                        │   ├ MOV_0002.MTS
                        │   └ MOV_0003.MTS ◄── (Video files with defective management information)

                        └ [PRIVATE] ──┬ [AVCHD]
                          (Management Information) │ (SD Card)
                                        └ [JVC]

Caution :

● When the folders or files are deleted/moved/renamed in the computer, they cannot be played back on this unit anymore.

Copying to Mac Computer

Copy the files to a Mac computer using the following method.

1 Open the LCD monitor.

2 Connect the USB cable and the AC adapter.

② AC Adapter
To AC Outlet
(110 V to 240 V)

USB   USB Cable
(Provided)   USB

Computer

①

* The AC adapter shown in the illustration is AC-V11U.

① Connect using the provided USB cable.

② Connect the AC adapter to this unit.

● This unit powers on automatically when the AC adapter is connected.

● Be sure to use the supplied JVC AC adapter.

③ The "SELECT DEVICE" menu appears.

3 Tap "CONNECT TO PC".

SELECT DEVICE

SELECT DEVICE
TYPE TO CONNECT

CONNECT TO PC

?

4 Tap "PLAYBACK ON PC".

CONNECT TO PC

PLAYBACK ON PC

?

● Tap ✕ to exit the menu.

● Tap ↩ to return to the previous screen.

● Close the Everio MediaBrowser 3 BE program, if it starts.

● The subsequent operations are to be performed on the computer.

5 Click on the "JVCCAM_MEM" or "JVCCAM_SD" icon on the desktop.

● The folder opens.

6 Click on the column display icon.

Column Display Icon
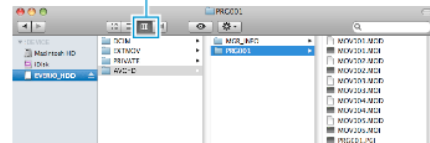
● Open the folder with the desired files.

"List of Files and Folders" (☞ p. 119)

7 Copy the files to any folder in the computer (desktop, etc).

Files to Copy
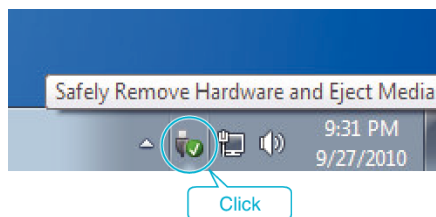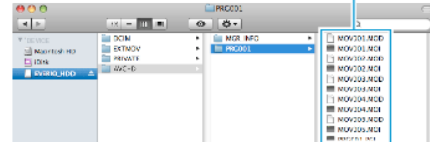
Caution :

● When the folders or files are deleted/moved/renamed in the computer, they cannot be played back on this unit anymore.

● MTS files that are copied to a Mac computer cannot be imported to iMovie. To use MTS files with iMovie, import the files using iMovie.

Memo :

● To edit/view the files, use a software that supports AVCHD (video)/JPEG (still image) files.

● When removing this unit from the computer, drag and drop the "JVCCAM_MEM" or "JVCCAM_SD" icon on the desktop to the trash bin.

iMovie and iPhoto

You can import files from this unit to a computer using Apple's iMovie '08, '09, '11 (video) or iPhoto (still image).
To verify the system requirements, select "About This Mac" from the Apple menu. You can determine the operating system version, processor and amount of memory.

● For the latest information on iMovie or iPhoto, refer to the Apple website.

● For details on how to use iMovie or iPhoto, refer to the help file of the respective software.

● There is no guarantee that the operations will work with all computer environments.

Operating the Menu

There are three types of menus in this unit.

● Main menu - Menu that contains all the items specific to the video recording, still image recording, video playback, and still image playback modes respectively.

● ✿ ("COMMON") menu in the main menu - Menu that contains all common items in the video recording, still image recording, video playback, and still image playback modes.

● **S** (face short cut) menu - Menu that picks up the face-related functions in the main menu in either the video or still image recording mode.

Operating the Main Menu

You can configure various settings using the menu.

1 Tap "MENU".

● The menu differs according to the mode in use.
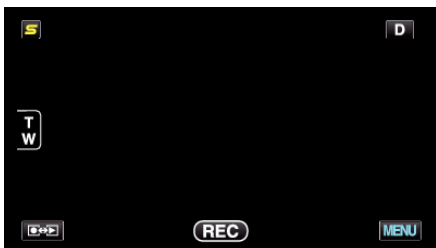
2 Tap the desired menu.
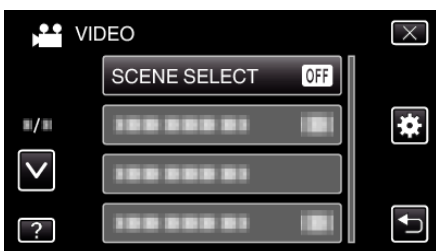
3 Tap the desired setting.
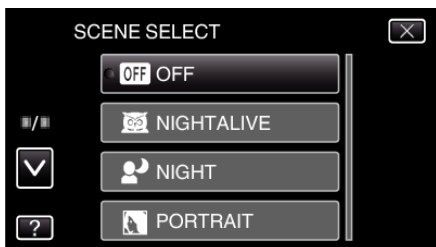
Memo :

● To exit the screen

Tap "✕" (quit).

● To return to the previous screen

Tap "↩" (return).

● To display the help file

Tap "**?**" (help) and tap the item.
Help file may not be available for some items.

Operating the Common Menu

You can configure common setting items regardless of the mode using the common menu.

1 Tap "MENU".

● The menu differs according to the mode in use.
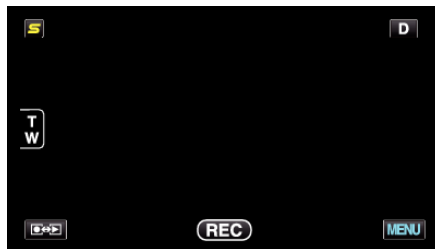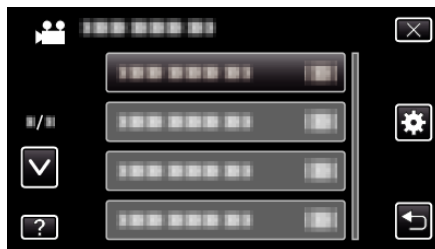
2 Tap "✿".

3 Tap the desired setting.
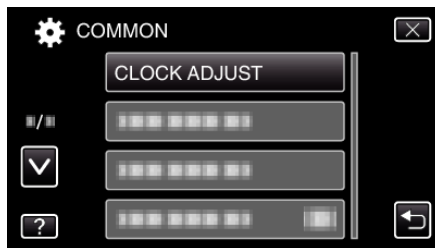
Memo :

● To exit the screen

Tap "✕" (quit).

● To return to the previous screen

Tap "↩" (return).

● To display the help file

Tap "**?**" (help) and tap the item.

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Operating the Face Short Cut Menu

You can configure various settings of face-related functions in either the video or still image recording mode using the face short cut menu.

1 Tap "**S**" in the video or still image recording mode.
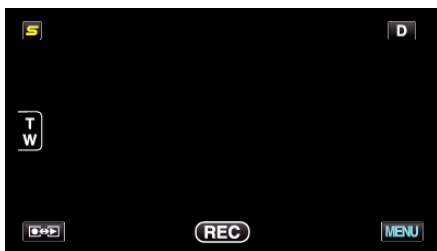
2 Tap the desired menu and setting.

● Face Short Cut Menu During Video Recording Mode

● Face Short Cut Menu During Still Image Recording Mode

Memo :

● To exit the screen

Tap "✕" (quit).

● To display the help file

Tap "**?**" (help) and tap the item.

Main Menu for Video Recording

You can adjust various settings, such as brightness and white balance, to suit the subject or purpose. You can also change settings such as picture quality and gain.

1 Select video mode.

2 Tap "MENU".

Setting	Details
SCENE SELECT	Settings to suit the shooting condition can be selected. "Scene Selection" (☞ p. 48) *Displayed only in the manual recording mode.
FOCUS	Focus can be adjusted manually. "Adjusting Focus Manually" (☞ p. 49) *Displayed only in the manual recording mode.
FOCUS ASSIST	Focused subject is outlined in color for more precise focus. "Using Focus Assist" (☞ p. 50) *Displayed only in the manual recording mode.
FOCUS ASSIST COLOR	Sets the color of the outline of a focused object when Focus Assist is used. "FOCUS ASSIST COLOR" (☞ p. 125) *Displayed only in the manual recording mode.
BRIGHTNESS ADJUST	Adjusts the overall brightness of the screen. "Adjusting Brightness" (☞ p. 50) *Displayed only in the manual recording mode.
SHUTTER SPEED	Shutter speed can be adjusted. "Setting Shutter Speed" (☞ p. 51) *Displayed only in the manual recording mode.
APERTURE PRIORITY	Adjusts the aperture value. "Setting Aperture" (☞ p. 51) *Displayed only in the manual recording mode.
WHITE BALANCE	Adjusts the color according to the light source. "Setting White Balance" (☞ p. 52) *Displayed only in the manual recording mode.
BACKLIGHT COMP.	Corrects the image when the subject appears dark due to backlight. "Setting Backlight Compensation" (☞ p. 53) *Displayed only in the manual recording mode.
TELE MACRO	Enables close-up shots when using the telephoto (T) end of the zoom. "Taking Close-up Shots" (☞ p. 54) *Displayed only in the manual recording mode.

Setting	Details
TOUCH PRIORITY AE/AF	Automatically adjusts focus and brightness based on the subjects' faces or selected area. "Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)" (☞ p. 61)
LIGHT	Turns on/off the light. "LIGHT" (☞ p. 126)
DIS	Camera shake during recording can be effectively reduced. "Reducing Camera Shake" (☞ p. 64)
GAIN UP	Makes the subject appear bright automatically when recording in dark places. "GAIN UP" (☞ p. 126)
WIND CUT	Reduces the noise caused by wind. "WIND CUT" (☞ p. 127)
EXPORT SHOOTING	Records videos for transferring to iTunes by setting EXPORT attributes. "Taking Videos in iTunes Format" (☞ p. 65)
ANIMATION EFFECT	Records videos or still images with special effects. "Creating Animation Effects (ANIMATION EFFECT)" (☞ p. 54)
HIGH SPEED RECORDING	You can record videos in slow-motion by increasing the recording speed to emphasize the movements, and play back the slow-motion video smoothly. "Slow-motion (High-speed) Recording" (☞ p. 66)
TIME-LAPSE RECORDING	Enables the changes of a scene that occur slowly over a long period to be shown within a short time by taking frames of it at a certain interval. "Recording at Intervals (TIME-LAPSE RECORDING)" (☞ p. 67)
AUTO REC	This function enables the unit to record automatically by sensing the changes in subject's movement (brightness) within the red frame displayed on the LCD monitor. "Recording Automatically by Sensing Movements (AUTO REC)" (☞ p. 69)
FACE SUB-WINDOW	Magnifies and displays a registered face in a sub-window. "Recording while Displaying a Magnified View of a Selected Face (FACE SUB-WINDOW)" (☞ p. 63)
SHUTTER MODE	Continuous shooting settings can be adjusted. "SHUTTER MODE" (☞ p. 128)
CONT. SHOOTING SPEED	Sets the speed for continuous shooting. "CONT. SHOOTING SPEED" (☞ p. 128)
SMILE SHOT	Automatically captures a still image upon detection of a smile. "Capturing Smiles Automatically (SMILE SHOT)" (☞ p. 62)
SMILE%/NAME DISPLAY	Sets the items to display when faces are detected. "Setting SMILE%/NAME DISPLAY" (☞ p. 58)
FACE REGISTRATION	Registers the faces of people who are often shot with this unit. "Registering Human Face Personal Authentication Information" (☞ p. 56)
VIDEO QUALITY	Sets the video quality. "VIDEO QUALITY" (☞ p. 129)
ZOOM	Sets the maximum zoom ratio. "ZOOM" (☞ p. 130)
SEAMLESS RECORDING	Continues recording on the SD card without stopping when the remaining space on the built-in memory runs out. "SEAMLESS RECORDING" (☞ p. 130)
x.v.Color	Captures the true colors. (Use an x.v.Color compatible TV for playback.) "x.v.Color" (☞ p. 131)
ZOOM MIC	Sets the zoom microphone. "ZOOM MIC" (☞ p. 131)
USER BUTTON SETTING	Assigns a frequently used function to the USER button. "Setting the USER Button" (☞ p. 71)

SCENE SELECT

Settings to suit the shooting condition can be selected.
Operating Details
"Scene Selection" (☞ p. 48)

FOCUS

Focus can be adjusted manually.
Operating Details
"Adjusting Focus Manually" (☞ p. 49)

FOCUS ASSIST

Focused subject is outlined in color for more precise focus.
Operating Details
"Using Focus Assist" (☞ p. 50)

FOCUS ASSIST COLOR

Sets the color of the outline of a focused object when Focus Assist is used.

Setting	Details
RED	Outlines the focused object in red.
GREEN	Outlines the focused object in green.
BLUE	Outlines the focused object in blue.

Displaying the Item

1 Select video mode.

2 Tap "MENU".

3 Tap "FOCUS ASSIST COLOR".

BRIGHTNESS ADJUST

Adjusts the overall brightness of the screen.
Operating Details
"Adjusting Brightness" (☞ p. 50)

SHUTTER SPEED

Shutter speed can be adjusted.
Operating Details
"Setting Shutter Speed" (☞ p. 51)

APERTURE PRIORITY

Adjusts the aperture value.
Operating Details
"Setting Aperture" (☞ p. 51)

WHITE BALANCE

Adjusts the color according to the light source.
Operating Details
"Setting White Balance" (☞ p. 52)

BACKLIGHT COMP.

Corrects the image when the subject appears dark due to backlight.
Operating Details
"Setting Backlight Compensation" (☞ p. 53)

TELE MACRO

Enables close-up shots when using the telephoto (T) end of the zoom.
Operating Details
"Taking Close-up Shots" (☞ p. 54)

TOUCH PRIORITY AE/AF

Automatically adjusts focus and brightness based on the subjects' faces or selected area.
Operating Details
"Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)" (☞ p. 61)

LIGHT

Turns on/off the light.

Setting	Details
OFF	Does not light up.
AUTO	Lights up automatically when the surrounding is dark.
ON	Lights up at all times.

Displaying the Item

1 Select video mode.
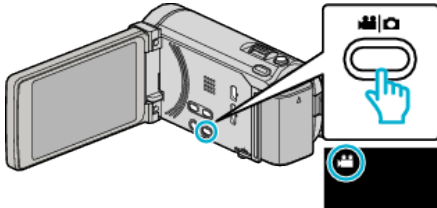
2 Tap "MENU".

3 Tap "LIGHT".

DIS
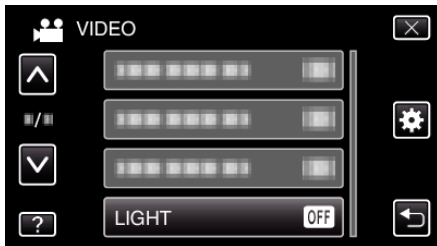
Camera shake during recording can be effectively reduced.
Operating Details
"Reducing Camera Shake" (☞ p. 64)

GAIN UP

Makes the subject appear bright automatically when recording in dark places.

Setting	Details
OFF	Deactivates the function.
ON	Electrically brightens the scene when it is dark.
AUTO SLOW-SHUTTER	Automatically brightens the scene when it is dark.

Memo :
● Although "AUTO SLOW-SHUTTER" brightens the scene more than "ON", movements of the subject may become unnatural.

Displaying the Item

1 Select video mode.

2 Tap "MENU".

3 Tap "GAIN UP".

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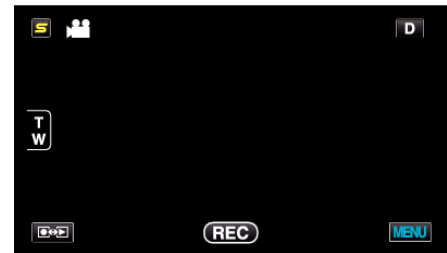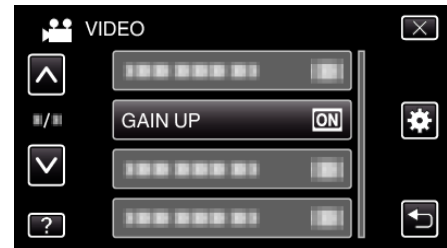
WIND CUT

Reduces the noise caused by wind.

Setting	Details
OFF	Deactivates the function.
ON	Activates the function.

Displaying the Item

1 Select video mode.
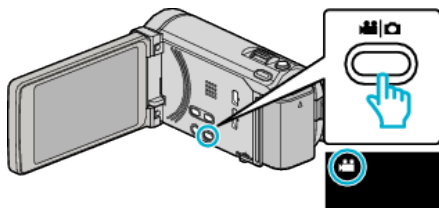
2 Tap "MENU".

3 Tap "WIND CUT".
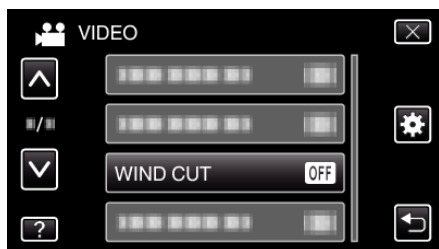
EXPORT SHOOTING

Records videos for transferring to iTunes by setting EXPORT attributes.
Operating Details
"Taking Videos in iTunes Format" (☞ p. 65)

ANIMATION EFFECT

Records videos or still images with special effects.
Operating Details
"Creating Animation Effects (ANIMATION EFFECT)" (☞ p. 54)

HIGH SPEED RECORDING

You can record videos in slow-motion by increasing the recording speed to emphasize the movements, and play back the slow-motion video smoothly. This is a handy function for checking movements, such as golf swings.
Operating Details
"Slow-motion (High-speed) Recording" (☞ p. 66)

TIME-LAPSE RECORDING

Enables the changes of a scene that occur slowly over a long period to be shown within a short time by taking frames of it at a certain interval. This is useful for making observations such as the opening of a flower bud.
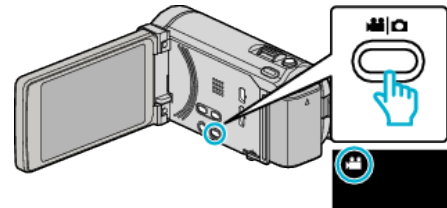Operating Details
"Recording at Intervals (TIME-LAPSE RECORDING)" (☞ p. 67)

AUTO REC

Starts/stops recording automatically by sensing the changes in subject's movement (brightness) within the red frame displayed on the LCD monitor.
Operating Details
"Recording Automatically by Sensing Movements (AUTO REC)" (☞ p. 69)

FACE SUB-WINDOW

Magnifies and displays a registered face in a sub-window.
Operating Details
"Recording while Displaying a Magnified View of a Selected Face (FACE SUB-WINDOW)" (☞ p. 63)

SHUTTER MODE

Continuous shooting settings can be adjusted.

Setting	Details
RECORD ONE SHOT	Records one still image.
CONTINUOUS SHOOTING	Records still images continuously while the SNAPSHOT button is pressed.

Memo :

● The continuous shooting speed can be changed.

"CONT. SHOOTING SPEED" (☞ p. 128)

● Performing continuous shooting while video recording is in progress switches the mode to "LOW SPEED" temporarily.

● The size of the still image that is captured in the video mode is 1,920 x 1,080.

● Some SD cards may not support continuous shooting.

● The continuous shooting speed will drop if this function is used repeatedly.

Displaying the Item

1 Select video mode.

2 Tap "MENU".

3 Tap "SHUTTER MODE".

CONT. SHOOTING SPEED

Sets the speed for continuous shooting.

Setting	Details
HIGH SPEED	● Shoots up to 40 still images continuously in the still image mode in about 2.7 second. ● Shoots up to 40 still images continuously in the video mode in about 0.67 second.
MEDIUM SPEED	● Shoots up to 40 still images continuously in the still image mode in about 5.3 second. ● Shoots up to 40 still images continuously in the video mode in about 4 second.
LOW SPEED	Shoots continuously until the recording media is full.

Memo :

● Shooting speed slows down gradually as continuous shooting goes on in the "LOW SPEED" mode.

● Performing continuous shooting while video recording is in progress switches the mode to "LOW SPEED" temporarily.

Displaying the Item

1 Select video mode.

2 Tap "MENU".

3 Tap "CONT. SHOOTING SPEED".

SMILE SHOT

Automatically captures a still image upon detection of a smile.
Operating Details
"Capturing Smiles Automatically (SMILE SHOT)" (☞ p. 62)

SMILE%/NAME DISPLAY

Sets the items to display when faces are detected.
Operating Details
"Setting SMILE%/NAME DISPLAY" (☞ p. 58)

FACE REGISTRATION

Registers the faces of people who are often shot with this unit.
Operating Details
"Registering Human Face Personal Authentication Information" (☞ p. 56)

VIDEO QUALITY

Sets the video quality.

Setting	Details
UXP	Enables recording in the best picture quality. ● Applies to Blu-ray discs only. Videos taken in high-definition quality cannot be saved to DVDs.
XP	Enables recording in high picture quality.
SP	Enables recording in standard quality.
EP	Enables long recordings.

Memo :
● Set to "UXP" or "XP" mode when recording fast-moving scenes or scenes with extreme changes of brightness to avoid noise.
● Use an external Blu-ray drive to save videos recorded in "UXP" mode.
● You can change to the desired "VIDEO QUALITY" by tapping on it from the remaining recording time display.

Displaying the Item

1 Select video mode.
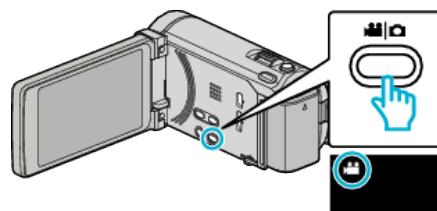
2 Tap "MENU".
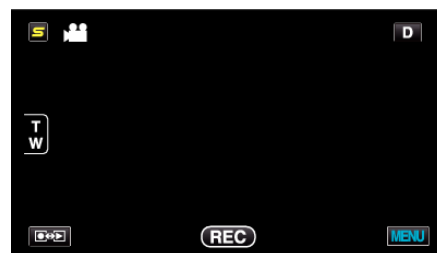
3 Tap "VIDEO QUALITY".
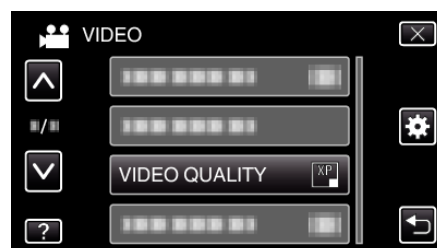
ZOOM

Sets the maximum zoom ratio.

Setting	Details
10x/OPTICAL	Enables zooming up to 10x.
15(13)x/DYNAMIC	Enables zooming up to 15x when the image stabilizer is set to the normal mode or turned off. Enables zooming up to 13x when the image stabilizer is set to the AIS mode.
60x/DIGITAL	Enables zooming up to 60x.
200x/DIGITAL	Enables zooming up to 200x.

Memo :
- When digital zoom is used, the image becomes grainy as it is digitally enlarged.

Displaying the Item

1 Select video mode.
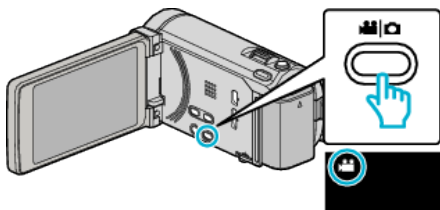
2 Tap "MENU".
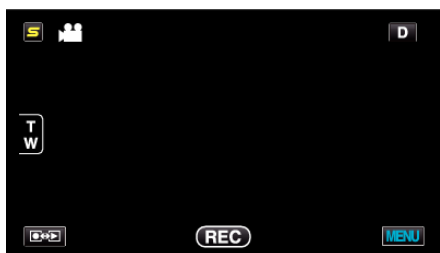
3 Tap "ZOOM".

SEAMLESS RECORDING

Continues recording on the SD card without stopping when the remaining space on the built-in memory runs out.

Setting	Details
OFF	Does not switch recording media automatically.
ON	Switches recording media automatically.

Memo :
- Seamless recording cannot be performed if there is not enough free space in the SD card.
- To start seamless recording again after the previous session is complete, it is necessary to combine seamless videos, or delete the combination information of the seamless videos.

"Combining Videos Recorded by Seamless Recording" (☞ p. 88)

Displaying the Item

1 Select video mode.
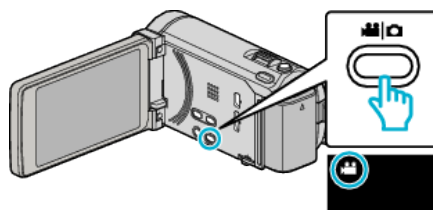
2 Tap "MENU".
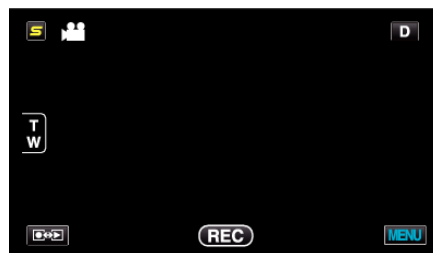
3 Tap "SEAMLESS RECORDING".
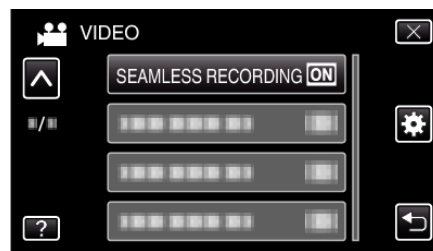
x.v.Color

Captures the true colors.
(Use an x.v.Color compatible TV for playback.)

Setting	Details
OFF	Captures colors with the same standard as TV broadcasting.
ON	Captures the true colors. (for TVs that supports x.v.Color)

Displaying the Item
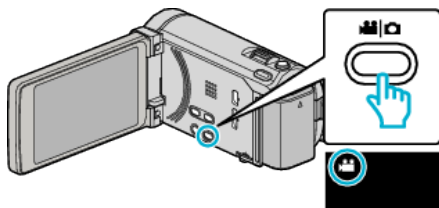
1 Select video mode.
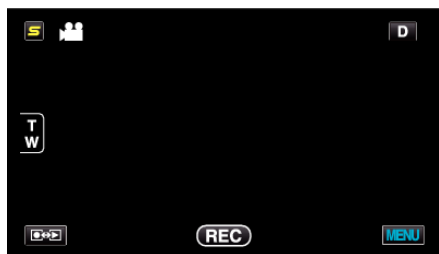
2 Tap "MENU".

3 Tap "x.v.Color".
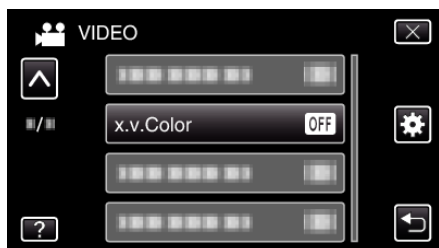
ZOOM MIC

Sets the zoom microphone.

Setting	Details
OFF	Deactivates the zoom microphone.
ON	Records audio sounds in the same direction as the zoom operation.

Displaying the Item

1 Select video mode.
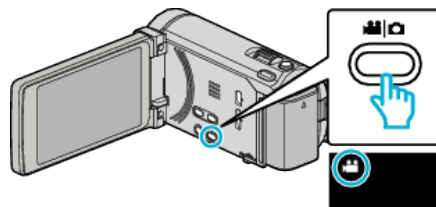
2 Tap "MENU".
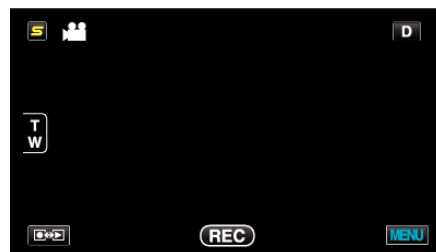
3 Tap "ZOOM MIC".
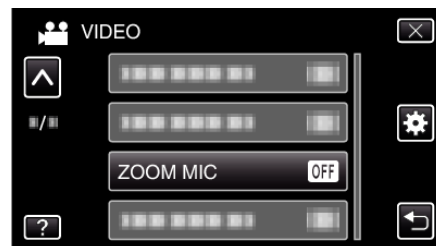
USER BUTTON SETTING

Assigns a frequently used function to the USER button.
Operating Details
"Setting the USER Button" (☞ p. 71)

Main Menu for Still Image Recording

You can adjust various settings, such as brightness and white balance, to suit the subject or purpose. You can also change settings such as picture quality and gain.

1 Select still image mode.

2 Tap "MENU".

Setting	Details
SCENE SELECT	Settings to suit the shooting condition can be selected. "Scene Selection" (☞ p. 48) *Displayed only in the manual recording mode.
FOCUS	Focus can be adjusted manually. "Adjusting Focus Manually" (☞ p. 49) *Displayed only in the manual recording mode.
FOCUS ASSIST	Focused subject is outlined in color for more precise focus. "Using Focus Assist" (☞ p. 50) *Displayed only in the manual recording mode.
FOCUS ASSIST COLOR	Sets the color of the outline of a focused object when Focus Assist is used. "FOCUS ASSIST COLOR" (☞ p. 134) *Displayed only in the manual recording mode.
BRIGHTNESS ADJUST	Adjusts the overall brightness of the screen. "Adjusting Brightness" (☞ p. 50) *Displayed only in the manual recording mode.
SHUTTER SPEED	Shutter speed can be adjusted. "Setting Shutter Speed" (☞ p. 51) *Displayed only in the manual recording mode.
APERTURE PRIORITY	Adjusts the aperture value. "Setting Aperture" (☞ p. 51) *Displayed only in the manual recording mode.
WHITE BALANCE	Adjusts the color according to the light source. "Setting White Balance" (☞ p. 52) *Displayed only in the manual recording mode.
BACKLIGHT COMP.	Corrects the image when the subject appears dark due to backlight. "Setting Backlight Compensation" (☞ p. 53) *Displayed only in the manual recording mode.
TELE MACRO	Enables close-up shots when using the telephoto (T) end of the zoom. "Taking Close-up Shots" (☞ p. 54) *Displayed only in the manual recording mode.

Setting	Details
TOUCH PRIORITY AE/AF	Automatically adjusts focus and brightness based on the subjects' faces or selected area. "Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)" (☞ p. 61)
FLASH	Sets the flash to use. "FLASH" (☞ p. 135)
SELF-TIMER	Use this when taking a group photo. "Taking Group Shots (Self-timer)" (☞ p. 70)
GAIN	Enables selection of the ISO level. "GAIN" (☞ p. 135)
AUTO REC	Enables the unit to record still images automatically by sensing the changes in brightness within the red frame displayed on the LCD monitor. "Recording Automatically by Sensing Movements (AUTO REC)" (☞ p. 69)
SHUTTER MODE	Continuous shooting settings can be adjusted. "SHUTTER MODE" (☞ p. 136)
CONT. SHOOTING SPEED	Sets the speed for continuous shooting. "CONT. SHOOTING SPEED" (☞ p. 136)
SMILE SHOT	Automatically captures a still image upon detection of a smile. "Capturing Smiles Automatically (SMILE SHOT)" (☞ p. 62)
SMILE%/NAME DISPLAY	Sets the items to display when faces are detected. "Setting SMILE%/NAME DISPLAY" (☞ p. 58)
FACE REGISTRATION	Registers the faces of people who are often shot with this unit. "Registering Human Face Personal Authentication Information" (☞ p. 56)
IMAGE SIZE	Sets the image size (number of pixels) for still images. "IMAGE SIZE" (☞ p. 137)
USER BUTTON SETTING	Assigns a frequently used function to the USER button. "Setting the USER Button" (☞ p. 71)

SCENE SELECT

Settings to suit the shooting condition can be selected.
Operating Details
"Scene Selection" (☞ p. 48)

FOCUS

Focus can be adjusted manually.
Operating Details
"Adjusting Focus Manually" (☞ p. 49)

FOCUS ASSIST

Focused subject is outlined in color for more precise focus.
Operating Details
"Using Focus Assist" (☞ p. 50)

FOCUS ASSIST COLOR

Sets the color of the outline of a focused object when Focus Assist is used.

Setting	Details
RED	Outlines the focused object in red.
GREEN	Outlines the focused object in green.
BLUE	Outlines the focused object in blue.

Displaying the Item

1 Select still image mode.

2 Tap "MENU".

3 Tap "FOCUS ASSIST COLOR".

BRIGHTNESS ADJUST

Adjusts the overall brightness of the screen.
Operating Details
"Adjusting Brightness" (☞ p. 50)

SHUTTER SPEED

Shutter speed can be adjusted.
Operating Details
"Setting Shutter Speed" (☞ p. 51)

APERTURE PRIORITY

Adjusts the aperture value.
Operating Details
"Setting Aperture" (☞ p. 51)

WHITE BALANCE

Adjusts the color according to the light source.
Operating Details
"Setting White Balance" (☞ p. 52)

BACKLIGHT COMP.

Corrects the image when the subject appears dark due to backlight.
Operating Details
"Setting Backlight Compensation" (☞ p. 53)

TELE MACRO

Enables close-up shots when using the telephoto (T) end of the zoom.
Operating Details
"Taking Close-up Shots" (☞ p. 54)

TOUCH PRIORITY AE/AF

Automatically adjusts focus and brightness based on the subjects' faces or selected area.
Operating Details
"Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)" (☞ p. 61)

FLASH

For setting the flash.

Setting	Details
OFF	Flash does not fire.
AUTO	Flash fires automatically when the surrounding is dark.
AUTO RED-EYE	Fires a pre-flash to reduce red-eye effects.
ON	Fires flash at all times.
SLOW SYNCHRO	Fires flash at all times, and slows down the shutter speed to capture both the subject and background brightly.

Memo :
- The flash icon displayed on the screen blinks while the flash is charging.
- The flash does not fire when "ISO6400" in "GAIN", "NIGHTALIVE", "NIGHT", or "SNOW" in "SCENE SELECT", or "SHUTTER MODE" are set.

Displaying the Item

1 Select still image mode.
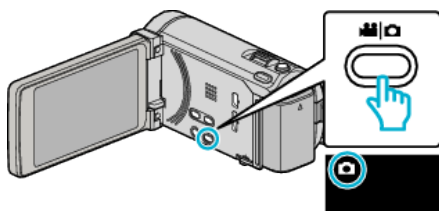
2 Tap "MENU".
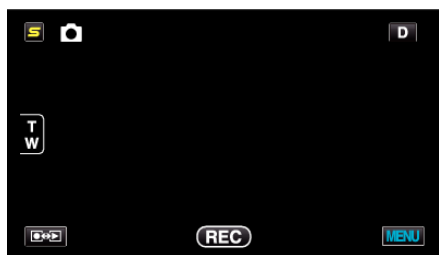
3 Tap "FLASH".
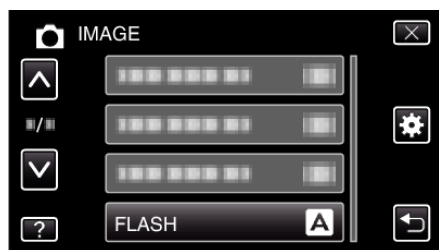
SELF-TIMER

Use this when taking a group photo.
Operating Details
"Taking Group Shots (Self-timer)" (☞ p. 70)

GAIN

Enables selection of the ISO level.

Setting	Details
AUTO	Adjusts the ISO level automatically according to the brightness of the subject.
ISO100 / ISO200 / ISO400 / ISO800 / ISO1600 / ISO3200 / ISO6400	Records with a fixed ISO level.

Memo :
- The flash cannot be used when "ISO6400" is set.
- The higher the ISO level, the grainier the image becomes due to noise.

Displaying the Item

1 Select still image mode.

2 Tap "MENU".

3 Tap "GAIN".

AUTO REC

Starts/stops recording automatically by sensing the changes in subject's movement (brightness) within the red frame displayed on the LCD monitor. Operating Details
"Recording Automatically by Sensing Movements (AUTO REC)" (☞ p. 69)

SHUTTER MODE

Continuous shooting settings can be adjusted.

Setting	Details
RECORD ONE SHOT	Records one still image.
CONTINUOUS SHOOTING	Records still images continuously while the SNAPSHOT button is pressed.
BRACKETING	Records 5 images with varying brightness continuously when the SNAPSHOT button is pressed. - Normal brightness - Dark (-0.6EV) - Slightly dark (-0.3EV) - Slightly bright (+0.3EV) - Bright (+0.6EV)

Memo :

● The continuous shooting speed can be changed.

"CONT. SHOOTING SPEED" (☞ p. 136)

● Continuous shooting and bracketing are not available when image size is set to 3,968 x 2,976.

● Some SD cards may not support continuous shooting.

● The continuous shooting speed will drop if this function is used repeatedly.

Displaying the Item

1 Select still image mode.

2 Tap "MENU".

3 Tap "SHUTTER MODE".

CONT. SHOOTING SPEED

Sets the speed for continuous shooting.

Setting	Details
HIGH SPEED	● Shoots up to 40 still images continuously in the still image mode in about 2.7 second. ● Shoots up to 40 still images continuously in the video mode in about 0.67 second.
MEDIUM SPEED	● Shoots up to 40 still images continuously in the still image mode in about 5.3 second. ● Shoots up to 40 still images continuously in the video mode in about 4 second.
LOW SPEED	Shoots continuously until the recording media is full.

Memo :

● Shooting speed slows down gradually as continuous shooting goes on in the "LOW SPEED" mode.

● "HIGH SPEED" and "MEDIUM SPEED" are not available when image size is set to "2656X1992(5.3M)" in the still image recording mode.

● Performing continuous shooting while video recording is in progress switches the mode to "LOW SPEED" temporarily.

Displaying the Item

1 Select still image mode.

2 Tap "MENU".

3 Tap "CONT. SHOOTING SPEED".

SMILE SHOT

Automatically captures a still image upon detection of a smile.
Operating Details
"Capturing Smiles Automatically (SMILE SHOT)" (☞ p. 62)

SMILE%/NAME DISPLAY

Sets the items to display when faces are detected.
Operating Details
"Setting SMILE%/NAME DISPLAY" (☞ p. 58)

FACE REGISTRATION

Registers the faces of people who are often shot with this unit.
Operating Details
"Registering Human Face Personal Authentication Information" (☞ p. 56)

IMAGE SIZE

Sets the image size (number of pixels) for still images.

Setting	Details
3968X2976(11.8M) 2656X1992(5.3M) 2304X1728(4M) 1600X1200(1.9M) 640X480(0.3M)	Takes still images with aspect ratio 4:3.
1920X1080(2M)	Takes still images with aspect ratio 16:9. ● The sides of still images recorded in 16:9 aspect ratio may be cut off when printed.

Displaying the Item

1 Select still image mode.
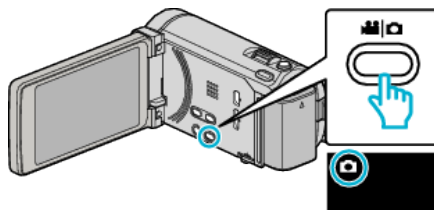
2 Tap "MENU".
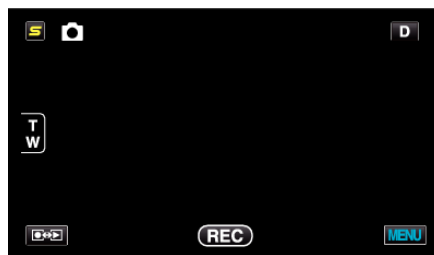
3 Tap "IMAGE SIZE".
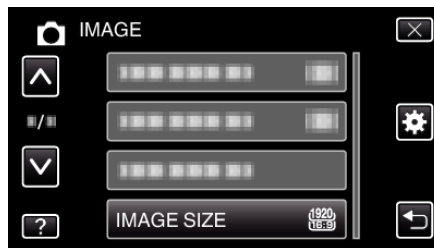
USER BUTTON SETTING

Assigns a frequently used function to the USER button.
Operating Details
"Setting the USER Button" (☞ p. 71)

Main Menu for Video Playback

You can delete or look for specific videos.

1 Select video mode.

2 Tap ◉↔▶ to select the playback mode.

● The mode changes between recording and playback with every tap.

3 Tap "MENU".

Setting	Details
SEARCH DATE	You can search and play videos or still images according to recording dates. "Date Search" (☞ p. 79)
PROTECT/CANCEL	Protects files from being deleted accidently. "Protecting/Releasing Protection of the Currently Displayed File" (☞ p. 86) "Protecting/Releasing Protection of Selected Files" (☞ p. 86)
COPY	Copies files from the built-in memory to the SD card. "Copying Files to an SD Card" (☞ p. 111)
MOVE	Moves files from the built-in memory to the SD card. "Moving Files to an SD Card" (☞ p. 112)
TRIMMING	Select the required part of a video and save it as a new video file. "Capturing a Required Part in the Video (TRIMMING)" (☞ p. 89)
UPLOAD SETTINGS	Capture and copy a part of a recorded video (maximum 15 minutes) for uploading to YouTube. "UPLOAD SETTINGS" (☞ p. 139)
EXPORT SETTINGS	Sets EXPORT attributes to recorded videos for transferring to iTunes. "Preparing Videos to Transfer to iTunes" (☞ p. 91)
PLAYBACK OTHER FILE	Plays videos with defective management information. "Playing a Video with Defective Management Information" (☞ p. 76)
SEAMLESS REC CTRL	Videos that are recorded on two separate media and with "SEAMLESS RECORDING" in the video recording menu enabled can be combined into a single video. "Combining Videos Recorded by Seamless Recording" (☞ p. 88)
K2 TECHNOLOGY	Reproduces small or high-pitched sounds that cannot be recorded during recording, and plays back with a sound quality close to the original. "K2 TECHNOLOGY" (☞ p. 139)

SEARCH DATE

Narrows down the video index screen according to recording dates.
Operating Details
"Date Search" (☞ p. 79)

PROTECT/CANCEL

Protects files from being deleted accidently.
Operating Details
"Protecting/Releasing Protection of the Currently Displayed File" (☞ p. 86)
"Protecting/Releasing Protection of Selected Files" (☞ p. 86)

COPY

Copies files from the built-in memory to the SD card.
Operating Details
"Copying Files to an SD Card" (☞ p. 111)

MOVE

Moves files from the built-in memory to the SD card.
Operating Details
"Moving Files to an SD Card" (☞ p. 112)

TRIMMING

Select the required part of a video and save it as a new video file.
Operating Details
"Capturing a Required Part in the Video (TRIMMING)" (☞ p. 89)

UPLOAD SETTINGS

Capture and copy a part of a recorded video (maximum 15 minutes) for
uploading to YouTube.
Operating Details
"Capturing Videos for Uploading to YouTube" (☞ p. 90)

EXPORT SETTINGS

Sets EXPORT attributes to recorded videos for transferring to iTunes.
Operating Details
"Preparing Videos to Transfer to iTunes" (☞ p. 91)

PLAYBACK OTHER FILE

Plays videos with defective management information.
Operating Details
"Playing a Video with Defective Management Information" (☞ p. 76)

SEAMLESS REC CTRL

Videos that are recorded on two separate media and with "SEAMLESS
RECORDING" in the video recording menu enabled can be combined into
a single video.
Operating Details
"Combining Videos Recorded by Seamless Recording" (☞ p. 88)

K2 TECHNOLOGY

Reproduces small or high-pitched sounds that cannot be recorded during
recording, and plays back with a sound quality close to the original.

Setting	Details
OFF	Deactivates K2 TECHNOLOGY.
ON	Activates K2 TECHNOLOGY.

Displaying the Item

1 Select video mode.
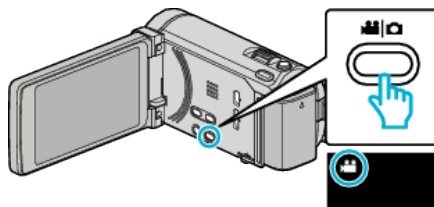
2 Tap ●↔▶ to select the playback mode.
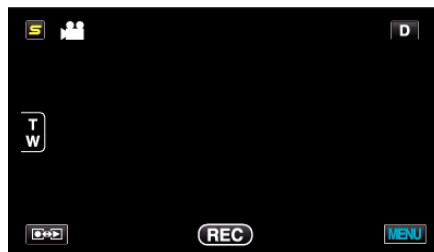
3 Tap "MENU".

4 Tap "K2 TECHNOLOGY".

Main Menu for Still Image Playback

You can delete or look for specific still images.

1 Select still image mode.

2 Tap ◉↔▶ to select the playback mode.

- The mode changes between recording and playback with every tap.

3 Tap "MENU".

Setting	Details
SEARCH DATE	You can search and play videos or still images according to recording dates. "Date Search" (☞ p. 79)
SLIDE SHOW EFFECTS (for GZ-HM860)	Sets the transition effects in slideshow playback. "SLIDE SHOW EFFECTS (for GZ-HM860)" (☞ p. 141)
PROTECT/CANCEL	Protects files from being deleted accidently. "Protecting/Releasing Protection of the Currently Displayed File" (☞ p. 86) "Protecting/Releasing Protection of Selected Files" (☞ p. 86)
COPY	Copies files from the built-in memory to the SD card. "Copying Files to an SD Card" (☞ p. 111)
MOVE	Moves files from the built-in memory to the SD card. "Moving Files to an SD Card" (☞ p. 112)
STILL IMAGE TRANSFER	When Bluetooth connection is established with a BIP/OPP-compliant device, you can transfer recorded still image data to this device. "Transferring Still Images to a Bluetooth-compliant Device" (☞ p. 29)

SEARCH DATE

Narrows down the still image index screen according to recording dates.
Operating Details
"Date Search" (☞ p. 79)

SLIDE SHOW EFFECTS (for GZ-HM860)

Sets the transition effects in slideshow playback.

Setting	Details
SLIDE	Switches the screen by sliding in from right to left.
BLINDS	Switches the screen by dividing into vertical strips.
CHECKERBOARD	Switches the screen by changing through a checkered pattern.
RANDOM	Switches the screen with a random effect from "SLIDE", "BLINDS", and "CHECKERBOARD".

Memo :
● Slideshow effects are not available when playing back still images in external devices (such as USB external hard disk drives).

Displaying the Item

1 Select still image mode.
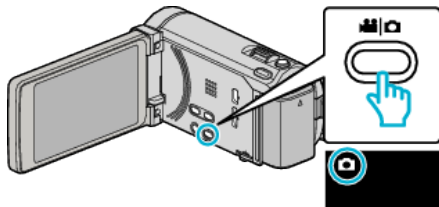
2 Tap ◉↔▶ to select the playback mode.
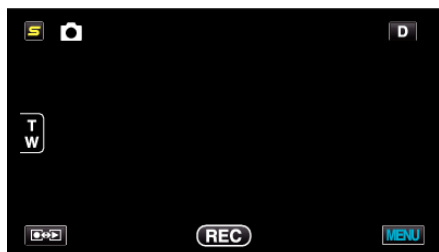
3 Tap "MENU".

4 Tap "SLIDE SHOW EFFECTS".
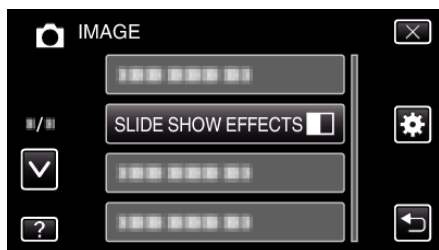
PROTECT/CANCEL

Protects files from being deleted accidently.
Operating Details
"Protecting/Releasing Protection of the Currently Displayed File" (☞ p. 86)
"Protecting/Releasing Protection of Selected Files" (☞ p. 86)

COPY

Copies files from the built-in memory to the SD card.
Operating Details
"Copying Files to an SD Card" (☞ p. 111)

MOVE

Moves files from the built-in memory to the SD card.
Operating Details
"Moving Files to an SD Card" (☞ p. 112)

STILL IMAGE TRANSFER

When Bluetooth connection is established with a BIP/OPP-compliant device, you can transfer recorded still image data to this device.
Operating Details
"Transferring Still Images to a Bluetooth-compliant Device" (☞ p. 29)

Common Menu

1 Tap "MENU".

2 Tap "⚙".
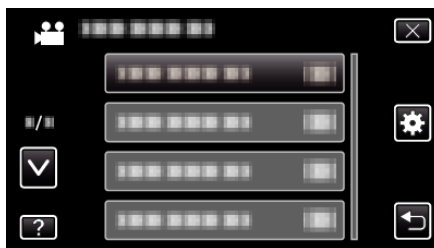
Setting	Details
CLOCK ADJUST	Resets the current time or sets to the local time when using this unit overseas. "Clock Setting" (☞ p. 20) "Setting the Clock to Local Time when Traveling" (☞ p. 39) "Setting Daylight Saving Time" (☞ p. 40)
DATE DISPLAY STYLE	Sets the order of year, month, day and the time display format (24H/12H). "DATE DISPLAY STYLE" (☞ p. 144)
LANGUAGE	The language on the display can be changed. "Changing the Display Language" (☞ p. 22)
MONITOR BRIGHTNESS	Sets the brightness of the LCD monitor. "MONITOR BRIGHTNESS" (☞ p. 144)
REC MEDIA FOR VIDEO	Sets the recording/playback media of videos. "REC MEDIA FOR VIDEO" (☞ p. 145)
REC MEDIA FOR IMAGE	Sets the recording/playback media of still images. "REC MEDIA FOR IMAGE" (☞ p. 145)
OPERATION SOUND	Turns on or off the operation sound. "OPERATION SOUND" (☞ p. 146)
AUTO POWER OFF	Prevents the situation of forgetting to turn off the power when this is set. "AUTO POWER OFF" (☞ p. 146)
QUICK RESTART	Reduces the power consumption within 5 minutes after the LCD monitor is closed to 1/3 of that used during recording. "QUICK RESTART" (☞ p. 147)
REMOTE	Enables remote control operation. "REMOTE" (☞ p. 147)
DEMO MODE	Introduces the special features of this unit in digest form. "DEMO MODE" (☞ p. 148)
3D LEVEL ADJUST (for GZ-HM960)	Adjusts the appearance of 3D images. "3D LEVEL ADJUST (for GZ-HM960)" (☞ p. 148)

Setting	Details
TOUCH SCREEN ADJUST	Adjusts the response position of the buttons on the touch screen. "TOUCH SCREEN ADJUST" (☞ p. 149)
3D DISPLAY WARNING (for GZ-HM960)	Sets whether to display warnings during 3D playback. "3D DISPLAY WARNING (for GZ-HM960)" (☞ p. 150)
DISPLAY ON TV	Displays icons and date/time on a TV screen. "DISPLAY ON TV" (☞ p. 150)
VIDEO OUTPUT	Sets the aspect ratio (16:9 or 4:3) according to the connecting TV. "VIDEO OUTPUT" (☞ p. 151)
COMPONENT OUTPUT	Sets the definition of the video output from the COMPONENT connector. "COMPONENT OUTPUT" (☞ p. 151)
HDMI OUTPUT	Sets the definition of the video output from the HDMI mini connector. "HDMI OUTPUT" (☞ p. 152)
HDMI CONTROL	Sets the linked operations ON/OFF when the TV and this unit are connected using the HDMI mini connector. "HDMI CONTROL" (☞ p. 153)
Bluetooth	Enables wireless connection with other devices. "Connecting to a Registered Bluetooth-compliant Device" (☞ p. 27)
AUTO FINALIZE	Finalizes the discs created automatically so that they can be played back on compatible devices. "AUTO FINALIZE" (☞ p. 153)
FACTORY PRESET	Returns all the settings to their default values. "FACTORY PRESET" (☞ p. 154)
UPDATE	Updates the functions of this unit to the latest version. "UPDATE" (☞ p. 154)
PC SOFTWARE UPDATE	Updates the built-in PC software of this unit to the latest version. "PC SOFTWARE UPDATE" (☞ p. 154)
FORMAT BUILT-IN MEM.	Deletes all files on the built-in memory. "FORMAT BUILT-IN MEM." (☞ p. 154)
FORMAT SD CARD	Deletes all files on the SD card. "FORMAT SD CARD" (☞ p. 155)
ERASE ALL DATA	Execute this process when disposing of this unit or passing it to another person. "ERASE ALL DATA" (☞ p. 155)

CLOCK ADJUST

Resets the current time or sets to the local time when using this unit overseas.
Operating Details
"Clock Setting" (☞ p. 20)
"Setting the Clock to Local Time when Traveling" (☞ p. 39)
"Setting Daylight Saving Time" (☞ p. 40)

DATE DISPLAY STYLE

Sets the order of year, month, day and the time display format (24H/12H).

1 Tap "MENU".
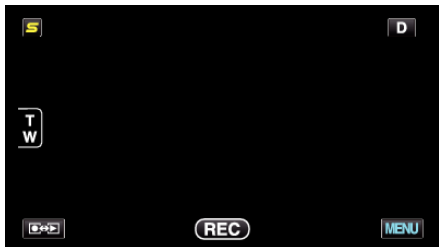
2 Tap "⚙".

3 Tap "DATE DISPLAY STYLE".
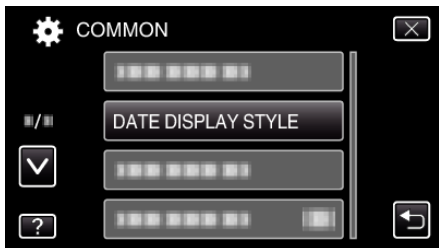
4 Tap to set the style of date and time display.
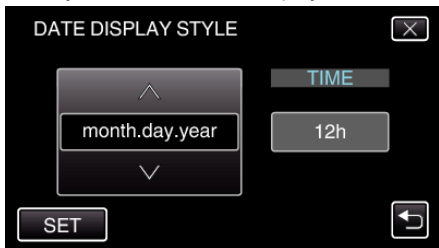
- For date display, set to any format from "month.day.year", "year.month.day", and "day.month.year".
- For time display, set to any format from "12h" and "24h".
- Tap the operation buttons ← / → to move the cursor.
- After setting, tap "SET".

LANGUAGE

The language on the display can be changed.
Operating Details
"Changing the Display Language" (☞ p. 22)

MONITOR BRIGHTNESS

Sets the brightness of the LCD monitor.

Setting	Details
4	Brightens the backlight of the monitor regardless of the surrounding conditions.
3	Sets to the standard brightness.
2	Darkens the backlight of the monitor regardless of the surrounding conditions.
1	Sets to dim brightness. Helps to save battery life when selected.
AUTO	Sets the brightness automatically to "4" when using outdoors and to "3" when using indoors.

Adjusting Monitor Brightness

1 Tap "MENU".
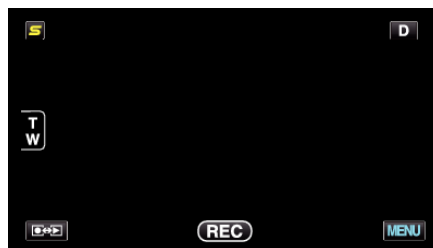
2 Tap "⚙".

3 Tap "MONITOR BRIGHTNESS".
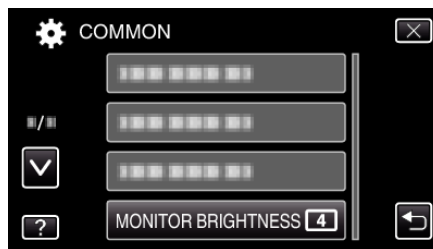
4 Tap the desired monitor brightness.
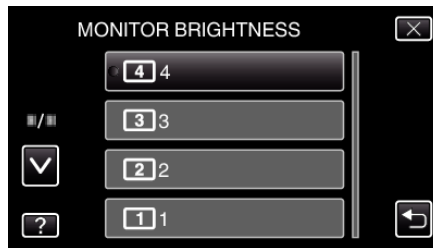
- By default, "MONITOR BRIGHTNESS" is set to "AUTO". To adjust the brightness, tap ∧, then tap a value between "1" to "4".
- Tap ∧ or ∨ to move upward or downward for more selection.

REC MEDIA FOR VIDEO

Sets the recording media of videos.

Setting	Details
BUILT-IN MEMORY	Records videos to this unit's built-in memory.
SD CARD	Records videos to the SD card.

Displaying the Item

1 Tap "MENU".
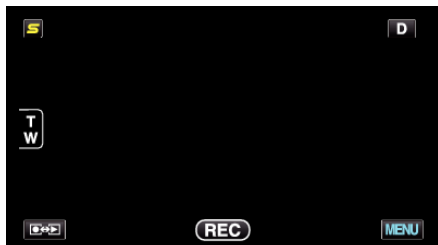
2 Tap "⚙".

3 Tap "REC MEDIA FOR VIDEO".
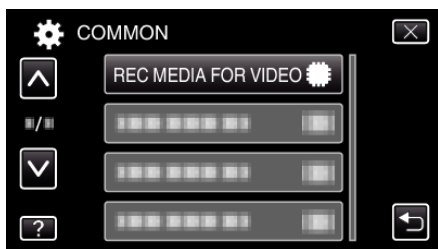
REC MEDIA FOR IMAGE

Sets the recording media of still images.

Setting	Details
BUILT-IN MEMORY	Records still images to this unit's built-in memory.
SD CARD	Records still images to the SD card.

Displaying the Item
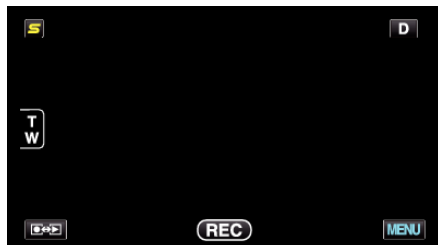
1 Tap "MENU".

2 Tap "⚙".

3 Tap "REC MEDIA FOR IMAGE".

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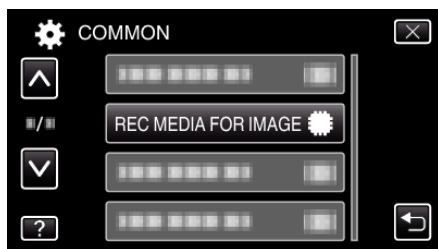
OPERATION SOUND

Turns on or off the operation sound.

Setting	Details
OFF	Turns off the operation sound.
ON	Turns on the operation sound.

Displaying the Item

1 Tap "MENU".

2 Tap " ".

3 Tap "OPERATION SOUND".
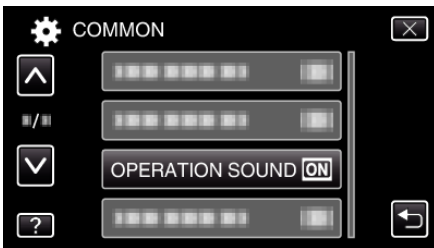
AUTO POWER OFF

Prevents the situation of forgetting to turn off the power when this is set.

Setting	Details
OFF	Power is not turned off even if this unit is not operated for 5 minutes.
ON	Turns off the power automatically if this unit is not operated for 5 minutes.

Memo :

● When using battery, power is turned off automatically if this unit is not operated for 5 minutes.
● When using the AC adapter, this unit goes into standby mode.

Displaying the Item

1 Tap "MENU".
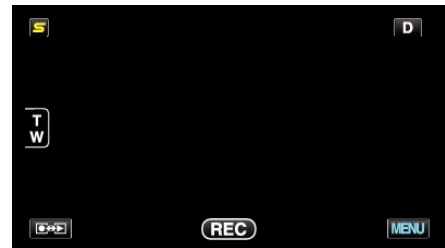
2 Tap " ".
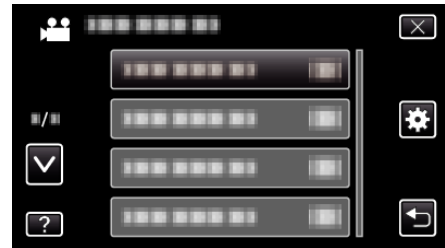
3 Tap "AUTO POWER OFF".

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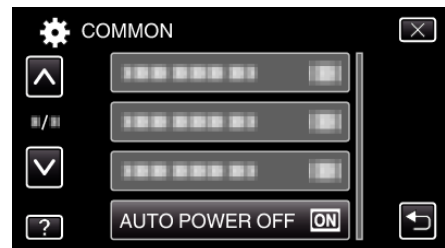
QUICK RESTART

Enables the power to turn on quickly when the LCD monitor is opened again within 5 minutes.

Setting	Details
OFF	Deactivates the function.
ON	Enables the power to turn on quickly when the LCD monitor is opened again within 5 minutes.

Memo :

● The power consumption within 5 minutes after the LCD monitor is closed is reduced.

Displaying the Item

1 Tap "MENU".
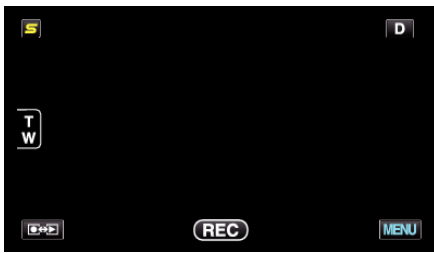
2 Tap "⚙".
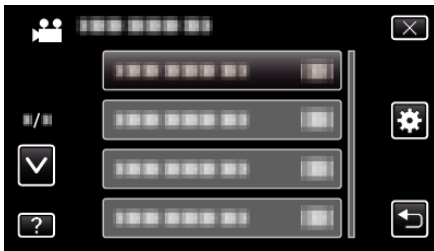
3 Tap "QUICK RESTART".
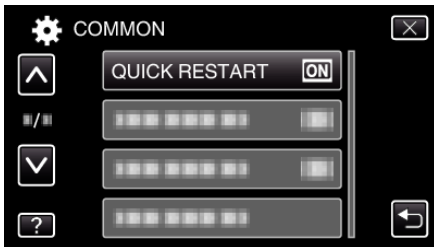
● The power consumption within 5 minutes after the LCD monitor is closed is reduced.

REMOTE

Enables remote control operation.

Setting	Details
OFF	Disables remote control operation.
ON	Enables remote control operation.

Displaying the Item

1 Tap "MENU".

2 Tap "⚙".
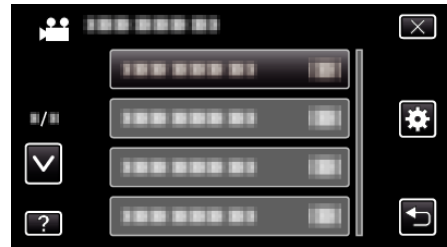
3 Tap "REMOTE".
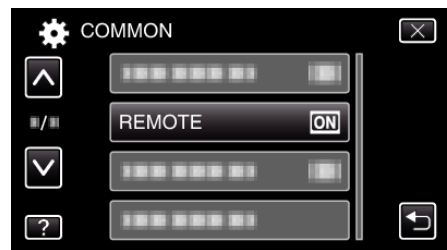
DEMO MODE

Plays a demonstration of the special features of this unit.

Setting	Details
OFF	Deactivates the function.
ON	Plays a demonstration of the special features of this unit.

Displaying Demo Mode

1 Remove the battery pack and SD card.
2 Connect the AC adapter.
3 Open the LCD monitor and turn on the power.

● Demonstration starts playing after 3 minutes.
● To stop playback, tap on the screen.

Memo :

● This mode is not available in the playback mode.
● "SMILE%/NAME DISPLAY" is set to "ON" when the demo mode is activated.

"Setting SMILE%/NAME DISPLAY" (☞ p. 58)

Displaying the Item

1 Tap "MENU".

2 Tap "⚙".

3 Tap "DEMO MODE".
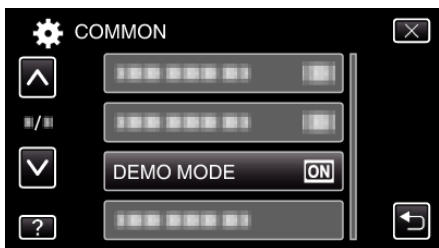
3D LEVEL ADJUST (for GZ-HM960)

The 3D effect of 3D images may appear either too strong or too weak.
In these cases, you can correct the 3D effect by adjusting the parallax (3D LEVEL ADJUST).

Setting	Details
+2	Higher value → Increases amount of correction
+1	Lower value → Decreases amount of correction
0	
-1	
-2	

1 Tap "MENU".
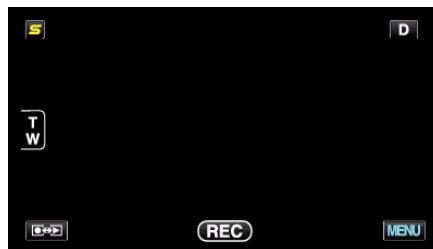
2 Tap "⚙".
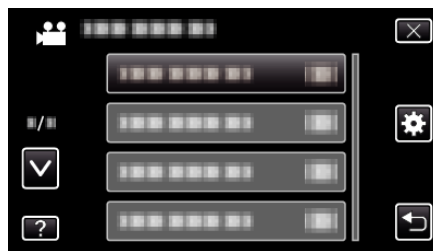
3 Tap "3D LEVEL ADJUST".
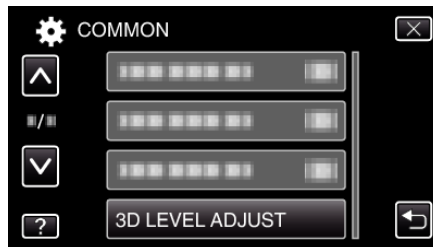
Caution :

● Too much parallax may cause the 3D effect to be lost.
● If you see double images even after parallax adjustment, set the display on the TV to 2D immediately. In addition, set the LCD monitor to 2D display accordingly.

Memo :

● Depending on the subject, 3D effect may not be seen even after parallax adjustment. In this case, it is recommended to play back the video in 2D mode.
● Depending on the subject, images may become distorted or the sides of the screen may appear dark.
● Double images of the subject may be seen depending on the scene. It may also become difficult to see the images after adjusting the parallax manually or changing the video quality on TV. In this case, it is recommended to play back the video in 2D mode.
(For details, refer to the instruction manual of the TV.)

TOUCH SCREEN ADJUST

Adjusts the response position of the buttons on the touch screen.

1 Tap "MENU".
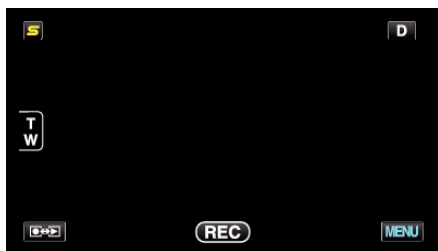
2 Tap "⚙".

3 Tap "TOUCH SCREEN ADJUST".
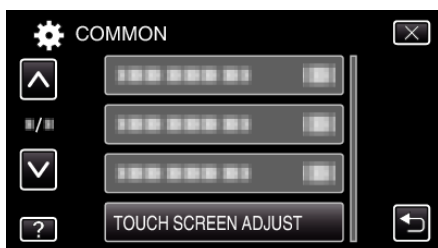
● The touch screen adjustment screen appears.

4 Tap "+". (3 times in total)

PRESS THE + MARK

1/3

● Keep tapping "+" as its position changes with every tap.

5 Tap "+" again to confirm the adjusted positions. (3 times in total)

CONFIRM THE ADJUSTMENT
PRESS + MARK AGAIN

1/3
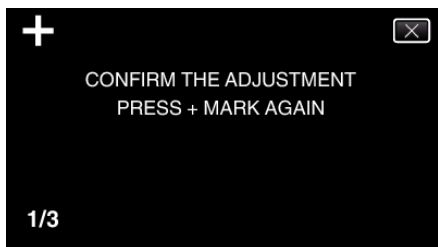
● Keep tapping "+" as its position changes with every tap.
● If areas on the adjustment screen other than the "+" mark are tapped, errors will occur. In this case, try again from step 4.

6 Tap "OK".

COMPLETED

OK
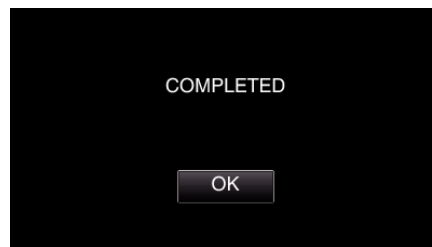
● Setting ends and returns to the menu screen.

Caution :
● Do not tap areas other than the "+" mark during touch screen adjustment (steps 4 - 5). Doing so may cause the touch screen to malfunction.

Memo :
● Adjust by lightly tapping with a corner of an SD card, etc.
● Do not press with an object with a sharp tip or do not press hard.

3D DISPLAY WARNING (for GZ-HM960)

Sets whether to display warnings during 3D playback.

Setting	Details
OFF	Hides 3D warning displays.
ON	Shows 3D warning displays at a regular interval.

Displaying the Item

1 Tap "MENU".

2 Tap "⚙".

3 Tap "3D DISPLAY WARNING".
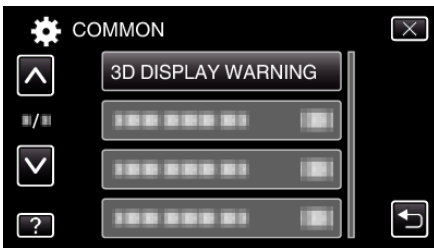
DISPLAY ON TV

Displays icons and date/time on a TV screen.

Setting	Details
OFF	Does not display icons and date/time on TV.
ON	Displays icons and date/time on TV.

Displaying the Item

1 Tap "MENU".

2 Tap "⚙".

3 Tap "DISPLAY ON TV".
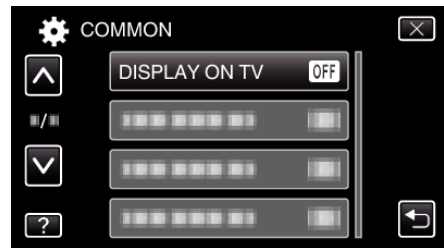
VIDEO OUTPUT

Sets the aspect ratio (16:9 or 4:3) according to the connecting TV.

Setting	Details
4:3	Select this when connecting to a conventional TV (4:3).
16:9	Select this when connecting to a widescreen TV (16:9).

Displaying the Item
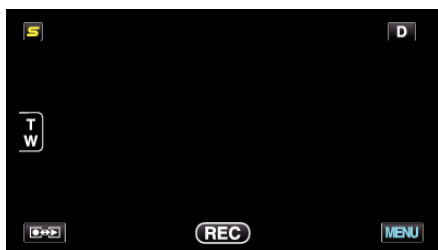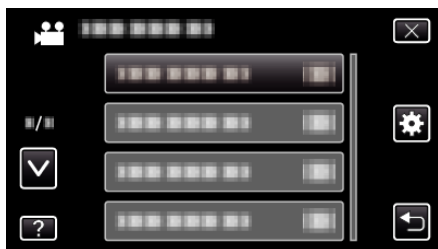
1 Tap "MENU".

2 Tap "⚙".

3 Tap "VIDEO OUTPUT".
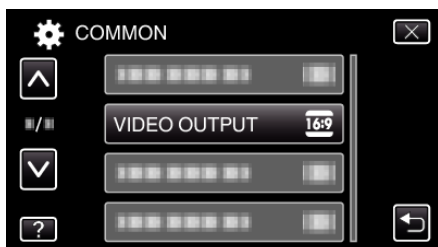
COMPONENT OUTPUT

Sets the definition of the video output from the COMPONENT connector.

Setting	Details
480i	Outputs at 480i.
1080i	Outputs at 1080i.

Displaying the Item

1 Tap "MENU".
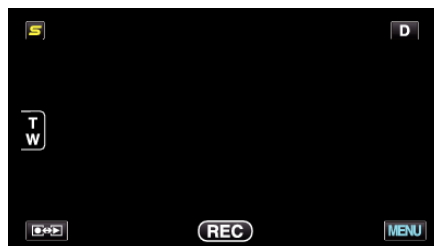
2 Tap "⚙".

3 Tap "COMPONENT OUTPUT".

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HDMI OUTPUT

Sets the output from the HDMI connector of this unit when it is connected to a TV.

■ 3D Mode (for GZ-HM960)

Setting	Details
AUTO	Output images according to the supported monitor input format.
SIDE-BY-SIDE OUTPUT	Outputs images from the HDMI connector in "SIDE-BY-SIDE OUTPUT" (960x1080ix2ch) regardless of the supported monitor input format.
CERTAIN TV TYPES	Outputs images from the HDMI connector in "SIDE-BY-SIDE OUTPUT" (960x1080ix2ch) if the input format "1080i" is supported by the monitor. Outputs images from the HDMI connector in "2D" (480p or 480i) if "1080i" is not supported by the monitor.

Memo :
● When connected to a 3D compatible TV in the recording mode, images are output in "SIDE-BY-SIDE OUTPUT" regardless of the "HDMI OUTPUT" setting.

Display on TV via HDMI Output (for GZ-HM960)

■ When HDMI OUTPUT is set to "AUTO"

Video Output	Video Output
2D TV	3D Compatible TV
2D	3D

● If 3D images cannot be seen even when connected to a 3D compatible TV, set "HDMI OUTPUT" to "CERTAIN TV TYPES" or "SIDE-BY-SIDE OUTPUT".
● If "HDMI OUTPUT" is set to "CERTAIN TV TYPES" when connected to a 2D TV, the left and right images will appear side by side.
● When 3D images are played back on a 3D compatible TV, the display on the LCD monitor is in 2D.
● For details on the settings of your TV, refer to its instruction manual.

■ 2D Mode (for GZ-HM960/GZ-HM860)

Setting	Details
AUTO	It is recommended to select "AUTO" usually.
480p	Select this when the video is not output in "AUTO" correctly.

Displaying the Item
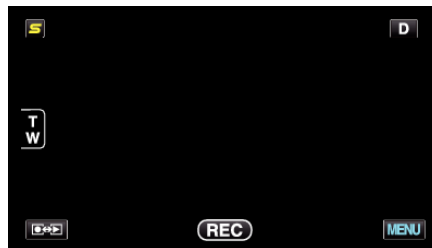
1 Tap "MENU".

2 Tap "⚙".

3 Tap "HDMI OUTPUT".
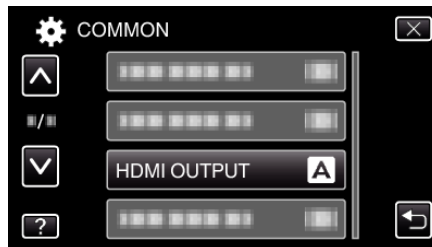
HDMI CONTROL

Sets whether to link operations with an HDMI-CEC compliant TV.

Setting	Details
OFF	Turns off linked operations.
ON	Turns on linked operations.

Displaying the Item

1 Tap "MENU".
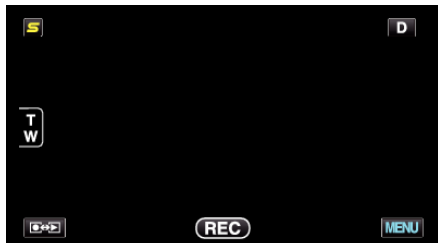
2 Tap "⚙".

3 Tap "HDMI CONTROL".
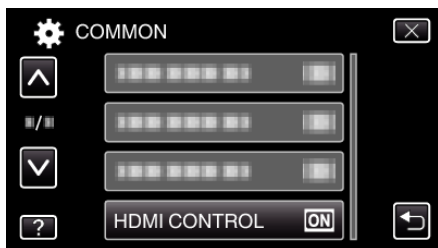
Bluetooth

Enables wireless connection with other devices.
Operating Details
"Connecting to a Registered Bluetooth-compliant Device" (☞ p. 27)

AUTO FINALIZE

Finalizes the discs created automatically so that they can be played back on compatible devices.

Setting	Details
OFF	Allows data to be added to the created discs later, but they can only be played back on this unit.
ON	Finalizes the discs created automatically so that they can be played back on compatible devices other than this unit.

Memo :
● DVD-Video discs will be finalized automatically regardless of the setting.

Displaying the Item
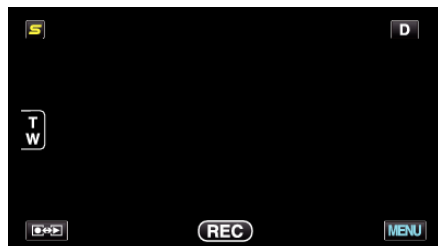
1 Tap "MENU".

2 Tap "⚙".

3 Tap "AUTO FINALIZE".
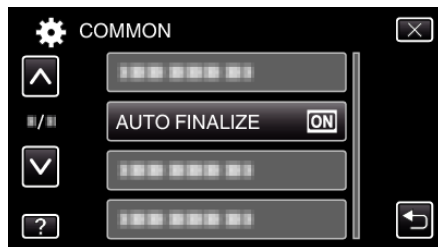
FACTORY PRESET

Returns all the settings to their default values.

1 Tap "MENU".
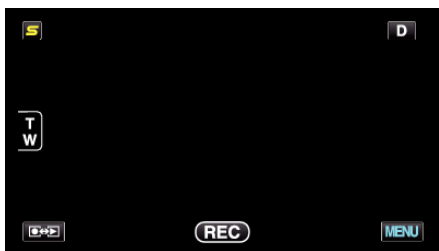
2 Tap "⚙".

3 Tap "FACTORY PRESET".

4 Tap "YES".

DO YOU WANT THE SETTINGS
RESET TO THE FACTORY PRESET?

YES   NO

● All settings return to their default values.

UPDATE

Updates the functions of this unit to the latest version.
For details, refer to the JVC homepage.
(When no program to update the software of this unit is available, nothing will be provided on the homepage.)
http://www.jvc-victor.co.jp/english/global-e.html

PC SOFTWARE UPDATE

Updates the built-in PC software of this unit to the latest version.
For details, refer to the JVC homepage.
(When no program to update the PC software is available, nothing will be provided on the homepage.)
http://www.jvc-victor.co.jp/english/global-e.html

FORMAT BUILT-IN MEM.

Deletes all files on the built-in memory.

Setting	Details
FILE	Deletes all files on the built-in memory.
FILE + MANAGEMENT NO	Deletes all files on the built-in memory and resets the folder and file numbers to "1".

Caution :
● All data on the built-in memory will be deleted when it is formatted.
Copy all files on the built-in memory to a computer before formatting.
● Connect the AC adapter when formatting the built-in memory. Formatting cannot be performed if the AC adapter is not connected.

Displaying the Item

1 Tap "MENU".
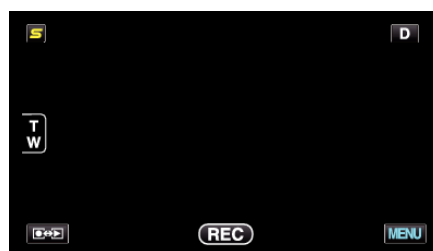
2 Tap "⚙".

3 Tap "FORMAT BUILT-IN MEM.".

COMMON
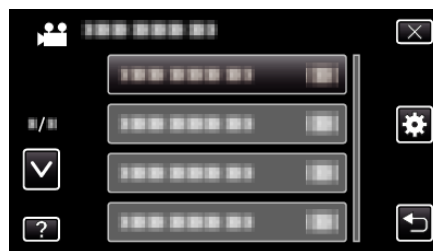
FORMAT BUILT-IN MEM.
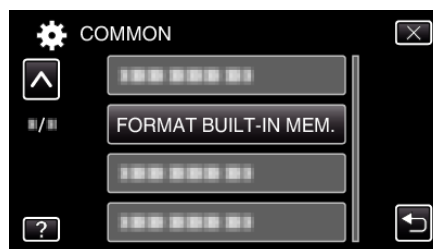
FORMAT SD CARD

Deletes all files on the SD card.

Setting	Details
FILE	Deletes all files on the SD card.
FILE + MANAGEMENT NO	Deletes all files on the SD card and resets the folder and file numbers to "1".

Caution :
- Not available for selection when no SD card is inserted.
- All data on the card will be deleted when it is formatted.
  Copy all files on the card to a computer before formatting.
- Make sure that the battery pack is fully charged or connect the AC adapter as the formatting process may take some time.

Displaying the Item
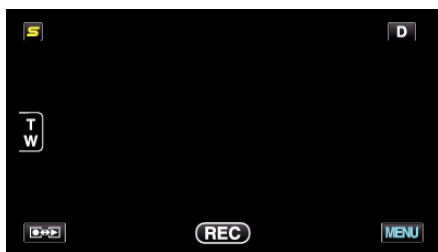
1 Tap "MENU".

2 Tap "⚙".

3 Tap "FORMAT SD CARD".
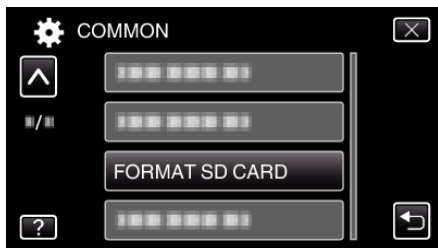
ERASE ALL DATA

Execute this process when disposing of this unit or passing it to another person.

1 Tap "MENU".
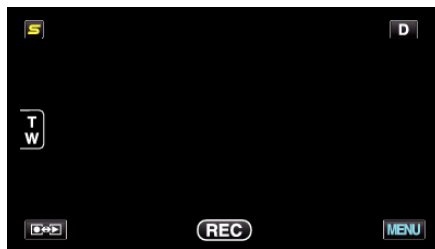
2 Tap "⚙".
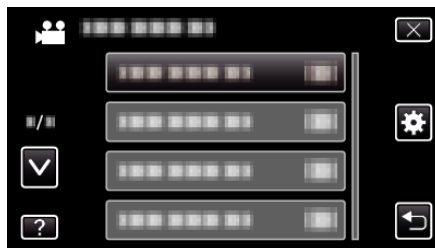
3 Tap "ERASE ALL DATA".

4 Tap "YES".

- After deleting is complete, tap "OK".

Caution :
- Connect the AC adapter when erasing all data on the built-in memory. Erasing cannot be performed if the AC adapter is not connected.

Memo :
- Repeat the process to make data restoration even more difficult.

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Front
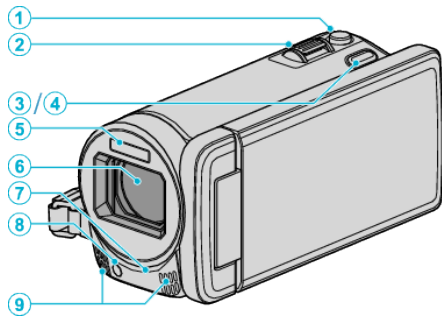
1 SNAPSHOT (Still Image Recording) Button

- Takes a still image.

2 Zoom/Volume Lever

- During shooting: Adjusts the shooting range.
- During playback (index screen): Moves to the next or previous page.
- During video playback: Adjusts the volume.

3 3D Button (for GZ-HM960)

- Switches the playback image and display on the LCD monitor between 3D and 2D.

"Playing Back 3D Images (for GZ-HM960)" (☞ p. 76)

4 AF Button (for GZ-HM860)

- Automatically adjusts focus and brightness based on the subjects' faces or selected area.

"Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)" (☞ p. 61)

5 Flash

"FLASH" (☞ p. 135)

6 Lens/Electric Lens Cover

- Do not touch the lens and lens cover.
- Do not cover the lens with your fingers during recording.

7 Remote Sensor

"Using the Remote Control" (☞ p. 23)

8 Light

- Turn on the light when shooting in dark places.

"LIGHT" (☞ p. 126)

9 Stereo Microphone

- Do not cover the microphone with your fingers during video recording.

Rear
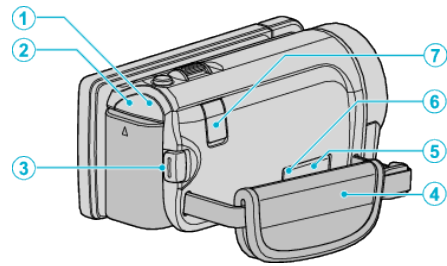
1 POWER/CHARGE (Power/Charge) Lamp

- Lights up: Power "ON"
- Blinks: Charging in progress
- Goes out: Charging finished

2 ACCESS (Access) Lamp

- Lights up/blinks during recording or playback.
  Do not remove the battery pack, AC adapter, or SD card.

3 START/STOP (Video Recording) Button

- Starts/stops video recording.

4 Grip Belt

- Pass your hand through the grip belt to hold this unit firmly.

"Grip Adjustment" (☞ p. 16)

5 AV Connector

- Connects to the AV connector of a TV, etc.

6 COMPONENT (Component) Connector

- Connects to the component connector of a TV, etc.

7 DC Connector

- Connects to an AC adapter to charge the battery.

Bottom
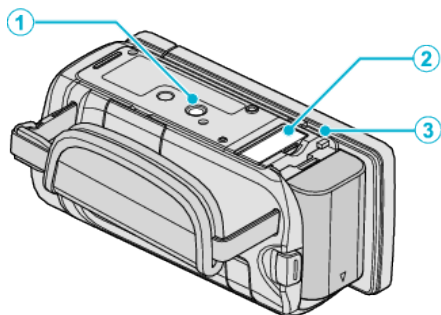
1 Tripod Mounting Hole

"Tripod Mounting" (☞ p. 22)

2 SD Card Slot

● Insert an optional SD card.

"Inserting an SD Card" (☞ p. 16)

3 Battery Release Lever

"Charging the Battery Pack" (☞ p. 15)

Interior
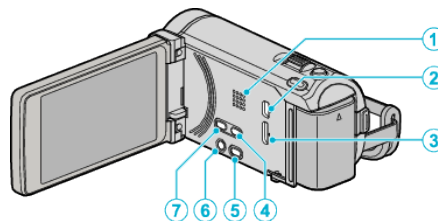
1 Speaker

● Outputs audio sound during video playback.

2 USB Connector

● Connects to computer using a USB cable.

3 HDMI Connector

● Connects to an HDMI TV.

4 USER Button

● Activates preset functions.

"Setting the USER Button" (☞ p. 71)

5 ▶ / □ (Video/Still Image) Button

● Switches between video and still image modes.

6 ⏻/INFO (Power/Information) Button

● Recording: Displays the remaining time (for video only) and battery power.

● Playback: Displays file information such as recording date.

● Press and hold to turn the power on/off while the LCD monitor is opened.

7 i.AUTO Button

● Switches between Intelligent Auto and Manual modes.

LCD Monitor
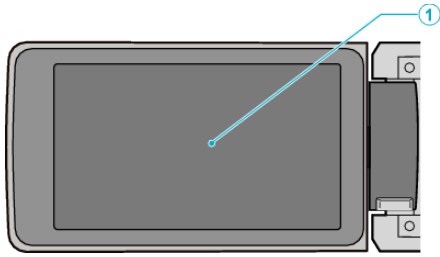
1   LCD Monitor

- Turns the power on/off by opening and closing.
- Enables self-portraits to be taken by rotating the monitor.
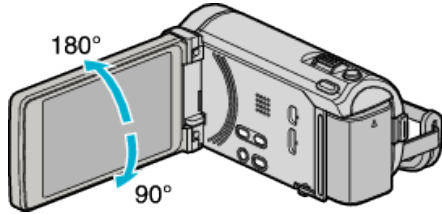
"Using the Touch Screen" (☞ p. 18)
"Names of Buttons and Functions on the LCD Monitor" (☞ p. 19)

Caution :

- Do not press against the surface with force or subject it to strong impact. Doing so may damage or break the screen.

Common Recording Indications
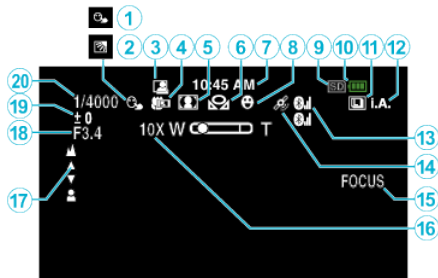
1 TOUCH PRIORITY AE/AF
"Capturing Subjects Clearly (TOUCH PRIORITY AE/AF)" (☞ p. 61)

2 Backlight Compensation
"Setting Backlight Compensation" (☞ p. 53)

3 Auto REC
"Recording Automatically by Sensing Movements (AUTO REC)"
(☞ p. 69)

4 Tele Macro
"Taking Close-up Shots" (☞ p. 54)

5 Scene Select
"Scene Selection" (☞ p. 48)

6 White Balance
"Setting White Balance" (☞ p. 52)

7 Time
"Clock Setting" (☞ p. 20)

8 Smile Shot
"Capturing Smiles Automatically (SMILE SHOT)" (☞ p. 62)

9 Media
"REC MEDIA FOR VIDEO" (☞ p. 145)
"REC MEDIA FOR IMAGE" (☞ p. 145)

10 Battery Indicator
"Remaining Recording Time/Battery Power" (☞ p. 72)

11 Continuous Shooting
"SHUTTER MODE (Video)" (☞ p. 128)
"CONT. SHOOTING SPEED (Video)" (☞ p. 128)
"SHUTTER MODE (Still Image)" (☞ p. 136)
"CONT. SHOOTING SPEED (Still Image)" (☞ p. 136)

12 Recording Mode
"Taking Videos in Intelligent Auto Mode" (☞ p. 42)
"Manual Recording" (☞ p. 47)

13 Radio Reception Status
"Connecting to a Registered Bluetooth-compliant Device" (☞ p. 27)

14 GPS Communication Status
"Connecting to a Registered Bluetooth-compliant Device" (☞ p. 27)

15 Focus Assist
"Using Focus Assist" (☞ p. 50)

16 Zoom
"ZOOM" (☞ p. 130)

17 Focus
"Adjusting Focus Manually" (☞ p. 49)

18 APERTURE PRIORITY
"Setting Aperture" (☞ p. 51)

19 Brightness
"Adjusting Brightness" (☞ p. 50)

20 Shutter Speed
"Setting Shutter Speed" (☞ p. 51)

Video Recording
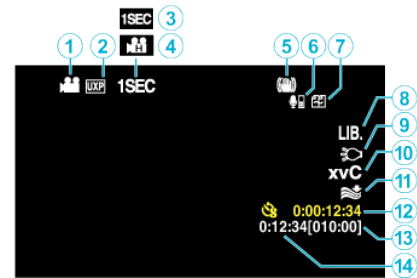
1 Video Mode
"🎥 / 📷 (Video/Still Image) Button" (☞ p. 157)

2 Video Quality
"VIDEO QUALITY" (☞ p. 129)

3 TIME-LAPSE RECORDING
"Recording at Intervals (TIME-LAPSE RECORDING)" (☞ p. 67)

4 HIGH SPEED RECORDING
"Slow-motion (High-speed) Recording" (☞ p. 66)

5 Digital Image Stabilizer
"Reducing Camera Shake" (☞ p. 64)

6 Bluetooth Microphone Volume
"Changing the Settings of a Registered Bluetooth-compliant Device"
(☞ p. 29)

7 Seamless Recording
"SEAMLESS RECORDING" (☞ p. 130)

8 EXPORT Recording
"Taking Videos in iTunes Format" (☞ p. 65)

9 Light
"LIGHT" (☞ p. 126)

10 x.v.Color
"x.v.Color" (☞ p. 131)

11 Wind Cut
"WIND CUT" (☞ p. 127)

12 Time-Lapse Recording Counter
"Recording at Intervals (TIME-LAPSE RECORDING)" (☞ p. 67)

13 Remaining Recording Time
"Remaining Recording Time/Battery Power" (☞ p. 72)

14 Scene Counter

159

Still Image Recording

1 Still Image Mode
   "📷 / 📷 (Video/Still Image) Button" (☞ p. 157)

2 Image Size
   "IMAGE SIZE" (☞ p. 137)

3 GAIN
   "GAIN" (☞ p. 135)

4 CONT. SHOOTING SPEED
   "CONT. SHOOTING SPEED" (☞ p. 136)

5 Self-Timer
   "Taking Group Shots (Self-timer)" (☞ p. 70)

6 Flash
   "FLASH" (☞ p. 135)

7 Remaining Number of Shots

8 Focus

9 Recording in Progress

Video Playback
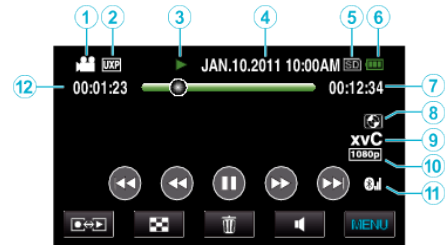
1 Video Mode
   "📷 / 📷 (Video/Still Image) Button" (☞ p. 157)

2 Video Quality
   "VIDEO QUALITY" (☞ p. 129)

3 Operation Indicator
   "Operation Buttons for Video Playback" (☞ p. 74)

4 Date/Time
   "Clock Setting" (☞ p. 20)

5 Media
   "REC MEDIA FOR VIDEO" (☞ p. 145)

6 Battery Indicator
   "Remaining Recording Time/Battery Power" (☞ p. 72)

7 Playback Time
   "Playing Back Videos" (☞ p. 74)

8 External Storage Playback
   "Playing Back with a DVD Writer" (☞ p. 99)
   "Playing Back with an External Blu-ray Drive" (☞ p. 104)
   "Playing Back Files in the USB External Hard Disk Drive" (☞ p. 108)

9 x.v.Color
   "x.v.Color" (☞ p. 131)

10 1080p Output
   "HDMI OUTPUT" (☞ p. 152)

11 Radio Reception Status
   "Connecting to a Registered Bluetooth-compliant Device" (☞ p. 27)

12 Scene Counter

Still Image Playback
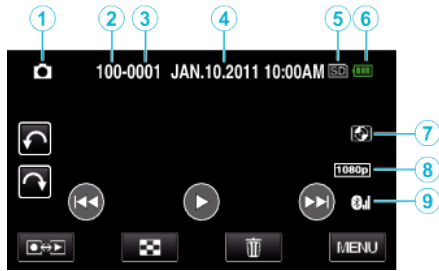
1 Still Image Mode

"🎥 / 📷 (Video/Still Image) Button" (☞ p. 157)

2 Folder Number

3 File Number

4 Date/Time

"Clock Setting" (☞ p. 20)

5 Media

"REC MEDIA FOR IMAGE" (☞ p. 145)

6 Battery Indicator

"Remaining Recording Time/Battery Power" (☞ p. 72)

7 External Storage Playback

"Playing Back with a DVD Writer" (☞ p. 99)
"Playing Back with an External Blu-ray Drive" (☞ p. 104)
"Playing Back Files in the USB External Hard Disk Drive" (☞ p. 108)

8 1080p Output

"HDMI OUTPUT" (☞ p. 152)

9 Radio Reception Status

"Connecting to a Registered Bluetooth-compliant Device" (☞ p. 27)

Battery Pack

Unable to turn on the power when using the battery pack.

Recharge the battery pack.
"Charging the Battery Pack" (☞ p. 15)
If the terminal of this unit or the battery pack is dirty, wipe it with a cotton swab or something similar.
If you use any other battery packs besides JVC battery packs, safety and performance cannot be guaranteed. Be sure to use JVC battery packs.

Short usage time even after charging.

Battery deterioration occurs when a battery pack is charged repeatedly. Replace the battery pack with a new one.
"Optional Accessories" (☞ p. 40)

Unable to charge the battery pack.

When the battery pack is fully charged, the lamp does not flash.
If the terminal of this unit or the battery pack is dirty, wipe it with a cotton swab or something similar.
Using a non-original AC adapter may result in damage to this unit. Be sure to use an original AC adapter.

The remaining battery display is not correct.

Remaining battery power is not displayed when the AC adapter is connected.
If this unit is used for long periods of time in high or low temperatures, or if the battery pack is repeatedly charged, the amount of remaining battery may not be displayed correctly.

Recording

Recording cannot be performed.

Check the ▣/◻ button.
"▣ / ◻ (Video/Still Image) Button" (☞ p. 157)

Recording stops automatically.

Recording stops automatically as it cannot be performed for 12 or more consecutive hours according to specifications. (It may take some time to resume recording.)
Turn off this unit, wait for a while, and turn it on again. (This unit stops automatically to protect the circuit when the temperature rises.)

The continuous shooting speed of still images is slow.

The continuous shooting speed will drop if this function is used repeatedly.
Continuous shooting speed may drop depending on the SD card or under certain recording conditions.

The focus is not adjusted automatically.

If you are recording in a dark place or a subject that has no contrast between dark and light, adjust the focus manually.
"Adjusting Focus Manually" (☞ p. 49)
Wipe the lens with a lens cleaning cloth.
Cancel manual focus on the manual recording menu.
"Adjusting Focus Manually" (☞ p. 49)

Zoom does not work.

Digital zoom is not available in the still image recording mode.
Zoom operation is not available in time-lapse recording. (Simultaneous still image recording and image stabilizer are also not available.)
To use digital zoom, set "ZOOM" in the menu accordingly.
"ZOOM" (☞ p. 130)

Mosaic-type noise occurs when recording scenes with fast movements or extreme changes in brightness.

Set the "VIDEO QUALITY" to "UXP" or "XP" for recording.
"VIDEO QUALITY" (☞ p. 129)

Vertical lines appear on recorded images.

Such a phenomenon occurs when shooting a subject illuminated by bright light. This is not a malfunction.

Card

Cannot insert the SD card.

Make sure not to insert the card in the wrong direction.
"Inserting an SD Card" (☞ p. 16)

Unable to copy to SD card.

To record to the card, it is necessary to perform media settings.
"REC MEDIA FOR VIDEO" (☞ p. 145)
"REC MEDIA FOR IMAGE" (☞ p. 145)
To use cards that have been used on other devices, it is necessary to format (initialize) the card using "FORMAT SD CARD" from media settings.
"FORMAT SD CARD" (☞ p. 155)

Playback

Sound or video is interrupted.

Sometimes playback is interrupted at the connecting section between two scenes. This is not a malfunction.

There is no sound.

Audio sound is not recorded for videos taken in HIGH SPEED RECORDING/ TIME-LAPSE RECORDING.
"Slow-motion (High-speed) Recording" (☞ p. 66)
"Recording at Intervals (TIME-LAPSE RECORDING)" (☞ p. 67)

The same image is displayed for a long time.

Use a high speed SD card (Class 4 or higher).
"Types of Usable SD Card" (☞ p. 17)
Clean the terminals of the SD card with a dry cotton swab or something similar.
Execute "FORMAT SD CARD" in the "COMMON" menu. (All data will be deleted.)
"FORMAT SD CARD" (☞ p. 155)

The motion is choppy.

Use a high speed SD card (Class 4 or higher).
"Types of Usable SD Card" (☞ p. 17)
Clean the terminals of the SD card with a dry cotton swab or something similar.
Execute "FORMAT SD CARD" in the "COMMON" menu. (All data will be deleted.)
"FORMAT SD CARD" (☞ p. 155)
Verify the system requirements of your PC when using Everio MediaBrowser 3 (3 BE) to play back.
"Verifying System Requirements (Guideline)" (☞ p. 113)

Cannot find a recorded file.

Cancel the date search function.
"Searching for a Specific Video/Still Image" (☞ p. 79)
Change the playback media by tapping ✱/🆂🅳 on the touch screen.
"Operation Buttons for Video Playback" (☞ p. 74)
"Operation Buttons for Still Image Playback" (☞ p. 77)

Images do not appear on the TV properly.

Disconnect the cable and connect again.
"Playing Back 3D Images (for GZ-HM960)" (☞ p. 80)
"Connecting via the HDMI Mini Connector" (☞ p. 82)
Turn off and on this unit again.
When connected via the component connector, check if the setting of "COMPONENT OUTPUT" in the connections setting menu is suitable for the connected TV. (Set to "1080i" by default)
"COMPONENT OUTPUT" (☞ p. 151)

3D images cannot be seen on a 3D compatible TV properly. (for GZ-HM960)

Set "HDMI OUTPUT" in the "COMMON" menu accordingly.
"HDMI OUTPUT" (☞ p. 152)

Images are projected vertically on the TV.

Set "VIDEO OUTPUT" in the "COMMON" menu to "4:3".
"VIDEO OUTPUT" (☞ p. 151)
Adjust the TV's screen accordingly.

The image displayed on TV is too small.

Set "VIDEO OUTPUT" in the "COMMON" menu to "16:9".
"VIDEO OUTPUT" (☞ p. 151)

When connected to the TV via the HDMI mini cable, proper images and sounds are not output.

Images and sounds may not be output properly depending on the TV connected. In such cases, perform the following operations.
① Disconnect the HDMI mini cable and connect it again.
② Turn off and on this unit again.
"Playing Back 3D Images (for GZ-HM960)" (☞ p. 80)
"Connecting via the HDMI Mini Connector" (☞ p. 82)

Unable to play back DVD with title.

The title will not be played back if you connect this unit to a DVD writer (optional).

Editing/Copying

Unable to delete file.

Files (videos/still images) that are protected cannot be deleted. Release protection before deleting the file.
"Protecting Files" (☞ p. 86)

Unable to copy/move files to SD card.

If the SD card is write protected, set it to off.

Unable to create DVD with a DVD writer.

The USB cable is not connected correctly.
"Preparing a DVD Writer (CU-VD50U)" (☞ p. 94)
"Preparing a DVD Writer (CU-VD3U)" (☞ p. 93)

BACK UP menu does not disappear.

While the USB cable is connected, the "BACK UP" menu is displayed.

Unable to turn off the BACK UP menu.

Turn off the power of this unit and the DVD writer, or remove the AC adapter.

Unable to delete folder in USB external hard disk drive.

Delete the folder using a computer.
(When files are added or folders moved/renamed with a computer, they cannot be deleted on this unit.)

Computer

Unable to copy files to the computer's HDD.

Connect the USB cable correctly.
"Backing Up All Files" (☞ p. 115)
If the provided software Everio MediaBrowser 3 (3 BE) is not installed, some functions may not work properly.
"Installing the Provided Software (Built-in)" (☞ p. 114)
Before making backup, make sure that enough free space is left in the computer's hard disk (HDD).

Unable to copy files to DVD with a computer.

To record to discs, a recordable DVD drive is required for the computer in use.

Cannot upload the file to YouTube.

Check if you have created an account with YouTube. (You need a YouTube account to upload files to YouTube.)
Changing videos to the file format for uploading cannot be performed on this unit.
Refer to "Q&A", "Latest Information", "Download Information", etc. in "Click for Latest Product Info" in the help file of the provided software Everio MediaBrowser 3 (3 BE).

I am using a Mac computer.

Copy the files to a Mac computer using the following method.
"Copying to Mac Computer" (☞ p. 120)

The computer cannot recognize the SDXC card.

Confirm and update the OS of your computer.
"When your computer cannot recognize the SDXC card" (☞ p. 17)

Screen/Image

The LCD monitor is difficult to see.

The LCD monitor may be difficult to see if used in bright areas such as under direct sunlight.

A band or a ball of bright light appears on the LCD monitor.

Change the direction of this unit to prevent the light source from coming into view. (A band or a ball of bright light may appear when there is a bright light source near this unit, but this is not a malfunction.)

The recorded subject is too dark.

Use backlight compensation when the background is bright and the subject is dark.
"Setting Backlight Compensation" (☞ p. 53)
Use "LIGHT" in the menu.
"LIGHT" (☞ p. 126)
Use "NIGHTALIVE" in SCENE SELECT.
"Scene Selection" (☞ p. 48)
Use "GAIN UP" in the menu.
"GAIN UP" (☞ p. 126)
Set "BRIGHTNESS ADJUST" in the recording menu to the "+" side.
"Adjusting Brightness" (☞ p. 50)

The recorded subject is too bright.

Set the backlight compensation to "OFF" if it is being used.
"Setting Backlight Compensation" (☞ p. 53)
Set "BRIGHTNESS ADJUST" in the recording menu to the "-" side.
"Adjusting Brightness" (☞ p. 50)

The color looks strange. (Too bluish, too reddish, etc.)

Wait for a while until natural colors are achieved. (It may take some time for white balance to be adjusted.)
Set "WHITE BALANCE" in the recording menu to "MANUAL". Select from "FINE"/"CLOUD"/"HALOGEN" according to the light source.
Select "MWB" and adjust accordingly.
"Setting White Balance" (☞ p. 52)

The color looks different.

Set "WHITE BALANCE" in the recording menu to "MANUAL". Select from "FINE"/"CLOUD"/"HALOGEN" according to the light source.
Select "MWB" and adjust accordingly.
"Setting White Balance" (☞ p. 52)
When the video was recorded with "x.v.Color" set to "ON", change the setting as desired on TV.
"x.v.Color" (☞ p. 131)

There are bright or dark spots on the screen.

While the LCD monitor screen has more than 99.99% effective pixels, 0.01% of the pixels may be bright spots (red, blue, green) or dark spots. This is not a malfunction. The spots will not be recorded.

Other Problems

The image is grainy.

When digital zoom is used, the image becomes grainy as it is digitally enlarged.

This unit heats up.

This is not a malfunction. (This unit may become warm when used for a long time.)

The language on the display changed.

It may occur when you connect this unit to a TV with different language setting using an HDMI mini cable.
"Operating in Conjunction with TV via HDMI" (☞ p. 81)

HDMI-CEC functions do not work properly, and the TV does not work in conjunction with this unit.

TVs may operate differently depending on the specifications, even if they are HDMI-CEC compliant. Therefore, the HDMI-CEC functions of this unit cannot be guaranteed to operate in combination with all the TVs. In such cases, set "HDMI CONTROL" to "OFF".
"HDMI CONTROL" (☞ p. 153)

The unit operates slowly when switching between video mode and still image mode, or when switching the power on or off.

It is recommended that you copy all videos and still images onto your computer, and erase the files from this unit. (If there are many recorded files on this unit, it takes time for the unit to respond.)

The remote control does not work.

Replace the battery.
"Reinserting the Battery" (☞ p. 23)
Set "REMOTE" in the "COMMON" menu to "ON".
"REMOTE" (☞ p. 147)
The remote control may not operate outdoors or in places exposed to strong light.

This unit does not function properly and error messages appear.

This unit is a microcomputer-controlled device. Electrostatic discharge, external noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such a case, turn off the power, then remove the AC adapter and battery pack. This unit will be reset.

Make a backup of important recorded data.

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

Error Message?

SET DATE/TIME!

Connect the AC adapter, charge the battery for more than 24 hours and set the clock. (If the message still appears, the clock battery is exhausted. Consult your nearest JVC dealer.)
"Clock Setting" (☞ p. 20)

COMMUNICATION ERROR

Reconnect the USB cable.
Turn off this unit and the devices connected to it, and turn them on again.
Reattach the battery pack.

FORMAT ERROR!

Check the operating procedure, and perform once again.
"FORMAT BUILT-IN MEM." (☞ p. 154)
Turn off and on this unit again.

DATA DELETION ERROR

Check the operating procedure, and perform once again.
"ERASE ALL DATA" (☞ p. 155)
Turn off and on this unit again.

ERROR IN BUILT-IN MEMORY!

Turn off and on this unit again.
If the above does not solve the problem, back up your files and execute "FORMAT BUILT-IN MEM." in the "COMMON" menu. (All data will be deleted.)
"FORMAT BUILT-IN MEM." (☞ p. 154)

MEMORY CARD ERROR!

Turn off and on this unit again.
Remove the AC adapter and battery pack, then remove and re-insert the SD card.
Remove any dirt from the SD card terminals.
If the above does not solve the problem, back up your files and execute "FORMAT SD CARD" in the "COMMON" menu. (All data will be deleted.)
"FORMAT SD CARD" (☞ p. 155)

NOT FORMATTED

Select "OK", then select "YES" on the "DO YOU WANT TO FORMAT?" screen.

RECORDING FAILURE

Turn off and on this unit again.

CANNOT TAKE MORE STILL IMAGES AT THE MOMENT

Stop video recording before taking still images. (If the SD card is removed and inserted during video recording, still images cannot be recorded.)

PLAYBACK FAILED

Remove and re-insert the SD card.
"Inserting an SD Card" (☞ p. 16)
Remove any dirt from the SD card terminals.
Insert the SD card before turning on the power.
Do not subject this unit to any strong impact or vibration.

VIDEO MANAGEMENT FILE IS DAMAGED, RECOVERY IS REQUIRED TO RECORD/PLAYBACK, RECOVER?

Select "OK" to restore. (Videos that cannot be restored will not be displayed on the index screen, but you may be able to play them back using "PLAYBACK OTHER FILE" in the menu.)
"Playing a Video with Defective Management Information" (☞ p. 76)

UNSUPPORTED FILE!

Use files recorded with this unit. (Files recorded with other devices may not be playable.)

THIS FILE IS PROTECTED

Switch off the "PROTECT/CANCEL" function in the "EDIT" menu.
"Protecting Files" (☞ p. 86)

CHECK CARD'S WRITE PROTECTION SWITCH

Set the write protect switch of the SD card to off.

INSUFFICIENT AVAILABLE SPACE

Delete files, or move files to a computer or other devices.
Replace the SD card with a new one.
Seamless videos cannot be combined if there is not enough free space in the built-in memory or SD card. Check the amount of remaining free space before combining.

MAXIMUM QUANTITY RECORDING FOLDERS/ FILES HAS BEEN REACHED

① Move the files or folders to a computer or other device. (Back up your files.)
② Select "FILE + MANAGEMENT NO" in "FORMAT BUILT-IN MEM." or "FORMAT SD CARD" of the media settings menu. (All data on the built-in memory or SD card will be deleted.)

SCENE QUANTITY EXCEEDED LIMIT

① Move the files or folders to a computer or other device. (Back up your files.)
② Select "FILE + MANAGEMENT NO" in "FORMAT BUILT-IN MEM." or "FORMAT SD CARD" of the media settings menu. (All data on the built-in memory or SD card will be deleted.)

NUMBER OF FOLDERS OVERFLOW

① Move the files or folders to a computer or other device. (Back up your files.)
② Select "FILE + MANAGEMENT NO" in "FORMAT BUILT-IN MEM." or "FORMAT SD CARD" of the media settings menu. (All data on the built-in memory or SD card will be deleted.)

FILE QUANTITY LIMIT EXCEEDED

① Move the files or folders to a computer or other device. (Back up your files.)
② Select "FILE + MANAGEMENT NO" in "FORMAT BUILT-IN MEM." or "FORMAT SD CARD" of the media settings menu. (All data on the built-in memory or SD card will be deleted.)

NO FILES

Change the setting of "REC MEDIA FOR IMAGE" or "REC MEDIA FOR VIDEO" in the "COMMON" menu, and check that files are not recorded to the other media.
"REC MEDIA FOR VIDEO" (☞ p. 145)
"REC MEDIA FOR IMAGE" (☞ p. 145)

RECORDING CANCELLED

Set "REC MEDIA FOR VIDEO" to "SD", then record to an SD card.
"REC MEDIA FOR VIDEO" (☞ p. 145)
Turn off and on this unit again.
Protect the unit from vibration and shock.

POWER IS OFF, OR USB DEVICE IS UNSUPPORTED

Turn on the power of the connected USB device.
Connect the AC adapter to the DVD writer.

INSERT DISC/CHANGE DISC

Open the tray of the DVD writer or external Blu-ray drive, check and reset the BD/DVD, then close the tray.
Replace the disc in the DVD writer or external Blu-ray drive.

UNABLE TO COMMUNICATE WITH THE Bluetooth DEVICE

Make sure that there are no obstacles between the Bluetooth-compliant device and the camcorder.

"Improving the Communication" (☞ p. 24)
Check the registered device and register again.
"Registering a Bluetooth-compliant Device" (☞ p. 25)
Refer to the instruction manual of the connected device.

Maintenance

Perform regular maintenance of this unit to enable it to be used for a long time.

Caution :
- Be sure to detach the battery pack, AC adapter, and power plug before performing any maintenance.

Camcorder

- Wipe this unit with a dry, soft cloth to remove any dirt.
- When it is extremely dirty, soak the cloth in a solution of neutral detergent, wipe the body with it, and then use a clean cloth to remove the detergent.

Caution :
- Do not use benzene or thinner. Doing so may cause damage to the unit.
- When using a chemical cloth or cleaner, be sure to observe the warning labels and instructions of the product.
- Do not leave the device in contact with rubber or plastic products for a long time.

Lens/LCD Monitor

- Use a lens blower (commercially available) to remove any dust, and a cleaning cloth (commercially available) to wipe off any dirt.
  Mold may form if the lens is left dirty.

Camera

Item	Details
Power supply	Using AC adapter: DC 5.2 V Using battery pack: DC 3.6 V
Power consumption	(GZ-HM960) 3D Display on LCD Monitor 4.6 W (MONITOR BRIGHTNESS: 3 (standard)) 4.7 W (MONITOR BRIGHTNESS: 4 (brighter)) 2D Display on LCD Monitor 4.1 W (MONITOR BRIGHTNESS: 3 (standard)) 4.5 W (MONITOR BRIGHTNESS: 4 (brighter)) (GZ-HM860) 3.7 W (MONITOR BRIGHTNESS: 3 (standard)) 4.2 W (MONITOR BRIGHTNESS: 4 (brighter))
Dimensions (mm)	54 x 62 x 121 (2-1/4" x 2-1/2" x 4-7/8") (W x H x D: excluding grip belt)
Mass	(GZ-HM960) Approx. 330 g (0.73lbs) (camera only), Approx. 370 g (0.82lbs) (including supplied battery pack) (GZ-HM860) Approx. 310 g (0.68lbs) (camera only), Approx. 350 g (0.77lbs) (including supplied battery pack)
Operating environment	Allowable operating temperature: 0°C to 40°C (32°F to 104°F) Allowable storage temperature: -20°C to 50°C (-4°F to 122°F) Allowable relative humidity: 35 % to 80 %
Image pickup device	1/2.3" 10,620,000 pixels (CMOS)
Recording area (Video)	2,820,000 pixels 2,070,000 to 4,770,000 pixels (dynamic zoom)
Recording area (Still image)	3,980,000 to 5,290,000 pixels (4:3) 2,990,000 to 3,970,000 pixels (16:9)
Lens	F1.2 - 2.8, f= 3.76 mm to 37.6 mm Video 35 mm conversion: 29.5 mm to 295 mm 35 mm conversion: 29.5 mm to 448 mm (dynamic zoom) Still Image 35 mm conversion: 29.7 mm to 297 mm (4:3) 35 mm conversion: 32.4 mm to 324 mm (16:9)

Item	Details
Lowest illumination	8 lux (GAIN UP: ON) 2 lux (GAIN UP: AUTO SLOW-SHUTTER) 1 lux (SCENE SELECT: NIGHTALIVE)
Flash	Recommended shooting distance: Within 2 m
Zoom (during video recording)	Optical zoom: Up to 10x Dynamic zoom: Up to 15x (DIS: AIS OFF), Up to 13x (DIS: AIS ON) Digital zoom: Up to 200x
Zoom (during still image recording)	Optical zoom: Up to 10x
Continuous shooting speed (during video record-standby)	HIGH SPEED: Approx. 60 images/second MEDIUM SPEED: Approx. 10 images/second LOW SPEED: Approx. 2 images/second (Maximum)
Continuous shooting speed (during still image recording)	HIGH SPEED: Approx. 15 images/second MEDIUM SPEED: Approx. 7.5 images/second LOW SPEED: Approx. 5 images/second (Maximum)
LCD monitor	3.5", 920,000 pixels, polysilicon color LCD
Recording media	Built-in memory (16 GB) SD/SDHC/SDXC card (commercially available) Eye-Fi card (commercially available) "Types of Usable SD Card" (☞ p. 17)
Clock battery	Rechargeable battery

Specifications

Connectors

Item	Details
HDMI output connector	HDMI mini connector (x.v.Color compatible)
Component output connector	Y, Pb, Pr component output Y: 1.0 V (p-p), 75 Ω Pb/Pr: 0.7 V (p-p), 75 Ω
AV output connector	Video output: 1.0 V(p-p), 75 Ω Audio output: 300 mV (rms), 1 K Ω
USB connector	Mini USB Type AB, USB 2.0 compliant

Video

Item	Details
Recording/Playback format	AVCHD standard Video: MPEG-4 AVC/H.264 Audio: Dolby Digital 2ch
Extension	.MTS
Signal system	NTSC standard
Image quality (Video)	UXP 1920 x 1080 pixels Average Approximate 24 Mbps XP 1920 x 1080 pixels Average Approximate 17 Mbps SP 1920 x 1080 pixels Average Approximate 12 Mbps EP 1920 x 1080 pixels Average Approximate 4.8 Mbps
Sound quality (Audio)	48 kHz, 256 kbps

Still Image

Item	Details
Recording format	JPEG standard
Extension	.JPG
Image size	"Approximate Number of Still Images (Unit: Number of Shots)" (☞ p. 73)

AC Adapter (AC-V11U) (for GZ-HM860)

Item	Details
Power supply	AC 110 V to 240 V, 50 Hz/60 Hz
Output	DC 5.2 V, 1 A
Allowable operating temperature	0°C to 40°C (32°F to 104°F) (10°C to 35°C (50°F to 95°F) during charging)
Dimensions (mm)	66 x 28 x 47 (2-5/8" x 1-1/8" x 1-7/8") (W x H x D: excluding cord and AC plug)
Mass	Approx. 71 g (0.15 lbs)

AC Adapter (AP-V30U) (for GZ-HM960)

Item	Details
Power supply	AC 110 V to 240 V, 50 Hz/60 Hz
Output	DC 5.2 V, 1.8 A
Allowable operating temperature	0°C to 40°C (32°F to 104°F) (10°C to 35°C (50°F to 95°F) during charging)
Dimensions (mm)	78 x 34 x 46 (3-1/8" x 1-3/8" x 1-13/16") (W x H x D: excluding cord and AC plug)
Mass	Approx. 107 g (0.24 lbs)

Battery Pack (BN-VG114U)

Item	Details
Power voltage	3.6 V
Capacity	1400 mAh
Dimensions (mm)	31 x 21.5 x 43 (1-1/4" x 7/8" x 1-3/4") (W x H x D)
Mass	Approx. 40 g(0.09 lbs)

Remote Control (RM-V760U)

Item	Details
Power supply	DC 3 V (button battery CR2025)
Battery life	Approx. 1 year (depending on frequency of use)
Operating distance	Approx. 5 m (16'4-7/8") (facing up)
Allowable operating temperature	0°C to 40°C (32°F to 104°F)
Dimensions (mm)	32.5 x 15.6 x 68 (1-5/16" x 5/8" x 2-3/4") (W x H x D)
Mass	Approx. 16 g (0.04 lbs) (including battery pack)

Memo :
● The specifications and appearance of this product are subject to changes for further improvement without prior notice.

US 0211HOH-SW-VM

JVC