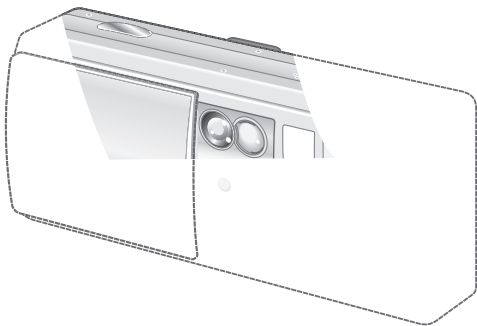


MANUAL

Xacti



SEE THE USER MANUAL AND CONNECTOR on pages 7 to 23. Keep this manual in a safe place for later reference.

Warning

TO PREVENT THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE

FOR AMERICAN USERS

- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



Tested to Comply with FCC Standards

FOR HOME OR OFFICE USE

Declaration of Conformity

Model number: VPC-J4

Trade Name: SANYO

Responsible party: SANYO FISHER COMPANY

Address: 21605 Plummer Street, Chatsworth, California 91311

Telephone No.: (818) 998-7322

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

FOR CANADIAN USERS

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

OUTLINE OF OPERATION

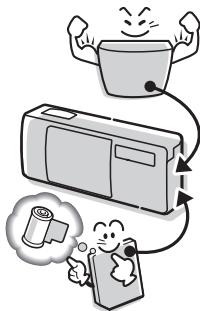
To help you get started enjoying using your digital camera right away, given below is an outline of the fundamental operation, from setup to shooting to playback.

SETUP

- ① Charge the battery pack (see page 29).
- ② Install the battery pack (see page 32).
- ③ Install the SD Memory Card^{**1} (see page 32).
- ④ Format the SD Memory Card (see page 134).

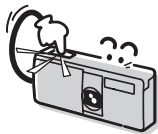
NOTE

- 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. A 16MB SD Memory Card is supplied with this camera. A 64 MB SD Memory Card is also available as a commercially sold accessory.
- Be sure to format the SD Memory Card with this digital camera before using it. A card that is not formatted using the digital camera may interfere with the operation of your camera.



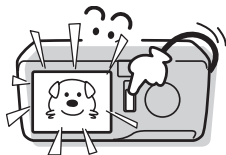
SHOOTING

- ① Take photos in the BASIC operation mode.^{**2}
 - See "CAPTURING IMAGES" on page 42.



PLAYBACK

- See “View the image just captured (preview display)” on page 41.
- See “VIEWING IMAGES” on page 68.



* 1: About the SD Memory Card

This digital camera can use either an SD Memory Card or a Multi Media Card for data storage. This manual is written with the premise that SD Memory Cards are used. In this manual, SD Memory Card and Multi Media Card are both referred to as “card”.

* 2: Shooting in the BASIC mode

In the BASIC mode, the Scene Select function—whereby simply by selecting one from a short list of shooting conditions, the suitable settings are automatically completed—is available. Also, only the necessary shooting settings are displayed, making it easy even for the novice photographer to enjoy using this digital camera.

Symbols used in this manual

HINT Points that may prove useful when using the digital camera.

NOTE Points giving some extended instructions or special points to pay attention to.

CAUTION Points that require special attention.

(see 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” (see page 155) and “TROUBLESHOOTING” (see page 166).

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USING YOUR DIGITAL CAMERA SAFELY AND CORRECTLY

Concerning the digital camera

WARNING

- **If the digital camera makes a strange noise, emits a strange odor, or if smoke comes out from it, immediately turn off the power and remove the batteries**

- If the digital camera is used under these conditions, it may cause a fire or electric shock. Immediately turn off the digital camera, remove the battery pack, and wait to make sure no more smoke comes from the digital camera. Then take it to the dealer for service. Do not try to repair or open the digital 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 digital 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 digital camera**

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



■ Do not get the digital camera wet

- This digital 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 digital camera in a bathroom.
- If the digital camera gets wet, immediately turn it off and remove the battery pack. Then take it to a dealer for repair. Using the digital camera after it has been 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 digital 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 digital camera may fall, resulting in damage to the digital camera or injury.
- If the digital 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 digital camera after its body has been damaged may cause a fire or electric shock.



■ Do not look through the digital camera into the sun

- Do not look through the digital 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 DIGITAL CAMERA SAFELY AND CORRECTLY

Concerning the digital camera (continued)

WARNING

■ Do not use where there is risk of explosion

- Do not use the digital 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 digital camera out of the reach of children

- The following may happen if children play with the digital camera:
 - They may wrap the strap 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 digital camera.



CAUTION

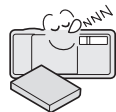
■ Cautions when carrying the digital camera

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



■ If the digital 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.)



■ Cautions during use and storage

- This digital camera is a precision instrument. When using or storing the digital 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 116°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 DIGITAL CAMERA SAFELY AND CORRECTLY

Concerning the supplied battery pack charger (Model NC-SAC05)

DANGER

- Risk of electric shock. Use only in a dry location
- Do not recharge battery packs that are not Lithium-ion battery packs (Model DB-L20)

- Do not use the supplied battery pack charger to recharge a battery pack other than the supplied Lithium-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 the battery pack charger

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

- Do not get the battery pack charger wet

- Make sure the battery pack charger does not get wet, as doing so may cause a fire or electric shock.
- Do not use the battery pack charger in a bathroom.
- If the battery pack 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.

■ Cautions when plugging in the battery pack charger

- Securely plug the power cord all the way into the power outlet when using the battery pack charger. If the battery pack charger is used with the power cord not fully plugged in, heat may be generated and cause a fire.
- If the power cord is damaged, or cannot be correctly plugged into the power outlet, do not use the battery pack charger. Using the battery pack charger 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 power plug 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 the power outlet while the other end is not plugged into the battery pack charger. The loose end can cause electrocution if touched with wet hands or if handled by children.
- Use only the power cord supplied with the battery pack charger. 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 supplied battery pack charger. 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 DIGITAL CAMERA SAFELY AND CORRECTLY

Concerning the supplied battery pack charger (Model NC-SAC05) (continued)

DANGER

■ **Keep the battery pack charger 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 the battery pack charger is used under these conditions, it may cause a fire or electric shock.
- If strange conditions such as these occur, immediately unplug the battery pack charger, 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 battery pack charger yourself.

■ **Do not handle with wet hands**

- Handling the battery pack charger with wet hands may cause an electric shock.

■ **Do not use during a storm**

- Do not touch the battery pack charger or power cord while it is plugged into a power outlet during a thunderstorm. Doing so may cause an electric shock.

■ **Unplug the power cord from the power outlet when finished**

- If the battery pack charger is left plugged into the power outlet for a long period of time, there is a risk of fire.

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 battery pack charger or wall outlet, contact the place of purchase.



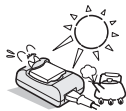
■ Do not place on an unstable surface

- The battery pack charger may fall, causing injury or damage.
- If the battery pack charger falls and the charger 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 damages.



■ 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

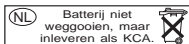
- | | |
|---------------|---|
| • Temperature | 0 to 40°C (32 to 116°F) (charging)
-20 to 60°C (-4 to 140°F) (storage) |
| • Humidity | 10 to 90% (charging and storage) |

USING YOUR DIGITAL CAMERA SAFELY AND CORRECTLY

Concerning the Lithium-ion battery pack (Model DB-L20)

DANGER

This camera uses a Lithium-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.



■ **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.



■ **Cautions regarding the correct environment for using and storing the battery pack**

• **Temperature when using or recharging: 0 to 40°C (32 to 116°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°C to 30°C (14°F to 86°F)**

When not using the battery pack, remove it from the camera and store at -10°C to 30°C in a place with no condensation.

• **Humidity: 10% to 90% (no condensation)**

USING YOUR DIGITAL CAMERA SAFELY AND CORRECTLY

Concerning the Lithium-ion battery pack (Model DB-L20) (continued)

DANGER

■ **Use only the supplied battery pack charger (Model NC-SAC05)**

- 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.





USING YOUR DIGITAL CAMERA SAFELY AND CORRECTLY

Concerning the accessories

CAUTION

■ Cautions concerning the use of the AC adaptor

- Use only the separately sold AC adaptor (model VAR-G7EX for the VPC-J4EX, model VAR-G7E for the VPC-J4EX [for U.K.] and model VAR-G7U for the VPC-J4) with your digital camera. Do not use an AC adaptor other than the one indicated here, designed for specific use with your digital camera.
- If an AC adaptor other than the specified one is used, it may damage the digital camera and cause a fire or electric shock.
- Normally when using an AC adaptor, remove the battery pack. Otherwise the battery pack may cause excess heat, leakage, injury or damage to nearby objects.
- For complete information on how to use the AC adaptor, refer to the instructions accompanying it.

■ Cautions concerning the card

- Immediately after use, the card will be very hot. Before removing the card, turn off the digital 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.

For correct use of your camera

■ Cautions before capturing important images

- Before capturing important images, make sure that the digital 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 digital camera, any of its accessories, or its software.

■ Caution concerning copyrights

- The images you capture with your digital 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 digital camera

Cleaning procedure

- 1 Turn off the digital camera and remove the battery pack.
- 2 Remove the dirt with a soft cloth.
- 3 If the digital camera is extremely dirty, 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 digital 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 digital camera. Do not let rubber or vinyl objects contact the digital camera for a long period. They may cause deformation, discoloration, or paint peeling.

USING YOUR DIGITAL CAMERA SAFELY AND CORRECTLY

CAUTION

■ Caution concerning the battery pack

- Periodically clean with a dry cloth the terminals (contacts) of the batteries

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 digital camera for a long period

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

■ Cautions concerning condensation

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

If condensation seems likely to form

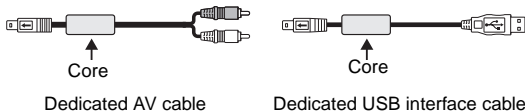
- Place the digital camera in a plastic bag and seal it, and then wait until the digital camera has reached the ambient temperature.

Be careful of condensation under the following conditions

- When moving the digital 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 digital camera is placed in the path of cool air from an air conditioner.
- When the digital camera is placed in a location of high humidity.

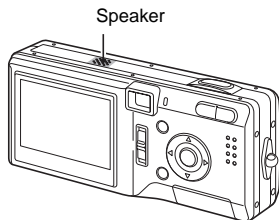
■ Caution concerning undesired interference

- The digital 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 AV cable and USB interface cable are not removed.



■ 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 digital camera.
 - If the card is subjected to electrical or mechanical shocks or other forces.
 - If the card is removed from the digital camera or if the digital camera is turned off during reading or writing operations.
 - If the card has reached the end of its usable life.

USING YOUR DIGITAL CAMERA SAFELY AND CORRECTLY

CAUTION

■ 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 digital camera (see "FORMATTING A CARD" on page 134).
- When buying commercially available products, carefully read the instructions and warnings that come with the card.

CHECKING THE INCLUDED ACCESSORIES

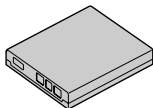
- Handstrap



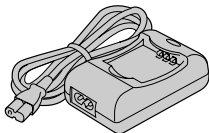
- Software: 1 CD-ROM



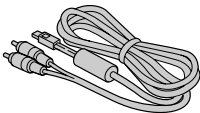
- Lithium-ion battery pack (battery pack): 1



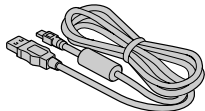
- Lithium-ion battery pack charger and power cord



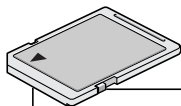
- Dedicated AV cable: 1



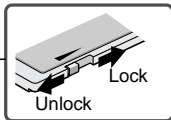
- Dedicated USB interface cable: 1



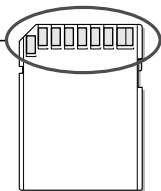
- SD Memory Card (16MB): 1



Lock switch



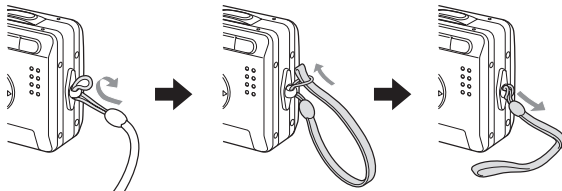
Contact end



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

CHECKING THE INCLUDED ACCESSORIES

ATTACHING THE HANDSTRAP



CAUTIONS CONCERNING THE CARD

Media cards that can be used with this digital camera

The types of card that can be inserted into and used with this digital camera are:

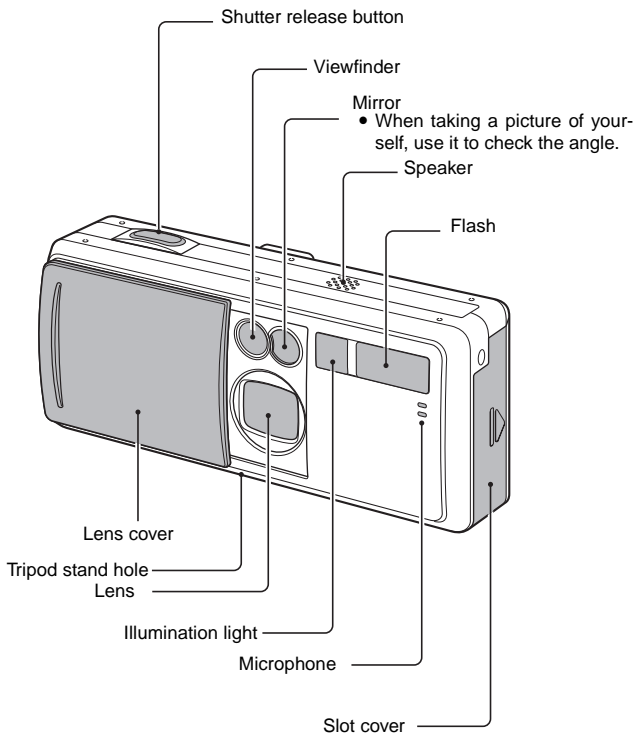
- **SD Memory Card**
- **Multi Media Card**

What “card” means in this manual

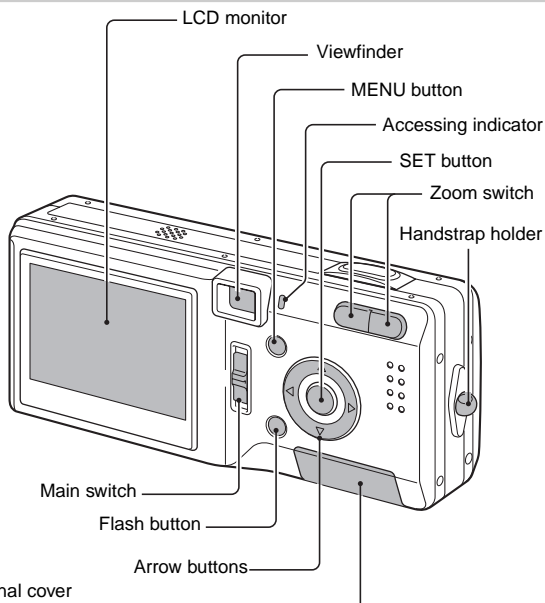
- In this manual, SD Memory Cards and Multi Media Cards that can be used in this digital camera are referred to as “card”.
- The cards in the illustrations in this manual are SD Memory Cards, but all installation, removal, and formatting procedures are the same for both SD Memory Cards and Multi Media Cards.

PARTS NAMES

Front

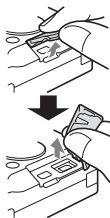


Rear



Terminal cover

To open the terminal cover

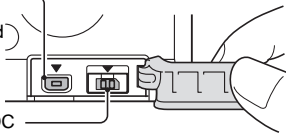


Inside...

DIGITAL/AV terminal
Used as both the
USB connector and
AV output terminal.

DC IN (external DC
power input) terminal

For connecting a separately sold AC adaptor
(model VAR-G7EX for the VPC-J4EX, model
VAR-G7E for the VPC-J4EX [for the U.K.] and
model VAR-G7U for the VPC-J4)



CHARGING THE BATTERY PACK

Before using the supplied battery pack in the camera, insert it into the charger.

-
- 1 Charge the battery pack.**
- Insert it in the direction indicated by the [▲] mark on the battery pack.

-
- 2 Connect the supplied power cord to the battery pack charger.**
- Insert the connector straight and securely.

-
- 3 Plug the power plug into a power outlet (AC 100V to 240V).**
- Recharging begins.
 - During recharge, the CHARGE indicator is lit red.

-
- 4 When the CHARGE indicator turns off, unplug the power cord from the power outlet, and remove the battery pack from the charger.**

HINT

- Please read the safety precautions regarding the battery pack (DB-L20) (see page 15) and the supplied battery pack charger (NC-SAC05) (see page 11).
- The recharge time is approx. 95 minutes.

RECHARGING THE BATTERY PACK

Be sure to fully charge the supplied or separately sold battery pack before using it in your camera. For charging the battery pack, use the supplied charger.

Charge the battery pack if it is being used for the first time, and recharge it whenever the remaining charge is low (see "CHECKING THE REMAINING BATTERY PACK CHARGE" on page 138).

- During recharging, the charger and battery pack will be warm. This is normal and does not indicate a malfunction.

If there is interference to your TV or radio during recharging...

- Move the battery pack and charger further away from the TV or radio.

Ambient temperature during recharging

- It is recommended that the ambient temperature during recharging be between about 10°C and 35°C (50°F and 95°F). Due to the characteristics of the battery pack, at temperatures below 10°C (50°F), it may not be possible to sufficiently recharge it.

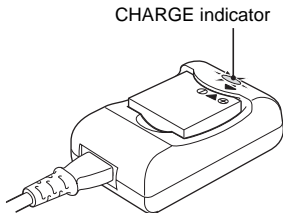
Recharge a battery pack in the following cases

- A battery pack which has not been used for a long time
- Newly purchased battery pack

CHARGING THE BATTERY PACK

About the CHARGE indicator

The CHARGE indicator shows the status of the battery pack and the charger. Please refer to the following table if the indicator flashes abnormally.



CHARGE indicator	
Not lit	Not connected properly <ul style="list-style-type: none">To recharge the battery pack, the power cord of the charger must be connected to a power outlet, and the plug at one end inserted in the charger's power socket (see page 29).The battery pack is not installed, or it is not installed correctly (see page 29). Recharging finished
Lit red	Recharging
Red flashing	Problem with the battery pack or battery pack charger <ul style="list-style-type: none">Immediately remove the battery pack from the charger.Do not use an abnormal battery pack. (The usable life of the battery pack has probably expired.)

About the internal backup battery

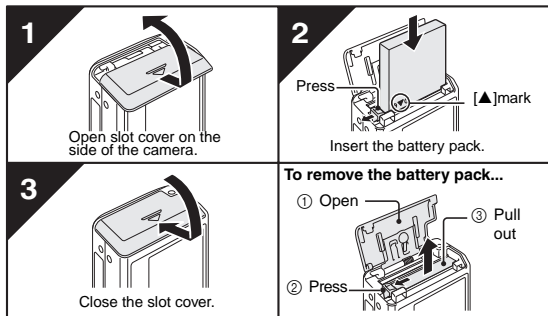
- This camera's internal battery serves to maintain the date and time settings, as well as the shooting settings. The backup battery will be fully charged when the batteries are kept in the camera continuously for about 2 days. In the fully charged state, the backup battery will maintain the camera settings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

When not using the camera for a long time, remove the batteries

- A small amount of power is still used even if the digital 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.

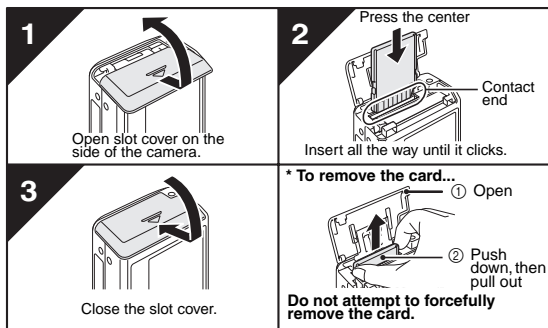
INSTALL THE BATTERY PACK AND CARD

1 Insert the battery pack.



2 Insert the card.

- Take special care to orient the card correctly when inserting it. Attempting to insert the card incorrectly may result in damage.







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

TURNING THE POWER ON/OFF

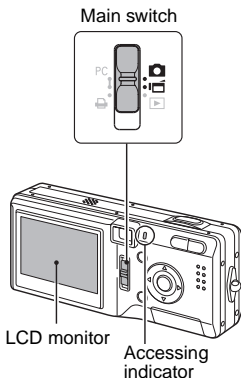
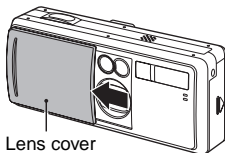
Turning the power on

When capturing images


- 1 Set the main switch to [] or [].
[]: To shoot still images or sequential shots
[]: To shoot video clips

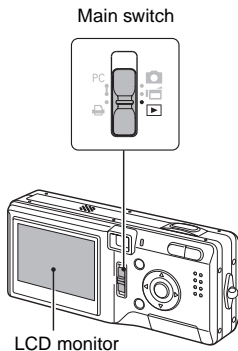
- 2 Open the lens cover.

- The power turns on, an image appears on the LCD monitor, and the accessing indicator next to the viewfinder lights.



When playing back images

- 1 Set the main switch to [].
• The power turns on, and an image appears on the LCD monitor.



-
- 2** Close the lens cover.
- The LCD monitor turns off.



Turning the power on when the power save function is active

In order to save the battery pack power, the power save function will automatically turn off the power 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, the power is restored after any of the following operations:

The main switch is moved

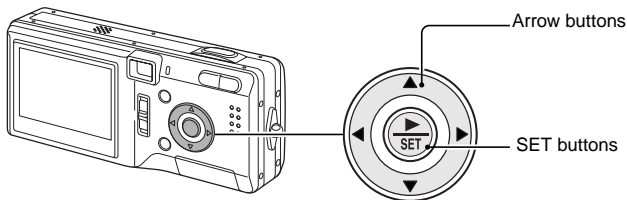
The lens cover is closed once, then opened.

The shutter release button, MENU button or SET button is pressed.

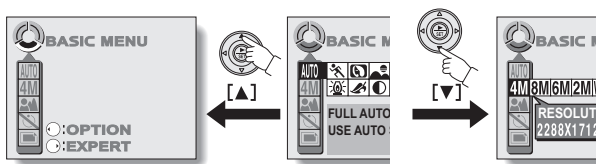
- After the power save function has been active for 15 minutes, the power will turn off completely.
- When the separately sold AC adaptor (model VAR-G7EX for the VPC-J4EX, model VAR-G7E for the VPC-J4EX [for U.K.] and model VAR-G7U for the VPC-J4) is connected, the power save function will become active 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 (see page 123).
- When the camera is connected to a computer or printer using the dedicated USB interface cable, the power save function is disabled, and the camera turns off after about 12 hours.

OPERATION BUTTONS

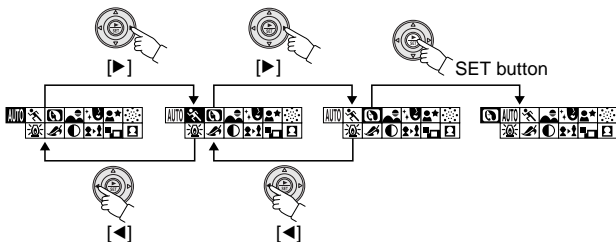
When a setting screen is displayed, the arrow buttons and the SET button are used to make the desired settings.



- When selecting a menu
 - Press [▲] or [▼] on the arrow button.



- When selecting a setting (icon)
 - Press [◀] or [▶] on the arrow button.
 - To make a setting, select the desired icon, and press the SET button. When the selected setting is activated, the corresponding icon moves to the left end of the line-up.



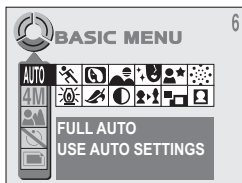
SWITCHING THE MENU MODE

Switch from the BASIC mode menu to the EXPERT mode menu, or vice versa, depending on how you wish to use your camera.

1 Turn on the camera (see page 33).

2 Press the MENU button.

- The Menu Screen (the Shooting Setting Screen or the Playback Setting Screen) appears.



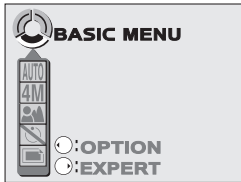
<Example: BASIC Mode Shooting Setting Screen>



<Example: BASIC Mode Playback Setting Screen>

SWITCHING THE MENU MODE

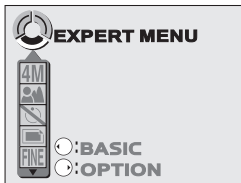
- 3** Press the [▲] or [▼] arrow button to select the menu mode icon.



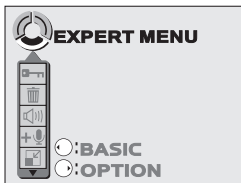
<Example: Shooting mode>

- 4** Press the [◀] or [▶] arrow button to select the desired menu mode.

- Each time the [◀] or [▶] button is pressed, the menu mode changes.
- Set the desired menu mode.
- For information about the option mode, please see page 114.



<Example: EXPERT Mode Still Image Shooting Setting Screen>



<Example: EXPERT Mode Playback Setting Screen>

NOTE

If no image appears on the LCD monitor...


- The setting to disable the LCD monitor is active. Change the setting so that the LCD monitor is enabled (see page 127).

BEFORE TAKING PICTURES (for best results)

Recording the date and time

When the correct date and time are set in your camera, the date and time are recorded with the image each time you snap a picture (see page 115).

To facilitate organizing your photographed data, it is recommended that you complete your camera's date and time settings before shooting pictures.

A clock alert icon  appearing on the LCD monitor indicates that the date and time settings have not been completed.

Holding the camera

Hold the camera securely with both hands, keeping your elbows close to your body and making sure the camera is stable.

Correct hold



Incorrect hold



A finger is blocking the lens.

Make sure that the lens, lens opening and flash are not blocked by your fingers or the handstrap.

HINT

- Images captured in the still image shooting mode or sequential shots shooting mode can be rotated when they are played back (see page 102). Note that video clips cannot be rotated while they are being played back.
- 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 (for best results)

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 or the focus area to capture images (see pages 61 and 88).

■ Conditions that may cause incorrect focus

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

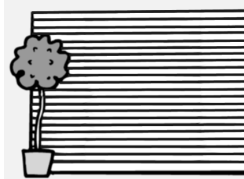
- **Subjects with low contrast, very bright subjects at the center of the image, or dark subjects or locations**

Use the focus-lock function (see page 43) 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 digital 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

Operation sounds

- The operation sounds that are generated, for example, when the power is turned on or off, or the shutter release button, MENU button, arrow button or SET button is pressed, as well as the audio guide when you switch the mode can be muted (see page 118).

Saving battery pack power

- When you take pictures without using the LCD monitor, you can slow down the rate of battery pack consumption (see page 127).

Where is the image and audio data saved?

- All the image and sound data is recorded on the card installed in the camera (see page 143).

Taking pictures in backlight conditions...

- When taking pictures with the light coming from behind the subject, due to the characteristics of the lens, 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.

While the image data is being recorded...

- The accessing indicator will light orange while the image is being written to the memory. Another image can be captured only after the accessing indicator lights green again.

BEFORE TAKING PICTURES (for best results)

View the image just captured (preview display)

- Immediately after capturing an image, you can press the SET button to preview the image. Press the [◀] or [▶] arrow button to view the previous image or the next image. For video clips, you can move backward or forward one frame at a time by pressing the [◀] or [▶] arrow button, or the pause the image by pressing the [▲] arrow button. If you do not want to keep the image, you can press the [▲] button at this time to delete the currently displayed image from the camera's memory. To return to the shooting mode, press the [▼] arrow button.

PREVIEW

- ONE ERASE
- EXIT


NOTE

- When creating a composite photo (see page 55), you will not be able to use the preview display to view the image just captured.

CAPTURING IMAGES

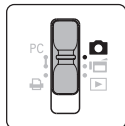
Setting the shooting mode

Set the camera to the still image or sequential shots shooting mode

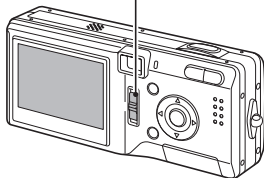
- 1** Set the main switch to [], and open the lens cover.

- An image appears on the LCD monitor. If no image appears, please see page 127 and follow the steps to enable the LCD monitor.



Main switch

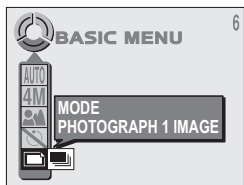


- 2** Set the camera to the BASIC or EXPERT mode (see page 36).



- 3** Select the mode menu.

- : To capture still images (still image shooting mode).
- : To capture sequential shots (sequential shots shooting mode).



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

- If you press the MENU button, the menu display is canceled.

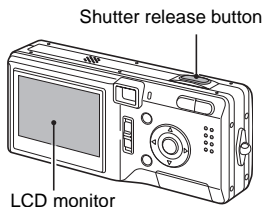
CAPTURING IMAGES

Set the camera to the video clip shooting mode



- 1 Set the main switch to [i], and open the lens cover.
 - An image appears on the LCD monitor. If no image appears, please see page 127 and follow the steps to enable the LCD monitor.

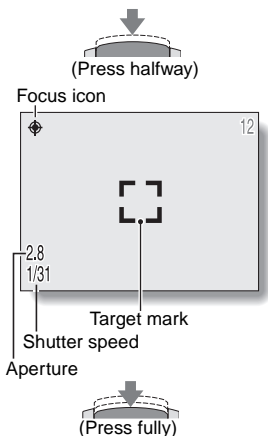
Capturing still images

- 1 Set the camera to the still image shooting mode.



- 2 Slowly press and hold the shutter release button halfway.

- The target mark  or the focus icon  (focus-lock) appears in the LCD monitor.
- The figures appearing in the lower left area of the LCD monitor are the shutter speed and aperture at the time the focused point was photographed.
- If the Shooting Setting Screen (see pages 47, 79) or Shooting Information Screen (see page 96) was displayed, it is exited.



3 Press the shutter release button all the way.

- The image is captured.

NOTE

About the focus icon and target mark


- The target mark outlines the area that the camera is using to focus. If the area outlined by the target mark is not the subject you want to focus on, then refocus your subject, for example by changing the shooting angle.
- The target mark does not appear in the following situations.

When the subject is not in focus

When using the self-timer to take a picture (see page 57)


When the focus is set to spot focus (see page 88)

When the focus is set to focus range **MF** (see page 61)

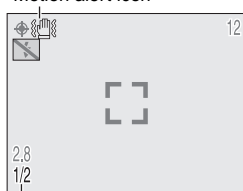
When the Scene Select function  is enabled (see page 51)

- When the camera focuses on a wide area of the central part of the screen, a large target mark appears.

If the motion alert icon appears...

- During still image shooting, if the shutter speed is slow and the possibility that the image may be blurred due to camera movement becomes high, the motion alert icon  may appear on the LCD monitor. In this case, use a tripod to stabilize the camera when shooting, or set the flash operation mode to automatic (see page 65).

Motion alert icon



Shutter speed

CAPTURING IMAGES

Capturing sequential shots

- 1** Set the camera to the sequential shots shooting mode (see page 42).
- 2** Press the shutter release button to capture the sequential shots.
 - Images are captured as long as the shutter release button is pressed.
 - An image is captured every 0.7 second. A maximum of four images are captured.
 - During shooting, **REC** appears in the LCD monitor.
- 3** Finish capturing images.
 - Release the shutter release button to end recording.

NOTE

About the focus during sequential shots shooting

- In sequential shots shooting, the autofocus function is activated when the shutter release button is pressed halfway and remains fixed at the same focus until the sequential shots are finished.
- The resolution settings **8M** and **6M** are not available for sequential shots shooting.

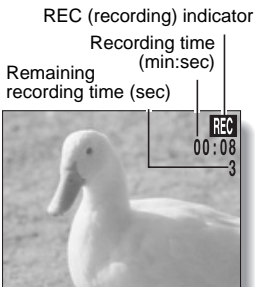
VIDEO CLIPS

When you shoot video clips, the sound is also recorded.

- 1 Set the camera to the video clip shooting mode (see page 43).**

- 2 Press the shutter release button to record the video clip.**

- It is not necessary to keep the shutter release button pressed while shooting.
- During recording **REC** appears on the LCD monitor.
- When the remaining recording time available for the currently recording clip becomes little, a countdown of the remaining recording time appears on the display.



- 3 End the recording.**

- Press the shutter release button to stop recording.
- If you finish photographing by closing the lens cover, the last photographed frames will be black.

NOTE

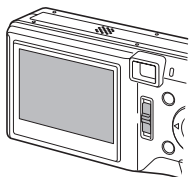
- The data for a video clip is very large. Therefore, be aware that if the video clip is uploaded to a computer to be played back, the computer may not be able to play back the video fast enough, making it appear jerky. (The video will always be displayed properly on the LCD monitor or a television.)
- The possible shooting time for each video clip will differ depending on the card. Also depending on the card, shooting may end even before the possible shooting time indicated on page 178.

ABOUT THE BA

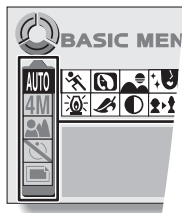
In the BASIC mode the n
making it easy for the nov
is recommended that the
familiar with the various s
mode.

Still Image/Seque

* All the icons never appe



①




⑧

① **Menu mode icon (see page 36)**

Switch the menu mode.

② **Scene Select menu (see page 51)**

: Full auto icon

: Sports icon

: Portrait icon

: Landscape icon

: Cosmetic icon

: Night view icon

: Fireworks icon


: Lamp icon

: Sepia icon


: Monochrome icon


: Slim icon


: Composite icon


: ID photo icon


③ **Resolution menu (see page 59)**

: 2288 × 1712-pixel (4 million pixels) resolution icon

: 3264 × 2448-pixel (8 million pixels) resolution icon

: 2880 × 2160-pixel (6 million pixels) resolution icon


: 1600 × 1200-pixel (2 million pixels) resolution icon


: 640 × 480-pixel (300,000 pixels) resolution icon


④ **Focus menu (see page 61)**

: Shooting with the autofocus

: Super macro icon


: Distance photography


: Shooting with manual focus


: Shoot using the continuous autofocus.


⑤ **Self-timer menu (see page 57)**

: Self-timer off icon


: Image captured 2 seconds after shutter release button is pressed.


: Image captured 10 seconds after shutter release button is pressed.

: Two seconds after the shutter release button is pressed, sequential shots are captured.

: Ten seconds after the shutter release button is pressed, sequential shots are captured.

⑥ **Mode menu (see page 42)**

: One still image is captured when shutter release button is pressed (still image shooting mode)

: Sequential images are captured when shutter release button is pressed (sequential shots shooting mode)

⑦ **Number of remaining images that can be captured (see page 136)**

⑧ **HELP display (see page 120)**

⑨ **Remaining battery pack charge (see page 138)**

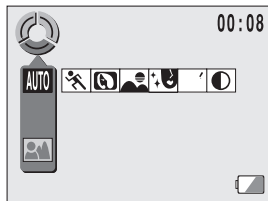
Not displayed when the remaining battery pack charge is near full or when the AC adaptor (sold separately) is used.

- When two mutually exclusive settings are made, the later setting has priority, and the related settings are changed accordingly.

ABOUT THE BASIC MODE SETTING SCREEN

Video Clip Shooting Setting Screen


* All the icons never appear at the same time.



① **Menu mode icon (see page 36)**

Switch the menu mode.

② **Scene Select menu (see page 51)**

: Full auto icon

: Sports icon

: Portrait icon


: Landscape icon


: Cosmetic icon


: Sepia icon

: Monochrome icon

③ **Resolution menu (see page 59)**

: 640 × 480-pixel resolution icon

: 320 × 240-pixel resolution icon


: 160 × 120-pixel resolution icon


④ **Frame rate menu (see page 63)**


: 15 frames per second


: 30 frames per second

⑤ **Focus menu (see page 61)**

: Shooting with the auto focus

: Macro photography (close-ups)

: Distance photography

: Shooting with manual focus

⑥ **Remaining recording time available (see page 136)**

⑦ **HELP menu (see page 120)**

⑧ **Remaining battery pack charge (see page 138)**














Not displayed when the remaining battery pack charge is near full or when the AC adaptor (sold separately) is used.

- When two mutually exclusive settings are made, the later setting has priority, and the related settings are changed accordingly.

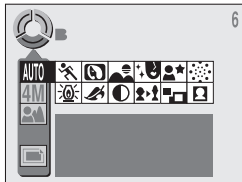
SCENE SELECT FUNCTION

Scene Select function

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

Shooting mode			Features
Still image	Sequential shots	Video clip	
Full auto 			The camera makes settings suitable for the surrounding conditions.
Sports 			Capture a split-second image of a fast-moving subject.
Portrait 			Enhance the 3D feeling of the subject by blurring the background.
Landscape 			For beautiful shots of distant scenery.
Cosmetic 			Enhance skin tones during close-up shots.
Night view 	–	–	Photograph the subject while keeping the background night scenery.
Fireworks 	–	–	For photographing fireworks displays.
Lamp 	–	–	Take photos in low-light conditions, such as in candlelight.
Sepia 			Create a sepia-tone photo.
Monochrome 			Snap black-and-white photos.
Slim 		–	Change the vertical-horizontal proportions of the subject.
Composite 	–	–	Select a frame to create a composite photo.
ID photo 	–	–	Creates three identical ID photos in two size (6 total): 45 × 35 mm [1.77" × 1.38"] and 40 × 30 mm [1.57" × 1.18"], printed out on postcard-sized paper.

-
- 1** Set the camera to the **BASIC** shooting mode (see page 36), and select the scene select menu.




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

: Full auto	: Sports	: Portrait
: Landscape	: Cosmetic	: Night view
: Fireworks	: Lamp	: Sepia
: Monochrome	: Slim	: Composite
: ID photo		

NOTE
















To return to normal shooting

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

SCENE SELECT FUNCTION

Notes regarding the Scene Select feature

Please note the following points when using the Scene Select feature.

Setting	Remarks
Sports 	Manual focus MF is available for the focus range setting.
Portrait 	
Landscape 	
Cosmetic 	
Night view 	To prevent taking blurred photos, use a tripod or the like to stabilize the camera. The focus may not be accurate if the focus range is set to super macro  .
Fireworks 	The focus range is fixed at the distance photography setting  .
Lamp 	The resolution setting is fixed at WEB . To prevent taking blurred photos, use a tripod or the like to stabilize the camera. The focus may not be accurate if the focus range is set to super macro  .
Sepia 	The 8M and 6M resolution settings are not available.
Monochrome 	Manual focus MF is available for the focus range setting.
Slim 	The digital zoom is not available. The 8M and 6M resolution settings are not available.
Composite 	The 8M , 6M and 4M resolution settings are not available. Manual focus MF is available for the focus range setting.
ID photo 	The 8M and 6M resolution settings are not available. Manual focus MF is available for the focus range setting.

Shooting with the slim

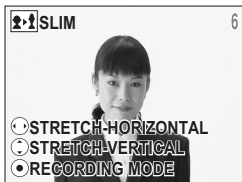
- 1 Select the slim icon  from the Scene Select menu, and press the SET button.

- 2 Press the SET button again, and press the arrow buttons to zoom.

- Maximum magnification is approx. 4x.

Press the [▲] or [▼] button to magnify the image vertically.

Press the [◀] or [▶] button to magnify the image horizontally.




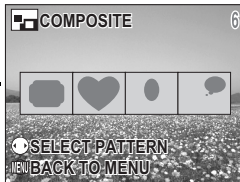
<Example: Vertically magnified image>

- 3 Press the shutter release to capture the image.

SCENE SELECT FUNCTION

Shooting composite (combined) images

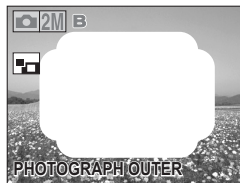
- 1** Select the composite icon  from the Scene Select menu, and press the SET button.



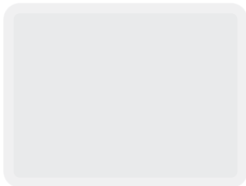
- 2** Press the SET button again.
- The frame selection display appears.

- 3** Press the [◀] or [▶] button to select the desired frame shape, and press the SET button.
- The select frame shape fills the display.

- 4** Capture the image for the background (frame).
- Point the lens at the background subject, and snap the picture.



- 5** Next, capture the image that will be superimposed in the frame.
- Take the photo of the image inside the frame.



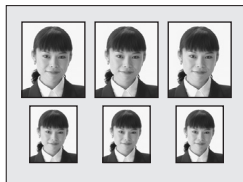
Snapping ID photos

Lets you take either of two different-sized ID photos (45 × 35 mm [1.77" × 1.38"] or 40 × 30 mm [1.57" × 1.18"], printed out on postcard-sized paper).

- 1** Select the ID photo icon  from the Scene Select menu, and press the SET button.

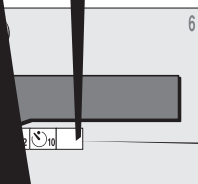
- 2** Press the MENU button again.
 - The ID photo outline appears on the LCD display.

- 3** Align the subject with the ID photo outline, and snap the picture.
 - After the preview screen for the captured image appears, you are returned to the Shooting Setting Screen.
 - Three images are shown in each of two sizes on the Playback Screen.



<Playback Screen>

the still image shooting mode



is pressed, sequen-




pressed, sequential

HINT

About the focus

- In self-timer photography, the autofocus is activated just before the shutter is released to produce a focussed image.

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

- If the shutter release button is pressed again before the image is captured, the self-timer countdown temporarily stops. Press the shutter release button one more time to restart the self-timer.
- To interrupt the 2-second interval  or 10-second interval  timed shooting, press the shutter release button again.
- To cancel self-timer photography, select the self-timer off icon  and press the SET button.

When are selected...

- When the shutter release button is pressed, the illumination light will change color and the accessing indicator will light for about 7 seconds. About 3 seconds before the shutter releases, the illumination light and accessing indicator will flash. Also, 3 seconds before the shutter releases, the beep tone will sound.

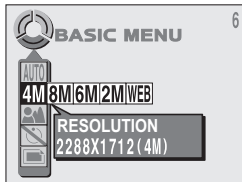
NOTE

- When using the self-timer function, be sure to use a tripod or place the digital camera on a level, stable surface.

RESOLUTION SETTING

If the resolution is increased, the image quality will improve, but the number of remaining images that can be taken will decrease. Select the resolution according to the desired image quality and purpose.

- 1** Set the camera to the **BASIC** shooting mode (see page 36), and select the resolution menu.



- 2** Select the desired resolution icon, and press the **SET** button.
<Still image/sequential shots shooting modes>

8M: 8 million pixels (3264 × 2448 pixels)

6M: 6 million pixels (2880 × 2160 pixels)

4M: 4 million pixels (2288 × 1712 pixels)

2M: 2 million pixels (1600 × 1200 pixels)

WEB: 300,000 pixels (640 × 480 pixels)

<Video clip shooting mode>

640: 640 × 480 pixels

320: 320 × 240 pixels

160: 160 × 120 pixels

<Example: Still image shooting mode>

HINT

Concerning shooting at **8M** and **6M** resolutions

- At the **8M** and **6M** resolutions, the digital zoom is not available.
- When shooting at **8M** or **6M** resolution, the camera processes the captured image internally to produce a 3264 × 2448-pixel image (**8M**) or 2880 × 2160-pixel image (**6M**).
- When capturing images at **8M** or **6M** resolution, it takes about 4 seconds after the shutter release button is pressed before the data is recorded (when using the supplied SD Memory Card).

NOTE

About the resolution and compression (see page 83) settings

- The image captured by a digital camera consists of a collection of small dots. The resolution refers to the number of these dots, and the greater the number, the higher the image quality. As the resolution increases, the size of the resulting data also increases, and the number of images that can be captured decreases. To compensate for this, this digital camera is able to compress the data. This digital camera uses JPEG compression. If JPEG compression is used, when the image is played back, an extremely small portion of it is lost. The higher the compression rate, the more of the original image is lost.

Therefore, in the still image and sequential shots shooting modes, this digital camera also allows you to store image data at extremely low compression to ensure that a minimum of the original image is lost. This is the **SFINE** mode. Since the image data is large when the **SFINE** mode is used, compared to **NORM** or **FINE** compression, the digital camera requires more time both to store the data after the shutter release button is pressed and to display the image in the playback mode.

FOCUS RANGE SETTING (DISTANCE)

The focus distance can be set to a specific range. Also, with super macro photography, you can capture the image of a subject as close as 2 cm (0.79 in).

1 Set the camera to the BASIC shooting mode (see page 36), and select the focus menu.

- : The camera automatically focuses on the subject within a range of 20 cm (7.87 in) (Wide end) or 30 cm (11.81 in) (Tele end) to infinity.
- : You can focus on a subject within a range of 2 cm (0.79 in) (Wide end) or 30 cm (11.81 in) (Tele end) to 50 cm (19.69 in) (super macro).
- : You can focus on a subject in the distance.
- : 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).
- : The camera continuously focuses on the subject (still image shooting mode only).



2 Select the desired focus range and press the

HINT

- You can set the focus range when the focus menu is shown.

How to use the manual focus

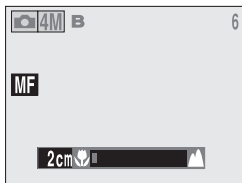
1 Select the manual focus icon **MF** from the focus menu, and press the SET button.

2 Press the MENU button.

- The focus distance adjustment bar appears.

3 Use the [◀] and [▶] arrow buttons to adjust the focus distance, and press the SET button.

- The focus distance is fixed, and you are returned to the Shooting Screen.



NOTE

About the focal length

- The indicated focal length is that as measured from the lens surface.
- There may be somewhat of a disparity between the focal length numerical value that is set using the manual focus and the actual distance to the subject. To confirm the focus, it is best to check that the image is in focus on the LCD monitor.

About zoom movement when using the manual focus

- If the focus distance is set to 20 cm (7.87 in) or less, the zoom is automatically set to the wide end.
- When the focus distance is set to 20 cm (7.87 in) or less, the zoom will function only within the range at which the image is focused.

FRAME RATE SETTING

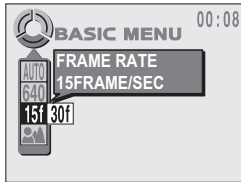
The frame rate is the number of frames shot each second in a video clip. The higher the frame rate during recording, the smoother the video playback appears. On the other hand, a higher frame rate uses more memory.

- 1** Set the camera to the video clip shooting mode (see page 43).
-

- 2** Set the camera to the **BASIC** shooting mode (see page 36), and select the frame rate menu.

15f : The video clip will be recorded at a rate of 15 frames per second.

30f : The video clip will be recorded at a rate of 30 frames per second.



- 3** Select the icon for the desired frame rate, and press the **SET** button.
-

OTHER SHOOTING FUNCTIONS

Using the zoom

There are two zoom functions: optical zoom and digital zoom.

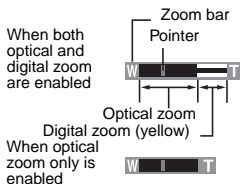
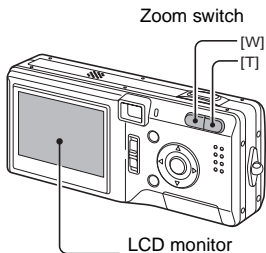
1 Point the camera lens at the subject.

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 (if digital zooming is enabled).



3 Press the shutter release button.

NOTE

- The digital zoom is not available when you are shooting without using the LCD monitor, at a resolution of [6M] or higher, or at a frame rate of [30f].

OTHER SHOOTING FUNCTIONS




Using the flash

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 four modes of operation (automatic flash mode, forced flash mode, flash off mode, and red-eye reduction mode). The flash is available only when shooting still images.

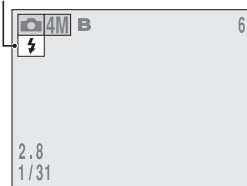
1 Set the camera to the still image shooting mode (see page 42).

- The current flash mode is shown on the LCD monitor.

No icon: The digital 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).

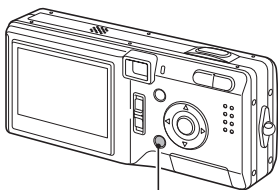
- : The flash will operate with every image captured regardless of the conditions. Use this setting under backlight conditions, when the subject is in shade, under fluorescent lighting conditions, etc. (forced flash).
- : The flash will not operate even in dark situations. Use this setting when capturing an image in a location where flash photography is prohibited, or when shooting a night landscape scene (flash off).
- : The digital camera will detect the brightness of the subject, and when the light is determined to be insufficient, the flash will automatically operate. At this time the illumination light will flash white in order to reduce the red reflection ("red-eye") in the subject's eyes.

Flash mode

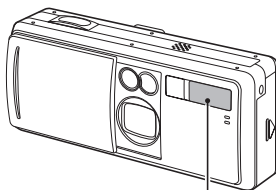


2 Press the flash button to select the flash mode.

- Each time the flash button is pressed, the flash mode icon changes.



Flash button



Flash

OTHER SHOOTING FUNCTIONS

3 Press the shutter release button.


- The image is captured in the desired flash mode.

<Shooting without using the LCD monitor>

- ① Press the flash button.
 - The LCD monitor turns on briefly to show the currently set flash mode.
- ② Press the flash button within 5 seconds to set the desired flash mode.

NOTE

In the automatic flash mode...

- In the automatic flash mode using the LCD monitor, when the shutter release button is depressed halfway, a  icon appearing in the upper right area of the LCD monitor indicates that the flash will operate.

VIEWING IMAGES

- 1 Set the main switch to [▶].**
- The last recorded image is displayed on the LCD monitor.

- 2 Select the image you wish to view.**
- To display the previous image, press the [◀] arrow button.
- To display the next image, press the [▶] arrow button.

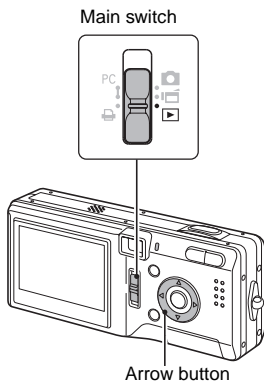
- 3 Play back a video clip.**
- Follow these steps to play back a video clip.

Normal playback

- Press the SET button.

Pause

- While the video clip is playing, press the [▲] arrow button. To resume playback, press the SET button.



VIEWING IMAGES

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

- **During forward playback**

After pausing playback, press the [▶] arrow button.

For slow playback, press and hold the [▶] arrow button.

- **During reverse playback**

After pausing playback, press the [◀] arrow button.

For slow reverse playback, press and hold the [◀] arrow button.

To accelerate playback

- **2x fast forward playback**

During normal playback, press the [▶] arrow button.

- **20x fast forward playback**

- During 2x playback, press the [▶] arrow button.

- During fast forward playback, the audio is not heard.

- Press the [◀] arrow button for reverse playback. The audio is not heard.

- **Return to normal playback speed**

Press the SET button.

- **To cancel playback**

Press the [▼] arrow button.

HINT

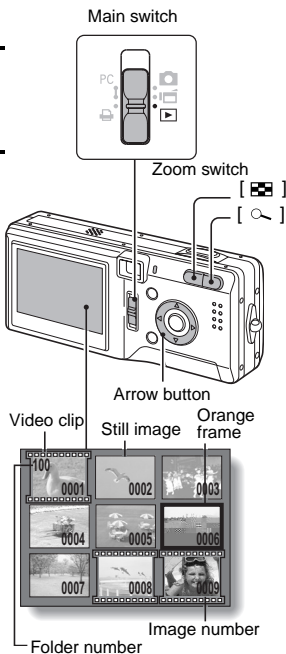
- If you press the shutter release button while an image is displayed, the image number will be shown. Press the shutter release button again to turn off the image number indication.

Convenient 9-image display playback

- 1** Set the main switch to [▶].
- 2** Press [W] ([📷]) on the zoom switch.
- 3** Select the image to play back.

- Press the [▲], [▼], [◀] or [▶] arrow button 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.



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 the image is displayed.
- Use the arrow buttons 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.

- The maximum degree of magnification will depend on the resolution of the original image.
- The maximum magnification is about 51x at **[8M]** resolution.
- If the image has been rotated, it will be returned to its original orientation and then enlarged.
- One scene (still image) of a paused video clip can be enlarged; however, a video clip cannot be played while enlarged.



HINT

The magnified portion of the image can be saved as a separate image.


- Press the shutter release button. The magnified portion is saved as a new still image.

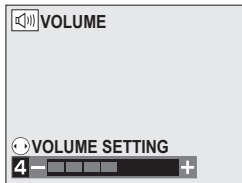
HINT

To play back a voice memo (see page 92)...

- Display the image, and press the SET button. The voice memo recorded with the image is played back.

To adjust the volume...

- ① Display the Playback Setting Screen (see page 36).
- ② Select the volume icon , and press the SET button.
 - The volume control bar appears.
- ③ Press [◀] or [▶] on the arrow button to adjust the volume.



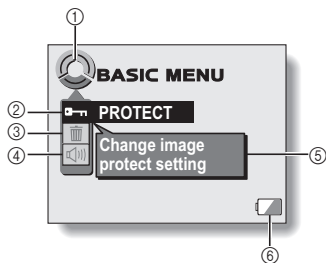
To view video clips on your computer

- You can view video clips taken with this camera on your computer using QuickTime Ver. 3.0 or later from Apple.
- By using the QuickTime Plug-in included with QuickTime, you can also play back your video clips on your Internet browser.
- QuickTime 6.5 for Windows and Macintosh is supplied with the included CD-ROM (Sanyo Software Pack).
- Online information about QuickTime can be found at <http://www.apple.com/quicktime/>.

ABOUT THE BASIC MODE PLAYBACK SETTING SCREEN

Various functions are available from the playback setting screen. You can set the protect function to prevent images from being accidentally erased, delete all the data, and adjust the playback volume of voice memos and video clips.

BASIC MODE Playback Setting Screen




- ① **Menu mode icon**
- ② **Protect (prevent accidental erase)**
- ③ **Erase icon**
- ④ **Volume control**
- ⑤ **HELP display**

- ⑥ **Remaining battery pack charge**
Not displayed when the remaining battery pack charge is near full or when the AC adaptor (sold separately) is used.

VOLUME ADJUSTMENT

The playback volume for voice memos recorded with still images and sequential shots and for video clips can be adjusted.

- 1** Play back an image.
- 2** Display the Playback Setting Screen (see page 36).
- 3** Select the volume icon , and press the SET button.
 - The volume control bar appears.
- 4** Press [◀] or [▶] on the arrow button to adjust the volume.

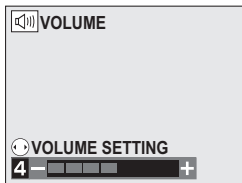


IMAGE PROTECT MODE (PREVENT ACCIDENTAL ERASURE)

By using the image protect mode, you can prevent accidental erasure or overwriting of the important data that you want to keep. The protect mode can be applied to a still image, to single images of a sequential shots sequence, to a video clip, or to an audio recording.

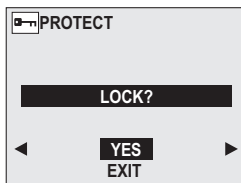
1 Display the data that you want to protect.

2 Display the Playback Setting Screen (see page 36).


3 Select the protect icon .

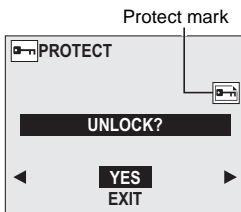
4 Press the SET button.

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



5 Select “YES”, and press the SET button.

- The protect mode is set for the data.
- The protect mark  indicates that the data is locked.



CAUTION

- Even if the protect mode is set for certain data files, they will be erased if the card is reformatted (see page 134).

HINT**To select a different image in steps 4 and 5...**

- Press [◀] or [▶].

To cancel the protect mode for an image...


- Display the desired data and repeat steps **2** to **5**. The protect mark will disappear and the protect mode is canceled.

ERASING DATA

Images, video clips, and sound recordings can be erased one at a time, or all at once.

1 Display the data that you want to erase.

2 Display the Playback Setting Screen (see page 36).

3 Select the erase icon  and press the SET button.

- The Erase Screen appears.

For still images/sequential shots:

ONE ERASE: Erases one still image at a time.

ERASE ALL: Erases all the images.

For video clips:

ONE ERASE: Erases the video clip displayed.

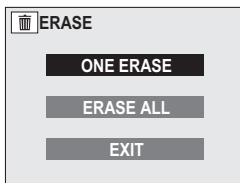
ERASE ALL: Erases all the images.

For audio recordings:

ONE ERASE: Erases one audio recording at a time.

ERASE ALL: Erases all the audio recordings.

- Select "EXIT", and press the SET button, to return to the Playback Setting Screen.

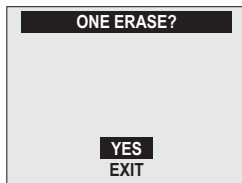


-
- 4** Press [▲] or [▼] on the arrow button to select the desired type of erase, and press the SET button.

- The Erase Confirmation Screen appears.

YES: Erases the selected data.

EXIT: Does not erase the selected data and returns to the Erase Screen.



-
- 5** Press [▲] to select “YES”, and press the SET button.

- “ERASING” is displayed, after which the next image appears. The data is erased.
- To erase other data, select “EXIT”, press [◀] or [▶] to display the data that you want to erase and repeat step 5.


HINT

To select a different data in step 4...



- If “ONE ERASE” is selected, select “EXIT”, and press [◀] or [▶] on the arrow button to select different data.

HINT

Audio data

- To erase audio data, follow steps 1 through 3 on page 131 to select the audio data you wish to erase. If you select “PLAY” and press the SET button, the selected audio data is played back. If you select the erase icon , the screen in step 4 above appears. follow steps 4 and 5 to erase the audio data.

To quickly erase the currently displayed image

- ① Display the image you want to erase.
- ② Press the flash [] ([]) button.
 - The Erase Confirmation Screen appears.
- ③ Select “YES”, and press the SET button.
 - The displayed image is erased.

ABOUT THE EXPERT MODE SHOOTING SETTING SCREENS

Compared to the BASIC mode, the EXPERT mode allows you much more control over the various shooting settings.

EXPERT Mode Shooting Setting Screens

Still Image/Sequential Shots Shooting Setting Screen

* All the icons never appear at the same time.

Main switch

PC

EXPERT MENU

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰

RESOLUTION
2288 × 1712 (4M)

4M 8M 6M 2M WEB	②
MF C AF	③
	④
	⑤
FINE SFINE NORM	⑥
ISO-A 50 100 200 400	⑦
AWB	⑧
AF C AF-S	⑨
	⑩
D44 D5M	⑪
	⑫
	⑬
EXP	⑭

① **Menu mode icon (see page 36)**

Switch the menu mode.

② **Resolution menu (see page 59)**

4M: 2288 × 1712-pixel (4 million pixels) resolution icon


8M: 3264 × 2448-pixel (8 million pixels) resolution icon

6M: 2880 × 2160-pixel (6 million pixels) resolution icon

2M: 1600 × 1200-pixel (2 million pixels) resolution icon

WEB: 640 × 480-pixel (300,000 pixels) resolution icon

③ **Focus menu (see page 61)**

: Shooting with the autofocus

: Macro photography (close-ups)


: Distance photography

MF: Shooting with manual focus


C-AF: Shoot using the continuous auto focus.


④ **Self-timer menu (see page 57)**

: Self-timer off icon


₂: Image captured 2 seconds after shutter release button is pressed.


₁₀: Image captured 10 seconds after shutter release button is pressed.

₂: Two seconds after the shutter release button is pressed, sequential shots are captured.

₁₀: Ten seconds after the shutter release button is pressed, sequential shots are captured.

⑤ **Mode menu (see page 42)**

: One still image is captured when shutter release button is pressed (still image shooting mode)

₁₀: Sequential images are captured when shutter release button is pressed (sequential shots shooting mode)

⑥ **Compression menu (see page 83)**

FINE: For shooting at low compression

SPINE: For shooting at super-low compression

NORM: For shooting at normal (moderate) compression

⑦ **ISO sensitivity menu (see page 84)**

ISO-A: Auto sensitivity setting (ISO50 to 200)

50: ISO50 setting


100: ISO100 setting


200: ISO200 setting


400: ISO400 setting


⑧ **White Balance menu (see page 86)**


AWB: The camera determines the optimum white balance settings based on the ambient light and weather.

: Fair weather setting


: Overcast setting

: Fluorescent lighting setting

: White (incandescent) light setting

: For setting the most accurate white balance


⑨ **Spot focus menu (see page 88)**


: Multi-section focus setting

AF-S: Spot focus on setting


⑩ **Light-measuring mode (EXP MEASURE) menu (see page 89)**


: Multi-section light-measuring setting

: Center-weighted light-measuring setting

: Spot light-measuring setting


⑪ **Digital Zoom menu (see page 90)**

: Digital zoom is enabled.

: Digital zoom is disabled.

⑫ **Voice Memo menu (see page 92)**

: Voice memo is not recorded

: Voice memo is recorded

⑬ **Assist light menu (see page 93)**

: The assist light setting is disabled.

: The assist light setting is enabled.

⑭ **Exposure correction icon (see page 94)**
Adjust the image brightness.

⑮ **Number of remaining images that can be captured (see page 136)**

⑯ **HELP display (see page 120)**

⑰ **Remaining battery pack charge (see page 138)**

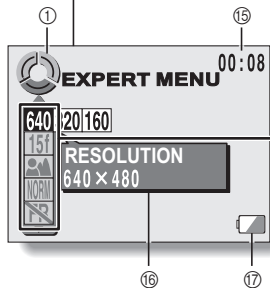
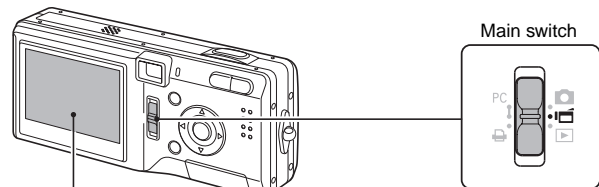
Not displayed when the remaining battery pack charge is near full or when the AC adaptor (sold separately) is used.

- When two mutually exclusive settings are made, the later setting has priority, and the related settings are changed accordingly.

ABOUT THE EXPERT MODE SHOOTING SETTING SCREENS

Video Clip Shooting Setting Screen

* All the icons never appear at the same time.



640 320 160	②
15f 30f	③
MF	④
FINE NORM	⑤
FR	⑥
ISO-A 200 400 800 1600	⑦
AWB	⑧
AF-S AF-S	⑨
	⑩
	⑪
DAAA	⑫
	⑬
EXP	⑭

① **Menu mode icon (see page 36)**

Switch the menu mode.

② **Resolution menu (see page 59)**

640: 640 × 480-pixel resolution setting

320: 320 × 240-pixel resolution setting

160: 160 × 120-pixel resolution setting

③ **Frame Rate menu (see page 63)**


15f: Shoot at 15 frames/sec

30f: Shoot at 30 frames/sec

④ **Focus menu (see page 61)**

: Shooting with the autofocus

: Macro photography (close-ups)

: Distance photography


MF: Shooting with manual focus

⑤ **Compression menu (see page 83)**

FINE: For shooting at low compression

NORM: For shooting at normal (moderate) compression

⑥ **Flicker-reduction menu (see page 95)**

: Flicker-reduction function off setting

FR: Flicker-reduction function on setting

⑦ **ISO sensitivity menu (see page 84)**

ISO-A: Auto sensitivity setting (ISO200 to 800)

200: ISO200 setting

400: ISO400 setting

800: ISO800 setting

1600: ISO1600 setting


⑧ **White Balance menu (see page 86)**


AWB: The camera determines the optimum white balance settings based on the ambient light and weather.

: Fair weather setting

: Overcast setting

: Fluorescent lighting setting

: White (incandescent) light setting


: For setting the most accurate white balance


⑨ **Spot focus menu (see page 88)**


: Multi-section focus setting

AF-S: Spot focus on setting

⑩ **Light-measuring mode (EXP MEASURE) menu (see page 89)**

: Multi-section light-measuring setting

: Center-weighted light-measuring setting

: Spot light-measuring setting


⑪ **Optical Zoom menu (see page 90)**

: Optical zoom is enabled.


: Optical zoom is disabled.


⑫ **Digital Zoom menu (see page 90)**

: Digital zoom is enabled.

: Digital zoom is disabled.

⑬ **Assist light menu (see page 93)**

: The assist light setting is disabled.

: The assist light setting is enabled.

⑭ **Exposure correction icon (see page 94)**
Adjust the image brightness.

⑮ **Remaining recording time available (see page 137)**

⑯ **HELP display (see page 120)**

⑰ **Remaining battery pack charge (see page 138)**

Not displayed when the remaining battery pack charge is near full or when the AC adaptor (sold separately) is used.

- When two mutually exclusive settings are made, the later setting has priority, and the related settings are changed accordingly.

COMPRESSION RATE SETTING

Use the procedure below to set the compression rate. Even if the same resolution is used, you can change the compression setting to decrease the image data size so that you can capture more images, or increase the image data size for no loss in image quality.

1 Display an EXPERT Mode Shooting Setting Screen (see page 36).

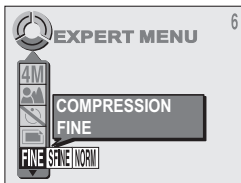
2 Select the desired compression rate from the compression menu, and press the SET button.

[FINE]: Stores the data with a low compression (high quality).

[SPFINE]: Stores the data with an extremely low compression (super high quality).

[NORM]: Stores the data with normal compression (normal quality).

- The possible compression rate settings for each shooting mode are shown in the following table.



<Example: Still image shooting mode>

		Com- pres- sion rate	Resolution							
			8M	6M	4M	2M	WEB	640	320	160
Shooting mode	Still image	[SPFINE]	Not available	Not available	Yes	Not available	Not available	Not available	Not available	Not available
		[FINE]	Yes	Yes	Yes	Yes	Yes	Not available	Not available	Not available
		[NORM]	Yes	Yes	Yes	Yes	Yes	Not available	Not available	Not available
	Sequen- tial shot	[SPFINE]	Not available	Not available	Yes	Not available	Not available	Not available	Not available	Not available
		[FINE]	Not available	Not available	Yes	Yes	Yes	Not available	Not available	Not available
		[NORM]	Not available	Not available	Yes	Yes	Yes	Not available	Not available	Not available
	Video clip	[FINE]	Not available	Not available	Not available	Not available	Not available	Not available	Yes	Not available
		[NORM]	Not available	Not available	Not available	Not available	Not available	Yes	Yes	Yes

ISO SENSITIVITY SETTING

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 an EXPERT Mode Shooting Setting Screen (see page 36).

2 Select the desired ISO sensitivity setting from the ISO sensitivity menu.

ISO-A: Sets the ISO sensitivity automatically (equivalent to ISO50 to 200 [video clip shooting mode: ISO200 to 800]).

50: Sets the sensitivity to ISO50 equivalent (still image and sequential shots shooting modes only).

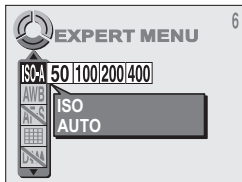
100: Sets the sensitivity to ISO100 equivalent (still image and sequential shots shooting modes only).

200: Sets the sensitivity to ISO200 equivalent.

400: Sets the sensitivity to ISO400 equivalent.

800: Sets the sensitivity to ISO800 equivalent (video clip shooting mode only).

1600: Sets the sensitivity to ISO1600 equivalent (video clip shooting mode only).



<Example: Still image shooting mode>

ISO SENSITIVITY SETTING

3 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 SETTING


This digital 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 an EXPERT Mode Shooting Setting Screen (see page 36).


2 Select the desired white balance setting from the white balance menu.


AWB: The digital 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.










WHITE BALANCE SETTING

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 Press the SET button.

- This completes the white balance setting.
- Once the white balance setting is programmed for the  icon, it is retained even if another white balance setting ( ,  ,  ,  , 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 2, select  , and then press the SET button.

FOCUS AREA SETTING


You can choose from the following 2 types of autofocus:


Multi-section 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.

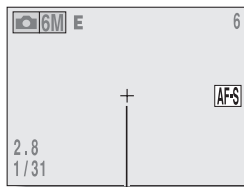
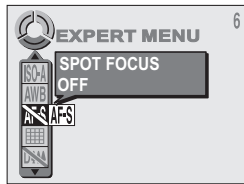
1 Display an **EXPERT Mode Shooting Setting Screen** (see page 36).

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

: Multi-section 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

NOTE

- It may be difficult to focus if there is little contrast in the subject or if the subject is very small.

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.

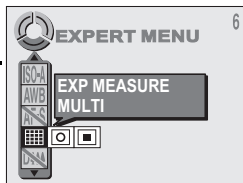
Center-weighted light-measuring: Light is measured from the entire shooting screen, but gives more importance to the values near the center.

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 an EXPERT Mode Shooting Setting Screen (see page 36).

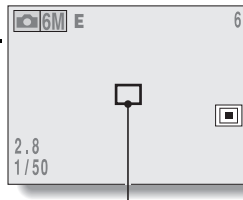
2 Select the desired light-measuring mode from the light-measuring mode (EXP MEASURE) menu.

-  : 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

ZOOM SETTINGS

ZOOM SETTINGS

Setting the digital zoom

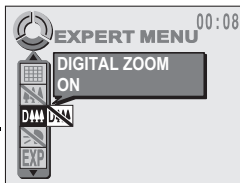
This setting allows you to specify whether or not the digital zoom is enabled.

1 Display an EXPERT Mode Shooting Setting Screen (see page 36).

2 Select the desired digital zoom setting from the digital zoom menu.

: Digital zoom can be used.

: Digital zoom cannot be used.



3 Press the SET button.
• This completes the digital zoom setting.


HINT



- The digital zoom does not function in the following situations:
When the resolution is set to **8M** or **6M**.
In the video clip shooting mode when the frame rate is set to **30f**.

ADDING A VOICE MEMO

In the still image shooting mode, you can record up to approximately 10 seconds of sound (called a "voice memo") when capturing the image.

- 1 Set the camera to the still image shooting mode (see page 42), and display the EXPERT Mode Shooting Setting Screen (see page 36).

- 2 Select the voice memo icon  from the voice memo menu, and press the SET button.

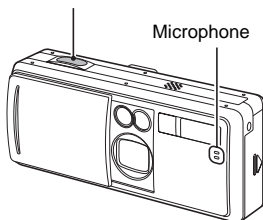
- : For no voice memo.
- : For adding a voice memo.



- 3 Press the shutter release button to capture the image, and then talk into the microphone.

- During recording, **REC** appears in the upper right area of the LCD monitor.
- A voice memo of up to about 10 seconds can be recorded.
- To end the recording within 10 seconds, press [▼] on the arrow button.
- After recording has finished, the add voice memo setting reverts to off.

Shutter release button




ASSIST LIGHT SHOOTING

The assist light that is emitted before the flash to reduce the red-eye effect can also be used to brighten the subject during close-up photography in dark surroundings.

1 Display an EXPERT Mode Shooting Setting Screen (see page 36).

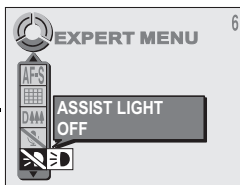
2 Select the desired assist light setting from the assist light menu.

: The assist light is disabled.

: The assist light is enabled.

3 Press the SET button.

- This completes the assist light setting.



NOTE

- When the assist light is enabled, the illumination light also shines when shooting a video clip in dark surroundings.

EXPOSURE CORRECTION

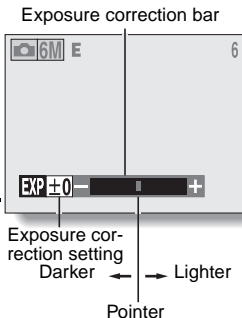
When capturing images, you can make the image lighter or darker.

- 1 Set the camera to the **EXPERT** shooting mode (see page 36), and exit the Shooting Setting Screen or Shooting Information Screen (see page 96).

- Press the MENU button to exit the Shooting Setting Screen or Shooting Information Screen.

- 2 Press [**◀**] or [**▶**] on the arrow button.

- The exposure correction bar appears.
- At this point, you can press [**◀**] or [**▶**] on the arrow button to adjust the exposure.



HINT

- Exposure correction setting is canceled in the following cases:
 - When the pointer is set to the center position.
 - After the shooting mode is changed.
 - When the BASIC mode is set.
 - After the power is turned off.
- 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 $+1.8\text{EV}$.
- While exposure correction is active, the accessing indicator in the viewfinder flashes green.
- You can also correct the exposure by selecting the exposure correction icon **EXP** on the Shooting Setting Screen.

FLICKER-REDUCTION SETTING (VIDEO CLIP SHOOTING ONLY)

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 for a frequency of 50 Hz.

1 Set the camera to the video clip shooting mode (see page 43), and display the EXPERT Mode Shooting Setting Screen (see page 36).

2 Select the desired flicker-reduction setting from the flicker-reduction menu.

- ~~FR~~: Turns off the flicker-reduction setting.
- FR: Turns on the flicker-reduction setting.



3 Press the SET button.

- This completes the flicker-reduction setting.
-

HINT

- Note that although the flicker-reduction setting decreases the image flicker that occurs under fluorescent lighting, the image quality may deteriorate slightly.
- If the flicker-reduction setting is used outdoors on a very bright day, a halation effect may occur.
- If the flicker-reduction is set to FR, then the ISO sensitivity setting (see page 84) becomes fixed at ISO-A.

SHOOTING SETTING INFORMATION DISPLAY (SHOOTING INFO SCREEN)

This Information Screen allows you to check the current settings while shooting.

To display

1 Put the digital camera in a shooting mode.

2 Press the MENU button for at least 1 second.
• The Shooting Information Screen appears.

To exit

<When using the LCD monitor>

- Press the MENU button.

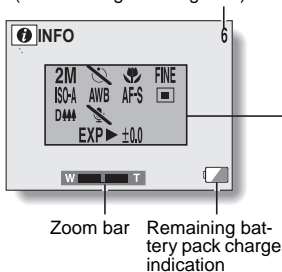
<When not using the LCD monitor>

- Press the MENU button, or wait 5 seconds.

SHOOTING SETTING INFORMATION DISPLAY (SHOOTING INFO SCREEN)

Shooting Info Screen

Number of images remaining
(or remaining shooting time)



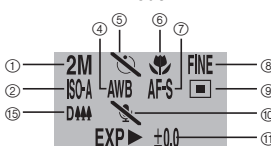
- ① Resolution setting (see page 59)
 - ② ISO sensitivity setting (see page 84)
 - ③ Optical zoom setting (see page 90)
 - ④ White balance setting (see page 86)
 - ⑤ Self-timer setting (see page 57)
 - ⑥ Focus range setting (see page 61)
 - ⑦ Focus area setting (see page 88)
 - ⑧ Compression rate setting (see page 83)
 - ⑨ Light-measuring mode setting (see page 89)
 - ⑩ Voice memo setting (see page 92)
 - ⑪ Exposure correction setting (see page 94)
 - ⑫ Scene select setting (see page 51)
 - ⑬ Flicker-reduction setting (see page 95)
 - ⑭ Frame rate setting (see page 63)
 - ⑮ Digital zoom setting (see page 91)
- All the icons never appear at the same time.

■ Still image/sequential shots shooting modes

- BASIC mode



- EXPERT mode

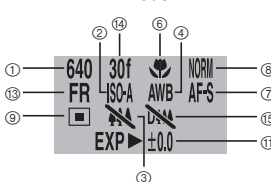


■ Video clip shooting mode

- BASIC mode



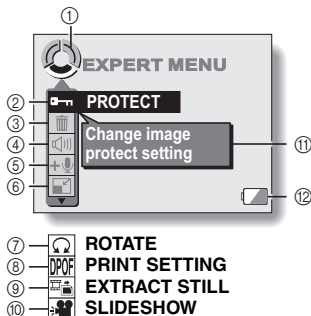
- EXPERT mode



ABOUT THE EXPERT MODE PLAYBACK SETTING SCREEN

In addition to the playback functions available in the BASIC mode, in EXPERT mode playback you can also edit and process images, change the print settings, and more.

Expert Mode Playback Setting Screen



- ① Mode menu icon
- ② Data protect setting (prevent accidental erase)
- ③ Data erase
- ④ Volume control
- ⑤ Audio dubbing
- ⑥ Resize
- ⑦ Rotate image
- ⑧ Print settings
- ⑨ Extract still image
- ⑩ Slideshow settings and playback
- ⑪ HELP display
- ⑫ Remaining battery pack charge

Not displayed when the remaining battery pack charge is near full or when the AC adaptor (sold separately) is used.

- Icons ⑦ through ⑩ on the Playback Setting Screen are displayed when you press the [▲] or [▼] arrow button to scroll down the screen.

SLIDESHOW PLAYBACK

- 1** Display the still image or video clip to play back, and display the EXPERT Mode Playback Setting Screen (see page 36).
-

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

- The Slideshow Screen appears.

STILL Only still images are played
IMAGE: back in the slideshow.

VIDEO Only video clips are played
CLIP: back in the slideshow.

MIX: Still images and video clips are played back in the slideshow in the order in which they were recorded.

EXIT: Return to the EXPERT Mode Playback Setting Screen.

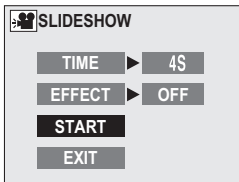


<When STILL IMAGE or MIX is selected>

- Select "TIME" or "EFFECT", press the SET button.
- Press [▲] or [▼] on the arrow button to select the desired setting.
- Press the SET button.

- 3** Select "START", and press the SET button.

- Slideshow playback is canceled when the SET button, MENU button or an arrow button is pressed.




NOTE

If the recorded voice memo is longer than the set slide time...

- The voice memo is played to the end, after which the next image is displayed.

CHANGING IMAGE SIZE (RESIZE)

The size of a still image that has already been captured at a resolution of **640** or more can be changed to 640 × 480 pixels or 320 × 240 pixels. The resized image is saved as a separate image.

- 1** Display the still image whose size you want to change.
- 2** Display the **EXPERT Mode Playback Setting Screen** (see page 36).
- 3** Select the resize icon , and press the **SET** button.
 - The Resize Screen appears.



CHANGING IMAGE SIZE (RESIZE)

4 Press [▲] or [▼] on the arrow button to select the new image size.

640: The saved image will be 640 × 480 pixels.

320: The saved image will be 320 × 240 pixels.

EXIT: Return to the EXPERT Mode Playback Setting Screen.

5 Press the **SET** button.

- The Confirm Size Change Screen appears.

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

- Resizing begins.
- When resizing is completed, you are returned to the EXPERT Mode Playback Setting Screen.



ROTATING AN IMAGE


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


1 Display the still image you want to rotate.

2 Display the EXPERT Mode Playback Setting Screen (see page 36).

3 Select the rotate image icon , and press the SET button.

- The Rotate Image Screen appears.

: Rotates image clockwise 90 degrees

: Rotates image counterclockwise 90 degrees

4 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.

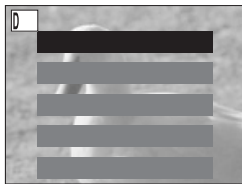


PRINT SETTINGS

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 **EXPERT Mode Playback Setting Screen**.



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

• The Print Settings 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) 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

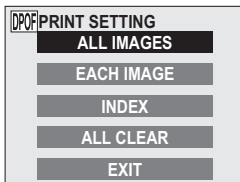
You can specify print settings for each individual image (EACH IMAGE), or apply the print settings to all the images on the card (ALL IMAGES).

1 Display the Print Settings Screen (see page 103).

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

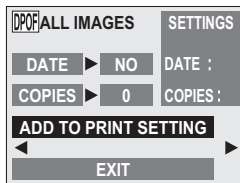
ALL IMAGES: The set print settings are applied to all the still images on the card.

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



3 Press the **SET** button.

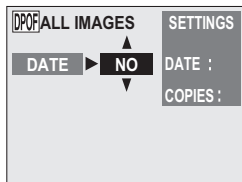
- The Date/Number Print Screen appears.
- If **EACH IMAGE** was selected, press the [◀] or [▶] arrow button to display the desired image to print.
- Under "SETTINGS" the settings that are currently active for the displayed image are shown. You can press the [◀] or [▶] arrow button to confirm the print settings for each image.



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

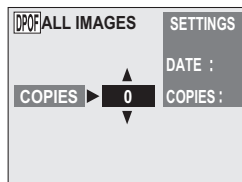
<Specifying dated prints>

- ① Press the [▲] or [▼] arrow button to select "DATE".
- ② Press the SET button.
 - The Print Date Screen appears.
- ③ Press the [▲] or [▼] arrow button 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/Number Print Screen.



<Specifying the number of prints>

- ① Press the [▲] or [▼] arrow button to select "NUMBER".
- ② Press the SET button.
 - The Print Number Screen appears.
- ③ Press the [▲] or [▼] arrow button to specify the number of prints.
 - Press the [▲] or [▼] arrow button until the desired number of prints is displayed.
- ④ Press the SET button.
 - You are returned to the Date/Number Print Screen.



PRINT SETTINGS

5 Select "ADD TO PRINT SETTINGS" and press the SET button.

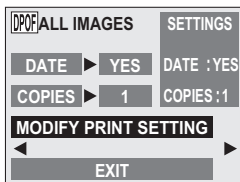
- The Confirm Print Settings Screen appears.

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.

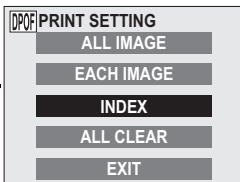


Index print

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 Settings Screen (see page 103).

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 Settings Screen.

Changing the print settings

1 Follow steps 1 to 4 on pages 105 and 106.

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 Settings Screen (see page 103).

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 Settings Screen.

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

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





ADDING A VOICE MEMO (STILL IMAGES AND SEQUENTIAL SHOTS ONLY)

You can add a voice memo to a still image or sequential shots image previously recorded.

1 Display the still image to which you want to add a voice memo.

2 Display the EXPERT Mode Playback Setting Screen (see page 36).

3 Select the add audio icon , and press the SET button.

- The Add Audio Setup Screen appears.
- If the image already has a voice memo recorded, the audio playback icon  appears on the image.



ADDING A VOICE MEMO (STILL IMAGES AND SEQUENTIAL SHOTS ONLY)

4 Press the shutter release button.

- Voice memo recording starts when the shutter release button is pressed. Talk into the microphone on the digital camera.
- A voice memo of up to about 10 seconds can be recorded.
- If you finish recording within 10 seconds, press [▼] on the arrow button to end recording.
- While the voice memo is being recorded, RECORDING and REC are displayed.



HINT

- For still images, you can also add a voice memo immediately after capturing an image (see page 92).
- After a voice memo has been added to an image, you cannot erase only the voice memo. When the image is erased, the attached voice memo is also erased.
- If a voice memo is added to an image that already has a voice memo, the new recording will replace the previous one.

EXTRACTING A STILL IMAGE FROM A VIDEO CLIP

You can select one image (scene) from a video clip, copy it, and save it as a still image (the original data remains unchanged).

1 Play back a video clip, and pause at the point you wish to copy and save.

2 Display the EXPERT Mode Playback Setting Screen (see page 36).

3 Select the extract icon, and press the SET button.

- The screen to extract an image appears.

YES: The image is copied and saved as a still image (the original data is left unchanged).

EXIT: The still image extraction procedure is canceled, and you are returned to the EXPERT Mode Playback Setting Screen.



4 Press the SET button.

- The image is extracted.
- Select "EXIT", and press the SET button, or press the MENU button, to return to the EXPERT Mode Playback Setting Screen.

HINT

To select a different image (frame) in step 3...

- Press [◀] or [▶] on the arrow button.

IMAGE INFORMATION DISPLAY (PLAYBACK INFO SCREEN)

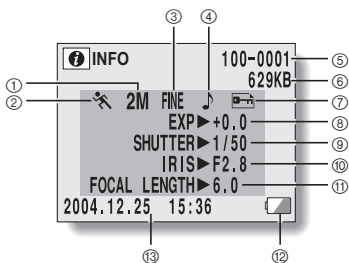
On the Information Screen you can check what the settings were when an image was captured.

1 Display the desired image.

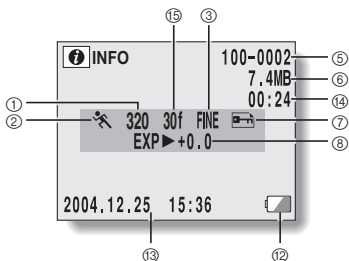
2 Press the MENU button for at least 1 second.

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

- ① Resolution
- ② Scene select setting
- ③ Compression rate
- ④ Voice memo indicator
- ⑤ Location of data (folder number) and file name
- ⑥ Data size
- ⑦ Protect setting
- ⑧ Exposure correction setting
- ⑨ Shutter speed
- ⑩ Aperture
- ⑪ Focus distance
- ⑫ Remaining battery pack charge
- ⑬ Date and time of image
- ⑭ Playback time
- ⑮ Frame rate setting



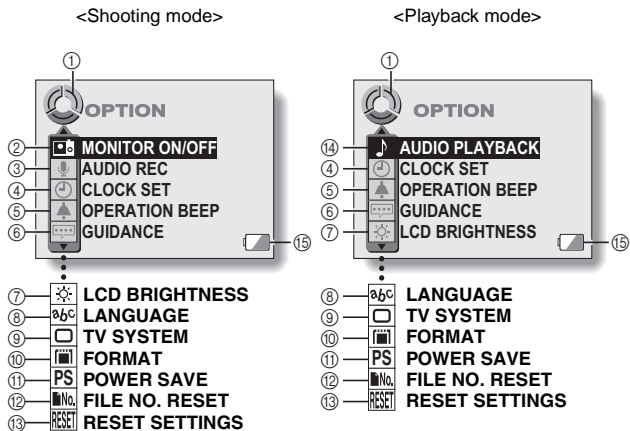
<Still image/sequential shots>



<Video clip>

ABOUT THE OPTION MODE SCREEN

With the option mode, you can adjust the various settings related to camera operation, reformat a card, and more.



- ① Menu mode icon
- ② Monitor ON/OFF setting
- ③ Audio recording
- ④ Date and time setting
- ⑤ Operation sound (beep) settings
- ⑥ Guidance settings
- ⑦ Monitor brightness setting
- ⑧ Display language

- ⑨ TV system
- ⑩ Card format
- ⑪ Power save function
- ⑫ File number reset
- ⑬ Reset settings
- ⑭ Audio playback
- ⑮ Remaining battery charge indication

- Icons ⑦ through ⑬ in the shooting mode, and icons ⑧ through ⑬ in the playback mode are displayed when you press the [▲] or [▼] arrow button to scroll down the screen.

DATE AND TIME SETTING

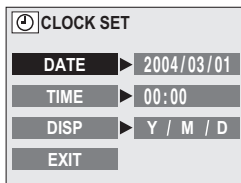
The digital camera will record the date and time an image or audio recording is taken so that you can display them during playback. Therefore, before capturing images, make sure the correct date and time are set.

Example: To set the clock to 7:30 p.m. on December 23, 2004

1 Display the Option Mode Screen (see page 36).

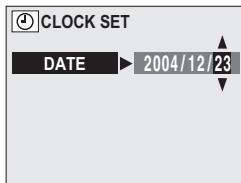
2 Select the clock set icon , and press the SET button.

- The CLOCK SET menu appears.
- The current date and time settings appear.
- 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 Mode Screen, press the MENU button, or select "EXIT" and press the SET button.



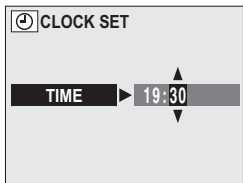
3 Set the date.

- ① Press the arrow button to select "DATE".
- ② Press the SET button.
 - The Set Date Screen appears.
- ③ Press the arrow button to set the date to "2004/12/23".
 - Year setting → [▶] → Month setting → [▶] → Day setting.
 - Press [▲] to increase the number.
 - Press [▼] to decrease the number.
- ④ Press the SET button.



4 Set the clock.

- ① Press the arrow button to select "TIME".
- ② Press the SET button.
 - The Set Time Screen appears.
- ③ Press the arrow button to set the time to "19:30".
 - Hour setting → [▶] → Minute setting.
 - A 24-hour clock is used for the time display.
- ④ Press the SET button.



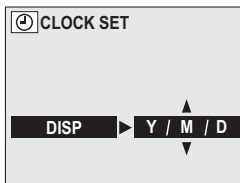
DATE AND TIME SETTING

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

- ① Press the arrow button to select "DISP".
- ② Press the SET button.
 - The Set Date Format Screen appears.
- ③ Press [▲] or [▼].
 - When [▲] is pressed, the displayed date order changes as follows:

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


- Press [▼] to change 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 Mode 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). Also, when the backup memory has failed and the camera's clock is not set, the clock alert icon  appears.

To correct the date and time settings

- After steps 1 and 2, press [▼] on the arrow button to select the line of the setting that you want to change, and press [▶] to select that setting. Then press [▲] or [▼] to set the new setting.

OPERATION SOUNDS SETTING

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

1 Display the Option Mode Screen (see page 36).

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

- The Set Operation Sounds Screen appears.

MUTE:

Mute or enable the operation sounds and audio guide.

TURN ON/OFF:

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

SHUTTER:

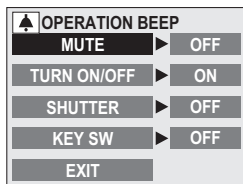
Select the sound that is produced when the shutter release button is pressed, or when a photo is taken using the self-timer.

KEY SW:

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

EXIT:

Return to the Option Mode Screen.



OPERATION SOUNDS SETTING

3 Press [▲] or [▼] on the arrow button to select the desired option, and then press SET button.

<If MUTE or TURN ON/OFF is selected>

- The screen to turn the operation sounds on or off appears.
- Press [▲] or [▼] on the arrow button to select the desired setting, and press the SET button.

MUTE

ON: The operation sounds and audio guide are muted.

OFF: The operation sounds and audio guide are enabled.

TURN ON/OFF

ON: Activates the operational sounds when the camera is turned on or off.

OFF: Deactivates the operational sounds when the camera is turned on or off.

<If SHUTTER or KEY SW is selected>

- The screen to select the operation sounds appears.
- Select from 9 different sounds (A to H, and ☺) for the SHUTTER sound, and from 8 different sounds (A to H) for the KEY SW sound.
- You can press the shutter release button to preview the selected operation sound.
- If OFF is selected, no sound is produced.
- Press [▲] or [▼] on the arrow button to select the desired setting, and press the SET button.

HINT

- A quick way to set the MUTE to ON is to press and hold the MENU button while turning on the camera.
- The volume of the operation sounds cannot be adjusted.

NOTE

About the MUTE setting

- If the MUTE function is set to "ON", the audio guide is also muted.

GUIDANCE FUNCTIONS

You can set whether or not the help display is shown on the LCD monitor, the audio guide giving verbal operation instructions is enabled, and the camera light illuminates.

1 Display the Option Mode Screen (see page 36).

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

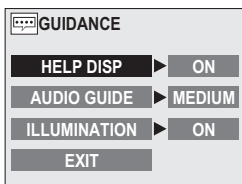
- The Set Guidance Screen appears.

HELP DISP: Enable or disable the HELP messages display.

AUDIO GUIDE: Adjust the volume of the audio guide. When set to "OFF", the audio guide is muted.

ILLUMINATION: Enable or disable the illumination light.

EXIT: Cancel the setting mode, and return to the Option Mode Screen.



3 Press the [▲] or [▼] arrow button to select the desired setting, and press the SET button.

- The setting screen for the selected setting appears.
- Press the [▲] or [▼] arrow button to select the setting, and press the SET button.

LANGUAGE

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

1 Display the Option Mode Screen (see page 36).

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.

FRANCAIS: Select for French.

ITALIANO: Select for Italian.

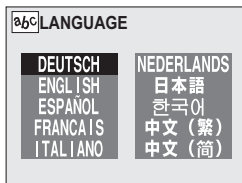
NEDERLANDS: Select for Dutch.

日本語: Select for Japanese.

한국어: Select for Korean.

中文(繁): Select for Chinese (traditional).

中文(简): Select for Chinese (simplified).



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

- You are returned to the Option Mode Screen.
-

TV SYSTEM SETTING

This setting is to specify the type of image signal that is output from the camera's DIGITAL/AV terminal.

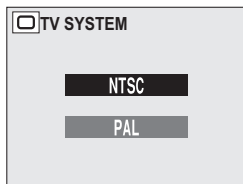
1 Display the Option Mode Screen (see page 36).

2 Select the TV system icon , and press the SET button.

- The TV System Setting Screen appears.

NTSC: Output NTSC video signals

PAL: Output PAL video signals



3 Select the appropriate TV system, and press the SET button.

CAUTION

- If the TV system setting is not correct for the connected TV, you will not be able to view the images on the TV.
- No image appears on the camera's LCD monitor when the dedicated AV cable is connected to the camera's DIGITAL/AV terminal.

POWER SAVE SETTING

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 Mode Screen (see page 36).

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

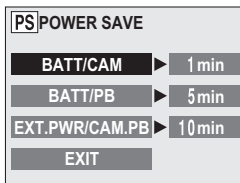
- The Power Save Setting Screen appears.

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 the AC adaptor is connected.

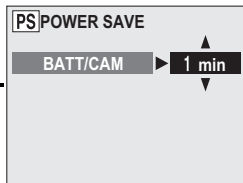
EXIT: Return to the Option Mode Screen.



3 Press [▲] or [▼] on the arrow button to select the desired option.

4 Press the SET button.

- The Set Standby Time Screen appears.



5 Press [▲] or [▼] on the arrow button to set the standby time.

[▲]: Increases the standby time.

[▼]: Decreases the standby time.

6 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 reformatted 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	00014, 00015..... 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.

Card A	0001, 0002..... 0012, 0013
--------	----------------------------

↓
Replace card

Card B	0001, 0002, 00014, 00015, 0025, 0026
--------	--------------------------------------

↑
Previously recorded images

- 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.



1 Display the Option Mode Screen (see page 36).

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.

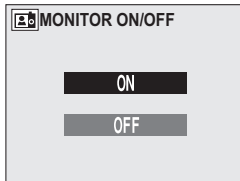
SHOOTING WITHOUT THE LCD MONITOR

You can save battery power by turning off the LCD monitor when shooting.

- 1** Set the camera to the shooting mode, and display the Option Mode Screen (see page 36).
-

- 2** Select the monitor ON/OFF icon , and press the SET button.

- The Monitor Screen appears.
 - ON: The LCD monitor is on.
 - OFF: The LCD monitor turns off.




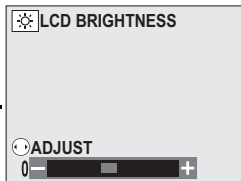
- 3** Select OFF, and press the SET button.

- The LCD monitor turns off.
- To turn the LCD monitor back on, press the MENU button to illuminate the LCD monitor, and perform steps 1 and 2 above to select the ON icon.

LCD MONITOR BRIGHTNESS

The brightness of the LCD monitor can be adjusted.

- 1 Display the Option Mode Screen (see page 36).**
- 2 Select the monitor brightness icon , and press the SET button.**
 - The Monitor Brightness Screen appears.
- 3 Press the [◀] or [▶] arrow button.**
 - Pressing [◀] makes the screen darker, and pressing [▶] makes it lighter.
- 4 Press the SET button.**
 - You are returned to the Option Mode Screen.



NOTE


- The LCD monitor brightness cannot be adjusted when the LCD monitor is set to OFF.

RECORDING AND PLAYING BACK SOUNDS

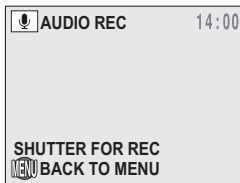
Your digital camera can record and play back sound, just like a normal tape recorder.

Recording

- 1 Set the camera to a shooting mode, and display the Option Mode Screen.

- 2 Select the audio recording icon , and press the SET button.

- The Audio Recording Screen appears.

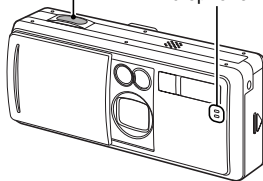


- 3 Press the shutter release button.

- Recording begins when the shutter release button is pressed. Point the microphone toward the sound you want to record.
- **REC** (recording) appears on the LCD monitor during recording.

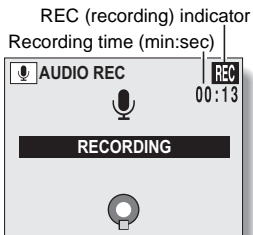
Shutter release button

Microphone



4 End the audio recording.

- Press the [▼] arrow button to end the recording. You are returned to the Audio Recording Screen.
- When the remaining recording time becomes little, a countdown of the remaining recording time is shown.
- To return to the Option Mode Screen, in the Audio Recording Screen mode, press the MENU button.



HINT

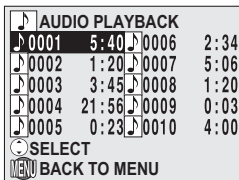
- Each single recording can consist of up to 9 hours of recording time.

RECORDING AND PLAYING BACK SOUNDS

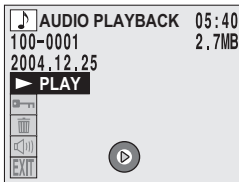
Playback

- 1 Set the camera to a playback mode, and display the Option Mode Screen (see page 36).

- 2 Select the audio playback icon , and press the SET button.
 - The Select Audio Screen appears.



- 3 Press the [▲] or [▼] arrow button to select the desired audio recording, and press the SET button.
 - The Audio Playback Screen for the selected audio recording appears.



4 Select the play icon , and press the SET button.

- Playback starts.


To pause playback

- Press the [**▲**] button to interrupt playback; press the SET button to continue playback.

To fast forward or rewind

- Fast forward: Press the [**▶**] button.
- Rewind: Press the [**◀**] button.
- If the SET button is pressed during fast forward or rewind, playback will start.

To adjust the volume

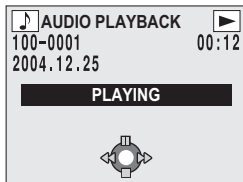
- ① On the Audio Playback Screen, select the volume icon , and press the SET button.
- ② Press [**◀**] or [**▶**] to adjust the volume.

To select a different audio recording

- On the Audio Playback Screen (step 3), press the MENU button. The Select Audio Screen appears; select the desired audio recording and play it back.

To stop playback


- During playback, press the [**▼**] button. Playback will stop, and you are returned to the Audio Playback Screen.



RESETTING THE CAMERA SETTINGS

The settings that were changed on all the setting screens can be reset to the factory-preset settings.

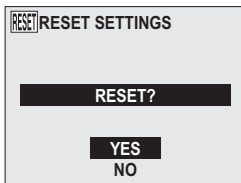
1 Display the Option Mode Screen (see page 36).

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 Mode 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

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 reformatted if the lock switch is set to the "LOCK" position. Proceed with the reformat procedure after setting the lock switch to the unlocked position (see page 24).

1 Display the Option Setting Screen (see page 36).

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

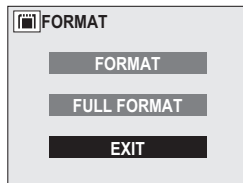
- The Format Screen appears.
- In normal use, a total format is not necessary. However, in case a card error occurs even after normal formatting, executing a total reformat may resolve the problem.

FORMAT:

A normal formatting is executed.

FULL FORMAT:

The entire card is scanned and reformatted. 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.

4 Select "YES".

5 Press the SET button.

- Formatting begins.
- During formatting, "FORMAT" and "DO NOT POWER OFF" are shown on the LCD monitor.

CAUTION

Caution during reformatting

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

Reformatting erases the data

- When a card is reformatted, all data recorded on the card is erased. Protected data (see page 75) is also erased, so before reformatting 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 reformatted 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 reformatting

- In step 4, select "EXIT", and press the SET button.

CHECKING THE REMAINING CARD MEMORY

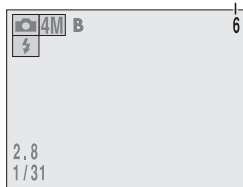
You can check how many images can be captured and how much recording time is available on the card. For a table showing the maximum number of images and recording time for specific cards, please see “Possible No. of Images/Possible Shooting Time/Possible Recording Time” on page 178.

Checking the remaining number of images and video recording time

1 Set the camera to the desired shooting mode.

- The remaining number of images appears in the upper right of the LCD monitor (for the still image and sequential shots shooting modes).
- The remaining video recording time appears in the upper right of the LCD monitor (for the video clip shooting mode).
- 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 (see page 140) and then erase them (see page 77) from the card.

Remaining number of images

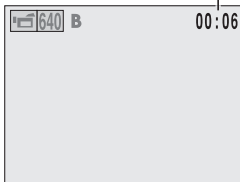


<Still image/sequential shots mode>

CHECKING THE REMAINING CARD MEMORY

- 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 changing the shooting mode, setting a lower resolution setting (see page 59), or selecting a different compression setting (see page 83).

Remaining time (min:sec)*



* Depending on the card capacity,
hr:min:sec

<Video clip shooting mode>

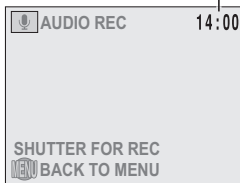
Checking the remaining audio recording time

-
- 1** Set the camera to the shooting mode, and display the Option Mode Screen (see page 36).

- 2** Press the arrow button to select the audio recording icon , and press the SET button.

- The Audio Recording Screen appears, and the remaining recording time appears in the upper right of the LCD monitor.

Remaining time (min:sec)*






* Depending on the card capacity,
hr:min:sec

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 177.





1 Display a Shooting or Playback Information Screen (see pages 96 and 113).

- The battery pack remaining charge indicator appears in the lower right corner of the LCD monitor.
-  and  (flashing) will appear even when the Shooting Information Screen or Playback Information Screen is not displayed.

- 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 digital 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.



Remaining charge indicator

Battery pack remaining charge indicator	Battery pack remaining charge
	Approx. full.
	Power is low.
	It will soon be impossible to capture or play back images.
	If this icon flashes when the shutter release button is pressed, images cannot be captured. If it flashes while a video clip is being edited, the editing cannot be performed. Recharge the battery pack.

CHECKING THE REMAINING BATTERY PACK CHARGE

HINT

- If any data is present, you can also check the remaining battery pack charge on the Playback Information 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 digital camera (such as the number of times the flash is used, the use of the LCD monitor, etc.) or the environmental conditions (temperature, etc.) the number of images that can be saved on a fully charged battery pack will vary greatly.

NOTE

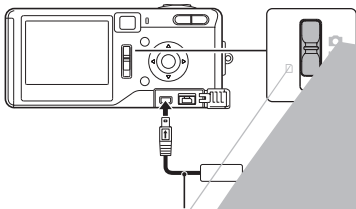
- It is recommended that you prepare an extra battery pack(s) when taking pictures at a wedding or while traveling, for example, so you don't miss capturing images of important moments due to the battery pack power running out. The same is recommended for taking photos in cold environments. (In a ski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

CONNECTING TO A COMPUTER

Your captured images can be copied to the hard disk of a personal computer, or can be printed by a digital print service or with a printer. For copying to a personal computer, please refer to the Sanyo Software Pack instruction manual. For printing, use a digital print service or access a network print service.

Using the camera as your computer's external drive

- 1 Set the main switch to [PC].
- 2 Using the supplied dedicated USB interface cable, connect the camera connector to the camera and the computer connector to the proper terminal on your computer.



- The PC Conn appears.

[CARD READER]

The camera is
puter's external
mode).

[PC CAMERA]

The camera is
era (PC came

[CANCEL]:

Cancel the USB
disconnect the USB

CONNECTING TO A COMPUTER

3 Select the mode that corresponds to your intended use, and press the SET button.

- Please 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.
- More information about these operations can be found in the instruction manual accompanying the included Sanyo Utility Software.

NOTE

- When the digital camera is set to the PC connection mode, no image is shown on the LCD monitor.

Data file formats

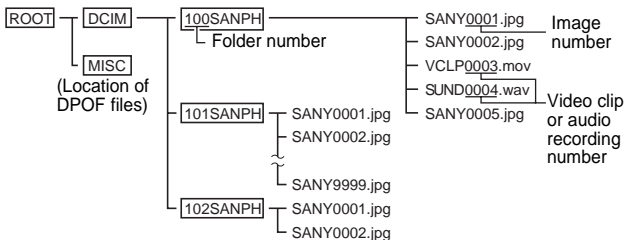
The format of the files saved on the card and the method in which the file names are determined are explained below.

Type of data	Data format	File name structure
Still image/ sequential shots data	JPEG	File name begins with SANY. Extension is ".jpg". SANY****.jpg
Voice memo data	WAVE	Same file name as corresponding still image or sequential shots data. Extension is ".wav". SANY****.wav
Video clip data	QuickTime Movie	File name begins with VCLP. Extension is ".mov". VCLP****.mov*
Audio recording data	WAVE	File name begins with SUND. Extension is ".wav". SUND****.wav*

*: Consecutive numbers assigned in the order the data was saved.

CONNECTING TO A COMPUTER

Configuration of directories for the stored data



- Up to 9999 files can be stored in folder 100SANPH. If more files are made, a folder named 101SANPH will be made and they will be stored in there. New folders will then be named in sequence, i.e., 102SANPH, 103SANPH, etc.

NOTE

Do not modify the folders and file names in the card using your computer

- If the folders, file names, or their configuration is modified using a personal computer, it will be impossible to play back the data using the digital camera, and the digital camera may not operate properly.

Concerning video clip data saved by the digital camera

- You can use QuickTime 3 or later from Apple to play back the video clips. QuickTime 6.5 for Windows and Macintosh is supplied with the included CD-ROM (Sanyo Software Pack).

About file names when the card is replaced...

- If the file number reset function is set to off, even when the card is replaced, consecutive numbering of folder numbers and file names continues from the previously installed card (see page 125).

Using the camera as a PC camera

By connecting your digital camera to a personal computer, you can broadcast (photograph, use as a TV telephone, etc.) images taken with your camera over the Internet (PC camera function).

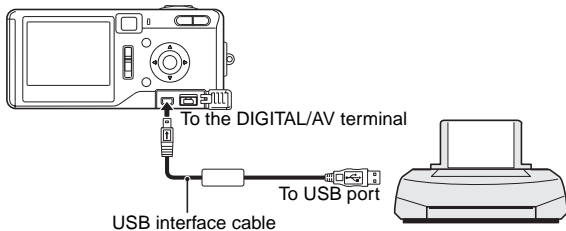
-
- 1 Connect the digital camera to a personal computer.**
 - The connection procedure is the same as step 2

DIRECT-PRINT (PictBridge PRINT)

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

Print preparations

- 1 Install the card containing the images you want to print in the digital camera.
- 2 Use the supplied USB interface cable to connect the camera to the printer.




NOTE

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 dedicated USB interface cable, turn off the camera, and then reconnect the cable.

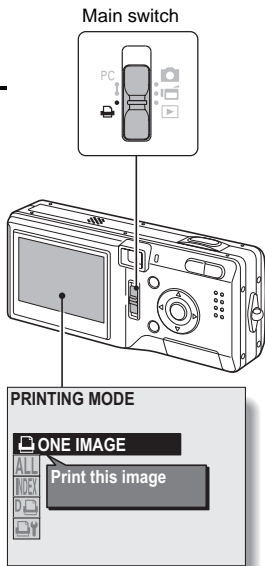
3 Turn on the power to the printer.

4 Set the main switch to [].

- The screen to confirm the connection appears.

5 Select “OK” and press the SET button.

- The camera changes to the PictBridge printing mode, and the Print Settings Screen appears.



CAUTION


- 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 (see page 136).

DIRECT-PRINT (PictBridge PRINT)

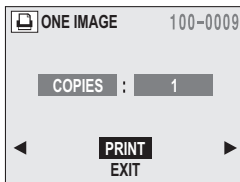
To select one image and print it (print select image)

Procedure to select one still image and print it.

1 Complete the print preparations (see page 145).

2 Select the choose print image icon , and press the SET button.

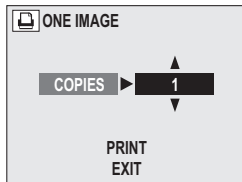
- The screen to select images for printing appears.



3 Press the [◀] or [▶] arrow button to display the image you wish to print.

4 Specify the number of prints.

- ① Select "COPIES", and press the SET button.
- ② Press the [▲] or [▼] arrow button to set the number of prints.
- ③ Press the SET button.
 - "PRINT" is selected.



5 Press the SET button.

- Printing begins.

NOTE

To cancel printing

- ① During printing, press the [▼] arrow button.
 - The Confirm Cancel Printing Screen appears.
- ② Select "YES", and press the SET button.
 - If "NO" is selected, printing resumes.

DIRECT-PRINT (PictBridge PRINT)

To print all the images (print all)

Print all of the images on the card.

1 Complete the print preparations (see page 145).

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

- The Print All Images Screen appears.



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

- Printing begins.

NOTE

Printing is not possible if there are more than 1,000 still images in the card.

- Delete unwanted images before printing.

Thumbnail prints (index print)

1 Complete the print preparations (see page 145).

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.

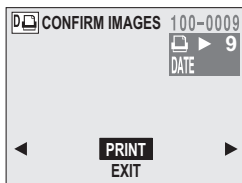


DIRECT-PRINT (PictBridge PRINT)

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

- 1 Make the print settings (see page 103), and complete the print preparations (see page 145).

- 2 Select the print reserved images 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 press the [◀] or [▶] arrow button, you can confirm the images that are set to print.

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

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

1 Complete the print preparations (see page 145).

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

- The Printer Settings Screen appears.

MEDIA TYPE: Specify the type of paper used for printing.

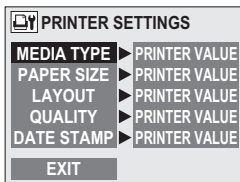
PAPER SIZE: Specify the size of paper used for printing.

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.



DIRECT-PRINT (PictBridge PRINT)

3 Adjust the printer settings.

- ① Press the [▲] or [▼] arrow button to select the printer setting parameter, and press the SET button.
 - The screen to set the selected parameter appears.
 - ② Press the [▲] or [▼] arrow button 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 SETTINGS" is selected>**
- The images will be printed according to the setting specified on the printer side.

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

- You are returned to the PictBridge Screen.

HINT

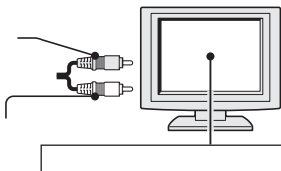
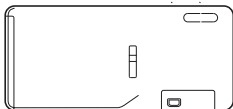
- The printer setting parameters will differ depending on the printer that is connected.
- To use printer functions which do not appear on your camera's Printer Settings Screen, select "PRINTER VALUE".
- If a function set by the camera is not available in the printer, the camera's printer setting will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

CONNECTING TO A TV

By connecting the digital camera to a television set, you can view the LCD monitor display on the TV screen.

Connections

Connect the supplied AV cable from the DIGITAL/AV terminal on the digital camera to the AUDIO and VIDEO input terminals on the TV.



Playback


- After connecting the digital camera to the television, set the TV input switch to VIDEO input.
- When an AV cable is connected, no image appears on the camera's LCD monitor.
- The playback method is the same as when viewing images on the LCD monitor.
- The same playback procedure as when playing back with the camera is used to play back voice memos and audio recordings as well.
- The sound output from the digital camera is monaural.
Voice memo playback: see page 72
Audio playback: see page 131

CAUTION

- Do not use excessive force when connecting and disconnecting cables.

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 digital 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 a separately sold AC adaptor (model VAR-G7EX for the VPC-J4EX, model VAR-G7E for the VPC-J4EX [for U.K.] or model VAR-G7U for the VPC-J4), or replace the battery pack with a fully charged one.






	Question	Answer	Action
Shooting	While the flash is recharging, why does the LCD monitor suddenly turn off?	Battery pack power is low, activating the function that momentarily turns off the LCD monitor.	Not a malfunction. When the flash is fully charged, the LCD monitor will turn on again.
	Why isn't the image captured when the shutter release button is pressed?	The accessing indicator is lit orange (data is being recorded).	Wait until the accessing indicator lights green to capture the image.
	Why does the accessing indicator light orange?	Recorded data is being saved on the card.	Not a malfunction. Wait until the accessing indicator changes to green before capturing the image.
	Why doesn't the flash operate?	The digital camera has determined that the image is bright enough and the flash is not necessary.	Not a malfunction. Capture the image; the digital camera will determine when the flash is necessary.

COMMONLY ASKED QUESTIONS

	Question	Answer	Action
Shooting	During macro photography, why is the captured image displaced from the image as seen through the viewfinder?	Due to the displacement between the camera lens and the viewfinder, a subject viewed close up through the viewfinder will appear lower in the captured image.	Compose the photo while viewing the LCD monitor.
	Why can only the [ISO-A] ISO sensitivity setting be selected?	The ISO sensitivity setting is fixed at [ISO-A] in the following case: <ul style="list-style-type: none"> • In the video clip shooting mode, flicker-reduction [FR] is set to on. 	Not a malfunction.
	Are the settings retained even after the camera is turned off?	—	All settings except the exposure correction are retained even after the camera is turned off. Set the voice memo and self-timer settings each time you take a photo; however, if you change the settings but not take the photo, the settings are retained even after the camera is turned off.

	Question	Answer	Action
Shooting	Why does the clock warning icon  appear?	The camera's date and time settings have not been set.	Set the date and time.
	Which resolution setting should I use?	—	Select the resolution setting according to the intended use: 8M 6M or 4M : 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. WEB : For photos displayed on a web page, or sent as e-mail attachments.

COMMONLY ASKED QUESTIONS

	Question	Answer	Action
Shooting	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.
	How can I get the distant view into focus?	—	Set the focus range to infinity  .
	How can I take photos using slow synchro?	—	<ol style="list-style-type: none"> ① Set the scene select setting to night view . ② Set the flash mode to a mode other than flash off . <ul style="list-style-type: none"> • In the forced flash  mode, slow synchro shooting is ensured.
	The video clip I shot outdoors is completely white.	—	Set the flicker-reduction setting to off  .

	Question	Answer	Action
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 digital camera correctly and slowly press the shutter release button halfway to lock the focus. Then press the shutter release 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, use the close-up alignment correction marks or 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 stored on a card p71466 Tygit

	Question	Answer	Action
Viewing images	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.
	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.
	Why is a strange sound heard during video clip playback?	The sound of the optical zoom motor was recorded.	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.

COMMONLY ASKED QUESTIONS

	Question	Answer	Action
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.
Printing	Why does a message appear during PictBridge printing?	Printer error.	Please refer to the instruction manual for your printer.

	Question	Answer	Action
Misc.	Why is a noise heard from a nearby TV or radio during battery recharging?	Electromagnetic waves are emitted from the battery charger.	Move the battery 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.
			Use a card that has more memory available.
	Why does the "CARD LOCKED" message appear?	The write-protect tab on the card is in the locked (protect) position.	Move the write-protect tab to the unlocked position.
	Why are there some menus or icons that I can't select?	Another setting has priority.	Change the other setting.
Why can't the digital camera be operated?	A temporary internal circuitry problem may be the cause.	Remove the battery pack from the digital camera, wait a few minutes, then reinstall the battery pack and try again.	

COMMONLY ASKED QUESTIONS


	Question	Answer	Action
Misc.	Can I use my digital 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 battery recharger 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 digital camera or card.	Check the following items ① Remove the card and then install it again. Misc. ② Remove the batteries and then install them again. ③ Install a different card. If "SYSTEM ERROR" still appears after performing the above steps, then take the digital camera to the dealer for service.




TROUBLESHOOTING

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

	Problem	Cause	Action	Reference page
Power	No power.	The battery pack is dead.	Change or recharge the battery pack.	29, 32
		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 digital camera turns off by itself.	The power save function is operating.	Turn on the camera again.	34
Shooting	An image is not captured when the shutter release button is pressed.	The power is not turned on.	Turn on the power.	33

TROUBLESHOOTING

	Problem	Cause	Action	Reference page
Shooting	An image is not captured when the shutter release button is pressed.	The memory is full (the accessing indicator lights red, the displayed number of remaining images that can be captured becomes "0" on the LCD monitor).	Install a new card.	32
			Erase the images that are not necessary. Save the images to separate media, then erase all the images from the card.	77, 140
	The flash does not operate.	The flash off mode is selected.	Set the flash to automatic flash mode or forced flash mode.	65
		The shooting mode is set to a mode other than the still image shooting mode.	Set the camera to the still image shooting mode.	42
		The battery pack is dead.	Change or recharge the battery pack.	29, 32
		The lamp mode  is active.	Set to a different mode.	51
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.	Change or recharge the battery pack.	29, 32	


	Problem	Cause	Action	Reference page
Shooting	The add voice memo setting turned off.	The voice memo setting automatically turns off after a voice memo is recorded.	Set the add voice memo function to ON again.	92
	During video clip shooting, 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.	64
	A voice memo cannot be added.	The camera is set to a mode other than the still image shooting mode.	Set the camera to the still image shooting mode.	42
	There is noise in the captured image.	The ISO sensitivity setting is too high.	Set the ISO sensitivity to a lower setting.	84
	The motion alert icon  is shown on the LCD display.	The shutter speed is slow.	Stabilize the camera with a tripod or the like.	44
	Four images were captured.	The camera is set to the sequential shots shooting mode.	Set the camera to the still image shooting mode.	42
LCD monitor	When capturing an image, no image is displayed on the LCD monitor.	The LCD monitor has been disabled.	Change the setting to enable to LCD monitor.	127
	No playback image appears.	The main switch is not set to [].	Set the main switch to [].	68

TROUBLESHOOTING

	Problem	Cause	Action	Reference page
Viewing images	The image is too dark.	The flash was blocked by a finger or other object.	Hold the digital camera correctly, and make sure the flash is not obstructed.	38
		The subject was too far away.	Capture the image in the range of operation of the flash.	176
		The subject was lit from behind.	Capture the image using the forced flash mode.	65
			Use the exposure correction function.	94
		There is not enough light.	Adjust the ISO sensitivity setting.	84
	The video clip picture is flickering.	The video clip was filmed under fluorescent lighting.	Set the flicker-reduction setting to on.	95

	Problem	Cause	Action	Reference page
Viewing images	The image is too bright.	The forced flash mode is selected.	Select a different flash mode.	65
		The subject was too bright.	Use the exposure correction function.	94
		The ISO sensitivity setting is incorrect.	Set the ISO sensitivity to [ISO-A] .	84
	The image is not in focus.	The subject is too close to the digital camera.	Select the correct focus setting for your needs.	61, 88
		The focus setting is not correct.		
		The digital camera moved when the shutter was released.	Hold the digital camera correctly and slowly press the shutter release button halfway to lock the focus. Then press the shutter release button all the way to capture the image.	38, 43
		The focus is not locked properly.		
	The lens is dirty.	Clean the lens.	21	

TROUBLESHOOTING

	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.	65
		The white balance setting is incorrect.	Set the white balance setting correctly.	86
	A part of the image is missing.	The handstrap or a finger was blocking the lens opening.	Hold the digital camera correctly, and make sure the lens is not obstructed.	38
	"NO IMAGE" or "NO AUDIO" is shown.	There is no recorded data for the selected playback mode.	Playback data after capturing images or making audio recordings.	—
	No image appears on the LCD monitor.	The camera is connected to a computer or TV.	No image appears on the LCD monitor while the camera is connected to a computer or TV.	140, 154
	During audio playback, there is no sound.	The volume setting on the digital camera is too low.	Select the volume icon  and adjust the volume.	72
No voice memo was recorded with the image.		Select the add voice memo setting, and speak into the microphone.	110	

	Problem	Cause	Action	Reference page
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.	154
		The TV input is not set correctly.	Set the input on the TV to "VIDEO".	
	The edge of the image is cut off.	This is a characteristic of the TV.	Not a malfunction.	154
Image editing	You cannot add a voice memo or rotate an image.	The protect mode is set.	Cancel the protect mode.	75
	The "CANNOT RESIZE" message appears.	The resolution is [320].	Resize is not possible. Select an image with a resolution of [640] or higher.	100

TROUBLESHOOTING

	Problem	Cause	Action	Reference page
Misc.	The "NO CARD" message appears.	No card is inserted.	Insert a card.	32
	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.	75
	The audio guide does not sound.	The operational sounds "MUTE" setting is set to "ON".	Set the "MUTE" setting to "OFF".	118
	The card installed in the camera connected to a computer cannot be read.	The PC connection setting is not correct.	Change the PC connection setting.	140
	The camera is not functioning as a PC camera.			


SPECIFICATIONS

Digital Camera

Type	CCD digital camera (recording and playback)
Recording system	Digital recording
Image file format	<p>Still images: JPEG format (DCF, DPOF, Exif 2.2 compliant)</p> <p>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: QuickTime Movie (Photo-JPEG) Audio: wav (monaural)</p>
Data storage media	SD Memory Card Multi Media Card
Camera effective number of pixels	Approx. 4,000,000 pixels
Image sensor	1/2.7-inch CCD Virtual number of pixels: Approx. 4,230,000 pixels, interlace scan, primary color filter
Recording resolution	<p>3,264 × 2,448 pixels : 8M (still images only)</p> <p>2,880 × 2,160 pixels : 6M (still images only)</p> <p>2,288 × 1,712 pixels : 4M (still images and sequential shots only)</p> <p>1,600 × 1,400 pixels : 2M (still images and sequential shots only)</p> <p>640 × 480 pixels : WEB (still images and sequential shots only)</p> <p>640 × 480 pixels : 640 (video clips only)</p> <p>320 × 240 pixels : 320 (video clips only)</p> <p>160 × 120 pixels : 160 (video clips only)</p>
Video clip frame rate	30 fps, 15 fps

SPECIFICATIONS

Data compression	Very low compression: [SFINE] (still images and sequential shots [4M] only) Low compression: [FINE] Normal compression: [NORM]	
White balance	Full-auto TTL, manual setting possible	
Lens	Prismatic optical 2.8x zoom lens	f=5.7 mm to 16.0 mm (35 mm film camera conversion f=37 mm to 104 mm) Autofocus, 7 groups, 10 elements
Focus modes	5-point range autofocus, spot autofocus	
Aperture	Open F=2.8 (Wide) to 3.9 (Tele) Smallest F=6.8 (Wide) to 9.4 (Tele)	
Exposure control type	Programmable AE Exposure correction available from the Shooting Setting Screen (0±1.8EV in 0.3EV steps)	
Light-measuring modes	Multi-section measuring, center-weighted measuring, spot measuring	
Range	20 cm (7.87 in) (Wide)/30 cm (11.81 in) (Tele) to infinity (normal photography), 2 cm (0.79 in) (Wide)/30 cm (11.81 in) (Tele) to 50 cm (19.69 in) (super macro photography)	
Digital zoom	For shooting: 1x to 4x (except resolution [8M] [6M] and Video clip shooting mode [30f]) For playback: 1x to 51x (varies with resolution)	
Shutter speed	Still image shooting mode: 1/2 to 1/2,000 sec. (Maximum approx. 4 seconds when scene select function set to lamp [30f]) (During flash: 1/30 to 1/2,000 sec.) Sequential shots shooting mode: 1/2 to 1/2,000 sec. Video clip shooting mode: 1/30 to 1/10,000 sec.	

Sensitivity		<p>Still image shooting mode/sequential shots 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 1,600 variation: when scene select function set to lamp )</p> <p>Video clip shooting mode: Auto (equivalent to ISO200 to 800)/equivalent to ISO200, ISO400, ISO800, and ISO1,600 (switchable from Shooting Setting Screen)</p>
Viewfinder		Optical direct image zoom viewfinder
LCD monitor		1.8-inch TFT color liquid crystal Approx. 85,000 pixels (Frame coverage: Approx. 100% when dedicated AV connection cable is not connected)
Flash working range		0.15 m to 2.5 m (0.49 to 8.20 ft.) (Wide) 0.3 m to 1.8 m (0.98 to 6.89 ft.) (Tele)
Flash modes		Auto-flash, forced flash, flash off, red-eye reduction
Focus		TTL-type AF
Self-timer		2-second delay, 10-second delay (including interval shooting)
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	Lithium-ion battery pack (DB-L20) × 1
	AC adaptor (sold separately)	Model VAR-G7EX for the VPC-J4EX, model VAR-G7E for the VPC-J4EX [for U.K.] and model VAR-G7U for the VPC-J4
Dimensions (not including protuberances, depth at narrowest dimension)		101 (W) × 46 (H) × 26 (D) mm 3.98" (W) × 1.81" (H) × 1.02" (D)
Weight		Approx. 128 g (4.5 oz.) (without battery pack and card)

SPECIFICATIONS

Digital camera connectors

DIGITAL/AV (communication/sound and image output) terminal	Regrouped jack	
	Audio output	265 mVrms (−9 dBs), 6 kΩ or less, monaural
	Video output	1.0 Vp-p, 75 Ω unbalanced, sync negative, composite video, NTSC color TV system/PAL TV system (switchable from the Option mode Screen)
	USB	USB 2.0 (In full speed mode: equivalent to 1.1) PC camera: USB video class
DC IN (external DC power input) terminal	DC 4.7 V (for exclusive use with separately sold AC adaptor [model VAR-G7EX for the VPC- J4EX, model VAR-G7E for the VPC-J4EX [for U.K.] and model VAR-G7U for the VPC-J4])	

Battery life

Maximum recording time	140 Images: Conforms to the CIPA standard
Maximum playback time	200 Minutes: LCD monitor on, continuous play- back

- Using the fully charged supplied battery pack and the supplied card
- Approximate time until battery pack runs out, based on test conditions at room temperature (25°C [77°F]).
- 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.

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

The table shows the possible number of images, the possible shooting time, and the possible recording time for the supplied 16MB SD Memory Card and for a commercially available 64MB/512MB SD Memory Card.

Shooting/ recording mode	Resolu- tion setting	Compression rate/ frame rate setting	SD Memory Card		
			16MB	64MB	512MB
Still image mode (no voice memo)/ Sequential shots mode	8M	FINE	5 images	23 images	190 images
		NORM	8 images	35 images	284 images
	□		7 images	30 images	244 images
			10 images	45 images	363 images
			7 images	32 images	258 images
			11 images	47 images	385 images
			16 images	70 images	568 images
			22 images	94 images	762 images
			33 images	143 images	1,150 images
			113 images	484 images	3,900 images
		150 images	645 images	5,200 images	



SPECIFICATIONS

Shooting/ recording mode	Resolu- tion setting	Compression rate/ frame rate setting		SD Memory Card		
				16MB	64MB	512MB
Video clip mode	640	FINE	30f	9 sec.	42 sec.	5 min. 44 sec.
			15f	19 sec.	1 min. 24 sec.	11 min. 24 sec.
	320	FINE	30f	22 sec.	1 min. 36 sec.	13 sec.
			15f	44 sec.	3 min. 10 sec.	25 min. 37 sec.
		NORM	30f	42 sec.	3 min. 2 sec.	24 min. 29 sec.
			15f	1 min. 22 sec.	5 min. 54 sec.	47 min. 35 sec.
	160	FINE	30f	1 min. 16 sec.	5 min. 24 sec.	43 min. 49 sec.
			15f	2 min. 24 sec.	10 min. 19 sec.	1 hr. 23 min.
Sound recording mode	—	—		31 min. 23 sec.	2 hr. 14 min.	18 hr. 11 min.

- 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.).

Supplied Battery Pack Charger

Part number		NC-SAC05
Power source		AC 100 to 240 V, 50 to 60 Hz, 8-12 VA, 0.09 A
Rated output		DC 4.2V, 650 mA
Compatible batteries		Supplied or separately sold Lithium-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 90% (no condensation)
Dimensions		45 (W) × 32.3 (H) × 85 (D) mm 1.77" (W) × 1.27" (H) × 3.35" (D)
Weight (without power cord)		Approx. 70 g (2.5 oz.)
Power cord rated value	VPC-J4	AC 125 V, 7 A
	VPC-J4EX	AC 250 V, 2.5 A

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

Supplied Lithium-ion battery pack

Model number		DB-L20
Voltage		3.7 V
Capacity		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)
Weight		Approx. 19 g (0.7 oz.)

SPECIFICATIONS

Supplied SD Memory Card

Memory capacity		16 MB
Ambient environment	Temperature	0 to 55°C (32 to 131°F)
	Humidity	20 to 85% (no condensation)
Dimensions		32.0 (L) × 24.0 (W) × 2.1 (H) mm 1.26"(L) × 0.94"(W) × 0.08"(H)

Others

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- Sanyo Electric declines all responsibility for damages due to improper use of the camera, failure to adhere to the instructions given in this manual, or repairs or changes done by those other than a technician authorized by the manufacturer.
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