



INSTRUCTION MANUAL

Important note

This manual explains how to safely operate the VPC-C5EX, VPC-C5E, VPC-C5, and VPC-C5GX.

Any information regarding only one of these products will be labeled as such.

Please read these instructions carefully before using the camera. Make sure to read and understand the section "USING YOUR CAMERA SAFELY AND CORRECTLY" on pages 7 to 20. Keep this manual in a safe place for later reference.

Warning

FOR CANADIAN USERS

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

OUTLINE OF OPERATION

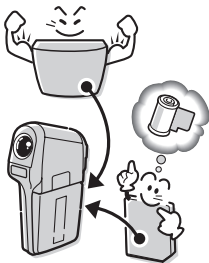
To help you get started enjoying using your camera right away, given below is an outline of the basic operation, from setup to shooting to playback.

SETUP

- ① **Charge the battery pack (page 35).**
- ② **Install the battery pack (page 37).**
- ③ **Install the SD Memory Card* (page 38).**
- ④ **Format the SD Memory Card (page 134).**

CAUTION

- This camera uses an SD Memory Card instead of photographic film to record images. Be sure to install the SD Memory Card before operating the camera.
- Be sure to format the SD Memory Card with this camera before using it. A card that is not formatted using the camera may limit your full use of all the camera's capabilities.



SHOOTING

- ① **Turn on the camera (page 40).**
- ② **Capture images.**
 - For shooting video clips, see page 47.
 - For shooting still photos, see page 49.

Please see the section “HINTS FOR TAKING PICTURES” at the end of this manual (page 187). This section provides additional information to help you get the most out of your camera.

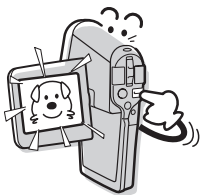


PLAYBACK

① Play back the images (page 55).

* About the SD Memory Card

In this manual, the SD Memory Card is referred to as “card”.



Symbols used in this manual

- HINT** Points that may prove useful when using the camera.
- NOTE** Points giving some extended instructions or special points to pay attention to.
- CAUTION** Points that require special attention.
- (page xx)** Refer to the page indicated for detailed information.

You may find the answers to questions or problems concerning camera operation in the sections “COMMONLY ASKED QUESTIONS” (page 160) and “TROUBLESHOOTING” (page 167).

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USING YOUR CAMERA SAFELY AND CORRECTLY

CAMERA

WARNING

- If the camera makes a strange noise, emits a strange odor, or if smoke comes out from it, immediately turn off the power and remove the battery pack
- If the camera is used under these conditions, it may cause a fire or electric shock. Immediately turn off the camera, remove the battery pack, and wait to make sure no more smoke comes from the camera. Then take it to the dealer for service. Do not try to repair or open the camera yourself.



- Do not modify or open the cabinet
- High voltage circuits are inside, and there is a high risk of fire or electric shock if they are touched. Any internal check, setting, or repair should be performed by the dealer.



- Do not use while driving
- Do not capture images, play back images, or watch the LCD monitor while driving a vehicle. Doing so may cause an accident.
- Be careful where you put down the camera inside an automobile. During sudden stops or turns it may fall behind the brake pedal and prevent braking.



- Be aware of your surroundings when using the camera
- Pay close attention to your surroundings when using the camera. Failure to do so may lead to an accident or injury.
- When using the camera while walking, be very careful of your surroundings and especially the traffic to avoid accidents.
- Do not use the camera inside an airplane or elsewhere where its use may be restricted.



WARNING

■ Do not get the camera wet

- This camera is not water-resistant. Do not allow it to get wet, as doing so may cause a fire or electric shock.
- Do not use the camera in a bathroom.
- If the camera gets wet, immediately turn it off and remove the battery pack. Then take it to a dealer for repair. Using the camera after it has become wet may cause a fire, electric shock, or other accident.



■ Do not use during a storm

- To avoid the risk of being struck by lightning, do not use the camera during a thunderstorm. In particular, if used in an open field, you have an increased chance of being struck by lightning. Quickly seek refuge in a place that will protect you from lightning.



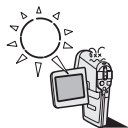
■ Do not place on an unstable surface

- The camera may fall, resulting in damage to the camera or injury.
- If the camera has fallen and its body is damaged, turn it off, remove the battery pack, and take it to the dealer for repair. Using the camera after its body has been damaged may cause a fire or electric shock.



■ Do not look through the camera into the sun

- Do not look through the camera at the sun or any other strong source of light. Doing so may seriously injure your eyes.



■ Do not use the flash close to a person's face

- To prevent possible eye injury, do not use the flash near a person's face (especially young children or babies). If the flash is used close to a person's opened eyes, there is a risk that it may damage that person's eyesight.



USING YOUR CAMERA SAFELY AND CORRECTLY

WARNING

■ Do not use where there is risk of explosion

- Do not use the camera in a location where there is explosive gas, or any other flammable material in the air. Doing so may cause a fire or an explosion.



■ Keep the camera out of the reach of children

- The following may happen if children play with the camera:
 - They may wrap the neckstrap around their neck and suffocate.
 - They may swallow the battery pack or other small parts. In such a case, consult a physician immediately.
 - They may damage their eyesight if the flash goes off too close to their eyes.
 - They may get hurt by the camera.

CAUTION

■ Cautions when carrying the camera

- Do not walk around with the camera suspended from your neck. It may hit other objects and get damaged. When walking around, hold the camera in your hand or place it in a pocket.
- Be careful not to drop the camera or subject it to strong shocks.
- Make sure direct sunlight does not hit the camera lens, as that may damage the internal parts. When not using the camera, be sure to always turn it off and close the lens cover.

■ If the camera is not going to be used for a long period of time

- For safety's sake, remove the battery pack from the camera. This will prevent any possible excess heat or leakage of battery fluid that may result in injuries or damage to nearby objects. (Note that when the battery pack is removed for a long period, the time and date settings will be cleared.)

CAUTION

■ Cautions during use and storage

- This camera is a precision instrument. When using or storing the camera, make sure to avoid the following locations to avoid damage.
 - Places in direct sunlight
 - Places where humidity and temperature are high
 - Places that may get wet
 - Places close to an air conditioner or heater
 - Inside a car
 - Places where there is dust and dirt
 - Places where there is a fire burning
 - Places where volatile products are stored
 - Places subject to vibration



Operating environment:

- | | |
|---------------|--|
| • Temperature | 0 to 40°C (32 to 104°F) (operation)
-20 to 60°C (-4 to 140°F) (storage) |
| • Humidity | 30 to 90% (operation, no condensation)
10 to 90% (storage, no condensation) |

USING YOUR CAMERA SAFELY AND CORRECTLY

DOCKING STATION AND AC ADAPTOR/CHARGER

DANGER

■ Do not recharge battery packs that are not Li-ion battery packs (Model DB-L20)

- Do not recharge a battery pack other than the supplied Li-ion battery pack (DB-L20). Recharging a dry-cell battery or other type of rechargeable battery may cause excess heat, combustion, or leakage, and cause a fire, injuries, burns, or damage to nearby objects.



■ Concerning the power cord

- The voltage rating for the power cord supplied with this camera conforms to the standards of the country in which the camera was sold.



■ Do not disassemble or modify

- It is dangerous to touch the inside. Doing so may cause a fire or electric shock.
- Do not use as a direct current generator.



■ Do not get the docking station or AC adaptor/charger wet

- Make sure they do not get wet, as doing so may cause a fire or electric shock.
- Do not use the camera in a bathroom.
- If the docking station or AC adaptor/charger gets wet, immediately unplug it from the power outlet and remove the battery pack. Then contact the place of purchase. If used while wet, it may cause a fire, electric shock, or an accident.



DANGER

■ Cautions when plugging in

- Securely plug the power cord all the way into the power outlet. If the docking station or AC adaptor/charger is used with the power cord not fully plugged in, heat may be generated and cause a fire.
- Do not use if the power cord is damaged or cannot be correctly plugged into the power outlet. Using in this condition may cause a fire or electric shock.
- Do not allow dust, etc., to build up on the power cord or power outlet. A build-up of dust may cause a short circuit or generate heat and cause a fire.
- When unplugging the power cord, be sure to hold the plug part and slowly pull it out of the power outlet. Pulling the cord portion may damage the power cord and cause a fire or electric shock.



■ Do not pull on the power cord to unplug it

- Do not leave the power cord plugged into an electrical outlet while the other end is not plugged into the AC adaptor/charger. The loose end can cause electrocution if touched with wet hands or if handled by children.
- Use only the supplied power cord. If a different power cord is used, it may be rated for a different current load, and that may cause a fire.
- The supplied power cord is for exclusive use with the devices supplied with your camera. Do not use it with other devices, as doing so may cause a fire or electric shock.
- Do not use a bundled power cord, as the heat generated may cause a fire.
- When using an extension cord, make sure that the total wattage of the connected devices does not exceed the rated value of the extension cord. If the power load exceeds the rated value, it may cause a fire.



USING YOUR CAMERA SAFELY AND CORRECTLY

DANGER

■ Keep out of the reach of children

- Children may place the battery pack or other small components in their mouth or perform some other such unforeseeable action. If swallowed, consult a physician immediately.



■ If smoke or a strange odor is emitted, or if strange noises are heard, immediately unplug the power cord from the power outlet

- If used under these conditions, it may cause a fire or electric shock.
- If strange conditions such as these occur, immediately unplug the device, remove the battery pack, and wait to make sure no more smoke is emitted. Then contact the place of purchase. Do not try to repair or open the device yourself.



■ Do not handle with wet hands

- Handling the docking station or AC adaptor/charger with wet hands may cause an electric shock.



■ Do not use during a storm

- Do not touch the docking station, AC adaptor/charger or power cord while it is plugged into a power outlet during a thunderstorm. Doing so may cause an electric shock.



CAUTION

■ Do not damage the power cord

- Do not place heavy objects on the power cord. Do not place the power cord near a heat source. Do not excessively bend the power cord, modify it, or secure it with staples. Doing so may damage the power cord and cause a fire or electric shock.
- If the power cord is damaged, or if it does not plug properly into the docking station, AC adaptor/charger or wall outlet, contact the place of purchase.



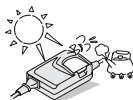
■ Do not place on an unstable surface

- The camera may fall, resulting in damage to the camera or injury.
- If it falls and the body is damaged, remove the battery pack and contact the place of purchase. If used while damaged, it may cause a fire, electric shock, or other damage.



■ Operating and storage conditions

- Do not use close to a heat source (close to a stove or heater) or leave it exposed to direct sunlight.



Operating environment:

- Temperature 0 to 40°C (32 to 104°F) (charging)
 -20 to 60°C (-4 to 140°F) (storage)
- Humidity 20 to 80% (charging and storage)

USING YOUR CAMERA SAFELY AND CORRECTLY

Li-ion BATTERY PACK (DB-L20)

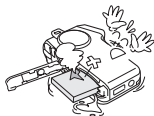
DANGER

This camera uses a Li-ion battery pack (Model DB-L20).



■ **If there is leaking, discoloration, change of shape, rise in temperature, damaged exterior, strange odor or any other abnormal condition, immediately discontinue use and remove the battery pack from the camera, taking care to keep it well away from fire**

- Continued use of the battery pack under any of these conditions may result in fire, injury, explosion or other serious damage.
- If battery fluid is leaking, placing the battery pack in close proximity to a fire or other heat source may ignite the battery fluid and result in fire, damage, eruption of battery fluid, or smoke fumes.



■ **Do not transform, take apart, or modify**

- Safety mechanisms and protective devices have been incorporated in the battery pack for the purpose of preventing danger. Any modification, by transforming, disassembling, or directly soldering to it, etc., will defeat these safety devices and possibly cause the battery pack to catch fire, explode, or leak or spew battery fluid.



■ **Do not connect the (+) and (-) terminals with a wire or other metal implement. Do not carry loose or keep with necklaces, hairpins, etc.**

- Doing so may result in a short circuit, high voltage flow, fire, explosion, leaking or spewing battery fluid, or heat generation. Metal such as a wire or necklace, etc. may cause heat to be generated.



■ **Do not throw the battery pack in the fire or subject it to heat**

- Doing so may cause the insulation to melt, damage the gas discharge valve and safety mechanisms, or ignite the battery fluid, resulting in fire or explosion.



DANGER

■ Do not drop, hit, or submit the battery pack to strong shocks

- If the safety mechanisms and protective devices are broken, an abnormal chemical reaction may occur inside the battery pack, or cause the battery pack to catch fire, explode, leak or spew battery fluid, or generate heat.



■ Do not allow the battery pack to come into contact with fresh or salt water, or allow the terminals to become wet

- If the safety mechanisms and protective devices are damaged by corrosion, an abnormal chemical reaction may occur inside the battery pack, or cause the battery pack to catch fire, explode, leak or spew battery fluid, or generate heat.



■ Operating and storage conditions

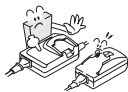
- Temperature when using or recharging: 0 to 40°C (32 to 104°F)
- Do not use, recharge, store or leave the battery pack near fire or inside a car exposed to the hot sun, etc. (locations in which the temperature reaches 60°C [140°F] or higher).
- At high temperatures, the safety mechanisms and protective devices inside the battery pack may be damaged by corrosion, causing an abnormal chemical reaction to occur, or cause the battery pack to catch fire, explode, leak or spew battery fluid, or generate heat. If the safety mechanisms and protective devices are damaged, the battery pack will become unusable. An environment with extremely high or low temperatures will cause the battery capacity to deteriorate and shorten the usable time, and may even shorten the battery life.
- Avoid storing the battery pack with it near full charge. It is recommended to store the battery pack when it is near fully discharged.
- If the battery pack is completely discharged, it may become unable to be recharged again. To avoid this, charge the battery pack for at least five minutes every six months.
- Storage temperature: -10 to 30°C (14 to 86°F)
When not using the battery pack, remove it from the camera and store at -10 to 30°C (14 to 86°F) in a place with no condensation.
- Humidity: 10% to 90% (no condensation)

USING YOUR CAMERA SAFELY AND CORRECTLY

DANGER

■ Use only the supplied docking station and AC adaptor/charger

- If another charger is used, the battery pack may be overcharged, or recharged with an abnormal voltage, causing an abnormal chemical reaction to occur, or cause the battery pack to catch fire, explode, leak or spew battery fluid, or generate heat.



■ Use the battery pack only in the specified device

- If the battery pack is used in a device other than that specified, it may cause an abnormal voltage flow, or cause the battery pack to catch fire, explode, leak or spew battery fluid, or generate heat.



■ Do not peel or damage the outer case

- Damaging the outer case, inserting nails, hitting with a hammer, stepping on the battery pack, etc. may cause a short circuit inside the battery pack or cause the battery pack to catch fire, explode, leak or spew battery fluid, or generate heat.



■ If the battery pack is leaking and the electrolyte gets on your skin or clothing, immediately rinse with clean water

- If the electrolyte gets into your eyes, you risk losing your eyesight. Immediately rinse your eyes with clean, running water, and seek medical attention right away. Any electrolyte that comes into contact with your skin or clothing may harm your skin. Immediately rinse the area with clean, running water.



■ Insert the battery pack correctly, as specified

- When installing the battery pack in the charger or camera, pay attention to the indicated polarity (+ and -), and insert it correctly.
- If the battery pack is installed with the wrong orientation, it may cause an abnormal chemical reaction while in the charger, an abnormal voltage flow when it is used, or cause the battery pack to catch fire, explode, leak or spew battery fluid, or generate heat.



WARNING

■ **Always stop the recharging after the prescribed recharge time, even if the battery pack is not fully charged**

- If you continue to recharge the battery pack, it may cause the battery pack to catch fire, explode, leak or spew battery fluid, or generate heat.



■ **Keep out of the reach of children**

- They may handle the battery pack in an unforeseeable manner that results in damage.



CAUTION

■ **Charge the battery pack before using it**

- Always recharge the battery pack before using it for the first time, or when using it after it has been kept in storage for a long time. During recharging, the battery pack may be warm. This is normal and does not indicate a malfunction.



■ **Note concerning the battery pack after use**

- The battery pack may be warm immediately after the camera is used. If removing the battery pack, turn off the camera and allow the battery pack to cool down before removing it.



■ **Recycling the battery pack**

- To conserve the environment and for efficient use of natural resources, please discharge the used battery pack, cover the (+) and (-) terminals with tape and recycle the insulated battery pack.
- If disposing of the battery pack as unburnable trash, please follow all applicable regulations of your area.



USING YOUR CAMERA SAFELY AND CORRECTLY

CONCERNING THE ACCESSORIES

WARNING

■ **Cautions concerning the use of the AC adaptor/charger**

- Use only the supplied docking station and AC adaptor/charger with your camera. Do not use a docking station or AC adaptor/charger other than the ones indicated here, designed for specific use with your camera.
- If a docking station or AC adaptor/charger other than the ones specified is used, it may damage the camera and cause a fire or electric shock.
- If the docking station or AC adaptor/charger is used in close proximity to a radio or TV set, it may cause interference with AM broadcast signals, resulting in noise. In this case, increase the distance between the radio or TV and the camera accessory.

■ **Cautions concerning the card**

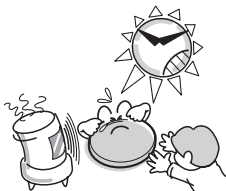
- Immediately after use, the card will be very hot. Before removing the card, turn off the camera and wait for the temperature to cool down.
- Keep out of the reach of children. Young children may put the media in their mouth and choke or cause some other unexpected injury or accident.

CONCERNING THE LITHIUM BATTERY (CR2025)

WARNING

■ Cautions concerning the CR2025 battery

- A CR2025 lithium battery is used for the remote control unit. Do not use a battery other than the CR2025 lithium battery.
- Install the battery with the (+) and (–) terminals correctly oriented as indicated. If the battery is placed in the wrong orientation, it may cause a fire, overheating, or rupturing.
- Do not recharge, short circuit, disassemble, modify, heat, or place the battery in a fire. Doing so may cause a fire, overheating, or rupturing.
- Do not hold the battery with metal tweezers or a similar tool. Doing so may cause a short circuit leading to a fire, overheating, or rupturing.
- Do not perform soldering on the battery or use, store, or leave it near a fire, under direct sunlight, in a hot car, or other high temperature location.
- Do not use the battery if it is leaking.
- If the electrolyte gets into your eyes, you risk losing your eyesight. Do not rub your eyes, wash them immediately with clean water, and seek medical attention right away. If electrolyte gets on your skin or clothing, it may cause irritation. Immediately wash with clean water.
- Keep the battery out of the reach of children. If the battery is accidentally swallowed, contact a physician immediately. It may cause poisoning or suffocation.
- When disposing of batteries, make sure to follow all applicable regulations.
- When disposing of the lithium battery, place tape on its positive (+) and negative (–) terminals to prevent shorting. Do not mix the lithium battery with other batteries. Doing so may cause a fire or rupturing.



FOR CORRECT USE OF YOUR CAMERA

■ Cautions before capturing important images

- Before capturing important images, make sure that the camera is operating properly and in condition to capture the image properly.
- Sanyo Electric shall not be held responsible for any losses that result from images that could not be recorded, are erased, destroyed, or damaged in any way due to a problem with the camera, any of its accessories, or its software.

■ Caution concerning copyrights

- The images you capture with your camera are for your own private use; any other use may violate the rights of copyrights owners.
- Please note that photography may be restricted at stage performances, shows or exhibitions, even in presentations whose purpose is entertaining or amusing individuals.
- Also note that images that are intended to be copyrighted cannot be used outside those limits defined by the regulations of the relevant copyright laws.

■ Cautions when cleaning the camera

Cleaning procedure

- ① Turn off the camera and remove the battery pack.
- ② Remove the dirt with a soft cloth.

If the camera is extremely dirty,

- ③ Wipe with a soft cloth moistened with a mild detergent diluted with water and wrung dry.

CAUTION

- Do not use benzene or thinner products to clean the camera. Doing so may cause deformation, discoloration, or paint peeling. When using a chemically treated cloth, carefully read its instructions and warnings.
- Do not spray insecticides or volatile sprays on the camera. Do not let rubber or vinyl objects contact the camera for a long period. They may cause deformation, discoloration, or paint peeling.

■ **Caution concerning the battery pack**

- Periodically clean with a dry cloth the terminals (contacts) of the battery pack. Do not touch the battery terminals with your bare hands. Doing so will allow contaminants from your hands to adhere to the terminals and oxidize, increasing the contact resistance. If the contact resistance increases, the usable life of the batteries will diminish.

■ **Caution when cleaning the lens**

- If the lens gets dirty, use a commercially available air blower or a cleaning cloth for photographic equipment to clean it.

■ **When not using the camera for a long period**

- Remove the battery pack. However, when the battery pack is removed for a long time, the camera functions may begin to not work properly. Periodically reinstall the battery pack and check the camera functions.
- If the battery pack is left in the camera, a small amount of power is still used even if the camera is turned off. If the battery pack is left in the camera for a long period, it may become completely discharged and lose its ability to be recharged again.

■ **Cautions concerning condensation**

- Using the camera with condensation inside it may damage the camera.

If condensation seems likely to form

- Place the camera in a plastic bag and seal it, and then wait until the camera has reached the ambient temperature.

Be careful of condensation under the following conditions

- When moving the camera suddenly from a cold place to a warm place.
- When the ambient temperature changes drastically, such as when a heater is turned on to quickly heat the room.
- When the camera is placed in the path of cool air from an air conditioner.
- When the camera is placed in a location of high humidity.

FOR CORRECT USE OF YOUR CAMERA

■ Caution concerning undesired interference

- The camera may create undesired interference if used close to a television or radio. To avoid this type of interference, make sure the cores on the supplied cables are not removed.

Dedicated USB interface cable



Dedicated S-AV interface cable



■ Caution concerning magnetism

- Do not place credit cards, bank cards, floppy disks, or other items that may be damaged by magnetic fields near the speaker. Data may be lost or the magnetic strips on cards may be damaged.



■ Cautions concerning data storage


- It is recommended that any important data be copied onto a separate media (such as a hard disk, MO disk, or CD-R disk).
- Stored data may be lost (or corrupted) in cases such as those listed below. Sanyo Electric will not be held responsible for any damage or lost profits arising from the loss of data.
 - If the card is used incorrectly.
 - If the card is not inserted correctly into the camera.
 - If the card is subjected to electrical or mechanical shocks or other forces.
 - If the card is removed from the camera or if the camera is turned off during reading or writing operations.
 - If the card has reached the end of its usable life.

■ Cautions when handling the cards

- The cards are precision devices. Do not bend, drop, or subject them to strong forces or shocks.
- Avoid using or storing the cards in places with extremely high or low temperatures, subject to direct sunlight, in a completely closed vehicle, near air conditioners or heaters, or in humid or dusty locations.
- Avoid using or storing the cards in locations where strong static electrical charges or electrical noise can be easily generated.
- Do not allow the edges of the cards to become contaminated with foreign materials. Gently wipe away any contamination with a soft, dry cloth.
- Do not carry the cards in trouser pockets, as the cards may become damaged when you sit down or make other movements that may apply forces.
- Before using a new card or a card that was used in other equipment, be sure to format it using the camera (see "FORMATTING A CARD" on page 134).
- When buying commercially available products, carefully read the instructions and warnings that come with the card.

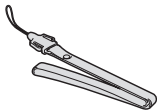
■ Caution concerning high temperatures

- During shooting, when the internal temperature of the camera becomes high, the  icon will appear on the LCD monitor. When the  icon appears, it is still possible to capture and play back images for a while. However, if the temperature rises further, it will become impossible to record (although playback will still be possible). In this case, discontinue shooting as soon as possible, and wait until the temperature falls before using the camera again.

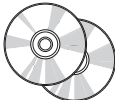
Note that particularly when shooting video clips, soon after the  icon appears, the remaining shooting time indication will appear, and when that figure becomes 00:00:00, further shooting is impossible.

CHECKING THE INCLUDED ACCESSORIES

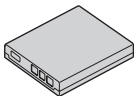
- Neckstrap: 1



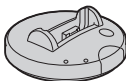
- SANYO Software Pack (CD-ROM): 2



- Li-ion battery pack: 1



- Docking station: 1



- S-AV interface cable: 1

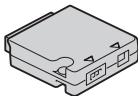


- USB interface cable: 1

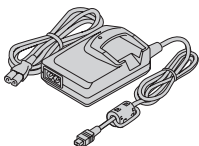
- Remote control unit: 1
A lithium battery (CR2025) is installed at the time of purchase.

- Lens cap and strap: 1

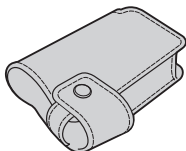
- Cable adaptor: 1



- AC adaptor/charger and power cord: 1



- Soft case: 1

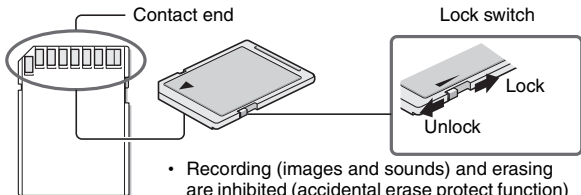


- Quick guide



- SD Memory Card: 1

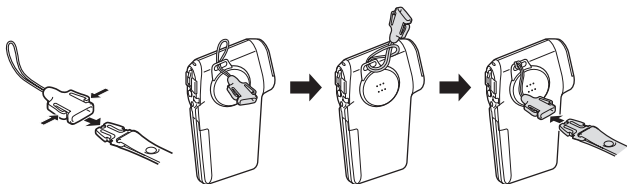
An SD Memory Card may not be an included accessory, depending on the region in which the camera is sold. If this is the case, please purchase a commercially sold memory card.



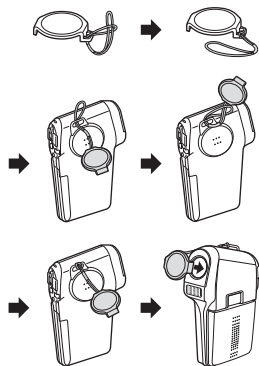
- Recording (images and sounds) and erasing are inhibited (accidental erase protect function) when the lock switch is set to the LOCK position.
- The card is normally used with the lock switch set to the unlocked position.

CHECKING THE INCLUDED ACCESSORIES

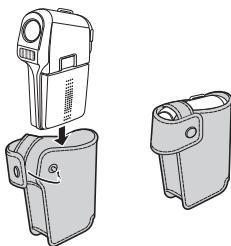
■ Neckstrap



■ Lens cap



■ Soft case



■ Media cards that can be used with this camera

The type of card that can be inserted into and used with this camera is:

- SD Memory Card

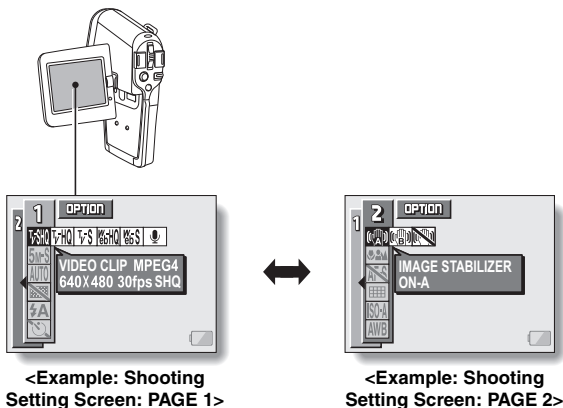
GETTING THE MOST OUT OF YOUR CAMERA

Your movie camera can not only record video clips, you can also take still photos and make audio recordings. For example, you can snap a still image while shooting a video clip, or make just an audio recording. In addition, by using the supplied docking station, it's easy to hook up your camera to a TV or computer.

Twin menus for easy operation (pages 62 and 86)

The basic settings are consolidated on the **PAGE 1** menu.

Additional camera settings providing full detailed control are found on the **PAGE 2** menu.

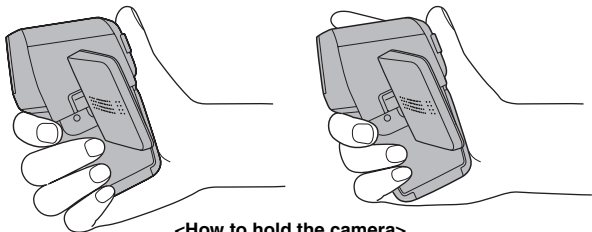


Shooting video clips (page 47)

You expect your camera to record great quality still photos, but you can record 640×480 -pixel video clips as well. The maximum 30-frames-per-second shooting speed guarantees beautiful, flowing movies for you to enjoy. Another bonus is the capability to record small file sizes that are perfect for uploading to Internet websites.

Capture still shots while recording a video clip (page 50)

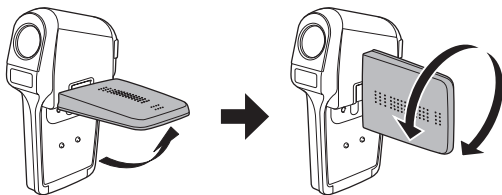
Suppose that while you're recording a video clip, there's a scene you'd like to keep as a still photo. Your camera makes it possible to record the still photo without interrupting the video clip recording.



<How to hold the camera>

Movable monitor for any shooting angle

The movable LCD monitor lets you shoot from any angle. Get perfect high-angle or low-angle shots, or snap a photo of yourself.

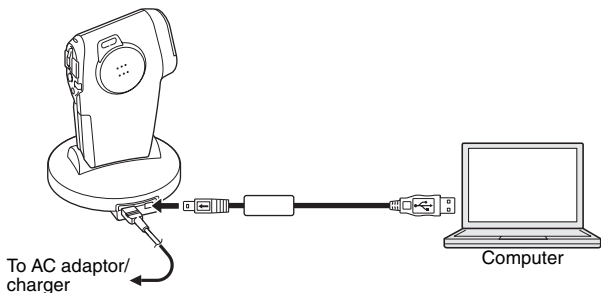


GETTING THE MOST OUT OF YOUR CAMERA

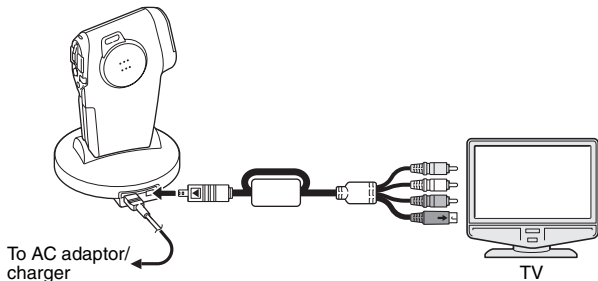
Docking station for easy connection

The docking station simplifies those complicated connections to your TV or computer. Just set the camera in the docking station, and you can view your photos on your TV or computer right away. The remote control unit makes it even more convenient.

<Connecting to a computer (page 143)>



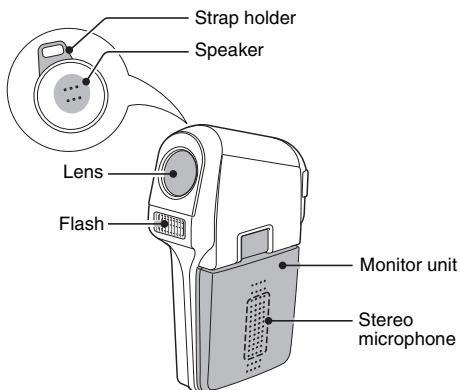
<Connecting to a TV (page 144)>



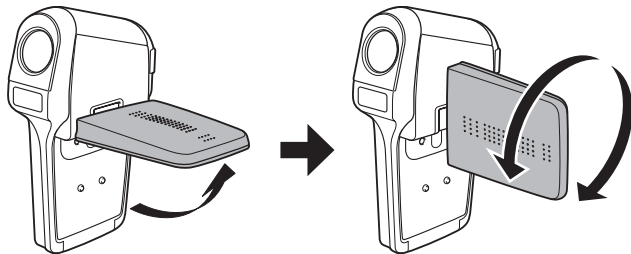
PARTS NAMES

Camera

Front

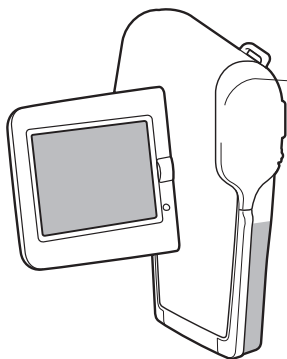


<To open the monitor unit>



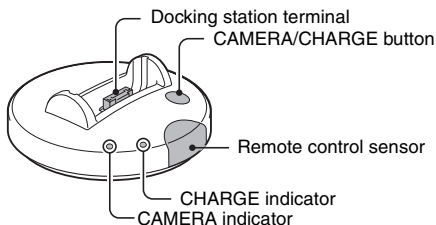
PARTS NAMES

Rear

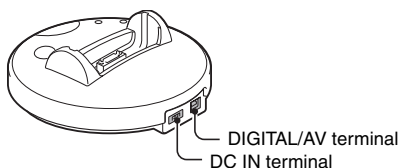


Docking station

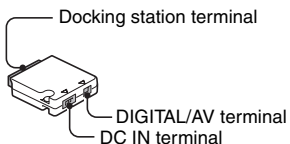
Front



Rear



Cable adaptor



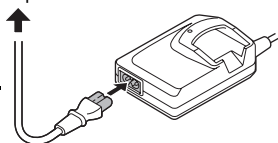
CHARGING THE BATTERY PACK

The battery pack is not charged at the time of purchase and therefore needs to be charged before use. In addition, if the battery charge becomes low while you are using the camera, it is recommended to recharge it as soon as possible.

1 Connect the AC adaptor/charger to a power outlet.

- Use the supplied power cord for connecting.

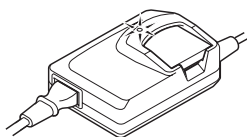
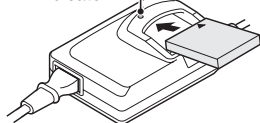
To power outlet



2 Insert the battery pack into the AC adaptor/charger.

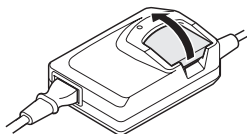
- Set it in the battery slot.
- Be sure the battery pack is correctly oriented when setting it in the charger.
- Charging begins. During charging, the CHARGE indicator lights red.
- When the battery pack is completely charged, the CHARGE indicator turns off.
- Charging will take approximately 90 minutes.

CHARGE
indicator



3 When the battery pack is fully charged, remove it from the AC adaptor/charger.

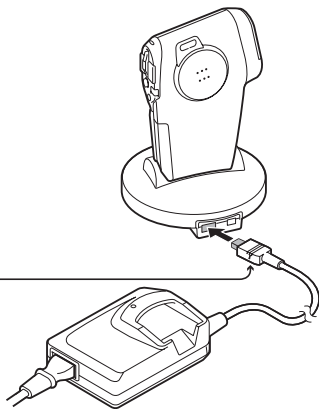
- After removing the battery pack, unplug the power cord from the power outlet.



Using the docking station

When the battery pack is installed in your camera, you can recharge it by setting the camera in the docking station (page 142).

To DC IN terminal
The [▲] mark on the plug
should be facing down.



CAUTION

When recharging the installed battery...

- When recharging a battery pack set in the AC adaptor/charger's battery slot, the AC adaptor/charger does not supply power to the docking station.
- After the battery pack becomes completely charged, or after the battery pack is removed from the battery slot, power will again be supplied to the docking station.

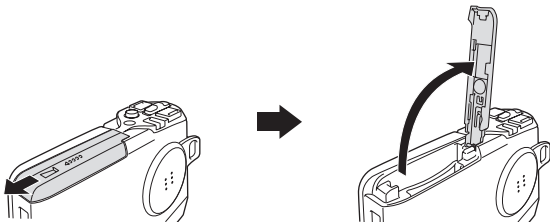
INSTALLING THE BATTERY PACK AND CARD

The card can be used after it has been formatted with the camera (page 134). Make sure that the battery pack polarity (+ and -) and the card orientation are correct.

Install the battery pack

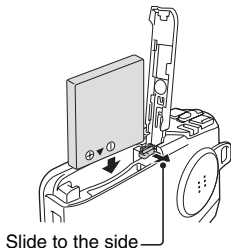
1 Open the battery/card cover.

- While gently pressing the cover, slide it open.



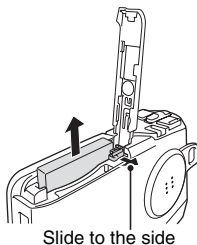
2 Insert the battery pack.

- Move the latch sideways, and firmly push the battery pack all the way in.



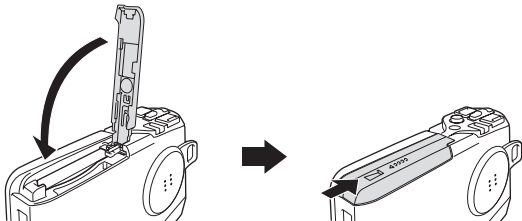
<To remove the battery pack...>

- Slide the latch securing the battery pack to the side, and remove the battery pack.



3 Close the battery/card cover.

- Lower the cover, and slide it closed.
- At the time of purchase the battery pack is not charged. Be sure to install a fully charged battery pack in the camera (page 35).

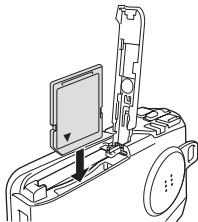


Install the card

1 Open the battery/card cover.

2 Insert the card.

- Firmly insert the card until it clicks into place.

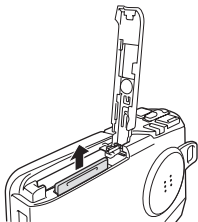


INSTALLING THE BATTERY PACK AND CARD

3 Close the battery/card cover.

<When removing the card...>

- To remove the card, press it down, and then release. The card will protrude slightly, and you can then pull it out.



CAUTION

- Do not attempt to forcibly remove the card.
- Never remove the card when the multi-indicator is flashing red. In doing so, you risk losing the data stored in the card.

NOTE

About the internal backup battery

- This camera's internal battery serves to maintain the date and time settings, as well as the shooting settings. The backup battery will be fully charged when the batteries are kept in the camera continuously for about 2 days. In the fully charged state, the backup battery will maintain the camera settings for about 7 days.

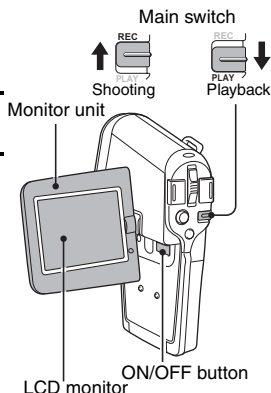
When not using the camera for a long time, remove the battery pack

- A small amount of power is still used even if the camera is turned off, and it is therefore recommended that the batteries be removed from the camera if it is not going to be used for a long time. Note that when the batteries are removed for a long period, the time and date settings may be cleared. Before using your camera again, be sure to confirm that the camera settings are correct.

TURNING THE CAMERA ON AND OFF

Turning on the camera

- 1 Set the main switch.**
To shoot pictures: Set to REC
To play back images: Set to PLAY
- 2 Open the monitor unit.**
- 3 Press the ON/OFF button for about 1 second.**
 - The camera turns on, and an image appears on the LCD monitor.



Turning on the camera when the power save (sleep) function is active

In order to preserve battery pack power, the power save (sleep) function will automatically turn off the camera after one minute of no use during shooting, or five minutes of no use during playback (factory-preset setting).

- When the power save function is active, you can restore the power by any of the following methods:
 - Move the main switch.
 - Press the ON/OFF button.
 - Press the Still image shooting/Video clip recording button.
 - Press the SET or MENU button.
- After the power save function has been active for about 1 hour, the camera will switch to the standby mode. In this case, you can restore the power by pressing the ON/OFF button, or by closing and then opening the monitor unit.
- When the AC adaptor/charger is connected, the power save function will become active about 10 minutes after the camera is turned on (factory-preset setting).
- The user can specify the time elapsed before the power save function is activated (page 129).
- When the camera is connected to a computer or printer, it does not change to the power save mode. In this case, the power save function becomes active after about 12 hours.

TURNING THE CAMERA ON AND OFF

Turning off the camera

- 1** Press the ON/OFF button for about 1 second.
- The camera turns off.

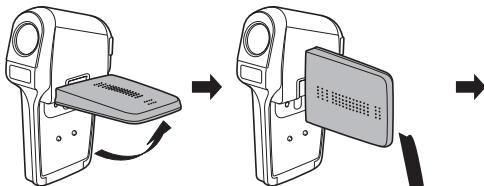
HINT

To immediately activate the power save function

- Press the ON/OFF button briefly to activate the power save function.

About the standby mode

- To turn off the camera only briefly, you can close the monitor unit to put the camera in the standby mode. The standby mode uses almost no power. When the monitor unit is opened again, the camera turns on immediately and you are ready to shoot or view images without any delay.




HINT

- If the date and time setting has been completed (page 115), the current time is shown on the LCD monitor when the camera is turned on.

NOTE

If the icon appears...

- When a picture is taken, the date and time it was captured is recorded with it. When the date and time cannot be recorded with the image because the date and time have not yet been set (page 115), the  icon appears. To have the date and time recorded with images, please make this setting before capturing images.

OPERATION BUTTONS

The procedures to change the camera settings, choose images, etc., are performed by using the SET button to control the LCD monitor display. This operation is used very frequently, so it is best to become familiar with it right away.

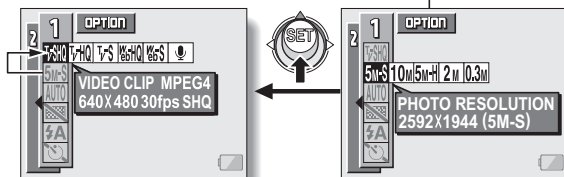
1 Turn on the camera (page 40).

2 Press the MENU button.

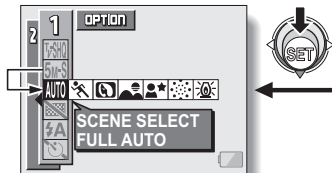
- The Menu Screen appears.

<Select the icon above or below>

To select the icon above:
Toggle the SET button up.



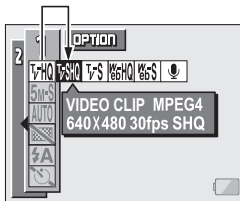
To select the icon below:
Toggle the SET button down.



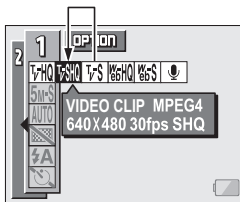
OPERATION BUTTONS

<Select the icon to the left or right>

To select the icon to the right,
toggle the SET button to the right.

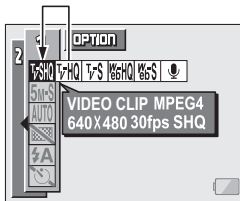


To select the icon to the left,
toggle the SET button to the left.



<Actuate the selected icon>

Press the SET button. The selected
icon moves to the left end of the
lineup.



BEFORE TAKING PICTURES

For best results

Hold the camera securely, keeping your elbow close to your body and making sure the camera is stable.

Correct hold



Incorrect hold



A finger is blocking the lens or flash.

Make sure that the lens and flash are not blocked by your fingers or the neckstrap.

HINT

- Images captured in the still image shooting mode can be rotated when they are played back (page 96).
- When the optical zoom is used or when the autofocus is operating, the image may appear to waver, but this is not a malfunction.

BEFORE TAKING PICTURES

Using the autofocus

The autofocus will work in almost all situations; however, there are certain conditions that may cause the autofocus function to not work properly. If the autofocus function is not working properly, set the focus range to capture images (page 78).

■ Conditions that may cause incorrect focus

The following examples are some of the situations where the autofocus function may not work.

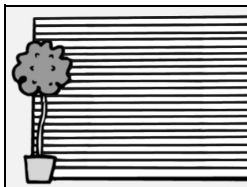
- **Subjects with low contrast, very bright subjects at the center of the image or dark subjects or locations**

Use the focus-lock function to lock the focus on an object with contrast at the same distance as the desired subject.



- **Subjects without vertical lines**

Use the focus-lock function to lock the focus on the subject while holding the camera vertically.



The following examples are some of the situations where the autofocus function may work, but not as desired.

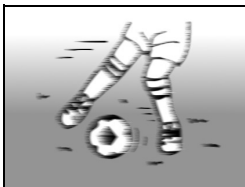
- **When both near and far objects are present**

Use the focus-lock function to lock the focus on an object at the same distance as the desired subject, then reposition the camera to compose the picture.



- **Fast-moving subjects**

Use the focus-lock function to lock the focus on an object at the same distance as the desired subject, then reposition the camera to compose the picture.



Hints for taking pictures

Muting the operation sounds

- The operation sounds that are generated, for example, when the still image shooting button, MENU button or SET button is pressed, as well as the audio guidance when you switch the mode, can be muted (page 118).

Where is the image and audio data saved?

- All the image and sound data is recorded on the card installed in the camera.

Taking pictures in backlight conditions...

- When taking pictures with the light coming from behind the subject, due to the characteristics of the CCD, light lines or ghost patterns (flare phenomenon) may appear in the captured image. In this situation, it is recommended that you avoid taking pictures with the subject lit from behind. In this situation, it is recommended that you avoid taking pictures with the subject lit from behind.

While the image data is being recorded...



- While the multi-indicator is flashing red, the image data is being written to the memory, during which time it is not possible to capture another image. Another image can be captured after the flashing red indicator turns off. However, even when the multi-indicator is flashing red, depending on the camera's internal memory remaining capacity, in some cases the next image can be captured about 2 seconds after shooting.

Checking the last image shot (instant review)

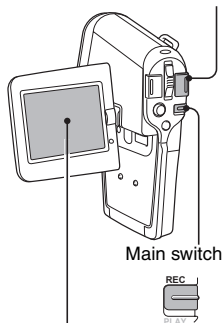
- After shooting a picture, you can immediately view it by pressing the SET button once.
- During instant review of a video clip, normal play, reverse play and pause are available (page 58).
- If you wish to delete the image (for a video clip, it must be in the pause or stop mode), toggle the SET button up to access the delete function.
- You can view other images while the instant review display is showing by toggling the SET button to the left or right.
- Cancel the instant review display by toggling the SET button down.

CAPTURING IMAGES

Recording video clips

- 1 Turn on the camera (page 40).
- 2 Set the main switch to REC.
- 3 Press the video clip recording button [].
 - Recording begins. During shooting,  appears in the LCD monitor. It is not necessary to continue pressing the video clip recording button while shooting.
- 4 End the recording.
 - Press the video clip recording button again to stop recording.

Video clip recording button



Recording time


Remaining memory icon

HINT

Adjusting the LCD monitor brightness

- You can quickly access the screen for adjusting the brightness of the LCD monitor by pressing the MENU button for at least 1 second.
- To adjust or turn off the LCD monitor contrast, please see page 91.

Focus lock during video clip recording

- The autofocus can be set to a fixed focus during video clip recording if you toggle the SET button up. When the autofocus is fixed, the  icon appears on the LCD monitor.
- When the focus range (page 78) setting is changed, the focus lock is released.

CAUTION

During video clip playback, the sound of a motor is audible

- During recording, the sound of the optical zoom movement or autofocus movement was recorded. This is not a malfunction.

NOTE

- The data for a video clip is very large. Therefore, be aware that if the video clip is uploaded to a computer to be played back, the computer may not be able to play back the video fast enough, making it appear jerky. (The video will always be displayed properly on the LCD monitor or a television.)
- When the remaining card memory becomes 10 percent or less of the total card capacity, the remaining memory icon appears on the LCD monitor.
- Depending on the card, shooting may end even before the possible shooting time indicated on page 183.

CAPTURING IMAGES

Capturing still images

1 Turn on the camera (page 40).

2 Set the main switch to REC.

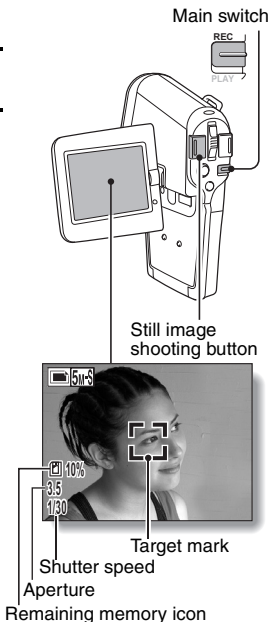
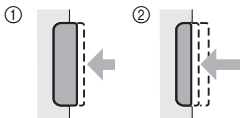
3 Press the still image shooting button [].

① Press the still image shooting button halfway.

- The autofocus operates, and the image is focused (focus lock).

② Continue to gently press the still image shooting button all the way.

- The shutter releases and the image is captured.
- You can view the captured image on the LCD monitor by keeping the still image shooting button depressed when you capture the image (post-view [page 121]).





NOTE

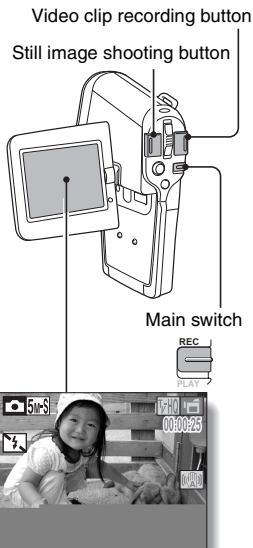
About the target mark

- The target mark indicates the position which is currently focused. If the target mark does not appear, or if it appears at a position that is different from the point you wish to focus, you can refocus, for example, by changing the shooting angle.
- The large target mark appears when the camera focuses on a wide area in the center of the screen.

Shoot a still image while recording a video clip

You can capture a still image while recording a video clip.

- 1 Turn on the camera (page 40).
- 2 Set the main switch to REC.
- 3 Press the video clip recording button [].
- 4 When you see a scene you'd like to capture as a still image, press the still image shooting button [].
- 5 End the recording.
 - Press the video clip recording button to stop recording.



NOTE

- When shooting a still image while recording a video clip, the flash does not operate.
- When shooting a still image while recording a video clip, the display briefly pauses, and then returns to the video clip display after the still image is captured.
- If the still image resolution is set to [10M], it automatically changes to [5M-S] and the image is captured.
- When the remaining card memory becomes 10 percent or less of the total card capacity, the remaining memory icon appears on the LCD monitor.

BASIC SHOOTING FUNCTIONS

Using the zoom

Your camera has two zoom functions: optical zoom and digital zoom. You can specify whether or not the digital zoom is enabled (page 125).

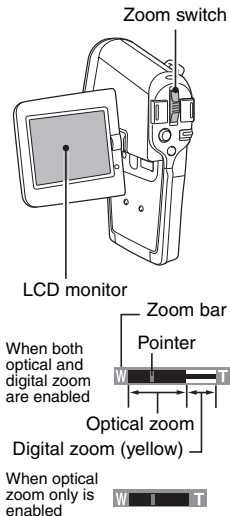
1 Point the camera lens at the subject.

2 Press [T] or [W] on the zoom switch to compose the desired image.

[T]: Zoom in on the subject.

[W]: Zoom out.

- When the zoom switch is pressed, the zoom bar appears on the LCD monitor.
- When the optical zoom factor is at maximum, zooming stops temporarily. When [T] on the zoom switch is pressed again, the mode changes to the digital zoom mode and zooming continues.



3 Take the picture.

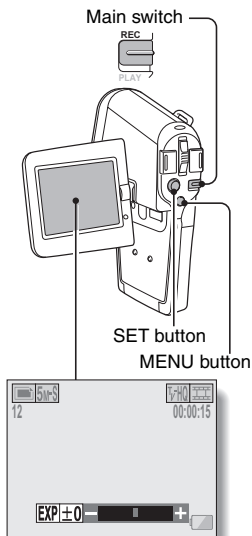
For video clip recording, see page 47.

For still image shooting, see page 49.

Exposure correction

When capturing images, you can make the image lighter or darker.

- 1 Set the main switch to REC.**
 - To exit the Menu Screen (Shooting Setting Screen), press the MENU button.
- 2 With the Shooting Setting Screen not shown, toggle the SET button to the right.**
 - The exposure correction bar appears.
- 3 Toggle the SET button to the left or right to adjust the exposure.**
 - To cancel the exposure correction bar, press the MENU button.
 - The exposure setting numerical value is shown at the left end of the exposure bar. The exposure can be set to a value from -1.8EV to $+1.8\text{EV}$.



HINT

The exposure correction setting is canceled in the following cases:

- When the pointer is set to the center position.
- When the Option Screen is accessed.
- When the main switch is set to PLAY.
- After the power is turned off.

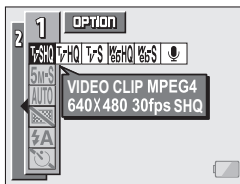
RECORDING AN AUDIO MEMO

Your camera can make audio recordings.

1 Turn on the camera (page 40), and set the main switch to REC.

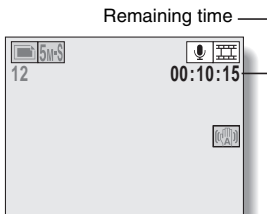
2 Press the MENU button.

- The menu display appears.




3 From the video clip mode menu, select the audio memo icon , and press the SET button.

- The recording mode is enabled.
- The menu display is canceled if the MENU button is pressed.

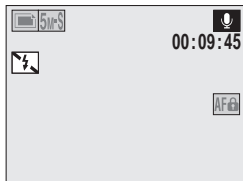


4 Press the video clip recording button [].

- Audio recording begins. During recording,  appears in the LCD monitor.

It is not necessary to continue pressing the video clip recording button while shooting.

- The maximum time for recording a continuous audio memo is about 9 hours.





5 End the recording.

- Press the video clip recording button again to stop recording.

HINT

Capture a still image during an audio recording

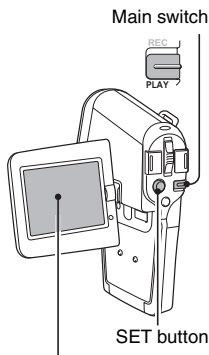
- Note, however, that if the resolution in the still image mode is set to , it automatically changes to  and the image is captured.

VIEWING IMAGES

- 1** Turn on the camera (page 40), and set the main switch to **PLAY**.

- An image is displayed on the LCD monitor.

- 2** Select the image you wish to view.
To display the previous image:
Toggle the SET button to the left.
To display the next image:
Toggle the SET button to the right.



<Example: After video clip recording>



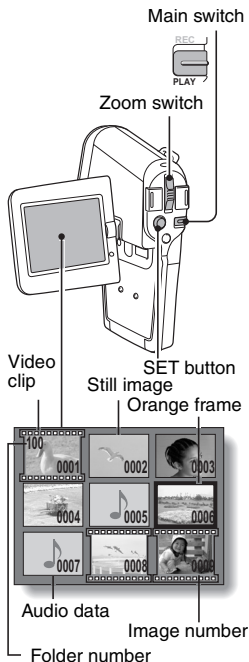
<Example: After still image recording>

9-image display playback

- 1 Turn on the camera (page 40), and set the main switch to **PLAY**.

- 2 Press **[W]** (**[]**) on the zoom switch.
 - The 9-image display appears.

- 3 Select the image to play back.
 - Toggle the **SET** button up, down, left or right to move the orange frame to the desired image, and press the **SET** button. Instead of pressing the **SET** button, you can press **[T]** (**[]**) on the zoom switch to show the image full screen.



NOTE

- The 9-image multi-playback display can also be accessed by selecting **[]** on the Playback Setting Screen.

VIEWING IMAGES

Magnifying (zooming in) the image

- 1** Display the image that you want to magnify.
- For a video clip, pause playback at the place you want to magnify.

- 2** Press [T] ([🔍]) on the zoom switch.
- Magnification is enabled.
 - The image is magnified, and the central portion of image is displayed.
 - Toggle the SET button to view different parts of the magnified image.
To magnify:
Press [T] ([🔍]) on the zoom switch.
To return to normal size:
Press [W] ([🔲]) on the zoom switch.



HINT

- The magnified portion of the image can be saved as a separate image.**
- Press the still image shooting button. The magnified portion is saved as a new still image.

VIEWING VIDEO CLIPS

Playing back a video clip

Follow these steps to play back a video clip.

Normal playback

- Press the SET button.

Pause

- While the video clip is playing, toggle the SET button up. To resume playback, press the SET button.

To play back one image at a time (single-frame step)

- **During forward playback**
After pausing playback, toggle the SET button to the right.
For slow playback, press and hold the SET button to the right.
- **During reverse playback**
After pausing playback, toggle the SET button to the left.
For slow reverse playback, press and hold the SET button to the left.

To accelerate playback

- Fast forward playback is possible at 2x (forward only), 5x, 10x and 15x.
- Toggle the SET button to the left or right during playback to activate fast playback.
- The playback speed changes each time the SET button is toggled to the left or right.

During forward playback, toggle SET button to the right

Normal playback → 2x → 5x → 10x → 15x

* Toggle the SET button to the left to return to normal playback speed.

During reverse playback, toggle SET button to the left

15x ← 10x ← 5x ← Normal playback

* Toggle the SET button to the right to return to normal playback speed.

- **Return to normal playback speed**

During fast forward or fast reverse playback, press the SET button.

VIEWING VIDEO CLIPS

HINT

Display the video clip playback point

- During video clip playback, press the MENU button for at least 1 second to display a bar showing the current playback point in the video clip.
- Press the MENU button for about 1 second to cancel the bar.

Adjust the volume

- During video clip or audio memo playback, if you move the zoom switch up or down, the volume control bar will appear, allowing you to adjust the volume.

CAUTION

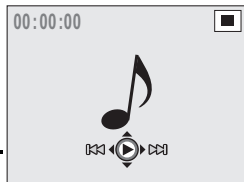
If no audio is heard...

- The audio is not played back when the video clip is played back in the frame-by-frame, fast playback or reverse playback mode.

PLAYING BACK AUDIO MEMOS

Listen to your audio recordings.

- 1** On the 9-image playback display, move the orange frame to the audio memo you wish to play back (page 56), and press the SET button.
- A musical note graphic appears on the screen.



- 2** Play back the recording.
Normal playback:

Press the SET button.

Pause:

While the audio memo is playing, toggle the SET button up.

Stop playback:

While the audio memo is playing, toggle the SET button down.

To accelerate playback:

- Fast forward playback is possible at 2x (forward only), 5x, 10x and 15x.
- Toggle the SET button to the left or right during playback to activate fast playback.
- The playback speed changes each time the SET button is toggled to the left or right.

During forward playback, toggle SET button to the right

Normal playback → 2x → 5x → 10x → 15x

- * Toggle the SET button to the left to return to normal playback speed.

During reverse playback, toggle SET button to the left

15x ← 10x ← 5x ← Normal playback

- * Toggle the SET button to the right to return to normal playback speed.

CAUTION

If no audio is heard...

- The audio is not played back when the audio memo is played back in the fast playback or reverse playback mode.

DISPLAYING THE SHOOTING SETTING SCREENS

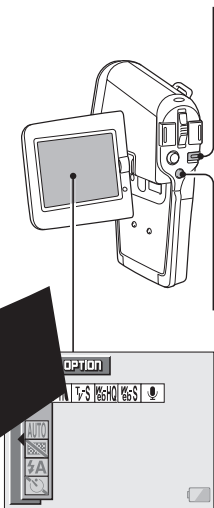
The Shooting Setting Screens are used to adjust your camera's shooting settings. The Shooting Setting Screens are organized into two displays: **PAGE 1** and **PAGE 2**. The **PAGE 1** settings (page 63) cover the basic shooting settings, and the **PAGE 2** settings (page 65) provide you with more detailed settings.

1 Turn on the camera (page 40).

2 Set the main switch to REC.

3 Press the **MENU** button.

- The Shooting Setting Screen appears.
- Pressing the **MENU** button again will cancel the Shooting Setting Screen.



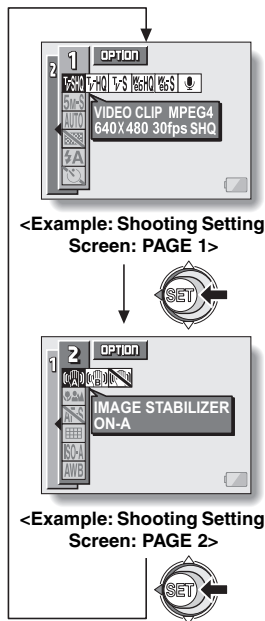
SWITCHING THE PAGE

Switch from PAGE 1 to PAGE 2, or vice versa, depending on how you wish to use your camera.

1 Display a Shooting Setting Screen.

2 Toggle the SET button to the left.

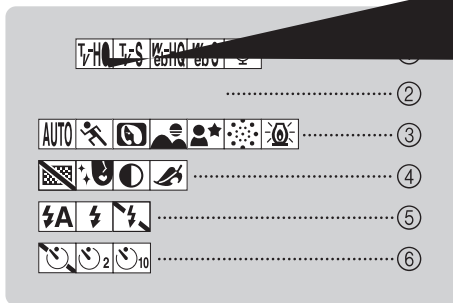
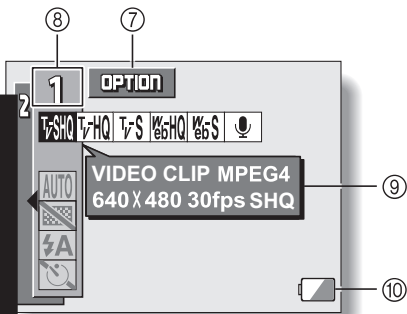
- The Shooting Setting Screen PAGE changes.
- Each time the SET button is toggled to the left, the PAGE changes.



DISPLAYING THE SHOOTING SETTING SCREENS

Overview of the Shooting Setting Screens

PAGE 1



① **Video clip menu (page 67)**

: Record at 640 × 480 pixels, 30 frames per second, high bit rate

: Record at 640 × 480 pixels, 30 frames per second, standard bit rate

: Record at 320 × 240 pixels, 30 frames per second

: Record at 320 × 240 pixels, 15 frames per second

: Record at 176 × 144 pixels, 15 frames per second

: Make an audio recording

② **Still image resolution menu (page 68)**

: Shoot image at 2,592 × 1,944 resolution (about 5 million pixels [normal compression])

: Shoot image at 3,680 × 2,760 resolution (about 10 million pixels)

: Shoot image at 2,592 × 1,944 resolution (about 5 million pixels [low compression])

: Shoot image at 1,600 × 1,200 resolution (about 2 million pixels)

: Shoot image at 640 × 480 resolution (about 300,000 pixels)

③ **Scene select menu (page 69)**

: Full auto photography

: Sports photography

: Portrait photography

: Landscape photography

: Night view photography

: Fireworks photography

: Lamp photography

④ **Filter menu (page 71)**

: No filter

: Cosmetic filter selected

: Monochrome filter selected

: Sepia filter selected

⑤ **Flash menu (page 72)**

: Automatic flash mode

: Forced flash mode

: Flash off mode

⑥ **Self-timer menu (page 74)**

: Self-timer off

: Shooting begins 2 seconds after the still image shooting button or video clip recording button is pressed.

: Shooting begins 10 seconds after the still image shooting button or video clip recording button is pressed.

⑦ **Option icon (page 113)**

- Displays the Option Screen.

⑧ **PAGE display (page 62)**

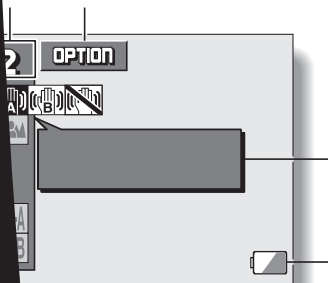
⑨ **Help display (page 120)**

⑩ **Remaining battery power (page 139)**


- When you specify multiple functions that cannot be simultaneously enabled, the function which was last set becomes the active setting, and the other settings accordingly change automatically.


PLAYING THE SHOOTING SETTING SCREENS


E 2



① **Image stabilizer menu (page 76)**


: Image stabilizer function on (ON-A)

: Image stabilizer function on (ON-B)


: Image stabilizer function off

② **Focus range menu (page 78)**


: All ranges focussed


: Normal focus range

: Manual focus


: Close-up photography


③ **Spot focus menu (page 80)**


: 5-point range finder focus setting

: Spot focus on setting


④ **Light-measuring mode (EXP MEASURE) menu (page 81)**

: Multi-section light-measuring setting

: Center-weighted light-measuring setting

: Spot light-measuring setting

⑤ **ISO sensitivity menu (page 82)**

: Auto sensitivity (corresponds to ISO50 to 200)


: Corresponds to ISO50


: Corresponds to ISO100

: Corresponds to ISO200

: Corresponds to ISO400


⑥ **White balance menu (page 83)**


: White balance is automatically adjusted depending on ambient lighting

: For photography in fair weather (sunny) conditions

: In overcast conditions

: Under fluorescent lighting

: Under incandescent lighting

: For setting the most accurate white balance

⑦ **Option icon (page 113)**

- Display the Option Screen.

⑧ **PAGE display (page 62)**

⑨ **Help display (page 120)**

⑩ **Remaining battery power (page 139)**

- When you specify multiple functions that cannot be simultaneously enabled, the function which was last set becomes the active setting, and the other settings accordingly change automatically.







IMAGE QUALITY

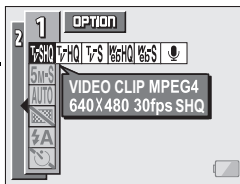
Video clip image quality setting

When it comes to video clips, a larger number of pixels and a higher frame rate means better image quality and smoother playback. On the other hand, the file size becomes large and uses more memory. Set the image quality to a setting that's right for your purpose.

-
- 1 Display the PAGE 1 Shooting Setting Screen (page 62).

- 2 Select the video clip menu.

- : Record at 640 × 480 pixels, 30 frames per second, high bit rate
- : Record at 640 × 480 pixels, 30 frames per second, standard bit rate
- : Record at 320 × 240 pixels, 30 frames per second
- : Record at 320 × 240 pixels, 15 frames per second
- : Record at 176 × 144 pixels, 15 frames per second
- : Make an audio recording



-
- 3 Select the desired icon from the video clip menu, and press the SET button.
 - This completes the video clip image quality setting.

CAUTION

When editing video clips...

- In order for video clips to be joined, they must have been photographed in the same mode.
- Video clips that were photographed in different modes cannot be joined.

Still image resolution setting

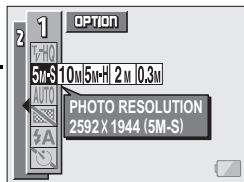
By setting the still image resolution (pixels) to a higher setting, image detail is enhanced for a smoother, finer picture. However, the file size also becomes large and uses more memory. Select the resolution setting that suits your purpose.

- 1 Display the PAGE 1 Shooting Setting Screen (page 62).

- 2 Select the still image resolution menu.

- 5M-S**: Shoot image at $2,592 \times 1,944$ resolution (5M-S) (standard compression: for maximum number of images)
- 10M**: Shoot image at $3,680 \times 2,760$ resolution (10M)
- 5M-H**: Shoot images at $2,592 \times 1,994$ resolution (5M-H) (low compression: for optimum image quality)
- 2M**: Photograph a still image at $1,600 \times 1,200$ resolution (2M)
- 0.3M**: Photograph a still image at 640×480 resolution (0.3M)

- The numbers in parentheses () refer to the approximate number of pixels in the image (units: megapixels).



- 3 Select the desired icon from the still image resolution menu, and press the SET button.


- This completes the still image resolution setting.


SCENE SELECT


You can select from various preset settings (aperture, shutter speed, etc.) for specific shooting conditions.

1 Display the PAGE 1 Shooting Setting Screen (page 62).

2 Select the scene select menu.


: The camera automatically makes the optimum settings suitable for the surrounding conditions (full auto).


: Capture a split-second image of a fast-moving subject.

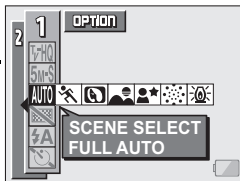
: Enhance the 3D feeling of the subject by blurring the background.

: For beautiful shots of distant scenery.

: Photograph the subject while keeping the background night scenery.

: For capturing fireworks at night.

: Photograph in low-light conditions.




3 Select the desired icon from the scene select menu, and press the SET button.

- This completes the scene select function setting.





4 Take the picture.

For video clip recording, see page 47.

For still image shooting, see page 49.

To return to normal photography, select  from the scene select menu, and press the SET button.

NOTE

- When capturing images using the fireworks , lamp  or night view  setting, use a tripod or other method to stabilize the camera.
- A table showing the limitations for settings corresponding to scene select icons other than  is on page 178.

FILTERS

The filter feature changes the aperture and shutter speed settings, as well as the color tones, to apply unique effects to the photographed image.

- 1** Display the **PAGE 1 Shooting Setting Screen** (page 62).
-

- 2** Select the filter menu.

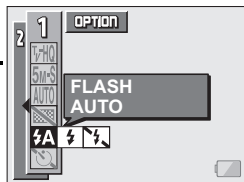
FLASH SETTING

The flash is used not only for taking pictures where there is insufficient light, but also when the subject is in shade or in backlight conditions. Your camera has three modes of operation (automatic flash mode, forced flash mode, and flash off mode).

1 Display the PAGE 1 Shooting Setting Screen (page 62).

2 Select the flash menu.

- : The camera will detect the subject brightness and use the flash only when required. In a backlight situation, if only the center of the image is very dark, the flash will operate to compensate (auto flash).
- : The flash will operate with every image captured regardless of the conditions. Use this setting under backlight conditions, when the subject is in shade, under fluorescent lighting conditions, etc. (forced flash).
- : The flash will not operate even in dark situations. Use this setting when capturing an image in a location where flash photography is prohibited, or when shooting a night landscape scene (flash off).




FLASH SETTING

3 Select the desired icon from the flash menu, and press the SET button.

- This completes the flash setting.

4 Take the picture.

For still image shooting, see page 49.

- To return to normal photography, select  from the flash menu, and press the SET button.




HINT

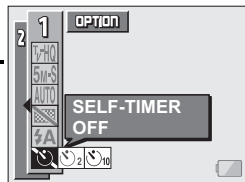
- You can change the flash setting by toggling the SET button to the left when the Shooting Setting Screen is not being displayed.

SELF-TIMER

- 1 Display the PAGE 1 Shooting Setting Screen (page 62).

- 2 Select the self-timer menu.

- : Turns off the self-timer function.
- : Turns on the self-timer function. The image is captured about 2 seconds after the still image shooting button or video clip recording button is pressed.
- : Turns on the self-timer function. The image is captured about 10 seconds after the still image shooting button or video clip recording button is pressed.



- 3 Select the desired icon from the self-timer menu, and press the SET button.

- This completes the self-timer setting.

- 4 Take the picture.


For video clip recording, see page 47.

For still image shooting, see page 49.

SELF-TIMER

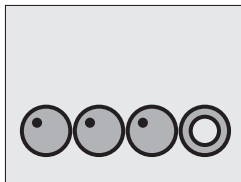
HINT

To pause or cancel the self-timer function...

- If the video clip recording button or still image shooting button is pressed again before the image is captured, the self-timer countdown temporarily stops. Press the video clip recording button or still image shooting button one more time to restart the self-timer.
- To cancel self-timer photography, select the  icon from the self-timer menu, and press the SET button.

When is selected...

- When the still image shooting button or video clip recording button is pressed, the illumination light and the multi-indicator will blink for about 10 seconds, and then the image is captured. Also, 4 seconds before the shutter releases, the indication shown in the illustration appears on the LCD monitor.
- If you swivel the monitor unit towards, the self-timer indication will be visible to the subject.



MOTION COMPENSATION (IMAGE STABILIZER)

Your camera can minimize a jittery picture by compensating for unintentional hand motion (video clips only).

1 Display the **PAGE 2 Shooting Setting Screen** (page 62).

2 Select the image stabilizer menu.



- Compensate for unintentional camera motion during video clip recording. The field of view does not change when the video clip recording button is pressed, so this setting is convenient when shooting mostly video clips.



- Compensate for unintentional camera motion during video clip recording. The field of view does not change when the still image recording button is pressed, so this setting is convenient when shooting mostly still images.




- Disengages the motion compensation function.

3 Select the desired icon from the image stabilizer menu, and press the **SET** button.

- This completes the image stabilizer setting.

HINT

If the motion compensation does not seem to be working...

- Due to the mechanical characteristics of this function, it may not be possible for the camera to compensate for violent motion.
- If the digital zoom (page 51) is being used, the large magnification factor may make it difficult for the motion compensation function to work correctly.
- When using a tripod, the docking station or other means to stabilize the camera, please turn the motion compensation function off . If the motion compensation function is enabled when it is not actually needed, it may result in an image that appears unnatural.

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When the recording resolution is set to **0.3M** and the scene is set to **0.10**, **0.20**, **0.30** or **0.40** (page 69), a still image or a video clip recording will have the same field of view as the

FOCUS RANGE

1 Display the PAGE 2 Shooting Setting Screen (page 62).


2 Select the focus range menu.

- When shooting a subject at a medium to far distance, by setting the focus range to , you will find it both easier and faster to focus.
 - : Wide end: 10 cm (3.94 in.) to infinity
Tele end: 80 cm (31.50 in.) to infinity (total range mode)
 - : 80 cm (31.50 in.) to infinity (normal mode)
 - MF**: The focus can be manually set to any distance from 2 cm (0.79 in.) to 8 m (26.25 ft.), as well as to infinity (manual focus).
 - : 1 cm (0.39 in.) to 80 cm (31.50 in.) (super macro mode: wide end only)
- When the focus range is set to ,  or **MF**, the corresponding indication appears on the LCD monitor.

3 Select the desired icon from the focus range menu, and press the SET button.

- This completes the focus range setting.

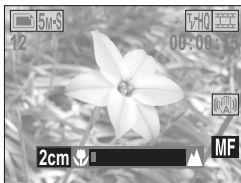
HINT

- From the Shooting Screen, you can quickly change the focus range setting by toggling the SET button down.
- When the focus range is set to super macro , the zoom is set to the wide end.

FOCUS RANGE

How to use the manual focus

- 1 Select the manual focus icon **MF** from the focus menu, and press the SET button.
- 2 Press the SET button.
 - The focus distance adjustment bar appears.
- 3 Toggle the SET button to the left or right to adjust the focus distance, and press the SET button.
 - The focus distance is set, and you are returned to the Shooting Screen.



NOTE

About the focus range

- The focus distance indication shows the distance between the lens surface and the subject.
- In some cases there may be a slight variance between the distance (numerical figure) you set in the manual focus mode and the actual distance. Use the LCD monitor to confirm the focus and compose the photo.

About zoom movement when using the manual focus

- If the focus distance is set to 70 cm (27.56 in.) or less, the zoom changes to the largest setting that is suitable for that focus distance.
- When the focus distance is set to 70 cm (27.56 in.) or less, the zoom will function only within the range at which the image is focused.

FOCUS AREA SETTING


You can choose from the following 2 types of autofocus (still image shooting only):


5-point range finder focus: The distance to the subject is detected by sampling from multiple areas of the entire shooting screen.

Spot focus: The camera focuses on the subject in the center of the LCD monitor.

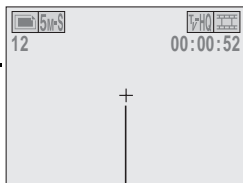
1 Display the PAGE 2 Shooting Setting Screen (page 62).

2 Select the desired focus method from the spot focus menu, and press the SET button.

: 5-point range finder focus is selected.

: Spot focus is selected.

- When the spot focus setting is selected, the focus mark + appears in the center of the LCD monitor.



Focus mark

LIGHT-MEASURING MODE SETTING

You can select from 3 types of light-measuring modes.

Multi-section light-measuring:

Light is measured by sampling from multiple areas of the entire shooting screen.

Center-weighted light-measuring:


Light is measured from the entire shooting screen, but gives more importance to the values near the center.


Spot light-measuring:


You can compose the picture and capture the image after first measuring the light only at the center spot of the LCD monitor.

1 Display the PAGE 2 Shooting Setting Screen (page 62).


2 Select the desired light-measuring mode from the light-measuring mode (EXP MEASURE) menu.

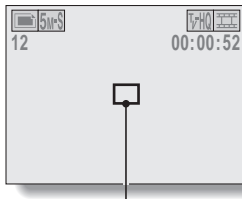
: Multi-section light-measuring

: Center light-measuring

: Spot light-measuring

3 Press the SET button.

- This completes the light-measuring mode setting.
- When spot light-measuring is selected, the light-measuring spot mark  appears in the center of the LCD monitor.



Light-measuring spot mark

ISO SENSITIVITY

With the initial settings, the ISO sensitivity is automatically set according to the brightness of the subject. However, the ISO sensitivity can be set to a fixed setting.

1 Display the PAGE 2 Shooting Setting Screen (page 62).

2 Select the ISO sensitivity menu.

- [ISO-A]**: Sets the ISO sensitivity automatically (equivalent to ISO50 to 200 [video clip shooting mode: ISO200 to 400]).
 - [50]**: Sets the sensitivity to ISO50 equivalent (video clip shooting mode: ISO200).
 - [100]**: Sets the sensitivity to ISO100 equivalent (video clip shooting mode: ISO200).
 - [200]**: Sets the sensitivity to ISO200 equivalent (video clip shooting mode: ISO400).
 - [400]**: Sets the sensitivity to ISO400 equivalent (video clip shooting mode: ISO800).
-

3 Select the desired icon from the ISO sensitivity menu, and press the SET button.

- This completes the ISO sensitivity setting.
-

HINT


- By setting a higher ISO sensitivity, you can set higher shutter speeds and capture images in darker locations, but noise in the captured images may increase.

WHITE BALANCE

This camera automatically adjusts the white balance under most lighting conditions. However, if you want to specify the lighting conditions or change the overall tone of the image, the white balance can be manually set.


1 Display the PAGE 2 Shooting Setting Screen (page 62).

2 Select the white balance menu.


: The camera will make the white balance adjustment automatically based on the natural and artificial light conditions. This is the setting used in the auto mode.

: For shooting outside on a sunny day.



: For shooting outside on a cloudy day.

: For shooting inside under fluorescent lighting.







: For shooting inside under incandescent lighting.

: For more accurate adjustment or when the light source cannot be specified.

Setting procedure

- ① Select the  icon and press the SET button.
 - The  icon moves to the left end of the line.
- ② Fill the entire screen with a plain white card (or piece of paper, etc.), and perform step 3.

3 Select the desired icon from the white balance menu, and press the SET button.

- Once the white balance setting is programmed for the  icon, it is retained even if another white balance setting (AWB, , , , or ) is selected. If you changed to another setting, whenever you select the  icon and press the SET button, the previously programmed setting is recalled.

HINT

To cancel the white balance setting

- Perform step 1, select **AWB**, and then press the SET button.

DISPLAYING THE PLAYBACK SETTING SCREENS

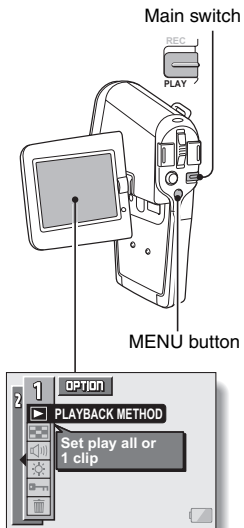
The Playback Setting Screens are used to adjust your camera's playback settings. The Playback Setting Screens are organized into two displays: **PAGE 1** and **PAGE 2**. The **PAGE 1** settings (page 87) cover the basic playback settings, and the **PAGE 2** settings (page 88) provide you with more detailed settings.

1 Turn on the camera (page 40).

2 Set the main switch to **PLAY**.

3 Press the **MENU** button.

- The Playback Setting Screen appears.
- Pressing the MENU button again will cancel the Playback Setting Screen.



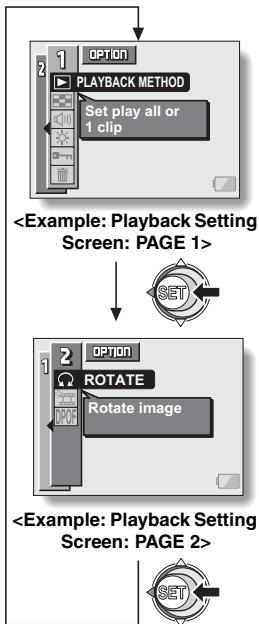
SWITCHING THE PAGE

Switch from PAGE 1 to PAGE 2, or vice versa.

1 Display a Playback Setting Screen.

2 Toggle the SET button to the left.

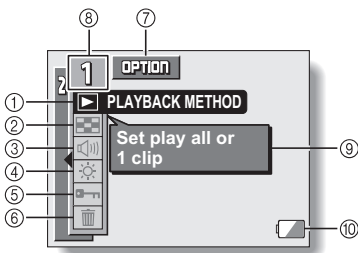
- The Playback Setting Screen changes to the other PAGE.
- Each time the SET button is toggled to the left, the PAGE changes.



DISPLAYING THE PLAYBACK SETTING SCREENS

Overview of the Playback Setting Screens

PAGE 1



- ① **Playback method setting (page 89)**
 - Select continuous playback or single-frame playback.
- ② **Multi-playback (page 56)**
 - Display images in the 9-frame multi-display format.
- ③ **Volume control (page 90)**
 - Adjust the playback volume for video clips and audio data, as well as the operation sounds.
- ④ **Monitor brightness (page 91)**
 - Adjust the brightness of the LCD monitor backlight.
- ⑤ **Data protect setting (page 92)**
 - Protect data from accidental erasure.
- ⑥ **Erase (page 94)**
 - Delete images from the card memory.
- ⑦ **Option icon (page 113)**
 - Display the Option Screen.
- ⑧ **PAGE display (page 86)**
- ⑨ **Help display (page 120)**
- ⑩ **Remaining battery power (page 139)**

① **Re**

•

②

③

PLAYBACK MODE

Images can be viewed continuously (slideshow playback) or you can choose to show single images.

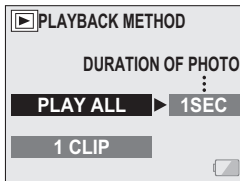
1 Display the PAGE 1 Playback Setting Screen (page 86).

2 Select the playback method icon , and press the SET button.

- The Playback Mode Screen appears.

PLAY ALL: Play back images in slideshow fashion.

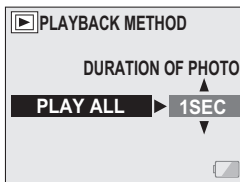
1 CLIP: Display only the selected image (page 55).



3 Select the desired playback mode, and press the SET button.

<PLAY ALL>

- The screen to set the time that each image is displayed appears.
 - Toggle the SET button to the right to select playback time.
 - Toggle the SET button up or down to specify the time that each image is shown.
 - Press the SET button.



4 Press the SET button.

- The display time is set, and you are returned to the Playback Setting Screen.

VOLUME

Adjust the playback volume for video clips and audio data, as well as the operation sounds.

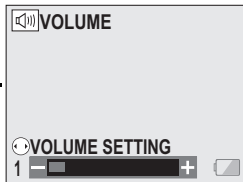
1 Display the **PAGE 1 Playback Setting Screen** (page 86).

2 Select the volume icon , and press the **SET** button.

- The volume control bar appears.

3 Toggle the **SET** button left or right to adjust the volume, and press the **SET** button.

- The volume is set, and you are returned to the Playback Setting Screen.



HINT

- During video clip or audio memo playback, if you move the zoom switch up or down, the volume control bar will appear, allowing you to adjust the volume.

HINT

Concerning the operation sounds volume setting

- The operation sounds volume is linked to the playback sound volume setting.

LCD MONITOR BRIGHTNESS

Adjust the brightness of the camera's LCD monitor display during playback. Use this adjustment when the monitor image is difficult to view because of ambient lighting.

In addition, in very bright surroundings, such as outdoors on a sunny day, you can turn the backlight OFF to preserve battery power.

1 Display the **PAGE 1 Playback Setting Screen** (page 86).

2 Select the LCD brightness icon , and press the **SET** button.

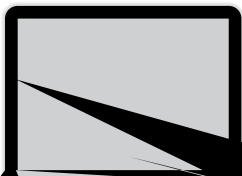
- The brightness control display appears.

Turn the LCD backlight ON/OFF:

Toggle the SET button down.

Adjust the brightness:

Toggle the SET button left or right.



3 Press the **SET** button.

- The brightness is adjusted and the screen is returned to the Playback Setting Screen.

HINT

- From the **Shooting** screen, you can quickly adjust the brightness of the LCD monitor by pressing the **SET** button for at least 1 second.

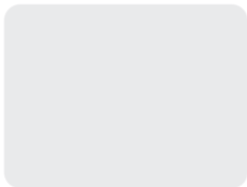
IMAGE PROTECT

Prevent accidental erasure of image and audio data.

- 1** Display the data that you want to protect from accidental erasure, and display the **PAGE 1 Playback Setting Screen** (page 86).
-

- 2** Select the protect icon , and press the **SET** button.

- “LOCK?” appears.
- If the protect mode has already been enabled for the data, then “UNLOCK?” appears.



- 3** Toggle the **SET** button up or down to select “YES”, and press the **SET** button.


- The protect mode is set for the data.
- The protect mark  indicates that the data is locked.
- To return to the Playback Setting Screen, press the **MENU** button.

IMAGE PROTECT

CAUTION


- Even if the protect mode is set for certain data files, they will be erased if the card is reformatted.

HINT

To select a different image in steps 2 and 3...

- Toggle the SET button to the left or right.

To cancel the protect mode for an image...

- Display the desired data and repeat steps 1 to 3. The protect mark  will disappear and the protect mode is canceled.

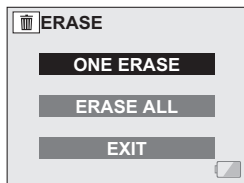
ERASING DATA

You can erase data that is stored on the card if you no longer need it. You can erase the data one at a time, or all at once.

1 Display the **PAGE 1 Playback Setting Screen** (page 86).

2 Select the erase icon , and press the **SET** button.

- The Erase Mode Screen appears.
ONE ERASE: Erases one data at a time.
ERASE ALL: Erases all the data from the card.
EXIT: Returns to the Playback Setting Screen.



3 Toggle the **SET** button up or down the select the erase mode, and press the **SET** button.

- The Erase Confirmation Screen appears.
<**ONE ERASE**>
 - Toggle the **SET** button to the left or right to select the data you wish to erase.
- <**ERASE ALL**>
 - Toggle the **SET** button to the left or right confirm the data to erase.

ERASING DATA

- 4** Toggle the **SET** button up or down to select “YES”, and press the **SET** button.

<ONE ERASE>

- The currently displayed image is deleted.
- To erase other data, select the data, and press the **SET** button.
- To return to the Playback Setting Screen, press the **MENU** button.

<ERASE ALL>

- The Erase Confirmation Screen again appears. To erase the data, select “YES”, and press the **SET** button. When data erase is completed, “NO IMAGE” is shown.

CAUTION

- Data which is protected from accidental erase cannot be erased. To erase protected data, set the protect setting for the data to off (page 92), and then follow the data erase procedure.


ROTATE IMAGE


Captured still images can be rotated to the correct orientation for viewing.

1 Display the PAGE 2 Playback Setting Screen (page 86).

2 Select the rotate icon , and press the SET button.

- The Rotate Image Screen appears.

: Rotates image clockwise 90 degrees.

: Rotates image counterclockwise 90 degrees.



3 Select the rotate right icon or rotate left icon , and press the SET button.

- Each time the SET button is pressed, the image is rotated another 90 degrees.
- To return to the Playback Setting Screen, press the MENU button.

EDITING VIDEO CLIPS

You can delete (“cut”) the first part or the last part of a video clip. You can choose anywhere in the video clip as the cutting point.

Procedure to join two video clips

Display the video clip that will come first.



Select the video clip that you wish to append (join).



Join the video clips. (Press the SET button.)



.....

CAUTION

Caution when editing video clips

- When editing video clips, do not move the main switch. If you move the main switch while editing video clips, not only will the editing not be properly completed, but the original video clip may also be erased.
- By repeating the clipping and joining procedures, you can create exactly the video clip you like. Note, however, that as the number or size of the video clips increases, the card memory may become full, making it impossible to edit the video clips. In this case, you will need to free some of the memory on the card either by deleting data that are no longer necessary (page 94), or by performing the procedure to erase the original video clip(s) (pages 101, 103).

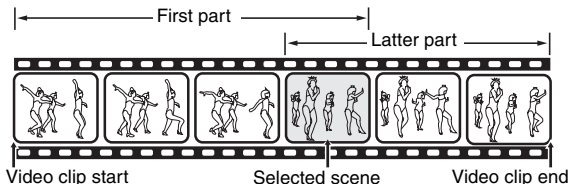
EDITING VIDEO CLIPS

Deleting part of a video clip

1 Display the video clip you wish to edit.

2 Display the scene you wish to delete.

- In step 5 you will specify whether you wish to delete the portion from the beginning of the video clip up to the selected scene, or the portion from the selected scene to the end of the video clip.



- To select the desired scene quickly, you can use a combination of the fast-forward (or reverse) playback, pause, and image-by-image playback functions (page 58).
- The actual cut point may be slightly before or after the displayed scene.

3 Display the PAGE 2 Playback Setting Screen (page 86).

-
- 4** Select the edit video icon , and press the **SET** button.

- The Edit Video Screen appears.



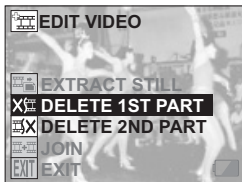
-
- 5** Toggle the **SET** button up or down to select the portion you wish to delete.

DELETE 1ST PART:

Delete the first part of the video clip.

DELETE 2ND PART:

Delete the latter part of the video clip.



-
- 6** Press the **SET** button.

- A screen appears for you to confirm whether or not you want to keep the original video clip.



EDITING VIDEO CLIPS

- 7** Select whether you want the original video clip to be erased when clipping is executed.

YES:

The original video clip is saved.

NO:

The original video clip is not saved.

-
- 8** Press the **SET** button.

- If “YES” was selected, the edited video clip is saved as a new video clip.
- If “NO” was selected, the edited video clip is saved as a new video clip, and the original video clip is erased.

NOTE

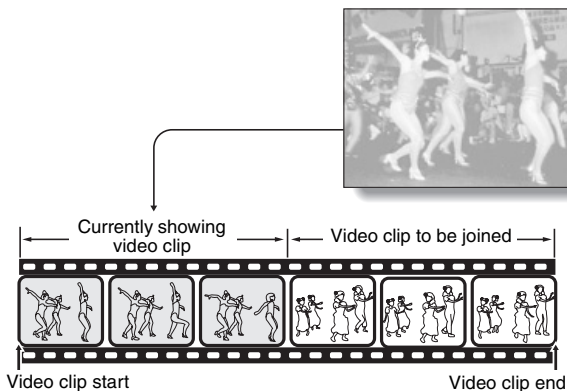
- If the original video clip is protected (image protect), even if you select “NO” in step 8 and press the SET button, the “IMAGE IS PROTECTED” message appears, and video clipping is not possible.

Joining two video clips

CAUTION

- Video clips that were photographed in different modes cannot be joined.

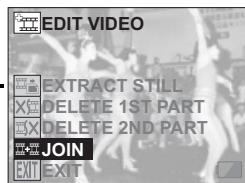
1 Display the first video clip.



2 Display the PAGE 2 Playback Setting Screen (page 86).

3 Select the edit video icon , and press the SET button.

- The Edit Video Screen appears.



4 Select the join icon .

EDITING VIDEO CLIPS

- 5** Press the **SET** button.
- The 9-image playback display for video clips appears.

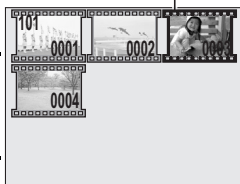
- 6** Toggle the **SET** button to move the orange frame to the video clip that you wish to join.

- 7** Press the **SET** button.

- 8** Select whether you want the original video clip to be erased when clipping is executed.
- YES:**
The original video clips are saved.
- NO:**
The original video clips are not saved.

- 9** Press the **SET** button.
- The two video clips are saved together as a separate video clip.
 - If “NO” was selected in step 8, the original video clips are erased when the joined video clip is saved.

Orange frame





<Confirmation screen for saving the original video clip>

NOTE

- If the original video clip is protected (image protect), even if you select “NO” in step 8 and press the **SET** button, the “IMAGE IS PROTECTED” message appears, and video clip joining is not possible.

Extracting a still image from a video clip

While video clip playback is paused, you can save a still image of the paused scene.


- 1** Display the frame (paused) you wish to save as a single still image.
- 2** Select the edit video icon  from the PAGE 2 Playback Setting Screen, and press the SET button.
 - The Edit Video Screen appears.
- 3** Select the extract still icon , and press the SET button.
 - The frame that is currently displayed is saved as a still image.

PRINT SETTINGS

In addition to using your printer to print out still images captured with your camera, as with conventional film, you can have prints made at shops offering digital print services. Moreover, this camera is DPOF-compatible, so you can use the camera to specify the number of prints, whether or not the date is displayed on the print, and also to specify an index print.

Display the Print Settings Screen

- 1 Display the **PAGE 2 Playback Setting Screen** (page 86).

- 2 Select the print settings icon , and press the **SET** button.

- The Print Setting Screen appears.

ALL IMAGES:

The specified print settings apply to all the still images on the card.

EACH IMAGE:

The print settings are specified for each individual image.

INDEX:

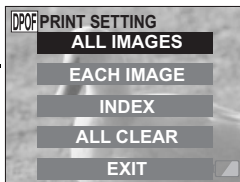
All the still images are printed as miniature images (thumbnail images), several images on one print.

ALL CLEAR:

Clear all the print settings. This cannot be selected if no print settings have been made for the image.

EXIT:

Return to the Still Image Playback Setting Screen.



HINT

- To print with a printer or have the digital print service shop print out a still image from a video clip, you must first save it (save frame (page 104)) as a still image.

HINT**About the DPOF format**

- DPOF (Digital Print Order Format) is a print order format. You can connect your camera to a DPOF-compatible printer to produce your prints. You can also set the print settings for the desired images, and then have the reserved images printed automatically.

About the finished prints

- Images that have been rotated will be printed in their original orientation.
- The quality of the print output will differ depending on the print service and printer used.

PRINT SETTINGS

Specifying date imprinting and print quantities

You can specify print settings for each individual image (**EACH IMAGE**), or apply the print settings to all the images on the card (**ALL IMAGES**).

1 Display the Print Setting Screen (page 105).

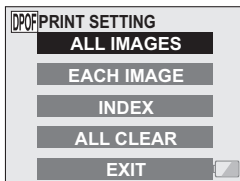
2 Select **EACH IMAGE** or **ALL IMAGES**.

ALL IMAGES:

The set print settings are applied to all the still images on the card.

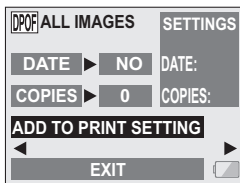
EACH IMAGE:

The set print settings are applied only to the image currently displayed.



3 Press the **SET** button.

- The Date/Copies Print Screen appears.
- If “EACH IMAGE” was selected, toggle the SET button to the left or right to display the desired image to print.
- Under “SETTINGS” the settings that are currently active for the displayed image are shown. You can toggle the SET button to the left or right to confirm the print settings for each image.



4 Specify whether the date is displayed on the print, and the number of prints.

<Specifying dated prints>

- ① Toggle the SET button up or down to select "DATE".
- ② Press the SET button.
 - The Print Date Screen appears.
- ③ Toggle the SET button up or down to select the desired option.

YES:

Print the date.

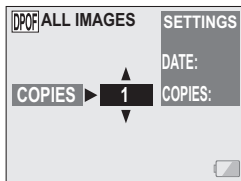
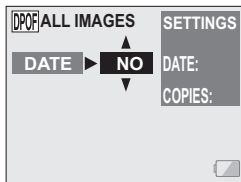
NO:

Do not print the date.

- ④ Press the SET button.
 - You are returned to the Date/Copies Print Screen.

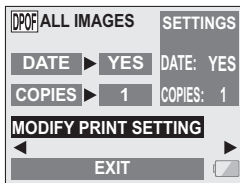
<Specifying the number of prints>

- ① Toggle the SET button up or down to select "COPIES".
- ② Press the SET button.
 - The Print Number Screen appears.
- ③ Toggle the SET button up or down to specify the number of prints.
 - Toggle the SET button up or down until the desired number of prints is displayed.
- ④ Press the SET button.
 - You are returned to the Date/Copies Print Screen.



PRINT SETTINGS

- 5** Select **"ADD TO PRINT SETTING"** and press the **SET** button.
- The Confirm Print Settings Screen appears.
If the print settings are correct:
Select **"EXIT"**, and press the **SET** button.
If the print settings were changed:
Select **"MODIFY PRINT SETTING"**, and press the **SET** button.



Index print

Printing out many small images on one sheet is called an "index print". This is convenient for use as a list of the images you have captured.

-
- 1** Display the Print Setting Screen (page 105).
-
- 2** Select **"INDEX"**.
-

3 Press the **SET** button.

- The Index Print Screen appears.
YES:
Specify an index print copy.
EXIT:
Discontinue the setting procedure,
and return to the Print Setting
Screen.



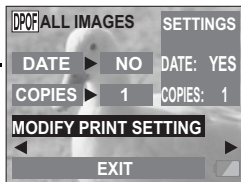
4 Select “**YES**”, and press the **SET** button.

- This completes the setting for the index print. You are returned to the Print Setting Screen.

Changing the print settings

1 Follow steps 1 to 4 on pages 107 and 108.

2 Select “**MODIFY PRINT SETTING**”, and press the **SET** button.



PRINT SETTINGS

Clearing all the print settings

Delete the print settings for all images.

1 Display the Print Setting Screen (page 105).

2 Select “ALL CLEAR”.

3 Press the **SET** button.

- The Confirm All Clear Screen appears.

YES:

Clear the print settings for all images.

EXIT:

Cancel the clear procedure and return to the Print Setting Screen.

4 Select “YES”, and press the **SET** button.

- All the print settings are cleared and you are returned to the Print Setting Screen.



DISPLAYING IMAGE DATA (INFORMATION SCREEN)

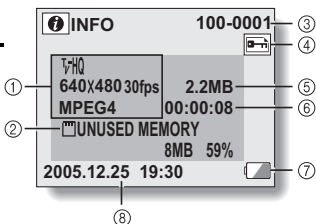
On the Information Screen you can check what the settings were when an image was captured.

1 Display the desired image.

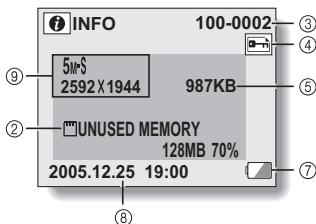
2 Press the MENU button for at about 2 seconds.

- The Information Screen appears.
- If the MENU button is pressed again, the Information Screen is canceled.

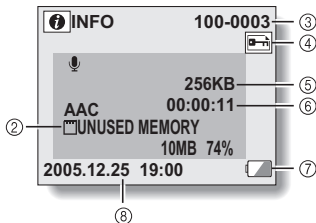
- ① Video clip mode settings
- ② Remaining card memory
- ③ Image or sound number
- ④ Protect setting
- ⑤ File size
- ⑥ Shooting or recording time
- ⑦ Remaining battery charge
- ⑧ Date and time of image
- ⑨ Still image resolution settings



<Video clip playback>



<Still image playback>



<Audio data playback>

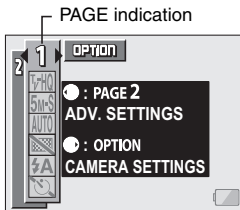
DISPLAYING THE OPTION SCREEN

The Option Screen is used to adjust various camera settings.

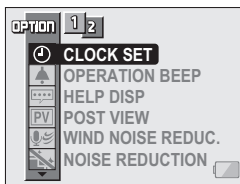
- 1 Turn on the camera, and press the **MENU** button.
 - The Shooting or Playback Setting Screen appears.

- 2 Toggle the **SET** button up or down to select the **PAGE** indication.

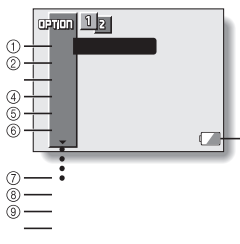
- 3 Toggle the **SET** button to the right.
 - The Option Screen appears.
 - The Option Screen is canceled if the **MENU** button is pressed.



- 4 Toggle the **SET** button down.
 - The menu appears.



Overview of the Option Screen



- ① **Date and time setting (page 115)**
 - Set the camera's internal clock.
- ② **Operation sounds setting (page 118)**
 - Adjust the operation sounds produced when the camera's buttons are pressed and turn the audio guide on or off.
- ③ **Help display setting (page 120)**
 - Turn the help display on or off.
- ④ **Post-view (page 121)**
 - Specify how long the captured image is displayed on the LCD monitor after the still image shooting button is pressed.
- ⑤ **Wind noise reduction setting (page 122)**
 - Set the wind noise reduction function on or off.
- ⑥ **Noise-reduction menu (page 123)**
 - Set the noise-reduction function on or off
- ⑦ **Flicker-reduction menu (page 124)**
 - Set the flicker-reduction function on or off
- ⑧ **Digital zoom setting (page 125)**
 - Enable or disable the digital zoom.
- ⑨ **Screen language (page 126)**
 - Select the language in which the LCD monitor messages are displayed.
- ⑩ **TV output settings (page 127)**
 - Select the type of video signal that is output from the camera's DIGITAL/AV terminal.
- ⑪ **Power save function (page 129)**
- ⑫ **File number reset (page 131)**
 - Select the file number reset function.
- ⑬ **Card format (page 134)**
 - Use the camera to format the memory card.
- ⑭ **Reset camera settings (page 136)**
 - Reset the camera to the factory-preset settings.
- ⑮ **Remaining battery power (page 139)**

* Icons ⑦ through ⑭ are displayed when you toggle the SET button up or down to scroll.

DATE AND TIME

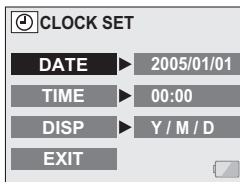
The camera will record the date and time an image or audio recording is taken so that you can display them during playback. Therefore, before capturing images, make sure the correct date and time are set.

Example: To set the clock to 7:30 p.m. on December 23, 2005

1 Display the Option Screen (page 113).

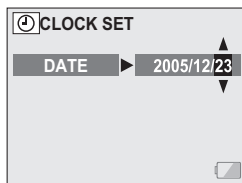
2 Select the clock set icon , and press the SET button.

- The Clock Set Screen appears.
- The current date and time settings are shown.
- Follow the procedures below to enable or disable the date display during playback, to set the display format for the date, and to set the date and time.
- To return to the Option Screen, press the MENU button, or select "EXIT" and press the SET button.



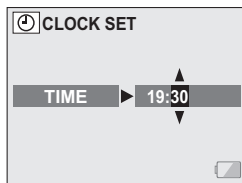
3 Set the date.

- ① Select "DATE".
- ② Press the SET button.
 - The Set Date Screen appears.
- ③ Set the date to "2005/12/23".
 - The date is set in the following order: Set the year → Set the month → Set the day.
 - Toggle the SET button left or right to select year, month or day. Toggle the SET button up or down to increase or decrease the number.
- ④ Press the SET button.



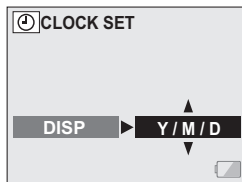
4 Set the clock.

- ① Select "TIME".
- ② Press the SET button.
 - The Set Time Screen appears.
- ③ Set the time to "19:30".
 - The time is set in the following order: Set the hour → Set the minute.
 - A 24-hour clock is used for the time display.
- ④ Press the SET button.



5 Set the order in which the date is displayed during playback.

- ① Select "DISP".
- ② Press the SET button.
 - The Set Date Format Screen appears.
- ③ Toggle the SET button up or down.



DATE AND TIME

- Toggle the SET button up to change the displayed date order as follows:

→ year/month/day → month/day/year → day/month/year → DISP OFF (no display)

Toggle the SET button down to change it in the reverse order.

- If “DISP OFF” is selected, the date the image was captured is not shown during playback.

- ④ Press the SET button.

6 Select “EXIT”, and press the SET button.

- The date and time setting is completed, and you are returned to the Option Screen.

NOTE

- Under normal conditions, while the battery pack is being replaced, an internal battery will maintain the date and time settings. However, there is a small chance the settings may be lost. (The backup will last for about 7 days.) It is recommended to check that the date and time settings are still correct after replacing the battery pack and before shooting or recording of any type (follow steps 1 and 2).

To correct the date and time settings

- After steps 1 and 2, select the line of the setting that you want to change, press the SET button, and follow the steps in the respective paragraphs above to change the setting.

OPERATION SOUNDS

This setting allows you to set whether or not a confirming audio signal sounds when the operation buttons (still image shooting button, SET button, MENU button, etc.) are pressed.

1 Display the Option Screen (page 113).

2 Select the operation beep icon , and press the SET button.

- The Operation Beep Setting Screen appears.
- The current settings are shown on the screen.
- If "ALL OFF" is selected and the SET button pressed, all the operation sounds are muted.
- If "EXIT" is selected and the SET button pressed, you are returned to the Option Screen.

TURN ON/OFF:

Mute or enable the sound that is produced when the power is turned on or off.

SHUTTER:

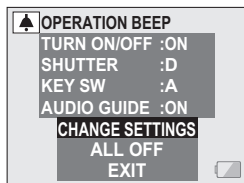
Select the sound that is produced when the still image shooting button is pressed, or when a photo is taken using the self-timer.

KEY SW:

Select the sound that is produced when the SET button, MENU button, etc. are pressed.

AUDIO GUIDE:

Mute or enable the camera's audio help guide.



OPERATION SOUNDS

3 Select “CHANGE SETTINGS”, and press the SET button.

- The screen to change the settings appears.

4 Toggle the SET button up or down to select the desired setting, and press the SET button.

- The screen to select operation sounds appears.

<If “TURN ON/OFF” or “AUDIO GUIDE” is selected

- The respective screen to enable or disable the sound appears.
- Toggle the SET button up or down to select the desired setting, and press the SET button.

ON:

Activates the sound.

OFF:

Deactivates the sound.

<If “SHUTTER” or “KEY SW” is selected

- The screen to select the operation sounds appears.
- Select from 8 different sounds (A to H).
- You can press the still image shooting button to preview the selected operation sound.
- If “OFF” is selected, no sound is produced.
- Toggle the SET button up or down to select the desired setting, and press the SET button.


HINT

- If you keep the MENU button pressed and turn on the power, the Operation Beep Screen appears at once. You may find this a convenient procedure to switch the setting in places you do not want the operation sounds to be audible.

HELP DISPLAY

You can set whether or not the help messages shown on the LCD monitor.

- 1** Display the Option Screen (page 113).

- 2** Select the help display icon  and press the **SET** button.

- The Help Setting Screen appears.
ON:
The HELP messages are enabled.
- **OFF:**
The HELP messages are disabled.



- 3** Toggle the **SET** button up or down to select the desired setting, and press the **SET** button.
- This completes the help display setting.

POST-VIEW SETTING

Specify the duration that the captured image appears on the LCD monitor (post-view) after the still image shooting button is pressed.

1 Display the Option Screen (page 113) .

2 Select the post-view icon , and press the SET button.

- The Post-view Screen appears.

OFF:

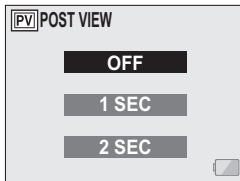
The post-view image is not displayed.

1 SEC:

The post-view image is displayed for 1 second.

2 SEC :

The post-view image is displayed for 2 seconds.



3 Select the desired setting, and press the SET button.

- This completes the post-view setting.

WIND NOISE REDUCTION

This feature reduces the ambient sound of the wind when you are recording a video clip or making an audio recording in a strong wind environment. Set the function to on or off.

1 Display the Option Screen (page 113).

2 Select the wind noise reduction icon , and press the SET button.

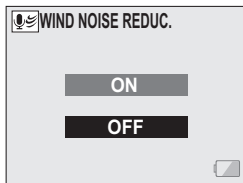
- The Wind Noise Reduction Screen appears.

ON:

The wind noise reduction function is turned on.

OFF:

The wind noise reduction function is turned off.



3 Select the desired setting, and press the SET button.

- This completes the wind noise reduction setting.

NOTE

- For normal shooting, set the wind noise reduction to "OFF". If the function is enabled when there is no wind, the audio during shooting and recording sounds unnatural.

NOISE-REDUCTION

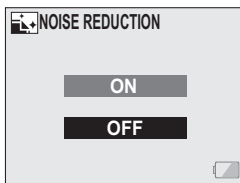
Use this setting to minimize noise in still images and produce a clear image.

1 Display the Option Screen (page 113).

2 Select the noise-reduction menu.

ON: The noise-reduction function is enabled.

OFF: The noise-reduction function is disabled.



3 Select the desired setting, and press the SET button.

- This completes the noise-reduction setting.

NOTE

- The noise-reduction function is effective when the shutter speed 1/4 second or less.
- Compared to normal shooting, the image processing time after shooting is slightly longer.

FLICKER-REDUCTION

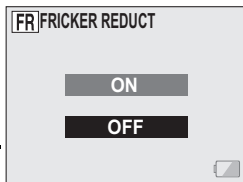
The flicker-reduction setting reduces the flicker that results when filming video clips under fluorescent lights and the like where the background lighting pulsates at the frequency of the power supply. The flicker-reduction setting is set to a frequency of 50 Hz.

1 Display the Option Screen (page 113).

2 Select the flicker-reduction menu.

ON: Turns on the flicker-reduction setting.

OFF: Turns off the flicker-reduction setting.



3 Select the **FR** icon from the flicker-reduction menu, and press the **SET** button.

- This completes the flicker-reduction setting.


HINT

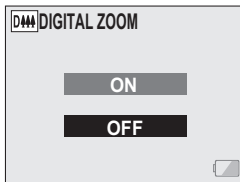
- If the flicker-reduction setting is used outdoors on a very bright day, a halation effect, which produces diffused rings of light around bright light areas, may occur.

DIGITAL ZOOM SETTING

This setting allows you to specify whether or not the digital zoom is enabled during zoom shooting.

1 Display the Option Screen (page 113).

- 2** Select the digital zoom icon , and press the **SET** button.
- The Digital Zoom Screen appears.
ON: Digital zoom can be used.
OFF: Digital zoom cannot be used.



- 3** Select the desired setting, and press the **SET** button.
- This completes the digital zoom setting.

SCREEN LANGUAGE

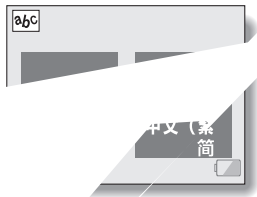
You can set the LCD monitor of your camera to display the messages in any one of eight languages.

1 Display the Option Screen (page 113).

2 Select the language icon , and press the SET button.

- The Language Screen appears.

DEUTSCH: Select for German.
ENGLISH: Select for English.
ESPAÑOL: Select for Spanish.
FRANÇAIS: Select for French.



Press the **SET** button.
The Option Screen.

TV OUTPUT SETTING

Specify the type of image signal that is output from your camera's DIGITAL/AV terminal.

1 Display the Option Screen (page 113).

2 Select the TV output settings icon , and press the SET button.

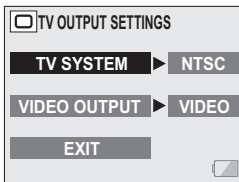
- The TV Output Setting Screen appears.

TV SYSTEM:

Set the type of TV signal.

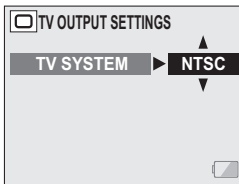
VIDEO OUTPUT:

Set the type of video signal.



3 Select the desired setting, and press the SET button.

- The screen to change the parameter for the selected setting appears.



<Example: TV SYSTEM>

4 Toggle the SET button up or down to select the desired parameter.
<If “TV SYSTEM” is selected>

NTSC:

Outputs NTSC video signals.

PAL:

Outputs PAL video signals.

<If “VIDEO OUTPUT” is selected>

VIDEO:

Outputs standard video signals.

S-VIDEO:

Outputs S-VIDEO signals.

5 Press the SET button.

6 Select “EXIT”, and press the SET button.
• This completes the TV output setting.

NOTE

When connecting to a standard video input terminal

- On your camera's Option Screen, set the “VIDEO OUTPUT” setting to “VIDEO”.
- Do not connect to a S-VIDEO input terminal, as doing so may cause the TV to automatically switch to the S-VIDEO input mode, and no image will appear on the TV monitor.

When connecting to an S-VIDEO input terminal

- On your camera's Option Screen, set the “VIDEO OUTPUT” setting to “S-VIDEO”.
- Do not connect to a VIDEO INPUT terminal, as doing so may cause the TV to automatically switch to the video input mode, and no image will appear on the TV monitor.

If no image appears on the TV...

- If the TV system setting or video output setting is not correct for the connected equipment, no image will appear on the TV.

When set to “PAL” and connected to a TV using the included S-AV interface cable (page 144)

Shooting: Images are displayed on the LCD monitor only and do not appear on the TV.

Playback: Images are displayed on the TV only and do not appear on the LCD monitor.

POWER SAVE FUNCTION

Your camera has a “power save” function whereby the power automatically turns off after a specified period of inactivity. The power save function works to conserve the battery pack power when the camera is not being used, or to prevent the battery pack from dying if the camera has accidentally been left on. You can specify the elapsed time (standby time) before the power save function is activated.

1 Display the Option Screen (page 113).

2 Select the power save icon [PS], and press the SET button.

- The Power Save Setting Screen appears.

BATT/CAM:

Set the standby time for the shooting modes when the battery pack is used.

BATT/PB:

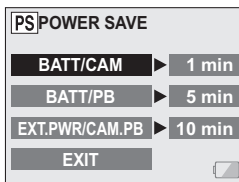
Set the standby time for the playback modes when the battery pack is used.

EXT.PWR/CAM.PB:

Set the standby time for the shooting and playback modes when using an AC power source.

EXIT:

Return to the Option Screen.



3 Select the desired option, and press the SET button.

- The Set Standby Time Screen appears.

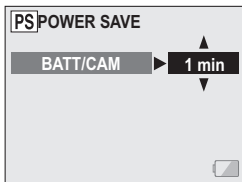
4 Toggle the SET button up or down to set the standby time.

Up:

Increases the standby time.

Down:

Decreases the standby time.



<Example: When “BATT/
CAM” is selected>

5 Press the SET button.

- The standby time is set, and you are returned to the Power Save Setting Screen.

FILE NO. RESET FUNCTION

If a newly formatted card is used, the file name (image number) of the captured image automatically begins from 0001. If the card is subsequently reformatted, or if a different reformatted card is used, the file names again begin from 0001. This is because the file number reset function is set to "ON", and consequently it results in more than one card containing images with the same numbers. By setting the file number reset function to "OFF", even if the card is reformatted or the card is replaced with another card, the consecutive numbering of file names continues from the last number recorded by the camera.

<File number reset function "ON">

	File name (image number)
Card A	0001, 0002 0012, 0013

:
Replace card
↓

Card B	0001, 0002 0012, 0013
--------	-----------------------------

<File number reset function "OFF">

	File name (image number)
Card A	0001, 0002 0012, 0013

:
Replace card
↓

Card B	0014, 0015 0025, 0026
--------	-----------------------------

- If Card B already has image data in it when it replaces Card A, file names are assigned as follows.

When the highest image number on Card B (before replacing) is lower than the highest image number on Card A: the file name of the next recorded image continues from last file name recorded on Card A.



When the highest image number on Card B (before replacing) is higher than the highest image number on Card A: the file name of the next recorded image continues from last file name recorded on Card B.



FILE NO. RESET FUNCTION

1 Display the Option Screen (page 113).

2 Select the file number reset icon .

3 Press the SET button.

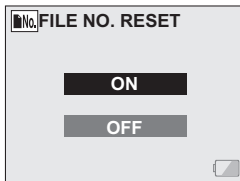
- The File Number Reset Screen appears.

ON:

The file number reset function is "ON".

OFF:

The file number reset function is "OFF".



4 Select "OFF", and press the SET button.

- The file number reset function is deactivated.

NOTE

- Until the file number reset function is turned "ON", consecutive file names are assigned. It is recommended that the file number reset function be returned to "ON" at the end of each photography session.

FORMATTING A CARD

The supplied card must be formatted with this camera. In addition, a card must be formatted with this camera:

- After purchasing, when used for the first time, or
- If it was formatted using a personal computer or another digital camera.

The card cannot be formatted if the lock switch is set to the "LOCK" position. Proceed with the format procedure after setting the lock switch to the unlocked position (page 26).

1 Display the Option Screen (page 113).

2 Select the format icon , and press the SET button.

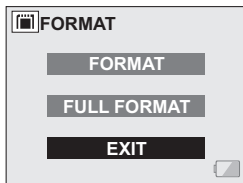
- The Format Screen appears.
- In normal use, a full format is not necessary. However, in case a card error occurs even after normal formatting, executing a full format may resolve the problem.

FORMAT:

A normal formatting is executed.

FULL FORMAT:

The entire card is scanned and formatted. (When there is little battery power remaining, this setting cannot be selected.)



FORMATTING A CARD

- 3** Select the desired format option, and press the SET button.
- A confirmation screen appears.

- 4** Select “YES”, and press the SET button.
- Formatting begins.
 - During formatting, “FORMATTING” and “DO NOT POWER OFF” are shown on the LCD monitor.

CAUTION

Caution during formatting

- Do not turn off the power to the camera or eject the card during formatting.

Formatting erases the data

- When a card is formatted, all data recorded on the card is erased. Protected data (page 92) is also erased, so before formatting a card, any data you want to keep should be copied to your personal computer's hard disk or other storage medium.

Can data be restored after a card is formatted?

- It may be possible to restore data from a formatted card by using application software designed to restore data. However, even such application software cannot restore data after a full format has been executed. It is recommended that a full format be executed before you dispose of a card or transfer it to someone else.

HINT

To cancel formatting

- In step 4, select “NO”, and press the SET button.

RESETTING THE CAMERA SETTINGS

Reset the camera to the factory-preset settings.

1 Display the Option Screen (page 113).

2 Select the reset settings icon , and press the SET button.

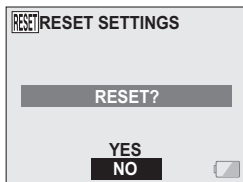
- The Reset Settings Screen appears.

YES:

Reset to the factory-preset settings.

NO:

Do not change the settings, and return to the Option Screen.



3 Select "YES", and press the SET button.

- The camera settings are reset to the factory-preset settings.

HINT

- Note that the following settings do not change with this procedure:
 - Date and time setting
 - Language setting
 - TV system setting

CHECKING THE REMAINING CARD MEMORY

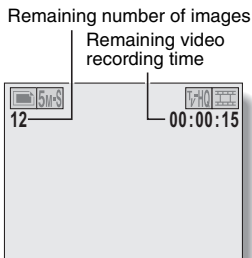
You can check how many images can be captured and how much recording time is available on the card. For a table showing the maximum number of images and recording time for specific cards, please see “Possible No. of Images/Possible Shooting Time/Possible Recording Time” on page 183.

Checking the remaining number of images and video recording time

1

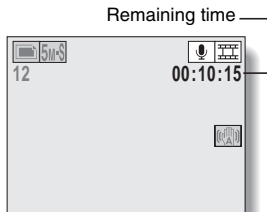
Set the main switch to REC, and turn on the camera (page 40).

- The remaining number of images appears in the upper left of the LCD monitor.
- The remaining video recording time appears in the upper right of the LCD monitor.
- The remaining number of images and video recording time will differ depending on the resolution and compression settings.
- When the remaining number of images or the remaining video recording time is “0”, you cannot capture any more images. To capture more images, either install a new card, or save the images to a computer and then erase them (page 94) from the card.
- When the remaining number of images or the remaining video recording time is “0”, it may be possible to capture a few more images by setting a lower resolution setting (pages 67 and 68), or selecting a different image quality setting.



For audio data


- 1 Set the camera to the audio recording mode (page 53).**
 - The remaining audio recording time is shown.

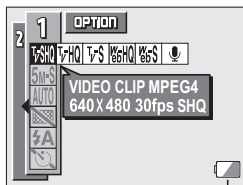


CHECKING THE REMAINING BATTERY PACK CHARGE





When using the battery pack, the remaining battery pack charge can be checked on the LCD monitor. Make sure to check this indicator before capturing an image. For an indication of the possible length of time for battery pack operation, see page 182.

1 Display a Shooting or Playback Setting Screen (pages 61 and 85).

- The battery pack remaining charge indicator appears in the lower right corner of the LCD monitor.
- Due to the battery pack characteristics, when the ambient temperature is low,  may appear early for an incorrect indication of the remaining charge. Also, depending on the conditions of use of the camera or the ambient conditions (temperature, etc.), the indicated remaining charge may change. Therefore, this indication can only be used as a general approximation of the remaining charge.



Battery pack remaining charge indicator

Battery pack remaining charge indicator	Battery remaining charge
	Approx. full.
	Power is low.
	It will soon be impossible to capture or play back images.
	If this icon flashes when the still image shooting button or video clip recording button is pressed, images cannot be captured. Recharge the battery pack.

HINT

- If any data is present, you can also check the remaining battery pack charge on the Playback Screen.
- Use only the supplied or separately sold battery pack in this camera.
- Battery life may differ even among battery packs of the same type.
- Depending on the usage of the camera (such as the number of times the flash is used, the use of the LCD monitor, etc.) or the ambient temperature (temperatures below 10°C [50°F]) the number of images that can be saved on a fully charged battery pack will vary greatly.

NOTE

- It is recommended that you prepare an extra battery pack(s) when taking pictures at a wedding or while traveling, for example, so you don't miss capturing images of important moments due to the battery pack power running out. The same is recommended for taking photos in cold environments. (In a ski area, for example, the battery pack can be kept warm in your pocket until ready to use.)

CONNECT THE DOCKING STATION

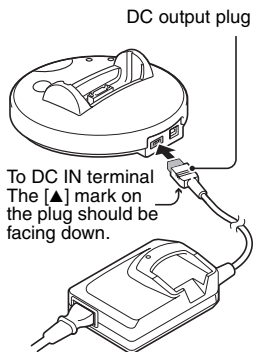
Set your camera in the supplied docking station to recharge the battery pack as well as for easy connection to a computer, printer or TV. A remote control unit is provided for even easier operation of your docked camera (playback only).

CAUTION

Gently connect and disconnect the cable

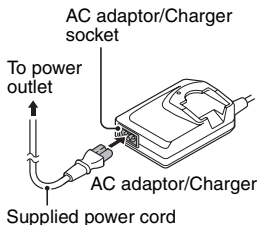
- When connecting and disconnecting the cable, please do so with a gentle touch. Exerting a strong pull on the cable or connector may damage them.

-
- 1 Use the supplied AC adaptor/charger to connect the DC IN terminal on the docking station to a power outlet.**



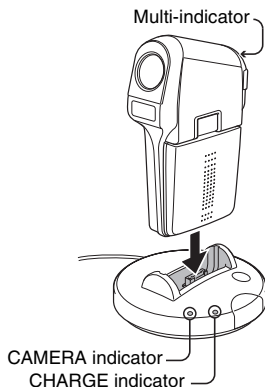
-
- 2 Connect the supplied power cord to the AC adaptor/charger socket.**

-
- 3 Plug the power cord into an electrical outlet.**



SET THE CAMERA IN THE DOCKING STATION

- 1** Close the camera's monitor unit, and set it in the docking station.
- Note the camera's orientation and the position of the docking station terminals, and insert the camera firmly.
 - Recharging begins as soon as the camera is set in the docking station.
 - During charging, the CHARGE indicator lights red. When charging is complete, the CAMERA indicator lights green.
 - If there is a battery malfunction or if the camera is incorrectly set in the docking station, the CHARGE indicator flashes red, and the docked camera's multi-indicator flashes red. Set the camera in the docking station correctly.

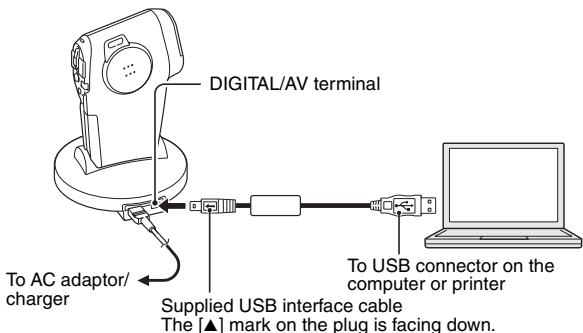


CONNECTING TO OTHER EQUIPMENT

Connecting to a computer or printer

Use the supplied USB interface cable to connect the DIGITAL/AV terminal of the docking station to the USB terminal of a computer or printer.

- Connect the dedicated USB interface cable to your computer's USB connector. Do not connect it to the USB port on your monitor or keyboard, or to the USB hub. Be especially careful when installing the driver software. In some instances, it may not be possible to correctly install the driver software.
- Please refer to the included SANYO Software Pack instruction manual for information regarding operating your camera from a computer.

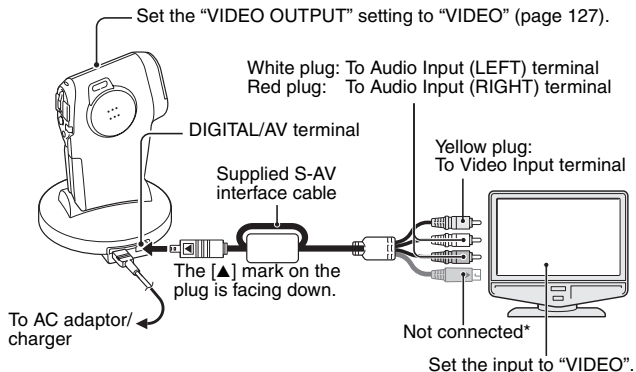


Connecting to a TV

Use the supplied S-AV interface cable to connect the docking station to the TV.

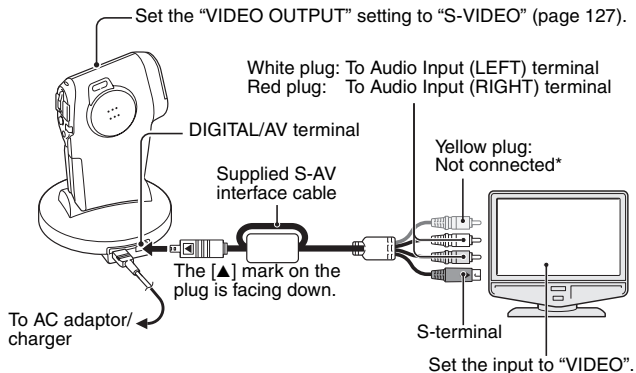
- When the camera's monitor unit is closed and the camera is set in the docking station, press the CAMERA/CHARGE button on the docking station to light the CAMERA indicator.
- The remote control unit can be used for playback (page 145).
- The same playback procedure as when playing back with the camera is used to play back audio recordings as well.

<When connecting to a standard video input terminal>



*** When connected, no image appears on the TV monitor.**

<When connecting to an S-VIDEO video input terminal>

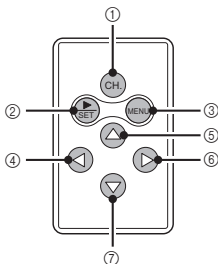


*** When connected, no image appears on the TV monitor.**

PREPARING AND USING THE REMOTE CONTROL UNIT

Use the supplied remote control unit to play back data from the docked camera.

Remote control unit button operation

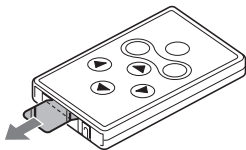


- ① **CH. (channel)**
 - Switch the remote control code (page 148).
- ② **SET**
 - Same operation as the camera's SET button.
- ③ **MENU**
 - Same operation as the camera's MENU button.
- ④ **[◀]**
 - Works the same as toggling the camera's SET button to the left.
- ⑤ **[▲]**
 - Works the same as toggling the camera's SET button up.
- ⑥ **[▶]**
 - Works the same as toggling the camera's SET button to the right.
- ⑦ **[▼]**
 - Works the same as toggling the camera's SET button down.

Prepare the remote control unit

The remote control unit comes with the battery already installed at the time of purchase.

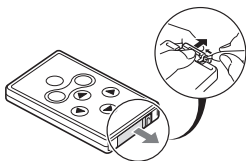
- 1 Pull out and remove the protective battery insulating sheet.**
 - The remote control unit becomes operative when the insulating sheet is removed.



Replacing the remote control unit battery

The life of the lithium battery will depend on your use of the remote control unit, but as a general guideline, it will require replacement about once a year. Follow the steps below to replace the CR2025 Lithium battery (sold commercially).

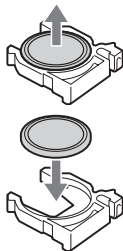
- 1 Pull out the battery holder from the remote control unit.**
 - Push in the tab to release the battery holder, and then pull it out.



- 2 Remove the battery.**

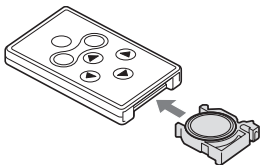
- 3 Insert a new battery (CR2025) in the holder.**

- Wipe the new battery with a soft, dry cloth, and then insert it with the (+) mark facing downward.



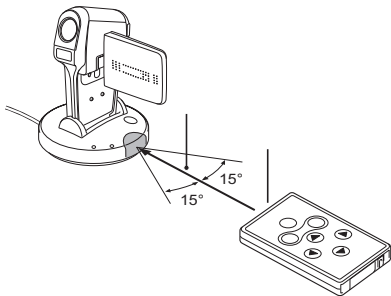
PREPARING AND USING THE REMOTE CONTROL UNIT

- 4** Reinsert the battery holder in the remote control unit.



How to use the remote control unit

The remote control unit can be used at an angle that is displaced 15 degrees horizontally from the remote control sensor on the front of the docking station, at a distance of up to 7 meters.



CAUTION

- If the remote control unit is operated in sunlight or under inverter lighting, the remote control receiving range may become shorter. This is a characteristic of the infrared remote control unit and is not a defect. To avoid this malfunction when operating the remote control unit, take care to shield the remote control sensor from strong light.

Changing the remote control code

The remote control unit will also work with other Sanyo cameras that can be operated by infrared remote control. When more than one camera is present, it is recommended to change the remote control code to ensure that only the intended camera operates when the remote control unit is used. The remote control code is set to "RC CODE 1" at the time of purchase.

<Changing the remote control code from "RC CODE 1" to "RC CODE 2">

1 Aim the infrared emitter at the remote control sensor on the docking station.

2 Hold down the CH button and press the [▲] button for about 3 seconds.

3 Press a button on the remote control unit and check that the camera is receiving correctly.

- The remote control codes are retained even if the batteries in the remote control unit and camera are replaced.
- If the remote control codes for the remote control unit and the camera and do not match, the remote control unit cannot be used to operate the camera.

<Resetting the remote control code to "RC CODE 1">

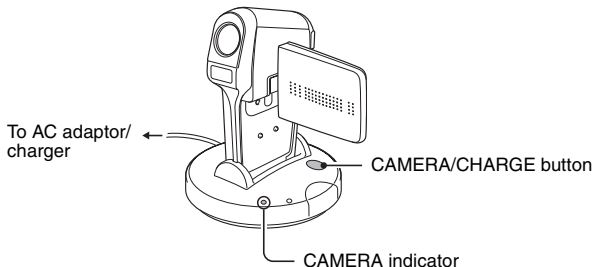
1 Aim the infrared emitter at the remote control sensor on the docking station.

2 Hold down the CH button and press the [▼] button for about 3 seconds.

PLAYBACK WITH THE DOCKING STATION

- 1** Connect the docking station to a TV, and set the camera in the docking station (page 144).

- 2** Press the **CAMERA/CHARGE** button to turn on the camera lamp.



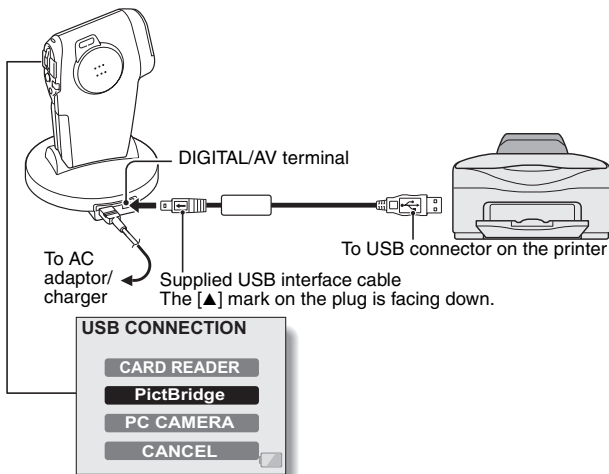
- 3** Set the TV input switch to **VIDEO** input.
 - If the camera is set to the playback mode (page 55), the Playback Screen appears on the TV monitor. The playback method is the same as when viewing images on the LCD monitor.

DIRECT PRINTING

Your camera supports the PictBridge function. By connecting the camera directly to a PictBridge-enabled printer, the camera's LCD monitor can be used to select images and initiate printing (PictBridge printing).

Print preparations

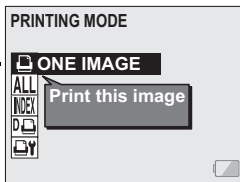
- 1 Install the card in the camera, and open the monitor unit to turn on the camera.
- 2 Use the supplied docking station or adaptor to connect the camera to the printer (pages 143 and 159).



DIRECT PRINTING

- 3** Select “PictBridge”, and press the SET button.

- 4** The PictBridge printing mode is activated.
- The camera switches to the PictBridge printing mode, and the PictBridge Screen appears.



CAUTION

Do not turn off the power to the printer while it is connected.

- If the power to the printer is turned off while it is connected, the camera may not operate correctly. If the camera does not operate correctly, disconnect the USB interface cable, turn off the camera, and then reconnect the cable.
- During PictBridge printing, the camera's button operation response is slower.
- If the camera is powered by batteries for printing, make sure that the remaining battery charge is sufficient.

To select one image and print it (one image)

Procedure to select one still image and print it.

1 Complete the printing setup (page 150).

2 Select the one image icon , and press the SET button.

- The screen to select images for printing appears.

3 Toggle the SET button to the left or right to display the image you wish to print.

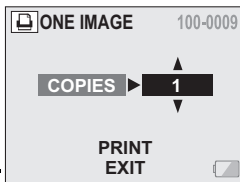
- Specify the image to print.



DIRECT PRINTING

4 Specify the number of prints.

- ① Select "COPIES", and press the SET button.
- ② Toggle the SET button up or down to specify the number of prints.
- ③ Press the SET button.
 - "PRINT" is selected.



5 Press the SET button.

- Printing begins.

NOTE

To cancel printing

- During printing, toggle the SET button down.
 - The Confirm Cancel Printing Screen appears.
- Select "YES", and press the SET button.
 - If "EXIT" is selected and the SET button is pressed, printing resumes.

To print all the images (all images)

Print all of the images on the card.

1 Complete the printing setup (page 150).

2 Select the all images icon **ALL**, and press the **SET** button.

- The Print All Images Screen appears.

3 Select “**PRINT**”, and press the **SET** button.

- Printing begins.



CAUTION

Printing is not possible if there are more than 999 still images in the card.

- Delete unwanted images before printing.

DIRECT PRINTING

Thumbnail prints (index)

Make an index print of all the images on the card.

1 Complete the printing setup (page 150).

2 Select the index print icon , and press the **SET** button.

- The Index Print Screen appears.

3 Select **"PRINT"**, and press the **SET** button.

- Printing begins.

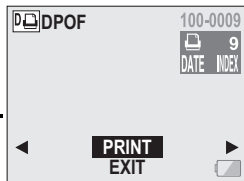


To print the images that are set to print (print reserved images)

Procedure to print all the images that are set to print.

- 1** Make the print settings (page 105), and complete the printing setup (page 150).

- 2** Select the DPOF icon , and press the SET button.
 - The Confirm Print Images Screen appears.




- 3** Select "PRINT", and press the SET button.
 - Printing begins.
 - Printing begins about 1 minute after the SET button is pressed.

HINT

- In step 2, if you toggle the SET button to the left or right, you can confirm the images that are set to print and their DPOF settings.

NOTE

- Reserved images printing  is not possible if a printer is used that does not support your camera's DPOF function.

DIRECT PRINTING

To change the printer settings and print images (change printer settings)

Images are printed according to settings specified by the camera, such as paper type, size, layout, printing quality, etc.

1 Complete the printing setup (page 150).

2 Select the printer settings icon , and press the **SET** button.

- The Printer Settings Screen appears.

MEDIA TYPE:

Specify the type of paper used for printing.

PAPER SIZE:

Specify the size of paper used for printing.

LAYOUT:

Specify how the images are to be arranged on the paper.

QUALITY:

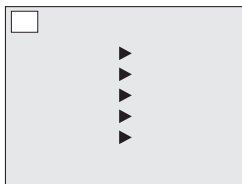
Select the print quality for the images.

DATE STAMP:

Print the date the photo was taken.

EXIT:

Return to the PictBridge Screen.



3 Adjust the printer settings.

- ① **Toggle the SET button up or down to select a printer setting parameter, and press the SET button.**
 - The screen to set the selected parameter appears.
 - ② **Toggle the SET button up or down to adjust the setting, and press the SET button.**
 - The selected parameter is set, and you are returned to the Printer Settings Screen.
 - Follow the same procedure to adjust the other parameters, as desired.
 - The contents of the settings that can be made for each parameter will differ depending on the printer.
- <When “PRINTER VALUE” is selected>**
- The images will be printed according to the settings specified on the printer side.

4 Select “EXIT”, and press the SET button.

- You are returned to the Printing Mode Screen.

NOTE

- The printer setting parameters will differ depending on the printer that is connected.
- To use printer functions which do not appear on your camera's Printer Settings Screen, select “PRINTER VALUE”.
- If a function set by the camera is not available in the printer, the camera's printer settings will automatically change to “PRINTER VALUE”.

CONNECTIONS

Using the supplied adaptor, you can connect the camera to a computer, printer, TV or AC adaptor/charger, etc., without using the docking station.

-
- 1 Attach the adaptor to the docking station terminal on the bottom of the camera.**
-

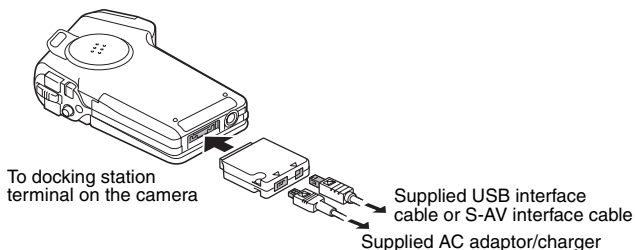
- 2 Various devices can be connected to the adaptor terminals.**
-

DC IN terminal:

Connect the supplied AC adaptor/charger.

DIGITAL/AV terminal:

Connect to a computer, printer or TV.



NOTE

The remote control unit cannot be used.


- Unlike when using the camera in the docking station, when the adaptor is connected, the remote control unit cannot be used to operate the camera. To play back data from the camera, use the operation buttons on the camera.

The battery cannot be recharged.

- When recharging the battery pack that is installed in the camera, set the camera in the docking station. To recharge the battery pack without using the docking station, remove the battery pack from the camera and set it in the AC adaptor/charger to recharge it.


COMMONLY ASKED QUESTIONS

If you have a question about the camera operation, you might find the answer in this compilation of commonly asked questions.

	Question	Answer	Action
Power	Why doesn't the power turn on?	Due to cold temperatures, the battery pack temporarily lost its power.	Place the camera in your pocket to warm it up before using it.
	Why is the battery pack consumed so quickly even after it was fully recharged?	The ambient temperature is very low.	Keep the battery pack in an environment of 10 to 40°C (50 to 104°F).
	Why doesn't recharging end?	The battery pack life has expired.	Replace with a new battery pack. If this is not effective, consult your dealer.
	Why does the  icon appear?	The remaining battery pack power is low.	Use the supplied AC adaptor/charger, or replace the battery pack with a fully charged one.
Shooting	Why does the multi-indicator flash red?	Recorded data is being saved on the card.	Not a malfunction. Wait until the multi-indicator turns off.
	Why doesn't the flash operate?	The camera has determined that the image is bright enough and the flash is not necessary.	Not a malfunction. Capture the image; the camera will determine when the flash is necessary.

COMMONLY ASKED QUESTIONS

	Question	Answer	Action
Shooting	Are the settings retained even after the camera is turned off?	—	All settings except the self-timer and the exposure correction are retained even after the camera is turned off.
	Which resolution setting should I use?	—	Select the resolution setting according to the intended use: 5M-S 5M-H 10M : Appropriate for printing letter-size or larger, and for printing a close-up of part of a photo (trimming). 2M : For printing standard photo (photo service) sizes. 0.3M : For photos displayed on a web page, or sent as e-mail attachments.
	What is the difference between the digital zoom and the optical zoom?	—	Because shooting with the optical zoom uses the optics of a physical lens, you can shoot without losing minute details in the image. The digital zoom, on the other hand, works by magnifying a portion of the image that hits the CCD sensor and may produce a coarser image.

	Question	Answer	Action
Shooting	How can I get the distant view into focus?	—	Set the scene select function to the landscape  mode when photographing. Or, set the focus range setting to manual focus [MF], and set the distance to ∞.
	The video clip I shot outdoors is completely white.	—	Set the flicker-reduction setting to off.
LCD monitor	When used in cold weather, why does the image seem to leave traces as it moves?	Condition due to the liquid crystals.	Not a malfunction. Spots that appear in the LCD monitor only appear in the monitor and will not be recorded with the images.
	Why does the displayed image contain some red, blue and green dots, or black spots are visible?		

COMMONLY ASKED QUESTIONS

	Question	Answer	Action
Viewing images	Why is the image too bright?	The subject was too bright.	When capturing an image, devise a way to compensate for a bright subject, for example, by changing the shooting angle.
	Why is the image out of focus?	The focus is not locked properly.	Hold the camera correctly and slowly press the still image shooting button halfway to lock the focus. Then press the still image shooting button all the way to capture the image.
	Why is a part of the image missing?	The image was captured at close range.	When capturing an image at close range, compose the image using the LCD monitor.
	Why is there no image (□ is shown)?	This may happen when trying to play back images stored on a card from a different digital camera.	Play back images that were recorded on a card using this camera.
	Why do vertical stripes appear?	If a bright subject is shot in the video clip shooting mode, vertical stripes may appear on the LCD monitor or in the image.	Not a malfunction.

	Question	Answer	Action
Viewing images	Why isn't the magnified image clear?	Due to the characteristics of the camera, magnified images appear less clear.	Not a malfunction.
	Why isn't the captured image clear?	The image was captured using the digital zoom.	Not a malfunction.
	Can I play back image and sound data that I edited using my computer?	—	We cannot guarantee the accurate playback of data that has been edited using a computer.
	Why is there a motor-like sound during video clip playback?	The sound of the camera's mechanical action was recorded.	Not a malfunction.
Connecting to a TV	Why is there no sound?	The volume on the TV is set to the minimum.	Adjust the volume on the TV.
		The volume of the camera is set to 0.	Increase the playback volume of the camera.
Printing	Why does a message appear during PictBridge printing?	There is a problem with the printer.	Please refer to the instruction manual for your printer.

COMMONLY ASKED QUESTIONS

	Question	Answer	Action
Misc.	The "CAN NOT EDIT VIDEO" message appears.	You have attempted to join video clips having different resolutions or frame rates.	Select video clips that have the same resolution or frame rates.
	Why is a noise heard from a nearby TV or radio during battery recharging?	Electromagnetic waves are emitted from the AC adaptor/charger.	Move the AC adaptor/charger further away from the TV or radio when recharging batteries.
	Why does the "CARD FULL" message appear?	There is no more available memory on the card.	Erase unnecessary data, or use a card that has more memory available.
	Why does the "CARD IS PROTECTED" message appear?	The lock switch on the card is in the locked (protect) position.	Move the lock switch to the unlocked position.
	Why can't the camera be operated?	A temporary internal circuitry problem may be the cause.	Remove the battery pack from the camera, wait a few minutes, then reinstall the battery pack and try again.

	Question	Answer	Action
Misc.	Can I use my camera abroad?	—	When the camera is connected to a TV, you can switch the camera's video output to NTSC or PAL. If you have questions about using the AC adaptor/charger and power cord abroad, please consult with a dealer near you for advice.
	Why does the "SYSTEM ERROR" message appear?	A problem has occurred within the camera or card.	<p>Check the following items:</p> <ul style="list-style-type: none"> ① Remove the card and then install it again. ② Remove the batteries and then install them again. ③ Install a different card. <p>If "SYSTEM ERROR" still appears after performing the above steps, then take the camera to the dealer for service.</p>

TROUBLESHOOTING

Before taking your camera to the repair shop, check the following table for a possible solution to the problem.

CAMERA

	Problem	Cause	Action	Reference page
Power	No power.	The battery pack is dead.	Recharge the battery pack, or replace with a new battery pack.	35, 37
		The battery pack has not been inserted correctly.	Reinsert the battery pack, making sure to orient it correctly.	
		The battery compartment cover is not fully closed.	Close battery compartment cover properly.	
	The camera turns off by itself.	The power save function is operating.	Turn on the camera again.	40

	Problem	Cause	Action	Reference page
Power	The camera is set in the docking station, but it does not recharge.	A battery pack is set in the AC adaptor/charger.	If a battery pack is set in the AC adaptor/charger, the battery pack in the AC adaptor/charger is recharged first, after which the battery pack in the camera starts to recharge. To speed up recharging of a battery pack, set it in the AC adaptor/charger.	—
Shooting	An image is not captured when the still image shooting button or video clip recording button is pressed.	The power is not turned on.	When the power save function is active, after pressing one of the buttons to turn on the camera, if the shooting power is off, press the ON/OFF button to turn it on.	40



TROUBLESHOOTING

	Problem	Cause	Action	Reference page
Shooting	An image is not captured when the still image shooting button or video clip recording button is pressed.	The maximum number of images that can be captured or the maximum video clip recording time has been reached.	Install a new card.	38
			Erase the images that are not necessary. Save the images to separate media, then erase all the images from the card.	94
	The flash does not operate.	The flash off mode is selected.	Set the flash to automatic flash mode or forced flash mode.	72
		The battery pack is dead.	Recharge the battery pack, or replace with a new battery pack.	35, 37
	The digital zoom does not work.	The still image mode is set to [10M] . The digital zoom setting is set to "OFF".	Set the still image mode to [5M+H] . Set the digital zoom setting to "ON".	68, 125
	A warning tone (beep-beep-beep) sounds, and it is not possible to take a picture using the self-timer.	The battery pack is consumed.	Install a sufficiently recharged battery pack.	35, 37

	Problem	Cause	Action	Reference page
Shooting	When zooming in or out, the zoom movement stops momentarily.	The optical zoom has moved to the maximum magnification position.	Not a malfunction. Release the zoom switch, and press it again.	51
	There is noise in the captured image.	The ISO sensitivity setting is too high.	Set the ISO sensitivity to a lower setting.	82
LCD monitor	No playback image appears.	The main switch is not set to PLAY.	Set the main switch to PLAY.	55
Viewing images	The image is too dark.	The flash was blocked by a finger or other object.	Hold the camera correctly, and make sure the flash is not obstructed.	44
		The subject was too far away.	Capture the image in the range of operation of the flash.	181
		The subject was lit from behind.	Use the forced flash mode.	72
			Use the exposure correction function.	52
		There is not enough light.	Adjust the ISO sensitivity setting.	82

TROUBLESHOOTING

	Problem	Cause	Action	Reference page
Viewing images	The video clip picture is flickering.	The video clip was filmed under fluorescent lighting.	Set the flicker-reduction setting to on.	124
	The image is too bright.	The forced flash mode is selected.	Select a different flash mode.	72
		The subject was too bright.	Use the exposure correction function.	52
		The ISO sensitivity setting is incorrect.	Set the ISO sensitivity to [ISO-A] .	82
	The image is not in focus.	The subject is too close to the camera.	Select the correct focus setting for your needs.	49, 78
		The focus setting is not correct.		
		The camera moved when the still image shooting button was pressed.	Hold the camera correctly and slowly press the still image shooting button halfway to lock the focus. Then press the still image shooting button all the way to capture the image.	44, 49
		The focus is not locked properly.		
		The lens is dirty.	Clean the lens.	22

	Problem	Cause	Action	Reference page
Viewing images	The colors of the images captured indoors are not correct.	This is due to ambient lighting.	Capture the image using the forced flash mode.	72
		The white balance setting is incorrect.	Set the white balance setting correctly.	83
	A part of the image is missing.	The neckstrap or a finger was blocking the lens or lens opening.	Hold the camera correctly, and make sure the lens is not obstructed.	44
	"NO IMAGE" is shown.	There is no recorded data for the selected playback mode.	Play back after capturing images or making audio recordings.	47
	During audio playback, there is no sound.	The volume setting on the camera is too low.	Select the volume icon  and adjust the volume.	90
Connecting to a TV	No image or sound.	The digital camera is not correctly connected to the TV.	Follow the instructions to make the connection correctly.	144
		The TV input is not set correctly.	Set the input on the TV to "VIDEO".	
	There is no sound.	The volume setting on the camera is too low.	Select the volume icon  and adjust the volume.	90
	The edge of the image is cut off.	This is a characteristic of the TV.	Not a malfunction.	—

TROUBLESHOOTING

	Problem	Cause	Action	Reference page
Image editing	You cannot edit or rotate an image.	The protect mode is set.	Cancel the protect mode.	92
Charging	The battery pack is installed in the AC adaptor/charger, but it is not being recharged.	The battery pack is not correctly oriented in the AC adaptor/charger.	Position the battery pack correctly in the AC adaptor/charge as indicated.	37
	The camera is set in the docking station but the installed battery is not being recharged.	The AC adaptor/charger is not connected to the docking station.	Check that the power cord of the AC adaptor/charger is connected correctly.	141
		The camera is not correctly connected to the docking station.	When inserting the camera in the docking station, push down on it to make sure that the connection between the camera and the docking station is secure.	142

	Problem	Cause	Action	Reference page
Charging	The camera is set in the docking station but the installed battery is not being recharged.	A battery pack is also installed in the AC adaptor/charger. * In this case, the battery pack installed in the charger will be recharged first, after which the battery pack installed in the camera will be recharged.	If you wish to begin recharging the battery pack in the camera immediately, remove the battery pack from the AC adaptor/charger.	36, 141, 142
	The camera is set in the docking station but the installed battery is not being recharged.	The camera is on, but the docking station is in the camera mode.	Press the CAMERA/CHARGE button on the docking station to light the CHARGE indicator.	142

TROUBLESHOOTING

	Problem	Cause	Action	Reference page
Misc.	The "NO CARD" message appears.	No card is inserted.	Turn off the power and insert a card.	38
	The "PROTECTED" message appears and the data cannot be erased.	You have attempted to erase data that is protected from accidental erasure.	Set the protect setting for the data to OFF.	92
	The audio guide does not sound.	The audio guide setting is set to "OFF".	Set the audio guide setting to "ON".	118
	When a 1GB card is used, the recording capacity is less than that indicated in the section "Possible No. of Images/ Possible Shooting Time/ Possible Recording Time".	The recording capacity of the card is less than 1GB.	Depending on the card, the capacity may be less than 1GB. Please refer to the instructions that accompanied the card.	183

DOCKING STATION













	Problem	Cause	Action	Reference page
Remote control unit	The remote control unit does not seem to work.	The remote control unit is aimed at the TV (not at the docking station).	Aim the remote control unit at the remote control sensor on the docking station (within a range of about 30 degrees horizontally from the docking station).	146, 147
		Something is obstructing the space between the remote control unit and the remote control sensor on the docking station.	Remove or move the obstructing object.	
		The remote control unit battery is consumed.	Replace with a new battery.	
		The remote control unit battery is not correctly inserted.	Take care that the (+) and (-) poles are correctly oriented.	

TROUBLESHOOTING




	Problem	Cause	Action	Reference page
Remote control unit	The remote control unit does not seem to work.	The remote control unit is too far from the remote control sensor on the docking station.	Operate the remote control unit from a position up to 7 meters from the docking station.	146, 147
	The remote control unit does not seem to work.	The remote control codes for the remote control unit and the docking station are different.	Change the remote control code.	148

Notes regarding the Scene Select feature and filters





Scene Select

Setting	Remarks
Sports 	Focus range:  cannot be selected.
Portrait 	
Landscape 	
Night view 	
Fireworks 	Focus range: Fixed at  . Flash: Fixed at  .
Lamp 	Resolution: Fixed at 0.3M . Flash: Fixed at  . Focus range:  cannot be selected. Noise-reduction: Fixed at  .

Filter

Setting	Remarks
Monochrome 	Resolution: 10M cannot be selected. Focus range:  cannot be selected.
Sepia 	

About the scene select function and focus range settings

- The scene select function changes to **AUTO** when the focus range is set to .
- Even if you set the focus range to ,  or **MF**, it changes to  when the scene select function is set to anything other than **AUTO**.


SPECIFICATIONS

Camera

Type	Digital Movie Camera (recording and playback)
Recorded image file format	<p>Still images: JPEG format (DCF, DPOF, Exif 2.2 compliant) Note: Designed mainly by the Japan Electronics and Information Technology Industries Association (JEITA), DCF (Design rules for Camera File system) is standard for digital still camera image files to provide interoperability between digital photography devices for the images stored on removable memory cards. However, it is not guaranteed that all devices will support the DCF standard.</p> <p>Video clips: Conforms to ISO-standard MPEG-4 format</p> <p>Audio: MPEG-4 audio (AAC compression) 48 kHz sampling rate, 16-bit stereo format</p>
Data storage media	SD Memory Card
Camera effective number of pixels	Approx. 5.1 Megapixels
Image sensor	1/2.5-inch CCD Virtual number of pixels: Approx. 5,260,000 pixels, interlace scan, primary color filter
Still image shooting mode (recording resolution)	<p>10M: 3,680 × 2,760 pixels</p> <p>5M-H: 2,592 × 1,944 pixels (low compression)</p> <p>5M-S: 2,592 × 1,944 pixels (normal compression)</p> <p>2M: 1,600 × 1,200 pixels</p> <p>0.3M: 640 × 480 pixels</p>

Video clip shooting mode (recording resolution, frame rate, bit rate)	<p> : 640 × 480 pixels, 30 fps 3 Mbps : 640 × 480 pixels, 30 fps 2 Mbps : 320 × 240 pixels, 30 fps 640 kbps : 320 × 240 pixels, 15 fps 384 kbps : 176 × 144 pixels, 15 fps 256 kbps * The 30 fps frame rate of this camera is 29.97 fps, and the 15 fps frame rate is 14.985 fps. </p>	
White balance	Full-auto TTL, manual setting possible	
Lens	Optical 5.0x zoom lens	<p>f=6.3 mm to 31.7 mm (35 mm film camera conversion f=38 mm to 190 mm)</p> <p>Autofocus, 9 groups, 12 elements (including three with five aspheric surfaces)</p> <p>Galvanometer iris</p> <p>Internal ND filter</p>
Aperture	<p>Open F=3.5 (Wide) to 4.7 (Tele)</p> <p>Smallest F=8.0 (Wide) to 10.7 (Tele)</p>	
Exposure control type	<p>Programmable AE</p> <p>Exposure correction available from the Shooting Setting Screen (0±1.8EV in 0.3EV steps)</p>	
Light-measuring mode	Multi-section measuring, center-weighted measuring, spot measuring	
Range	<p>Total mode:</p> <p>10 cm (3.94 in.) to infinity (Wide end)</p> <p>80 cm (31.50 in.) to infinity (Tele end)</p> <p>Standard mode:</p> <p>80 cm (31.50 in.) to infinity</p> <p>Super Macro mode:</p> <p>1 cm (0.39 in.) to 80 cm (31.50 in.) (Wide end only)</p>	
Digital zoom	<p>For shooting:</p> <p>1x to approx. 12x</p> <p>For playback:</p> <p>1x to 58x (varies with resolution)</p>	
Shutter speed	<p>Still image shooting mode: 1/2 to 1/2,000 sec. (Maximum approx. 4 seconds when scene select function set to lamp)</p> <p>(During flash: 1/30 to 1/2,000 sec.)</p> <p>Video clip shooting mode: 1/30 to 1/10,000 sec.</p>	

SPECIFICATIONS

Sensitivity	<p>Still image shooting mode: Auto (equivalent to ISO50 to 200)/equivalent to ISO50, ISO100, ISO200, and ISO400 (switchable from Shooting Setting Screen) (Maximum ISO sensitivity up to 800 variation: when scene select function is set to lamp ) Video clip shooting mode: Auto (equivalent to ISO200 to 400)/equivalent to ISO200, ISO400, and ISO800 (switchable from Shooting Setting Screen)</p>	
Image stabilizer	Electronic	
LCD monitor	2.0-inch low-temperature polysilicon TFT color liquid crystal display, translucent Approx. 210,000 pixels (Frame coverage: Approx. 100%)	
Flash working range	GN = 3 Approx. 10 cm (3.94 in.) to 1.2 m (3.94 ft.) (Wide) Approx. 80 cm (31.50 in.) to 90 cm (2.95 ft.) (Tele)	
Flash modes	Auto-flash, forced flash, flash off	
Focus	TTL-type AF (still image shooting mode: 5-point range finder/spot focus; video clip recording mode: continuous area focus), manual focus (15 steps)	
Self-timer	2-second delay, 10-second delay	
Time/date	Recorded with image data	
Ambient environment	Temperature	0 to 40°C (32 to 104°F) (operation), -20 to 60°C (-4 to 140°F) (storage)
	Humidity	30 to 90% (operating, no condensation) 10 to 90% (storage, no condensation)
Power supply	Battery pack	Li-ion battery pack (DB-L20) × 1
Power consumption		3.1W (When using the Li-ion battery during recording)
Dimensions (excluding protrusions)		68 (W) × 108 (H) × 23 (D) mm 2.68 (W) × 4.25 (H) × 0.91 (D) in. (Maximum dimensions) Volume: Approx. 124 cc
Weight		Approx. 145 g (5.1 oz.) (Only the camera [without battery pack and card])

Camera connectors

DIGITAL/AV (communication/ sound and image output) terminal	Regrouped jack	
	Audio output	265 mVrms (−9 dBs), 12 kΩ or less, stereo
	Video output	1.0 Vp-p, 75 Ω unbalanced, sync negative, composite video NTSC color TV system/PAL TV system (switchable from the Option Screen)
	S-video output	Y signal: 1.0 Vp-p, 75 Ω, unbalanced, sync negative C signal: 0.286 Vp-p, 75 Ω, unbalanced NTSC color TV system/PAL color TV system (switchable from the Option Screen)
	USB	USB 2.0 (Full speed, equivalent to 1.1) PC camera: USB video class
DC IN (external DC power input) terminal		DC 4.7 V (for exclusive use with the supplied AC adaptor/charger)

Battery life

Shooting	Still image shooting mode	113 images: CIPA standard (when a Toshiba 16MB SD Memory Card is used)
	Video clip recording mode	60 minutes: Recorded in TV-HQ mode (640 × 480 pixels, 30 fps)
Playback		125 minutes: LCD monitor on, continuous playback

- Until battery pack runs out when using a fully charged battery pack at a 25°C (77°F) ambient temperature.
- The operation time may vary depending on the conditions of the battery pack and the conditions of use. Especially when used at temperatures below 10°C (50°F), the battery pack operation time is drastically reduced.

SPECIFICATIONS

Possible No. of Images/Possible Shooting Time/ Possible Recording Time

Shooting/ recording mode	Resolution setting	SD Memory Card		
		128 MB	512 MB	1 GB
Still image mode	$\boxed{10M}$	36 images	150 images	302 images
	$\boxed{5M-H}$	49 images	201 images	405 images
	$\boxed{5M-S}$	73 images	300 images	604 images
	$\boxed{2M}$	187 images	762 images	1,530 images
	$\boxed{0.3M}$	960 images	3,900 images	7,850 images
Video clip mode	$\boxed{V-SHQ}$	5 min. 7 sec.	20 min. 52 sec.	41min. 58 sec.
	$\boxed{V-HQ}$	7 min. 27 sec.	30 min. 23 sec.	1 hr. 1 min.
	$\boxed{V-S}$	19 min. 39 sec.	1 hr. 20 min.	2 hr. 41 min.
	$\boxed{V65HQ}$	28 min. 24 sec.	1 hr. 55 min.	3 hr. 52 min.
	$\boxed{V65S}$	36 min. 30 sec.	2 hr. 28 min.	4 hr. 59 min.
Sound recording mode	—	2 hr. 4 min.	8 hr. 28 min.	17 hr. 3 min.

- The maximum continuous shooting time at the $\boxed{V-S}$ setting is 2 hours 30 minutes. The maximum continuous shooting time at the $\boxed{V65HQ}$ and $\boxed{V65S}$ settings is 3 hours.
- Up to 9 hours of continuous audio recording is possible.
- Even with cards of the same capacity, the amount of data that can actually be stored may differ depending on the card brand, etc.
- The continuous shooting time for each video clip will differ depending, for example, on the card capacity, environmental conditions (temperature and shooting conditions, etc.).

Docking station

Part number		PDS-C5
Power supply		DC 4.7 V
Rated output		DC 4.2 V/4.7 V
Compatible batteries		Supplied or separately sold Li-ion battery pack (DB-L20)
Ambient environment	Temperature	0 to 40°C (32 to 104°F) (recharge), –20 to 60°C (–4 to 140°F) (storage)
	Humidity	10 to 85% (no condensation)
Dimensions		94 (W) × 34.1 (H) × 94 (D) mm 3.70 (W) × 1.34 (H) × 3.70 (D) in.
Weight		Approx. 67 g (2.4 oz.)

Remote control unit

Part number		BRC-C1
Power supply		Lithium battery (CR2025)
Dimensions		35 (W) × 56.6 (H) × 6.5 (D) mm 1.38 (W) × 2.23 (H) × 0.26 (D) in.
Weight		Approx. 15 g (0.5 oz.) (including battery)

SPECIFICATIONS

Supplied AC adaptor/charger

Part number	VAR-AL20	
Power supply	AC 100 V to 240 V, 50/60 Hz, 0.27 A to 0.17 A, 23 VA to 32 VA	
Rated output	DC 4.2 V, 0.6 A (charging) DC 4.7 V, 2.0 A (DC output)	
Compatible battery	Supplied or sold separately Li-ion battery pack DB-L20	
Ambient environment	Temperature	0 to 40°C (32 to 104°F) (operation), -20 to 60°C (-4 to 140°F) (storage)
	Humidity	20 to 80% (no condensation)
Dimensions	60 (W) × 33 (H) × 90 (D) mm 2.36 (W) × 1.30 (H) × 3.54 (D) in.	
Weight	Approx. 175 g (6.2 oz.)	
Power cord rated value	VPC-C5, C5GX : AC125 V, 7 A VPC-C5EX, C5E : AC250 V, 2.5 A	

- When using the supplied AC adaptor/charger abroad, the power cord may need to be replaced in accordance with local requirements. Please contact your local dealer for details.

Supplied Li-ion battery pack

Model number	DB-L20	
Voltage	3.7 V	
Rated output	720 mAh	
Ambient environment	Temperature	0 to 40°C (32 to 104°F) (during use, recharged) -10 to 30°C (14 to 86°F) (storage)
	Humidity	10 to 90% (no condensation)
Dimensions	39.4 (W) × 6.0 (H) × 35.5 (D) mm 1.55 (W) × 0.24 (H) × 1.40 (D) in.	
Weight	Approx. 19 g (0.7 oz.)	

Supplied SD Memory Card

Operating environment	Temperature	0 to 55°C (32 to 131°F)
	Humidity	20 to 85%
Dimensions		32 (H) × 24 (W) × 2.1 (D) mm 1.26 (H) × 0.94 (W) × 0.08 (D) in.

- An SD Memory Card may not be an included accessory, depending on the region in which the camera is sold.

Others

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HINTS FOR TAKING PICTURES

Taking great pictures in difficult surroundings is easier than you might think. By keeping a few points in mind and choosing the correct settings, you can create photos that you'll be proud to display and share.

If images are blurred even when the autofocus is used

Your camera employs an autofocus function. When you snap a picture using the autofocus, the camera automatically adjusts the settings so that the image will be in focus. If you are getting blurred images even when using the autofocus, one or more of the following might be the reason.

■ How the autofocus works

The autofocus is activated when the shutter release button is gently pressed halfway. Press the shutter release button slightly, and the target mark will appear on the LCD monitor to indicate that the autofocus has been activated. Next, continue to gently press the shutter release button all the way to snap the picture. This two-step method is the way to ensure that your photos are perfectly focussed.

■ Reasons for unfocussed images

- ① The shutter release button was pressed all the way in one step.
- ② After the image was focussed, the subject moved.
 - Even if camera focusses the subject once, if the distance between the camera and the subject is changed, the subject may become out of focus.
- ③ The focus setting is not set for the correct distance.
 - If you shoot a close-up subject with the camera set to the normal focus mode, or if you shoot a subject at normal distance with the camera set to the super macro (close-up) mode, the image will not be in focus.

■ Preventing blurred images

- ① Confirm that the camera is set to the correct focus mode for your subject.
- ② Hold the camera correctly, and press the shutter release button halfway.
- ③ Wait for the target mark to appear in the LCD monitor, and holding the camera steady, gently continue to press the shutter release button all the way down.

Following these steps for a gentle but firm pressing of the shutter release button will ensure that you get beautifully focussed photos.

Photographing a moving subject

Situation: You would like to snap an action shot of a moving child or pet. The autofocus is activated, but because the subject is moving, the image may be blurred. In particular, when the distance between the camera and the subject is changing, it is difficult to lock the focus on the subject. Here are some hints for successfully capturing images of moving subjects.

■ Reasons for unfocussed images

When the shutter release button is gently pressed halfway, the camera's autofocus works by determining the distance between the camera and the subject. Once the subject is in focus, if it then moves before the picture is snapped, the image may be out of focus. This often happens when you once lock the focus on a subject and then wait for the right moment to snap the picture. And, conversely, a blurred image may result if you press the shutter release button all the way in one step in an attempt to quickly capture an action scene, thus failing to activate the autofocus in time.

■ Preventing blurred images (How to use the manual focus [page 78])

In addition to the autofocus, a manual focus mode is also incorporated in your camera. In the autofocus mode, the distance between the camera and the subject is automatically determined when you press the shutter release button halfway. In contrast to this, with the manual focus mode, you manually set the focus by specifying the correct distance between the camera and the subject before taking the picture.

■ How to photograph a moving subject

- ① Set the camera's focus mode to the manual focus. Set the focus distance to the correct distance between the camera and the subject.
- ② When the subject is at the set focus distance, gently press the shutter release button all the way down.

<Advantage of using the manual focus>

- Images can be quickly captured without waiting for the autofocus to activate.
- Because you are presetting the focus distance, the focus can be more accurate.

<Using the manual focus effectively>

- When photographing a moving subject, press the shutter release button just before the subject reaches the focus distance, and the shutter will be released when the subject is at the correct distance.
- Use manual focus to avoid incorrectly focussed images when there is an object between the camera and the subject you wish to focus on.

HINTS FOR TAKING PICTURES

Shooting portraits (portrait mode)

Points:

- Choose a background that doesn't detract from your subject.
- Move in close to your subject.
- Pay attention to lighting and how it affects your subject.

NOTE

- If the background is distracting, it will not show your subject to his best advantage. Move in closer to your subject or zoom in so that the background does not compete with the subject.
- In portrait photography your subject is clearly the central figure, so try techniques that allow the subject to stand out.
- If light is coming from behind your subject (backlit), his face will appear dark. You can get a better picture by using the flash, for example, or changing the exposure setting.

Photographing moving subjects (sports mode)

Points:

- Match the camera's movement with that of the subject.
- Set the zoom to the Wide end (wide-angle).
- Don't be too hesitant to press the shutter release button, or you'll miss the action.

NOTE

- Tips to not missing those great action shots: Make sure you're holding the camera correctly. Keep the subject in the lens at all times, moving the camera with him while waiting for the right shot. Move your whole body—not just your arms—with the camera while shooting.
- Blurred images are more likely when the zoom is set to the Tele end than the Wide end. Set the zoom as close as possible to the Wide end.
- Learn to press the shutter release button quickly yet smoothly the instant your photo chance occurs.

Night photography (night view mode)

Points:

- Avoid camera shake.
- Increase the ISO sensitivity.

NOTE

- Camera shutter speed during night photography is considerably slower, so there is a much greater chance that your photographed images will be blurry. Use a tripod whenever possible, or if a tripod is not available, you



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