

POSTED 6-27-'04

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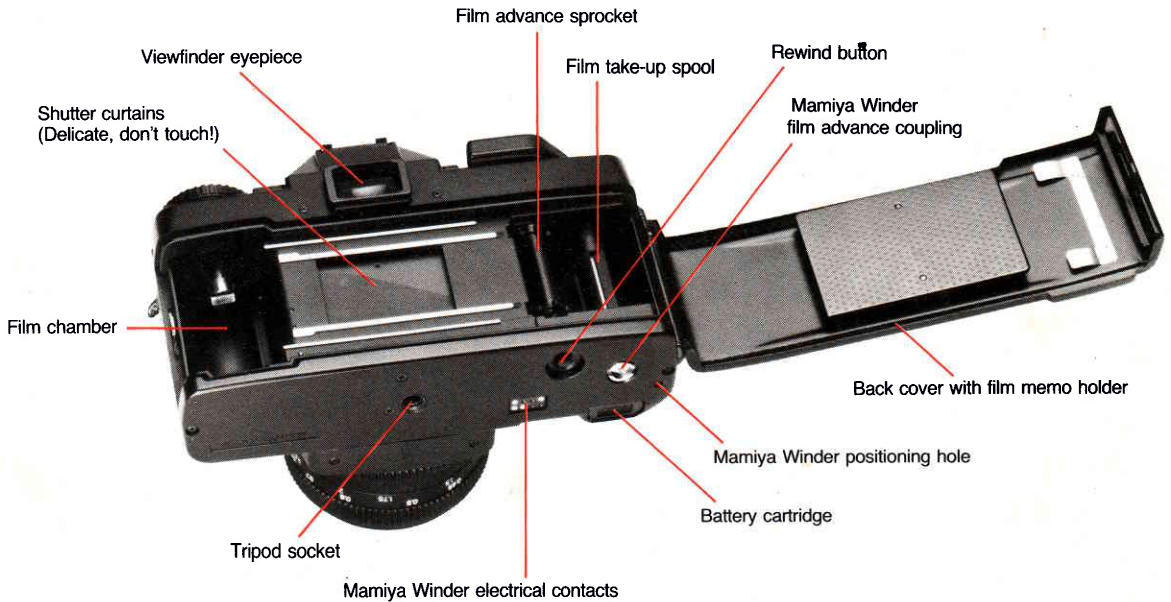
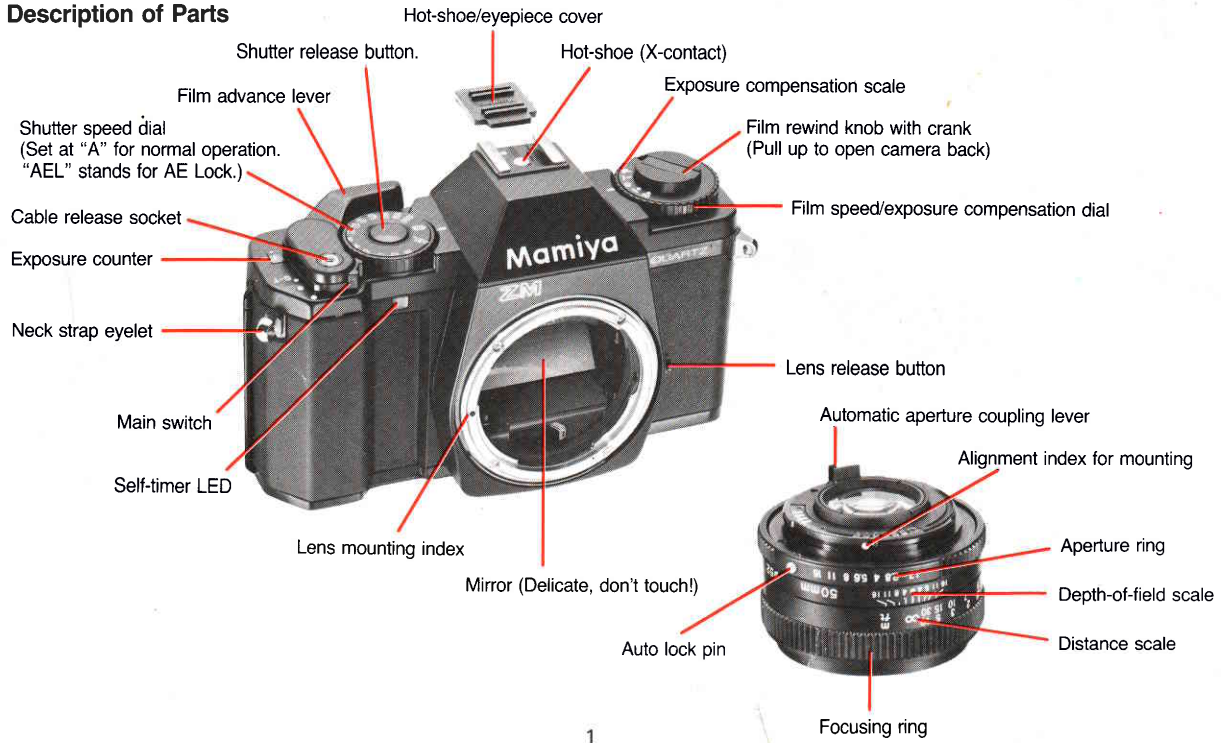
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# Mamiya ZM QUARTZ

Instructions

Mamiya  
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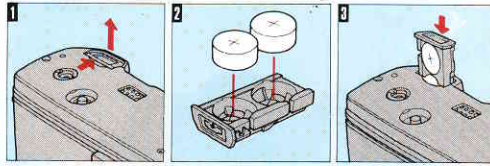
## Description of Parts



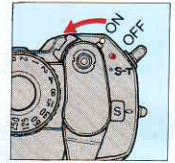
# Short Course of Operation

## 1. Insert the batteries.

Take out the battery cartridge and insert two batteries into the cartridge. Replace the cartridge.

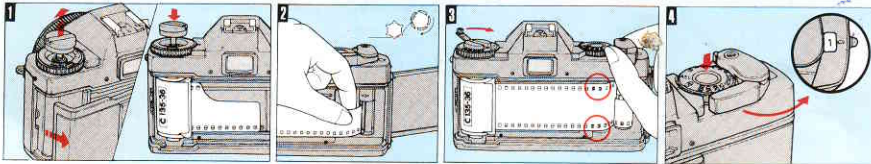


## 2. Turn the main switch to "ON".



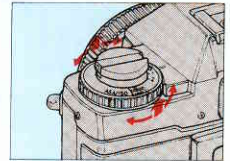
## 3. Load the film.

- (1) Open the back cover by pulling up the rewind knob. Load a film cartridge into the film chamber.
- (2) Insert the end of the film into the slot of the take-up spool.
- (3) Advance the film until the film perforations are engaged with the sprocket teeth.
- (4) Close the back cover tightly and make two blank exposures until the exposure counter stops at "1".

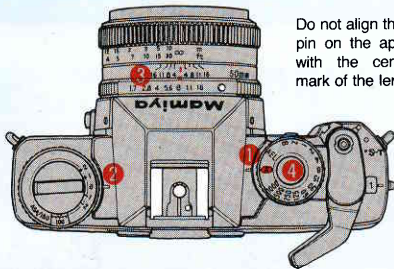


## 4. Set the film speed.

Lift up the film speed dial and rotate it until the number in the window matches the film speed of the film being used.



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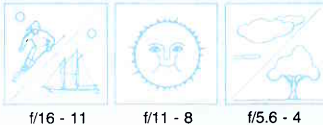


Do not align the auto lock pin on the aperture ring with the central index mark of the lens.

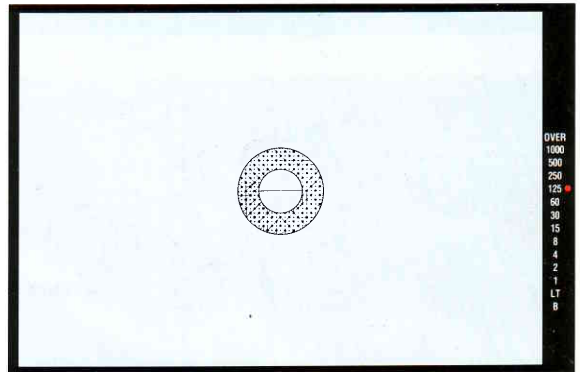
## 5. Set the camera in AE mode.

- (1) Set the shutter speed dial to "A".
- (2) Set the exposure compensation dial to the "0".
- (3) Set the aperture in accordance with the light conditions.

Recommended apertures\* (with ASA/ISO 100 film)



- (4) When the shutter release button is lightly pressed, an LED lights inside the viewfinder to indicate the correct shutter speed automatically selected by the camera in accordance with the aperture setting. If an LED flashes or buzzer sounds, see page 10. You can select the shutter speed manually for special effects. For details of the manual mode, see page 11.



## 6. Compose and focus on the subject.

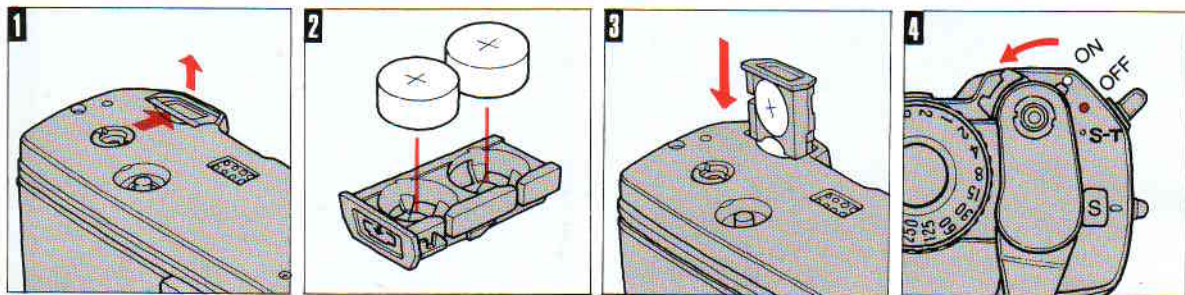
Then press the shutter release button gently. Wind the film advance lever for the next shot.

## 7. When the last exposure has been made ...

Press in the rewind button. Fold the crank out and rotate the rewind knob in the direction of the arrow. See page 13. Never open the back cover until the film is rewound back into the cartridge.

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# Loading the Batteries



1. Push the battery cartridge in the direction of the arrow. The cartridge will pop up for easy removal.

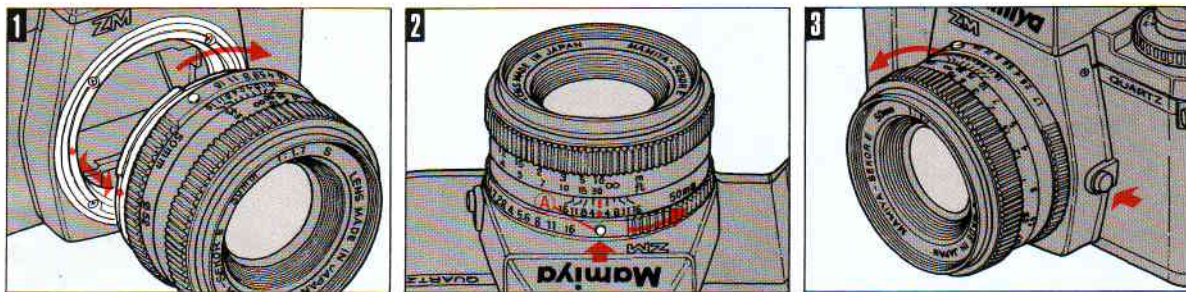
2. Load the two batteries that come with the camera, making sure that plus (+) terminals are facing up.

4. Turn the main switch to "ON". This switch should be left in the "OFF" position when the camera is not in use.

3. Insert the cartridge as shown in the illustration. Then press down until the cartridge locks into place.

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# Lens Mounting/Removal



Match the red dots on the lens and camera body, then rotate the lens in the direction of the arrow until it clicks into position.

If the auto lock pin (A) is set at the central index mark, the aperture ring cannot be turned. In this case, rotate the aperture ring away from the index mark while depressing the auto lock pin.

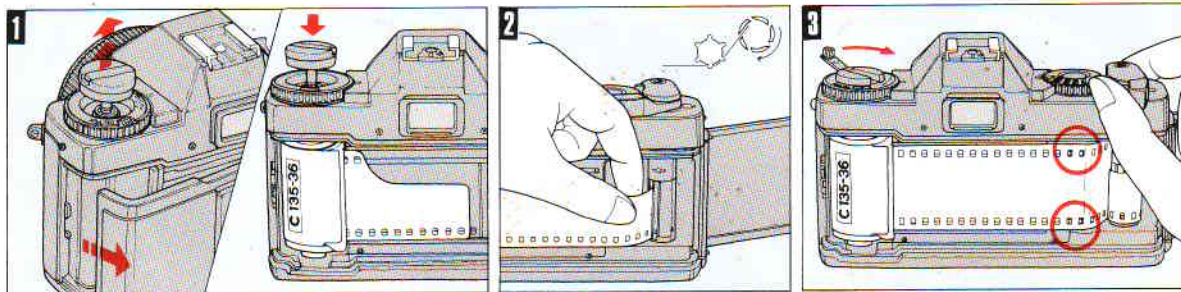
- The auto lock pin should be set to the central index mark when the lens is mounted on a camera like the Mamiya ZE-X which is capable of shutter speed priority AE mode.

## Removing the lens

Press the lens release button and rotate the lens to the left until it stops.

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# Loading the Film



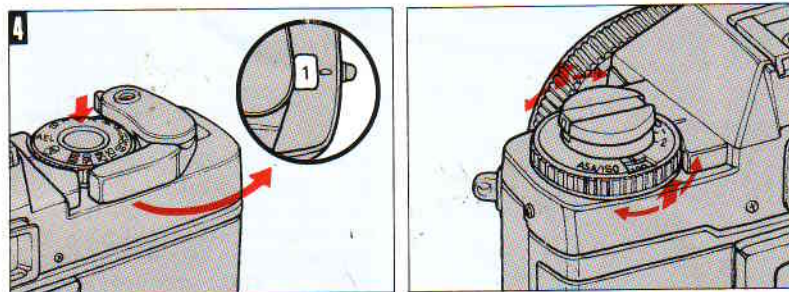
**1.** Open the back cover of the camera by pulling up on the rewind knob. (Avoid direct sunlight when loading or unloading film. Stand in the shade or cast a shadow with your own body.) Load a film cartridge into the film chamber of the camera and return the rewind knob to its original position to hold the film in place.

**2.** Insert the end of the film into the slot of the film take-up spool.

**3.** First advance the film by operating the film advance lever; then rotate the rewind knob in the direction of the arrow to take the slack out of the film. It is important to make sure that the both the upper and lower teeth of the sprocket are engaged in the perforations of the film.

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# Setting the Film Speed



**4.** Close the back cover of the camera and advance the film by alternately operating the film advance lever and releasing the shutter until the numeral "1" appears in the exposure counter. While performing this operation, make sure that the film is advancing properly by checking if the rewind knob rotates when the film advance lever is operated.

Set the film speed of the film being used by lifting up the outer rim of the film speed dial and rotating it until the correct ASA/ISO value appears in the window. (The film speed is indicated on the film cartridge or box.)

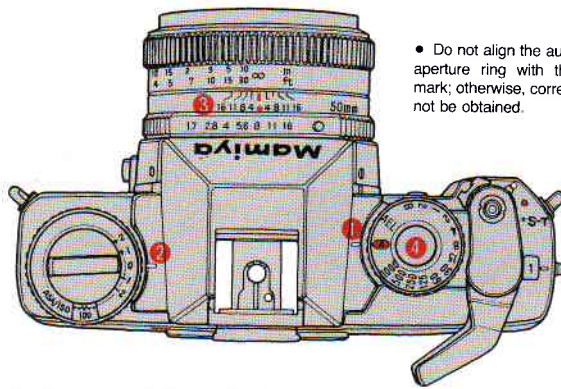
• If, when setting the film speed the exposure compensation scale accidentally shifts from the "0" position, it should be returned to the "0" position.

It is convenient to remove the end of the film box and insert it into the memo holder on the back of the camera. Intermediate film speeds can be set as follows when necessary.

ASA/ISO 17 25 50 100 200 400 800 1600 3200  
DIN 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

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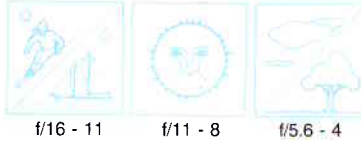
# AE (Automatic Exposure) Photography



- Do not align the auto lock pin on the aperture ring with the central index mark; otherwise, correct exposure cannot be obtained.

1. Set the shutter speed dial to "A" for AE (automatic exposure) operation.
2. Set the exposure compensation dial to the "0" mark. (How to use exposure compensation is explained later.)
3. Set the aperture after selecting in accordance with the light conditions as shown in the illustration.

Recommended apertures  
(with ASA/ISO 100 film)



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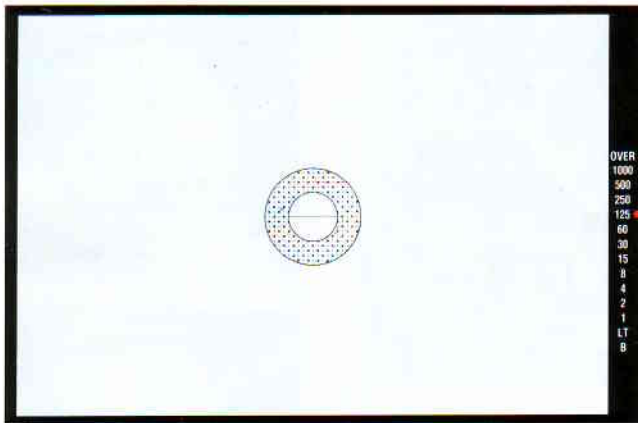
4. When the shutter release button is lightly pressed, an LED lights inside the viewfinder to indicate the correct shutter speed automatically selected by the camera in accordance with the aperture setting.

- The "OVER" LED flashes and the buzzer sounds at the rate of 8 times per second to indicate overexposure. To obtain the correct exposure, turn the aperture ring until the LED stops flashing.

- The "LT" LED flashes and the buzzer sounds at the rate of 8 times per second to indicate underexposure. Again, turn the aperture ring until the LED stops flashing.

- A lit "LT" LED also indicates that the shutter speed is set between more than 1 second and 4 seconds. The use of a flash unit is recommended in conditions so dark that the "LT" LED remains lit or flashes.

- If any of the shutter speed LEDs flash slowly (2 times per second) and the buzzer sounds, this is an indication that the batteries are low and should be replaced.



- Keeping the shutter release button pressed after the exposure has been completed causes the LED display to continue indicating the same shutter speeds to permit easy checking of whether or not the exposure was correct.

### • Slow Shutter Speed Warning

When the shutter speed automatically selected by the camera in the "A" (Auto) and "AEL" (AE Lock) modes is too slow for hand-held shooting, a buzzer will sound at the rate of 1 time per second warning you to set the lens to a wider

aperture (giving you a faster shutter speed), or to mount the camera on a sturdy tripod to avoid the possibility of blurred pictures.

The safe slowest shutter speed for hand-held shooting varies with the focal length of the lens in use. The slow shutter speed warning system automatically adjust for this variation when you change lenses.

### It is also possible to take photographs with preset shutter speeds

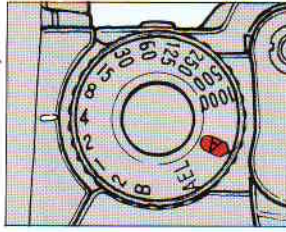
1. Set the shutter speed dial to the desired speed.

2. Light pressure on the shutter release button will cause an LED to light and indicate the shutter speed selected. If the lens aperture is not appropriate for the degree of brightness, a second LED will flash (4 times per second) to indicate another speed.

3. The correct exposure can be obtained by turning the aperture ring until the

flashing LED and the steady LED coincide.

- When the shutter speed setting is appropriate for the aperture, a single LED will light (but not flash).
- With manual shutter speed settings, the LED remains lit for 10 seconds after the shutter release button is pushed lightly and then released. If the shutter release button is released after the exposure is completed, the LED will go out even before ten seconds have elapsed. If light pressure is maintained on the shutter release button for more than ten seconds, the LED will disappear as soon as the button is released.



Manual shutter speeds for the ZM work independently of the metering system, allowing for maximum creativity in exposure control. During manual operation, set the shutter speed and lens aperture to accord with your specific exposure requirements.

Light pressure on the shutter release button will cause an LED to flash at the rate of 4 times per second to indicate the appropriate shutter speed for the aperture setting. The exposure should be adjusted on this basis.



## Holding the Camera

Before taking a photograph, the subject must be brought into sharp focus by rotating the focusing ring. Correct focus can be checked by any of the following conditions:

- (1) When lines in the central split-image rangefinder appears straight.
- (2) When the part of the image in the microprism ring appears sharply defined.
- (3) When the part of the image in the matte field is clear and sharp.

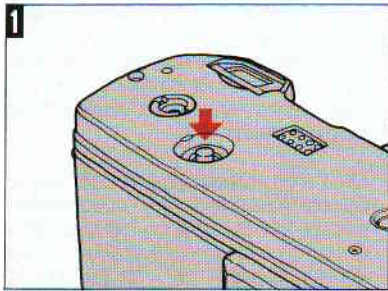


Press the elbow firmly against the side of your body for a steadier hold, whether using the camera horizontally or vertically. It is also recommended that you press the camera against your forehead for extra steadiness.

Most blurred photographs are due to camera shake caused by not holding the camera steady. Improve the sharpness of your pictures by holding your camera steady. Depress the release button gently with a squeezing motion, without jerking.

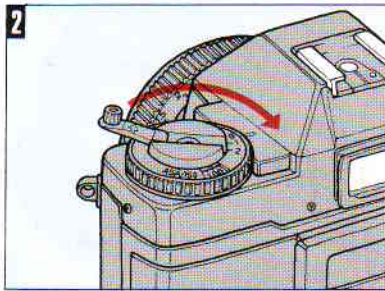


# Rewinding the Film

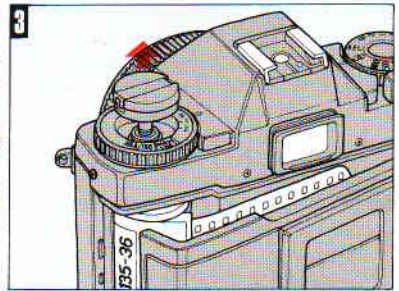


When the last exposure has been made, the film must be rewound back into the cartridge before removing it from the camera. Never open the camera back until this has been done.

1. Press in the rewind button.



2. Fold the crank out from the rewind knob and rotate in the direction of the arrow.



3. When the rewind knob starts to turn lightly, pull up on the rewind knob to open the camera back and remove the film.

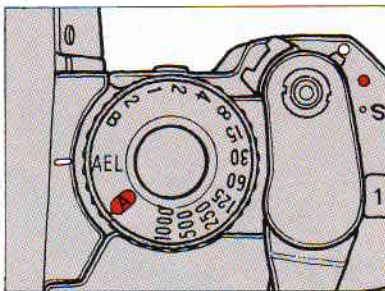
- When the film has been fully advanced, the film advance lever may stop halfway. Press the rewind button and rewind the film. Turn the film advance lever fully after the completion of rewinding and it will return to its normal position.

**Additional Features**  
ZM QUARTZ

# Exposure Compensation

The center-weighted exposure metering system of the ZM will give you the best possible exposures in most of all shooting situations. However, when the subject is situated against a bright light source such as snow, against a window, in the shade of a backlit tree, or when the subject is spotlighted on stage against a dark background, some exposure increase or decrease may be required to bring out the details of the subject. The exposure compensation may be accomplished by either of two methods described below.

## (1) AE Lock



The Mamiya ZM is equipped with a special device for obtaining correct exposure not only with backlighting, but any other difficult lighting situation as well. And this device is called the AE Lock. Set the shutter speed dial to the "AEL" (AE Lock) position.

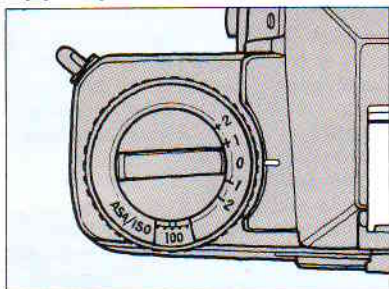
When the shutter release button is lightly pressed the camera locks in, or memorizes, the exposure reading until the finger is removed from the release button.

To use the AE Lock function, move close to the subject until the desired part of the subject covers the center area of the viewfinder and lightly press the shutter release button until the LED lights. Hold the shutter release in this position and move back to the place from where you want to photograph, compose the picture and press the release button to make the exposure. The subject will be correctly exposed even under difficult light conditions.

If it is not possible to move close to the subject, determine the exposure using the palm of the hand at a distance of about 12" (30cm), or point the camera so that sky or other bright areas are not included in the viewfinder; then lock in the exposure value and make the exposure as described above.

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## (2) Exposure Compensation Dial



Use of the exposure compensation dial is the most effective method of exposure compensation when you cannot approach your subject closely, such as a person standing against the snow across the river or spotlighted on stage, etc.

The dial surrounds the film rewind knob permits up to  $\pm 2EV$  (2 f/stops) compensation. When compensation is required it may be set for exposure increase at +1 +2 or exposure decrease at -1 -2 by rotating to the desired setting. In-between settings may also be used. The amount of increase or decrease required depends mainly on experience; in the beginning, it's a good idea to take same photo at two or three settings to be on the safe side.

Be sure to set the dial back to "0" when exposure compensation is not longer needed to avoid exposure failures.

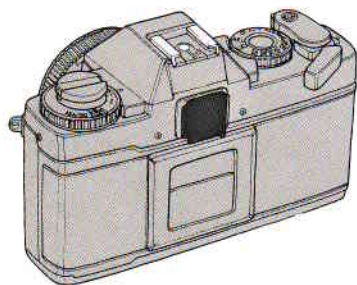
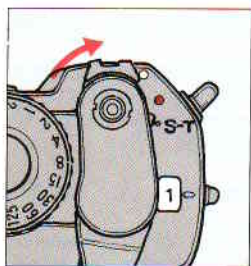
### Exposure increase (for backlit subject):

When the subject is situated against a bright background, exposure must be increased to compensate. Set the dial to +1 or +2 as required.

### Exposure decrease (for frontlit subjects):

When your subject is spotlighted against a dark background such as on stage, best results are obtained by decreasing the exposure. Set the dial to the appropriate -1 or -2 setting.

# Self-timer



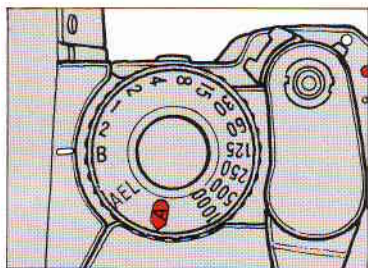
1. Set the main switch to "S-T" The film should be advanced either before or after this adjustment. The self-timer will not function unless the film is advanced.

2. The self-timer will start when the shutter release button is pressed, releasing the shutter after a period of approximately ten seconds. While the self-timer is in operation, an LED will flash and the buzzer will sound intermittently. The LED flashes twice a second for the first 8 seconds, changing to 4 times a second during the last 2 seconds as a warning that the shutter is about to be released.

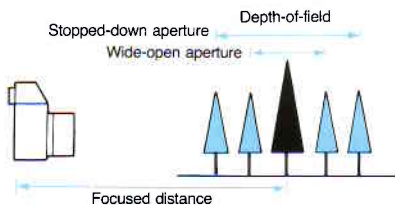
- Before shooting, cover the viewfinder eyepiece with the hot-shoe/eyepiece cover to prevent light from entering via the eyepiece. Failure to do so may cause the photograph to be incorrectly exposed as a result of extraneous light entering from the back.
- The self-timer can be halted even after the countdown has started by setting the main switch to "On" or "OFF".
- If the shutter release button is pushed again while the self-timer is operating, the shutter will be released after an interval of 10 seconds.
- The self-timer cannot be used when the shutter speed dial is set to "B".

# B (bulb) Exposure

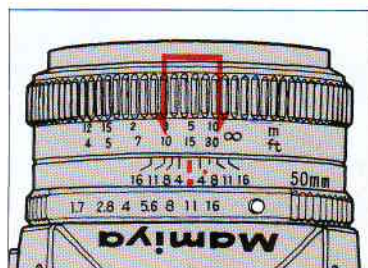
# Depth-of-Field



Set the shutter speed dial at the "B" (bulb) for exposures longer than 2 sec. At this position the shutter will remain open as long as the shutter release button is held down. The use of a cable release and tripod is recommended to prevent camera shake.



When the camera is focused on a subject, a certain distance in front and back of the subject is also in relatively sharp focus. This is called the depth-of-field and increases as the lens aperture is stopped down while it decreases as the lens is opened up to larger apertures. To render a background in sharp focus, or to allow snap-shooting without the bother of pinpoint focusing, the lens can be stopped down to increase the depth-of-focus. Opening up the lens aperture appropriately enables a subject to be rendered in sharp detail against a pur-



posely blurred background or foreground. The depth-of-field range can be determined using the depth-of-field scale of the camera lens. Once the desired aperture is selected, the corresponding figures on both sides of the center index mark indicate the depth-of-field for that aperture on the distance scale. For example, if the camera is focused at 15ft (5m) at an aperture of  $f/11$ , the range from approximately 10ft (3m) to 30ft (10m) will also be in sharp focus.

# Flash Photography



1. Clip-on type flash units (the Mamiyalite ZE or MZ 18R) are mounted directly on the hot shoe. For grip type units (the Mamiyalite MZ 36R), a sensor base must be attached to the hot shoe. A sync cord is not required.

2. Set the shutter speed dial to the "A" or "AEL" position.

3. The Mamiyalite will be fully charged a few seconds after the switch is turned on. If you maintain light pressure on the shutter release button while the flash unit is being charged, the LED display will shift from the shutter speed for natural light conditions to 1/60 sec. as soon as the flash is fully charged.

When the shutter speed dial is at a manual speed between 1/1000 sec. and 1/125 sec., the camera automatically synchronizes for flash at 1/60 sec. on charging. When the dial is set between 1/60 sec. and 2 sec., the shutter will be

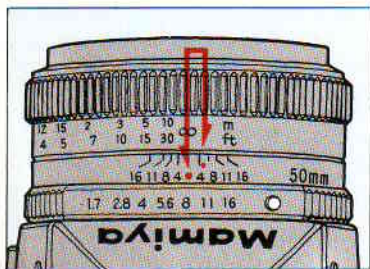
released at the selected speed. Light pressure on the shutter release button will cause an LED to appear at the shutter speed setting. When the flash is fully charged, an LED will start to flash at the "60" setting. (When the speed is set to 1/60 sec., the LED will light up without flashing.)

4. Set the lens to the aperture indicated by the flash unit and start taking photographs as explained in detail in the Mamiyalite instructions. The Mamiyalite is a series control type automatic electronic flash, so energy is saved at close distances. The remaining energy is stored in a capacitor until the flash is recharged, shortening recycle times and extending battery life.

- The Mamiyalite MZ 18R or MZ 36R will not flash if the switch on the flash unit is set to "MZ-AUTO". Use either the "AUTO" or "MANUAL" setting.

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# Infrared Photography



The red dot (or red line) to the right of the center index mark of the lens is the infrared mark. This mark is provided because focusing when using black and white infrared film differs than with ordinary films. Compensation must be applied as explained below.

1. First focus the camera as for normal photography; then read the distance indicated by the center index mark and move this value to the infrared mark position.

2. A red filter should also be used with infrared film so refer to the film instructions concerning exposure.

- There is no need for focus compensation when using color infrared films. Use the filters recommended in the film instructions.

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# Mamiya-Sekor

ZM QUARTZ

# E/EF Lenses

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Macro  
50mm f/3.5



Auto macro  
spacer ZE

135mm f/2.8



135mm f/3.5



200mm f/4



Zoom 80 - 200mm f/3.8



300mm f/4



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# Mamiya-Sekor E/EF Lenses

	Lens	Construction		Angle of view	Mini. aperture	Mini. focusing distance	Filter size	Lens hood	Weight
		Groups	Elements						
EF Series	35mm f/2.8	6	6	63°	22	1.5ft. or 0.4m	49mm	Screw-in	5.1oz. (145g)
	50mm f/1.4	6	7	47°	16	1.5ft. or 0.45m	49mm	Screw-in	7.1oz. (200g)
	50mm f/1.7	5	6	47°	16	1.5ft. or 0.45m	49mm	Screw-in	5.3oz. (150g)
	135mm f/2.8	4	5	18°	22	5ft. or 1.5m	52mm	Built-in	10.9oz. (310g)
E Series	28mm f/2.8	7	8	74°	22	1ft. or 0.3m	49mm	Screw-in	5.8oz. (165g)
	28mm f/3.5	5	5	74°	22	1ft. or 0.3m	49mm	Screw-in	4.9oz. (140g)
	35mm f/2.8	6	6	63°	22	1.5ft. or 0.4m	49mm	Screw-in	5.1oz. (145g)
	50mm f/1.4	6	7	47°	16	1.5ft. or 0.45m	49mm	Screw-in	7.1oz. (200g)
	50mm f/1.7 S	5	6	47°	16	1.5ft. or 0.45m	52mm	Screw-in	5.3oz. (150g)
	50mm f/2 S	4	6	47°	16	1.5ft. or 0.45m	52mm	Screw-in	5.1oz. (145g)
	Macro 50mm f/3.5	4	5	47°	22	0.75ft. or 0.22m	49mm	Screw-in	7.1oz. (200g)
	135mm f/2.8	4	5	18°	22	5ft. or 1.5m	52mm	Built-in	10.9oz. (310g)
	135mm f/3.5	4	4	18°	22	5ft. or 1.5m	49mm	Built-in	10.1oz. (285g)
	200mm f/4	5	5	12°	32	7ft. or 2m	52mm	Built-in	14.3oz. (405g)
	300mm f/4	4	5	8°	32	18ft. or 5m	77mm	Built-in	25.7oz. (730g)
	Zoom 28-50mm f/3.5-4.5	8	9	74°-47°	22	2ft. or 0.6m	55mm	Screw-in	10.2oz. (290g)
	Zoom 35-70mm f/3.5-4.5	6	7	63°-34°	22	1.75ft. or 0.5m	55mm	Screw-in	13.8oz. (390g)
	Zoom 35-105mm f/3.5-4.3	13	15	63°-23°	22	1.6m(27cm in macro)	55mm	Screw-in	15.9oz. (450g)
	Zoom 70-150mm f/3.8	9	12	34°-17°	32	3.5ft. or 1m	52mm	Built-in	17.5oz. (495g)
	Zoom 80-200mm f/3.8	10	14	30°-12°	32	4ft. or 1.3m	58mm	Screw-in	26.5oz. (750g)

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**System Accessories**  
**ZM<sub>QUARTZ</sub>**



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## Mamiyalite MZ 36R

This is a grip type series control automatic electronic flash unit. Its system of flash intensity adjustment permits a choice of 3 different flash aperture settings. In the manual mode, the flash intensity can be adjusted in five steps from 1/16 to full intensity. The flash can be set to the desired angle for bounce and close-up photography.

Guide number: 36 (ASA/ISO 100-m)

Angle of coverage: Vertical – 45°, horizontal – 60°

(Attaching the wide-angle diffuser provides coverage for a 28mm wide-angle lens.)

The flash can be rotated 90° upwards, 180° to the left and 150° to the right.

Batteries: 8 AA-size alkaline or Ni-Cd batteries

## Mamiyalite MZ 18R

The MZ 18R is a clip-on type electronic flash unit. If you set the lens aperture for flash according to the speed of the film in use, it is not necessary to adjust the aperture for each change in distance so long as the subject remains within the unit's effective flash range. Naturally, manual flash photography is also possible.

Guide number: 18 (ASA/ISO 100-m)

Angle of coverage: Vertical – 45°, horizontal – 60°

(Attaching the wide-angle diffuser provides coverage for a 28mm wide-angle lens.)

Batteries: 4 AA-size alkaline or Ni-Cd batteries

## Mamiyalite ZE

This is a clip-on type lightweight and compact electronic flash unit. It has 2 flash aperture settings and manual flash photography is also possible.

Guide number: 17 (ASA/ISO 100-m)

Angle of coverage: Vertical – 45°, horizontal – 60°

(Attaching the wide-angle diffuser provides coverage for a 28mm wide-angle lens.)

Batteries: 4 AA-size alkaline or Ni-Cd batteries

# Accessories

## Mamiya Winder ZE

Mounting the Mamiya Winder ZE on the camera eliminates the need to advance film manually. Photographic opportunities can be captured more easily because there is no need to take the eye away from the viewfinder for film advance. Single frame photography is easy by simply removing the finger from the shutter release after each shot.



Continuous sequence photography is possible at the rate of approximately 2 frames per second by merely holding down the shutter release button.

**Power source:** Four AA-size alkaline or rechargeable Ni-Cad batteries.

## Lens Hoods ZE

Mamiya lens hoods are an important accessory for getting the best possible performance from the camera lens because they minimize the entry of stray light which can cause internal reflection and lead to flare or ghost images. Always use the lens hood designed for the specific focal length of the lens being used.

## Filters

Mamiya filters are made of high-quality optical glass to maintain the high performance of the camera lens. They are available in the following five types: SY48 (Y2), SO56 (O2), SL39 (UV), YG, and SL-1B (skylight).

## Diopter Correction Lenses ZE

Far- and near-sighted people sometimes find it difficult to focus a camera due to the optical characteristics of the viewfinder system. This situation, however, can easily be remedied by using a diopter correction lens and adapter. These diopter correction lenses are available in six different strengths: +3, +2, +1, -1, -2 and -3. Before purchasing a diopter correction lens at your Mamiya dealer, be sure to actually try various strength diopter lenses and select the one that suits your eyesight.

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### 1 Rubber Eye-cup ZE with Adapter

This adapter is required for attaching the diopter correction lenses to the camera. The rubber eye-cup helps to prevent stray light entering the viewfinder while taking photographs.

To attach the diopter correction lens, first remove the mounting ring located inside the eye-cup by turning it counter-clockwise; then put the lens in place and replace the ring.

### 2 Magnifier ZE

The magnifier is a useful aid for critical focusing as required in copy work, close-up photography, and similar applications. The size of the image is doubled and only the center part is visible for more accurate work. The magnifier also features diopter adjustment from -5 to +5.

### 3 Angle Finder ZE

The angle finder is useful when shooting at low angles and for copy work. Click stops are provided every 90°, but full 360° rotation is possible for viewing even from the side or from below. The angle finder also features built-in diopter adjustment from -4 to +4.

### 4 Close-up Lens ZE

The close-up lenses ZE are convenient attachment lenses which screw directly to the filter threads of the master camera lens enabling swift and easy conversion to close-up photography.

Two models are available: Close-up lens No. 1 having +2 diopters, and Close-up lens No. 2 having +4 diopters. Diameter of threads: 49mm

### 5 Auto Extension Rings ZE

A set of three extension rings are intended for close-up photography and mount between the camera body and lens, directly coupling with the ZM camera metering system and the lens automatic diaphragm. Three different lengths of the rings can be used individually or in combination.

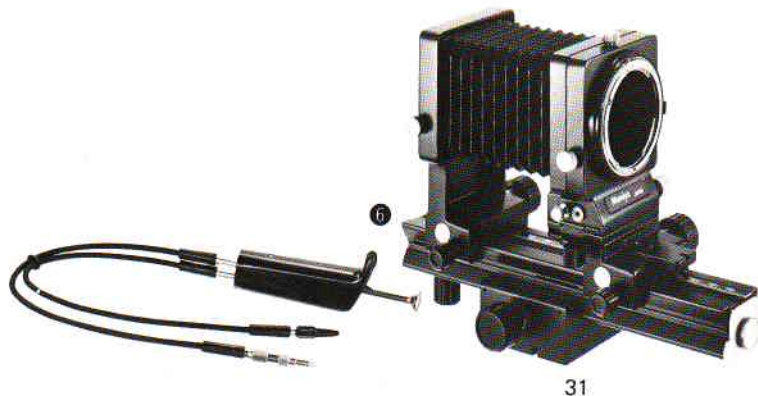




## ⑥ Auto Bellows ZE

This is an easy to operate, precision bellows type close-up attachment. Automatic aperture stop-down coupling is possible using a double cable release. And the front standard can be swiveled 360°, permitting simple reversing of the lens for large magnification ratios with images that are sharp to the very edges.

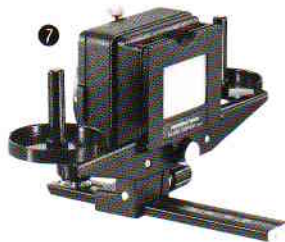
Shift control also enables control of perspective. And the camera can also be rotated at the back for a choice of vertical or horizontal format with easy operation. The focusing rail allows the entire bellows unit to be shifted back and forth for sensitive adjustment of distance and focusing.



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## ⑦ Slide Copier ZE

This device is mounted on the front of the Auto Bellows for making copies of slides. Convenient film trays are provided for copying film strips. The slide stage also moves vertically and horizontally for easier cropping of 35mm slides.



## ⑧ Bellows Stand ZE

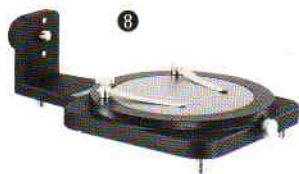
Used with the Auto Bellows, the Bellows Stand is used for copying small objects such as stamps, coins, insects, etc. Clips are provided for holding subjects on the platform. And the platform rotates for precise positioning. The platform is also finished to provide 18% reflectance, convenient for measuring exposures. A clear glass platform is also included for back-lighting of subjects.

## ⑨ Microscope Adapter ZE

The microscope adapter ZE is designed to permit photomicrography using Mamiya's ZE Series cameras. It serves to connect the camera body to the microscope, allowing the magnified image to be observed through the viewfinder of the camera. Photomicrography becomes easy, with no problems of parallax or exposure compensation.

## ⑩ 645 Adapter ZE

The 645 Adapter ZE is an adapter designed to allow the 645 lens to be mounted onto the ZE series camera. It combines the high-performance lens of medium-format cameras with the rapid-shooting capabilities of the 35 mm camera to enable AE photography based on stopped-down aperture metering.



## Precautions on Batteries

The Mamiya ZM has a built-in circuit that automatically gives a warning when battery power is running low. In this case, the LED corresponding to the correct shutter speed flashes and a warning buzzer sounds at the rate of 2 times per second when the shutter release button is lightly pressed.

The batteries should be replaced as quickly as possible, although several exposures can still be made. When the batteries go completely dead, the LEDs won't light at all.

- Batteries should always be removed when the camera is not to be used for an extended time. Keep them in a cool, dry place. Leaving batteries in the camera for long periods may result in leakage which could damage the internal mechanisms.

- When replacing batteries, use 1.5V alkaline-manganese batteries LR44 (A-76), or silver oxide batteries SR44 (G-13). Although 1.3V mercury batteries are the same shape and size, they will not operate the camera normally.

- Be sure to replace both two batteries at the same time. Do not mix new and old batteries or batteries of different types or brands.

- When loading batteries into the battery cartridge, be sure the plus and minus terminals are located properly. Before loading the batteries, be sure to wipe the terminals of the batteries and the cartridge with a dry cloth to remove any soiling or finger marks, etc.

- Never take apart batteries, short them, or throw them into fire.

## Handling Cautions

When the camera is not in use, the main switch should be left in the "OFF" position. If the camera's main switch is left in the "ON" position, the LEDs will light up whenever the shutter button is depressed, causing premature battery exhaustion.

The depth of the tripod socket is 7/32 in. (5.5mm). If a tripod is used with a mount screw longer than this, the internal mechanisms of the camera may be damaged. Do not use excessive force when mounting the camera on a tripod.

Avoid strong vibration and shock since this may cause adverse influence on the delicately adjusted parts of the camera. Be careful not to drop the camera or allow it to strike against objects.

Do not keep the camera for extended periods where temperature is above 100°F (40°C) or below 5°F (-15°C), or where there is excessive humidity or salt in the air. The camera mechanism or film can also be damaged if the camera is left for a long time in a place where there is naphthalene or formalin gas. Always store color film at the designated temperature.

Never touch the surface of the mirror or lens with the hands. Any dust should be blown off with a blower or wiped off by lightly applying a soft cloth. Be especially sure to never rub the surface of the mirror.

Always clean the camera carefully after photographing at the beach or other place where there is salt in the air. Clean the many plastic parts by gently wiping with a soft, dry cloth. Never use solvents when cleaning. Inspect the camera periodically when it is not being used. Be sure to inspect moving parts before trying to take important photographs. This includes the film advance and shutter operation, electronic flash synchronization, etc. Test shots should also be taken if possible to discover any irregularities that may exist. (Incidental damage which results in this camera malfunctioning will not be compensated.)

Do not try to repair or lubricate the camera if some irregularity is discovered. Leave this to your Mamiya dealer.

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## Specifications

**Type of camera:** 35mm single-lens reflex (SLR), aperture priority automatic exposure camera with manual override.

**Picture format:** 24mm × 36mm.

**Usable lenses:** Mamiya-Sekor E series and EF series lenses

**Shutter:** Electronically controlled metal focal plane. Speed range from 4 sec. to 1/1000 sec. at AUTO position and 2 sec. to 1/1000 sec. at MANUAL and B (bulb).

**Camera shake warning:** A buzzer sounds intermittently when the shutter speed drops below the slowest safe speed for hand-held shooting according to the lens used on the camera in the Auto/AEL mode.

**Self-timer:** Approx. 10-second delay; timer operation signalled by buzzer and flashing LED.

**Sync contact:** X-sync on a hot-shoe.

**Metering system:** TTL center-weighted, open-aperture metering using SPD (silicon photo diode)

**Metering range:** EV0.5 - EV18 (ASA/ISO 100, f/1.7 lens)  
EV1 - EV18 (ASA/ISO 100, f/2 lens)

**Exposure compensation:** ±2 f-stops

**Film speed range:** ASA/ISO 12 - 3200

**Viewfinder information display:** LED dot displays indicate shutter speeds of 1 - 1/1000 sec., plus B and LT. Flashing LEDs and an intermittent buzzer warn of over- and under-exposure and battery exhaustion.

In manual mode; An LED dot lights at the speed set for

manual shutter speed. If the speed setting is different from the exposure automatically calculated by the camera, another LED flashes at the later speed.

**Viewfinder magnification ratio:** 0.85X with 93% coverage of field of view (with 50mm lens at infinity).

**Focusing screen:** Fixed split/microprism type with matte field.

**Film advance:** Using film advance lever with 130° winding angle and 30° stand-off angle.

**Exposure counter:** Additive type. Automatic reset to "S" mark when camera back is opened.

**Film rewind:** Manual rewind with rewind lever.

**Power source:** Two 1.5V alkaline-manganese LR44 (A-76) batteries or two 1.5V silver oxide SR44 (S-76, G-13, etc.) batteries.

**Power switch:** Main switch and shutter release button.

**Flash synchronization:** When using a Mamiyalite with the camera on Auto or Manual and adjusted to 1/125 - 1/1000 sec, the shutter speed is automatically set to 1/60 sec. when the flash is fully charged.

**Winder coupling:** Electrical contact and coupler built in for operation with the Mamiya Winder ZE.

**Dimensions:** 140mm (W) × 88mm (H) × 52mm (D)

**Weight:** 480 g

\* Specifications and design are subject to change without notice.