

JVC



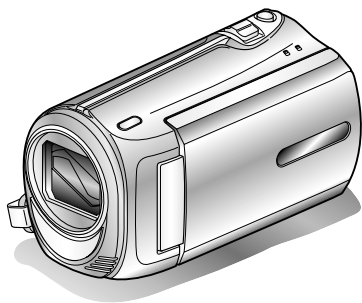
LYT2214-001A-M

CAMCORDER

GZ-MS230 **AS**

GZ-MS215 **AS**

Basic User Guide



Everio

Dear Customers

Thank you for purchasing this JVC product.

Before use, please read the Safety Precautions and Cautions on P.2 and P.21 to ensure safe use of this product.

Some features explained in this manual only apply to the specific camera model identified.

This product comes with a "Basic User Guide (this manual)" and a "Detailed User Guide".

Detailed User Guide



Explains the ways of shooting in various situations and the useful features.

■ Access the following website on your PC

<http://manual.jvc.co.jp/index.html/>

Getting Started

Recording

Playback

Copying

Further Information



ENGLISH
FRANÇAIS
РУССКИЙ

Safety Precautions

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

CAUTIONS:

- If you notice smoke or a peculiar smell coming from the camcorder or AC Adapter, shut it down and unplug it immediately. Continue using the camcorder or AC Adapter under these conditions could lead to fire or electric shock. Contact your JVC dealer. Do not attempt to repair the malfunction yourself.
- To prevent shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified personnel.
- When you are not using the AC adapter for a long period of time, it is recommended that you disconnect the power cord from AC outlet.
- In certain areas, use the conversion plug depending on the type of your AC wall outlet.

NOTES:

- The rating plate and safety caution are on the bottom and/or the back of the main unit.
- The serial number plate is on the battery pack mount.
- The rating information and safety caution of the AC adapter are on its upper and lower sides.

WARNING:

The battery pack, the camcorder with battery installed, and the remote control with battery installed should not be exposed to excessive heat such as direct sunshine, fire or the like.

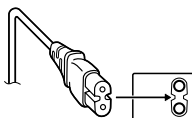
CAUTION:

The mains plug shall remain readily operable.

- Remove the mains plug immediately if the camcorder functions abnormally.

CAUTION:

To avoid electric shock or damage to the unit, first firmly insert the small end of the power cord into the AC Adapter until it is no longer wobbly, and then plug the larger end of the power cord into an AC outlet.



Caution on Replaceable lithium battery

The battery used in this device may present a fire or chemical burn hazard if mistreated.

Do not recharge, disassemble, heat above 100°C or incinerate.

Danger of explosion or Risk of fire if the battery is incorrectly replaced.

- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

When the equipment is installed in a cabinet or on a shelf, make sure that it has sufficient space on all sides to allow for ventilation (10 cm or more on both sides, on top and at the rear).

Do not block the ventilation holes.

(If the ventilation holes are blocked by a newspaper, or cloth etc. the heat may not be able to get out.)

No naked flame sources, such as lighted candles, should be placed on the apparatus.

When discarding batteries, environmental problems must be considered and the local rules or laws governing the disposal of these batteries must be followed strictly.

The apparatus shall not be exposed to dripping or splashing.

Do not use this equipment in a bathroom or places with water.

Also do not place any containers filled with water or liquids (such as cosmetics or medicines, flower vases, potted plants, cups etc.) on top of this unit. (If water or liquid is allowed to enter this equipment, fire or electric shock may be caused.)

Do not point the lens directly into the sun. This can cause eye injuries, as well as lead to the malfunctioning of internal circuitry. There is also a risk of fire or electric shock.

CAUTION!

The following notes concern possible physical damage to the camcorder and to the user.

Carrying or holding the camcorder by the LCD monitor can result in dropping the unit, or in a malfunction.

Do not use a tripod on unsteady or unlevel surfaces. It could tip over, causing serious damage to the camcorder.

CAUTION!

Connecting cables (Audio/Video, etc.) to the camcorder and leaving it on top of the TV is not recommended, as tripping on the cables will cause the camcorder to fall, resulting in damage.



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

Remember that this camcorder is intended for private consumer use only.

Any commercial use without proper permission is prohibited. (Even if you record an event such as a show, performance or exhibition for personal enjoyment, it is strongly recommended that you obtain permission beforehand.)

Trademarks

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- Windows® is either registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.
- Macintosh is a registered trademark of Apple Inc.
- iTunes, iMovie, iPhoto are trademarks of Apple Inc., registered in the U.S. and other countries.
- YouTube and the YouTube logo are trademarks and/or registered trademarks of YouTube LLC.
- Other product and company names included in this instruction manual are trademarks and/or registered trademarks of their respective holders.

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▶ Learning About Advanced Operations			

Use the “Detailed User Guide” on your PC to find out more about the advanced operations.

- Access the following address on your PC
<http://manual.jvc.co.jp/index.html/>

Verifying the Accessories

AC Adapter
AP-V30M *1



Power Cord *1



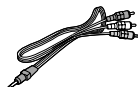
Battery Pack
BN-VG107E



USB Cable
(Type A - Mini Type B)



AV Cable



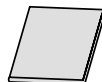
CD-ROM *2



Plug Adapter *3



Basic User Guide
(this manual)

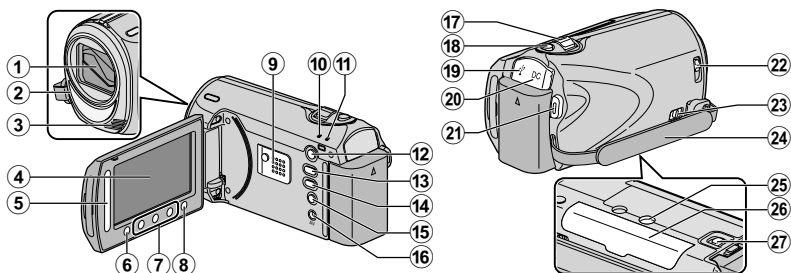


- SD cards are sold separately.

For details on the types of cards that can be used on this unit, refer to P.8.

- *1 When using the AC adapter overseas, please prepare a commercially available converter plug for the country or region of visit.
- *2 To view the Detailed User Guide, connect to the internet and click “Read Detailed User Guide”.
- *3 If the AC outlet does not match the AC plug, use the provided plug adapter.

Names of Parts and Functions

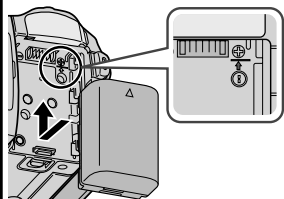


- ① Lens/Lens Cover
- ② Light
- ③ Stereo Microphone
- ④ LCD Monitor
Turns the power on/off by opening and closing.
- ⑤ Slider
Selects an image or item.
- ⑥ OK Button
Confirms the selected image or item.
- ⑦ Operation Buttons
Functions differently according to the operation.
- ⑧ Menu (menu) Button (P.17)
- ⑨ Speaker
- ⑩ ACCESS (Access) Lamp
Lights up/blinks during recording or playback.
- ⑪ POWER/CHARGE (Power/Charge) Lamp (P.6)
- ⑫ (Play) Button
Switches between recording and playback modes.
- ⑬ (Video/Still Image) Button
Switches between video and still image modes.
- ⑭ UPLOAD/EXPORT
(Upload/Export to iTunes) Button
Recording : Takes videos in YouTube or iTunes format.
Playback : Changes the video to YouTube or iTunes format.
- ⑮ (Power/Information) Button
Recording : Displays the remaining time as well as the battery power during continuous recording.
Playback : Displays file information. Press and hold to turn the power on/off while the LCD monitor is opened.
- ⑯ AV Terminal (P.15, P.16)
- ⑰ Zoom/Volume Lever (P.12, P.14)
- ⑱ SNAPSHOT (Still Image Recording) Button (P.13)
- ⑲ USB Terminal
- ⑳ DC Terminal (P.6)
- ㉑ START/STOP (Video Recording) Button (P.12)
- ㉒ Lens Cover Switch (P.12)
- ㉓ Grip Belt Release Lever
- ㉔ Grip Belt (P.7)
- ㉕ Tripod Mounting Hole
- ㉖ SD Card Slot (P.7)
- ㉗ Battery Release Lever (P.6)

Charging the Battery Pack

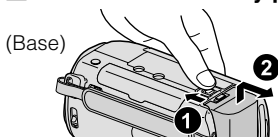
1 Attach the battery pack.

* The battery pack is not charged at the time of purchase.

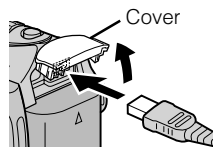


- Align the top of the battery with the mark on this unit, and slide in until the battery clicks into place.

■ To detach the battery pack



2 Connect the DC terminal.



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

Charging Lamp

3 Plug in the power.

Charging Lamp



Charging in progress:
Blinks
Charging finished:
Goes out

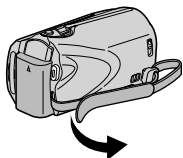
CAUTION

Be sure to use JVC battery packs.

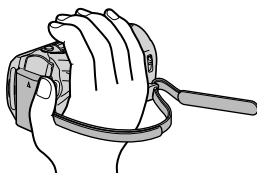
- If you use any other battery packs besides JVC battery packs, safety and performance cannot be guaranteed.
- Charging time: Approx. 1 h 50 m (using supplied battery pack)

* 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.

Grip Adjustment



① Pull back the belt



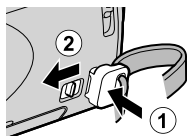
② Adjust the length



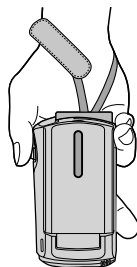
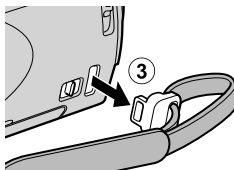
③ Attach the belt

Using as a Hand Strap

Remove the strap and loop it around your wrist. While pressing ①, pull ② and remove the strap.



Press and hold



- When attaching the hand strap, insert ③ until it clicks into place.

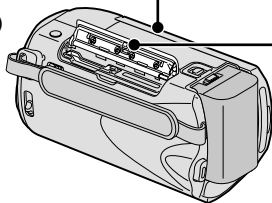
Inserting an SD card

■ GZ-MS230 (Models with Built-in Memory)

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.

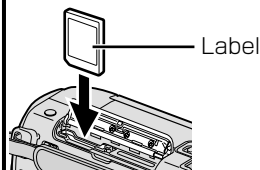
1 Close the LCD monitor.

(Base)



2 Open the cover.

3 Insert an SD card.



- * Turn off the power of this unit before inserting or removing a card.

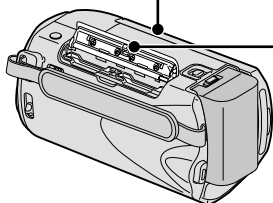
■ GZ-MS215 (Models with Dual Slot)

Insert a commercially available SD card before recording.

This unit comes with two SD card slots. When two SD cards are inserted, recordings can be continued on the other card even if one card is full.

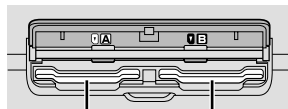
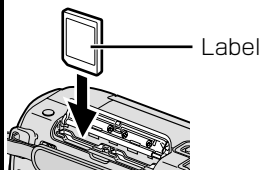
1 Close the LCD monitor.

(Base)



2 Open the cover.

3 Insert an SD card into slot A.



Slot A

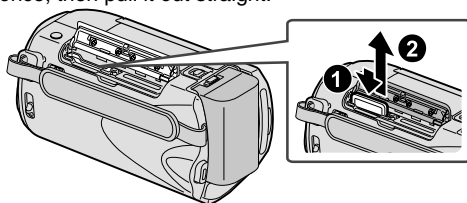
Slot B

* Turn off the power of this unit before inserting or removing a card.

■ To remove the card

Push the card inward once, then pull it out straight.

(Base)



NOTE

Operations are confirmed on the following SD cards.

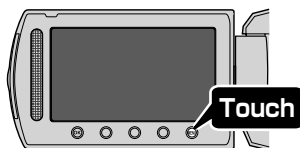
Manufacturer	Panasonic, TOSHIBA, SanDisk, ATP
Video	Class 4 or higher compatible SDHC card (4 GB to 32 GB)
Still Image	SD card (256 MB to 2 GB), SDHC card (4 GB to 32 GB)

- Using cards other than those specified above may result in recording failure or data loss.

■ To use an SD card (GZ-MS230 only)

Recording and playback can be performed on a card when “REC MEDIA FOR VIDEO” or “REC MEDIA FOR IMAGE” of media settings is set to “SD CARD”.

- ① Display the menu.



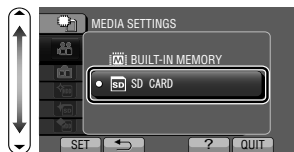
- ② Select “MEDIA SETTINGS” and touch **OK**.



- ③ Select “REC MEDIA FOR VIDEO” or “REC MEDIA FOR IMAGE”, and touch **OK**.



- ④ Select “SD CARD” and touch **OK**.



■ To use SD cards that have been used on other devices

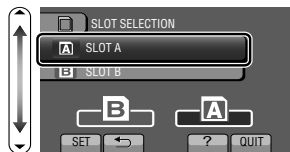
Format (initialize) the card using “FORMAT SD CARD” from media settings.

All data on the card will be deleted when it is formatted. Copy all files on the card to a PC before formatting.

- ① Touch **MENU** to display the menu.
 ② Select “MEDIA SETTINGS” with the slider and touch **OK**.
 ③ Select “FORMAT SD CARD” and touch **OK**.



- ④ (GZ-MS215 only)
 Select the slot with the card to format inserted, and touch **OK**.



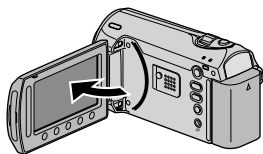
- ⑤ Select “FILE” and touch **OK**.



- ⑥ Select “YES” and touch **OK**.
 ⑦ After formatting, touch **OK**.

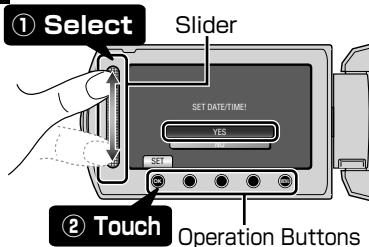
Clock Setting

- 1** Open the LCD monitor.



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

- 2** Select “YES” and touch **OK** when “SET DATE/TIME!” is displayed.



- Slide along the slider to select, then touch the operation buttons to set.

- 3** Set the date and time.

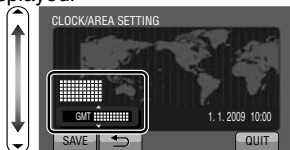


- Use the slider to adjust the year, month, day, hour and minute.
- Touch the operation buttons “←” / “→” to move the cursor.

- 4** After setting the date and time, touch **OK**.

- 5** Select the region where you live and touch **OK**.

- The city name and time difference is displayed.



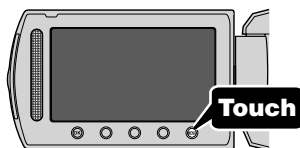
NOTE

- Touch the slider and buttons around the screen with your fingers.
- The slider and buttons do not function if you touch them with your fingernails or with gloves on.
- The displays on the screen do not work even if you touch them.
- “SET DATE/TIME!” is displayed when you turn on this unit after it has not been used for a prolonged period. Charge this unit for more than 24 hours before setting the clock. (P.6)

■ To reset the clock

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

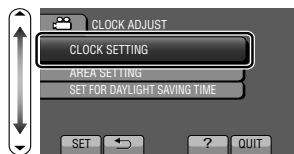
- 1 Display the menu.



- 2 Select "CLOCK ADJUST" and touch **OK**.



- 3 Select "CLOCK SETTING" and touch **OK**.

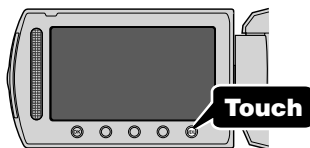


- The subsequent setting operations are the same as steps 3 - 5 on the previous page.

■ To change the display language

The language on the display can be changed.

- 1 Display the menu.



- 2 Select "DISPLAY SETTINGS" and touch **OK**.



- 3 Select "LANGUAGE" and touch **OK**.




- 4 Select the desired language and touch **OK**.
- 5 Touch **MENU**.

Video Recording


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

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

1 Open the lens cover.



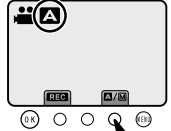
2 Select video mode.



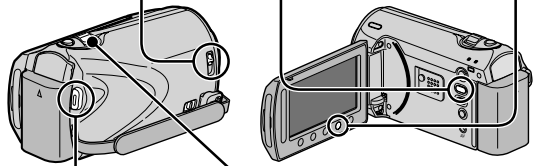
Press

3 Check if the recording mode is **A** Auto.

- If the mode is **M** Manual, touch the **A/M** button to switch.
- The mode changes between auto and manual with every touch.



Touch




Zooming

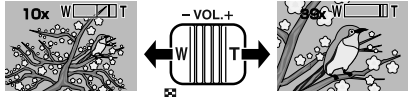
4 Start recording.

START/STOP

- Press again to stop.

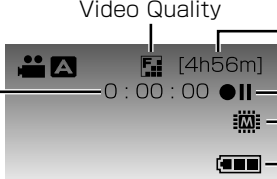


Press



(Wide angle) (Telephoto)

■ Indications during video recording



Video Quality: [4h56m]

Remaining Recording Time: ● || : Record-Standby
● REC : Recording in Progress

Recording Media (GZ-MS215 : **A**/**B**)

Battery Indicator

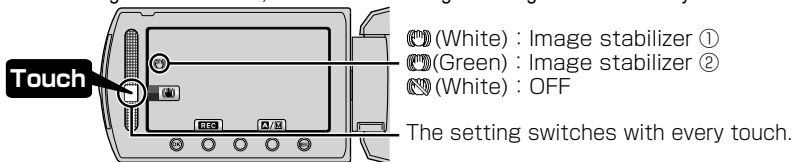
Scene Counter: 0 : 00 : 00

NOTE

- The estimated recording time of the supplied battery pack is approximately 50 minutes. (P.18)

Reducing Camera Shake (Video Recording)

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

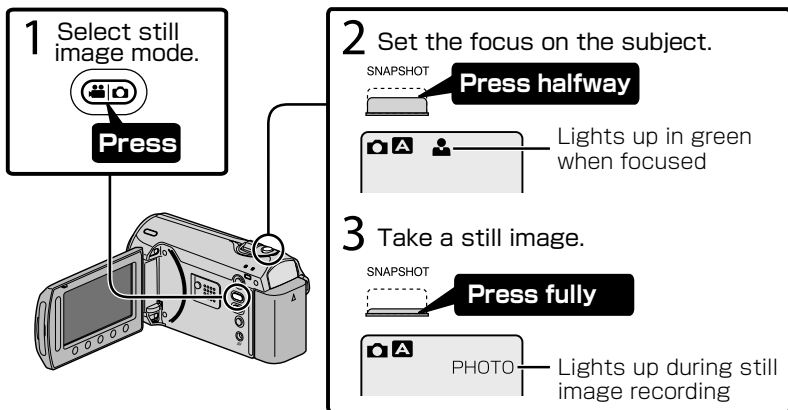


- ① : Reduces camera shake.
- ② : Reduces camera shake at wide angle effectively. It is also effective for recording while walking.

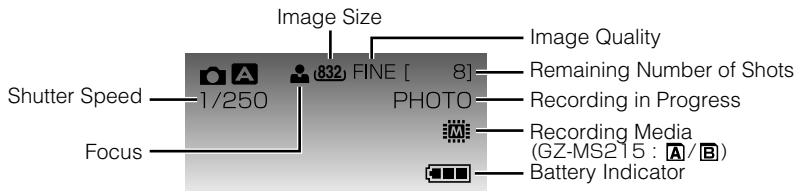
NOTE

- 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.

Still Image Recording



■ Indications during still image recording



Playing Back/Deleting Files on this Unit

Select and play back the recorded videos or still images from an index screen (thumbnail display). The contents of the media selected in media settings (P.9) are displayed on the index screen.

1 Select the playback mode.

2 Select video or still image mode.

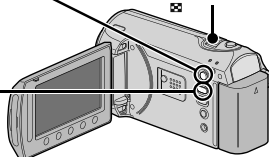
3 Play back a file.

Media being played back (GZ-MS215 : A/B)

• Touch to stop.

Volume adjustment during video playback

Turn down the volume ← → Turn up the volume



■ To delete unwanted files

1 Select

• Select YES when the confirmation message appears and touch .

■ To capture a still image during playback

Pause the playback and press the SNAPSHOT button.

■ Usable operation buttons during playback

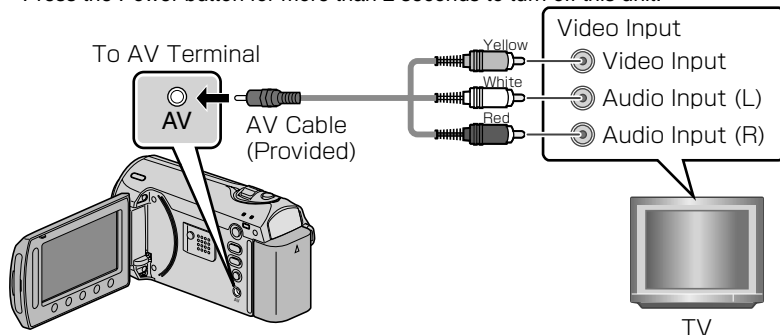
Display	During video playback	During still image playback
	Playback/pause	Start/pause slideshow
	Stop (returns to thumbnail display)	Stop (returns to thumbnail display)
	Advances to the next video	Advances to the next still image
	Returns to the beginning of the scene	Returns to the previous still image
	Forward search	-
	Reverse search	-
	Forward slow-motion	-
	Reverse slow-motion	-

Playing Back on TV

1 Connect to a TV.

* Refer also to the instruction manual of the TV.

- Press the Power button for more than 2 seconds to turn off this unit.



2 Connect the AC adapter. (P.6)

- This unit powers on automatically when the AC adapter is connected.

3 Select the TV input switch.

4 Play back a file. (P.14)

■ To play back with date/time display

Set "DISPLAY ON TV" in the connection settings menu to "ON".

Alternatively, set "ON-SCREEN DISPLAY" in the playback menu to "DISPLAY ALL" or "DISPLAY DATE ONLY".

■ When images look unnatural on the TV

Images do not appear on the TV properly.	<ul style="list-style-type: none">• Disconnect the cable and connect again.• Restart this unit by turning off and on.
Images are projected vertically on the TV.	Set "VIDEO OUTPUT" in the connection settings menu to "4:3".
Images are projected horizontally on the TV.	Adjust the TV's screen accordingly.

NOTE

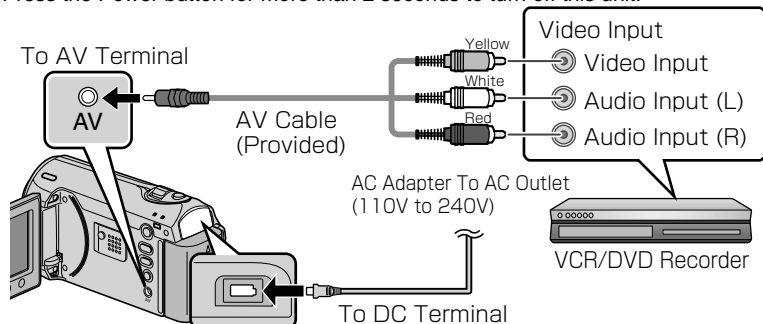
- Please contact the TV manufacturer on questions or problems with setting the TV to the correct mode.

Dubbing Files by Connecting to a DVD Recorder or VCR

You can dub videos in standard quality by connecting to a DVD recorder or VCR. Refer also to the instruction manual of the TV, DVD recorder, VCR, etc.

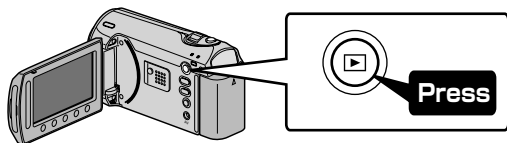
1 Connect to a VCR/DVD recorder.

- Press the Power button for more than 2 seconds to turn off this unit.



- This unit powers on automatically when the AC adapter is connected.

2 Select the playback mode.



3 Prepare to record.

Preparation on TV and VCR/DVD recorder

- Switch to a compatible external input.
- Insert compatible blank DVD or VHS to dub.



Preparation on this unit

- Set "VIDEO OUTPUT" in the connection settings menu to the aspect ratio ("4:3" or "16:9") of the connecting TV.
- To include the date during dubbing, set "DISPLAY ON TV" in the connection settings menu to "ON". Alternatively, set "ON-SCREEN DISPLAY" in the playback menu to "DISPLAY DATE ONLY".

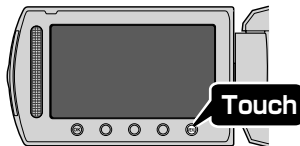
4 Start recording.

- Start playback on this unit (P.14) and press the record button on the recorder.
- After playback is complete, stop the recording.

Using the Menu

You can configure various settings using the menu.

1 Display the menu.



- The menu differs according to the mode in use.

2 Select the desired menu and touch **OK**.



3 Select the desired setting and touch **OK**.



■ To exit the screen

Touch **MENU** (quit).

■ To return to the previous screen

Touch **←**."

■ To display the help file

Touch **?**."

- For more information on the settings, refer to the Detailed User Guide.

Customer Support Information

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

JVC (for inquires regarding this unit)

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

- Product Name, Model, Serial Number, Problem, Error Message
 - PC (Manufacturer, Model (Desktop/Laptop), CPU, OS, Memory (MB/GB), Available Hard Disk Space (GB))
- Please note that it may take some time to respond to your questions, depending on their subject matter. JVC cannot answer questions regarding basic operation of your PC, or questions regarding specifications or performance of the OS, other applications or drivers.


Pixela (for inquires regarding the provided software)

Region	Language	Phone #
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/>

Please check our website for latest information and downloading.

Recordable Time/Number of Images


You can check the video recording time by pressing the  (Power/Information) button.

Approximate Video Recording Time

Quality	Built-in Memory	SDHC Card			
	GZ-MS230 (8GB)	4 GB	8 GB	16 GB	32 GB
ULTRA FINE	1 h 50 m	56 m	1 h 50 m	3 h 45 m	7 h 30 m
FINE	2 h 45 m	1 h 20 m	2 h 50 m	5 h 40 m	11 h 20 m
NORMAL	3 h 40 m	1 h 45 m	3 h 45 m	7 h 30 m	15 h
ECONOMY	9 h 50 m	4 h 57 m	10 h	20 h	40 h

- Built-in Memory applies to GZ-MS230 only.
- The approximate recording time is only a guide. The actual recording time may shorten depending on the shooting environment.

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

 / 	Image Size	Quality	SD Card			
			256 MB	512 MB	1 GB	2 GB
 Still Image	832×624 (4:3)	FINE	970	1950	3950	7590
		STANDARD	1450	2930	5930	9999
 Video	640×480 (4:3)	FINE	1450	2930	5930	9999
		STANDARD	2080	4180	8480	9999
	640×360 (16:9)	FINE	1820	3660	7420	9999
		STANDARD	2430	4880	9890	9999

- Up to 9999 still images may be recorded on the SDHC cards with at least 4 GB capacity (regardless of image size and quality).

Approximate Recording Time (Using Battery)

Battery Pack	Actual Recording Time	Continuous Recording Time
BN-VG107E	50 m	1 h 30 m
BN-VG114E	1 h 40 m	3 h 5 m
BN-VG121E	2 h 35 m	4 h 40 m

- The above are values when “LIGHT” is set to “OFF” and “LCD BACKLIGHT” is set to “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.)

Troubleshooting

Before requesting service, consult the following chart or the "Troubleshooting" section in the Detailed User Guide.




If the solutions indicated in the chart do not solve the problem, consult your nearest JVC dealer or JVC service center for instructions. Refer also to the FAQ of new products on JVC's website. Refer also to the Q&A information of new products on JVC's website (<http://www.jvc.com>).

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, reset this unit.

■ Reset this unit when it does not function properly or when "... Error" appears on the screen.

- ① Turn off the power. (Close the LCD monitor.)
- ② Remove the AC adapter and battery pack from this unit, reattach them, and turn on the power again.

Trouble

	Trouble	Action	Page
Power	POWER/CHARGE lamp starts blinking when the monitor is closed.	<ul style="list-style-type: none"> The battery pack is being charged. 	P.6
Recording	Recording cannot be performed.	<ul style="list-style-type: none"> Check the  /  button. Set to the recording mode with the  button. 	P.12 P.14
	Recording stops by itself.	<ul style="list-style-type: none"> 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.) Recording stops automatically after 12 hours of continuous recording. 	- -
Playback	No date/time display.	<ul style="list-style-type: none"> Set "ON-SCREEN DISPLAY" in the playback menu accordingly. 	-
	Sound or video is interrupted.	<ul style="list-style-type: none"> Sometimes playback is interrupted at the connecting section between two scenes. This is not a malfunction. 	-

The lamp does not flash during battery pack charging.

- Check the remaining battery power. (When the battery pack is fully charged, the lamp does not flash.) P.12
- When charging in either a hot or cold environment, ensure that battery is being charged within the permitted temperature range. (Otherwise, charging may stop to protect the battery pack.) P.6

The slider and operation buttons do not work.

- Remove any gloves.
- Touch the slider and buttons with your fingers to operate. (They do not function if you touch them with your fingernails or pen tips.)

This unit heats up.

- This is not a malfunction. (This unit may become warm when used for a long time.)

Warning Indications

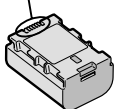
Warning Indications	Action	Page
RECORDING FAILURE	<ul style="list-style-type: none"> • Turn off and on this unit again. 	P.10
UNSUPPORTED SCENE! (Video)/ UNSUPPORTED FILE! (Still image)	<ul style="list-style-type: none"> • Make use of a file recorded with this unit. (Files recorded with other devices may not be playable. If the file was recorded with this unit, then it is corrupted.) 	-
BACK UP RECORDED DATA ON PC OR DISC PERIODICALLY (GZ-MS230 only)	<ul style="list-style-type: none"> • Connect and copy your data to a PC. 	-
DATA RECORDED IS TOO LITTLE UNABLE TO SAVE	<ul style="list-style-type: none"> • If a video recording is stopped with the actual recording time displayed at "0:00:00:17" and below, the video cannot be saved. 	-

Cautions

Battery Pack

The supplied battery pack is a lithium-ion battery. Before using the supplied battery pack or an optional battery pack, be sure to read the following cautions:

Terminals



- **To avoid hazards**
 - ... **do not burn.**
 - ... **do not** short-circuit the terminals. Keep it away from metallic objects when not in use. When transporting, make sure the provided battery cap is attached to the battery. If the battery cap is misplaced, carry the battery in a plastic bag.
 - ... **do not** modify or disassemble.
 - ... **do not** expose the battery to temperatures exceeding 60°C, as this may cause the battery to overheat, explode or catch fire.
 - ... use only specified chargers.
- **To prevent damage and prolong service life**
 - ... do not subject to unnecessary shock.
 - ... charge within the temperature range of 10°C to 35°C. Cooler temperatures require longer charging time, or in some cases stop charging at all. Warmer temperatures prevent complete charging, or in some cases stop charging at all.
 - ... store in a cool, dry place. Extended exposure to high temperatures will increase natural discharge and shorten service life.
 - ... fully charge and then fully discharge the battery every 6 months when storing the battery pack over a long period of time.
 - ... remove from charger or powered unit when not in use, as some machines use current even when switched off.

Recording Medium

- **Be sure to follow the guidelines below to prevent corruption or damage to your recorded data.**
 - Do not bend or drop the recording medium, or subject it to strong pressure, jolts or vibrations.
 - Do not splash the recording medium with water.
 - Do not use, replace, or store the recording medium in locations that are exposed to strong static electricity or electrical noise.
 - Do not turn off the camcorder power or remove the battery or AC adapter during shooting, playback, or when otherwise accessing the recording medium.
 - Do not bring the recording medium near objects that have a strong magnetic field or that emit strong electromagnetic waves.
 - Do not store the recording medium in locations with high temperature or high humidity.
 - Do not touch the metal parts.
- When formatting or erasing data using the camcorder, only the file administration information is changed. The data is not completely erased from the hard disk. If you want to completely erase all of the data, we recommend either using commercially available software that is specially designed for that purpose, or by physically destroying the camcorder with a hammer etc.

LCD Monitor

- **To prevent damage to the LCD monitor, DO NOT**
 - ... push it strongly or apply any shocks.
 - ... place the camcorder with LCD monitor on the bottom.
- **To prolong service life**
 - ... avoid rubbing it with coarse cloth.

Main Unit

- **For safety, DO NOT**
 - ... open the camcorder's chassis.
 - ... disassemble or modify the unit.
 - ... allow inflammables, water or metallic objects to enter the unit.
 - ... remove the battery pack or disconnect the power supply while the power is on.
 - ... leave the battery pack attached when the camcorder is not in use.
 - ... place naked flame sources, such as lighted candles, on the apparatus.
 - ... expose the apparatus to dripping or splashing.
 - ... leave dust or metal objects adhered to the power plug or an AC wall outlet.
 - ... insert any objects in the camcorder.
- **Avoid using the unit**
 - ... in places subject to excessive humidity or dust.
 - ... in places subject to soot or steam such as near a cooking stove.
 - ... in places subject to excessive shock or vibration.
 - ... near a television set.
 - ... near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
 - ... in places subject to extremely high (over 40°C) or extremely low (under 0°C) temperatures.
- **DO NOT leave the unit**
 - ... in places of over 50°C.
 - ... in places where humidity is extremely low (below 35%) or extremely high (above 80%).
 - ... in direct sunlight.
 - ... in a closed car in summer.
 - ... near a heater.
 - ... in high places such as on a TV. Leaving the unit in high places while a cable is connected may result in a malfunction if the cable is caught and the unit falls onto the floor.
- **To protect the unit, DO NOT**
 - ... allow it to become wet.
 - ... drop the unit or strike it against hard objects.
 - ... subject it to shock or excessive vibration during transportation.
 - ... keep the lens directed at extremely bright objects for long periods.
 - ... expose the lens to direct sunlight.
 - ... swing it excessively when using the hand strap.
 - ... swing the soft camcorder case excessively when the camcorder is inside it.
 - ... place the camcorder in dusty or sandy areas, such as on a beach.
- **To prevent the unit from dropping,**
 - Fasten the grip belt securely.
 - When using the camcorder with a tripod, attach the camcorder to the tripod securely. If the camcorder drops, you may be injured and the camcorder may be damaged. When a child uses the unit, there must be parental guidance.

Specifications

Camera		
Model name	GZ-MS230	GZ-MS215
Power supply	Using AC adapter: DC 5.2 V, Using battery pack: DC 3.6 V	
Power consumption	1.5 W (when light is set to "OFF" and monitor backlight is set to "STANDARD")	
Dimensions (mm)	52 x 62 x 110 (W x H x D: excluding grip belt)	
Mass	Approx. 200 g (camera only), Approx. 230 g (including supplied battery pack)	
Operating environment	Allowable operating temperature: 0°C to 40°C Allowable storage temperature: -20°C to 50°C Allowable operating humidity: 35 % to 80 %	
Image pickup device	1/6" 800,000 pixels	
Recording area (Video)	410,000 pixels (optical zoom), 410,000 to 550,000 pixels (dynamic zoom)	
Recording area (Still image)	550,000 pixels	
Lens	F1.8 to F4.3, f= 2.2 mm to 85.8 mm (35 mm conversion: 41.5 mm to 1619 mm)	
Zoom (Video)	Optical zoom: Up to 39x Dynamic zoom: Up to 45x Digital zoom: Up to 800x	Optical zoom: Up to 39x Dynamic zoom: Up to 45x Digital zoom: Up to 900x
Zoom (Still image)	Optical zoom: Up to 39x	
Video recording format	SD-VIDEO standard, Video: MPEG-2, Audio: Dolby Digital (2 ch)	
Still image recording format	JPEG standard	
Recording media	Built-in Memory (8 GB), SD/SDHC card (commercially available)	SD/SDHC card (1 or 2 cards, commercially available)
Clock battery	Rechargeable battery	

AC Adapter (AP-V30M)*

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 (10°C to 35°C during charging)
Dimensions (mm)	50 x 29 x 100 (W x H x D: excluding cord and AC plug)
Mass	Approx. 112 g

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

- The specifications and appearance of this product are subject to changes for further improvement without prior notice.

Terms

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