

Full Support

RICOH

Digital Camera

RDC-2E

Operation Manual

Before using your digital camera, read this manual carefully to understand the proper use of the camera. Please keep this manual handy for easy reference.

Introduction

Thank you for purchasing the Ricoh RDC-2E Digital Camera.

This manual contains instructions on the proper use of your camera as well necessary as handling precautions. Read this manual carefully to understand the proper use of the camera. Please keep this manual handy for easy reference.

- Ricoh Co., Ltd.

Testing the camera

Test the camera by taking several sample pictures to confirm that the pictures are correctly recorded.

Respecting copyrights

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About digital audiovisual files

We regret that we cannot be responsible for files lost due to any malfunction of the camera or any failure of a memory card.

About the warranty

This product is made to local specifications. Should it malfunction while you are abroad, we cannot be responsible for the cost or availability of servicing in other countries.

Radio-frequency interference

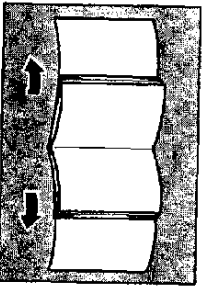
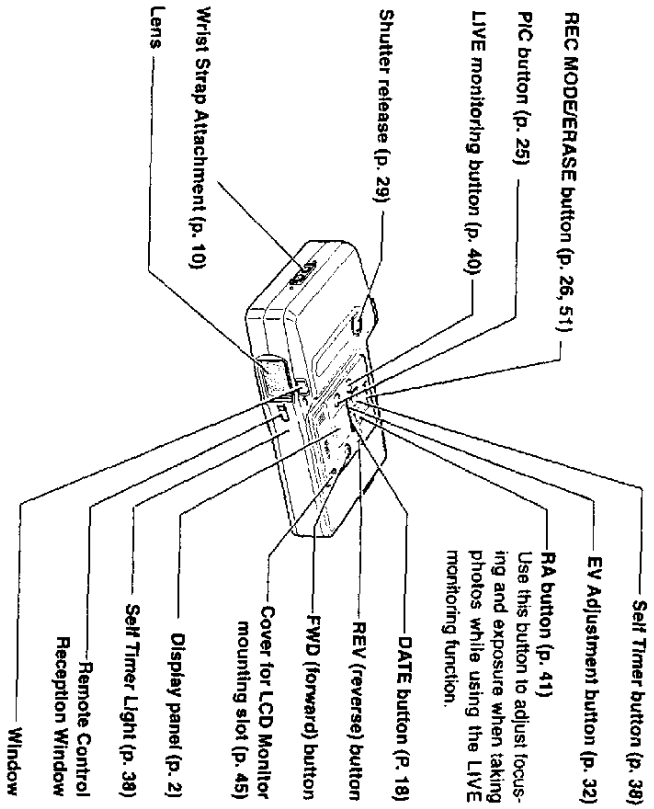
Using the digital camera near electronic devices could inhibit the performance of both the camera and nearby devices. Interference is likely to occur when the camera is placed near a radio or television. If such occurs, complete the following procedures:

- Relocated the camera as far as possible from the interference source.
- Change the orientation of the radio or television antenna.
- Plug the camera into a different electrical outlet.

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Camera Description (1)

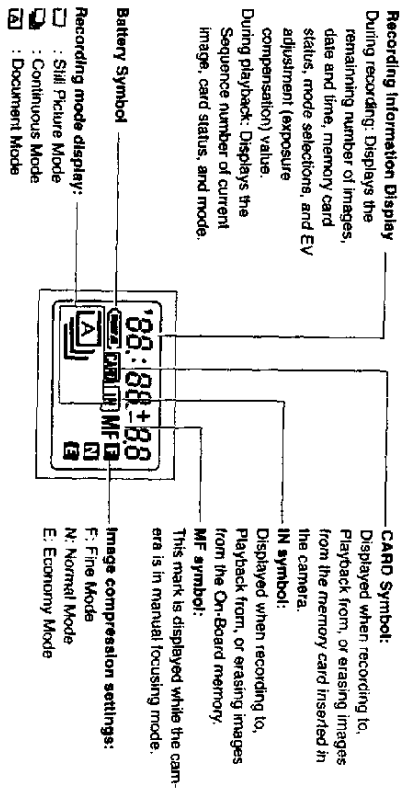
■ Camera Body



While reading this manual, leave the inside and outside flaps open for easy reference to the camera's components.

Display Panel

Camera Status is shown on the Display Panel.



- Notes:
- In this illustration, all available symbols are displayed concurrently. In practice, however, the display will vary depending on use and settings.
 - If no buttons or levers are operated for approximately 5 minutes while the main switch is set to [REC], the Auto Power-Off function dims the display panel to save power (requiring that only a small amount of battery power be consumed). To turn the power back on, lightly press the shutter release button.
 - See p. 57 for information on adjusting the Auto Power-Off setting.

■ Display Panel Messages

When the following is displayed, confirm the contents and respond accordingly.

Message	Condition	Description	Ref. page
no Ca rd	Light is on	Memory card is selected but no memory card is inserted.	p. 16
no Fo	Light is blinking	Memory card is not initialized. Memory card was initialized in another device.	p. 16
no r E C	Light is blinking	Data in the memory card is damaged. (Initialize the memory card.) Incompatible memory card is inserted.	p. 14
no CO Py	Light is blinking	Memory card is write-protected. Insufficient free memory available on memory card to copy selected images from internal memory. Replace the memory card.	p. 16
	Light is on	The batteries are getting low.	p. 11
	Light is on	The batteries are depleted.	p. 11

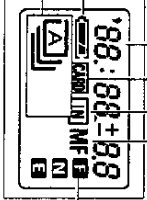
Display Panel

Camera Status is shown on the Display Panel.

Recording Information Display
 During recording, Displays the remaining number of images, date and time, memory card status, mode selections, and EV adjustment (exposure compensation) value.

During playback: Displays the Sequence number of current image, card status, and mode.

- Battery Symbol**
- : Still Picture Mode
 - : Continuous Mode
 - : Document Mode



CARD Symbol:
 Displayed when recording to, Playback from, or erasing images from the memory card inserted in the camera.
N symbol:
 Displayed when recording to, Playback from, or erasing images from the On-Board memory.
MF symbol:
 This mark is displayed while the camera is in manual focusing mode.

Image compression settings:
 F: Fine Mode
 N: Normal Mode
 E: Economy Mode

- Notes:**
- In this illustration, all available symbols are displayed concurrently. In practice, however, the display will vary depending on use and settings.
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	Light is on	The batteries are getting low.	p. 11
	Light is on	The batteries are depleted.	p. 11

Error Display and Description

When the following is displayed, confirm the contents and respond accordingly.

Error message	Description	Ref. page
Er. rE r	Failed to record. Playback may be impossible. Record the data again.	—
Er. Er oS	Failed to erase. After turning off the main switch, turn the power back on, then shoot a test shot. When the test shot is erased the data that was not erased will be erased at the same time.	p. 50
Er. Fo	Failed to initialize. Try again.	p. 16
Er. PE Ry	Failed to play back the data. Turn the power off and then on, and try again.	p. 48
Er. CO Py	Failed to copy the data. Try again.	p. 56

Displays for Recording, Playback, Deleting and Copying

The following messages will appear on the display panel during operation.

Recording

Display	Function	Ref. page
S Et f	Self-Timer shots.	p. 38

Playback

Display	Function	Ref. page
P-	Program Playback	—

Note: The optional DR-2 Remote Control Unit is required for program playback.

Erasing

Display	Function	Ref. page
Fo	Initializing memory card.	p. 16, 52
E r o S E	Erasing image.	p. 50

Copying

Display	Function	Ref. page
CO Py	Copying memory contents.	p. 56

Display during data checking

When a memory card is inserted and the main switch is then set to [REC] or [PLAY(P)], the camera begins to check the data on the memory card. Bars (—) are displayed on the display panel to indicate the progress of the data checking operation. Once six bars are displayed, data checking is complete.

Note: No bars will be displayed when using certain types of memory cards.

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Basic Operation

Preparing the camera

- **Preparing a power source**
 - 1 Insert batteries into the camera. See p. 11.

Note: When using the AC Adapter, connect the AC Adapter to the camera body first, then plug the adapter into an electrical outlet. See p. 13.

Preparing a memory card

- **Preparing a memory card**
 - 1 Insert a memory card. See p. 16.
 - 2 If using a new memory card, first initialize the memory card. See p. 16.

Note: A memory card is not required if data is being recorded to the internal memory.

Recording

- 1 Slide the main switch to [REC]. See p. 23.
- 2 If a memory card is inserted, press the SELECT button to select the destination drive for recording. See p. 24.
- 3 Press the PIC button to select the picture quality. See p. 25.
- 4 Press the REC/ERASE button to select the REC MODE. See p. 26.
- 5 Press the shutter release button halfway down to focus. See p. 29.
- 6 Press the shutter release button all the way to record. See p. 30. A short "beep" sounds to confirm recording.

Playback a Image

- 1 Connecting your camera to a TV monitor or LCD monitor. See p. 44, 45.
- 2 Slide the main switch to [PLAY(PC)]. See p. 48.
- 3 If a memory card is inserted, press the SELECT button to select the drive containing the image to be played. See p. 48.
- 4 Select the image to be played with the FWD and REV buttons. See p. 49.
- 5 To playback an image - except one recorded in Still Picture Mode - press the shutter release button. See p. 49. An image is displayed on the monitor screen.

Transferring data to a computer
Use of the connection cable is required. See p. 54.

Safety Precautions

Please read all safety notes in this manual to use this product safely. Safety notes are designated as follows:

⚠ Warning This symbol indicates mishandling that may result in a serious injury or even death.

⚠ Caution This symbol indicates mishandling that may cause injury to the user as well as damage to objects.

To ensure safe operation of your new equipment, please observe the following precautions.

⚠ WARNING

- It is dangerous to use this device if any sign of malfunctioning is apparent, such as an unusual odor or smoke. In such cases, immediately unplug the power plug from the electrical outlet (if using an AC Adapter), as a fire or shock hazard may be present. Contact a Ricoh service representative. Do not continue to use a malfunctioning camera.
- When connecting the camera to a standard AC electrical outlet, use only Ricoh's optional AC-2 AC Adapters. Use of any other AC adapter may cause a fire, electric shock or product failure.

To ensure safe operation of your new equipment, please observe the following precautions.

⚠ WARNING

If the LCD monitor is damaged or leaks, be very careful not to touch the liquid crystal inside. Should you contact the liquid crystal, immediately take the first aid actions shown below.

- If liquid crystals contact the skin...
Wipe the liquid off the skin, flush the affected area with plenty of water, then wash the area thoroughly with soap and water.
- If liquid crystals enter the eye...
Flush the eye thoroughly with clean water for at least 15 minutes, contact a doctor immediately.
- If liquid crystals are swallowed...
Rinse the mouth thoroughly with water. Drink a large quantity of water and induce vomiting. Contact a doctor immediately.

⚠ CAUTIONS

- This camera contains high-voltage circuitry. To avoid a shock hazard, never attempt to disassemble the camera.
- Never dispose of the batteries in a fire, short-circuit the terminals, attempt to disassemble, heat, or recharge the batteries (only nickel-cadmium [NiCad] batteries and nickel-metal-hydrate [NiMH] batteries can be recharged). Doing so may damage the batteries and cause a fire, injury or environmental contamination.
- Do not solder the batteries. Doing so may damage the batteries and cause a fire, injury or environmental contamination.
- Liquid leaking from a battery can cause skin burns. If you touch a damaged battery, immediately wash your hands with water (do not use soap). If a battery leaks inside the camera, carefully remove the battery, thoroughly wipe off the leaked liquid, and insert a new battery.

Using optional accessories

When using optional accessories such as the Remote Control Unit or AC Adapter, be sure to read the safety precautions in the manuals provided with each accessory.

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Before Using the Camera

Confirming the package contents

Check the packaging to ensure you have received the following items. Read the warranty, then store it in a safe place.

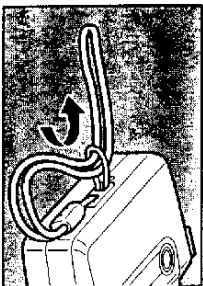
Digital Camera (Camera Body)	1
LCD Monitor	1
Video Cable	1
Soft Case	1
AA Alkaline Batteries	4
Wrist Strap	1
Operation Manual (this document)	1
Operation Manual for the LCD Monitor ...	1
Warranty	1

Attaching the wrist strap

To attach the wrist strap, loop the leading end through the wrist strap lug of the camera, as indicated in the illustration.

- 1 For security, always use the wrist strap when carrying the camera.

Note: Avoid swinging the camera as it's carried.



Supplying Power to the Camera

The camera can be powered either by common AA alkaline batteries or by standard AC household current.

Inserting batteries

Insert the AA alkaline batteries to begin using the camera.

Note: The camera can also be powered by commercially available rechargeable nickel-cadmium (NiCad) batteries or nickel-metal-hydride (NiMH) batteries.

CAUTIONS

- Never dispose of the batteries in a fire, short-circuit the terminals, attempt to disassemble, heat, or recharge the batteries (only nickel-cadmium [NiCad] batteries and nickel-metal-hydride [NiMH] batteries can be recharged). Doing so may damage the batteries and cause a fire, injury or environmental contamination.
- Do not solder the batteries. Doing so may damage the batteries and cause a fire, injury or environmental contamination.
- Liquid leaking from a battery can cause skin burns. If you touch a damaged battery, immediately wash your hands with water (do not use soap). If a battery leaks inside the camera, carefully remove the battery, thoroughly wipe off the leaked liquid, and insert a new battery.

About rechargeable batteries

Before using commercially available NiCad or NiMH batteries, thoroughly read the safety precautions provided with each product.

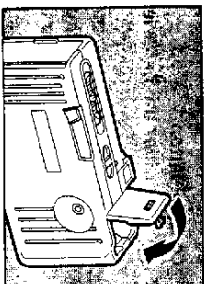
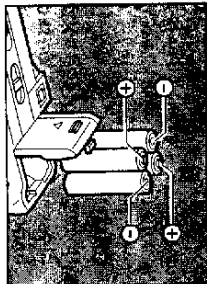
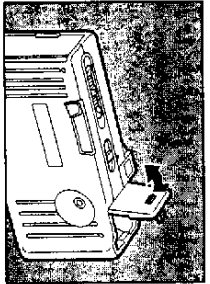
Note:

- Use only AA-type batteries.
- Never use manganese batteries, lithium batteries, or any other type of battery not specifically recommended. Use of such batteries may damage the camera or monitor.
- Some batteries may become hot after a long period of use.

- After confirming that the main switch of the camera is set to [POWER (OFF)], slide the lever to open the battery cover.

Note: See p. 23 "Turning on the power" for information on the camera's power sources.

- Insert the batteries. Carefully note the proper battery polarities (positive [+] poles and negative [-] poles).




- Close the battery cover.

- Recording and playback capacities**
The following table shows the number of recordable images and the playback time available with AA alkaline batteries (at temperatures between 10°C and 30°C).

Type of battery	Number of recordable standard Images (Still pictures)	Standard playback time (Still pictures)
AA alkaline batteries	Approximately 300 images	Approximately 2 hours

Notes:

- Battery life varies with usage conditions.
- Results may vary by type and brand of battery.
- The standard playback time refers to playback on a TV monitor.
- Use of the LCD Monitor during recording and playback will reduce the above values.
- Whenever you do not have access to an electrical outlet, we suggest that you always carry a spare set of batteries.
- The battery symbol () appears on the display panel to indicate that the batteries are weak or depleted. Prepare spare batteries.
- With rechargeable NiCad or NiMH batteries, the time between lighting of the battery symbol and complete depletion of the batteries is shorter than when alkaline batteries are used.

Safety Notes

- Be sure to maintain the correct polarity (positive [+] and negative [-] poles) when inserting the batteries.
- Do not use damaged batteries or batteries that are near the end of their service lives.
- Do not place batteries near a heat source or dispose of them in a fire.
- Do not subject the batteries to strong impact.
- Do not mix batteries of different types, brands, manufacturers, or ages.

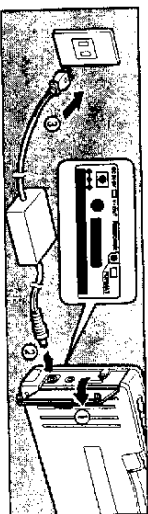
Operating on AC power

If you intend to use your camera to record or play back over a long period of time, it is advisable to connect the camera to a household electrical outlet with the optional AC Adapter.

CAUTIONS

- When connecting the camera to a household electrical outlet, use only Ricoh's optional AC-2 AC Adapter. Use of any other AC adapter may cause a fire, electric shock or product failure.

About the AC Adapter
Be sure to read the safety precautions in the manual supplied with the AC Adapter.



(The illustration shows how to connect the Ricoh AC-2 AC Adapter.)

- Confirm that the main switch of the camera is set to POWER (OFF), then open the side cover of the camera.
- Connect the connection cable of the AC Adapter to the power (DC IN 5V) terminal of the camera.
- Insert the plug into an electrical outlet.

Note: When the AC Adapter is used with the camera, it becomes the active power source, even when the battery is installed in the camera.

Important:

- Plug the power cord firmly into the power source and into the camera. If the power plug or connecting cable loosens during recording, data could be lost or damaged.
- When the AC Adapter is connected to the camera, the power supply to the camera is temporarily interrupted during the change of power source. If this occurs while the camera is in use (for example, during recording, playback or erasing), data can be damaged or destroyed. Therefore, always set the main switch of the camera to [POWER (OFF)] before connecting the AC Adapter.

Memory Cards

This section explains how to use a memory card. If you are not using a memory card, see p. 18 "Before you begin Recording."

Types of Memory Cards

When the memory card has been designated as the memory source, the data is recorded onto the memory card. Ricoh ATA cards are recommended. See P. 60 "Accessories for RDC-2E".

Note: Camera performance specifications based upon Ricoh's ATA Flash Memory Card. Performance may vary using other manufacturers' cards.

Specifications of the Ricoh ATA Card

Specifications

- Compatibility: Complies with PCMCIA 2.1/JEIDA 4.2 and PCMCIA ATA 1.02; Type I.
- Interface: ATA
- Driving voltage: 5 V
- Warm-up time: 2.5 ms max. (from sleep mode to writing)
- Warm-up time: 2.0 ms max. (from sleep mode to reading)
- Access time: 0.8 ms max.
- Operating temperature range: -10°C to 65°C
- Vibration resistance: 15 Gp-p max.
- Shock resistance: 1,000 G max.
- Reliability (MTBT): 300,000 hours min.

Other Memory Cards

The use of a memory card not manufactured by Ricoh may result in a camera malfunction. If you intend to use a memory card from another manufacturer, contact the manufacturer and make absolutely certain that the card is compatible with your camera.

Flash Memory ATA Card (ATA-compliant)

- Compatible with PCMCIA 2.1/JEIDA 4.2 Type I; Type II; with max. capacity of 40 MB
- With common memory write cycle of 300 ns max.

Flash Memory AIMS Card (AIMS-compliant)

- Compatible with PCMCIA 2.1/JEIDA 4.2 Type I; with max. capacity of 24 MB

Important

- Some other brands of PC cards may be damaged if used in this camera.
- Some cards bearing the CMC mark may not reproduce data properly in this camera.
- Cards with a capacity exceeding the specified maximums cannot be used with this camera.
- Please note that other brands of ATA-compliant memory cards may require more time to record a picture.
- "ATA" is an abbreviation for AT Attachment, an interface and protocol for hard-disk access used by AT-compatible computers.
- "AIMS" is an acronym for auto indexing mass storage, which is a standard card interface for portable devices such as digital cameras.
- Please note that SRAM cards cannot be used with this camera.

Handling Precautions for Memory Cards

- Do not bend, drop, or subject the memory card to shock.
- Avoid using or storing the memory card in an environment conducive to static electricity or electromagnetic interference.
- Avoid using or storing the memory card to heat, moisture, or dusty or corrosive environments.
- Do not allow dirt or foreign objects to contact the connectors.
- Do not place the card near a heat source or dispose of them in a fire.
- Memory cards have a limited life expectancy. After prolonged use, the card may be unable to record data.

A note about recorded images...

- Recorded data can be lost if the memory card malfunctions or is repaired, or is mishandled or subjected to static electricity or electromagnetic interference. Please note that Ricoh cannot be responsible for any loss of or damage to recorded images if you experience malfunctions during recording or playback.
- Never remove the batteries, turn off the power, or connect the AC Adapter to the camera while recording data on the memory card. Doing so may damage or destroy data on the memory card.

Inserting a memory card

Before inserting a memory card, make sure the main switch of the camera is set to [POWER (OFF)].

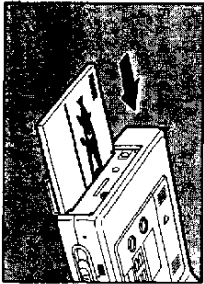
Note: Do not insert or remove a memory card while the camera power is turned on.

■ Inserting the memory card

① Open the side cover of the camera.

② With the front surface of the card facing up, insert the memory card into the card slot. Push the card all the way into the slot until the trailing edge of the card is flush with the card slot opening.

Note: When inserting the memory card, be sure the card is not upside down, backward, or askew.

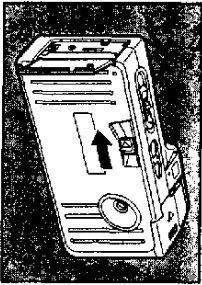


■ Removing the memory card

To remove the card, slide the card ejection lever in the direction of the arrow shown in the illustration.

Note:

- Do not remove the card while recording data to the card. Doing so may damage or destroy the data on the card.
- Do not use the memory card ejection lever while the side cover is closed.



Initializing the memory card

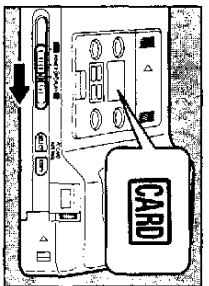
Before using a new memory card or a memory card that has been initialized in another device such as a personal computer, you must initialize (or "format") the card in the camera.

Note: Confirm that a memory card has been inserted.

① Slide the main switch of the camera to [PLAY(PC)].

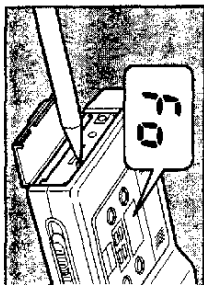
Confirm that the CARD symbol appears on the display panel. If the IN symbol appears on the display panel instead, press the Memory Select button for approximately one second to display the CARD symbol.

Note: For information on using the Memory Select button, see p. 24 "Designating the destination drive for recording."

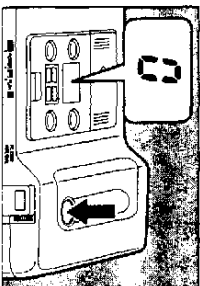


② Open the slide cover of the camera and push the Format button with a pointed object such as a ball-point pen or the tip of your fingernail. Push and hold until "Fo" appears on the display panel, then release the button.

Note: Do not press the Format button with any object that has a sharpened point or is easily broken.



③ Press the shutter release button for at least two seconds to begin initialization. When initialization is completed, a buzzer sounds, and the counter display on the display panel resets to 0. Initialization is now completed. Close the slide cover and begin using the camera.



Important: _____
Initialization erases all data recorded on the memory card. Erased data cannot be recovered.

Notes:

- Some types of memory cards require more than a minute for initialization.
- Initialization cannot take place if a Continuous Still Picture is currently paused or in playback.
- Keeping the memory card in good condition. We suggest that you initialize the memory card in the following cases.
 - After approximately 4,000 playback and erase cycles.
 - When you wish to erase all data in the memory card.

Before You Begin Recording

This section explains initial camera adjustments and basic camera operations.

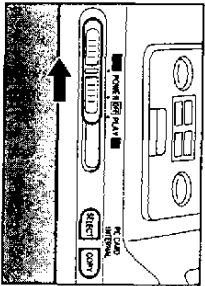
Adjusting the date and time

The camera records the date and time of every image recorded. You should set the correct date and time when you first begin using your camera, as well as when you travel to a different time zone.

Note:

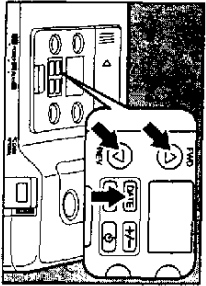
- Input the date and time in the following format: yy/mm/dd
- The camera uses a 24-hour clock, where 0:00 indicates midnight and 12:00 indicates noon.

- 1 Slide the main switch of the camera to [REC].



- 2 Press and hold the DATE button for more than two seconds.

On the display panel, the year designation begins flashing.



- 3 Press the FWD button or the REV button to set the correct year.

To advance the number

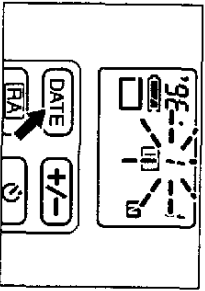
Press the FWD button. Press and hold the button to fast-forward the numbers.

To reverse the number

Press the REV button. Press and hold the button to reverse the numbers rapidly.

- 4 Set the other date and time numbers in the same manner.

Press the DATE button repeatedly to select (in order) the year, month, day, hour and minute. When the selected date or time designation is flashing, press the FWD button or the REV button to set the correct numbers.



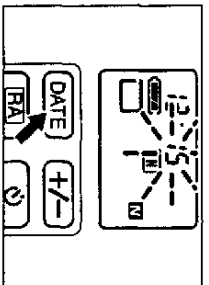
- 5 After setting the minutes, press the DATE button again to start the clock.

Note: To adjust the seconds, press the DATE button.

Confirming the date and time settings

Press the DATE button repeatedly to display the date, time, and normal displays on the display panel.

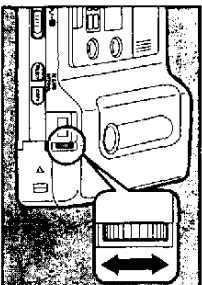
Note: Remember that the date & time setting mode appears when you press and hold the DATE button for two seconds or longer.



Adjusting the diopter

Adjust the diopter so that the subject can be clearly seen in the viewfinder.

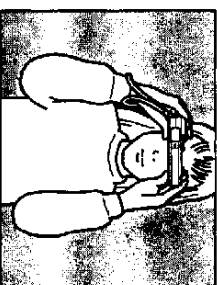
- 1 Rotate the diopter adjusting dial up or down to adjust the viewfinder so that the subject can be seen clearly.



Holding the camera

Unintentional movement of the camera during shooting will result in blurred pictures. For best results, hold the camera steady when pressing the shutter release button.

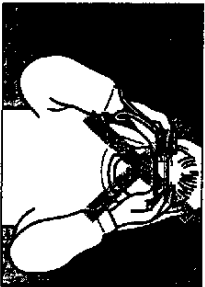
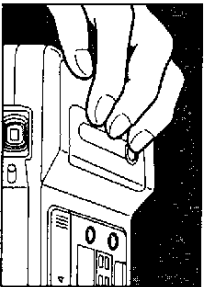
- 1 We suggest you hold the camera securely with both hands as shown in the illustration. Hold your elbows lightly against your sides, steady the camera by gently pressing it against your face, and look through the viewfinder.



2 Place your index finger lightly on the shutter release button.

Notes:

- If you hold your index finger too far from the shutter release before pressing, the camera may shake and a blurred picture may result.
- Holding the camera upright will result in the subject being displayed sideways.
- Be sure to keep your fingers, hair, and the wrist strap, etc., away from the camera lens.



Chapter 2: Recording Basics

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Basic Picture-Taking

This chapter explains basic operations and other information needed to record images.

Picture-taking sequence

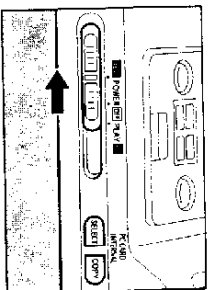
How to take a picture in Still Picture Mode:

- ➔ **Turn on the power.**
Slide the main switch of the camera to [REC]. See p. 23.
- ➔ **Choose the destination drive for recording.**
The camera normally records images to its internal memory. However, if a memory card is inserted, you can select either the memory card or the internal memory as the destination drive for recording the images. See p. 24.
- ➔ **Select the image quality.**
Select the desired image quality - either F, N, or E. See p. 25.
- ➔ **Select the recording mode.**
Select the desired recording mode from the three patterns available (□, □, □). See p. 26.
- ➔ **Look through the viewfinder.**
Look through the viewfinder to compose the image. See p. 27.
- ➔ **Confirm the indicator lights.**
Press the shutter release button halfway down to confirm the camera status (the Auto-focus indicators). See p. 28.
- ➔ **Take the picture.**
Press the shutter release button to record the image.

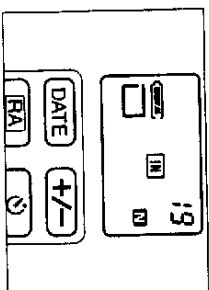
Turning on the power

Turn on the power with the main switch of the camera. If a memory card is installed, the CARD symbol appears on the display panel, indicating that the data on the memory card is being checked.

- ➊ **Slide the main switch to [REC].**
The lens cover opens.



Power is turned on and information is displayed on the display panel.



Notes:

- When a memory card is inserted, the CARD symbol appears on the display panel.
- When the main switch is set to [POWER OFF], the power is turned off, and the lens cover closes.

The Auto Power-Off function

If no buttons or levers are operated for approximately 5 minutes or longer while the main switch is set to [REC], the Auto Power-Off function dims the display panel to save power (requiring that a small amount of battery power be consumed in this state). To turn the power back on, lightly press the shutter release button.

Canceling and retaining mode settings

When the power to the camera is turned off, some mode selections are canceled (see table below). To continue shooting in the same mode, select the mode again.

Mode	Auto Power-Off	Main switch OFF
Drive designation	○	x
Recording mode	○	○
Resolution	○	○
EV adjustment	x	x
LIVE monitoring function	x	x

○: Selected mode is retained. x: Selected mode is canceled.

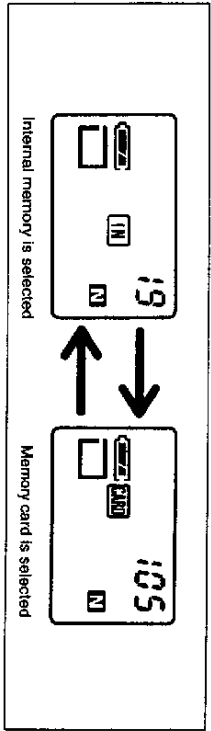
If the camera will not be operated for a long period of time, switch the main switch to [POWER (OFF)]. You can override the Auto Power-Off setting. For details, see p. 55 "Auto Power-Off and Buzzer settings."

Designating the destination drive for recording

You can designate whether data is recorded in the internal memory of the camera or onto an inserted memory card.

■ Destination drive symbols on the display panel

Press the SELECT button to select the destination drive.



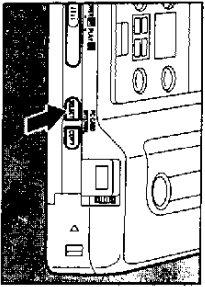
Note: Follow the same procedure to change the drive in any operation.

■ Designating the destination drive for recording

Press the SELECT button for approximately one second to change the selected destination drive for recording.

The symbol on the display panel indicates the selected destination drive for recording.

Note: To determine the number of images recordable in memory, see p. 70 "Memory Storage Capacity."

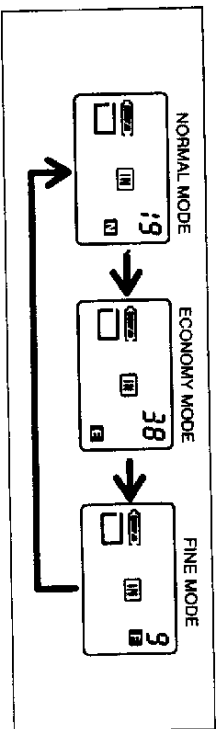


Selecting the image quality

This digital camera employs data compression and decompression schemes that allow a large amount of information to be recorded. N (Normal) mode is standard. F (Fine) mode gives priority to picture quality, and E (Economy) mode gives priority to the number of images recordable. You can select the desired image quality for each image recorded.

■ PIC Mode symbols on the display panel

Press the PIC Mode button to select the desired image mode.



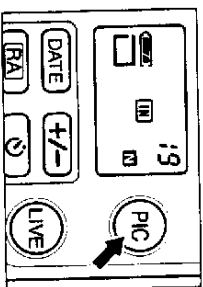
■ Selecting the image quality

① Press the PIC Mode button to select the image quality.

The selected symbol appears on the display panel.

● Standard capacities for image data

Image quality	Image size
F Mode	Approximately 192 KB/image
N Mode	Approximately 96 KB/image
E Mode	Approximately 48 KB/image



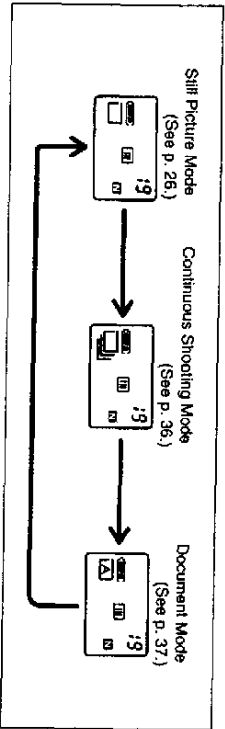
For information on the number of images recordable at the various image quality settings, see p. 70 "Memory Storage Capacity."

Selecting a Recording Mode

Three recording modes are available. You can easily select the desired mode.

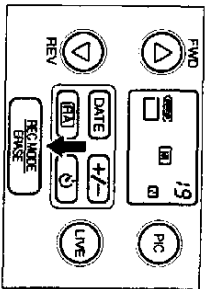
Recording mode symbols on the display panel

Press the REC MODE/ERASE button to select the desired mode.



Selecting Still Picture Mode

Press the REC MODE/ERASE button repeatedly until the [] symbol appears on the display panel.

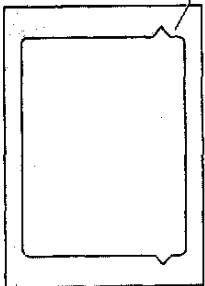


Looking through the viewfinder

Compose the image while looking through the viewfinder.

Note: When shooting at distances of 0.25 m or less, or when exact image composition is desired, take a test picture beforehand to confirm the image captured by the camera.

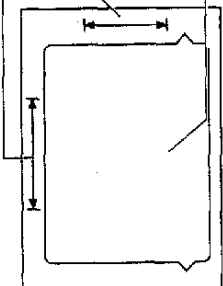
Shooting frame _____
Enclose the subject within this frame.



Auto-focus range _____
The center portion of the viewfinder is the area on which the camera focuses.

Approximately one-half the height, positioned at the center.

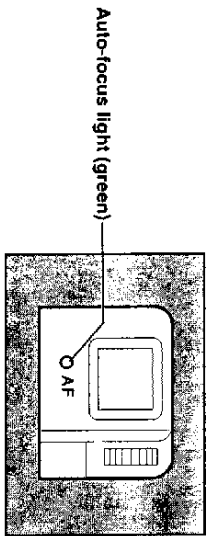
Approximately one-half the width, positioned at the center.



Note: The colors in the illustration of the viewfinder are for clarity only. The actual viewfinder is not colored.

Indicator lights

When the shutter release button is pressed halfway down, the Auto-focus light (below the viewfinder) lights or flashes to indicate the status of these functions.



● Auto-focus indicator light (green)

Status	Description	Shutter release button	Ref. page
Lit	In focus	Can be pressed.	p.29
Rapid flashing	Focusing not assured.	Can be pressed.	p.30
Slow flashing	Take picture after confirming range on monitor.*	Can be pressed.	p.30

* When the distance to the subject is approximately 25 cm or less, the field of view in the viewfinder can be quite different from that of the camera lens. For best results, use the LIVE monitoring function or the Macro shooting function.

See "LIVE Monitoring Function" on p. 40, and "Macro Shooting" on p. 42.

Shooting in Still Picture Mode

This section explains the basics of shooting in Still Picture Mode. Please refer to p. 19 "Holding the camera," for hints on how to hold the camera still while shooting.

① Look through the viewfinder to compose the image.

Note: When shooting a subject at a distance of approximately 1 to 25 cm, use the LIVE monitoring function or Macro function for best results.

See "LIVE Monitoring Function" on p. 40, and "Macro Shooting" on p. 42.



② With your index finger, press the shutter release button halfway down.

The shutter release button has two steps. Press and hold the shutter release button halfway down to activate the auto-focus mechanism, which automatically brings the subject into focus. To record the image, continue pressing the shutter release button all the way down.

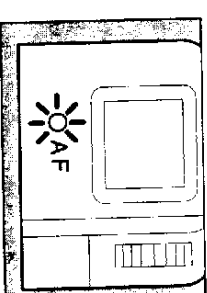
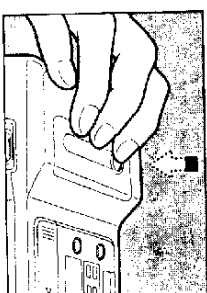
Note: When the subject is in the center of the viewfinder, it is in the auto-focus range and is brought into focus. If the subject is not at the center of the auto-focus range, use the focus-lock function. See "Focus-lock" on p. 39.

When the subject is in focus, the green Auto-focus indicator lights.

Notes:

* Pressing the shutter release button all the way down before allowing the auto-focus mechanism to function may result in an out-of-focus image. Be sure to confirm that the Auto-focus indicator lights before taking the picture.

See p. 28, "Indicator lights," for information on the Auto-focus light.



3 Keep your finger on the shutter release button, then smoothly press the button all the way down.

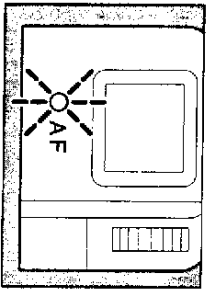
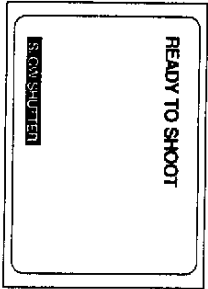
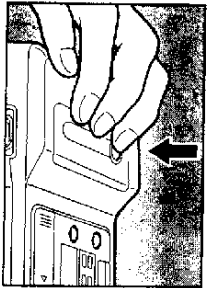
A short "beep" sounds to confirm that the subject image has been recorded. The number on the display panel indicating the remaining number of recordable images is reduced by one.

Notes:

- When the camera is connected to an *Bioch LCD Monitor* or to a TV monitor, the captured image is displayed for approximately three seconds, allowing the focus of the captured image to be easily confirmed.
- The buzzer audio can be turned off. See p. 56 "Turning the Buzzer On or Off."

In dark conditions, "SLOW SHUTTER" is displayed when the Release button is pressed halfway down.

Note: When "SLOW SHUTTER" is displayed, the shutter will be released very slowly. Hold the camera steady or stabilize it with a tripod.



- Accurate auto-focusing is sometimes impossible when the camera is too close to the subject or when the subject causes focusing problems. In this case, the green Auto-focus light flashes, but the shutter release button can be pressed. In such a case, follow one of the procedures below to ensure correct focus.
- 1 Move away from the subject slightly to take the picture.
 - 2 Put the subject in focus with the LIVE monitoring function.
 - 3 Focus on a different subject located at the same distance as that of the desired subject.

For information on the LIVE monitoring function, see p. 40, "LIVE Monitoring Function." For more information on focusing, see p. 39 "Focus-lock."

Subjects that cause focusing problems

The following subjects tend to be difficult to focus:

- Subjects with no contrast (sky, white walls, car hoods, etc.)
 - Straight horizontal lines
 - Fast-moving subjects
 - Subjects under low lighting conditions
 - Subjects with strong backlighting or under reflected light
 - Flickering subjects, such as fluorescent tubes
- In such cases, focus on a different subject located at the same distance as that of the desired subject.

For more information on focusing, see p. 39 "Focus-lock."

Auto-white balance

To shoot a subject with natural hues, the "white balance" (compensation for the whiteness of a subject under varied lighting conditions) is automatically adjusted, with the light-colored portion used as reference. For this reason, the white balance sometimes cannot be adjusted when the subject has a small light-colored area. In such a case, include a light-colored subject when composing the picture.

Subjects that complicate white balance:

- Monotone subject
- Subject with many light sources

Exposure compensation (EV adjustment)

When there is a significant difference in brightness between the background and the subject, the subject may be underexposed (too dark) or overexposed (too light). In such cases, compensate the exposure with the EV adjustment. This function allows you to intentionally underexpose or overexpose an image.

- **EV adjustment range**
±1.5 EV (in 0.3-EV steps)

- **Shooting with backlighting**

When the background is bright, the subject is underexposed. In such a case, adjust the exposure by increasing the value (positive (+) compensation).

Note: In backlit conditions, place the subject at the center of the shooting range.

If the subject is not placed at the center of the shooting range, the camera cannot determine the backlit conditions. In this case, make an EV adjustment.

- **Shooting too light images**

When shooting a too light image, the entire image is underexposed. The image of the subject is recorded as too dark and light-colored subjects are recorded as grayish. In such cases, increase the value to the positive (+) side to compensate the exposure.

- **Shooting too dark images**

When shooting a too dark image, the entire image is overexposed. The image of the subject is recorded as too light and light-colored subjects are recorded as grayish. In such a case, increase the value to the negative (-) side to compensate the exposure. Follow the same procedure as when shooting a spot-lighted person image.

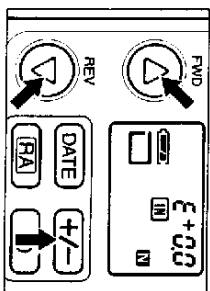
EV adjustments

- 1 Press the +/- button to display the compensation value on the display panel.
- 2 Press the FWD or REV button to set the compensation value to be set.
After adjusting the value, take the picture.

Adjusting the exposure by 0.3 EV
Press the FWD button.

Reversing the adjustment value by 0.3 EV
Press the REV button.

To cancel the setting, press the +/- button again.



About the EV adjustment

- 1 To confirm the effect of the EV adjustment on the recorded image, watch the image that appears on the screen for approximately three seconds after the picture is taken, or play back the screen.
- 2 The EV adjustment value (if any) is displayed on the screen when the LIVE monitoring function is used. In addition, the image on the screen shows the effect of the adjustment (i.e., the screen brightness changes).
- 3 The EV adjustment value can be set to within ±1.5 EV. The adjustment displayed with the LIVE monitoring function is limited to the range of +1.5 EV to -0.6 EV. Confirm adjustments outside this range (-0.9 EV to -1.5 EV) with the method outlined in (1) above.
- 4 If the subject is dark and the exposure compensation is adjusted to a positive value, the live display may not accurately reflect the adjusted value. However, the picture will be recorded exactly at the adjusted exposure value.
- 5 The EV adjustment value is retained in memory even when the EV adjustment setting is released. However, the EV adjustment setting affects only the images recorded when EV adjustment mode is selected.

Chapter 3. Advanced Techniques

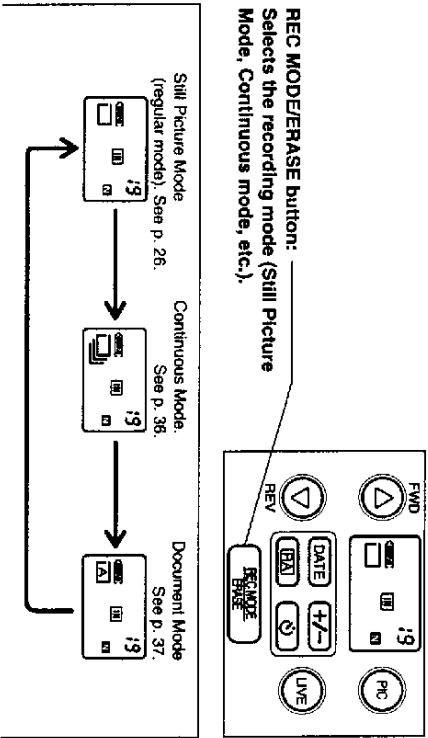
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Recording Modes

This section explains the various recording modes and how to select the desired mode.

Selecting a Recording Mode

Press the REC MODE/ERASE button to select a desired recording mode.



Continuous Mode

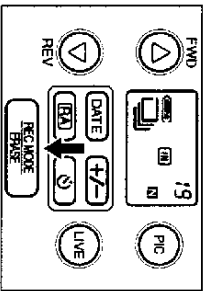
This mode enables you to shoot a sequence of still pictures by holding down the shutter release button. The focus is locked at the moment you press the shutter release button. The camera records the pictures sequentially at a rate of approximately one frame per second. This feature allows you to capture images as if a motor drive was attached to your camera.

Notes:

- Files recorded in this mode cannot be transmitted with CC-2 (optional connection cable). Use the PC card slot of a notebook PC or other device to transmit files recorded in Continuous Mode.

1 Press the REC MODE/ERASE button until [] appears on the display panel.

The camera will continue to shoot at a rate of approximately one frame per second as long as the shutter release button is held down. When you remove your finger from the shutter release button, the camera stops shooting.



- Notes:**
- In Continuous Mode, the focus and the exposure are locked at the moment you press the shutter release button.
 - When several pictures are captured in Continuous Mode while the camera is connected to an LCD Monitor, only the first image is displayed on the monitor in order to minimize power consumption from the battery.
 - The shooting speed varies according to the image quality selected and type of memory card used (if any).

Memory Drive selected	Image quality		
	F Mode	N Mode	E Mode
Internal Memory	Approx. 1.5 sec./frame	Approx. 1.3 sec./frame	Approx. 0.9 sec./frame
Floosh Memory Card (ATA Type)	Approx. 1.5 sec./frame	Approx. 1.4 sec./frame	Approx. 1.2 sec./frame

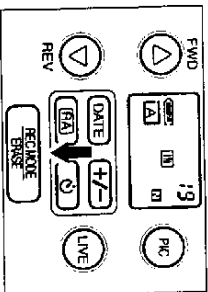
- Values may vary by as much as 0.2 seconds, depending on shooting conditions, such as subject brightness. (Values measured by Ricoh.)

Canceling the selected mode
Press the REC MODE/ERASE button again to select another mode.

Document Mode

This feature is convenient when you want to record a document image. The image is specially processed to enhance the clarity of the document. (Specifically, black portions of the image are darkened and surrounding light portions are lightened to increase contrast.)

- ### 1 Press the REC MODE/ERASE button until [A] appears on the display panel.
- Press the shutter release button to begin recording.



Canceling the selected mode
Press the REC MODE/ERASE button again to select another mode.

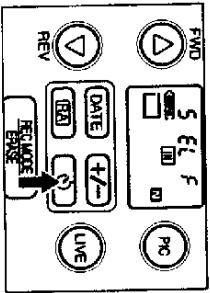
Special Functions

This camera has a variety of special features that expand the use and enjoyment of your digital camera. Accessing these functions is easy, as described below.

Using the Self Timer

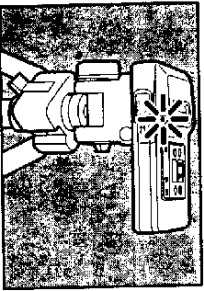
This function is convenient for taking a group shot that includes the photographer. Before using the Self Timer, compose the image with the camera on a steady support or a tripod.

- 1 Press the **Self Timer mode button**. [SELF TIMER] appears on the display panel.



- 2 Compose your picture and make sure that the camera is firmly placed. Press the **shutter release button**.

The Self Timer light on the front of the camera lights and the Self Timer begins to count down. After approximately 10 seconds, the shutter is released, the Self Timer light will flash for nearly two seconds before the shutter is released, and a beeper will sound. Self Timer mode automatically ends once the shutter is released.



Notes:

- The self-timer function cannot be used while the camera is set to Continuous Mode.

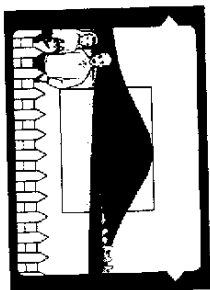
Focus Lock

This camera automatically focuses on subjects located within the Auto-focus frame in the Viewfinder. If the subject you wish to focus on is not within the Auto-focus frame, it may appear out-of-focus in the image. In such cases, use the Focus Lock feature.

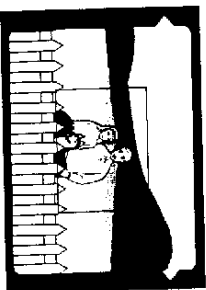
For information on the viewfinder, see p. 27, "Looking through the Viewfinder."

Use this feature to avoid the following problems:

When the subject you wish to focus is not within the Auto-focus frame, the background will be in focus but the main subject will be out-of-focus.



When the Auto-focus frame is occupied by subjects that you do not want to focus on, only those subjects will be in focus, not your principal subject.



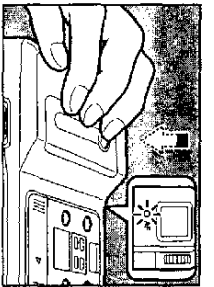
Using the Focus Lock

- 1 Compose the image, keeping the subject you wish to focus on within the Auto-focus frame.

Note: Before using the Focus Lock, connect the camera to a Ricoh LCD Monitor or a TV monitor. Confirm the proper focus through the monitor.



- Press the shutter release button halfway down until the green Auto-focus light illuminates, and hold your finger on that position. Focusing is locked at this stage.



- Recompose the image by moving the camera again, without removing your finger from the shutter release button. Then press the shutter release button all the way down to take the picture.



LIVE Monitoring Function

This function enables you to take pictures while simultaneously checking the live image transmitted by the camera to a monitor. Connect your camera to an LCD monitor or TV monitor (NTSC only) before activating this function.

Notes: After activating this function, you cannot change memory drive designation or date/time indicator mode. Complete all necessary steps in advance.

- Confirm the camera is properly connected to the LCD Monitor or a TV monitor (NTSC ONLY).

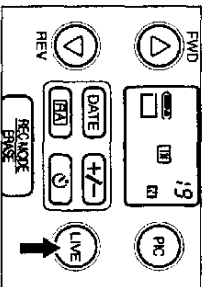
For information on connecting an LCD Monitor, see p. 45, "Connecting an LCD Monitor." For information on connecting a TV monitor, see p. 44, "Connecting a TV Monitor."

- Slide the main switch on the camera to [REC].

- If the camera is connected to a TV monitor, turn on the power to the TV.

- Press the LIVE button on the camera. The monitor begins displaying the live images captured by the camera, allowing you to confirm the image before recording.

The focus and exposure are locked at this stage.



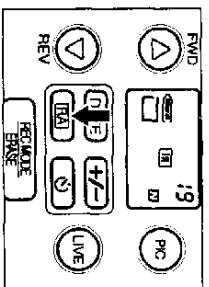
- Compose the picture.

- To adjust the focus or exposure, press the RA button.

- Press the shutter release button to record the image.

Canceling LIVE mode

Press the LIVE button again to cancel.



Notes:

- When the exposure compensation (EV adjustment) function is used while the LIVE function is activated, the EV adjustment value is displayed on the monitor. In addition, the image on the monitor shows the effect of the adjustment (i.e., the screen brightness changes).
- The EV adjustment value can be set to +1.5 EV. However, screen reflects brightness change only for the compensation range of +1.5 EV to -0.6 EV.
- If the subject is dark and the exposure compensation is adjusted to a positive value, the live display may not accurately reflect the adjusted value. However, the picture will be recorded exactly at the adjusted exposure value.
- For information on exposure compensation, see p. 32, "EV adjustments."

Extended monitoring

If no buttons or levers are operated for approximately 5 minutes during LIVE monitoring mode, the Auto Power-Off function cancels the mode to save power. If you anticipate monitoring for a long period of time, turn off the Auto Power-Off function. We also recommend that you keep fresh batteries available, as the LIVE function exhausts the batteries rather quickly. If power can be supplied from a nearby AC power line, however, we suggest that you power the camera with an optional Ricoh AC Adapter.

For information on the Auto Power-Off function, see p. 55, "Auto Power-Off and Buzzer Settings."

Manual focusing

When the FWD button or the REV button is pressed, "MF" appears on the display panel and focusing can be adjusted manually.

- The auto-focus system does not function while "MF" appears on the display panel.
- To clear "MF" from the display panel, press the LIVE button to cancel the LIVE monitoring function.

Remote control

The optional DR-2 Remote Control Unit may be useful when the camera is positioned at a distance or is fixed in one place.

Macro Shooting (Close-up shooting)

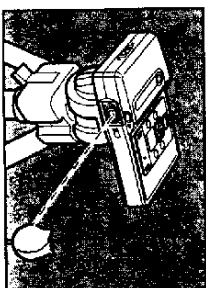
Macro shooting is tight close-up photography.

Notes:

- The minimum shooting distance is about 1 cm.
- In macro shooting, the image in the viewfinder can be quite different from the image captured through the lens. Connect the camera to an LCD Monitor or a TV monitor, and check the composition of the image through the connected monitor.

- ➊ Approach the subject and compose the picture. Then press the shutter release button to take the picture.

Note: When the camera is repositioned, the subject may go out of focus due to the depth of field (range of accurate focus) for macro shooting being quite narrow. Position the camera on a stable surface or tripod before taking a tight close-up. For best results, use the LIVE monitoring function.



Shutter release button

The optional Remote Control Unit is very useful for releasing the shutter when the camera is stabilized on a tripod or on any other support.

Chapter 4. Image Playback/Erasing

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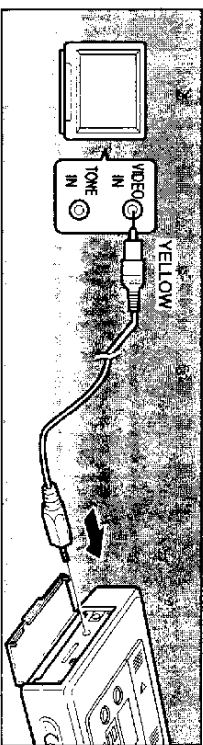
Before Playback a Image

This section explains playback operations and the information displayed on the screen during image playback.

Connecting a TV Monitor (NTSC ONLY)

To view recorded images on a TV monitor, use the Video cable provided to connect the camera to a TV monitor.

Note: Refer to the manual provided with the TV monitor for more information.



- 1 Make sure that the power to the camera and the TV monitor is turned off.
- 2 Open the side cover of the camera, and connect the Video cable to the camera's V output jack.
- 3 Connect the opposite end of the video cable to the video input jack of the TV monitor.

Notes:

- When the TV monitor is connected to the camera with the Video cable, it can function as the monitor when taking pictures with the camera.
- To copy the data from the camera onto videotape, connect a VCR to the camera with the Video cable.
- To make full-color prints from the recorded data, connect a video printer to the camera with the Video cable.

Extended playback

For extended playback, we suggest you use the optional Ricoh AC-2 AC Adapter, which takes power from a standard electrical outlet. See p. 13, "Operating on AC Power."

- Be sure to turn off power to the camera before connecting the AC Adapter.

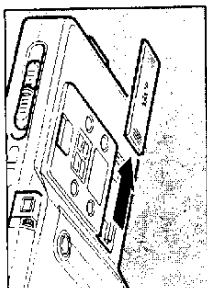
Connecting an LCD Monitor

When the camera is connected to an LCD Monitor, you can immediately view the recorded image.

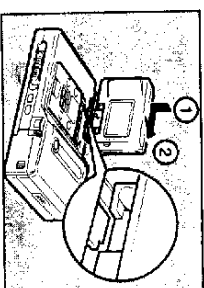
Note: Refer to the manual provided with the LCD monitor for more information.

Connecting an LCD Monitor

- 1 Make sure that the power supply of the camera is set to OFF.
- 2 Slide the mounting slot cover on the camera as indicated by the arrow to remove it.



- 3 Remove the protective cover from the bottom of the LCD Monitor. As shown in the illustration,
 - 1 hold the LCD Monitor vertically and set it straight down into the mounting slot in the camera;
 - 2 slide the LCD Monitor until it is firmly locked into position.

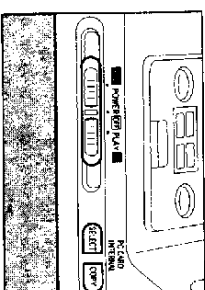


Notes:

- To prevent loss, store the camera's mounting slot cover and the protective cover of the LCD Monitor in the soft case provided.
- To view an image simultaneously on both a TV monitor and LCD Monitor, connect a TV monitor to the camera with the Video cable.

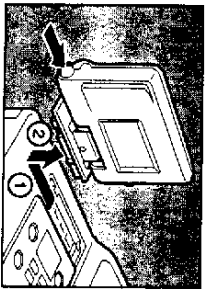
Disconnecting the LCD Monitor

- 1 Turn off the power of the camera.



- ② While pushing in the UNLOCK button, ① slide the LCD Monitor in the direction of the arrow; ② remove the LCD Monitor from the camera.

Notes: Replace the camera's mounting slot cover and the protective cover of the LCD Monitor to prevent damage to the electrical contacts.



Extended use

For extended playback, we suggest you use the optional Ricoh AC-2 AC Adapter, which takes power from a standard electrical outlet. See p. 13, "Operating on AC Power."

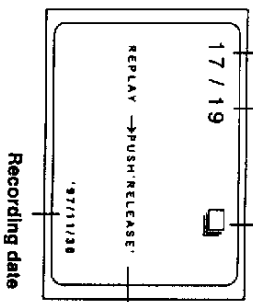
- Be sure to turn off power of the camera before connecting the AC Adapter.

Information displayed during playback

During playback of a image useful information about the recorded images, including image numbers and recording mode, is displayed on the monitor for approximately 3 seconds, as shown below:

Number of this image

Total number of Images



Recording Mode

Still Picture: A image recorded in Still Picture Mode or Document Mode

Continuous images: A image recorded in Continuous Mode

Audio: An audio file not recorded with this camera

Still Picture & Audio : A still picture plus audio file not recorded with this camera

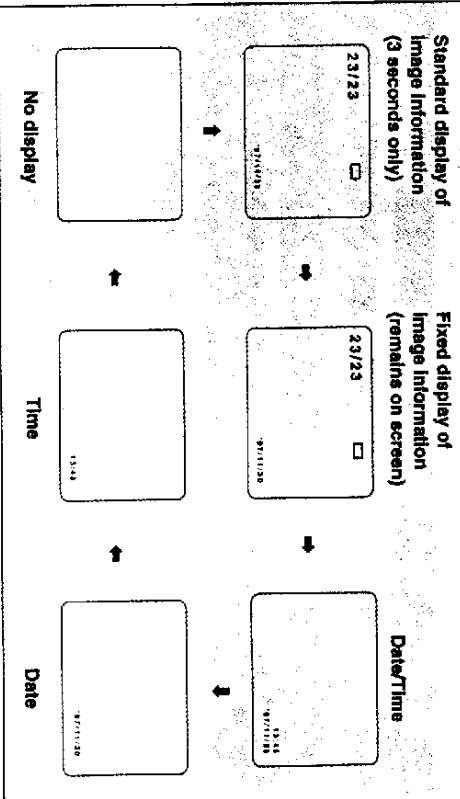
Prompt

Operation prompts are displayed here. For example, in the screen illustration displayed, the prompt suggests pressing the shutter release button to start Playback this image.

Notes:

- No prompts are displayed during playback of Still Pictures.
- In you have taken the picture while holding the camera in landscape orientation (horizontally), the reproduced image will appear on the monitor as intended. However, if you held the camera in portrait orientation (vertically) while shooting, the image will appear as if rotated 90 degrees.
- Audio files and still picture plus audio files recorded by other Ricoh digital cameras are displayed as [A], [A]. The audio portions of these files cannot be played back on this camera.

Information display
The monitor displays information about the recorded images, including the date and time of the recording. Press the DATE button repeatedly to change the display in the following sequence:



For longer battery life

- Batteries will be exhausted quickly if they are used with the LCD monitor under the following conditions:
- When files are being replayed on a TV monitor
 - While a video printer is printing a picture
 - While data is being transferred to a PC
- Fold up the LCD monitor when not in use.

Image Playback

This section explains how to play back images recorded in the various recording modes. Basic operations are presented, beginning with the steps required to play back a Still Picture.

The playback sequence

The following is a brief explanation of the procedures for Playback a image:

Turn the power on

Slide the main switch of the camera to [PLAY (PC)].

Designate a memory drive

If a memory card is installed in the camera, you can designate either the memory card or the built-in memory as the Image source.

Select a Image

Press the FWD button or REV button to select the image to be replayed.

For Still Picture s, see p. 48.

For Continuous Still Picture, see p. 49.

Notes:

Audio files and still picture plus audio files recorded by other Ricoh digital cameras are displayed as [AUDIO] or [PICT]. The audio portions of these files cannot be played back on this camera.

Playback Still Pictures

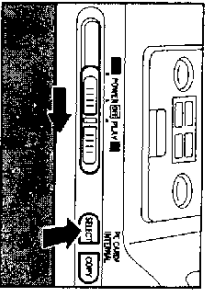
By pressing the FWD button or the REV button of the camera, you can select playback for any image recorded in Still Picture Mode or Document Mode (a Still Picture).

1 Slide the main switch to [PLAY (PC)].

The monitor displays the data most recently recorded.

For more information, see p. 46 "Information displayed during playback."

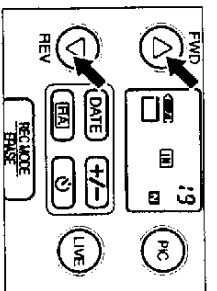
2 Press the SELECT button for approximately one second to designate an output memory drive.



3 Press the FWD button or the REV button to select the image to be played back.

To select a later image:
Press the FWD button.

To select an earlier image:
Press the REV button.



Notes: To play back a file recorded in Continuous Mode, follow the on-screen prompts.

Playback Continuous Still Pictures

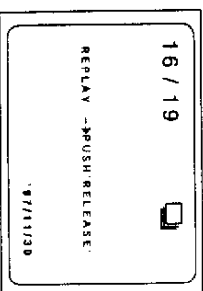
The following section explains how to play back images recorded in Continuous Mode.

1 Press the shutter release button when the monitor displays a desired continuous still picture.

The recorded images are displayed frame by frame in succession. After the last picture in the image is displayed, the monitor displays the image displayed before continuous playback began.

Notes:

- If the FWD button is pressed during playback, the monitor skips to the next image.
- If the REV button is pressed during playback, the monitor displays the image displayed before playback began. If the REV button is pressed again, the monitor skips back to the previous image.



Advancing the frame

Press the shutter release button during playback to interrupt the playback. Then press the FWD button, and the next frame will be displayed.

Reversing the frame

Press the shutter release button during playback to interrupt the playback. Then press the REV button, and the previous frame will be displayed.

Restarting playback

Press the shutter release button again.

Erasing Images

This section explains how to erase recorded images. There are two methods of erasing images: single-image erasing, for erasing selected images individually, and initialization, which erases all images in a memory drive at one time.

The image-erasing sequence

The following is a brief explanation of the procedures for erasing images:

Turn the power on.

Slide the main switch of the camera to [PLAY (PC)].

Designate a memory drive.

If a memory card is installed in the camera, you can designate either the memory card or the built-in memory as the image source.

Select a Image.

Press the FWD button or REV button to select a single image to be erased.

Erase the Image.

The image is erased.

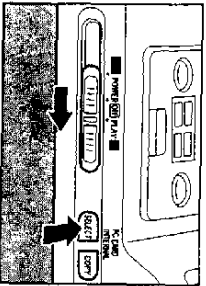
For information on single-image erasing, see p. 50. For information on initialization, see p. 52.

Single-image erasing

The following explains how to erase a selected image.

Note: Erased images cannot be recovered. Carefully confirm the content of a image before erasing it.

- Slide the main switch to [PLAY (PC)].
- Press the SELECT button for approximately one second to select the desired memory drive.



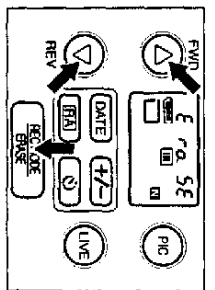
Important:

Check the symbol indicated on the display panel again to confirm that the correct memory drive is selected.

[IN] Built-in memory
[CARD] Memory Card

- Press the REC MODE/ERASE button until ERASE appears on the display panel.

- Press the FWD button or the REV button to select the image to be erased.

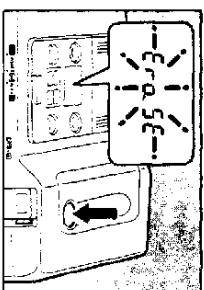


Notes:

- To exit erase mode, press the REC MODE/ERASE button again. Confirm that ERASE no longer appears on the display panel.
- Continuous Still Pictures cannot be erased when paused during playback.

- Press the shutter release button.

- The selected image will be erased. Repeat steps 4 and 5 to erase another image.



Notes:

- When a image is erased, the image numbers of succeeding images decrease by one.
- The time required to erase a image varies depending on the type of memory card used and the type of image recorded.

Exiting from erase mode
Press the REC MODE/ERASE button again.

Initialization (Erasing all images)

To erase all images in a memory drive, select the drive and initialize it.

Note: Erased images cannot be recovered. Carefully confirm the content of a image before erasing it.

1 Slide the main switch to [PLAY (PC)].

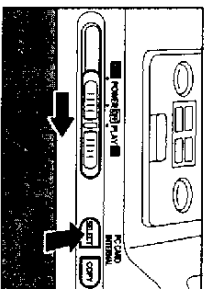
2 Press the SELECT button for approximately one second to select the desired memory drive.

Important:

Check the symbol indicated on the display panel again to confirm that the correct memory drive is selected.

[IN] Built-in memory

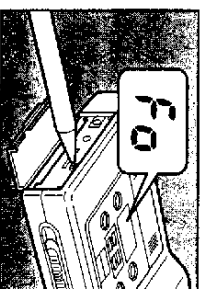
[CARD] Memory Card



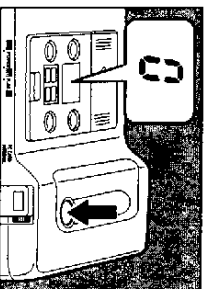
3 Open the side cover of the camera and push the Format button with a pointed object such as a ball-point pen or the tip of your fingernail.

Push and hold until "Fo" appears on the display panel, then release the button.

Note: Do not press the Format button with any object that has a sharpened point or is easily broken.



4 Press the shutter release button for at least two seconds to begin initialization. When initialization is completed, a buzzer sounds, and the counter display on the display panel resets to 0. Initialization is now completed.



Chapter 5. Additional Information

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Connecting to a Personal Computer

Exclusive Attachment Cables and Software for personal computers allow you to directly transmit data from the camera to a personal computer.

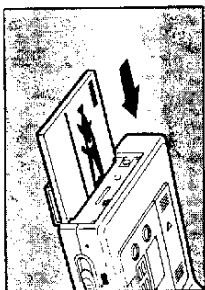
Copying Images

This section explains how to copy all images recorded in the internal memory to a Memory Card.

Notes: Images on memory cards cannot be copied to the internal memory.

1 Insert a memory card into the camera.

For details, see p. 16, "Inserting a Memory Card."

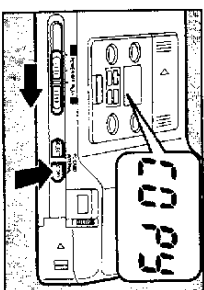


2 Slide the main switch to [PLAY (PC)].

3 Press the COPY button.

COPY appears on the display panel.

To interrupt copying
Press the COPY button again.

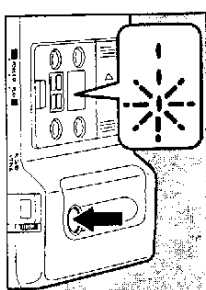


4 Press the shutter release button.

The camera starts copying. A series of illuminated bars (-) appear on the display panel to show the progress of the copying operation.

Notes:

- One bar flashes until all images are copied.
- The indicator on the monitor counts down the copying of each frame.
- As copying progresses, one bar stops flashing but remains illuminated. Another bar then appears on the display panel.
- Once all images have been copied, six bars will have appeared on the panel. The camera then returns to image playback mode.



Auto Power-Off and Buzzer Settings

This section explains how to change the Auto Power-Off and buzzer settings.

Setting/canceling Auto Power-Off

If no buttons or levers are operated for approximately 5 minutes while the main switch is set to recording mode or playback mode, temporarily turns off the main power to save power.

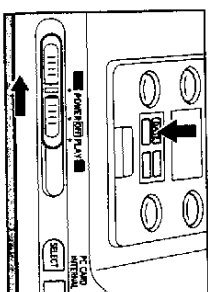
■ Canceling Auto Power-Off in Recording Mode

- 1 Turn the power off. Hold down the DATE button while sliding the main switch to [REC].

A slightly longer buzzer sound indicates that the Auto Power-Off function is canceled.

To reactivate Auto Power-Off

Repeat the above operation. A shorter buzzer sound tells you that the Auto Power-Off function is activated.



■ Canceling Auto Power-Off in Playback Mode

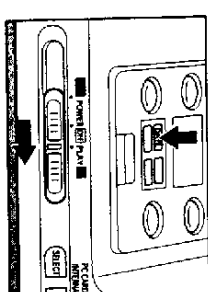
- 1 Turn the power off. Hold down the DATE button while sliding the main switch to [PLAY (PC)].

A slightly longer buzzer sound tells you that the Auto Power-Off function is canceled.

To reactivate Auto Power-Off

Repeat the above operation. A shorter buzzer sound tells you that the Auto Power-Off function is activated.

Notes: If the display panel is turned off by the Auto Power-Off system, turn on the power again.



Turning the buzzer on or off

The camera makes a buzzer sound to confirm each recording operation. To cancel the buzzer, follow the instructions below.

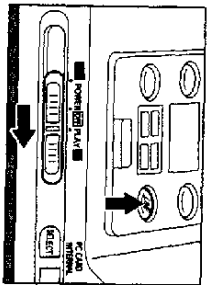
- 1 Slide the main switch to [PLAY (PC)] and press down the LIVE button for more than 5 seconds.

A short buzzer sound tells you that the buzzer is turned off.

Note: The warning buzzer is not canceled.

Reactivating the buzzer

Repeat the above operation. A slightly longer buzzer sound confirms that the buzzer is activated.



Using your Digital Camera in other countries

Ricoh AC-2 AC Adapter (optional)

- The AC-2 AC Adapter adjusts automatically to voltages ranging from 100 to 240 VAC and frequencies of 50 Hz and 60 Hz.

Viewing the images via TV Monitor

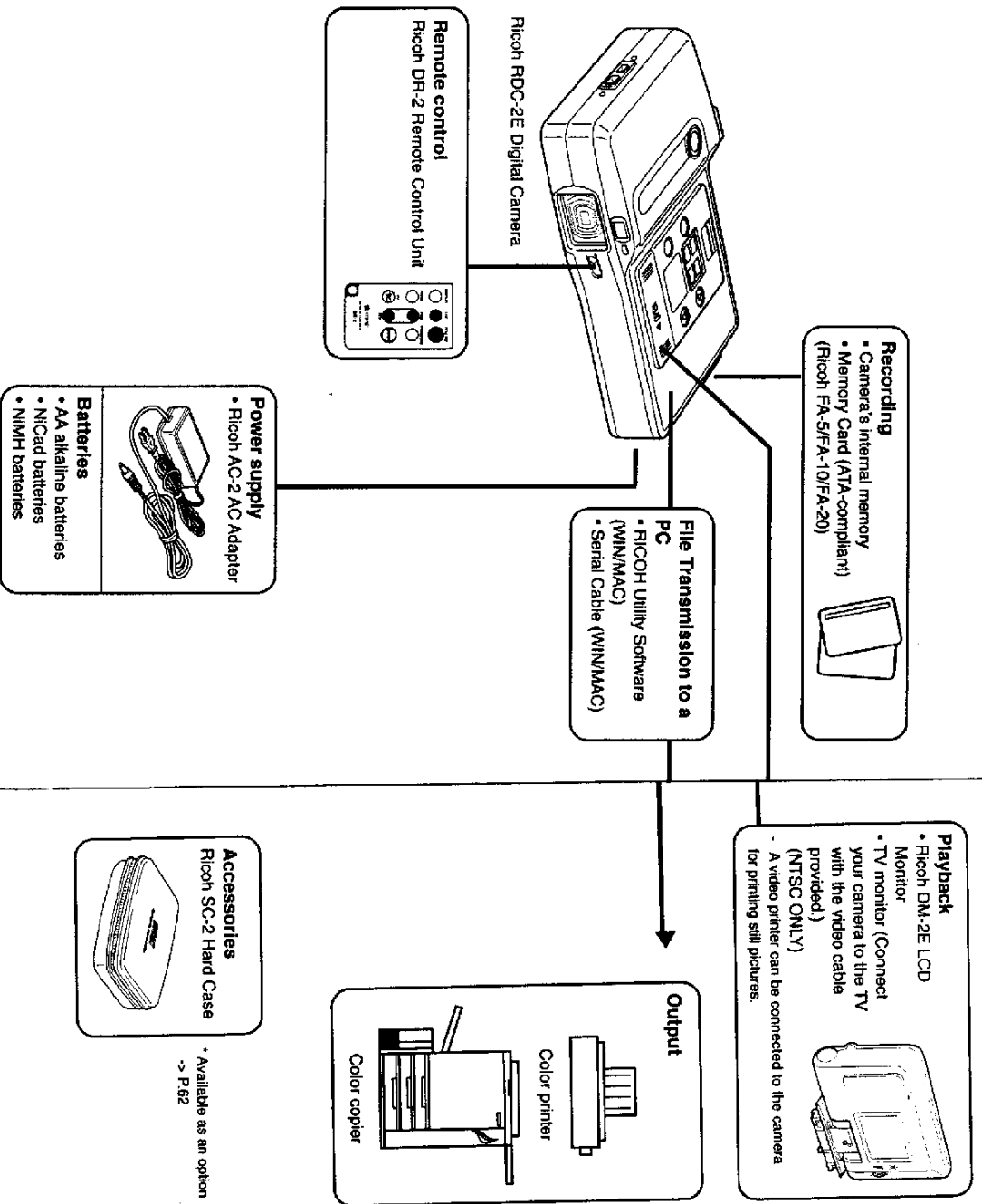
- Make sure to check if the TV monitor is NTSC.
- The NTSC format is used in the following countries:

American Samoa	Haiti
Barbados	Honduras
Bermuda	Mexico
Bolivia	Micronesia
Canada	Myanmar
Chile	Nicaragua
Colombia	Panama
Costa Rica	Peru
Cuba	Philippines
Democratic People's Republic of Korea	Puerto Rico
Dominica	Suriname
El Salvador	Taiwan
Ecuador	Trinidad and Tobago
Guam	USA
Guatemala	Venezuela

5

Additional Information

System Configuration Chart



Supplying power

Install common AA alkaline batteries. Alternatively, rechargeable NiCad batteries or NiMH batteries can be used. For extended use, the Ricoh AC Adapter is recommended.

Recording

The camera's internal memory ensures that the camera is always ready to record. No memory card is required. For high-volume recording, however, Ricoh's high-performance PCMCIA Memory Cards offer convenient storage options.

Viewing

You can connect the camera to an LCD Monitor to immediately play back Still Pictures and Continuous shots. With the supplied Video Cable, you can connect the camera to a TV monitor to view a recorded image immediately. (NTSC only)

Image transmission to a PC

You can transmit your images to a PC with connector cable included as the interface between the camera and PC. You can also transmit data recorded on a memory card simply by inserting the card directly into the PC card slot of a personal computer. The PC card slot is a popular feature of many notebook PCs.

Output

Once data is sent to your PC, you can print it with a color printer or color copier.

5

Additional Information

Accessories for RDC-2E

Item	Model	Remarks
AC Adapter	AC-2	For operating on household AC current. See p. 13, "Operating on AC Power."
Hard case	SC-2	Storage and carrying case for the camera and LCD Monitor
Remote Control Unit	DR-2	For recording or playback by remote control. Features a programmed playback function (a presentation tool that enables you to program the sequence of pictures to be played back). This function is available only with this Remote Control Unit.
5-MB Memory Card	FA-5	ATA-compliant memory card with flash memory Capacity: 5 MB.
10-MB Memory Card	FA-10	ATA-compliant memory card with flash memory Capacity: 10 MB.
20-MB Memory Card	FA-20	ATA-compliant memory card with flash memory Capacity: 20 MB.

Note: To use an ATA-compliant flash memory card on a PC, you need a driver for ATA cards. Generally, PCs with PC card slots have such a driver. Install this driver for ATA memory cards in your PC before you use a memory card in your PC the first time.

* The corporate names and brand names stated above are trademarks or registered trademarks of their respective corporations.

Handling Precautions

- This camera is not waterproof. Take great care of avoid water, rain or spilled drinks.
- Never drop the camera or subject it to strong shock.
- Protect the camera from sand or dust, especially at the beach or in dusty environments.
- Do not expose the camera to high temperatures or high humidity for a long period, such as in a closed vehicle, a bathroom, or on the beach.
- Turn off the camera before connecting it to the optical AC Adapter.
- Sudden changes of temperature may cause condensation to form inside and outside the camera body and lens, resulting in malfunctions. In such conditions, put the camera into a bag or plastic bag temporarily to moderate any drastic change of temperature. Keep it in the bag until the temperature difference is minimized.

Condensation occurs when:

- the camera is suddenly brought into a warm place from a cold place;
- the camera is used in high humidity.

Caring for Your Digital Camera

■ Camera Care

- Keep the lens of the camera clean, as stains or dirt on the lens may degrade the precision of the auto-focus mechanism.
- Do not attempt to remove dust or smears from the lens or the viewfinder with your fingers. Use a blower to blow the dust away, or wipe the surface gently with a soft cloth.
- After using the camera at the beach or exposing it to a chemical environment, take special care to wipe off any dirt.
- If the camera does not operate properly, contact a Ricoh service center. The camera is equipped with a hazardous high-voltage circuit; never attempt to repair it yourself.
- Keep the camera away from volatile liquids such as thinner, benzene and insecticide, as these chemicals may peel off the paint or damage the surface.
- Keep input/output jacks clean to avoid malfunctions. Wipe them carefully with a dry cloth.
- Before cleaning the camera, slide the main switch to [POWER (OFF)].

■ Safekeeping

- Do not store the camera in a closet with insect repellents, as these may damage the camera and cause a malfunction.

Troubleshooting

Before sending the unit in for repairs, first refer to the following checklist for a possible solution to the problem. If you still cannot correct the problem, please contact the store where you purchased the product.

■ Power Source Problems

Problem	Probable Cause	Remedy	Reference page
No power	Batteries are not positioned properly or are depleted.	Reposition the batteries correctly or replace with fresh batteries.	P. 11
	AC Adapter is not connected properly.	Reconnect the AC Adapter.	P. 13
Sudden loss of power	Auto Power-Off system shut down the camera after several minutes of inactivity.	Touch the shutter release button lightly or turn on the power again.	—
Batteries go dead	Batteries are depleted.	Replace with fresh batteries.	P. 11
	Batteries were subjected to excessively low or high temperatures.	—	—
	LCD Monitor was used for a long time.	—	—

■ Shooting and Playback Problems

Problem	Probable Cause	Remedy	Reference page
Fails to record pictures when shutter release button is pressed.	Batteries are not inserted properly (recharged polarity) or are dead.	Reposition the batteries correctly or replace with fresh batteries.	P. 11
	Power is off, or the main switch is set to [PLAY (PCL)].	Slide the main switch to [REC].	P. 23
	The shutter release button is not fully pressed down. (Shutter was pressed only halfway down).	Press the shutter release button all the way down.	P. 29, P. 30
	When the internal memory is designated as the memory drive:		
	Internal memory is full.	Delete (or copy and delete) some images to secure enough space.	P. 50
	When the memory card is designated as the memory drive:		
	Memory Card is not inserted properly.	Insert the memory card again.	P. 16
	Memory Card is not initialized.	Initialize the card.	P. 16
	Memory Card is write-protected.	Write-enable the memory card.	—
	Memory Card is full.	Delete some images or replace with a new memory card.	P. 50, P. 16
	Memory Card is expired.	Replace with a new memory card.	P. 16
	Self Timer mode is selected.	Press the Self Timer mode button to cancel/Self Timer mode.	P. 38
	Lens is dirty.	Clean the lens.	P. 1
	Subject is not in the center of the Auto-focus frame.	Use Focus Lock or LIVE monitoring mode.	P. 39, P. 40
Auto-focus does not focus on subject.	Difficulty focusing on subject.	Take the picture using Focus Lock.	P. 39, P. 40

Problem	Probable Cause	Remedy	Reference page
Actual image differs greatly from image viewed through viewfinder.	Distance to subject is less than 25 cm (10 in.).	Use LIVE monitoring function or macro shooting technique.	P.40, P.42
Picture is too bright.	Image is overexposed.	Compensate exposure with EV button.	P.32
Image is underexposed.	Image is underexposed.	Compensate exposure with EV button.	P.32
Picture does not show natural colors.	Image conditions prevent automatic white balance system from functioning properly.	Include a white or light-colored object in the subject.	P.31
Fail to play back data or display an image on the monitor.	The main switch is not set to [PLAY (P/C)]. Proper memory drive is not selected.	Slide the main switch to [PLAY (P/C)]. Press the SELECT button to select the correct drive.	P.48
	When the memory card is selected as the memory drive: Memory Card is not properly positioned or contains no images. Memory Card was not initialized in this camera. Memory Card contains improperly recorded data.	Reposition the memory card or replace with a memory card containing recorded images. Insert a correctly formatted memory card. Insert a memory card with properly recorded data.	P.16 P.16 P.16
	Only Audio play back. Video cable is not correctly connected to the Video Input of the camera and the input jack of the TV monitor. LCD Monitor is not correctly mounted.	Connect Video cable correctly. Mount the LCD Monitor correctly on the camera.	P.44 P.45
Image does not play back clearly.	Electric motors or other devices near the camera produce electromagnetic interference. Memory Card is faulty.	Move camera away from interfering devices. Insert another card containing recorded images. If this card functions correctly, the camera is not malfunctioning. However, original memory card is probably defective. Discard this memory card.	—
	Malfunction of camera's internal memory	Back up any important images in the internal memory with the image copying function. Then initialize the internal memory.	P.54, P.16
The image on the monitor has disappeared.	Batteries are dead. Auto Power-Off system has activated.	Replace with fresh batteries. Slide main switch to [POWER (OFF)] and restart playback.	P.11 P.48
Remote Control Unit is malfunctioning.	Path between reception window of the camera and the transmission window of the Remote Control Unit is obstructed. The reception window on camera or transmission window on Remote Control Unit is dirty. Lithium battery in the Remote Control Unit is dead.	Clear the path between the camera and the Remote Control Unit. Clean both windows. Replace with a fresh lithium battery (CR2032).	— P.1 —

Other Problems

Problem	Probable Cause	Remedy	Reference page
Memory Card cannot be inserted in camera.	Memory Card does not meet required specifications. Memory Card is upside down or backward.	Insert a recommended memory card. Insert the memory card correctly.	P.14, P.16
Camera buttons and switches do not function.	Batteries are dead. Camera does not function properly.	Replace with fresh batteries. Slide the main switch of the camera to [POWER (OFF)] and then slide it back to [REC] or [PLAY (P/C)]. If the camera still fails to function properly, try the following steps to recover properly. 1. Remove and reinstall all batteries in the camera. 2. Slide the main switch to [REC] or [PLAY (P/C)] again.	P.11 —
Viewfinder is out of focus.	Dioptr is not properly adjusted.	Adjust the diopter with the Dioptr control.	P.19
Date is incorrect or the date display is flashing.	The correct date and time have not been set.	Reset the time and date correctly.	P.18
The date display is turned off.	Batteries are dead, or batteries were removed from camera for more than two weeks.	Replace with fresh batteries and reset the date. * Do not remove the batteries immediately after resetting the date. Batteries must remain in camera for at least 10 hours before being removed to prevent date memory from being erased.	P.11, P.18
Fails to erase a image card or initialize a memory card.	Main switch is not set to [PLAY (P/C)]. Memory Card is write-protected.	Slide main switch to [PLAY (P/C)]. Write-enable the memory card.	P.50, P.52
Camera changes to a mode other than the one selected.	Continuous images are paused during playback. Power was shut off manually or the Auto Power-Off system shut down the camera.	Resume and complete playback. Select the mode again.	P.49
Counter indicated 2 pictures even though only 1 was taken.	Batteries were removed. Memory underwent more than 4,000 record/erase cycles without being initialized.	Select the mode again. Initialize the memory drive.	P.52
Auto Power-Off system does not work.	Auto Power-Off system was canceled.	Confirm Auto Power-Off system settings.	P.55
Buzzer does not sound.	Buzzer was shut off.	Confirm buzzer settings.	P.56

Servicing

1. The Ricoh HDC-2E camera is backed by a one-year limited warranty. During the warranty period, which starts from the date of purchase, any defective parts will be repaired free of charge. In the event of a camera malfunction, contact the dealer where you purchased the camera or contact the nearest Ricoh Service Representatives. Please note that you will be charged for the cost of shipping the camera from the Ricoh service center to you.
2. This warranty does not cover any damage resulting from:
 - ① failure to follow the instructions in this instruction manual;
 - ② repair, modification or overhaul not conducted by authorized service station specified in this instruction manual;
 - ③ fires or natural calamities;
 - ④ improper storage, such as exposing the camera to high temperatures, humidity, or insect repellents; storing it with leaking batteries; storing the camera in a dirty condition so that it becomes moldy; or otherwise insufficiently caring for the camera.
 - ⑤ submergence; exposure to floods or spilled alcoholic or non-alcoholic beverages; allowing sand or mud to enter the camera; exposure to physical shocks; or dropping of the camera.
3. After a full year has passed from the purchase date, you will become responsible for all repair fees, including those incurred at authorized service stations.
4. You will be responsible for all repair fees, even within the warranty period, if the warranty card is not attached or if the distributor's name or the purchase date have been changed or are not indicated on the card.
5. Expenses for overhauls and thorough inspections as a result of your special request will be charged to you, whether or not they occur during the warranty period.
6. This warranty only applies to the camera and not to the accessories such as the hard case and wrist strap, nor does it apply to the consumables provided, such as batteries.
7. Whether during the warranty period or not, any consequential damage arising from the failure of this camera, such as expenses for taking pictures or loss of expected profit, will not be reimbursed.
8. The above provisions are in regard to repairs offered free of charge, and do not limit your legal rights. The intention of the above provisions are also described in the warranty card provided with this camera.
9. Parts essential to the servicing of this camera - that is, components required to maintain the functions and quality of this camera - will be available for a period of seven years after the camera is discontinued. However, as some of those parts are kept for a longer period, do not hesitate to contact your distributor or the nearest Ricoh service center even after the 7-year period.
10. Please note that, if seriously damaged from flooding, submergence, infiltration of sand or mud, violent shocks or dropping, the camera may not be repairable, and restoration to its original condition may be deemed impossible.

- Notes: Before sending the camera in for repair, check the batteries and read this instruction manual again to ensure proper operation.*
- Some repairs requires a significant amount of time to be completed. Please allow sufficient time for the repair.
 - When sending the camera to a service representative, please include a note describing the defective part and the problem as precisely as possible.
 - Remove all accessories not related to the problem before sending the camera to a service representative.
 - Before taking any important pictures (such as at weddings, on trips abroad, etc.), test the camera to learn and ensure proper functioning. We recommend that you keep this manual and fresh batteries on hand.

Specifications

- **General**
- Video signal method : NTSC
- Power requirement : Batteries: 6 V
DC: 5 V
- Dimensions (W × H × D) : 143 (5.6) × 27 (1.1) [36 (1.4) incl. grip] × 76 (3) mm (in.)
- Weight : approx. 270 g (9.55 oz.) without batteries
- Operating temperature range : 0°C to 40°C
- Storage temperature range : -20°C to 60°C
- **Main system**
- CCD : 1/4" 410,000 pixels (effective 380,000 pixels) with complementary color checkers
- Lens**
- F number : F:2
- Focal length : f:3.7 mm (equiv. to 35 mm on a 35-mm camera)
- Shooting range : 0.01 m -
- Wide angle : 6 elements in 6 groups
- Composition
- Viewfinder
- Type : Relay-type real image finder
- Magnification : 0.63
- Field-of-view coverage : 80% minimum
- Diopter adjustment : -3.5 to +0.5 dpt
- White balance : 4300 + 50K
- Color temperature of standard setting : - 50K
- Automatic adjustment range : 2800K-6500K
- Exposure adjustment
- AE range : EV 9-EV 17
- Light measuring system : Centerweighted
- EV memory system : With automatic backlight control program (AE is locked when shutter release button is held halfway down.)
- Manual exposure adjustment range + -1.5 EV (in 0.3 EV increments)
- Exposure mode : Program AE
- Exposure measurement : TTL CCD method
- Shutter speeds : Still Picture (mechanical): 1/8-1/1000
- Focusing**
- AF method : TTL CCDAF method
- AE range : 0.01 m (0.03 ft.) -
- Pre-focus system : Focus is locked when shutter release button is held halfway down.
- Focusing : Green LED in viewfinder

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- Manual focusing : Adjust with the FWD/REV buttons, while shutter release button is held halfway down. (Also operational with the Remote Control Unit.)
- **Image recording**
- Color method : NTSC-compatible
- Image format : JEIDA DSC 68-pin standard
VIDEO1-compatible
- Compression method : JPEG-compatible
- Compression ratio (Still picture)
- Economy mode : 1 bit/pel (48 KB/frame)
- Normal mode : 2 bit/pel (96 KB/frame)
- Fine mode : 4 bit/pel (192 KB/frame)
- Still Picture Image quality : 768 x 576
- Document Mode : Gamma characteristics optimized
- Continuous speed : Approx. 1 image/second
- **Input/Output**
- Connectors for monitor
- Socket : Specially designed 9-pin socket (gold-plated)
- Video output : 1.0 Vp-p (1 K)
- Other specific terminals : Power supply input terminal
Video terminal
RS-232C/AUX terminal
- **Camera body**
- Tapped Hole for Tripod : 1/4-20 UNC
5.5 mm (0.2 in.) max. bolt length
- **Power supply**
- Batteries : AA alkaline batteries
AA NiMH batteries
AA NiCad batteries
- Voltage : 6 V (1.5 V × 4 cells)
- Batteries : AC Adapter: 5 V
- Auto Power-Off system : Activates when camera is not used for approximately 5 minutes.
- **Memory Cards for recording/playback**
- With flash memory : PCMCIA 2.1/JEIDA 4.2
Type I and Type II, ATA-compliant
- Capacity: 40 MB
- With common memory write cycle of 300 ns or less
- AIMS-compliant: Type I, PCMCIA 2.1/JEIDA 4.2
- Capacity: 24 MB

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Additional Information

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Memory Storage Capacity

The following tables show the data recording capacity for each image quality and recording mode.

Internal memory

Recording Mode	Image quality		
	F Mode	N Mode	E Mode
Still Picture Mode			
Continuous	10 frames *	20 frames **	41 frames
Document Mode			

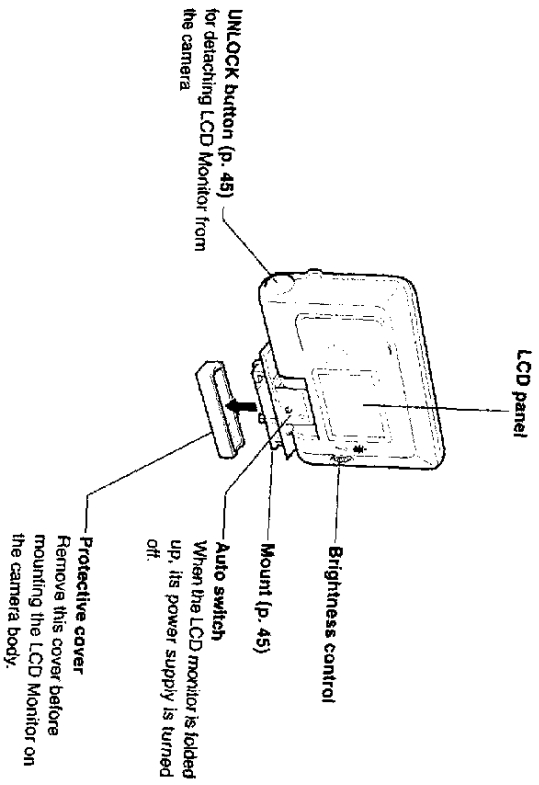
*, ** Plus 1 still pictures in E mode.

Memory Card (ATA-compliant)

Memory Card	Recording Mode	Image quality		
		F Mode	N Mode	E Mode
5 MB (Model: FA-5)	Still Picture Mode			
	Continuous	25 frames	51 frames	103 frames
	Document Mode			
	Still Picture Mode			
10 MB (Model: FA-10)	Continuous	52 frames	105 frames	210 frames
	Document Mode			
	Still Picture Mode			
	Document Mode			
20 MB (Model: FA-20)	Still Picture Mode			
	Continuous	105 frames	211 frames	422 frames
	Document Mode			
	Document Mode			

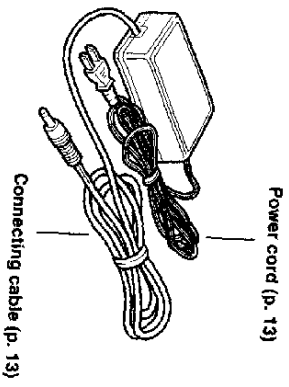
Camera Description (2)

■ Optional LCD Monitor



■ Optional AC Adapter

• AC-2



■ Camera Body

