CASIO®

If you need help with your camera, please call: 1(800)435-7732

LCD Digital Camera
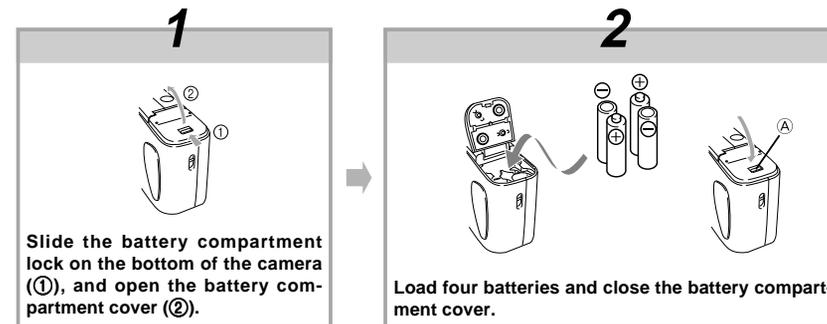
QV-770
Owner's Manual

CASIO COMPUTER CO.,LTD.
6-2, Hon-machi 1-chome
Shibuya-ku, Tokyo 151-8543, Japan

QUICK REFERENCE

To load batteries (page 16)

Be sure to load four AA size batteries that come with this camera before using it.

1

Slide the battery compartment lock on the bottom of the camera (①), and open the battery compartment cover (②).
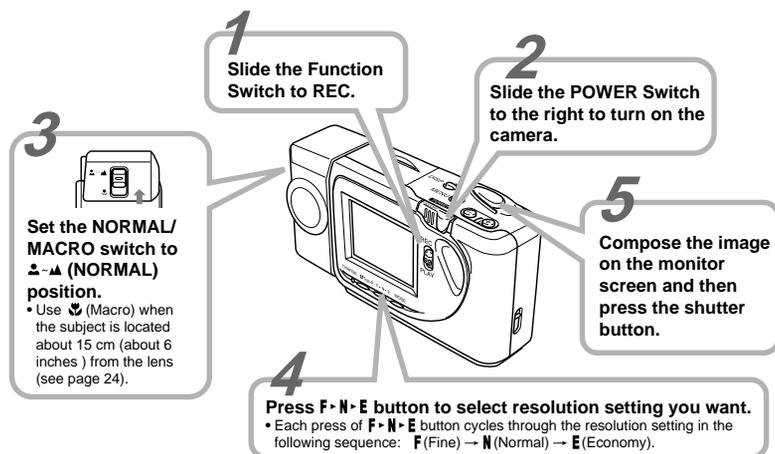
2

Load four batteries and close the battery compartment cover.

• Be sure to use Alkaline or Lithium batteries. Never use manganese batteries.
• Press down on the battery compartment cover at the point marked Ⓐ in the above illustration until the cover locks into place with a click.

QUICK REFERENCE

To Record Images (page 20)

1
Slide the Function Switch to REC.

2
Slide the POWER Switch to the right to turn on the camera.

3
Set the NORMAL/ MACRO switch to ▲-▲ (NORMAL) position.
• Use ♥ (Macro) when the subject is located about 15 cm (about 6 inches) from the lens (see page 24).

5
Compose the image on the monitor screen and then press the shutter button.
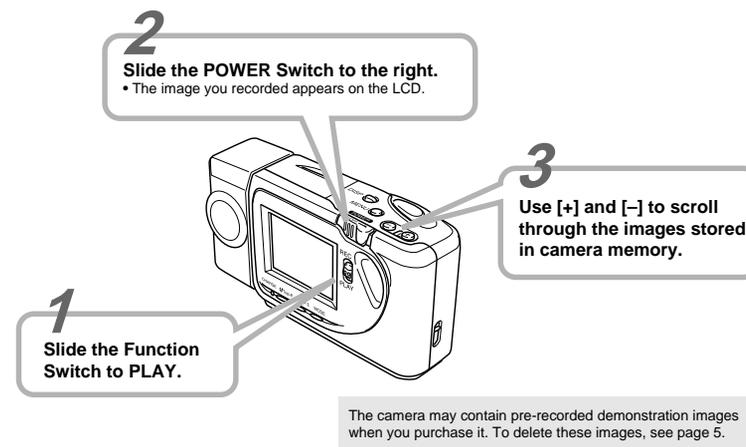
4
Press F▸N▸E button to select resolution setting you want.
• Each press of F▸N▸E button cycles through the resolution setting in the following sequence: F (Fine) → N (Normal) → E (Economy).

QUICK REFERENCE

To Playback Images (page 33)

2
Slide the POWER Switch to the right.
• The image you recorded appears on the LCD.

3
Use [+] and [–] to scroll through the images stored in camera memory.

1
Slide the Function Switch to PLAY.

The camera may contain pre-recorded demonstration images when you purchase it. To delete these images, see page 5.

QUICK REFERENCE

To delete images (page 54)

2 Press MENU.

5 Press the shutter button to delete the selected image.
You can continue deleting operation.
* To exit deleting operation, press MENU.

4 Double check to make sure that you really want to delete the image you selected.
* Press MENU to stop deleting the image.

3 Use [+] and [–] to select DELETE, and then press the shutter button.

⬇

Use [+] and [–] to select PAGE, and then press the shutter button.

⬇

Use [+] and [–] to select the image you want to delete.

1 Slide the Function Switch to PLAY.

CONTENTS

FEATURES

Compact, lightweight design

A built-in monitor provides the ultimate in go-along-any-where portability.

Powerful display functions, including movies and panoramas!

Record and play back movies that are about 3.2 seconds long and panoramas that link multiple images together. Multi-page shows multiple images on a single screen, Close-up lets you zoom in close for more detail, Auto Playback, automatically show a series of images.
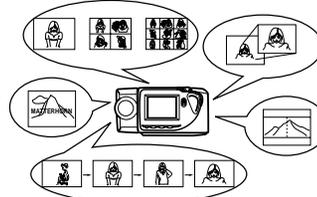
On-the-spot viewing of recorded images

A high-resolution TFT LCD screen produces low-glare images even under bright light.
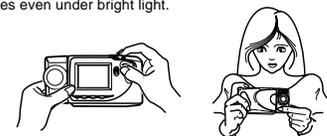
Multiple interfaces, including an infrared data port (IrTran-P)

VIDEO OUT lets you output images to a TV for big-screen presentations. A DIGITAL port lets you transfer image data to a computer for storage and editing. Data can be transferred back to the camera when you need it. A new infrared data port enables quick and easy data communication with another device equipped with infrared communication capabilities.

IrTran-P protocol compatible digital device

PRECAUTIONS

General Precautions

Be sure to observe the following important precautions whenever using the QV-770.

All references in this manual to "this camera" and "the camera" refer to the CASIO QV-770 Digital Camera.

- Never try to take pictures or use the built-in display while operating a motor vehicle or while walking. Doing so creates the danger of serious accident.
- Never try to open the case of the camera or attempt your own repairs. High-voltage internal components create the risk of electrical shock when exposed. Always leave maintenance and repair work up to authorized CASIO service providers.
- Never fire the flash in the direction of a person operating a motor vehicle. Doing so can interfere with the driver's vision and create the danger of accident.
- Never fire the flash while it is too close to the subject's eyes. Be especially careful with small children. Intense light from the flash can cause eye damage if it is fired too close to the eyes, especially with young children. When using the flash, the camera should be at least one meter (3.3') from the eyes of the subject.
- Keep the camera away from water and other liquids, and never let it get wet. Moisture creates the danger of fire and electrical shock. Never use the camera outdoors in the rain or snow, at the seashore or beach, in the bathroom, etc.

- Should foreign matter or water ever get into the unit, immediately turn power off, unplug the AC adaptor from the power outlet, and contact your dealer or nearest CASIO service provider. Using the unit under these conditions creates the danger of fire and electrical shock.
- Should you ever notice smoke or a strange odor coming out of the unit, immediately turn power off and unplug the AC adaptor from the power outlet. Using the unit under these conditions creates the danger of fire and electrical shock. After making sure there is no more smoke coming from the unit, take it to your nearest CASIO service provider for repair. Never attempt your own maintenance.
- If the unit's case should ever become cracked due to dropping it or otherwise subjecting it to rough treatment, immediately turn power off, unplug the AC adaptor from the power outlet, and contact your nearest CASIO service provider.
- Never use the unit inside of an air craft or in any other areas where its use is prohibited. Doing so can result in an accident.
- Physical damage and malfunction of this unit can cause the image data stored in its memory to be deleted. Be sure to always keep backup copies of data by transferring them to personal computer memory.
- Never open the battery compartment cover, disconnect the AC adaptor from the camera or unplug it from the wall socket while the "WAIT" message is on the LCD. Doing so will not only make storage of the current image impossible, it can also corrupt other image data already stored in camera memory.

Battery Life Notes

- The battery life figures noted in the specifications of this Owner's Manual indicate the number of hours before battery failure under normal operating temperatures (25°C). They do not guarantee that batteries will perform for any amount of time.
- The actual number of hours of service provided by batteries varies widely depending upon manufacturer, battery age, and temperature.
- Long term continued use of the camera can cause the low battery indicator to appear sooner than expected. Be sure to turn off power whenever the camera is not being used.
- Appearance of the low battery indicator means that batteries are about to go dead. Be sure to replace all four batteries a fresh set of new ones as soon as possible. Leaving dead batteries in the camera creates the danger of leaking batter fluid and corruption of stored image data.

Operating conditions

- This camera is designed for use in temperatures ranging from 0°C to 40°C (32°F to 104°F).
- Do not use or keep the camera in the following areas.
  — In areas subject to direct sunlight
  — In areas subject to high humidity or dust
  — Near air conditioners, heaters, or other areas subject to temperature extremes
  — Inside of a closed vehicle, especially one parked in the sun
  — In areas subject to strong vibration

Condensation

- When you bring the camera indoors on a cold day or otherwise expose it to a sudden change of temperature, there is the possibility that condensation can form on the exterior or on interior components. Condensation can cause malfunction of the camera, so you should avoid exposing it to conditions that might cause condensation.
- To keep condensation from forming, place the camera into a plastic bag before moving it into a location that is much warmer or colder than your current location. Leave it in the plastic bag until the air inside the bag has a chance to reach the same temperature as the new location. If condensation does form, remove the batteries from the camera and leave the battery compartment cover open for a few hours.

About the camera's backlight…

- The camera is equipped with a fluorescent light source to provide the back lighting for its LCD.
- The normal service life of the backlight is approximately six years, when the camera is used for about two hours a day.
- Should the LCD image appear abnormally dark, take the camera to your dealer or an authorized CASIO service provider to have the light source replaced. Note that you will be charged for this replacement.
- Under very cold conditions, the backlight may require more time than normal to light, or reddish bands may appear in the image. These conditions do not indicate malfunction, and normal operation should return at higher temperatures.

GUIDELINES LAID DOWN BY FCC RULES FOR USE OF THIS UNIT IN THE U.S.A. (not applicable to other areas).

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.

NOTICE

This equipment has been tested and found to comply with the limits for a Class B peripheral, 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.

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Properly shielded cables with ferrite core must be used for connection to host computer and/or peripherals in order to meet FCC emission limits.

THE SPECIAL VIDEO CABLE THAT COMES WITH THE CAMERA
----- THE CAMERA TO A VIDEO IN TERMINAL OF A COMPUTER
THE SPECIAL CONNECTION CABLE THAT COMES WITH QV-Link SOFTWARE
----- THE CAMERA TO A PROPER TERMINAL OF A COMPUTER

Declaration of Conformity

Model Number: QV-770
Trade Name: CASIO COMPUTER CO.,LTD.
Responsible party: CASIO INC.
Address: 570 MT. PLEASANT AVENUE,
                   DOVER,NEW JERSEY 07801
Telephone number: 973-361-5400

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.

CASIO COMPUTER CO.,LTD.   QV-770

FC Tested To Comply
     With FCC Standards

FOR HOME OR OFFICE USE

UNPACKING

Check to make sure that all of the items shown below are included with your camera. If something is missing, contact your dealer as soon as possible.

Camera

Alkaline batteries (AA-size × 4)

Soft case

Wrist Strap

Video cable

Manual
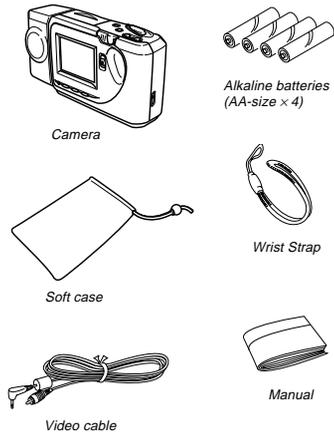
Connecting the Wrist Strap

Pass the wrist strap through the hole on the side of the camera as shown in the illustration.

▶▶▶ IMPORTANT! ◀◀◀

Be sure to keep the wrist strap around your wrist whenever using the camera to protect against accidentally dropping it.

Using the Soft Case

Keep the camera in its soft case to protect it when not in use. Slide the stopper and close the soft case as shown in the illustration.

Stopper
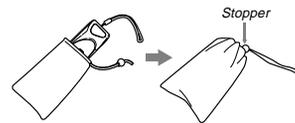
GENERAL GUIDE

The following illustrations show the names of each component, button and switch on the camera.

Top and Display
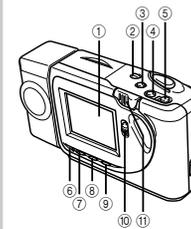
① LCD
② DISP button
③ MENU button
④ [–]
⑤ [+]
⑥ Charge lamp
⑦ 🗲/Tran-P button
⑧ F ▸ N ▸ E button
⑨ MODE button
⑩ FUNCTION switch
⑪ POWER switch

Lens
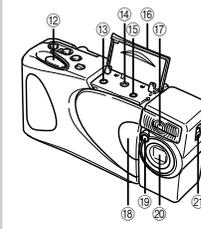
⑫ Shutter button
⑬ VIDEO OUT terminal
⑭ AC Power terminal
⑮ DIGITAL terminal
⑯ Terminal panel cover
⑰ FLASH
⑱ Infrared port
⑲ Exposure sensor
⑳ Lens
㉑ ♣~▲/♥ switch

Bottom
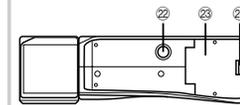
㉒ Tripod hole
㉓ Battery compartment cover
㉔ Battery compartment lock

Opening the Terminal Panel Cover
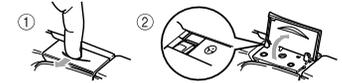
▶▶▶ IMPORTANT! ◀◀◀

As shown in Figure ① above, pull the connector cover out as far as it will go and then lift up to open it. Never force the cover. Doing so can damage it.

MONITOR SCREEN

• Pressing DISP during recording and playback changes the information shown on the monitor screen.
• The display area of the image shown on the monitor screen is slightly smaller than the actual full image.

Recording Mode

Macro indicator
Recording Mode
Flash Mode
Auto **None**
Flash On 🗲
Flash Off 🚫
Remaining number of page
*Manual recording indicator*
Mode
F (FINE)
N (NORMAL)
E (ECONOMY)
Battery capacity
EV shift
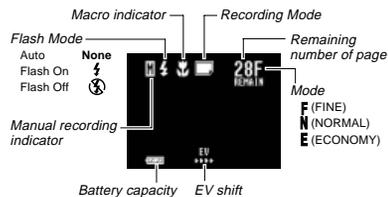
About Recocrding Mode

📷	Normal Recording	⏱	Self timer Recording (Single)
📷	Movie Recording	⏱MOVIE	Self timer Recording (Movie)
📷	Serial Recording (Continuous)	⏱FUTURE	Self timer Recording (Future)
◀⏱	Serial Recording (Past)	🏔	Panorama Recording
⏱▶	Serial Recording (Future)	🎬	Title Recording

Playback Mode

Pages
Protect indicator
Mode
F (FINE)
N (NORMAL)
E (ECONOMY)
Battery capacity

📷 Playingback Movie
🏔 Panorama Playback
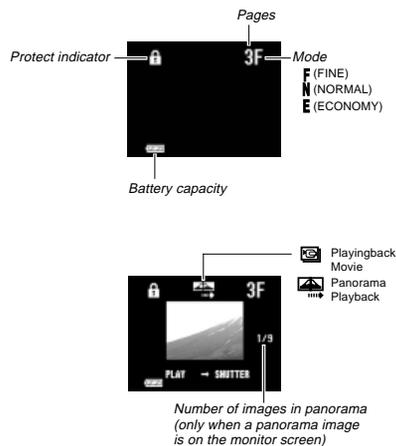
Number of images in panorama (only when a panorama image is on the monitor screen)

POWER SUPPLY

The camera features a two-way power supply that lets you use either batteries (AA-size Alkaline or Lithium) or household AC current.

To load batteries

Be sure that camera power is turned off whenever loading or replacing batteries.

1. **Slide the battery compartment lock on the bottom of the camera in the direction indicated by arrow (❶), and swing open the battery compartment cover as indicated by arrow (❷).**

2. **Insert four batteries and close the battery compartment cover.**
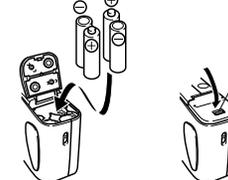
Be sure to use **Alkaline** or **Lithium** batteries. Never use manganese batteries (see precautions on the next page).

• Press down on the battery compartment cover at the point marked Ⓐ in the illustration until the cover locks into place with a click.

Standard Battery Life

The battery life reference values given below indicate the amount of time at standard temperature (25°C) until power automatically turns off due to battery failure. They do not guarantee that batteries will perform the amount of service indicated. Battery life is reduced by low temperatures and continued use.

Type of Operation	AA-size Alkaline Batteries LR6	AA-size Lithium Batteries FR6
Continuous Playback	Approximately 190 minutes	Approximately 320 minutes
Continuous Recording	Approximately 690 shots	Approximately 1,430 shots

"Continuous Recording" is made without use of the camera's flash.

Regardless of use of the camera's flash, turning on and off the POWER Switch, as well as other operating conditions may affect the above values.

►► NOTE ◄◄

Battery life is based on Panasonic's alkaline batteries and Fujifilm's lithium batteries.
They may vary if other manufacturer's batteries are used. For your reference, the values when the camera is operated with Duracell's batteries are shown below.

Type of Operation	AA-size alkaline batteries LR6
Auto Play	Approximately 100 minutes
Continuous Recording	Approximately 190 shots

Battery Handling Precautions

Incorrect use or handling of batteries can cause them to leak or burst and seriously damage your camera. Be sure to note the following important precautions to avoid problems with batteries.

⚠ **CAUTION**

• Use only LR6 (AM-3) type alkaline or FR6 type lithium dry cell batteries with this camera. Never mix old batteries with new ones. Failure to do so can result in bursting or leaking of batteries, creating the danger of fire or personal injury.

⚠ **CAUTION**

• Always make sure that the positive [+] and negative [–] ends of the batteries are facing correctly, as noted by the markings on the camera itself. Improper loading of batteries can result in bursting or leaking of batteries, creating the danger of personal injury or soiling of objects nearby.

• Remove batteries from the camera if you do not plan to use it for more than two weeks.
• Never recharge batteries, never allow direct connection between two ends of a battery, and never try to take batteries apart.
• Do not expose batteries to direct heat or dispose of them by burning. Doing so can create the danger of explosion.
• Never mix batteries of different types.
• Dead batteries are susceptible to leakage, which can cause serious damage to your camera. Remove batteries from the camera as soon as you notice they are dead.
• The batteries that power this camera normally become warm when they lose power. This does not indicate malfunction.
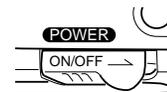
Low Battery Indicator

The battery capacity indicator in the lower left of the monitor screen (shown only when image information display is turned on) changes to "▭" whenever battery power goes low. If you continue to use the camera, a battery warning indicator "▨" will appear in the center of the monitor screen, and then camera power will automatically turn off. If this happens, replace all four batteries with new ones as soon as possible.
Note that the camera may automatically shut down at a somewhat higher level of remaining battery capacity when a computer is connected to its DIGITAL terminal for data communication. This is to protect against problems caused by sudden power outage during data communications. Because of this, we strongly recommend that you use the optionally available AC adaptor to power the camera whenever performing data communication with a personal computer.

Auto Power Off

Power automatically turns off whenever you do not perform any camera operation for a period of time. Power turns off after about two minutes in the Record Mode or after about five minutes in the Playback Mode.
• To restore power, simply slide the POWER Switch to the right as you normally do.

POWER
ON/OFF →

►► IMPORTANT! ◄◄

The Auto Power Off function does not operate under the following conditions.

• During playback of a movie (page 34)
• During playback of a panorama (page 35)
• During Auto Play (page 39)
• During infrared communication (page 65)
• When operations are being performed on a computer connected to the camera via the camera's DIGITAL terminal. (page 59)
• Whenever the AC adaptor is connected to the camera.

Using AC Power

To power the camera from standard AC power, use the optional AC adaptor (AD-C620).

AC adaptor

CASIO

AC power terminal
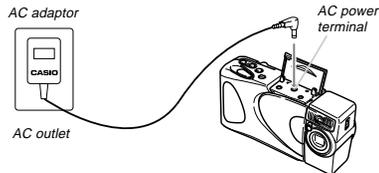
AC outlet

AC Adaptor precautions

⚠ **CAUTION**

• Never use an electrical outlet whose voltage is outside the rating marked on the AC adaptor. Doing so can create the danger of fire or electrical shock. Use only the optional AC adaptor specified for this camera.
• Should the cord of the AC adaptor become damaged (exposed internal wiring or shorts), request a replacement from an authorized CASIO service provider. A damaged AC adaptor cord creates the danger of fire or electrical shock.

⚠ **CAUTION**

• Always be sure to use the AD-C620 AC adaptor only. Using any other AC adaptor can cause damage to the camera not covered by the warranty.
• When unplugging the AC adaptor from the wall socket, be sure to grasp the adaptor (not the cord).
• Avoid an undue bending, pulling, and twisting of the AC adaptor's cord, and never try to lengthen the cord by splicing it with other wire.

• Be sure to switch power off before connecting or disconnecting the adaptor.
• Always turn camera power off before disconnecting the AC adaptor, even if the camera has batteries installed. If you don't, the camera will turn off automatically when you disconnect the AC adaptor. Even so, you run the risk of damaging the camera whenever you disconnect the AC adaptor without first turning power off.
• The AC adaptor may become warm to the touch after extended periods of use. This is normal and is not cause for alarm.
• After use turn off the power switch of the camera and unplug adaptor from the AC outlet.

RECORDING

Basic Recording Operation

The following describes the basic operation for recording images.

1. Slide the Function Switch to REC.

REC
PLAY
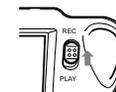
• The REC position selects the Record Mode, while PLAY selects the Playback Mode.

2. Slide the POWER Switch in the direction indicated by the arrow.
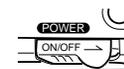
POWER
ON/OFF →

• The POWER Switch returns to its original position when you release it.
• Turning on power enters the normal Recording Mode.
• The monitor screen shows the image picked up by the lens.
• You can perform step 2 before step 1, if you want.
• If power turns off, slide the POWER Switch again to turn it back on.

3. Set the NORMAL/MACRO switch to ▲~▲ (NORMAL) position.
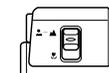
• Use ✿ when the subject is located about 15 cm from the lens (about 6 inches). See page 24 for details on using this switch.

4. Press F▸N▸E to select resolution setting you want.
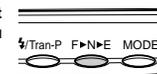
⚡/Tran-P   F▸N▸E   MODE

• Each press of F▸N▸E cycles through the resolution setting in the following sequence: F (Fine) → N (Normal) → E (Economy).
• The resolution setting you select here affects how many images can be stored in memory. See "Resolution Settings" on page 24 for details.

5. Compose the image on the monitor screen and then press the shutter button.

• Viewing the subject on the monitor screen, carefully compose it within the frames provided on the screen.
• Take care to avoid blocking the lens with your fingers.
• Carefully press the shutter button, taking care not to move the camera as you do.
• You can view images immediately after you record them by sliding the Function Switch to the PLAY.

▶▶▶ **CAUTION** ◀◀◀
• Never open the battery compartment cover, disconnect the AC adaptor from the camera or unplug it from the wall socket while the "WAIT" message is on the LCD. Doing so will not only make storage of the current image impossible, it can also corrupt other image data already stored in camera memory.
• Fluorescent lighting actually flickers at a frequency that cannot be detected by the human eye. When using the camera indoors under such lighting, you may experience some brightness or color problems with recorded images.

▶▶▶ **NOTE** ◀◀◀
This camera is equipped with "flash memory" that retains images even when batteries go dead and the AC adaptor is not connected. Images can be recalled after new batteries are loaded or the AC adaptor is connected.

Shooting Images Outdoors

Note that strong direct or reflected light can cause vertical lines in an image. This is due to the characteristics of the camera's charge-coupled device (CCD), and it does not indicate malfunction of the camera.

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Using the Flash

You can use the built-in flash unit to provide illumination during recording. Auto Flash causes the flash to fire automatically whenever the shutter button is pressed while available light is below a certain level.

1. **Press ⚡/Tran-P to select the flash mode.**
• Each press of ⚡/Tran-P cycles through the flash modes in the following sequence: Auto Flash → Flash On "⚡" → Flash Off "⚡̸".

| Indicator	Flash Mode	Description
None	Auto Flash	Flash is automatically enabled and disabled in accordance with exposure conditions.
⚡	Flash On	Flash is always fired, regardless of exposure conditions.
⚡̸	Flash Off	Flash is never fired, regardless of exposure conditions.

• The image on the monitor screen is cleared and the Charge Lamp flashes while the flash unit is charging.

CHARGE ⚡/Tran-P F▶N▶E MODE

Charge lamp

22
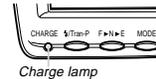
▶▶▶ **IMPORTANT!** ◀◀◀
• Never use the flash on areas where combustible or explosive gas is present. Doing so creates the danger of fire and explosion.
• Never fire the flash in the direction of a person operating a motor vehicle. Doing so can interfere with the driver's vision and create the danger of accident.
• Never fire the flash while it is too close to the subject's eyes. Be especially careful with small children. Intense light from the flash can cause eye damage if it is fired too close to the eyes, especially with young children. When using the flash, the camera should be at least one meter (3.3') from the eyes of the subject.
• Make sure that you do not touch or block the flash or exposure sensor with your fingers. Doing so can soil these components and interfere with correct flash operation.
• Flash should be used for distances within the range of about 0.7 meters to 3 meters (2.3' to 9.8'). Flash does not work well outside this range.
• Depending on operating conditions (type of battery being used, temperature, etc.), it may take up to 10 seconds for the flash unit to charge.
• The flash does not fire in the following modes: Serial, Movie, Self-timer (movie or future). The ⚡̸ indicator flashes to indicate this condition.
• The flash unit will not charge when battery power is low. The ⚡̸ indicator flashes red to warn you that the flash will not fire correctly, which may affect exposure of the image. Replace batteries as soon as possible when this happens.

Changing the Lens Orientation

The lens of the camera is built into a lens body that is designed to rotate. This means you can change the angle of the lens without moving the rest of the camera.

*Rotates up to 90°
towards the front*

*Rotates up to 180°
towards the back*

• Any images recorded while the lens body is rotated so the lens is pointed from the back of the camera are stored as mirror images of the image that appears in the LCD before the shutter button is pressed.

Ⓐ

Ⓑ
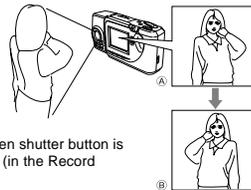
Ⓐ .... LCD when shutter button is pressed (in the Record Mode)
Ⓑ .... LCD when image is played back from camera memory

▶▶▶ **IMPORTANT!** ◀◀◀
• Do not apply excessive force when rotating the lens body. Doing so can cause serious damage to the lens.
• Do not carry the camera or move it around while holding onto only the lens body.
• Return the lens body to its normal position (with the lens pointing from the front of the camera) before storing the camera.

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NORMAL/MACRO Switch

The NORMAL/MACRO switch tells the camera how much distance there will be between the lens and the object whose image you are recording. The following table describes the conditions covered by each switch setting. ♣ is shown on the monitor screen whenever the macro position is in use.
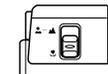
	👤~⛰ (NORMAL)	♣ (MACRO)
Focus Range	0.7m ~ ∞ (2.3' ~ ∞)	14cm ~ 16cm (5.5" ~ 6.3")

The above figures indicate the distance from the lens protection filter to the subject.

Resolution Settings

Pressing F▶N▶E cycles through the available resolution settings. Each press of F▶N▶E cycles through the resolution setting in the following sequence: F (Fine) → N (Normal) → E (Economy).

CHARGE ⚡/Tran-P F▶N▶E MODE
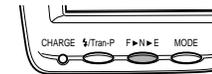
Setting Indicator	Resolution	Number of Images
F	Fine	30 (minimum) (approx. 124KB compressed image)
N	Normal	60 (minimum) (approx. 62KB compressed image)
E	Economy	120 (approx. 32KB compressed image)

• The above figures are approximations only. The actual number of images depends on image subject matter.
• Up to 120 images (total of F, N, E images)

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Exposure Adjustment

This camera features an program AE function that automatically changes shutter speed and aperture in accordance with available light. In addition, you can also manually adjust the exposure to compensate for backlighting, indirect indoor lighting, dark backgrounds, and other special conditions.

To manually adjust the exposure

1. Set the Function Switch to REC.

2. Use [+] and [–] to perform exposure compensation and display a bar graph on the monitor screen.
- Pressing [+] makes the image on the LCD brighter. Use it to adjust for dim indoor lighting and backlighting.
- Pressing [–] makes the image on the LCD darker. Use it to adjust for bright sunlight.
- The bar graph turns red whenever the compensation value is at its limit.

3. After adjusting the exposure, press the shutter button to record the image.

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▶▶▶ NOTES ◀◀◀
- Exposure adjustment is generally expressed in terms of an exposure adjustment value. The exposure adjustment value is always set to zero whenever you turn on the camera.
- The exposure adjustment value is changed by 0.25EV with each press of [+] or [–]. The range of the value is –2EV to +2EV.
- The exposure adjustment value automatically reverts to zero whenever the shutter button is pressed. You can manually reset the exposure adjustment value by using [+] and [–] to change the value back to zero, which is indicated when the bar graph disappears from the monitor. EV shift is fixed during panorama recording.
- Shutter speed and aperture is fixed whenever an EV shift setting is made.

▶▶▶ IMPORTANT! ◀◀◀
- When the exposure adjustment is too bright or too dark, you may not be able to adjust within the range of –2EV to +2EV.
- The aperture setting of this camera switches automatically in accordance with available lighting when an image is recorded. The switching operation causes the camera to emit a noise. This is normal and does not indicate malfunction.

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OTHER RECORDING FUNCTIONS

This section describes more advanced recording operations that are also provided by this camera.

Movie Recording

You can record a movie up to 3.2 seconds long.

1. Slide the Function Switch to REC.

2. Press MODE a number of times until the screen shown on the right hand appears, which indicates the Movie Recording Mode.

Movie Recording Mode
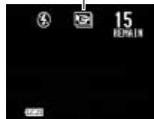
3. Compose the image on the monitor screen and then press the shutter button.
- The movie icon flashes as 32 frames are recorded at intervals of approximately 0.1 second.

- Storage of the 32 frames in memory uses up two still images worth (two pages) of memory.
- See "Playingback Movie" on page 34 for details on playingback movie.

▶▶▶ IMPORTANT! ◀◀◀
- Flash is disabled during movie recording.
- All the images that make up a movie are treated as a single unit for image movement, delete, and protect operations.
- Movie images that are uploaded to a personal computer and then downloaded back to the camera cannot be played back as a movie.
- The resolution of movie images is always **F** (Fine), and cannot be converted.
- Memory enough to store at least two **F** (Fine) images must be free in order to record a movie.

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Serial Recording

There are three different serial recording modes: continuous, past, and future.

- **Continuous (CONT.S)**
  With this mode, image recording continues as long as the shutter button is depressed. Images are recording at intervals of about one second.
- **Past (PAST)**
  This mode records the image in front of the lens the instant the shutter button is pressed, along with three images 0.05, 0.1 and 0.15 seconds before the shutter button is pressed.
- **Future (FUTURE)**
  This mode records the image in front of the lens the instant the shutter button is pressed, along with four subsequent images at intervals of about 0.05 second.

SHUTTER

Time Recording (Past)　①②③④
Time Recording (Future)　①②③④
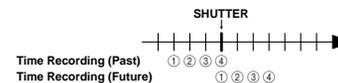
▶▶▶ IMPORTANT! ◀◀◀
- The flash unit is disabled during serial recording.
- The number of images actually recorded in the PAST mode and FUTURE mode depend on the amount of memory available.

1. Slide the Function Switch to REC.

2. Press MODE a number of times until the screen shown on the right hand appears, which indicates the Serial Recording Mode.

Serial Recording Mode

3. Press MENU.

4. Use [+] and [–] to select the Serial Recording Mode you want to use, and then press the shutter button.

5. Compose the image on the monitor screen and then press the shutter button to start the record operation.
- If you are using the CONT.S mode, keep the shutter button depressed until you record everything you want.

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Self-timer Recording

There are three different Self-timer Recording Modes: single, movie, and future.

• Single (SINGLE)
After about 10 seconds have elapsed, this mode records a single image.
• Movie (MOVIE)
Starts movie recording 10 seconds after the shutter button is pressed. See "Movie Recording" on page 27 for details on movie recording.
• Future (FUTURE)
After about 10 seconds have elapsed, this mode records the image in front of the lens the instant the shutter button is pressed, along with four subsequent images.

▶▶▶ **IMPORTANT!** ◀◀◀
The flash fires only when SINGLE is selected.

1. Slide the Function Switch to REC.

2. Press MODE a number of times until the screen shown on the right hand appears, which indicates the Self-timer Recording Mode.

Self-timer Recording Mode

3. Press MENU.

4. Use [+] and [–] to select the Self-timer Recording Mode you want to use, and then press the shutter button.

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5. Compose the image on the monitor screen and then press the shutter button to start the record operation.
• A 10-second countdown starts on the LCD. The shutter will release automatically when the end of the countdown is reached.
• To cancel ongoing Self-Timer operation, press shutter button.

▶▶▶ **NOTE** ◀◀◀
During self-timer recording, you may find it helpful to rotate the swivel lens mechanism 180 degrees so the monitor screen faces the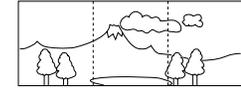 same direction as the lens. This way you can always see how much time is left until the start time is reached and recording begins.

Panorama Recording

With panorama recording you record a series of images and then link them to create a single panoramic effect.

1. Slide the Function Switch to REC.

2. Press MODE a number of times until the screen shown on the right hand appears, which indicates the Panorama Recording Mode.

Panorama Recording Mode

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3. Compose the image on the monitor screen and then press the shutter button to record.
• The left edge of the previous image you recorded remains on the monitor screen, so you can use it to compose the next image correctly.
• Up to nine images can be grouped into a panorama. Press MENU when you want to stop a panorama recording operation.
• If you want to link more than 9 images into a panorama, upload the images to a computer and use your computer application to link them.
• Aperture and white balance settings are locked when you record the first image of a panorama, and these settings are applied to all subsequent images in that panorama.
• See "Panorama Playback" on page 35 for details on playing back panoramas.
• Panorama images that are uploaded to a personal computer and then downloaded back to the camera cannot be played back using panorama playback.

Manual Recording

With this operation you manually set the aperture and white balance to the settings you want to use in order to produce special effects or to compensate for special conditions.
• You can override automatic settings and manually set exposure and white balance to create exactly the effects you want for your images.

Aperture

You can select AUTO, F2, or F8 as the aperture setting. F8 allows recording of a wider area (NORMAL Mode: 0.3m ~ ∞ (11.8" ~ ∞), MACRO Mode: 11 ~ 26cm (4.3" ~ 10.2")).

White Balance

This settings lets you adjust white areas to produce a more natural-looking image.

WB1 .... Use this setting when indoor lighting is making the image appear reddish.
WB2 .... Use this setting when indoor lighting is making the image appear bluish.
WB3 .... Use this setting for outdoor recording.

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1. Slide the Function Switch to REC.

2. Press MODE a number of times until the screen shown on the right hand appears, which indicates the Manual Recording Mode.

Manual Recording Mode

3. Press MENU.

4. Use [+] and [–] to select the aperture (APT) setting you want to use, and then press the shutter button.

5. Use [+] and [–] to select the white balance (WB) setting you want to use, and then press the shutter button.
• The M indicator is in the upper left corner of the display screen.
• Manual settings you make remain in effect until you turn off power or change to another mode.

6. Compose the image on the monitor screen and then press the shutter button to record.
• The image is recorded using the aperture and white balance settings you made above.
• To return the aperture and white balance settings to their default (AUTO) settings, turn off the camera or select normal recording again and set the aperture (APT) and white balance (WB) both to AUTO.
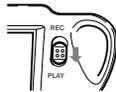
PLAYBACK

The following describes the different techniques that you can use to playback recorded images.

Basic Playback Operation

The built-in monitor screen of the camera lets you play back recorded images without connecting an external monitor.

1. Slide the Function Switch to PLAY.

- The PLAY position selects the Playback Mode, while REC selects the Record Mode.

2. Use [+] and [–] to scroll through the images stored in camera memory.

- Press [+] to scroll forward and [–] to scroll back. Holding down either button scrolls at high speed.
- Pressing the shutter button and the [–] button at the same time jumps to the first image.
- Pressing the shutter button and [+] button at the same time jumps to the last image.
- You cannot perform a jump to the first or last image in memory during playback of a movie or panorama.

▶▶ NOTE ◀◀

Sliding the Function Switch to PLAY immediately after recording an image displays the image you just recorded first.

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Playingback Movie

Use the following operation to play back a movie that was recorded using the operation under "Movie Recording" on page 27.

1. Slide the Function Switch to PLAY.

2. Use [+] and [–] to select the movie you want to playback.

3. Press the shutter button to start playingback movie.

- You can use [+] (forward) and [–] (reverse) during playingback movie to change the playback direction.
- Pressing MENU during playingback movie changes to the menu screen. While the menu screen is on the monitor, you can use [+] (forward) and [–](reverse) move frame-by-frame through the movie, or you can press DISP to change to mirror display and full screen display.

- Press the shutter button to return to a previous display from a mirror display or full screen display. If the previous display does not appear right away, keep the shutter button depressed until it does.

4. After playingback movie is complete, press the shutter button again.

- If you playback a movie using the basic (non-movie) playback operation, only the first frame of the memory page that contains the first 16 frames of the movie appears on the screen.
- If one of the memory pages that contains 16 movie frames has been deleted by the PC Link software application, movie will be shortened by half.
- When a movie page (of 16 frames) is sent to or received from a personal computer, the applicable frames play on the monitor screen of the camera.
- Uploading a movie image to a computer causes it to be converted automatically to two images, each of which contains 16 frames.
- Auto Power Off is disabled while playingback movie is in progress.

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Panorama Playback

Use the following operation to playback panoramas recorded using the operation under "Panorama Recording" on page 30.

1. Slide the Function Switch to PLAY.

2. Use [+] and [–] to select the panorama you want to playback.

3. Press the shutter button to start panorama playback.

- You can use [+] (forward) and [–] (reverse) during panorama playback to change the playback direction.
- Press MENU during panorama playback to advance to the next frame (or previous frame in the case of reverse playback).

4. Press the shutter button to stop panorama playback.

▶▶ NOTE ◀◀

The Auto Power Off function is disabled while panorama playback is being performed.

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Using Zoom

The following operation lets you magnify an image to twice its normal size. Note that you can zoom in only on a single still image.

▶▶ IMPORTANT! ◀◀

Movie and panorama images cannot be zoomed.
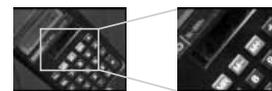
1. Slide the Function Switch to PLAY.

2. Use [+] and [–] to select the image you want to zoom in.

3. Press MENU.

4. Use [+] and [–] to select VIEW, and then press the shutter button.

5. Use [+] and [–] to select ZOOM, and then press the shutter button.

- This magnifies the center part of the image to twice its normal size.

6. Use [+] and [–] to slide the image so you can view the part of it that you want.

7. After you are finished, press any button besides [+], [–], or DISP return the image to its normal size.

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Enlarged Image Movement
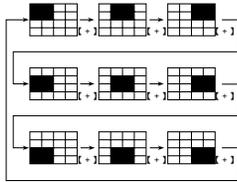
• Pressing [–] slides the image in the opposite direction.

▷▷▷ NOTE ◁◁◁

When an image is enlarged while image information is turned on (page 15), an image part indicator ▣ appears in the upper right corner to indicate which part of the image is currently on the screen. Display of the image part indicator can be toggled on and off during the enlarged display by pressing DISP.

Displaying Multiple Images

The following operation lets you simultaneously view either four or nine images on the same screen. This capability is especially useful when playing back to the screen of a connected TV, and can be used to display a catalog of products, etc.

• When a panorama or movie is included in a multi-page display, only the first image that makes up the panorama or movie is shown.
• A movie image appears smaller in size than a normal (non-movie) image.

1. Slide the Function Switch to PLAY.

2. Press MENU.

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3. Use [+] and [–] to select VIEW, and then press the shutter button.

4. Use [+] and [–] to select 4PAGE or 9PAGE, and then press the shutter button.

• The first image of the set is the image that was on the screen when you performed step 2 of this operation. The other images are those that sequentially follow the first one.

5. Use [+] and [–] to scroll through images stored in memory.

6. After you are finished, press any button besides [+], [–], or DISP return to the normal single-image display.

Selecting a Specific Image

Use the following operation to select one of the images on a multi-image screen and change to the display of that image only.

1. Use the operation on page 37 to display the multi-image screen that contains the image you want.

2. Press DISP.

• This displays the image number on the upper left image.

3. Use [+] and [–] to move the page (image) number display from image-to-image on the monitor screen.

4. Press the shutter button to display the image whose page (image) number is shown.

Auto Play

Auto Play automatically scrolls through the images stored in memory. You can also specify how much time should be allowed between each image.

**▷▷▷ IMPORTANT! ◁◁◁**

Auto Power Off (page 18) is disabled whenever the Auto Play is being used. This means you should not leave Auto Play running when using batteries to power the camera. Doing so will cause batteries to go dead. Be sure to stop Auto Play and turn off the camera after you are finished.

To start Auto Play

1. Slide the Function Switch to PLAY.

2. Press MENU.

3. Use [+] and [–] to select VIEW, and then press the shutter button.

4. Use [+] and [–] to select AUTO PLAY, and then press the shutter button.

5. To stop Auto Play, press any button besides MENU.

• Note that all buttons are disabled while an image change is in progress. Wait until an image is stopped on the screen before performing a button operation, or hold down the button until the image stops.

Setting the Auto Play Interval

You can use the following operation to set the amount of time that should be allowed between each image during Auto Play (the Auto Play interval).

1. Start Auto Play using the operation under "To start Auto Play" on page 39.

2. Press MENU.

• Be sure to wait for the image on the screen to stop before performing any button operation.

3. Use [+] and [–] to set the Auto Play interval value you want and then press the shutter button.

• You can set the Auto Play interval to any value in the range of 1 to 30 (seconds).
• After you make the above setting, Auto Play resumes using the interval you set.

Screen Saver

The screen saver function automatically activates Auto Play (which automatically scrolls through images) whenever you do not perform any operation for about five minutes in the Playback Mode. This protects the camera's monitor screen and the screen of a connected TV against "burn in" of a static image that is left displayed too long.

▷▷▷ IMPORTANT! ◁◁◁

• The screen saver is enabled only when the camera is being powered by its optional AC adaptor. If you do not perform any operation for five minutes under battery power, camera power automatically turns off (Auto Power Off).
• The screen saver is disabled (it does not activate) if there are no images stored in memory.
• PC Link will not send images between the camera and a personal computer while the screen saver is turned on. Make sure you turn off the screen saver before trying to perform any image transfer operation. Note that the screen saver is turned on when you purchase the camera.

To turn the screen saver on and off

1. **Slide the Function Switch to PLAY.**

2. **Press MENU.**

3. **Use [+] and [–] to select VIEW, and then press the shutter button.**

4. **Use [+] and [–] to select SCREEN SAVER, and then press the shutter button.**

5. **Use [+] and [–] to select ON, and then press the shutter button.**
   • To turn off the screen saver, perform the above procedure and select OFF in step 5.
   • The screen saver activates if you do not perform any operation for about five minutes in the Playback Mode.
   • To stop an ongoing screen saver operation, press the shutter button.
   • When changing between images, the screen saver uses the interval that is specified for Auto Play (page 40). To change the interval, press MENU while a screen saver operation is in progress, and then specify the interval time you want.

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EDITING IMAGES

A selection of powerful built-in editing tools helps you to create the effects you want.

Using Image Filters

Use the following operation to apply black-and-white, sepia, or another filter to an image. Filters alter the appearance of an image and create interesting effects.

▶▶ **IMPORTANT!** ◀◀

A filter cannot be applied when any of the following conditions are present.
• When an **F** (Fine) resolution image is on the monitor screen and there is only enough memory remaining to allow recording of an **N** (Normal) or **E** (Economy) resolution image
• When an **N** (Normal) resolution image is on the monitor screen and there is only enough memory remaining to allow recording of an **E** (Economy) resolution image
• While a movie image or panorama image is on the monitor screen
• When the "MEMORY FULL" message is on the monitor screen
• Applying a filter to a rotated image, automatically causes the image to return to its normal (unrotated) orientation.

1. **Slide the Function Switch to PLAY.**

2. **Use [+] and [–] to display the image to which you want to apply the filter.**

3. **Press MENU.**

4. **Use [+] and [–] to select EFFECT, and then press the shutter button.**

5. **Use [+] and [–] to select FILTER, and then press the shutter button.**

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6. **Use [+] and [–] to select the type of filter you want, and then press the shutter button to store the filtered image.**
   • Each press of [+] and [–] cycles through one of the five available filters.
   • Applying a filter does not affect the original image. Instead, the filtered version is saved as a new image immediately after the original image. All images following the original image are automatically shifted to make room.
   • The amount of time it takes the camera to apply a filter depends on the composition of the original image and the type of filter you select.

Adding a Title to an Image

Adding a title to an image is actually a two-step process. First you record the title into title memory, and then you superimpose the title onto the image. Because of this, you should prepare the title by printing it out on your computer or handwriting it on a sheet of paper.
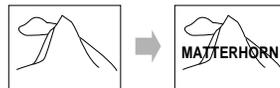
Recording the Title

▶▶ **IMPORTANT!** ◀◀

There is space for only one title in title memory. Any title already in memory is automatically deleted whenever you record a new title.

1. **Slide the Function Switch to REC.**

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2. **Press MODE a number of times until the screen shown on the right hand appears, which indicates the Title Record Mode.**

Title Recording Mode

3. **On the monitor screen, compose the title that you prepared.**
   • When recording a title, make sure that the title is between the lines provided.
   • You can use [+] and [–] to adjust the exposure of the title image. See "Exposure Adjustment" on page 25 for details.

4. **Press the shutter button.**

5. **Use [+] and [–] to adjust the brightness of the title image (±30), and then press the shutter button.**
   • The brightness adjustment you make here is stored along with the title image data.

Superimposing a Title onto an Image

▶▶ **IMPORTANT!** ◀◀

Text cannot be added to an images when any of the following conditions are present.
• When an **F** (Fine) resolution image is on the monitor screen and there is only enough memory remaining to allow recording of an **N** (Normal) or **E** (Economy) resolution image
• When an **N** (Normal) resolution image is on the monitor screen and there is only enough memory remaining to allow recording of an **E** (Economy) resolution image
• While a movie image or panorama image is on the monitor screen
• When the "MEMORY FULL" message is on the monitor screen
• Adding a title to a rotated image, automatically causes the image to return to its normal (unrotated) orientation.

1. **Slide the Function Switch to PLAY.**

2. **Use [+] and [–] to display the image onto which you want to superimpose the title.**

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3. Press MENU.

4. Use [+] and [–] to select EFFECT, and then press the shutter button.

5. Use [+] and [–] to select TITLE, and then press the shutter button.

6. Use [+] and [–] to select the color you want the title to be, and then press the shutter button.
  • Each press of [+] or [–] scrolls through the selection of 20 available title colors.

7. Use [+] and [–] to select the type of title plate you want to use, and then press the shutter button.
  • Each press of [+] or [–] scrolls through the selection of 9 available title plate settings.
  • Title plate settings consist of 8 plate variations, plus a setting that specifies no title plate.

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8. Use [+] and [–] to select the color you want the plate to be, and then press the shutter button.
  • Each press of [+] or [–] scrolls through the selection of 12 available plate colors.

9. Use [+] and [–] to select the position of the title on the image, and then press the shutter button.
  • Each press of [+] or [–] changes to one of 5 available title locations.
  • Pressing the shutter button to register the title location superimposes the title onto the image and stores the result immediately after the original image. All images following the original image are automatically shifted to make room.

Combining Two Images

The following operation describes how to combine two recorded image into a new image.

▶▶▶ **IMPORTANT!** ◀◀◀
  • The following operation cannot be performed unless there is enough room in memory to store one fine resolution image.
  • You cannot use this operation with a movie, a panorama, or an image that has been rotated.
  • Combining a rotated image with another image automatically returns the rotated image to its normal orientation (unrotated).

1. Slide the Function Switch to PLAY.

2. Use [+] and [–] to display the image you want to use as the foreground image.

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3. Press MENU.

4. Use [+] and [–] to select EFFECT, and then press the shutter button.
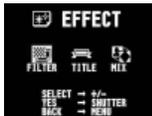
5. Use [+] and [–] to select MIX, and then press the shutter button.

6. Use [+] and [–] to select the type of cut out pattern you want to use, and then press the shutter button.
  • Each press of [+] or [–] scrolls through the selection of 4 available cutout patterns.

7. Use [+] (left) and [–] (right) to specify the horizontal location of the cutout pattern and then press the shutter button.

8. Use [+] (up) and [–] (down) to specify the vertical location of the cutout pattern and then press the shutter button.

9. Use [+] and [–] to select the image you want to use as the background image, and then press the shutter button.

10. If you selected the vertical ellipse or small circle as the cutout pattern, use [+] and [–] to select the paste location, and then press the shutter button.
  • Pressing the shutter button combines the two images according to your specifications and stores the result immediately after the original foreground image. All images following the original foreground image are automatically shifted to make room.

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Moving an Image

Use the following operation when you want to move an image to a different location in the sequence of images stored in memory.

1. Slide the Function Switch to PLAY.

2. Press MENU.

3. Use [+] and [–] to select TOOL, and then press the shutter button.

4. Use [+] and [–] to select MOVE, and then press the shutter button.

5. Use [+] and [–] to select the image you want to move, and then press the shutter button.

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6. Use [+] and [–] to select the image that you want come after the image you are moving, and then press the shutter button.

• Pressing the shutter button moves the image to the location above the image you specified in step 6 above. Images after the location you move to are shifted to make room.

• When you move a movie or panorama, all related images are moved as a group.

• To jump to the last page (image) in memory, use [+] and [–] to display the message "LAST PAGE" and then press the shutter button.

Rotating an Image

The following operation rotates an image.
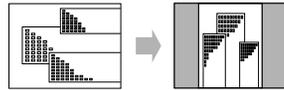
IMPORTANT!

You cannot use the following operation with a movie, or a panorama.

1. Slide the Function Switch to PLAY.

2. Use [+] and [–] to display the image you want to rotate.

3. Press MENU.

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4. Use [+] and [–] to select TOOL, and then press the shutter button.

5. Use [+] and [–] to select ROTATE, and then press the shutter button.

6. Use [+] and [–] to specify 0°, 90°, 180°, or 270° as the rotation.

7. If you selected 90° or 270° in the previous step, press MENU to specify the background color.

• Skip this step if you specified 0° or 180° in step 6.

• Each press of MENU scrolls through the 10 available background colors.

8. Press the shutter button to rotate the image.

IMPORTANT!

The above operation only rotates the displayed representation of the image, without actually rotating the image itself. This means that uploading the image to a computer or outputting it to a QV Color Printer sends the original un-rotated image.

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IMAGE PROTECTION

Use the following operations when you want to protect images against accidental deletion. A protected image cannot be deleted until it is unprotected. You can protect and unprotect a single specific image, or all images currently in memory.

Protecting and Unprotecting a Single Image

1. Slide the Function Switch to PLAY.

2. Press MENU.

3. Use [+] and [–] to select TOOL, and then press the shutter button.

4. Use [+] and [–] to select PROTECT, and then press the shutter button.

5. Use [+] and [–] to select PAGE, and then press the shutter button.

6. Use [+] and [–] to select the image you want to protect or unprotect.

7. Press the shutter button to toggle image protection on and off.

• The indicator in the upper left corner of an image indicates that it is protected.

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8. If you want to protect or unprotect other images, repeat steps 6 and 7.

• When you protect or unprotect a movie or panorama, all related images are treated as a group.

• To exit the image protect operation, press MENU. The image protect operation is also cancelled automatically if you do not perform any button operation for about one minute.

Protecting and Unprotecting All Images in Memory

1. Slide the Function Switch to PLAY.

2. Press MENU.

3. Use [+] and [–] to select TOOL, and then press the shutter button.

4. Use [+] and [–] to select PROTECT, and then press the shutter button.

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5. **Use [+] and [–] to select "ALL", and then press the shutter button.**

6. **Use [+] and [–] to select ALL (protect) or CANCEL (unprotect), and then press the shutter button.**
   - The 🔒 indicator that is shown in the upper left corner of the images when image information is turned on (page 51) indicates they are protected.
   - The 🔒 indicator does not appear when images are not protected.

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DELETING IMAGES

Use the following operations when you want to delete images from memory. You can delete a single specific image, or all images currently in memory.

▶▶ IMPORTANT! ◀◀
- Image deletion cannot be undone. Before deleting an image, make sure you no longer need it or you have a back-up copy saved on you computer, on diskette, or on some other medium.
- Be especially careful with the DELETE ALL operation, which deletes all unprotected images in memory.
- A protected image cannot be deleted. See "Image Protection" on page 51 for details on protecting and unprotecting images.

Deleting a Single Image

1. **Slide the Function Switch to PLAY.**

2. **Press MENU.**

3. **Use [+] and [–] to select DELETE, and then press the shutter button.**

4. **Use [+] and [–] to select PAGE, and then press the shutter button.**

5. **Use [+] and [–] to select the image you want to delete.**
   - Deleting a movie deletes all associated images as a group.
   - If you delete one or more images that are part of a panorama, the remaining images of the panorama regrouped into a new panorama without the deleted images.
   - Protected images do not appear on this screen.

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6. **Double check to make sure that you really want to delete the image you selected.**
   - To abort the delete operation without deleting anything, press any button besides [+], [–], or the shutter button.

7. **To actually delete the selected image, press the shutter button.**
   - The selected image is deleted and the next image in sequence is selected.
   - Deleting a movie image deletes all the frames in both images that make up the movie.

8. **If you want to delete more images, repeat steps 5 through 7.**
   - To exit the image delete operation, press any button besides [+], [–], or the shutter button.

▶▶ NOTE ◀◀
The camera does not maintain open spaces in its memory. Deleting an images causes all images following the deleted image to be shifted up.

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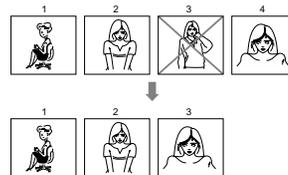
Deleting All Unprotected Images

The following operation deletes all unprotected images. See "Image Protection" on page 51 for details on protecting and unprotecting images.

1. **Slide the Function Switch to PLAY.**

2. **Press MENU.**

3. **Use [+] and [–] to select DELETE, and then press the shutter button.**

4. **Use [+] and [–] to select ALL, and then press the shutter button.**

▶▶ IMPORTANT! ◀◀
The next step deletes all unprotected images in memory. To abort this operation without deleting anything, select EXIT instead of ALL.

5. **Use [+] and [–] to select ALL, and then press the shutter button.**
   - The message "NO IMAGE" appears on the monitor screen after all the images are deleted.

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CHANGING IMAGE RESOLUTION

The following operation changes the resolution of an image. Note that image resolution can be changed downwards only (from fine to normal, or from normal to economy).

▶▶ IMPORTANT! ◀◀

Changing the resolution causes the original image to be replaced with the new one.

1. Slide the Function Switch to PLAY.

2. Use [+] and [–] to display the image whose resolution you want to change.

• The resolution of movie, panorama and protected images cannot be changed.

3. Press MENU.

4. Use [+] and [–] to select TOOL, and then press the shutter button.

5. Use [+] and [–] to select CONVERT, and then press the shutter button.

**6. Press the shutter button.**

• If you selected fine resolution image in step 2, its resolution is converted to a normal image. If you selected a normal image, it is converted to economy.

• If you selected an economy resolution image in step 2, the image is unchanged.

• After you are finished converting images, press MENU.

CONNECTIONS

This camera is equipped with VIDEO OUT sockets for connection to a television or video deck, and a DIGITAL interface for connection to a computer or other equipment.

VIDEO OUT Sockets

• **Television (page 60)**

• **Video Deck, Video Printer**

You can connect to a video tape deck and record image to tape. Or you can connect to a video printer to produce hard copy printouts of your images.

INPUT

Special video cable that comes with camera

VIDEO IN terminal of other device

VIDEO Terminals

DIGITAL Terminal

Cables

The type of cable you should use depends on the type of equipment to which you are connecting.

▶▶ IMPORTANT! ◀◀

• Be sure to turn off both the camera and other equipment before making any connections.

• Check the documentation that comes with your other equipment for information you may need to know when making connections.

• Leaving the same image displayed on a television or computer display screen for very long periods can cause the image to be "burned in" on the screen. When this happens, a faint after-image remains on the screen, even after you disconnect the camera. To avoid this, you should not leave the same image displayed on such a screen for very long periods.

DIGITAL Interface

• **Computer (page 64)**

• **Other CASIO Digital Camera (page 62)**

• **QV Color Printer (page 61)**

CONNECTING TO OTHER EQUIPMENT

Connecting to a Television

You can playback images in camera memory on the screen of a connected television.

TV

Accessory video cable

VIDEO OUT terminal

VIDEO IN terminal
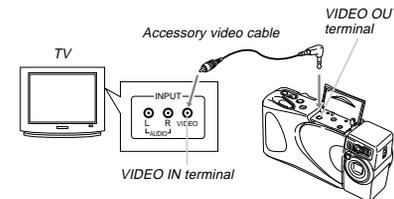
INPUT

1. Connect one end of the video cable to the camera and the other end to the television.

2. Set up the television for video input.

• See the documentation that comes with the television for information about how to do this.

3. Use the operations under "Playback" on page 33 to playback images on the television screen.

▶▶ IMPORTANT! ◀◀

• A television must have a video input socket like the one shown in the illustration to connect to this camera.

• This camera outputs images using NTSC format. Images do not appear normal when output to a PAL or other type of television or video equipment.

• Battery capacity (page 18) and other displays that normally appear on the camera's monitor screen are also displayed on the television screen.

Connecting to a QV Color Printer

You can use a QV Color Printer to produce printouts of your image data.

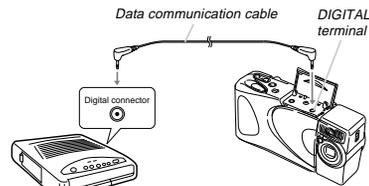Supported Printer Models: QG-100, DP-300, DP-8000

Data communication cable   *DIGITAL terminal*

Digital connector

1. Connect one end of the cable that comes with the QV Color Printer to the camera and the other end to the printer.

2. Slide the camera's Function Switch to PLAY and then turn on camera power.

3. Perform the QV Color Printer operations required for printing.
   • See the documentation that comes with the QV Color Printer for details.
   • Performing a print operation for a movie prints the 16 individual frames that make up the movie.
   • Printing a panorama prints the individual images that make up the panorama.

Connecting to another CASIO QV Digital Camera

Connecting to another CASIO digital camera makes it possible to transfer image data between the two cameras.

Supported CASIO Camera Models: QV-10, QV-10A, QV-11, QV-30, QV-70, QV-100,QV-120, QV-200, QV-300, QV-700, QV-770

DIGITAL terminal   *DIGITAL terminal*
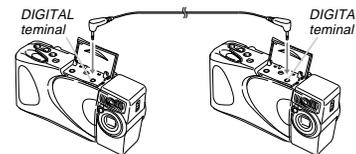
Setting Up For Communication

1. Turn off both cameras.

2. Connect the two cameras using a separately available SB-62 cable.

3. Turn on both cameras.

Transferring Data

1. Slide the Function Switch of both cameras to the PLAY position.

2. Display the image you want to send on monitor screen one of the cameras.
   • Note that data communication is impossible if the Function Switch of either camera is in the REC position.
   • You also will not be able to perform data communication if the monitor screen of either camera is displaying multi-images (page 37) or a zoomed image (page 36).

3. On the QV-770, press the shutter button.

IMAGE COPY
SEND   RECEIVE
SELECT   +/–
YES   SHUTTER
EXIT   MENU

4. Use [+] and [–] to select the type of operation you want to perform.
   • Select SEND to send an image or RECEIVE to receive an image.
   • To abort the image transfer operation, press MENU.

5. On the QV-770, press the shutter button again.
   • This starts the selected image transfer operation.
   • You can transfer only one image at a time. To send more images, repeat steps 2 through 5.
   • All the images that make up a movie or panorama are treated as a single unit for image data communication operations.

▶▶▶ IMPORTANT! ◀◀◀
   • Take care to ensure that the cable does not become disconnected, power is not turned off, and the position of the Function Switch is not changed. Doing so can cause malfunction of the camera.
   • Transferring a movie or panorama to another model QV Digital Camera (other than the QV-770) causes the images to be ungrouped. Auto play cannot be performed on other QV Digital Camera models.

Data Transfer and Image Resolution

QV-770 AND QV-700, QV-770

QV-770		QV-700
FINE	↔	FINE
NORMAL	↔	NORMAL
ECONOMY	↔	ECONOMY
ECONOMY	←	QUARTER (QV-700 only)

QV-770 AND QV-100, QV-120, QV-200, QV-300

QV-770		Other Camera
FINE		
NORMAL	→	FINE
ECONOMY		
NORMAL	←	FINE
ECONOMY	←	NORMAL

QV-770 AND QV-10, QV-10A, QV-11, QV-30, QV-70

QV-770		Other Camera
FINE		
NORMAL	→	NORMAL
ECONOMY		
ECONOMY	←	NORMAL

• QV-10, QV-10A, QV-11, QV-30, and QV-70 support normal resolution images only.

PC Link Software

Special PC Link software available from CASIO makes image data transfers with a personal computer quick and easy. The software is also designed to minimize loss of image quality due to data transfer.
For details on how to connect to a personal computer and exchange data, see the documentation that comes with the PC Link software.

Windows Version: LK-11/LK-12S
Macintosh Version: LK-22S

▶▶▶ IMPORTANT! ◀◀◀
   • This camera does not fully support the software that comes with the LK-1, LK-1A, LK-10V connection kits for Windows, and the LK-2, LK-2A, LK-2V, LK-21 connection kits for the Macintosh. Never try to use the software that comes with these connections kits with this digital camera.
   • Movie and panorama images are automatically ungrouped when transferred to a personal computer, so they loose their ability to be played back as movies and panoramas. You can use Spin PhotoObject and Spin Panorama to play movies and panoramas on your computer. Images cannot be played back as movies or panoramas even if they are transferred back to the camera from the computer.

• Cable-free IrDA data transfer with a computer is supported for LK-12S PC Link for Windows. LK-11 for Windows and LK-22S for the Macintosh do not support IrDA communication.

INFRARED DATA TRANSFER

TranP

This camera support IrDA data communication with digital equipment that supports IrTran-P protocol.
Infrared data transfer capabilities lets you exchange image data with another digital camera without physical connection.

• This camera uses IrDA IrTran-P protocol, which was jointly developed by NTT, Sony, Sharp, Okaya Systemware and CASIO to provide a means for transferring digital camera still images using infrared signals. (January 1998)

Receiving Data

Setting Up to Receive

═══ ⚡/Tran-P BUTTON OPERATION ═══

1. **Slide the Function Switch to the PLAY position.**

2. **Press ⚡/Tran-P.**

3. **Use [+] and [–] to select RECEIVE, and then press the shutter button.**

4. **Receive standby screen appears**

5. **Align the infrared port of the camera with the port of the sending unit, and start the send operation.**
   • See the documentation that comes with the sending unit for details on its operation.

═══ MENU BUTTON OPERATION ═══

1. **Slide the Function Switch to the PLAY position.**

2. **Press MENU.**

---

3. **Use [+] and [–] to select IR, and then press the shutter button.**

4. **Use [+] and [–] to select IRTRAN-P, and then press the shutter button.**

5. **Use [+] and [–] to select RECEIVE, and then press the shutter button.**

6. **Receive standby screen appears.**

7. **Align the infrared port of the camera with the port of the sending unit, and start the send operation.**
   • See the documentation that comes with the sending unit for details on its operation.

Sending Data

Transferring a movie or panorama to another model QV Digital Camera (other than the QV-770) causes the images to be ungrouped. Auto play cannot be performed on other QV Digital Camera models.
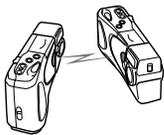
Sending a Single Image

═══ ⚡/Tran-P BUTTON OPERATION ═══

1. **Slide the Function Switch to the PLAY position.**

2. **Use [+] and [–] to select the image you want to send.**

3. **Press ⚡/Tran-P.**

4. **Use [+] and [–] to select SEND, and then press the shutter button.**

5. **Send standby screen appears.**

6. **Align the infrared port of the receiving device that supports IrTran-P protocol.**

   • Make sure that the infrared ports are 10 to 30 centimeters (3.9" ~ 11.8") from each other.
   • To interrupt the data image send operation at any time, press MENU.

═══ MENU BUTTON OPERATION ═══

1. **Slide the Function Switch to the PLAY position.**

2. **Press MENU.**

3. **Use [+] and [–] to select IR, and then press the shutter button.**

4. **Use [+] and [–] to select IRTRAN-P, and then press the shutter button.**

---
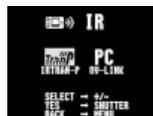
5. **Use [+] and [–] to select SEND, and then press the shutter button.**

6. **Use [+] and [–] to select PAGE, and then press the shutter button.**

7. **Use [+] and [–] to display the image you want to send, and then press the shutter button.**
   • Images selected for the send operation are indicated by ★.
   • Repeat step 7 if you want to send more than one image.
   • Some devices do not support transfer of multiple images, even though they do support IrTran-P protocol.

8. **Use step 6 of the procedure under "⚡/Tran-P BUTTON OPERATION" on page 67 to start the data transfer operation.**

Sending All Images

1. **Slide the Function Switch to the PLAY position.**

2. **Press MENU.**

3. **Use [+] and [–] to select IR, and then press the shutter button.**

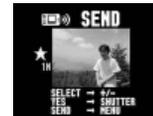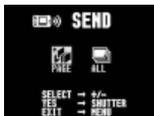4. **Use [+] and [–] to select IRTRAN-P, and then press the shutter button.**

5. **Use [+] and [–] to select SEND, and then press the shutter button.**

6. **Use [+] and [–] to select ALL, and then press the shutter button.**

7. **Use step 6 of the procedure under "⚡/Tran-P BUTTON OPERATION" on page 67 to start the data transfer operation.**

Transferring Images Using PC Link Software

With PC Link Software, Cable-free infrared image data transfer can be performed with a personal computer that supports IrDA1.0 protocol or later. See the documentation that comes with your computer for details on its infrared communication capabilities.

1. **Slide the Function Switch to the PLAY position.**

2. **Press MENU.**

3. **Use [+] and [–] to select IR, and then press the shutter button.**

4. **Use [+] and [–] to select QV-LINK, and then press the shutter button.**

5. **Align the infrared port of the camera with the port of your computer.**

6. **Start up the PC Link software on your computer and transfer the images you want.**

Infrared Data Transfer Precautions

• Make sure that the infrared ports of the sending unit and the receiving unit are pointed straight at each other, and that there is nothing blocking the path between them.
• To avoid problems that occur due to sudden loss of battery power during infrared image transfer, we recommend that you use the separately AC adaptor specified for this camera when transferring images.
• This camera cannot perform infrared data transfer with any device that does not support the IrTran-P protocol.
• Avoid performing infrared data transfers in areas expose to direct sunlight or other strong illumination.
• Such conditions as natural outdoor light, low battery power, too much distance between infrared ports, and misalignment of infrared ports can cause failure of image transfers or corrupted data.
• Proper image data transfer is impossible whenever there is anything blocking either of the infrared ports.
• Do not locate any other infrared emitting device (such as remote control units) or fluorescent lighting in the vicinity of the cameras while they are performing infrared image transfers.
• A sender ID, which shows manufacturer and model name, normally appears on the display during infrared data communication. Some equipment, however, does not transmit a sender ID, in which case nothing appears on the display.
• Failure to be able to establish an IrDA connection can mean that the device you are trying to communication with does not support the IrDA standard, or that the applications being used are not compatible. When this happens, you probably have to connect the camera to the computer with a separately available cable for data transfer.

TROUBLESHOOTING

	Symptom	Probable Cause	Action
Power Supply	No power	1. Batteries not loaded correctly. 2. Dead batteries 3. Wrong AC adaptor	1. Correctly load batteries (page 16). 2. Replace batteries with new ones (page 16). 3. Use only recommended AC adaptor .
	Sudden power failure	1. Operation of Auto Power Off 2. Low battery power 3. Use of manganese batteries.	1. Turn power back on. 2. Replace batteries with new ones (page 16). 3. Replace manganese batteries with alkaline batteries.
	▭ indicator on LCD	Batteries are about to go dead.	Replace all four batteries with a set of new ones (page 16).
Recording	No recording when shutter button is pressed	1. Function Switch sets to PLAY. 2. Flash unit is charging. 3. The message "MEMORY FULL" is on the monitor screen. 4. The message "REMAINING" is on the monitor screen.	1. Set Function Switch to REC. 2. Wait until flash unit charging is finished. 3. Delete images you no longer need from camera memory. 4. Press F ▶ N ▶ E to change to another resolution mode, or delete images you no longer need from camera memory.
	Power failure during self-timer operation	Low battery power	Replace batteries (page 16).
	Poor LCD image focus	Incorrect NORMAL/MACRO switch setting	Use NORMAL for scenery and group photos, and MACRO for close-ups (page 24).
	Poor color and brightness when indoors	Indoor fluorescent lighting	Shoot under incandescent or other non-fluorescent lighting (page 21).

	Symptom	Probable Cause	Action
Recording	Cannot perform movie recording.	1. Movie Record Mode is not selected. 2. Insufficient camera memory capacity.	1. Press MODE to enter the Movie Record Mode (page 27). 2. Delete images you no longer need from camera memory, so there are at least two images worth of free memory capacity (page 54).
Playback	Color of recorded image is strange.	Reflection from sunlight or light from another source	Reorient the camera so that light is not shining directly into lens.
	No +/– button operation during multi-page display	Button operation during page change	Wait until an image is on the LCD before performing a button operation.
	Camera is connected to a TV, but LCD monitor contents do not appear on TV screen.	1. Incorrect camera-TV connection 2. Wrong TV set up	1. Connect correctly using the special video cable that comes with the camera (page 60). 2. Set up the TV correctly.
Deletion	Delete operation does not operate.	All pages are protected.	Unprotect the page you want to delete (page 51).
Other	Menu icon is blue and nothing happens when it is selected.	Icons for functions that are disabled in the Playback Mode are blue.	Select a different function or change to the Record Mode.
	All buttons and switches do not operate.	Malfunction due to static electrical charge or strong impact. Camera is connected to a computer or QV Color Printer.	Remove batteries and disconnect the AC adaptor if you are using one. Restore power and turn the camera on. If this does not work, contact your dealer or an authorized CASIO service provider.

	Symptom	Probable Cause	Action
Other	Cannot exchange data between two cameras	1. Incorrect cable connection 2. Camera connected to is not turned on. 3. Function Switch sets to REC.	1. Connect correctly (page 62). 2. Turn power on after connecting cable. 3. Set Function Switch to PLAY (page 62).
	Cannot transfer data (error keeps occurring)	1. Sending camera's memory is empty. 2. Receiving camera's memory is full 3. Receiving camera's Function Switch is in REC position. 4. Low battery (indicated by ⟞) 5. Disconnection of cable during data communication	1. Correct the situation and try again. 2. Correct the situation and try again. 3. Change Function Switch setting of receiving camera to PLAY (page 62). 4. Replace batteries or use the AC adaptor (page 16). 5. Securely reconnect the cable.
	Cannot perform infrared data communication.	1. Other device does not support IrTran-P protocol. 2. Sending and receiving units are not positioned correctly. 3. Object blocking the infrared light path, another device using infrared light is in the vicinity, or fluorescent lighting. 4. Direct sunlight	1. Communicate only with devices that support IrTran-P protocol. 2. Orient the infrared ports of the two devices so they are pointed directly at each other (page 67). 3. Move the sending and receiving devices away from the source of the problem. 4. Avoid infrared data communication in direct sunlight.
	Auto Play starts even though it is not selected.	Activation of screen saver.	Turn off screen saver (page 40).

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MESSAGES

ERROR	Error during data communication. Check cable connections and mode settings.
FULL	Indicates that movie recording is not possible because camera memory is full. Delete images no longer need or reduce the resolution of some of the images in camera memory.
MEMORY ERROR #1, #3 CONSULT THE OWNER'S MANUAL!	Problem with internal memory. Perform the following procedure. The reset procedure described below can also be used to recover from a memory error. **Important!** The following procedure deletes all images stored in memory. You can use the optionally available connection kit (LK-11/LK-12S/LK-22S) to make copies of images before deleting them. 1. Holding down **F▸N▸E** and MENU at the same time.

```
SYSTEM RESET

YES    SHUTTER
NO     CALL
       TECH SUPPORT
```

2. After checking that the SYSTEM RESET message is on the display, press the shutter button to perform a system reset or turn power off if you do not want to perform a system reset.
• Never turn off power while the system reset is in progress! Doing so will damage camera memory are require servicing by an authorized service provider!
• Be sure to power the camera using the AC adaptor or a new set of alkaline or lithium batteries. Weak batteries or manganese batteries can result in a power failure while the system reset operation is in progress, causing damage to camera memory.
• If the MEMORY ERROR message continues to appear on the display after you perform the reset procedure, contact your nearest CASIO service provider.

After the final "SYSTEM RESET" confirmation message appears, press the shutter button.
The display should return to normal after the system reset is complete.

Important!
• System reset can result in a change in the order of images stored in camera memory.
• Corrupted images may be lost entirely.
• If image data is partially corrupted, parts of the image may not be recoverable.

MEMORY ERROR #2, #4 CONSULT THE OWNER'S MANUAL!	Problem with internal memory. Contact your dealer or an authorized CASIO service provider.
MEMORY FULL	Not enough memory for further recording. Delete some images from memory or change resolution of stored images from FINE to NORMAL or NORMAL to ECONOMY (page 24, 54).
NO IMAGE	No images are stored in memory.
REMAINING	Not enough memory for recording in current resolution mode. Press **F▸N▸E** to change to another resolution mode, delete some images from memory, or change resolution of stored images from FINE to NORMAL or NORMAL to ECONOMY (page 24, 54).
SYSTEM ERROR CALL TECH SUPPORT	Problem with internal memory. Contact your dealer or an authorized CASIO service provider.

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SPECIFICATIONS

Recording System .... Digital (JPEG base); PC Link software can be used to input images in CAM, JPEG, TIFF and other format.

Recording Medium .... Flash memory (4MB)

Memory Capacity .... FINE: 30 images (minimum) (Approximately 124KB compressed)

NORMAL: 60 images (minimum) (Approximately 62KB compressed)

ECONOMY: 120 images (Approximately 32KB compressed)

The above figures are approximations only. The actual number of images depends on image subject matter.

Up to 120 images (total of **F**, **N**, **E** images)

Image Element .... 1/4-inch CCD (Total Pixels: 350,000; Effective Pixels: 330,000)

Computer Output image .. 640 x 480 pixels

Lens .... Fixed focal point with macro position; F2, f = 3.9mm

Aperture .... f2, f8 auto switching/fixed

Focus Range .... NORMAL: 0.7m to ∞ (2.3' to ∞)

MACRO: 14cm to 16cm (5.5" to 6.3") (From surface of protective lens.)

Light Metering .... TTL center priority by CCD

Exposure Metering .... Program AE, Aperture Priority AE

Exposure Range .... EV +5 to 18

Exposure Correction .... -2EV to +2EV (1/4EV units)

Shutter .... CCD shutter

Shutter Speed .... 1/8 to 1/4000 second

White Balance .... Automatic, Fixed

Self-timer .... 10 seconds

Recording Modes .... Single-image; Serial; Self-timer; Movie; Panorama; Title; Macro

Flash Modes .... AUTO, ON, OFF

Monitor/Viewfinder .... 1.8-inch TFT low-glare color LCD; 122,100 (555 x 220) pixels

Video Output .... NTSC

Infrared Communication .. IrDA1.0; IrTran-P compliant

Input/Output Terminals .... DIGITAL IN/OUT, VIDEO OUT, AC adaptor connector

Power Supply .... Four batteries (AA-size alkaline or lithium batteries)/AC adaptor (AD-C620)

Power Consumption .... Approximately 6.8 W

Battery Life
The values noted below indicate the number of hours before battery failure under normal operating temperature (25°C), as estimated by battery manufacturers. These values are for reference only, and do not guarantee that any particular set of batteries actually will provide the service life indicated. Low temperatures shorten battery life.

Type of Operation	AA-size Alkaline Batteries LR6	AA-size Lithium Batteries FR6
Continuous Playback	Approximately 190 minutes	Approximately 320 minutes
Continuous Recording	Approximately 690 shots	Approximately 1,430 shots

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"Continuous Recording" is made without use of the camera's flash. Regardless of use of the camera's flash, turning on and off the power switch, as well as other operating conditions may affect the above values.

Note: The above values are obtained based on Panasonic's alkaline batteries and Fujifilm's lithium batteries.

They may vary if other manufacturer's batteries are used. For your reference, the values when the camera is operated with Duracell's batteries are shown below.

Type of Operation	AA-size alkaline batteries LR6
Auto Play	Approximately 100 minutes
Continuous Recording	Approximately 190 shots

Dimensions .... 129(W) x 66(H) x 38(D) mm / 5" (W) x 2.6" (H) x 1.5" (D)

Weight .... Approximately 200g / 7oz. (excluding batteries)

Standard Accessories ...... wrist strap; soft case; video cable; four LR6 alkaline batteries;owner's manual

• The liquid crystal panel built into this camera is the product of precision engineering, with an effective pixel rate of 99.99%. This also means, however that 0.01% of the pixels can be expected to fail to light or to remain lit at all times.

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