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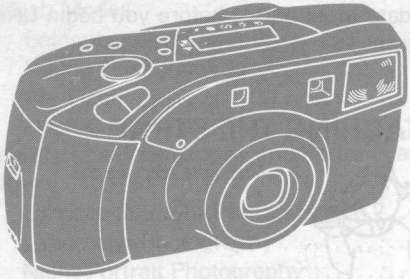
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RIVA ZOOM 90EX
FREEDOM ZOOM 90EX

E INSTRUCTION MANUAL



MINOLTA

Congratulations on your purchase of the Minolta Riva/Freedom Zoom 90EX. This manual provides you with short explanations of each function, plus all the information you'll need to understand and operate this camera properly. To begin taking pictures in the easiest way possible, read **Getting Started**. Later, when you're ready to learn how to use the camera's other buttons and functions and improve your pictures, move along to **Advanced Operation**.

If your camera is a Quartz Data Back model, its data must be set before you begin taking pictures (see p.32).

ATTACHING THE STRAP



Attach the strap like this.

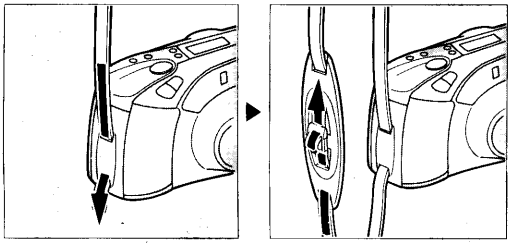


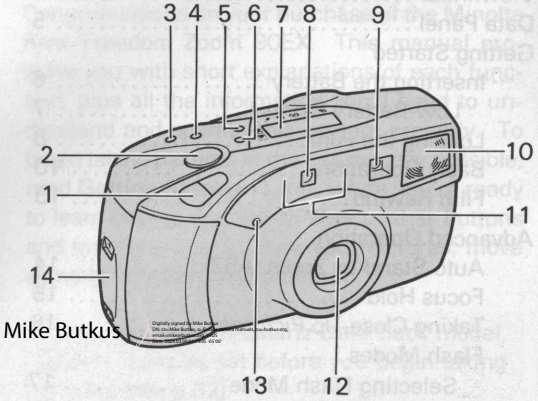
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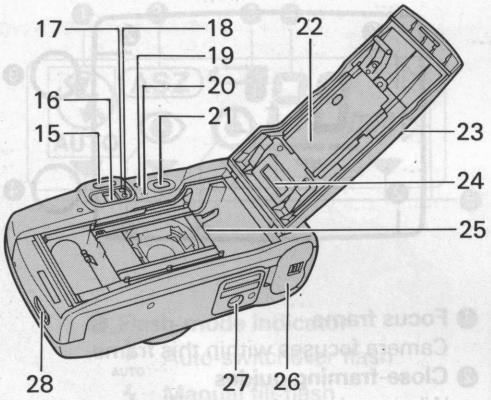
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NAMES OF PARTS



Mike Butkus

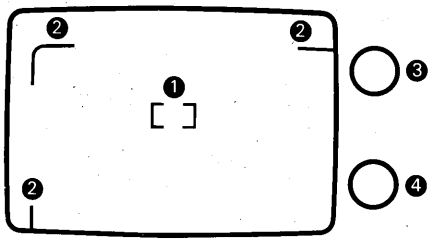
1. Zoom button
2. Shutter-release button
3. Pre-flash button
4. Flash-mode button
5. Operating-mode button
6. Landscape/night-portrait button
7. Data panel
8. Autoexposure meter-cell window*
9. Viewfinder window*
10. Flash
11. Autofocus windows*
12. Lens*
13. Self-timer/remote-control lamp
14. Strap eyelet
15. Eyepiece sensor*



16. Viewfinder eyepiece*
17. Focus lamp
18. Flash lamp
19. ASZ button
20. Manual-rewind button
21. Power button
22. Pressure plate*
23. Back cover
24. Film window
25. DX contacts*
26. Battery cover
27. Tripod socket
28. Back-cover release

* Do not touch

VIEWFINDER



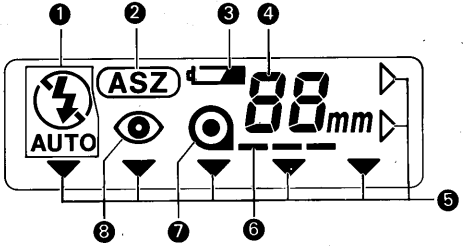
❶ **Focus frame**
Camera focuses within this frame.

❷ **Close-framing guides**
When using tele zoom positions 60mm - 90mm and camera-to-subject distances less than 1.4m, the picture should be composed within this frame.

❸ **Focus lamp:** Activated when shutter-release button is pressed partway down.
Glowing: Focus and exposure settings are locked.
Blinking: Subject is too close.

❹ **Flash lamp:** Activated by the eyepiece sensor and when shutter-release button is pressed partway down.
Off: Flash is not needed.
Glowing: Flash will fire with next picture.
Blinking slowly: Camera-shake warning.
Blinking quickly: Flash is charging.
Blinking at varying intervals: Pre-flash will fire.

DATA PANEL



❶ **Flash-mode indicator**
AUTO : Auto-switchover flash
: Manual fill-flash
: Flash cancel

❷ **ASZ indicator**

❸ **Low-battery symbol**

❹ **Frame counter**

❺ **Mode pointers**

❻ **Film-transport signals**

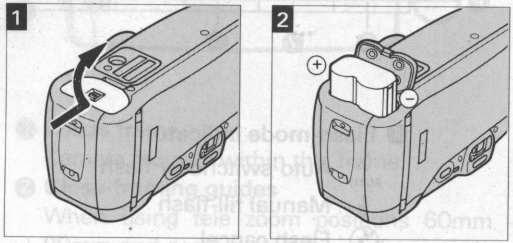
❼ **Film-cartridge mark**

❽ **Pre-flash indicator**

INSERTING THE BATTERY



Your camera uses a 6-volt lithium battery (CR-P2 or DL223A) that supplies power for all camera operations.



1 Open the battery cover by sliding the battery-cover lock.

2 Insert the battery with the +/– end first, then snap the cover closed.

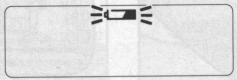
Battery Cautions

- Read and follow all warnings and instructions supplied by the battery manufacturer.
- Keep batteries away from children.
- Do not attempt to disassemble, recharge, or short out the battery, or subject it to high temperatures or fire.

Low-Battery Symbol



If the blinking low-battery symbol appears in the data panel with the other indicators, you can still use the camera, but the battery will have to be replaced soon.



If the blinking low battery symbol appears alone, you cannot use the camera until you replace the battery.

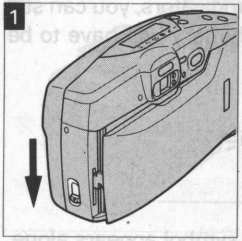
Auto Power Off

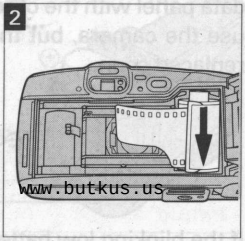
To save power, your camera automatically turns itself off if not operated for more than three minutes.

LOADING THE FILM



You should only use DX-coded, 35mm film with ISO ratings 25 to 3200.



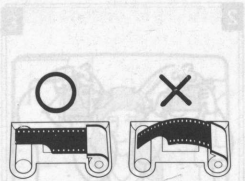


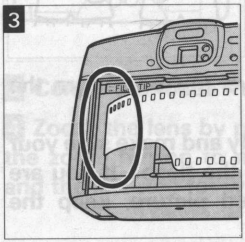
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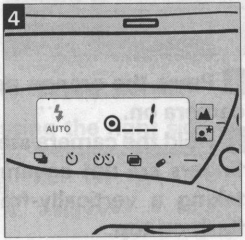
1 Open the back cover by sliding the back-cover release down.

2 Place the film cartridge, bottom first, into the film chamber as shown.

- Polaroid instant 35mm films cannot be used.
- Always load your film in the shade or at least away from direct sunlight.





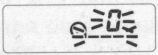


3 Lay the film flat between the guide rails and extend the film to the "FILM TIP" mark.

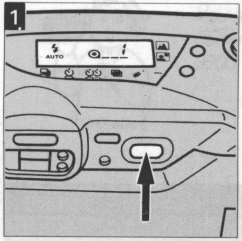
- If the film extends too far, gently push the excess back into the cartridge.

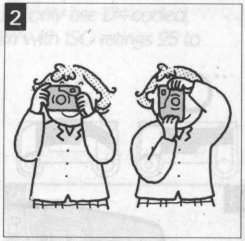
4 Snap the back cover closed.

The film automatically advances to the first frame and 1 appears in the data panel.



If 0 blinks in the data panel, the film was incorrectly loaded. Open the back cover and re-load the film.

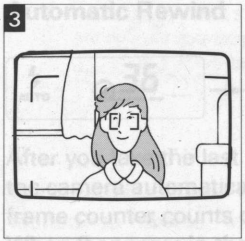


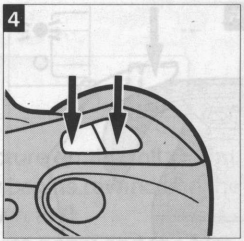


1 Press the orange power button to turn the camera on.

2 Hold the camera steady and make sure your fingers are not covering the flash. If you are taking a vertically-framed picture, keep the flash on top.





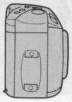


3 Center the focus frame on your subject.

4 Zoom the lens by pressing the right side of the zoom button to move towards telephoto and the left side for wide.

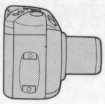


38mm

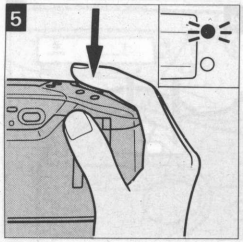




90mm



The focal length appears in the data panel while the zoom button is pressed, and is replaced by the frame counter afterwards.



5 Press the shutter-release button partway down so that the focus lamp glows and then all-the-way down to take the picture.
The film automatically advances to the next frame.

Always press the shutter-release button with a slow, steady squeeze--never a quick jab.

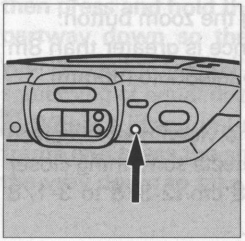
Automatic Rewind



After you take the last picture on the roll of film, the camera automatically begins rewind and the frame counter counts down to **0**.
When 0 appears in the data panel and the film-cartridge mark blinks, open the back cover and remove the film.

Manual Rewind

If you don't want to take the whole roll of pictures, you can rewind the film manually.



1. Press the manual-film-rewind button using a pen or similar object.

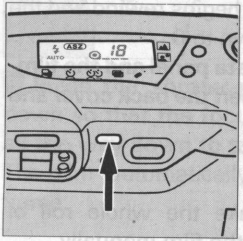
2. When 0 and the blinking film-cartridge mark appear in the data panel, open the back and take out the film.

If 0 doesn't appear in the data panel after the motor stops running, check the battery level, you may have to change the battery.

AUTO STAND-BY ZOOM (ASZ)



ASZ sets a zoom position the moment you look through the viewfinder.

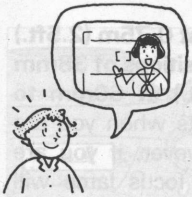


Press the ASZ button to select or cancel ASZ. When it is selected, "ASZ" appears in the data panel.

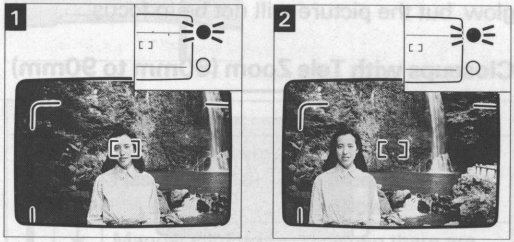
- After ASZ is activated, you can change the zoom position by pressing the zoom button.
- When the subject distance is greater than 8m (26ft.), zoom will be set to telephoto (90mm).

A sensor located above the viewfinder eyepiece activates zoom when it detects something closer than approximately 6 to 8 cm (2-3/8 to 3-1/8 in.).

FOCUS HOLD



Hold focus on your subject when you don't want it in the center of the picture.



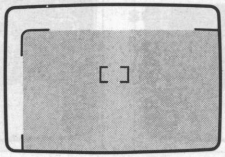
1 Center the focus frame on your subject, then press and hold the shutter-release button partway down so the focus lamp glows. If your subject is behind glass, use focus hold on something of equal distance from the camera.

2 Without lifting your finger, recompose the frame and press the shutter-release button all-the-way down to take the picture.

TAKING CLOSE-UP PICTURES

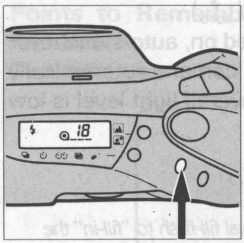
Make sure that you are at least 0.75m (2.5ft.) from your subject at zoom positions of 38mm to 55mm and 0.90m (3.0ft.) at 60mm to 90mm. The focus lamp blinks when you are too close to the subject, however, if you are closer than 0.4m (1.3ft), the focus lamp will glow, but the picture will not be in focus.

Closeups with Tele Zoom (60mm to 90mm)



When you are using tele zoom positions from 60mm to 90mm and your subject is closer than 1.4m (4.6ft.), compose the picture within the close-framing guides.

SELECTING FLASH MODE



Pressing the flash-mode button successively changes the flash modes in the order shown below.

Flash Mode		When to Use
AUTO	Auto-Switchover Flash (see p.18)	In all situations, except those listed below
	Manual Fill-Flash (see p.18)	When there are shadows on your subject's face
	Flash Cancel (see p.21)	With twilight scenes and inside museums

The indicator of the selected flash mode appears in the data panel.

Auto-Switchover Flash($\overset{\text{AUTO}}{\text{ϟ}}$)

When the camera is turned on, auto-switchover flash is initially set. The camera automatically fires the flash when the overall light level is low or the subject is backlit.

Manual Fill-Flash (ϟ)



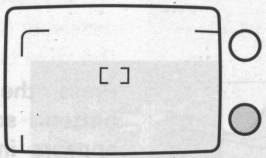
Use manual fill-flash to "fill-in" the shadows on your subject's face.



In this mode, the flash will fire everytime a picture is taken, regardless of the lighting conditions.

Points to Remember When Taking Flash Pictures:

1. Flash Lamp



If the flash lamp is blinking rapidly, the flash is charging. Wait until it glows steadily before taking the picture. This indicates that the flash is charged and will fire with the next shutter release. Charging takes approximately 4 seconds.

2. Flash Range

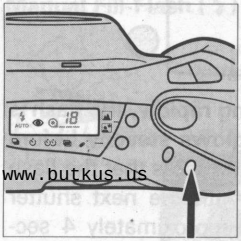
Make sure your camera-to-subject distance is within the flash range.

	Flash Range	
	ISO 100	ISO 400
38mm	0.75m to 6.0m (2.5 ft. to 19.7 ft.)	0.75m to 12.0m (2.5 ft. to 39.4 ft.)
90mm	0.90m to 3.3m (3 ft. to 10.8 ft.)	0.90m to 6.6m (3 ft. to 21.7 ft.)

PRE-FLASH(◉)

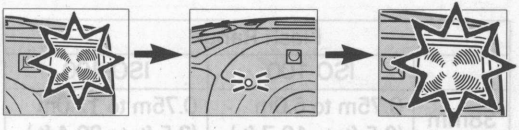


Reduce red-eye by using pre-flash!



Press the pre-flash button so that ◉ appears in the data panel. When the flash is charged, the flash lamp will blink at varying intervals indicating it is o.k. to take the picture.

Warn the people you are photographing that the flash will fire a small burst before the picture is taken.



When you press the shutter-release button all-the-way down, first, the pre-flash burst fires, then the self-timer/remote-control lamp blinks until the main flash fires with the shutter release.

FLASH CANCEL(⚡)

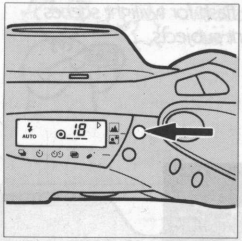


Don't use flash for twilight scenes and distant subjects.



Flash should be canceled when you are photographing subjects like sunsets or city skylines at night which do not include people. When your subjects are far away, landscape mode should also be selected (see p.23). If the scene includes people that you want to photograph, use night-portrait mode (see p.24) When the flash is canceled, shutter speeds are slower and sometimes the flash lamp will blink slowly, so to avoid blurry pictures, use a tripod.

LANDSCAPE/NIGHT-PORTRAIT BUTTON



Each time the landscape/night-portrait button is pressed, the modes change successively as shown in the table below.

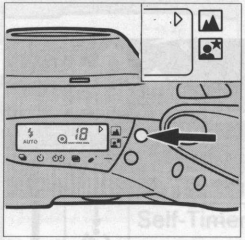
Mode		When to Use
Off →	Landscape	When photographing distant subjects through a window
↓	Night Portrait	When your subject is placed in front of a night scene
↑		

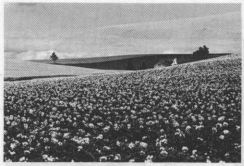
- The mode pointer appears in the data panel next to the mark of the selected mode. If no mode is selected, it does not appear.
- These modes can be used at the same time as the operating modes.

LANDSCAPE PHOTOGRAPHY ( )



If you're photographing distant subjects through a window, use landscape mode to set focus at infinity.





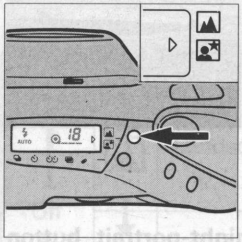
Press the landscape/night-portrait button until the mode pointer appears next to the landscape mark. If you are taking pictures at night, select flash canceland use a tripod.

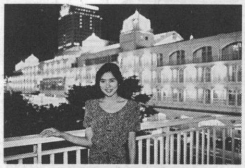
After you press the shutter-release button all-the-way down to take the picture, landscape mode is automatically canceled.

NIGHT-PORTRAIT PHOTOGRAPHY ( )



When you're posing someone in front of a night scene, use night-portrait mode.



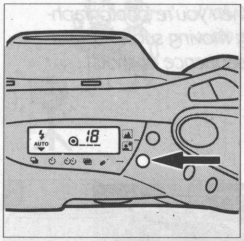


Press the landscape/night-portrait button until the mode pointer appears next to the night-portrait mark. Auto-switchover flash is automatically selected. If a bright object is near the camera, the flash may not fire and the flash lamp will not blink to indicate so. Therefore, in cases such as this, select manual fill-flash.

In this mode, shutter speeds are slow; please use a tripod and warn your subjects to remain still.

After you press the shutter-release button all-the-way down to take the picture, night-portrait mode is canceled.

OPERATING-MODE BUTTON



Each time the operating-mode button is pressed, the modes change successively as shown in the table below.

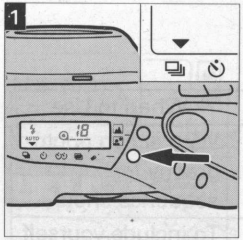
Operating Mode		When to Use
Off →	Continuous Drive	With action photography for sequence shots
↓	Self-Timer	To include yourself in group pictures
↓	Two-Shot Self-Timer	To include yourself in group pictures and have an extra surprise shot
↓	Double Exposure	For superimposing two pictures
↓ → Off	Remote Control	For releasing the shutter by remote control

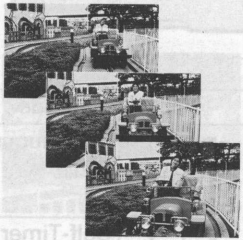
- The mode pointer appears in the data panel next to the mark of the selected mode. If no mode is selected, it does not appear.
- These modes can be used at the same time as landscape and night-portrait modes.

CONTINUOUS-DRIVE MODE ( )



When you're photographing moving subjects, take a sequence of shots.





1 Press the operating-mode button until the mode pointer appears in the data panel above the continuous-drive mark.

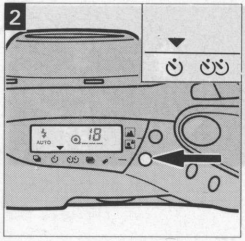
2 When you're ready to take pictures, press the shutter-release button all-the-way down and hold. The shutter will continue to release as long as the shutter-release button is held down. When taking flash pictures, the shutter will release after the flash has charged.

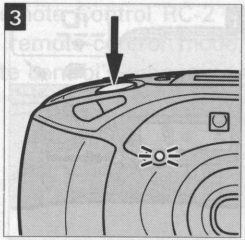
This mode remains selected until the camera is turned off.

SELF-TIMER PHOTOGRAPHY (,)



Include yourself in the picture with self-timer.





1 Set up the picture.

2 Press the operating-mode button until the mode pointer appears in the data panel above the self-timer or two-shot self-timer mark.

3 When you're ready to take the picture, press the shutter-release button all-the-way down.

- The mode pointer and the red self-timer lamp blink to show that self-timer is operating.

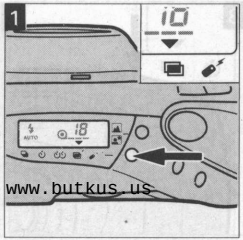
There is a 10 sec. delay for the first picture and a 4 sec. delay for the second in the two-shot mode.

Both self-timer modes are canceled after the selected number of pictures are taken. To stop self-timer operation before the picture is taken, turn off the camera.

DOUBLE-EXPOSURE MODE ( )



Superimpose two images with double exposure.





1 Press the operating-mode button until the mode pointer appears in the data panel above the double-exposure mark.

2 Press the shutter-release button all-the-way down to take the first picture.

- The mode pointer and film-transport mark blink to show that one picture has been taken. If the camera is turned off at this time, these will continue blinking when it is turned on again.

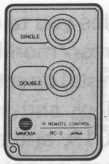
3 Recompose your picture and take the second shot.

After this, double-exposure mode is canceled.

If you have a QD back model, select "No imprinting" (see p.31).

For best results, use a dark background.

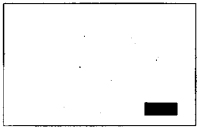
REMOTE-CONTROL MODE ( )



Optional accessory IR Remote Control RC-2 is required for the use of remote-control mode. Please refer to the remote control's manual for operating instructions.

FOR OWNERS OF THE QUARTZ DATA BACK MODEL

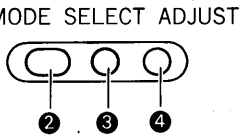
The data back enables you to record the date, in a choice of three year/month/day formats, or time (day/hour/minute) directly onto the film. It features a quartz clock and automatic calendar through the year 2019, and automatically controls the imprint exposure according to the camera's film-speed setting. With the camera held horizontally, the data is recorded onto the lower right portion of the picture; in the vertical format, imprinting occurs on the lower left portion of the picture.



The data back is powered by the camera's battery, therefore data must be set before you begin taking pictures.

Names of Parts

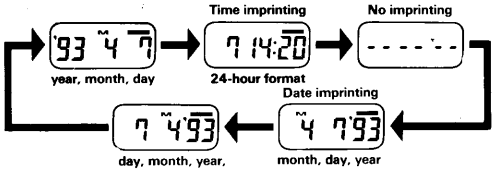




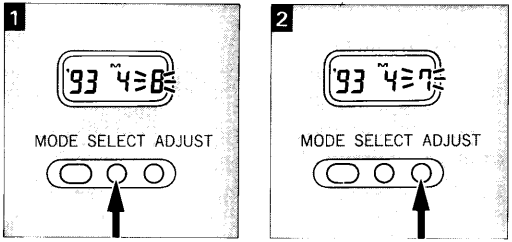
❶ Print indicator
❷ MODE button
❸ SELECT button
❹ ADJUST button

Mode Selection

Use the MODE button to change the data display as shown.



Setting Data



1 Use the SELECT button to move between different parts of the displayed data.

- With the date displayed, pressing the SELECT button in succession causes the settings for year, month, and then day to blink.
- In time mode, pressing the SELECT button successively causes the hour, minute, and then the colon to blink.

2 Press the ADJUST button to change the blinking display.

- In time mode, pressing the ADJUST button while the colon is blinking synchronizes the seconds counter to 00.

Data Imprinting

Press the MODE button to select the desired data type, then take the picture.

Following exposure, the print indicator blinks in the data panel for approximately two seconds to confirm imprinting.

- The imprinted data may be difficult to read if the subject area over which it is superimposed is bright or non-uniform.
- Legibility of the imprinted data may vary somewhat with film type.

Care and Storage

This unit is designed for use between 40 and 0°C (104 and 32°F). At temperatures above or below this range, LCD and imprinted date may become difficult to read. Even higher temperatures may cause the LCD to temporarily blacken.

CARE AND STORAGE

- If the lens becomes dirty, clean it gently with a lens brush. If necessary, moisten a sheet of lens tissue with one drop of lens- cleaning fluid and gently wipe the lens. Never touch the lens surface with your fingers.
- Never use alcohol or chemical solvents on the camera body. If it is dirty, wipe it gently with a soft, clean, dry cloth.
- Never subject the camera to shock, high heat, or humidity. Be particularly careful not to leave it in the glove compartment or other places in motor vehicles where it may be subjected to high temperatures.
- Entry of sand, salt, or other grit may cause costly or irreparable damage to the camera. Use extra care when taking pictures at the beach.
- This camera is designed for use between -10 and 40°C (14 to 104°F).
- Using the camera at very low temperatures impairs its performance. In cold weather, carry the camera inside your coat to keep it warm. Do not transfer the camera directly from an extremely cold to warm area, since condensation may form inside and prevent normal operation.
- Do not let the camera get wet. Water seepage could result in costly or irreparable damage to internal parts.

- When not in use, keep the camera in a cool; dry place away from dust and chemicals. For extended storage we recommend that you place the camera in an airtight container with a drying agent such as silica gel.
- This camera contains high-voltage circuits. Do not attempt to disassemble or repair it yourself.
- If you have questions about your camera, contact your local camera dealer. For more information write to the Minolta distributor or subsidiary in your area (addresses listed at the back of this manual).
- To assure prompt service, please contact an authorized Minolta Service Center before shipping your camera for repairs.

TECHNICAL DETAILS

Lens: 35-90mm f/3.5-7.7 power zoom lens; 4 elements in 4 groups; max. magnification: 1/10X (for subjects at 0.9m with 90mm lens)
Metering Range: 38mm: EV4 and EV6 to EV17; 90mm: EV6 and EV8 to EV17; in flash-cancel and night-portrait modes, shutter speed is set up to 1 sec.
Battery Performance: Approximately 22 rolls (based on Minolta's standard test method using 24 exposure film with flash 50% of exposures)
Viewfinder
Magnification: 38mm: 0.45x; 90mm: 0.95x
Image Area: 85% coverage (for subject at 3m/9.8ft.)
Dimensions: 149.5(W) x 76.5(H) x 60.5mm(D) (5-7/8 x 3 x 2-3/8 in.)
Weight: 345g (12-1/8oz.)
QD model: 350g (12-3/8oz.)

Specifications are based on the latest information available at the time of printing and are subject to change without notice.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.