

Ricoh FF-90

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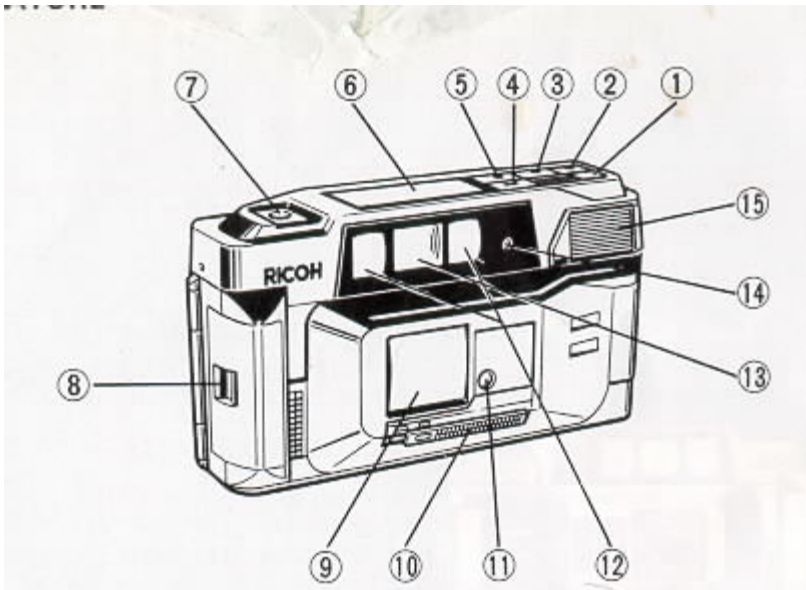


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1. Flash Button	8. Strap Eyelet
2. Display Mode Button	9. Lens Shield
3. Back Light Control Button	10. Lens Shield Switch
4. Self-Timer Button	11. Photocell
5. Manual Film Speed Set Button	12. Distance Measuring Windows
6. LCD Control Panel	13. Viewfinder Window
7. Shutter Release Button	14. Self-Timer LED



15. Built-in Flash Unit

16. Viewfinder Eyepiece

17. Flash Ready Lamp

18. Film Rewind Shaft

19. Back Cover Lever

20. Battery Compartment Cover

21. Film Chamber

22. Film Guides

23. Tripod Socket

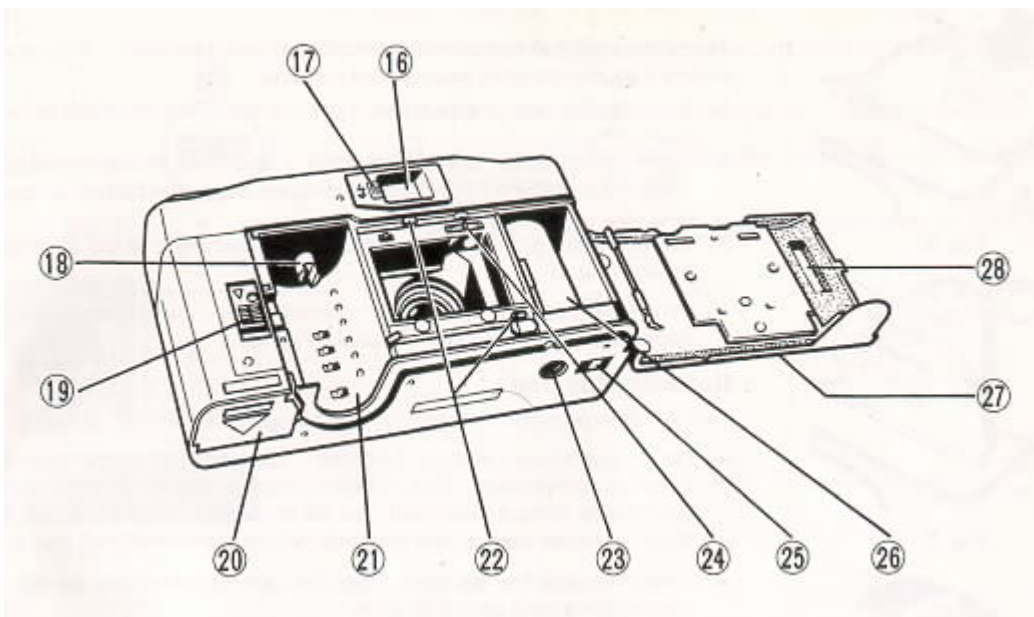
24. Sprocket

25. Manual Film Rewind Switch .

26. Film Take-up Spool

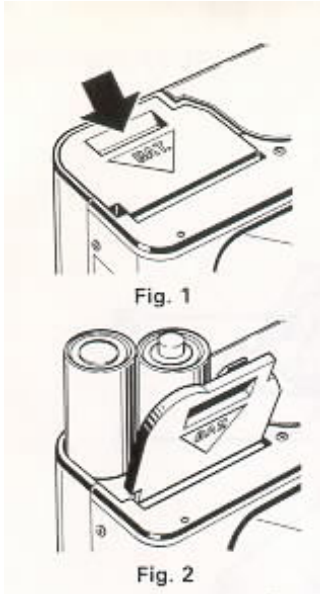
27. Back Cover

28. Film Loaded Window



INSERTING THE BATTERIES .

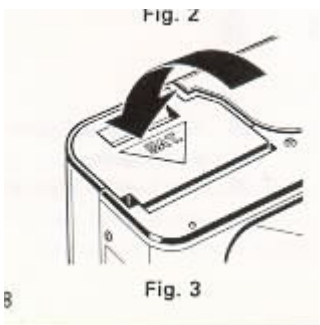
The camera will not operate unless the batteries are installed. It is important to ensure that the batteries are inserted correctly.



1. Push the Battery Compartment Cover in the direction of the arrow to pull open. (Fig. 1)

2. Insert two batteries, checking that the + and -- on the batteries are lined up correctly according to the polarity diagram inside the battery compartment.: (Fig. 2)

3. Close the Battery Compartment Cover by pushing it in the direction of the arrow. (Fig. 3)



* When the batteries are inserted correctly, the Low Battery Warning Mark appears on the LCD Control Panel. (Fig. 4)

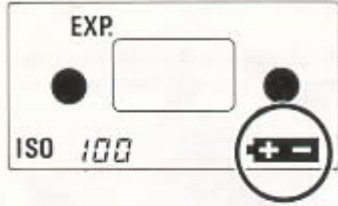


Fig. 4

Batteries for Use: Two Alkaline penlight batteries, or two Manganese penlight batteries.

* Do not use Nickel Cadmium batteries. "Use of rechargeable Ni-cad batteries is not recommended. Due to higher internal amperage, the electronics in your Ricoh camera/flash unit may be damaged. If damage due to use of Ni-cad batteries occurs, the warranty will be considered null and void".

* Please remove the batteries from the camera when you do not use the camera for a long period of time.

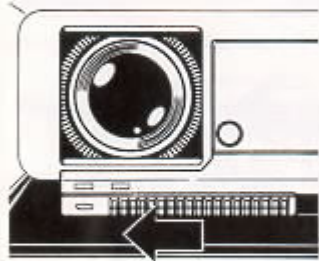


Fig. 5

OPENING THE LENS SHIELD

1. Open the Lens Shield by sliding the Lens Shield Switch in the direction of the arrow. (Fig. 5)

* You can only fire the camera when the Lens Shield is completely open.

* If the Lens Shield is opened while the Shutter Release Button is pressed down, a frame will be exposed.

* When the Lens Shield is opened, the Lens Shield Mark on the LCD Control Panel blinks. (Fig. 6)



Fig. 6

CHECKING THE BATTERIES

If the Low Battery Warning Mark on the LCD Control Panel blinks when you press the Shutter Release Button, please be prepared two new batteries for replacement. (Fig. 7)

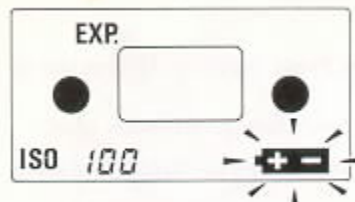


Fig. 7

In normal temperature (at 20°C, with new Alkaline batteries)

Without using the Flash Unit: More than 100 rolls of 24 exposure film can be taken.

Using the Flash Unit repeatedly: More than 10 rolls of 24 exposure film can be taken.

Please change both batteries to new ones of the same kind in the following cases; a. The shutter cannot be released (apart from when the Lens Shield is closed).

b. The Flash Ready Lamp takes more than 30 seconds to light up.

c. The film advance or film rewind does not operate.

d. The batteries have been in the camera for more than one year. (Even without using the camera, the batteries will lose power naturally.) * Generally in cold conditions, the capacity of the batteries decreases, and in some cases, the camera may not operate correctly. You should either warm the batteries or keep a spare set in your pocket, inserting them just before you use the camera. Incidentally, if the capacity of the batteries has decreased in cold temperatures, it will regain full capacity in normal temperatures, so do not throw the batteries away.

LOADING THE FILM

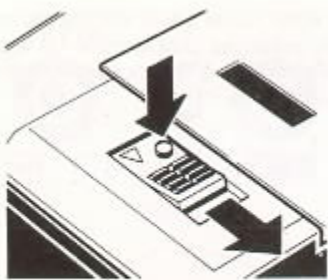


Fig. 8



Fig. 9A

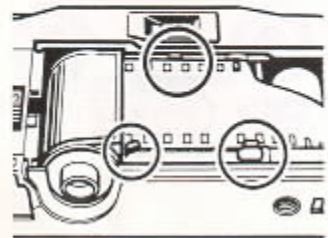


Fig. 10

1. Push the Back Cover Lever downwards, while pressing the safety button on the Back Cover Lever, in the direction of the arrow to open. (Fig, 8)

2. Load the film into the Film Chamber and pull out the film leader, placing it over the mark (ok) of the film leader position. (Fig. 9)

3. Please make sure that the film is within the Film Guides. (Fig. 10)

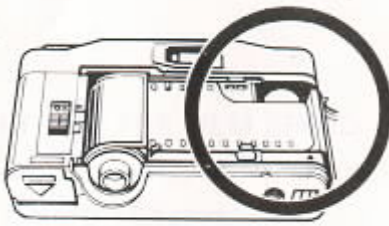


Fig. (Abb.) 9B

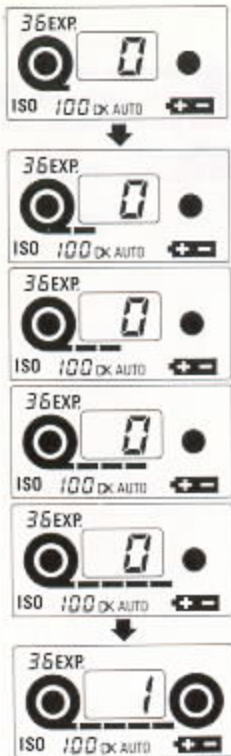


Fig. 11

4. Press the Back Cover shut so that the Back Cover Lever returns to its original position. The film is automatically advanced until number "1" appears in the LCD Control Panel. The film advance is indicated by four dashes flashing in sequence from LED to right.



Fig. 12

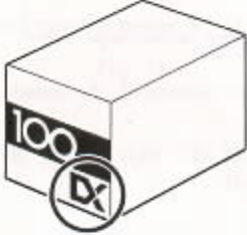


Fig. 13

5. If the film has not advanced correctly and has not been taken up onto the Film Take-up Spool, the cartridge symbol on the right and "O" in the Exposure Counter blinks. So please reload the film.

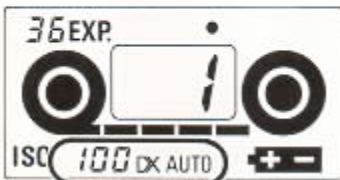


Fig. 14

* Always avoid direct sunlight when loading the film.

* Whether film is loaded or not can be confirmed by the Film Loaded Window or the cartridge symbols in the LCD Control Panel.

SETTING THE FILM SPEED

Please check whether the film has a DX code system or not. (Fig. 13)

A film with a DX code

1. Setting the film speed is not necessary. The camera automatically makes the correct film speed setting. The film speed as well as "DX AUTO" is displayed on the LCD Control Panel. (Fig. 14)

A film without DX code



Fig. 15

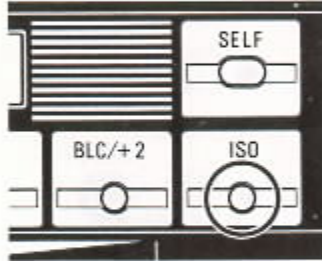


Fig. 16A

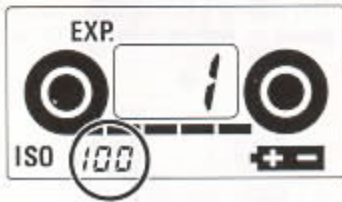


Fig. 16B

* When the film previously used had a DX code system, "100" flashes in the LCD Control Panel and if the film was non-DX, the speed of the previous film flashes. (Fig. 15)

* Pressing the Manual Film Speed Set Button once stops the flashing of the speed.

1. The film speed is indicated on the outer packaging of the film. e.g. ASA 100 (ISO 100)
2. Press the Manual Film Speed Set Button until the speed of your film is displayed in the LCD Control Panel. (Figs. 16A, B)

* When the Manual Film Speed Set Button is kept depressed, the speeds advance automatically.

* Please be careful when you take a picture with ISO 1000 or 1600 film in bright sunlight, the picture may be overexposed.

VIEWFINDER (Fig. 17)

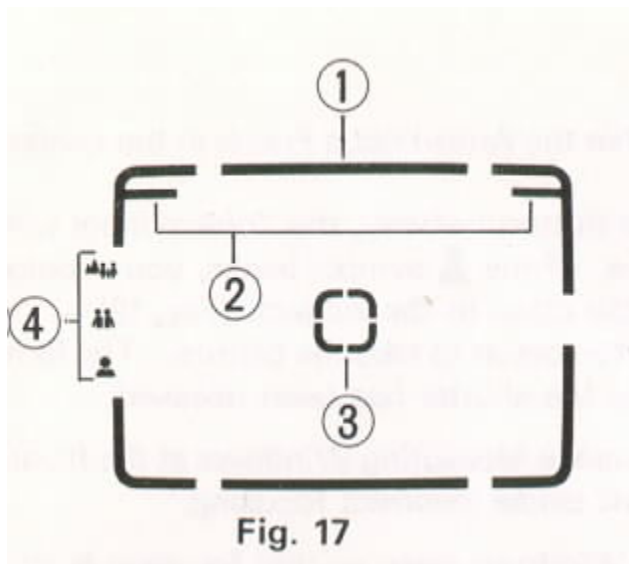


Fig. 17

1. Field of View Frame

The subject (such as people or scenery) that you wish to take should be set within this frame.

2. Parallax Correction Marks When taking a picture of subject that is between 0.8m--1.2m (2.6 - 4 A.) away from the camera, the subject should be positioned within these marks. Anything outside the marks will not be included in the picture even though you can see it through the viewfinder.

3. Auto-Focus Frame The auto-focus system focuses automatically on any subject that appears within this small square.

4. Zone Marks These marks indicate the focusing distance. When the ~ symbol blinks, the subject is too close to the camera. You should move further away from the subject.

AUTO-FOCUS SHOOTING



Fig. 18

1. Set the subject you wish to take within the Auto Focus Frame in the center of the Viewfinder. (Fig. 18)

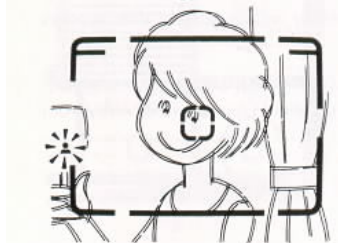


Fig. 19

2. When you press the Shutter Release Button halfway, the Zone symbol will light up to indicate the focus distance. If the ~ symbol blinks, you should move back a little as the camera is too close to the subject. (Fig. 19)

3. Gently press the Shutter Release Button down to take the picture. The film will advance automatically as soon as the shutter has been released,

* Please be careful not to cover the Distance Measuring Windows at the front of the camera accidentally, as this will cause incorrect focusing.

* Please keep the Distance Measuring Windows clean so that focusing is accurate. If it gets dirty, it should be wiped clean with a soft cloth.

* There may be rare cases where the subject cannot be well-focused. (For instance, dark subject that do not reflect light well, glossy subjects, or sub jects taken through glass.)

In these cases, it is best to use the pre-focus to "lock" the focus on a more "normal" subject at the same distance. While holding focus, turn the camera to the original subject and shoot,

(Also see PRE-FOCUS SHOOTING.)

Shooting Distance:

For subject that are less than 0.8m (2.6 ft.) away f rom the camera, it is not possible to obtain sharp focus.

1. When the Shutter Release Button is depressed slightly, the ~ symbol will appear for subject 0.8m--1 .8m (2.6 - 6 ft.) away. If you are closer than 0.8m (2.6 ft.) away from your subject, the mark will blink on and off. If you are much closer than 0.8m (2.6 A.), the ~ symbol or the '44 symbol will appear.

2. The ~ symbol will appear for subjects 1.3m--4.5m (4.3 - 14.8 ft.) away.

3. The ~ symbol will appear for subjects 2.3m-- oo (7.4 ft. -- or).

As you can see, there is slight degree of overlap in the distances covered by the three marks. This will not cause any focus problems. Your camera has 10 focusing zones that assure maximum sharpness at any focusing distance.

Note: Due to the above mentioned overlap, you may occasionally notice that the marks may move from one figure to another even though the subject distance did not change. This does not mean that your camera has focused improperly. It just mean that an "in-between" zone has been selected.

PRE-FOCUS SHOOTING

When the main subject you wish to focus on is outside the Auto-Focus Frame, or if the subject is difficult to focus on, then you should use pre-focus shooting.

When the subject is outside the Auto-Focus Frame



Fig. 20



Fig. 21



Fig. 22

1. If you want to photograph two people, there may be cases where neither of them can be set within the Auto-Focus Frame in the center of the Viewfinder. If you release the shutter then, only the background will be in focus, and the people which are the main subject will be out-of-focus. (Fig. 20)

2. Move the camera so that one of the people is within the Auto Focus Frame. Press the Shutter Release Button halfway so that the Zone Mark lights up and the focusing distance is indicated. Hold your finger in that position on the Shutter Release Button. (Fig. 21)

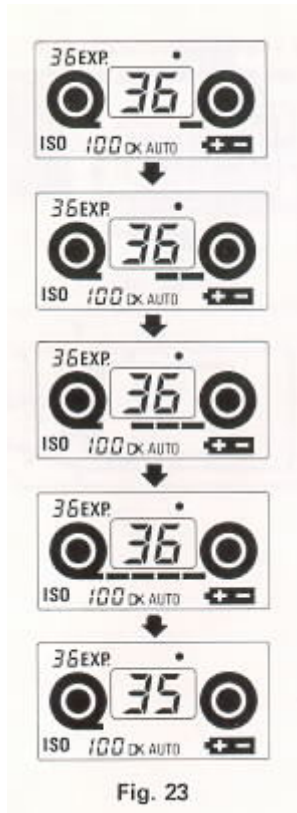
3. Now return the camera to its former position so that both people are in the Field of View Frame again, and press the Shutter Release Button fully to take the picture. (Fig. 22)

When the subject is difficult to focus on

1. When you take subjects that are difficult to focus on, find another subject at about the same distance from the camera. You can pre focus on that subject in the same way as described above.

* When you remove your finger from the Shutter Release Button, the prefocused condition is cleared, so that you can pre-focus again as many times as you wish.

REWINDING THE FILM (AUTO REVERSE)



After the end of the film has been reached, the film is automatically rewind.

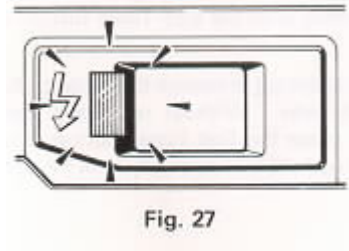
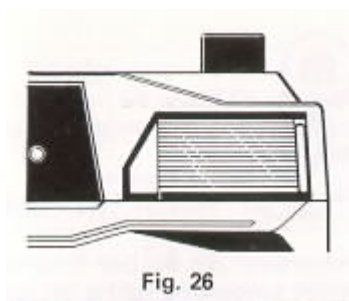
* The film rewind is indicated by four dashes flashing in sequence from right to left and the counter gives a subtractive reading. (Fig. 23)

* When the film is fully rewound, the motor stops automatically and "E" is displayed in the LCD Control Panel. You can now open the Back Cover to unload the film. (Fig. 24)

* If you wish to rewind the film before the end of roll is reached, push the Manual Film Rewind Switch in the direction of the arrow. (Fig. 25)

* You can close the Lens Shield when the film is being rewind.

FLASH PHOTOGRAPHY



When flash is required, the Flash Button automatically pops up as the Shutter Release Button is pressed halfway and the power source will be on. (Fig. 26)

1. Check that the Flash Ready Lamp is lit, then take the picture. (Fig. 27)
2. When you have completed flash photography, please be sure to push the Flash Button down. This turns off the flash.

Flash Photography Distance:

Shooting Range: 0.8m--am (2.6 - 9.8 ft.) ISO 25, 50

0.8m--4.5m (2.6 - 14.8 ft..) ISO 100 over

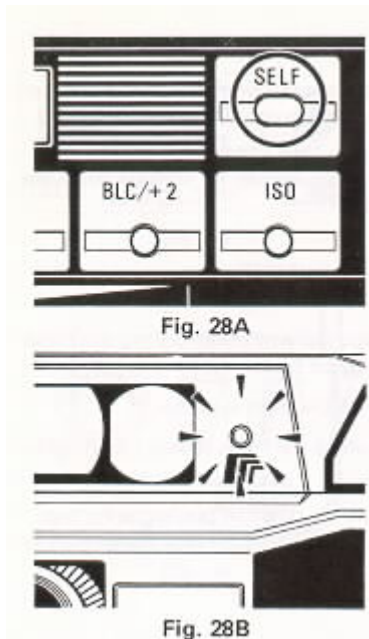
* If the Shutter Release Button is kept pressed halfway down before the Flash Ready Lamp comes on, the Flash Unit will not be charged.

* Be careful not to put your finger in front of the flash window,

* If the Shutter Release Button is pressed before the Flash Ready Lamp lights up, the shutter will not release.

* You can use the Flash Unit as a fill-in light for daytime photography too. Cover the photocell with your hand and press the Shutter Release Button in halfway. Then the Flash Button pops up.

USING THE SELF-TIMER



1. Press the Self-Timer Button. Then the Self-Timer LED on the front of the camera blinks on and off with an electronic sound. The shutter will be released about 10 seconds later. (Figs. 28A, B)

* If you wish to clear the self-timer once it has started, close the Lens Shield or press the Self-Timer Button again.

* When using the self-timer with flash photography, put the Self-Timer on after the Flash Ready Lamp is lit. (When the surrounding light is not sufficient, the Flash Button pops up immediately after the Self-Timer Button is activated.)

* When using the self-timer with pre focus shooting, measure the distance by pressing the Shutter Release Button halfway. Without removing your finger from the Shutter Release Button press the Self-Timer Button, and the self-timer will operate. Pre-focus will be held automatically until the picture is taken.

EXPOSURE COMPENSATION

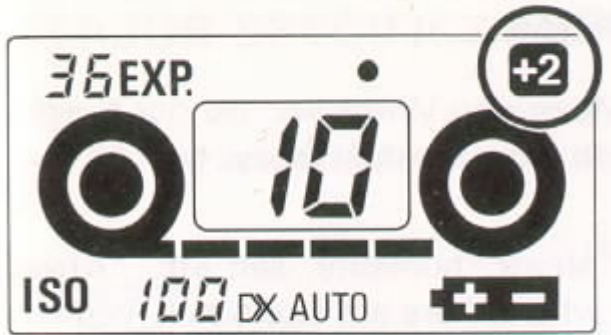


Fig. 29

When back light is given to the subject, under exposed (dark) pictures result. Back light control is used in such case.

1. Press the Back Light Control Button (BLC/ +2) and the ~ mark will be displayed in the LCD Control Panel. (Fig. 29)

* If you wish to clear the back light control once it is activated, press the Back Light Control Button again.

* Once the camera is fired, back light control is cleared.

DISPLAY MODE

When the Display Mode Button is pressed, the film advance up to 24 exposure and rewind operation is displayed repeatedly on the LCD Control Panel.

* The display mode is cleared when;

1. Press the Display Mode Button again or

2. Fire the camera.

* The camera cannot be set to display mode when the film is rewound and "E" is displayed in the LCD Control Panel.

PROPER CARE OF YOUR CAMERA

* If there is dirt on the lens or Distance Measuring Windows, do not touch directly with your fingers. Use a blower to blow the dust away, or wipe the surface gently with a soft cloth.

* Camera malfunction can be caused by shock, humidity, salt etc. After using the camera at the beach or places where there are chemicals, wipe it particularly carefully.

* Take care not to expose the camera to sudden changes in temperature, as they may cause malfunction.

* Do not expose the camera for a long period of time in extremely high temperatures, such as in your car or on the beach, as this may cause malfunction.

* When using a tripod, do not try to force a long screw into the socket. (The screw length should be less than 5.7 mm.)

* Do not place the camera near equipment that has strong magnetism such as television or radio.

* Remove the batteries before storing the camera, and keep the camera in a place that is free of dust and humidity.

* Avoid keeping the camera in a closet etc. where the camera may be affected by mothballs, insecticides, etc.

MAJOR SPECIFICATIONS

Type: 35 mm lens shutter type with automatic focusing

Lens: 35 mm F2.8 Rikenon lens, 5 elements, 5 groups

Focusing: Automatic focusing with pre-focus facility.

Distance measuring (shooting) range: 0.8m (2.6 ft) --co.

Distance less than 0.8m (2.6 ft): out-of-focus warning ~ blinks, Shutter:

Programmed AE type electronic shutter, 2 - 1/500 sec. Self-Timer:

Built-in electronic type with sight and sound. Operating delay of approx. 10 sec.

Viewfinder: Albada type with bright-frame viewfinder (with parallax correction marks).

Magnification 0.44X, Field of view 84%.

Viewfinder Information: Field of View Frame, Parallax Correction Marks, Auto-Focus Frame, Zone Marks
Exposure Adjustment With SPD photocell. Exposure coupling range EV2 ~ EV17 (ISO 100)

Exposure adjustment system: +2

Film Speed Range: ISO 25 ~ ISO 1600 (in 1/3 steps). Compatible with the DX-code system

Film Advance/Rewind: By a built-in motor. Automatic 1st frame setting. Automatic film reverse at the end of film

Film Loading: RICOH Auto-Load system

Exposure Counter: Additive, counts down during film reverse

LCD Display: Film loaded, Film advance, Film taken up onto film take-up spool, Exposure counter, Film reverse and reverse completion, DX film, Exposure compensation, Number of exposure of film (When DX film is used), Battery loaded, Battery low warning, Lens shield open/close

Built-in Flash: Automatic turn on electronic flash in dim light

Guide Number: 12 (ISO 100 m.). Exposure adjustment through flashmatic system

Interval Between Flashes: About 6 seconds

Number of Shots Possible: With new Alkaline batteries (under nominal temperature of 20°C)

Without using the flash unit: more than 100 rolls of 24 exp. film

When using the flash unit repeatedly: more than 10 rolls of 24 exp. film

Power Source: 2 penlight Alkaline batteries or 2 penlight Manganese batteries
(Nickel Cadmium batteries cannot be used)

Dimensions: 128 mm (L) x 70 mm (H) x 41 mm (D)

Weight: 290g (without batteries)

* Specifications and appearance of this camera are subject to change without notice.