Mamiya

Mamiya ZD

Mamiya Digital Single-Lens
Reflex Camera

Mamiya ZD

User's Manual

Foreword

Thank you for purchasing a Mamiya Product. Make sure that you read and understand all of the explanations detailed in this User's manual before using this product. Keep the User's manual in a safe place for future reference.

Testing the camera functions

Make sure that the camera is recording images correctly by taking trial shots before actually using the camera.
Mamiya assumes no responsibility for memory data of the photographed images that could not be saved or uploaded due to camera (main unit) or recording medium (memory card) problems.

Copyright

Except for the purposes of personal enjoyment, unauthorized use of the images of the subject that is copyright protected using this camera is prohibited. There are also times when use of professional and personal photographic devices is restricted in some performances, shows, and other exhibitions.

Trademark

- Mamiya and Mamiya ZD are the trademarks of Mamiya Digital Imaging Co., Ltd.
- Adobe and Photoshop are the trademarks of Adobe Systems Incorporated.
- CompactFlash is a trademark of Sandisk Corporation.
- Windows is the registered trademark or the trademark in the U.S.A. and foreign countries of Microsoft Corporation.
- Macintosh is the registered trademark In the U.S.A. and foreign countries of Apple Computer.

Cautionary points on safe operation and handling

Safety cautions

- Please read this "Safety cautions" section in order to operate this product safely and correctly and to prevent any harm coming to the user or any third party.
- The definition of each symbol and display is explained as follows:

⚠Warning..... The following refer to where inappropriate use by disregarding these displays can result in serious injury or even death.

⚠Caution..... The following refer to where inappropriate use by disregarding these displays can result in injury.

⚠Warning

- The lithium ion battery and its charger are designed exclusively for this product. Only charge this battery using the specified charging system. Make sure that you read and understand the instructions detailed in the User's manual for correct use of the battery and its charger.
- Do not heat or throw the battery into an open fire.
- Do not connect the positive and negative terminals of the battery with metal objects, or carry or store together with metal items or metal accessories.
- Do not use or leave the camera in extremely hot conditions, such as in places where it is exposed to direct sunlight, in sun-heated vehicles or near stoves.
- Do not attempt to weld, deform, modify or disassemble the battery or camera. The terminals may be damaged or the contents scatter.
- Loss of sight can result if any battery acid makes contact with the eyes. If any battery acid does get into the eyes, do not rub them. Wash the infected eyes under clean running water and consult a doctor as soon as possible.
- Do not use in the vicinity of flammable and explosive gases. Refrain from using this product in areas where this type of gas may exist. Fires or explosions can result.
- Keep the camera in a safe place out of the reach of young children. The following cases show where accidents can occur.
  - Accidental strangling from wrapping the strap around the neck.
  - Swallowing the battery or other small items. Consult a doctor immediately in the event any item is swallowed.
- Do not use the camera to observe the sun or any bright light. This can cause eye damage.

Immediately stop using the camera and consult the local sales branch or service center when the following conditions are noticed.

- If the power plug and cord over-heat, emit a burning smell or start to smoke.
- The charger or the AC adapter becomes damaged, wires become severed; or the power plug is damaged or suffers from a faulty connection.

Cautionary points on safe operation and handling

⚠Caution

- Do not touch the AC adaptor, charger, or battery while charging for an extended period. The charger and the battery become warm during the charging process. When the AC adapter has been used for an extended period, the unit becomes warm. Extended periods of skin contact can produce a low-heat burn.
- Do not use or store in dusty, humid, oily, smoky, or steamy place for extended periods. Fire or electrical shocks can result.
- Do not dismantle or modify this product. This can result in injury or electrical shock.
- Do not allow water or other foreign particles to enter the mechanism of this product. If by chance water enters the unit, there is a possibility of fire or electrical shock. Turn off the main power and remove the battery. Consult your sales branch or nearest service center.
- Do not use in the event the product starts to produce any unusual smells, sounds, or smoke. Taking special care not to burn yourself, remove the battery and consult your sales branch or nearest service center. These can cause fires or burns.
- Do not use with wet hands. There is a danger of electrical shock. Do not try to insert or disconnect the AC adapter with wet hands.
- Make sure that the strap is not caught on anything when carrying the camera. Care should be taken in order to avoid catching the strap on other objects when carrying the camera. This can result in injury or accidents.
- Do not place this product in places with high temperature. This will cause deterioration of the parts and may cause fire.
- Only use the provided AC adapter, charger and batteries. A malfunction of the camera or its power system may cause unexpected accidents. The warrantee does not cover any injury sustained from using an unspecified AC adapter.
- Do not damage the cord of the charger or the AC adapter. Always remove and insert by holding the plug. Never remove the plug by pulling on the cord. Do not use with an extension cord.
- If the battery terminals become dirty from sweat or grease, connections may become faulty. Always wipe clean with a clean, dry cloth.
- Do not use this battery with products from other manufacturers.
- Do not remove the battery from the camera immediately after the camera has been used for an extended period. Burns can result.
- In order to prevent short circuiting of the battery terminals, make sure that they are insulated for carrying and storage.
- Remove the battery from the camera when it will not be used for long periods. Battery acid leakage can cause heat, fire and injury.

Cautionary points on handling the camera

- This product is a precision instrument. Do not drop or use in a rough manner.
- This product is not waterproof and therefore should not be used in or near water. Consult your customer service center as soon as possible if this product comes into contact with water. Use a clean, dry cloth to remove any water or salt particles.
- Never place this product near any magnetic or motorized devices that produce strong magnetic fields. Avoid using or placing this product near radio towers, etc., that produce radio waves. Malfunction or damage to recorded data may result if the unit is exposed to electromagnetic waves or when used inappropriately.
- Keep this product away from direct sunlight or in areas where the temperature may exceed the manufacturer's standards. Avoid exposing the camera to these conditions as damage can occur.
- Do not try to dismantle this product. This product is equipped with precision circuitry.
- Do not use cleaners including organic solvents to clean this product. Consult your nearest customer service center if the camera becomes soiled.
- Do not touch the electrical connection points of the camera. This can result in corrosion of the points. Corrosion of the points can result in the malfunctioning.
- Suddenly moving the camera from particularly cold areas to hot areas can result in condensation buildup within the camera. To avoid condensation buildup within the camera, it is suggested that the camera be placed inside a plastic bag and sealed. Remove the camera from the bag when the conditions are suitable for the camera to be exposed to the outside environment.
- Condensation can cause the camera to malfunction and breakdown. Do not use when condensation is present. Remove the lens, memory card, and battery, and refrain from use until the condensation clears from inside the camera.
- Remove the battery and store the camera in a cool, well-ventilated area when it will not be used for an extended period.
- Avoid storing the camera in areas such as laboratories, etc., where chemicals could cause the camera to rust or corrode.
- Inspect the camera before use after it has been stored for an extended period. Before using the camera after extended storage or use overseas, it is important that the camera be inspected by the owner or customer service center to ensure that the camera is operating correctly.
- The LCD screen has been manufactured employing precision technology with 99.99% effective pixels, however, pixels at 0.01% and below or black/red spots can appear. This is not considered to be a malfunction. This will not affect any recorded images.
- One of the characteristics of LCD screens is that the display reaction time will slow when operated in low temperatures and may turn darken in high temperatures. Normal operation should resume when the temperature returns to normal levels.

Cautionary points on safe operation and handling

Safe operating cautions

Usable memory cards

The following memory cards have been verified for compatibility.

- SanDisk CF Card: Ultra II/Extreme III
- SanDisk SD Card: Ultra II/Extreme III
- LEXAR MEDIA CF Card: X40 and over
- Matsushita Electrics SD Card: 5MB/s to 2GB

Any one of the memory cards with over 256MB can be used.
Check with the specific memory card manufacturer for any questions regarding the operation or functionality of a memory card.
Memory cards other than those stated above have not been verified for compatibility.

Safe operation of Memory cards

- Memory cards are precision instruments. Do not drop or allow them to be exposed to strong vibrations. This can corrupt data that is stored in the memory card.
- Do not use or store around television sets, speakers, or magnets where there are high levels of static electricity. There is the possibility of recorded image data being erased from the memory card.
- Do not leave in areas where exposed to direct sunlight or near heating devices, etc. The memory card may become deformed.
- Do not spill any liquid onto the memory card.
- In order to protect important image data stored within the memory card, always store the memory card in its intended case.
- Do not store in hot, dusty, or areas of high humidity.
- When the lens is removed, attach the protective dust cap and place the lens so that the mounting surface faces up to protect the mounting surfaces or the lens, and avoid damage or scratching.

⚠Caution

Cautions when throwing away/giving away memory cards

- Due to the Format and Delete function of the camera and personal computers, file information can be altered but the data may not be completely deleted. Data can be recovered through restoration software. Important recorded data may remain and is subject to revelation after disposing of/giving away the card. In order to avoid these problems, we recommend that the memory card be physically destroyed or special data deletion software (available separately) be used to delete any remaining data completely before disposing of/giving away the memory card.
  The customer must assume the responsibility for data stored within the memory card.

About this User's manual

- Button operation and setting positions explained in the following use pictorials to display the buttons, dials and marks on the camera.
- The ** in the bracketed figures (**) refer to reference pages.
- Explanations in this manual are provided on the assumption that a lens is attached to the camera.
- Explanations are provided on the assumption that the menu functions are in default mode.

The following marks shown in the columns are explained by each of the following.
Important: Refers to cautionary points to help avoid problems when taking photos.
MEMO: Points that are based on fundamental operations that should be remembered.

Contents

Before Taking Pictures

This chapter describes what you need to do before you start using your camera for the first time.

Checking the Contents of the Package

Open the package containing the camera and accessories and check that it contains all the items shown below.

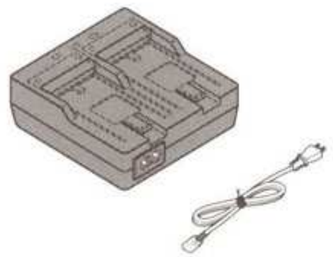
MEMO

A memory card for recording images must be purchased separately.

Mamiya ZD Camera

- Neck strap CN301
- IEEE1394 cable BL301

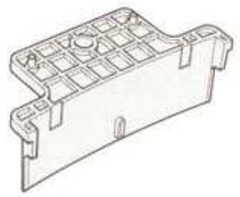
Lithium ion battery
BA701



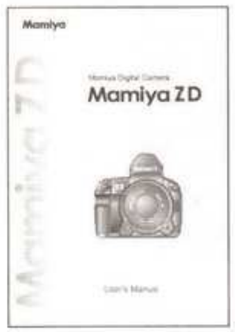
Battery charger DE-975A
Power cord

Mamiya Digital PhotoStudio
(RAW data processing software)
BS301

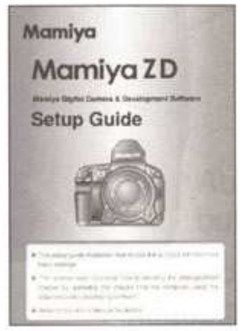
IR cut filter case



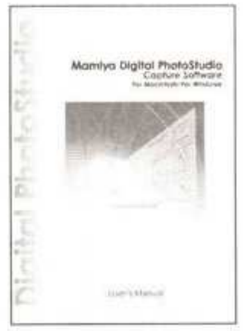
Filter replacement
guide



Mamiya ZD User's Manual
(this manual)



Mamiya ZD Setup
Guide



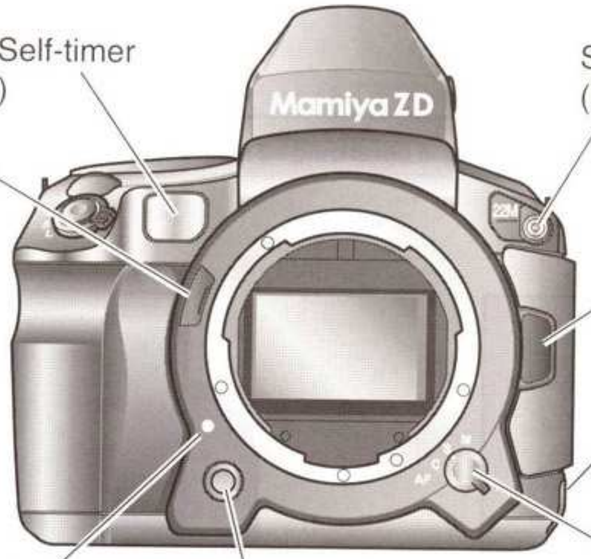
Mamiya Digital PhotoStudio
User's Manual

- Battery charger DE-975A User's Manual
- Lithium ion battery BA701 User's Manual
- IR Cut filter/Low Pass filter User's Manual

MEMO

- A memory card for recording images must be purchased separately.
- The eye cap (AE301), diopter adjustment lens (standard) (DE301), viewfinder screen (type A) (SA301), IR cut filter (YB301) and front body cap are attached to the camera.

Front View



AF assist beam/Self-timer lamp (P.72, P.95)

AF lock button (P.71)

Synchro terminal (P.102)

Lens release button (P.30)

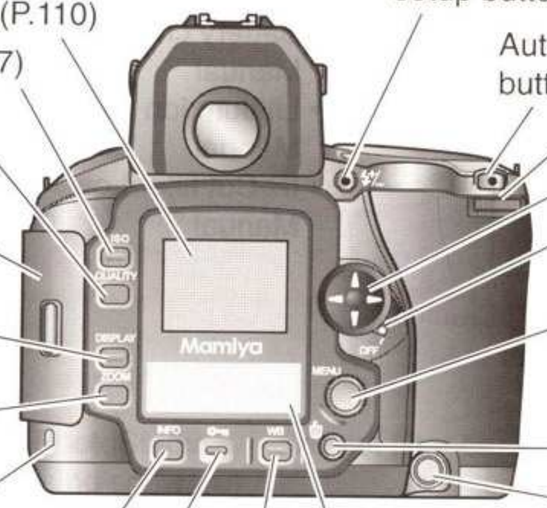
IEEE1394 terminal/Video terminal

Focus mode selector lever (P.34)

Lens mount alignment mark (P.30)

Preview button (P.103)

Back View



LCD monitor (P.110)

ISO button (P.37)

Quality button (P.37)

Memory card slot cover (P.25)

DISPLAY button (P.42)

ZOOM button (P.111)

Memory card access lamp (P.41)

Info button (P.112)

Protect button (P.116)

White balance button (P.38)

Digital LCD panel (P.16)

Shutter release contact (P.94)

Delete button (P.42)

MENU button/Day/ Night selector button (P.24)

Toggle key lock lever (P.24)

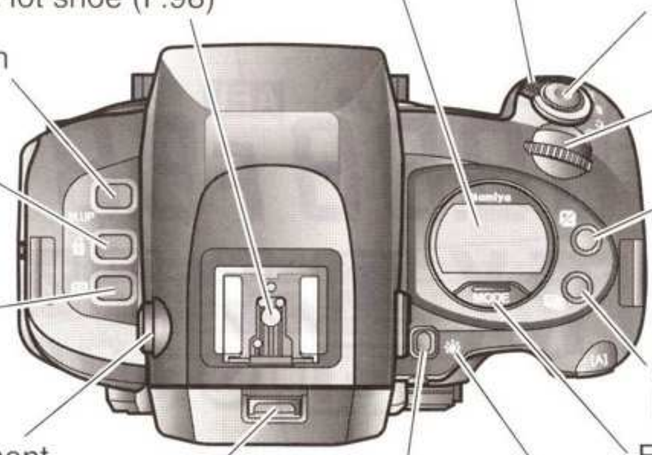
Toggle key (P.18)

Rear dial (P.18)

Auto exposure lock button/OK button (P.86)

Flash compensation button/ Cancel button/Self-timer setup button (P.100)

Top View



Shutter release mode selector lever (P.34)

Top LCD panel (P.16)

Hot shoe (P.98)

Shutter release button (P.40)

Mirror-up button (P.92)

Front dial (P.18)

Electronic dial lock button (P.37)

Exposure compensa- tion button (P.87)

Metering mode button (P.35)

Auto bracketing button (P.89)

Diopter adjustment dial (P.31)

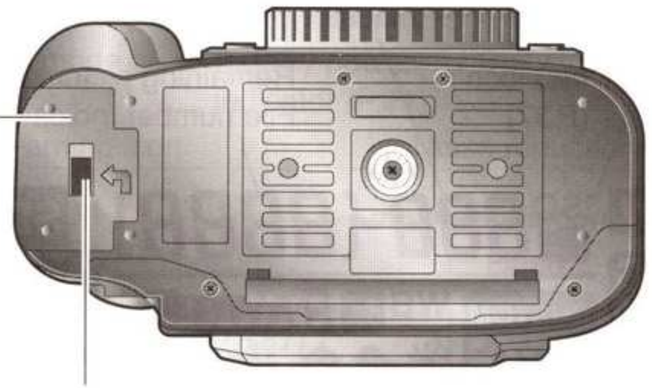
Exposure mode button (P.36)

Eye cap release lever (P.32)

Eyepiece shutter (P.96)

LCD backlight button (P.142)

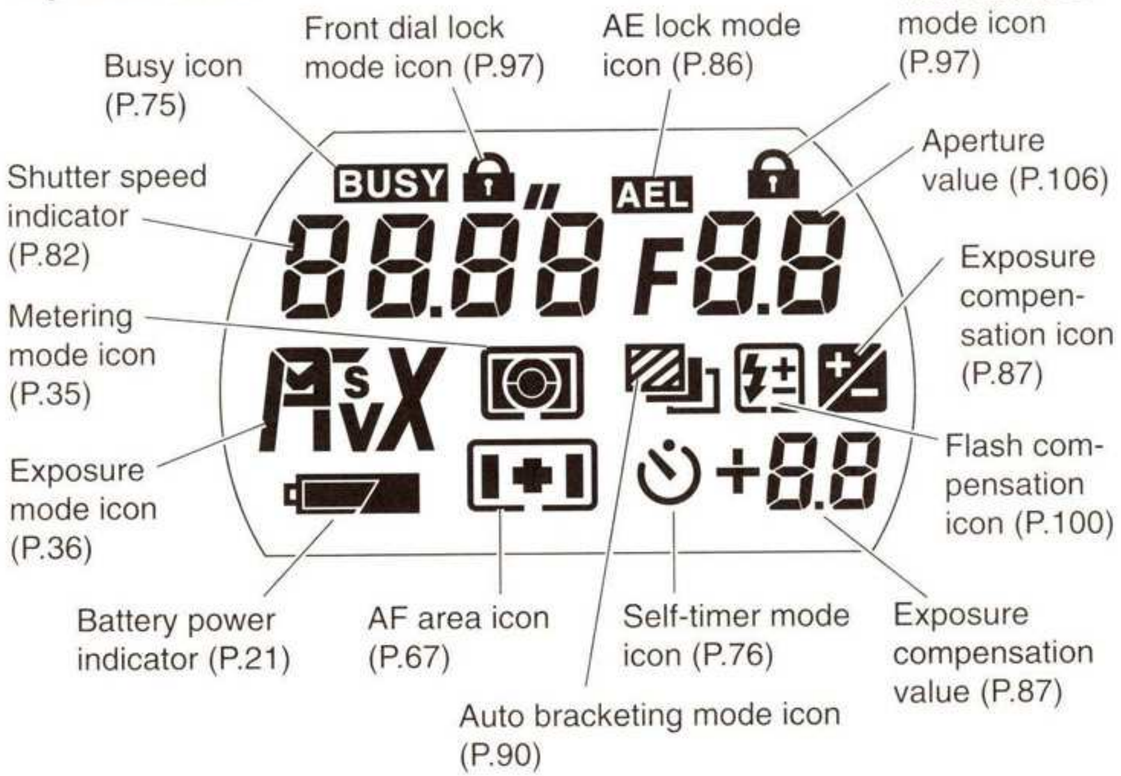
Bottom View



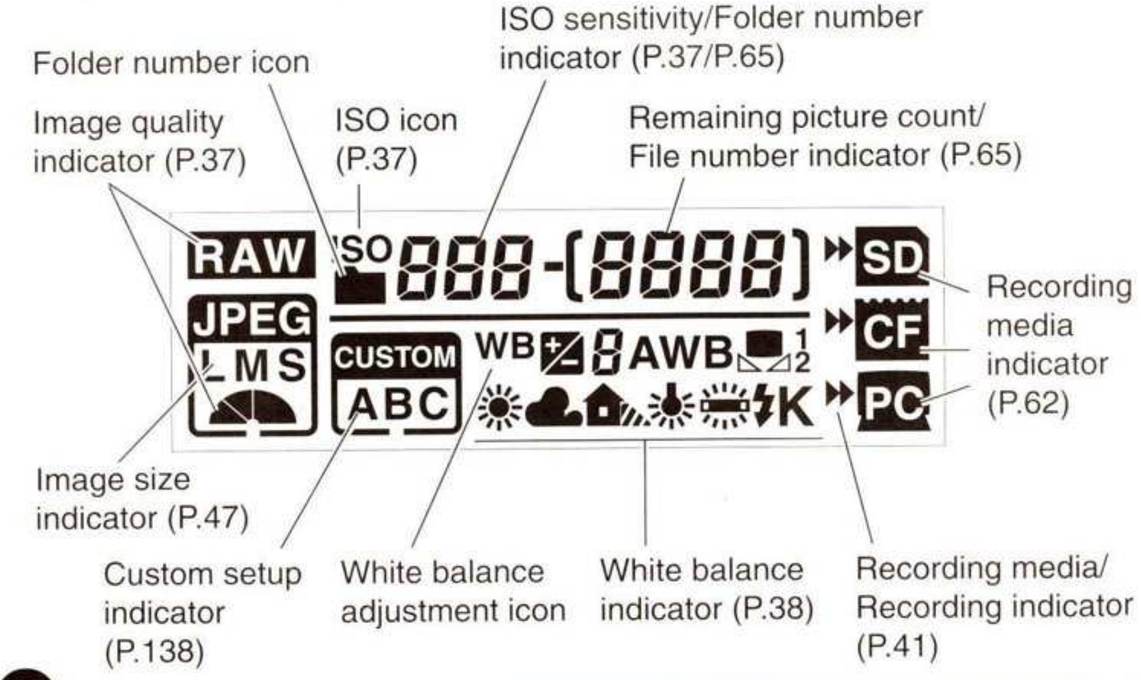
Battery cover (P.20)

Battery cover lock (P.22)

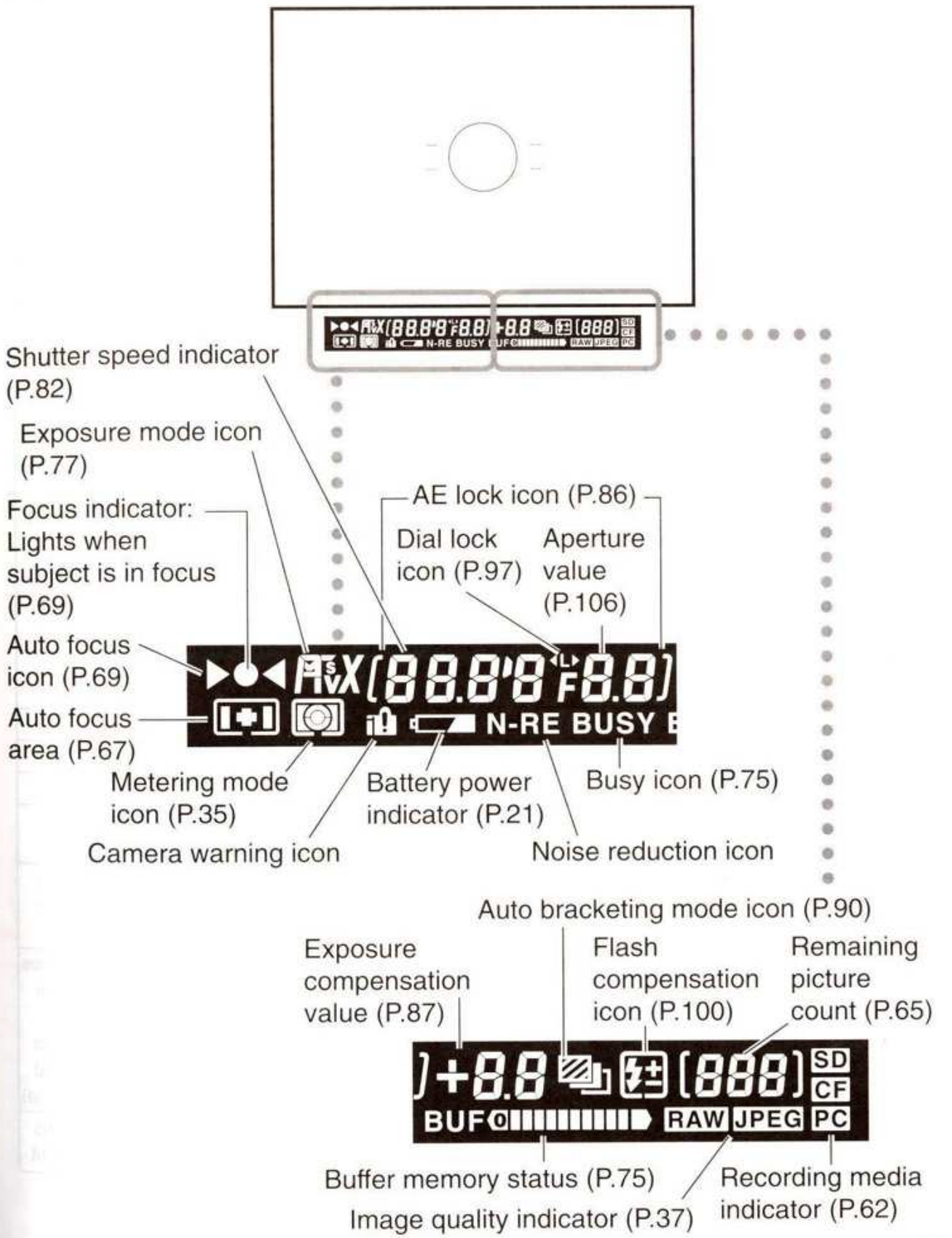
Top LCD Panel



Digital LCD Panel



Viewfinder LCD



Electronic Dial and Toggle Key Operations

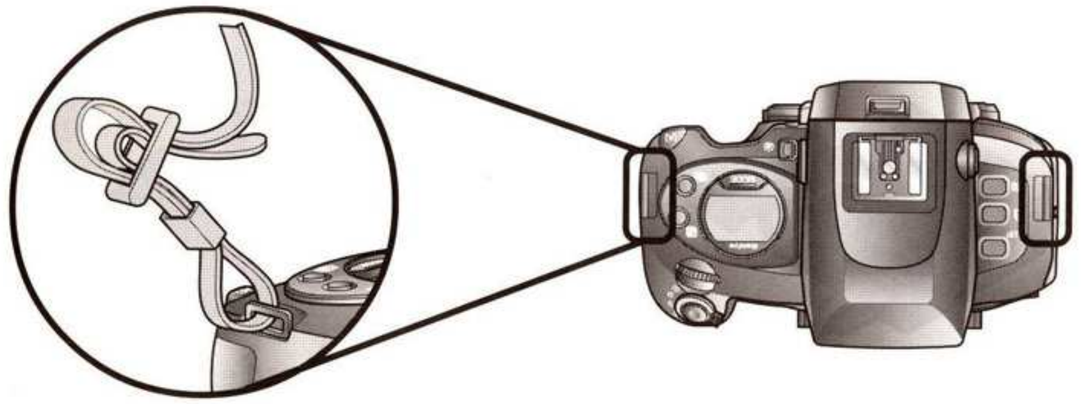
The following functions can be set by various combinations of the front and rear electronic dials, toggle keys and buttons.

	Indicator	Front dial	Rear dial	Toggle key
Exposure mode	P	Program shift	Exposure compensation	—
	Av	Aperture	Exposure compensation	—
	Tv	Shutter speed	Exposure compensation	—
	M	Shutter speed	Aperture	—
	X	Aperture		—
Exposure compensation button	±	Exposure compensation		—
Auto bracketing button		Determines bracketing increment and number of pictures	Turns auto bracketing ON/OFF	—
MODE button	P,Av,Tv,M,X	Selects the exposure mode		—
Cancel button		Sets the self-timer time (by pressing and holding button for 1 sec. in self-timer mode)		—
	±	Flash compensation (when using Metz flash and SCA3952 adapter)		—
Electronic dial lock button	Av,Tv,M,X	Locks and releases the shutter speed and aperture		—
Metering mode button		Selects the metering mode		—
ISO button	ISO	Sets the ISO sensitivity		
Quality button	Quality icon	Selects the image quality		
Display button	Image	Selects an image		
Zoom button	Zoom position mark	Moves position up and down	Moves position left and right	Moves position up, down, left and right
Info button	Shooting data & histogram	Selects shooting monitor and histogram display	—	Selects shooting data and histogram display (up/down)
White balance button	WB icon	Selects the white balance	Adjusts the whitebalance/ Selects color temperature (excluded the pre-set white balance)	Selects the white balance (up/down) Adjusts the white balance (left/right)/Selects color temperature (excluded the pre-set white balance)
MENU button	MENU	Moves the menu items up and down	Moves the menu items left and right	Moves the menu items up, down, left and right

Preparing to Take Pictures

1. Attach the strap.

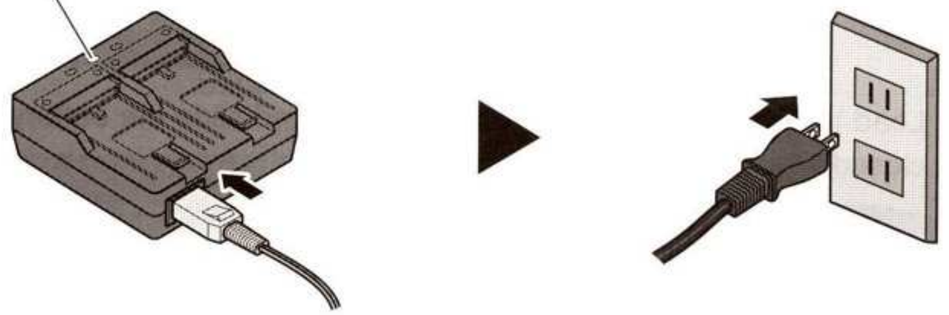
Pass the neck strap supplied with the camera through the two mounts and secure it as illustrated.



2. Plug in the battery charger (DE-975A).

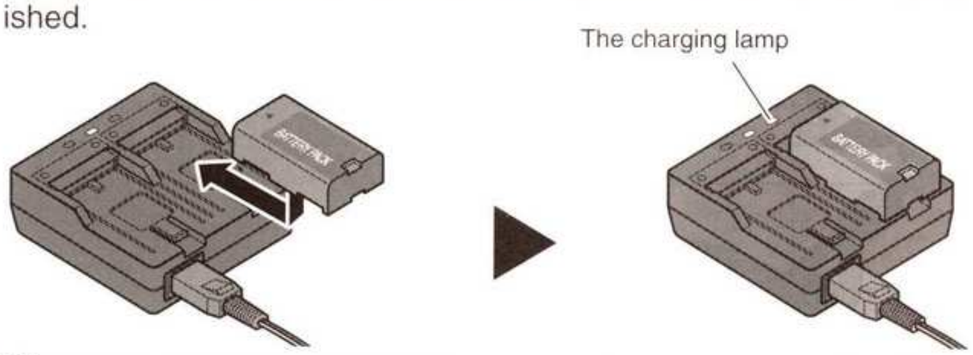
Plug one end of the power cord into the battery charger and plug the other end into a power outlet.

The power lamp lights.



3. Charge the battery.

Insert the battery supplied with the camera into the battery charger as illustrated. The charging lamp flashes and charging starts automatically. When the charging lamp stops flashing and lights continuously, charging is finished.



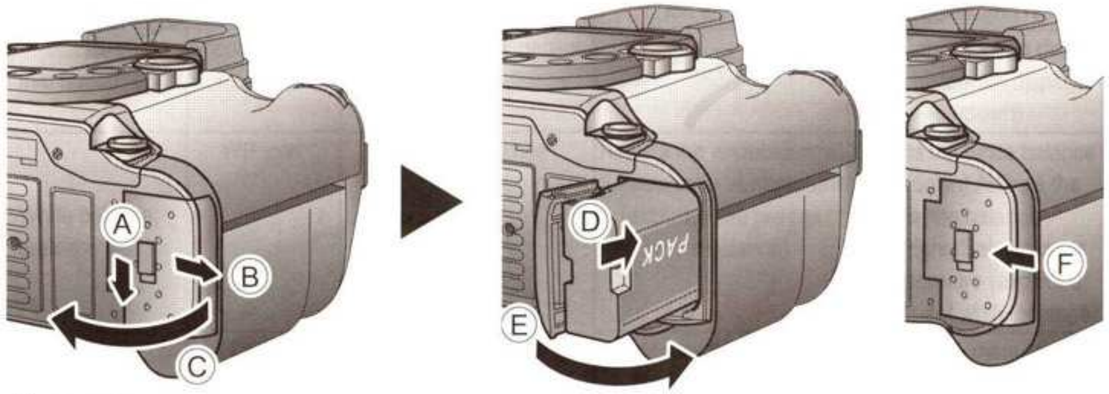
MEMO

- It will take about two hours to charge the battery for the first time when new.
- For instructions on how to use the battery charger, refer to the manual for the charger.

4. Load the battery into the camera.

1 Set the shutter release mode selector lever to L.

2 Load the charged battery into the camera and slide the battery cover closed.

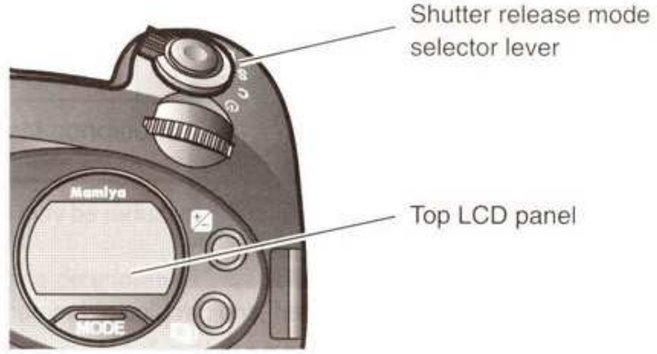


⚠Caution

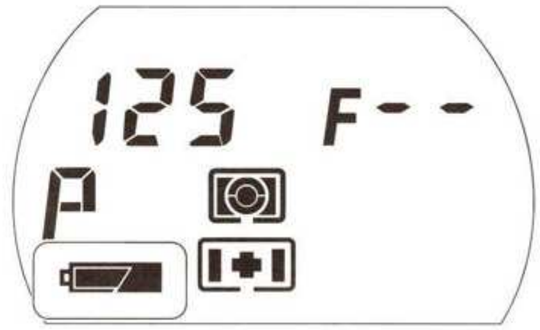
Be sure to turn the camera off before loading or unloading the battery.

5. Check the battery power indicator.

1 Set the shutter release mode selector lever to "S".



2 Check the battery condition on the top LCD panel.

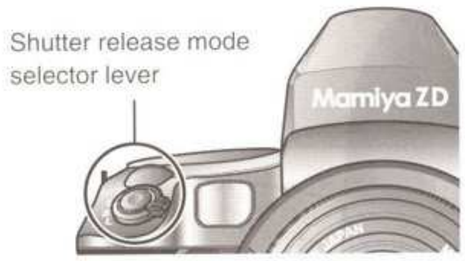


Battery power indicator

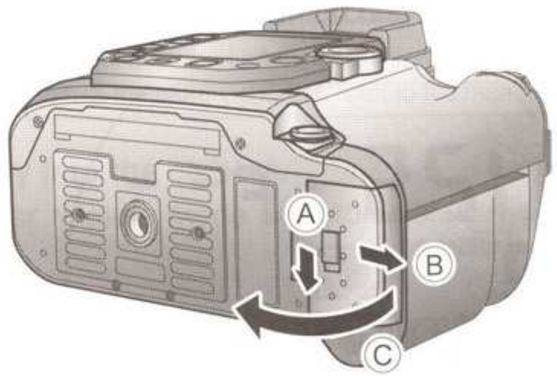
	The battery is sufficiently charged.
	There is little power remaining. Have a charged battery ready. (The camera will still operate.)
Flashing	There is very little power remaining. Replace the battery with a charged battery.
batt Flashing	When the battery is spent, "batt" and the battery power indication flash on the top LCD panel and viewfinder LCD when the shutter release button is pressed.

Removing the Battery

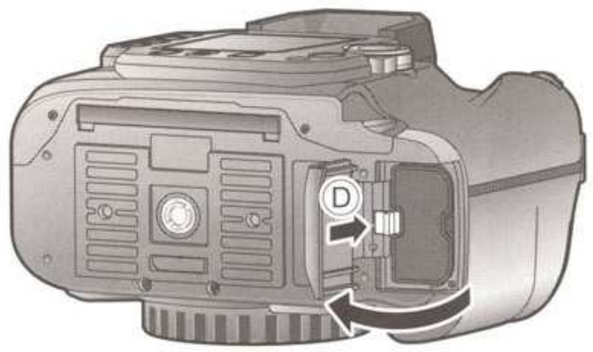
1. Set the shutter release mode selector lever to L.



2. Press the battery cover lock (Ⓐ) to open the battery cover (Ⓑ), (Ⓒ).



3. Press the stopper shown in the illustration in the direction of the arrow (Ⓓ) and remove the battery.



⚠Caution

Be sure to turn the camera off before loading or unloading the battery.

Frame Count

Approximate number of frames taken in succession with the battery fully charged

Temperature	Frame Count
Normal temperature (20°C)	Approx. 450 frames
Low temperature (0°C)	Approx. 70 frames

* Under Mamiya test conditions based on CIPA standard conditions.

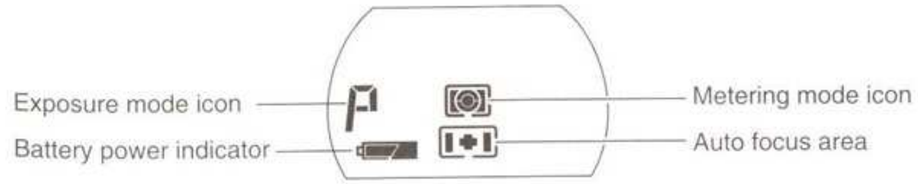
MEMO

- The picture count may be reduced depending on the actual shooting conditions, amount of LCD monitor use, etc.
- Battery performance deteriorates in low temperatures.
  When using the camera in cold regions, have a spare battery ready and keep it warm in your pocket.
- When taking a lot of pictures, be sure to have a spare battery at hand.
- The shape of plugs and power outlets varies from country to country. When traveling abroad, be sure to check the shape of the outlet beforehand and take a correctly shaped adapter plug for the battery charger.
- Refer to "Picture Count" (P.49) in the chapter on Camera Functions for the number of frames that can be saved to the memory card.

Turning the Camera On

- To turn the camera on, set the shutter release mode selector lever to [S], [C] or [⏲].
  To save battery power, the camera automatically switches from ON (metering status is retained) to power-saving mode after a fixed time in which no operations are performed.
- The default setting for metering status retention is 15 seconds.
  The setting can be changed at any time to between 5 and 60 seconds by Custom Setup [5] (P.141).
- When the camera is in power-saving mode, it can be restored to normal operation by operating the shutter release button or function setup button.

The shutter speed and aperture disappear from the top LCD panel in power-saving mode and the display shown below appears.

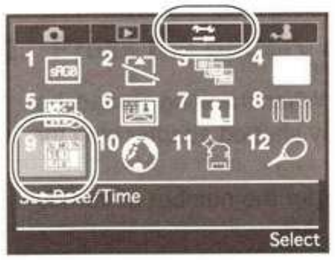


1. Set the camera date and time.

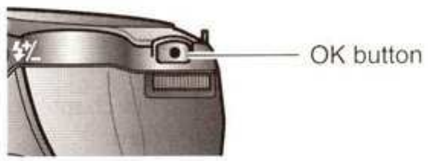
1 Set the toggle key lock lever to ON.

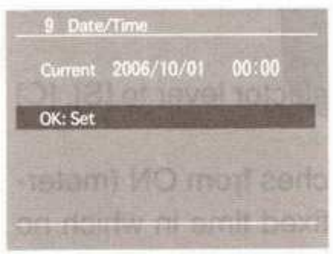
Toggle key lock lever

2 Press the MENU button to display the menu, press [►] on the toggle key to select [ ] (Setup Menu) and press [▼] on the toggle key.

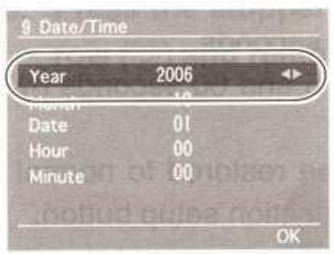


3 Use the toggle key to select [9] Date/Time and press the OK button.

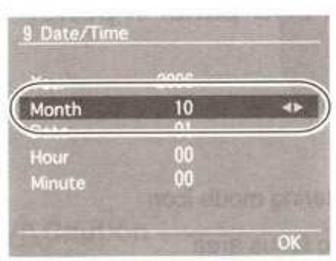




4 The current date and time is displayed. Press the OK button.



5 The year entry field is selected. Press [◄ ►] on the toggle key or turn the rear dial to set the year.



6 After setting the year, press [▼] on the toggle key or turn the front dial to select the month.

7 Select the month, day, hour and minutes in the same way.
After the date and time are set, press the OK button to save the settings.

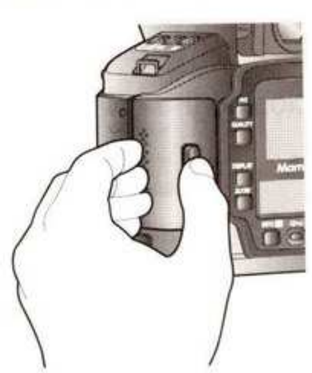
MEMO

- The camera has a built-in lithium manganese secondary battery charged from the camera battery for powering the clock.
- When the clock battery is sufficiently charged, the set date and time will be saved for approximately two months even if the camera battery is not charged in that time.
- The correct date and time may not be displayed when the camera has not been used for a long time or the clock battery is not sufficiently charged. If this happens, set the correct date and time.

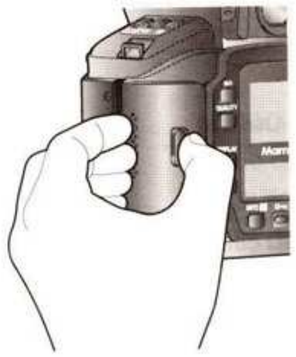
2. Insert a memory card (purchased separately).

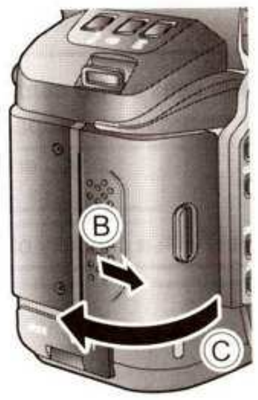
1 Set the shutter release mode selector lever to L.

2 Hold a finger on the center of the memory car slot cover lock lever and push it in the direction of the arrow (Ⓐ).

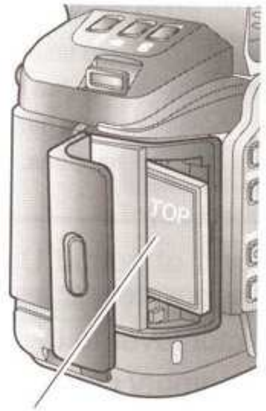


3 Hold a finger on the memory card slot cover, and pull and slide it (Ⓑ). The slot cover opens.

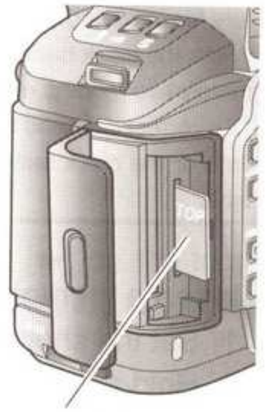




4 Insert the memory card as far as it will go, making sure it is oriented as illustrated.

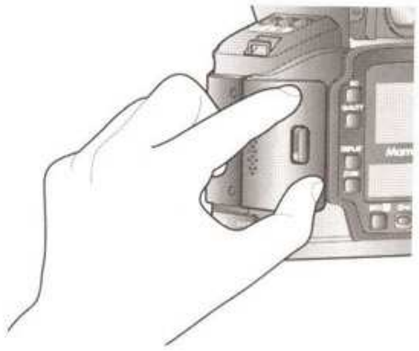


Compact flash (CF) card slot



SD card slot

5 Close the memory card slot cover.
Push both side of the lock lever when closing the cover.



MEMO

- This camera uses an SD card or CF card.
- SD memory cards with a capacity of up to 2GB can be used.

Important

Use a CF card with a capacity of 256MB or more or an SD card with a capacity of 5MB or more.

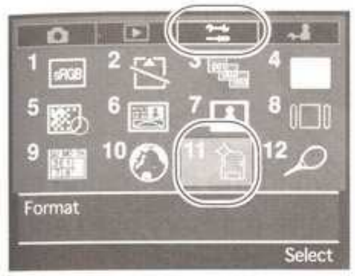
3. Format the inserted memory card.

1 Set the shutter release mode selector lever to L.

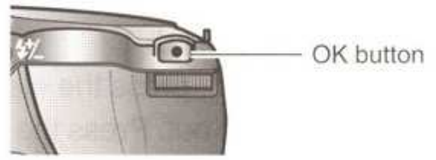
2 Set the toggle key lock lever to ON.

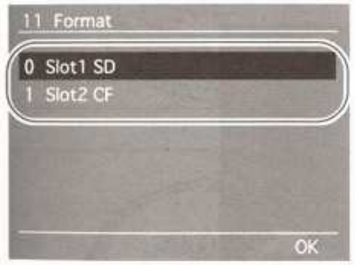
Toggle key lock lever

3 Press the MENU button to display the menu, press [►] on the toggle key to select [ ] (Setup Menu) and press [▼] on the toggle key.

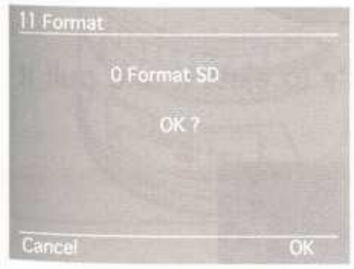


4 Use the toggle key keys to select [11] Format and press the OK button.



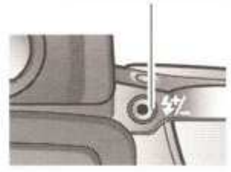


5 Press [▲▼] on the toggle key or turn the front dial to select the slot that the memory card has been inserted in, and press the OK button.



6 The confirmation dialog is displayed. Press the OK button to format.

Cancel button



MEMO

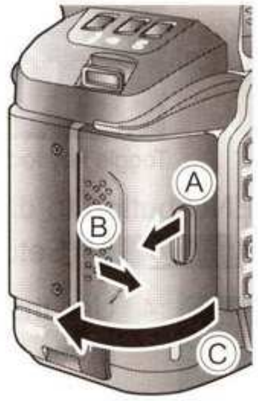
- To cancel formatting, press the Cancel button. The display returns to Step 2.

Important

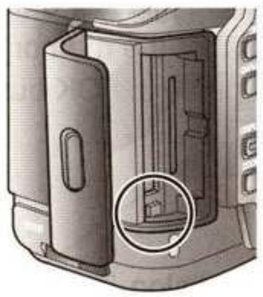
- All image data stored on the memory card is deleted by formatting.
- Once deleted, image data cannot be restored.
- To avoid losing important data, check the images and data stored on the memory card before formatting (initializing).
- All protected images are also deleted by formatting.

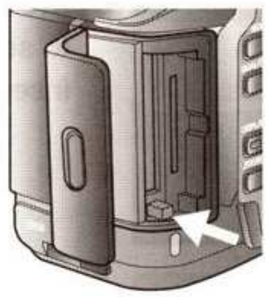
Removing the Memory Card

1. **Set the shutter release mode selector lever to L.**
2. **Open the memory card slot cover.**

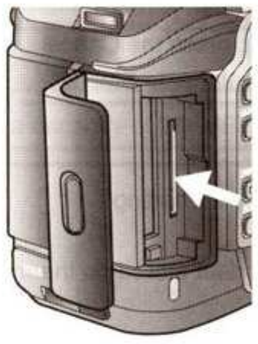


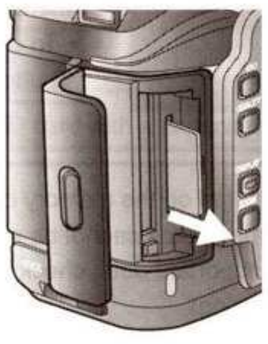
3. **Remove the memory card.**
   1 To remove a CF card, press the eject button shown in the illustration to make the button pop out. Press the button to eject the memory card and pull it slowly out of the slot.





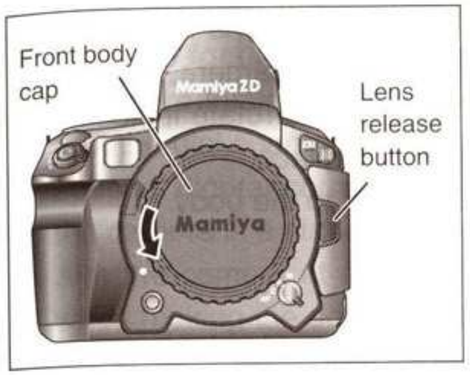
   2 To remove an SD card, press the card in lightly to eject it and pull it slowly out of the slot.



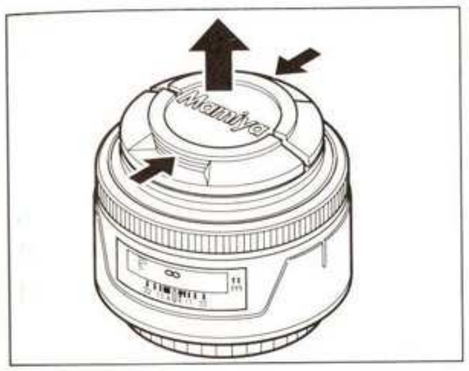


* Depending on the type of card, the card may pop out of the slot.

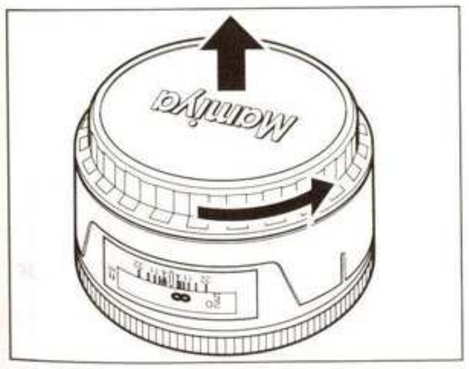
Attaching the Lens



1. **Remove the front body cap from the camera and the front and rear caps from the lens.**
   1 To remove the front body cap, press the lens release button as illustrated and turn the front body cap counter clockwise as far as it will go.

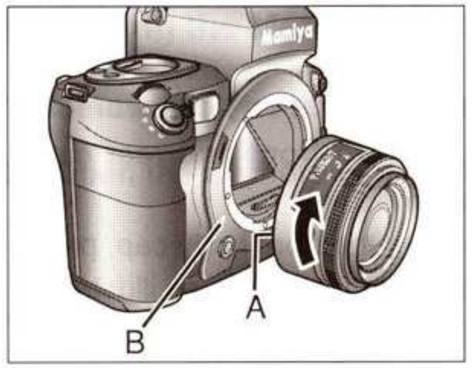


   2 Remove the front lens cap.



   3 Turn the rear lens cap in the direction of the arrow to remove it.

Attaching and Removing the Lens



2. **Attach the lens.**
   Align the lens mount alignment mark A on the lens with the lens mount alignment mark B on the camera, fit the lens into the camera and rotate it clockwise until it clicks into place.
   The lens is fixed to the body.

* Hold the lens barrel when attaching and removing the lens.
* Do not press the lens release button when attaching the lens.
* When attaching or removing the front body cap or lens, hold the camera face down to prevent dirt or dust getting inside the camera. Dirt or dust inside the camera may appear on images.

Removing the Lens

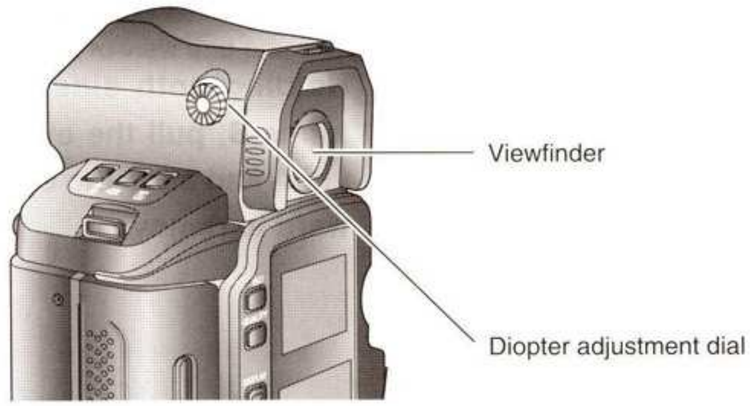
Press the lens release button and rotate the lens counter clockwise as far as it will go as illustrated.

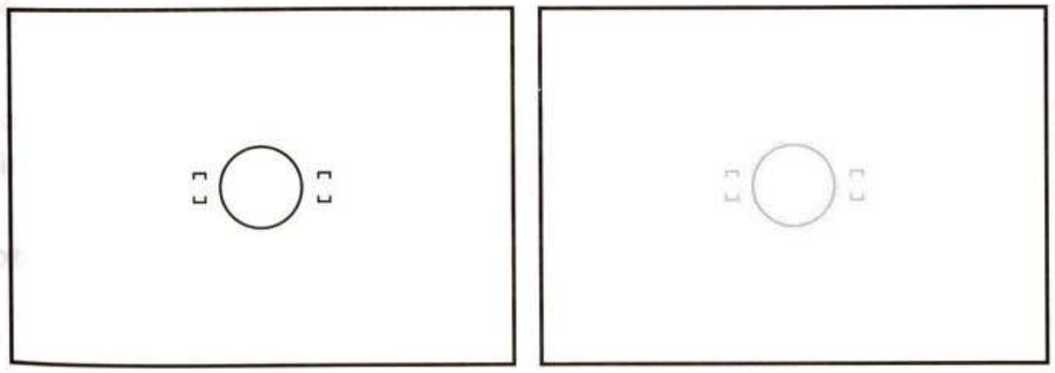
* After removing the lens, replace the protective caps on the lens and camera body.
* Oil, dust, fingerprints or water on the electronic contacts may cause malfunction or corrosion. Wipe any dirt off the contacts with a clean dry cloth.

Diopter Adjustment

Adjust the diopter to obtain a clear view of the subject in the viewfinder.

1. **Look through the viewfinder and rotate the diopter adjustment dial until the focus frame is in sharp focus.**
   If you are farsighted, turn the dial clockwise, and if you are nearsighted, turn the dial counter clockwise. If this is not sufficient, you may require an optional diopter correction lens. (The diopter correction lens supplied with the camera is a standard type.)
   Aim the camera at a bright, plain object such as a white wall or similar when making the adjustment.





Correct diopter adjustment

Incorrect diopter adjustment

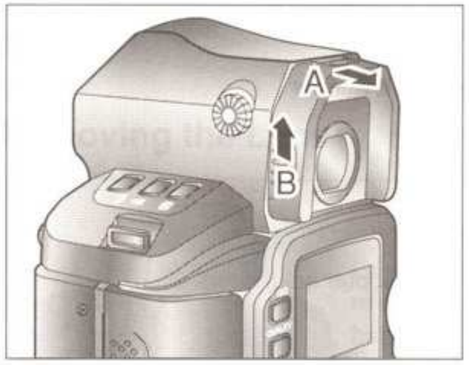
Diopter Adjustment

If you cannot adjust the diopter using the standard diopter correction lens, refer to the table below and use an optional diopter correction lens.

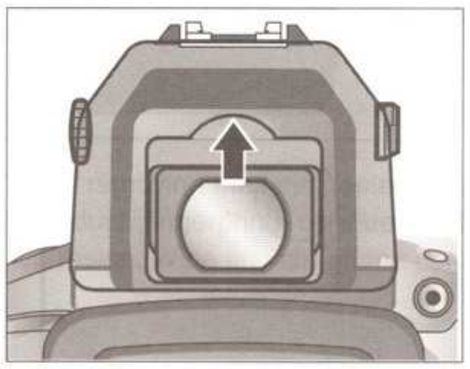
Adjustment range of optional diopter correction lens (sold separately)

Diopter correction lens	Adjustment range (dioper)
DE301 (standard)	–2.5 to +0.5
DE302 (for nearsighted users)	–5.0 to +2.0
DE303 (for farsighted users)	0 to +3.0

Changing the Diopter Correction Lens



1. **Holding both sides of the eyecap frame B, pull the eyecap release lever A and slide the eyecap frame upward to remove it.**



2. **Slide the diopter correction lens upward as illustrated.**
3. **Insert the replacement diopter correction lens and slide it downward until it locks.**
   Slide the eyecap frame back into place.

* If there is dirt or dust on the lens surface, remove it with a blower or brush it off gently with a lens brush.
* If there are fingerprints or dirty marks on the lens surface, wipe the lens with a piece of soft, clean gauze.
* Using organic solvents such as thinner or benzene may cause discoloration or deformation of the diopter correction lens frame.

Basic Operation

This chapter explains how to make basic camera settings before taking pictures and how to view and erase captured images.

Setting the Shutter Release Mode

There are four shutter release modes as shown below. The shutter release mode is selected by the shutter release mode selector lever.

1. Set the shutter release mode to [S] (single frame mode).

[L]	Power is turned off (lock)
[S]	Single frame mode
[C]	Continuous mode
[⏲]	Self-timer mode

Setting the Focus Mode

There are three focus modes as shown below. The focus mode is selected by the focus mode selector lever.

1. Set the focus mode selector lever to [S] (single focus mode).

Focus mode		Focusing
[S]	Single focus mode	Half-press the shutter release button to focus. When the focus indicator lights, the focus is locked and the shutter can be released.
[C]	Continuous focus mode	The camera focuses continuously as long as the shutter release button is half-pressed. The shutter can be released regardless of whether or not the focus indicator is lit.
[M]	Manual focus mode	Focus the camera manually.

Setting the Exposure Metering Mode

There are four metering modes as shown below. The metering mode is selected by the metering mode button and front or rear dial.

1. Press the metering mode button.
The metering mode icon appears on the top LCD panel when the metering mode button is pressed.

2. Turn the front or rear dial to select [⊙] (average/spot auto-select metering mode).

3. Press the exposure mode button to return to the normal display.

[⊙]	Average/spot auto-select metering mode	Average or spot metering is selected automatically.
[◎]	Center-weighted average metering mode	The average brightness of the entire picture area is measured with emphasis on the center.
[◉]	Center metering mode	The brightness in the circle in the center of the picture area is measured to determine the exposure.
[•]	Spot metering mode	The brightness at a specific spot in the center of the picture area is measured.

Setting the Exposure Mode

There are four exposure modes as shown below. The exposure mode is selected by the exposure mode button and front or rear dial.

1. **Press the exposure mode (MODE) button.**
   The exposure mode icon appears on the top LCD panel when the exposure mode button is pressed.
2. **Turn the front or rear dial to select [P] (program auto exposure).**
3. **Press the exposure mode button to return to the normal display.**

Exposure mode		Features
[P]	Program AE	The aperture and shutter speed are determined automatically according to the shooting conditions to obtain the optimum exposure. You can change the shutter speed using the program shift function.
[Av]	Aperture-priority AE	Set the desired aperture and the camera automatically selects the optimum shutter speed.
[Tv]	Shutter priority AE	Set the desired shutter speed and the camera automatically selects the optimum aperture.
[M]	Manual mode	Set the desired aperture and shutter speed.
[X]	Synchro mode	The shutter speed is locked to synchronize with the flash. You can set the desired aperture. You can change the synchronized shutter speed by Custom Setup.

Setting the Image Quality

1. **Press the image quality selector (QUALITY) button.**
   The image quality indicator appears on the digital LCD panel.
2. **Press [▲] [▼] on the toggle key or turn the rear dial to select JPEG L ◠.**

The image quality changes in the following sequence.

RAW ⟷ RAW+JPEG (L, M, S and 3 compression rates) ←
↑ JPEG (L, M, S and 3 compression rates) ←

* To return to the normal display, press any button (exposure compensation button, auto bracketing button, LCD backlight button, electronic dial lock button or metering mode button) on the top of the camera other than the QUALITY button, OK button, Cancel button or Mirror-Up button.

Setting the ISO Sensitivity

1. **Press the ISO sensitivity (ISO) button.**
   The ISO icon and ISO sensitivity appear on the digital LCD panel.
2. **Press the toggle key keys or turn the front or rear dial to select ISO 50.**

* To return to the normal display, press any button on the top of the camera other than the ISO button, OK button, Cancel button or Mirror-Up button.

Setting the White Balance

1. **Press the white balance (WB) button.**
   The white balance icon appears on the digital LCD panel.
2. **Press [▲] [▼] on the toggle key or turn the front dial to select AWB (auto white balance).**

AWB

* To return to the normal display, press any button on the top of the camera other than the WB button, OK button, Cancel button or Mirror-Up button.

The white balance mode changes in the following sequence.

Focusing

1. **Aim the camera so that the subject is within the focus frame [▫◯▫].**

2. **Half-press the shutter release button.**
   The auto focus is activated and the focus is adjusted automatically.

   When the focus indicator ● lights, the subject is in focus.

3. **When ● lights, press the shutter release button all the way to take the picture.**

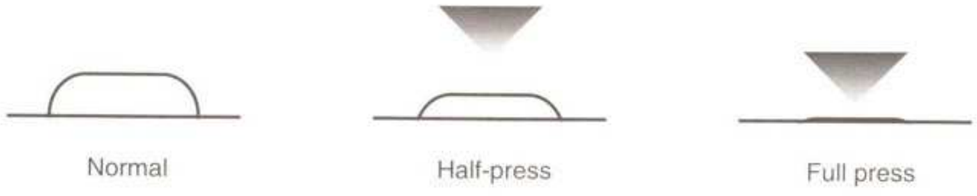
Out-of-focus indicator

▶ ◀ Blinks: The out-of-focus indicator [▶ ◀] blinks when the subject is not in focus, such as when the subject is a white wall, and the shutter cannot be released. Press the shutter release button again to adjust the focus or move the camera to change the position of the focus frame.

* While the camera is in the auto focus mode, the focus ring on lenses not equipped with a focus mode selector (45mm, 55mm and 80mm lenses) automatically rotates. Do not touch the focus ring.

Shutter Release Button

The shutter release button works in a two-step action.
When pressed lightly, it stops at a certain point. In this manual, this is referred to as the "half-press" position.
Half-pressing the shutter release button activates the camera functions.
When the shutter release button is pressed all the way from the half-press position, the picture is taken.



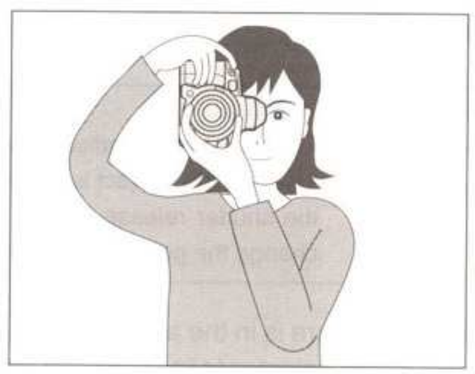
Normal　　Half-press　　Full press

Holding the Camera

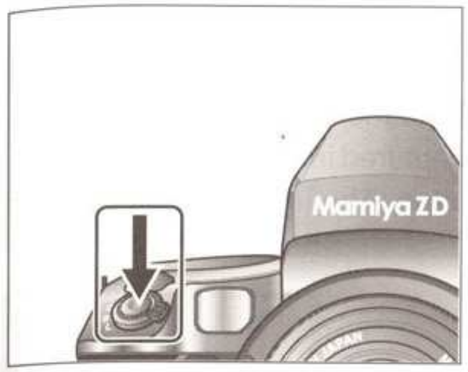
Hold the camera still when taking pictures. If the camera moves when the shutter is released, the resulting picture will be blurred and out of focus.
Grip the camera firmly, keeping your elbows pressed against your body, and support the camera with your left hand.

* At slow shutter speeds or when using the self-timer, it is best to use a tripod and RE401 electromagnetic cable release (optional accessories) or a commercial cable release.

Horizontal



Vertical



4. Press the shutter release button all the way to take pictures.

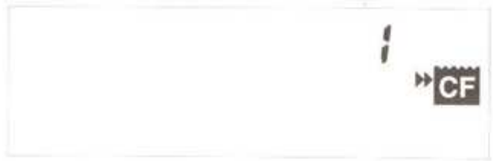
5. Captured images are saved to the memory card.
The memory card access lamp lights or the recording media indicator on the digtal LCD panel blinks while the image is saved.

Important

- Do not open the memory card slot cover or remove the battery while the memory card access lamp is lit as this could result in the data being lost.

Turning the camera off (L) while saving to the memory card

If the camera is turned off (shutter release mode is set to [L]) while the memory card access lamp is lit, data saving continues until completed.
The remaining unsaved picture count appears on the digital LCD panel and top LCD panel.
The camera turns off when saving is completed.



Basic Method of Viewing and Erasing Pictures

Basic Viewing

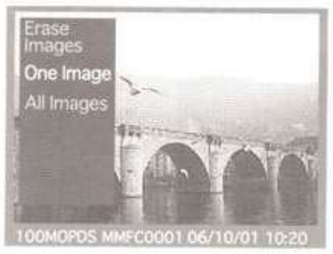
You can view the images that have been saved to the memory card.
To view captured images, press the DISPLAY button. The last image taken appears.

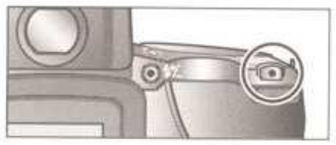
Viewing another frame

Press the toggle key keys or turn the rear dial to view another frame.
To view the previous image, press [◄] on the toggle key or turn the rear dial counterclockwise.
To view the next image, press [►] on the toggle key or turn the rear dial clockwise.
Pressing [►] on the toggle key or turning the rear dial clockwise when the last image is displayed will display the first image.

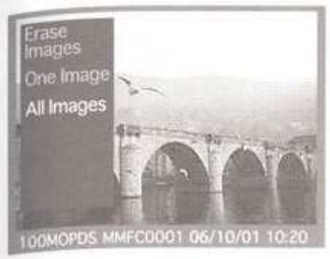
Erasing Unwanted Images

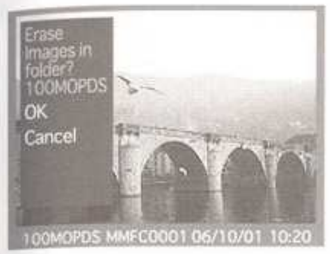
You can erase unwanted images by displaying the image and pressing the erase button.





Display the image that you want to erase. Press the Erase button to display the erase menu. Select [One Image] (shown in red) and press the OK button.

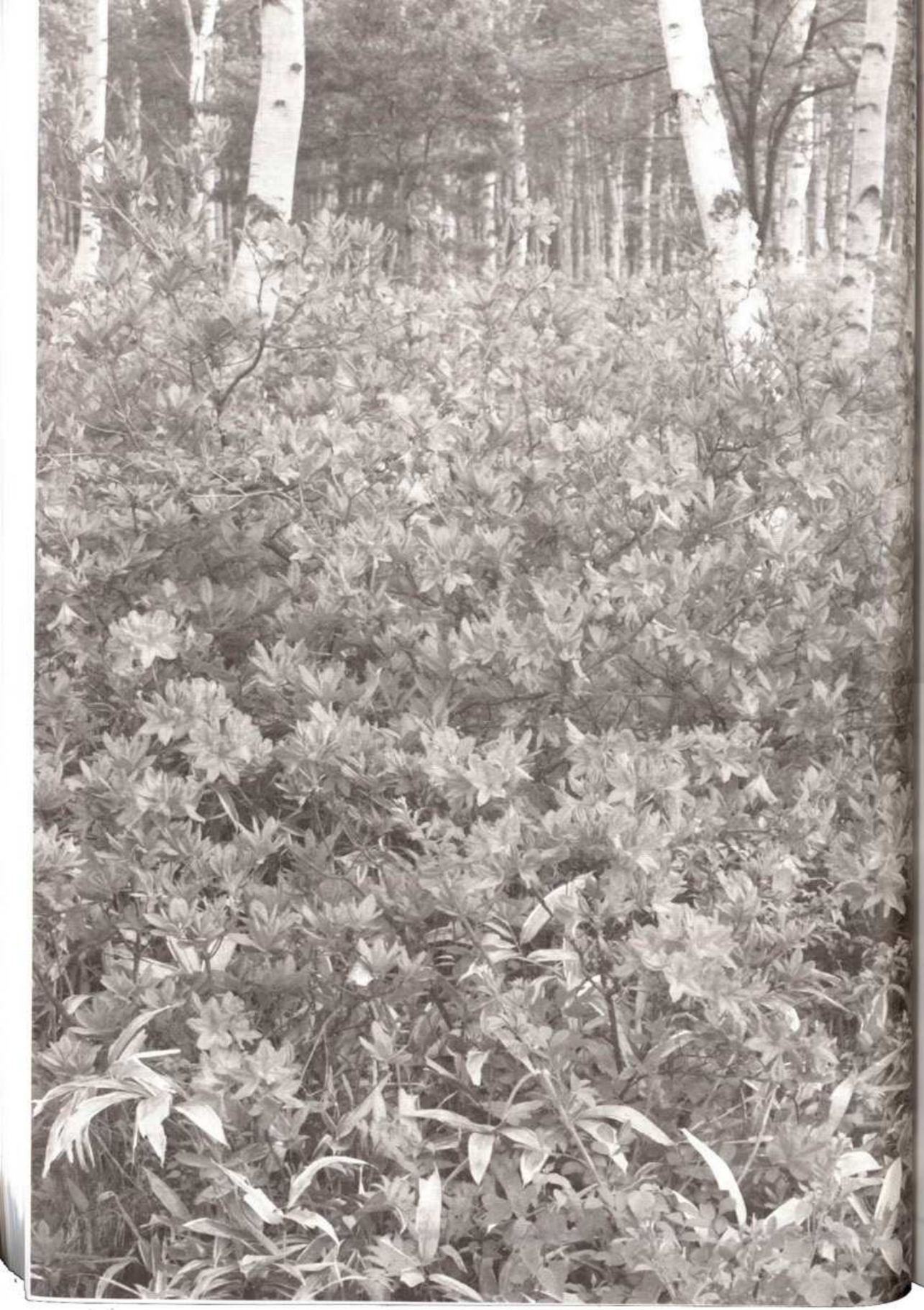




When [All Images] is selected and the OK button is pressed, the confirmation dialog appears.
To erase all the images in the folder, press the OK button.

⚠Caution

* Once erased, images cannot be restored. Make sure that you really want to erase the images before pressing the OK button.



Camera Functions

With the Mamiya ZD, you can set the camera functions to suit the shooting conditions. This chapter explains the various camera functions.

Image Quality

You can select the quality of the images you capture.
There are three image settings to choose from: RAW uncompressed format, JPEG compressed format and RAW+JPEG format.

Quality	Description
RAW	Images are recorded in RAW (uncompressed) format.
RAW + JPEG	Images are recorded in RAW (uncompressed) and JPEG (compressed) format. For JPEG format, you can choose from 3 images sizes (L, M, S) and 3 compression rates (FINE, NORMAL, BASIC).
JPEG	Images are recorded in JPEG (compressed) format. For JPEG format, you can choose from 3 images sizes (L, M, S) and 3 compression rates (FINE, NORMAL, BASIC).

RAW Data

RAW data is image data that has not undergone any processing in the camera and has the extension .MEF. To view RAW image data on a computer, it must first be converted to processing, editing and general use format (TIFF, JPEG) by Mamiya Digital PhotoStudio software. This process is called “developing.”

MEMO

- RAW+JPEG images can be erased simultaneously, or you can use the menu settings to erase them separately. (Playback Menu [10] Select File Type to Erase P.129)

Image Size

You can choose the size of the images you capture. A large image size is best if you want to print large pictures.
Choose the image size when selecting the image quality.

Quality mode	Image size	Approximate print size	File size	
RAW	5328×4000 pixels Approx. 21,300,000 pixels	———		Approx. 35MB
JPEG	L 5328×4000 pixels Approx. 21,300,000 pixels	386.7 × 290.3mm	FINE NORMAL BASIC	Approx. 10MB Approx. 5MB Approx. 2.5MB
	M 4096×3072 pixels Approx. 12,600,000 pixels	297.3 × 222.9mm	FINE NORMAL BASIC	Approx. 6MB Approx. 3MB Approx. 1.5MB
	S 3008×2256 pixels Approx. 6,800,000 pixels	218.3 × 163.7mm	FINE NORMAL BASIC	Approx. 3MB Approx. 1.5MB Approx. 0.8MB

* The image file size varies depending on the subject and shooting environment.
* The print size is the approximate size when printing in 350dpi resolution.

Setting the Quality and Size

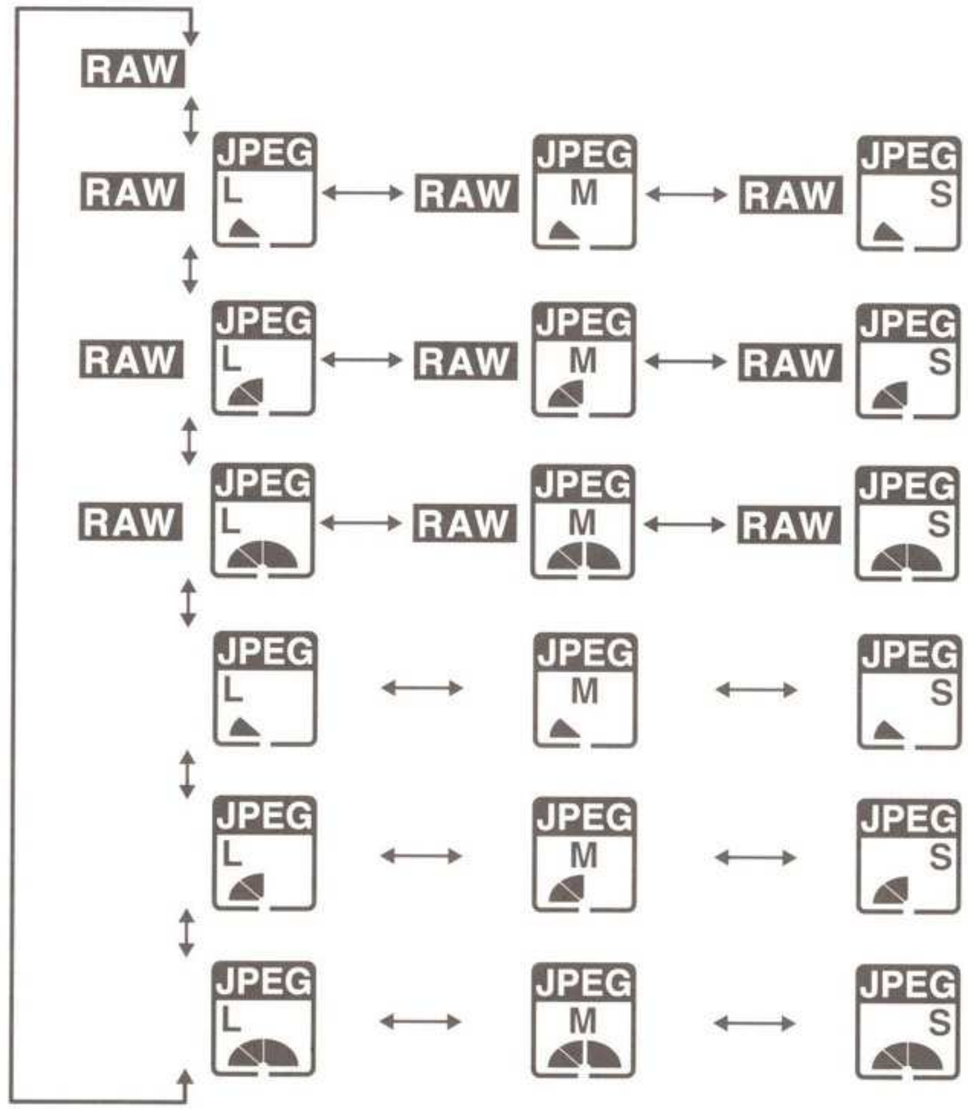
1. **Press the QUALITY button.**
   The image quality indicator appears on the digital LCD monitor.

* JPEG Icon

Image size (L, M, S)
File size (Compressed mode)

FINE :
NORMAL:
BASIC :

2. **Press [◄] [►] on the toggle key or turn the rear dial to select the quality.**
3. **If you selected JPEG format, press [▲] [▼] on the toggle key or turn the front dial to select L, M or S.**
4. **Press the QUALITY button to set.**



Picture Count

The file size is determined by the image size and compression rate. The number of frames that can be saved to the memory card varies depending on the image size and compression rate.

Number of frames that can be saved to the memory card

Quality mode	Image size	File size	Picture count		
			1GB memory	2GB memory	4GB memory
RAW	—	—	27 frames	56 frames	112 frames
RAW + JPEG	L	FINE	21 frames	43 frames	87 frames
		NORMAL	22 frames	47 frames	95 frames
		BASIC	24 frames	50 frames	101frames
	M	FINE	22 frames	46 frames	92 frames
		NORMAL	24 frames	50 frames	101 frames
		BASIC	25 frames	52 frames	105 frames
	S	FINE	24 frames	50 frames	100 frames
		NORMAL	25 frames	53 frames	106 frames
		BASIC	26 frames	54 frames	108 frames
JPEG	L	FINE	94 frames	195 frames	390frames
		NORMAL	152 frames	315 frames	629 frames
		BASIC	266 frames	551 frames	1101 frames
	M	FINE	128 frames	266 frames	532 frames
		NORMAL	257 frames	533 frames	1065 frames
		BASIC	413 frames	856 frames	1709 frames
	S	FINE	238 frames	494 frames	988 frames
		NORMAL	477 frames	989 frames	1976 frames
		BASIC	766 frames	1587 frames	3170 frames

* The number of frames that can be taken varies depending on the shooting conditions. The above figures are approximate.
* The figures for RAW+JPEG show the total frame count.

Color Space

Color space refers to the area where colors are reproduced. The color reproduction area varies depending on the type of digital camera, monitor, printer or other input/output device. To match the colors from input to output, it is necessary to adjust the colors reproduced by each device by correcting/managing the different color reproduction areas.
Adobe RGB color space has a broader color reproduction area than sRGB and is mainly used for business purposes, such as commercial printing. When images taken in Adobe RGB mode are output on an sRGB device, they will appear slightly paler than output images taken in sRGB mode.

Color Space

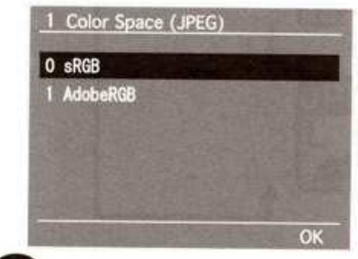
You can set the color space of JPEG images. The default setting is [sRGB]. RAW images can be specified when developing images using Mamiya Digital PhotoStudio.

Setting	Description
sRGB	Sets the color space to sRGB. Suitable for general image use.
AdobeRGB	Sets the color space to Adobe RGB. With a broader color reproduction area than sRGB, it is suitable for uses such as commercial printing. However, the same gamut can only be reproduced on an image output device with the Adobe RGB color reproduction area.

NOTE:

- When sRGB or AdobeRGB color space is selected in the Mamiya ZD Setup menu, the ICC profile is not embedded in JPEG images captured with the camera. When editing JPEG images captured with the camera using applications other than Mamiya Digital PhotoStudio, be sure to use the same work space as the color space that was selected when the pictures were taken.

1. **Select [1 Color Space (JPEG)] on the Setup menu and press the OK button.**



2. **Press [▲] [▼] on the toggle key or turn the front dial to select the color space.**
3. **Press the OK button to set.**

White Balance

The adaptability of the human eye enables us to see white as white regardless of the light source, such as daylight, cloudy skies, incandescent lighting or fluorescent lighting. To capture white as white in the same way as the human eye in images taken with a digital camera, the camera must be adjusted to suit the light conditions under which the subject is captured.

Available white balance settings

Indicator	White balance	Color temperature	Description
AWB	Auto	Approx. 2900_6000K	The camera adjusts the white balance automatically.
☀	Daylight	Approx. 5200K	For taking pictures in fine weather with the sun behind the camera.
☁	Cloudy	Approx. 6000K	For taking pictures in overcast weather.
⌂	Shade	Approx. 7500K	For taking pictures in the shade on a sunny day.
💡	Electric light	Approx. 3200K	For taking pictures under incandescent light.
▭	Fluorescent light	Approx. 4200K	For taking pictures under white fluorescent light.
ϟ	Flash	Approx. 5500K	For taking pictures using the flash.
1	Customized white balance 1	Approx. 2900_6000K	For adjusting the white balance according to the shooting environment.
2	Customized white balance 2	Approx. 2900_6000K	For adjusting the white balance according to the shooting environment.
K	Color temperature	Approx. 2800_10000K	For adjusting the color temperature.

* Minor adjustments can be made to the color temperature from Auto to Flash.

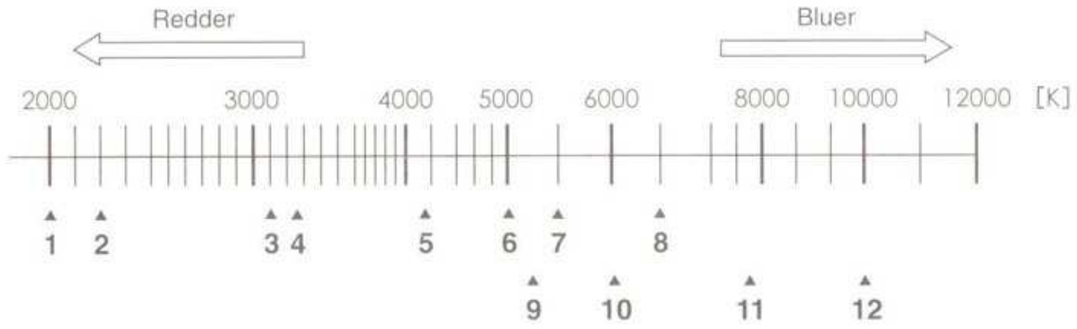
AWB

1. **Press the WB button.**
   The white balance indicator appears on the digital LCD panel.
2. **Press [▲] [▼] on the toggle key or turn the front dial to display the white balance indicator you want to set.**
3. **Press the WB button to set.**

Color Temperature

Light has various hues and may be reddish or bluish, for example. Reproducing such hues requires an objective gauge (scale). The color temperature describes the hue by the absolute temperature (K: kelvin).
The higher the color temperature, the bluer the hue and the lower the color temperature, the redder the hue.

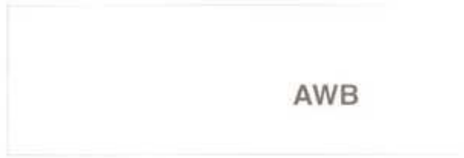
Approximate color temperature



1 : Candlelight
2 : Oil lamp
3 : Incandescent lamp
4 : Halogen lamp
5 : White (fluorescent lamp)
6 : Daytime white (fluorescent lamp)
7 : Flash
8 : Daylight color (fluorescent lamp)
9 : Sunlight
10 : Cloudy
11 : Shade
12 : Fine weather

Minor Adjustment of White Balance

You can make minor adjustments to the white balance settings for auto, daylight, cloudy, shade, electric light, fluorescent light and flash in the range of ±3 decamired steps. Adjusting in the plus direction produces a reddish tinge, while adjusting in the minus direction produces a bluish tinge.



1. **Press the WB button.**
   The white balance indicator appears on the digital LCD panel.

2. **Press [◄] [►] on the toggle key or turn the rear dial to select the number of adjustment steps.**
   When an adjustment is made, the adjustment icon +/– and number of steps appear. The number displayed with the adjustment icon indicates the number of adjustment steps.
3. **Press the WB button.**

Setting the Color Temperature

You can set the color temperature used for the white balance by the color temperature setting (kelvin value).

1. **Press the WB button on the back of the camera.**
   The WB indicator appears on the LCD monitor.
2. **Press [▲] [▼] on the toggle key or turn the front dial to select the color temperature setting [K].**
3. **Press [◄] [►] on the toggle key or use the rear dial to select the color temperature (kelvin value) you want to set.**
   Press and hold down the toggle key to change the color temperature continuously.
4. **Press the WB button.**

Trial Shot

Check that the color temperature you have set is the correct white balance for the shooting conditions by taking a test shot using the white balance set by the color temperature setting.

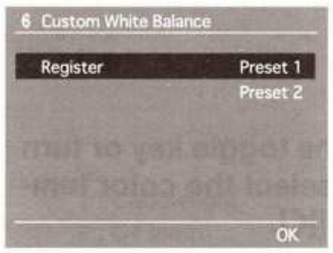
Mired

The color temperature of the light source is expressed in kelvins (K), but it does not correspond to the color difference of the light source.
A difference of 500K in the high color temperature area is very different from a difference of 500K in the low color temperature area. The mired is a measure for expressing this breadth of variation. The mired value is the reciprocal of the color temperature multiplied one million times.

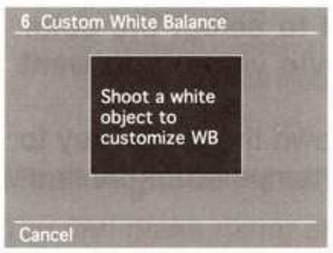
Customized White Balance

Use the customized white balance when the desired white balance cannot be obtained by the manual white balance settings or color temperature settings. Two customized white balance settings can be saved. This function is useful when taking pictures in a limited color temperature environment.

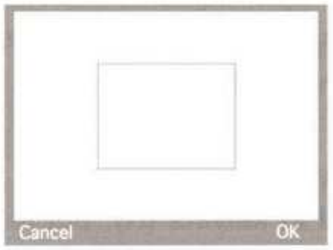
1. **Press the MENU button to display the menu.**
2. **Use the toggle key to select [6 Customize White balance] in the Recording menu and press the OK button.**



3. **Select customized white balance [1] or [2] in the customize window and press the OK button.**
   Customized white balance [1] is used in this explanation.
   The Customize White Balance window appears.



4. **Aim the camera so that a white or gray object fills as much of the picture area as possible and take the picture.**
   The customized white balance data appears on the LCD monitor.



5. **Check that the white or gray object is inside the frame in the customize window and press the OK button.**
   Half-press the shutter release button or press the MENU button to return to the normal display.
   To cancel or redo, press the Cancel button and return to the customize window.

Important

- The white balance can be customized in any exposure mode, but auto mode is recommended.
- The white balance can be customized without focusing (∞ can be used).
- Take the white or gray object in standard exposure.
  If excessively under- or overexposed, the correct customized white balance may not be obtained.
- Select as achromatic an object as possible when customizing the white balance.
  As photocopying paper and other OA paper contains a fluorescent coating, the correct customized white balance may not be obtained.
- If the captured white or gray object is smaller than the frame in the customize window, the correct customized white balance may not be obtained.
- The image used for customizing the white balance is not saved.

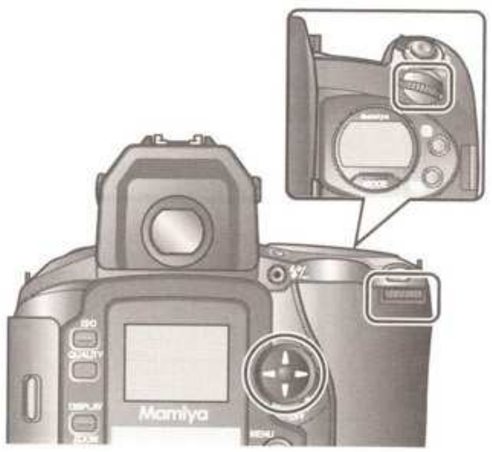
Using the Customized White Balance

1. **Press the WB button.**
2. **Press [▲] [▼] on the toggle key or turn the front dial to select customized white balance [1] or [2].**
3. **Press the WB button to set.**
4. **Take the picture.**

ISO Sensitivity (Image Sensitivity)

The ISO sensitivity (image sensitivity) is a numeric indication of the degree to which the image sensor reacts to light. The higher the number, the greater the sensitivity to light and suitability to taking pictures in low light where a fast shutter speed is required. Greater sensitivity, however, is accompanied by some loss of quality, apparent as noise, color noise or grainy images.
The standard Mamiya ZD film speed is ISO 50. The recommended ISO sensitivity is ISO 50 to ISO 100 to capture images with low noise. The film speed can be adjusted in 1/3 steps from ISO 50 to ISO 400, but selecting a film speed above ISO 200 may result in visible noise or grainy images. Use only when you require a fast shutter speed in low light conditions.

1. **Press the ISO button.**
   The ISO icon and film speed appear on the digital LCD panel.



2. **Press the toggle keys or turn the front or rear dial to select the film speed.**

3. **Press the ISO button to set.**
   You can also half-press the shutter release button or press any button other than the buttons on the back of the camera to set.

Important

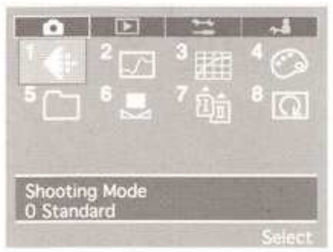
- Selecting a high ISO sensitivity will result in greater noise, such as color noise or graininess.
- Taking pictures with a high film speed under long exposure conditions will produce more noise, such as color noise.
- More noise may appear in images when a high film speed is used in a high temperature environment.
- Use of the noise reduction function is recommended when using a film speed higher than ISO200. (P.133)

Setting the Color Mode

You can set the color reproduction of the images you capture. There are four color modes to choose from: standard, portrait, landscape and products.
The default setting is standard mode.

Color mode	Description
Standard	Produces the most natural color tones. Suitable for most pictures.
Portrait	Emphasizes skin tones. Suitable for portrait pictures.
Landscape	Emphasizes bright greenery and blue skies. Suitable for landscape pictures.
Products	Emphasizes primary colors. Suitable for pictures of products.

1. **Press the MENU button to select the recording menu.**



2. **Press [▲] [▼] on the toggle key or turn the front or rear dial to select [1 Shooting Mode] in the Recording menu and press the OK button.**

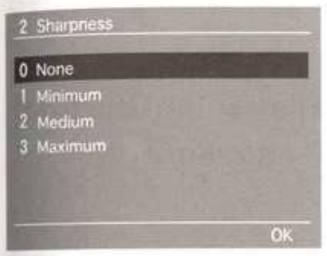
3. **Press [▲] [▼] on the toggle key or turn the front dial to select the desired color mode.**
4. **Press the OK button to set.**

Setting the Sharpness, Tone and Saturation

Sharpness

You can adjust the sharpness to obtain sharply defined images.
The default setting is None.

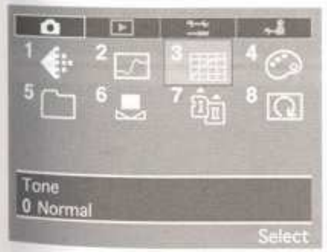
1. **Press the MENU button. Press the toggle keys or turn the front or rear dial to select [2] Sharpness] in the recording menu and press the OK button.**



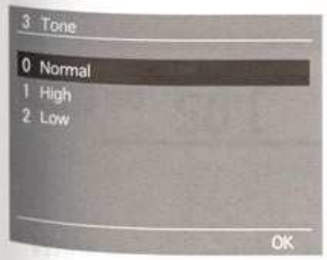
2. **Press [▲] [▼] on the toggle key or turn the front dial to select the desired sharpness.**
3. **Press the OK button to set.**

Tone

You can adjust the tone of images. Select Low to reduce the contrast and High to increase the contrast.
The default setting is Normal.



1. **Press the MENU button. Press the toggle keys or turn the ront or rear dial to select [3 Tone] in the recording menu and press the OK button.**

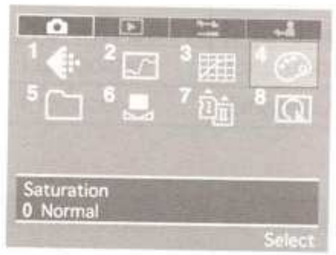


2. **Press [▲] [▼] on the toggle key or turn the front dial to select the desired tone.**
3. **Press the OK button to set.**

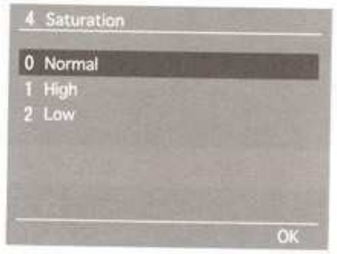
Setting the Sharpness, Tone and Saturation

Saturation

You can adjust the saturation of images. Select High to increase the saturation and obtain bright images and Low to reduce the saturation.
The default setting is Normal.



1. **Press the MENU button. Press the toggle keys or the front or rear dial to select [4 Saturation] in the recording menu and press the OK button.**



2. **Press [▲] [▼] on the toggle key or turn the front dial to select the desired saturation.**

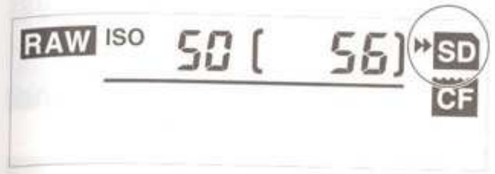
3. **Press the OK button to set.**

Important

- Any changes you make to the sharpness, tone and saturation are reflected in the JPEG images produced by the camera.
- For RAW images, the settings are saved as the default settings when the images are opened with Mamiya Digital PhotoStudio.

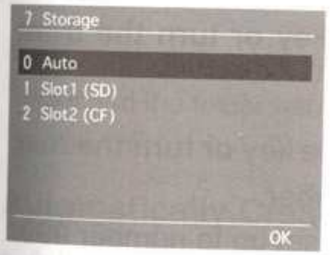
Selecting a Memory Card and Creating Folders

You can use two types of memory card in the Mamiya ZD, a CF card and an SD card.
The default setting is the slot that contains a card.
If both a CF card and an SD card are inserted when the default setting is set, priority is given to the SD card.

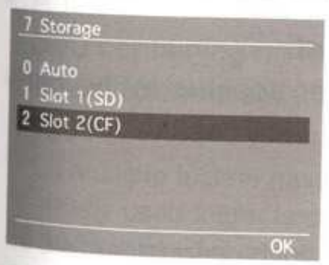


Selecting a Memory Card

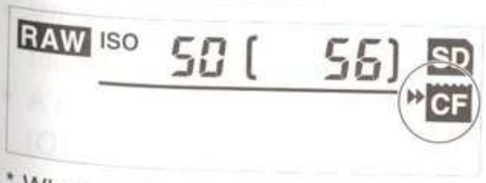
1. **Press the MENU button. Press the toggle keys or turn the front or rear dial to select [7 Storage] in the recording menu and press the OK button.**



2. **Press [▼] on the toggle key or turn the front dial to select a card slot.**



3. **Press the OK button to set.**
Subsequently captured images are saved to the memory card in the selected card slot.



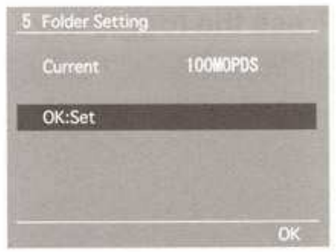
* When you have selected a card slot, no images will be saved to the memory card in the other card slot, if a card has been inserted.
* Insert the memory card that you want to use before selecting the card slot.

Creating a Folder

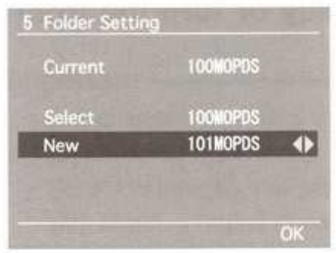
You can create and select folders for storing images in.

Creating a New Folder

1. **Press the MENU button. Press the toggle keys or turn the front or rear dial to select [5 Folder Setting] in the recording menu and press the OK button.**



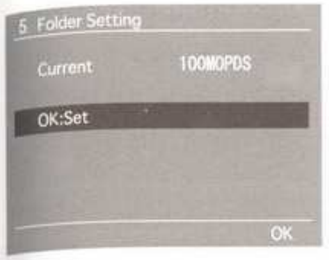
2. **A new folder setting window appears. Press the OK button.**



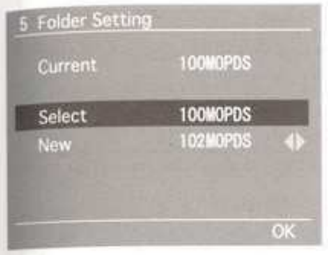
3. **Press [▼] on the toggle key or turn the front dial to select [New].**
4. **Press [◄ ►] on the toggle key or turn the rear dial to set the folder number.**
   The folder number can be set up to number 999.
5. **Press the OK button to set.**
   The selected folder number appears in the current folder field and subsequently captured images are saved to this folder.

* The number after the highest existing folder number appears in the new folder field in a new folder display window.

Changing the Folder



1. **Display the folder setting window and press the OK button.**



2. **Press [▼] on the toggle key or turn the front dial to select [Select].**
3. **Press [◄ ►] on the toggle key or turn the rear dial to select the number of an existing folder.**
4. **Press the OK button to set.**
   The selected folder number appears in the current folder field and subsequently captured images are saved to this folder.

* When the camera is turned off or the memory card cover is opened, the settings are reset and the folder with the highest number is selected.

Automatically Creating a Folder

- A folder is automatically created when the memory card is formatted or a card containing no folders is inserted.
- A new folder is created when the number of files saved to the folder exceeds 9999.
  * If multiple folders have been created, the folder with the number closest to the currently used folder is selected and a new folder is not created. If the folder with the highest number was selected, a new folder is created with the next sequential number.
- When the settings are reset in [3 File Numbering] in the Setup menu, a new folder is created.
- A new folder is created if the settings are reset when file numbering is set to [ON].

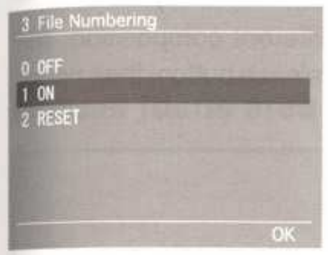
File Numbering

When file numbering is set to [ON], the file number of the last captured image is stored in the camera and the next time you take a picture, it is saved with the subsequent number. When multiple memory cards are used, images are saved with sequential file numbers to facilitate management of captured images.

Setting	Description
OFF (File Numbering)	• Images are saved in folders according to file number until the memory card is formatted.
	• When the memory card is formatted, folder numbering starts from 100 and file numbering starts from 0001.
	• A new folder is created when the file number reaches 9999.
	• File numbering starts from 0001 when a new folder is selected or a new memory card is inserted. However, when the selected folder or memory card already contains images, numbering starts from the next file number after the highest existing file number in the folder.
	• When the memory card is full, [FOLDER NO. FULL] appears on the LCD monitor, then [CARD FULL] appears and the shutter release is locked.
ON (File Numbering)	• Images are saved with sequential file numbers, regardless of the file numbers in the memory card. However, if a file number in a folder is duplicated or a file number that is higher than the current file number already exists, the image is saved with the subsequent file number.
	• A new folder is created when the maximum number of image files is reached.
	• When the memory card is full, [FOLDER NO. FULL] appears on the LCD monitor, then [CARD FULL] appears and the shutter release is locked.
RESET	• You can reset the file numbers stored in the camera in file numbering mode. When the settings are reset, a new folder is created and file numbering starts from 0001.

Setting File Numbering

1. **Press the MENU button. Press the toggle keys or turn the front or rear dial to select [3 File Numbering] in the setup menu and press the OK button.**



2. **The file numbering window appears. Press [▲] [▼] on the toggle key or turn the front dial to select [1 ON].**
3. **Press the OK button.**

Folder and File Number Display

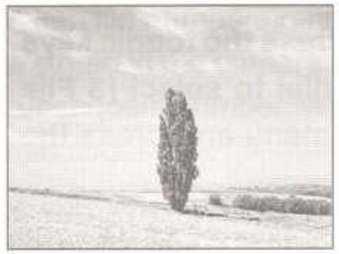
You can change the display on the LCD monitor from the ISO sensitivity and picture count to the folder number and file number. While the ISO sensitivity and picture count are displayed on the monitor, press the ISO button while holding down the INFO button. The ISO sensitivity and picture count change to the folder number and file number. The setting is saved when the camera is turned off. To restore the normal display, press the ISO button while holding down the INFO button again.

ISO sensitivity and picture count display

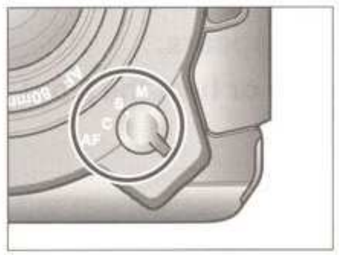
Folder number and file number display

Auto Focus

Single focus mode (S)



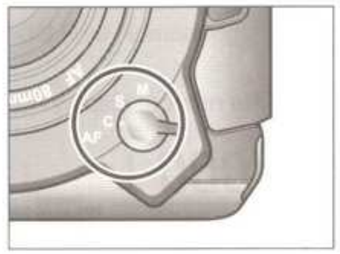
This mode uses the focus-priority mechanism where the shutter can be released when the focus indicator ● in the viewfinder LCD is lit. This mode is suited to taking stationary subjects.
The focus is locked when the focus indicator ● is lit.



* The shutter cannot be released if the subject is not in focus (the focus indicator ● is not lit).
* To take another picture with a different composition, remove your finger from the shutter release button, then press the shutter release button again.

Continuous focus mode (C)

In this mode, shutter release takes priority over focusing. The shutter can be released regardless of whether or not the focus indicator ● in the viewfinder LCD is lit. The focus is adjusted continuously while the shutter release button is half-pressed. This mode is suited to taking moving subjects.

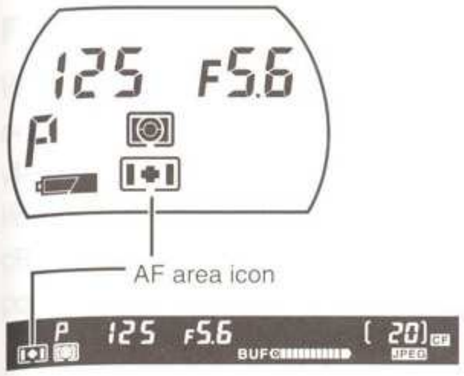


* The focus is not locked when the focus indicator ● is lit.
* The shutter can be released when the focus indicator ● is not lit.

MEMO

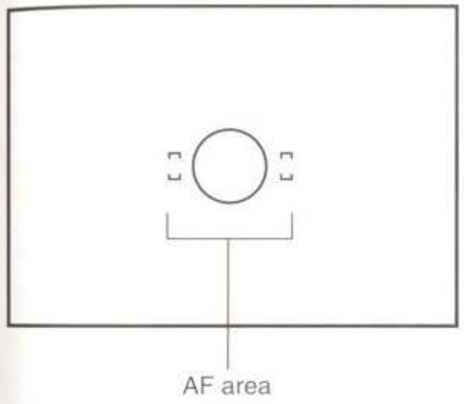
- You can select whether or not to display the focus and out-of-focus indicators. → Custom setting menu [19] (P.146)

Focus Area



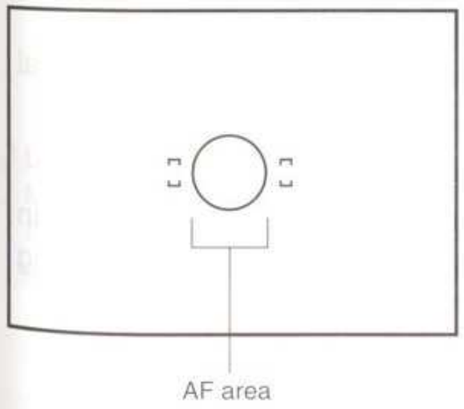
With the Mamiya ZD, you can select a focus area to suit the subject using the custom setting menu.
The default setting is normal focus area.
You can check the selected focus area in the viewfinder LCD or top LCD panel.
For instructions on how to select the focus area, see Custom setting menu [3] (P.144).

Normal focus area



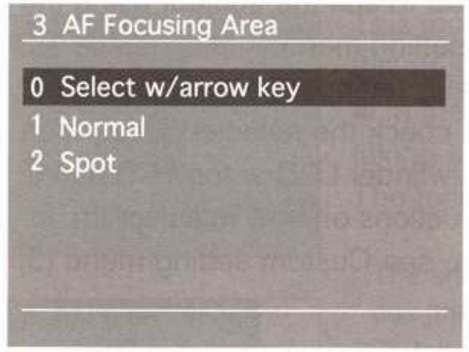
The camera focuses on the area inside the focus frame in the viewfinder.

Spot focus area

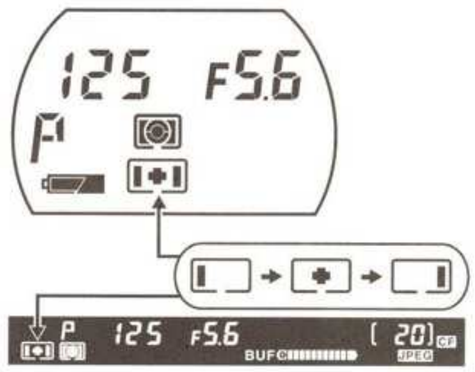


The camera focuses on the center of the focus frame in the viewfinder.

Changing the Focus Area

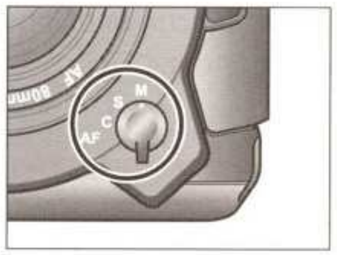


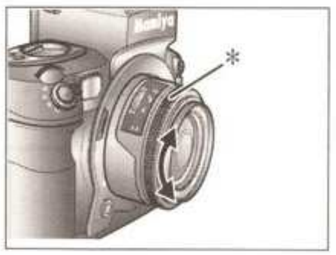
If you select [0 Select w/arrow key] in [3 AF Focusing Area] (P.140) in the custom setting menu, you can press [◄] [►] on the toggle key to select from three focusing points while looking at the AF focusing area mark displayed on the top LCD panel or viewfinder LCD.



Manual Focus Mode (M)

You can cancel the auto focus function and focus the camera manually.

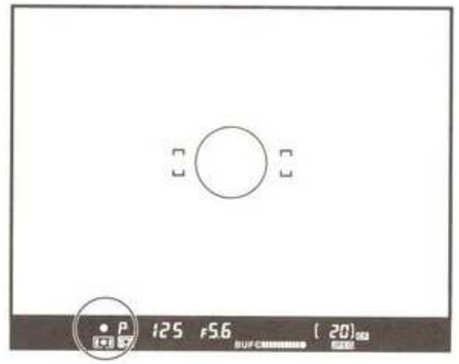




1. **Switch to [M] (manual focus mode).**
   Set the focus mode selector lever to [M] (manual focus mode)
2. **Adjust the focus.**
   Turn the lens focus ring ∗ until the subject is in focus. You can also focus on the subject using the focus indicator ●. (P.69)

Focusing Using the Focus Indicator

With the shutter release button half-pressed, turn the lens focus ring to focus on the subject. When the subject is in focus, the focus indicator ● lights in the viewfinder LCD.
If the out-of-focus indicator ► lights in the viewfinder LCD, the camera is focused on a point beyond the subject. If ◄ lights, the camera is focused on a point in front of the subject.



In focus

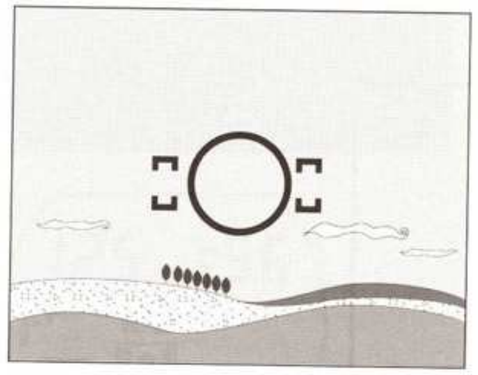
Turn the lens focus ring clockwise.

Turn the lens focus ring counterclockwise.

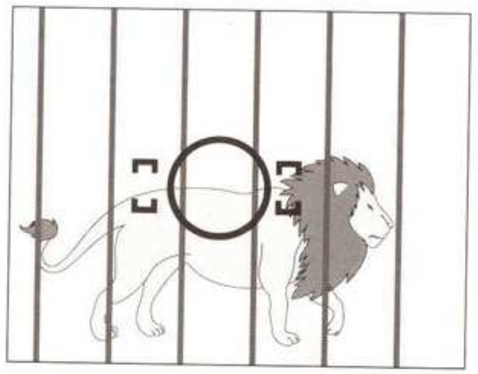
* Use the focus indicator when taking pictures in manual focus mode or when using an M645 lens.
* If you adjust the focus using the focus indicator with an M645 lens, be sure to open the aperture. You can use this function with a lens with an aperture of f/5.6 or higher.

Difficult Subjects for Auto Focus to Focus on

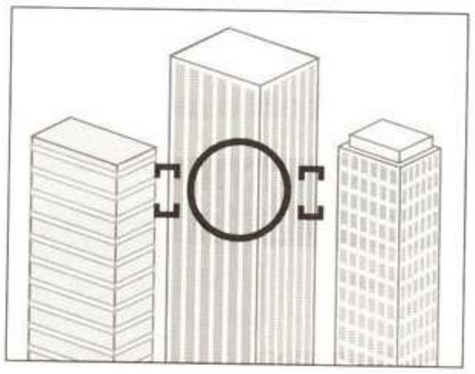
The auto focus function requires a subject with contrast. Auto focusing may fail to focus on subjects such as those described below. In such cases, switch to the manual focus mode and focus manually or focus on an object at the same distance as the subject you want to take, lock the focus using the focus lock mechanism and then take the picture.



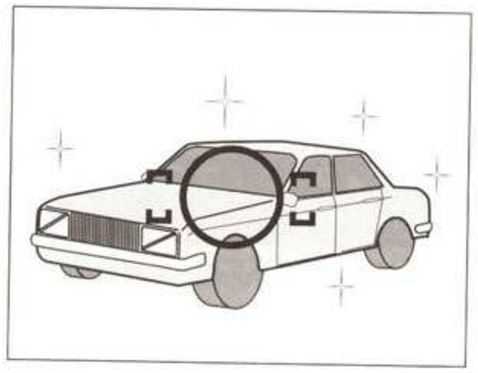
1 Low contrast objects (blue sky, white walls, etc.)



2 Two or more objects at different distances in the focus frame (animal in a cage, etc.)



3 Objects with continuous repeated patterns (building exteriors, blinds, etc.)



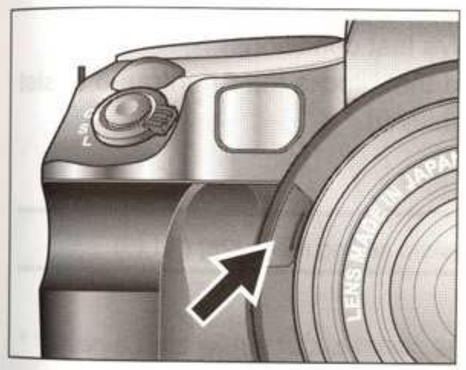
4 Extremely bright objects reflecting the sun or light source (car bodies, water surfaces, etc.)

5 Objects that are far smaller than the focus frame

Using the Focus Lock Function

If the subject you want to focus on is not in the focus frame, the camera focuses on the background in the center. In such cases, use the focus lock function to lock the focus before releasing the shutter.

1. **Set the focus mode selector lever to [S] or [C].**
   Position the subject you want to focus on in the focus frame and half-press the shutter release button.



2. **Lock the focus.**
   When the focus indicator ● in the viewfinder LCD lights, press the AF lock button on the front of the camera to lock the focus.

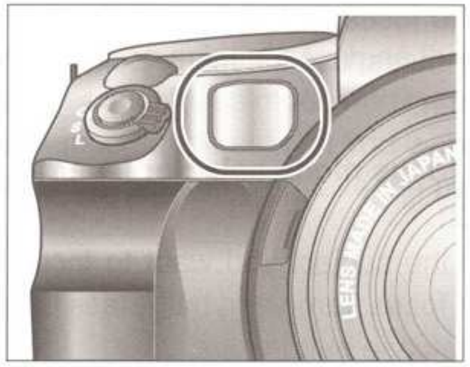
3. **Compose the picture.**
   Keeping the AF lock button pressed, move the camera to achieve the desired composition and release the shutter.
   Keeping the AF lock button pressed after taking the picture will retain the focus for the next picture.

* When the focus mode is set to [S] (single focus mode) and the focus indicator ● is lit, the focus can be locked by half-pressing and holding the shutter release button.

MEMO

- The functions of the AEL and AFL buttons can be switched. → Custom setting menu [16] (P.145)

AF Infrared Assist Beam



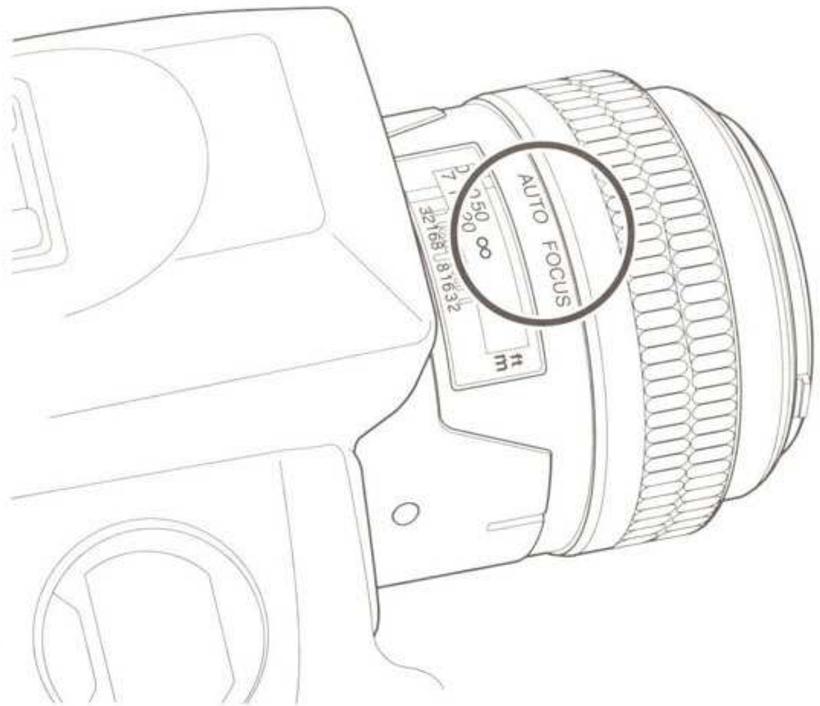
When the subject is dark or the contrast is low, a red lamp (AF assist beam) may light on the front of the camera when the shutter release button is half-pressed. This beam helps the auto focus to focus on the subject.

* The AF infrared assist beam only lights when the focus mode is set to [S] (single focus mode).
* The effective range of the AF infrared assist beam is limited. It does not reach distant subjects.
  Range: 9m (using an 80mm f/2.8 lens under Mamiya test conditions)
* Use of an optional lens hood or bellows lens hood that blocks the AF infrared assist beam may prevent the correct focus from being achieved.

MEMO

• The AF infrared assist beam can be disabled. → Custom setting menu [28] (P.149)

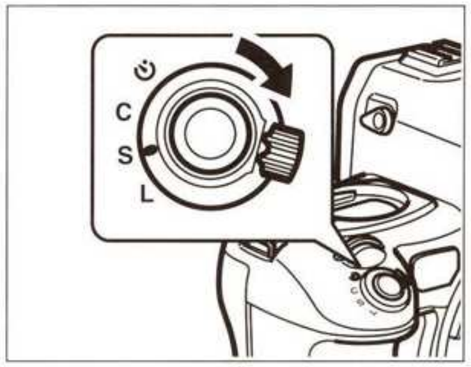
Lens with Focus Mode Selector



* When a lens with a focus mode selector is attached and the focus mode selector lever on the camera is set to [S] or [C], you can switch focus modes between auto focus and manual focus using the lens selector.
* To use the auto focus function, both the camera and the lens have to be set to auto focus mode.
* When either the camera or the lens is set to manual focus mode, the auto focus does not function.
* See the instruction manual for the lens to switch focus modes on the lens.

Single Frame Mode (S)

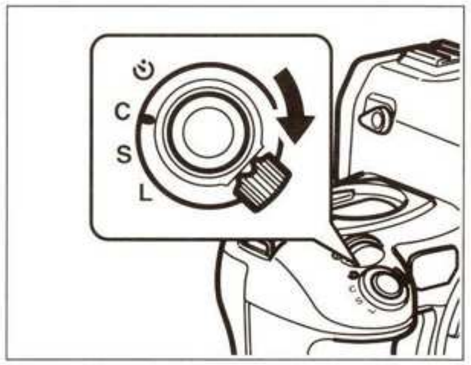
The shutter is released each time the shutter release button is pressed.



1. **Set the shutter release mode selector lever to [S].**

Continuous Mode (C)

Pictures are taken continuously as long as the shutter release button is pressed.



1. **Set the shutter release mode selector lever to [C].**
   Up to 10 pictures can be taken continuously at a rate of approximately 1.2 frames per second.

Continuous Frame Count

If more than 10 frames are taken in continuous mode, the camera memory becomes full and the shutter release is locked so that no more pictures can be taken.
At this time, [BUSY BUF] blinks in the viewfinder LCD.
The indicator continues to blink until sufficient capacity for the set image size is available in the camera memory. The camera memory status is displayed in the viewfinder.

Viewfinder display when camera memory is full

[BUSY BUF] blinks to indicate that the camera memory is full.

Viewfinder display when there is space available in the camera memory

Indicates that there is space available in the camera memory. The illustration shows that there is enough space for 2 frames.

Continuous frame count according to shutter speed

The continuous frame count varies when taking long-exposure pictures over 1/8 sec.

Shutter speed	Frame count
Shutter speed over 1/8 sec.	10 frames
Long exposures less than 1/8 sec.	6 frames

Approximate Image Saving Time in Continuous Mode

The approximate time required to write images to the memory in continuous mode when the camera memory is full (10 images) is shown below.

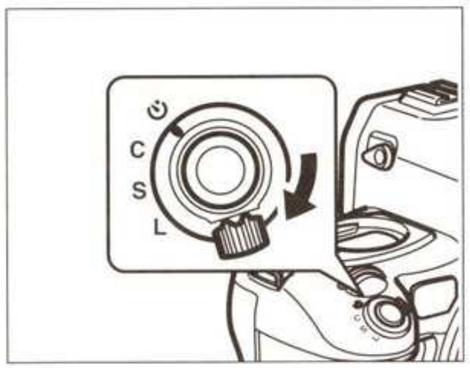
SD card: SUN DISC Extreme 1GB
CF card: SUN DISC Extreme 1GB
} Film speed: ISO 50

	Recording mode	Time
SC card	RAW	Approx. 1 min. 18 sec.
	RAW + JPEG L FINE	Approx. 2 min. 17 sec.
	JPEG L FINE	Approx. 1 min. 4 sec.
CF card	RAW	Approx. 1 min. 36 sec.
	RAW + JPEG L FINE	Approx. 2 min. 38 sec.
	JPEG L FINE	Approx. 1 min. 8 sec.

* Do not open the memory card slot cover or remove the memory card or the battery while the memory card access lamp is lit as this could result in loss of the image data.
* Removing the memory card while the memory card access lamp is lit could result in malfunction of the camera or memory card.
* The image saving time varies depending on the subject, recording mode, type of memory card, etc. The above figures are approximate.
* If you turn the camera off while the memory card access lamp is lit, the number of frames not saved to the memory card appears on the top LCD panel and LCD monitor until saving is completed. At this time, a preview image is displayed on the LCD monitor.

Self-Timer Mode

In this mode, the shutter is released 10 seconds after the shutter release button is pressed.



1. **Set the shutter release mode selector lever to the [⏲] position.**
   When the shutter release button is pressed, the self-timer lamp blinks for 7 seconds, then blinks rapidly for 3 seconds before the shutter is released. For instructions on how to use the self-timer, see P.95.

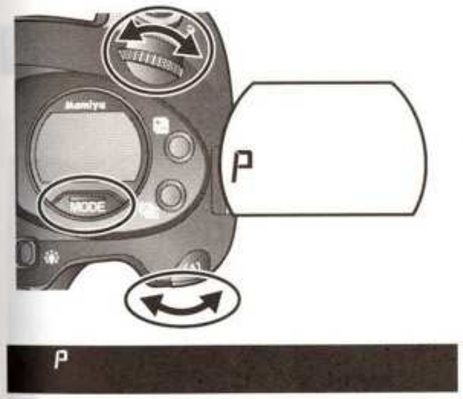
The Mamiya ZD has 5 exposure modes: program AE (P), aperture-priority AE (Av), shutter-priority AE (Tv), manual mode (M) and synchro mode (X). Press the MODE button and turn the front or rear dial to select a mode.

Long exposures over 1/8 sec.

When the shutter speed is slower than 1/8 sec. in any of the exposure modes, shooting takes double the shutter speed time.

Program AE (P)

The aperture and shutter speed are determined automatically for the optimum exposure according to the shooting conditions. This mode is best suited for general photography as it allows the user to concentrate on the subject.



1. **Press the MODE button and turn the front or rear dial to [P] (program AE).**
2. **Press the MODE button to return to the normal display mode.**

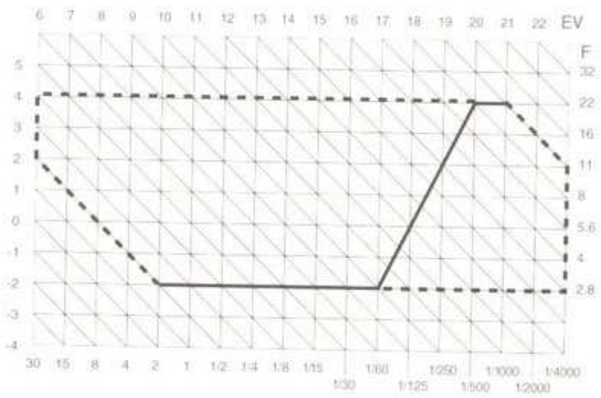
* If the exposure is outside the metering range, the shutter speed and aperture value blink. In such cases, the correct exposure cannot be obtained.

Program Shift (Ps)

You can change the shutter speed and aperture by turning the front dial in [P] (program AE) mode, without changing the exposure. To avoid blurred images or to open the aperture, change to a higher speed. For slower shutter speeds and wider depth of field, change to a lower speed. This function allows you to make these changes quickly.

In program shift mode, the program shift icon [Ps] appears in the viewfinder LCD and top LCD panel.
To cancel the program shift mode, turn the front dial until the program shift icon disappears, set a different exposure mode or turn the camera off.

Mamiya ZD program shift chart



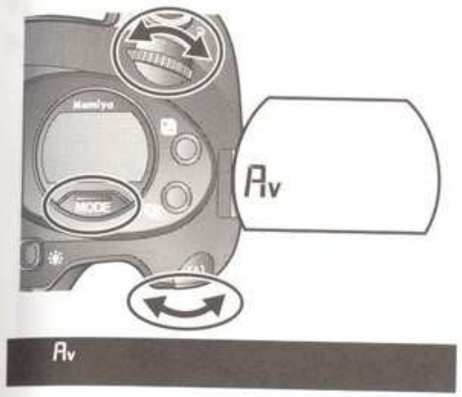
* If the shutter speed and aperture value blink, the correct exposure cannot be obtained. The exposure is outside the metering range.
* When the program line is shifted, the aperture value changes.
* The program line cannot be shifted when an M645 series lens is attached.

MEMO

- You can choose program shift with shutter speed priority or aperture priority. → Custom setting menu [15] (P.145)
- The shutter speed and aperture are set in increments of 1/3 or 1/2 steps. → Custom setting menu [1] (P.140)

Aperture-priority (Av)

Set the desired aperture and the camera automatically selects the optimum shutter speed. Use this mode to achieve various aperture effects when taking portraits, landscapes, etc.



1. **Press the MODE button and turn the front or rear dial to [Av] (aperture-priority AE).**

2. **Turn the front dial to set the desired aperture.**

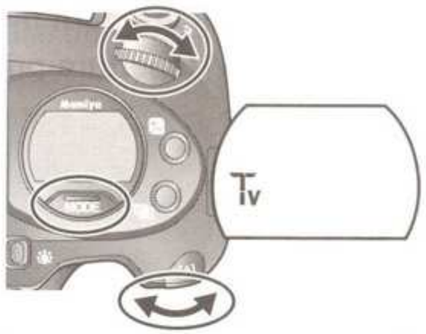
* The shutter speed blinks when the subject is too bright or too dark to meter and the correct exposure cannot be obtained.

MEMO

- The aperture is set in increments of 1/3 or 1/2 steps. → Custom setting menu [1] (P.140)
- The aperture can be changed by the rear dial. → Custom setting menu [12] (P.143)
- The selected aperture level can be locked. (P.97)
- The rotation direction of the dial to increase and decrease the values can be changed. → Custom setting menu [14] (P.144)

Shutter-priority AE (Tv)

Set the desired shutter speed and the camera automatically selects the optimum aperture. Use this mode to achieve various shutter speed effects when taking sporting events, moving objects, etc.



Tv

1. **Press the MODE button and turn the front or rear dial to [Tv] (shutter-priority AE).**

Tv 400 F5.6 [35]

2. **Turn the front dial to set the desired shutter speed.**

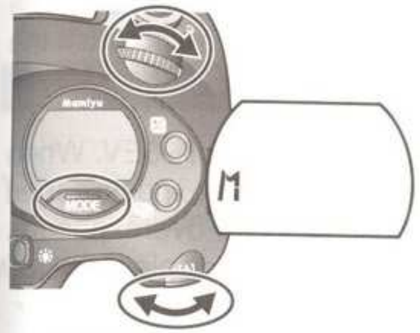
* The shutter speed blinks when the subject is too bright or too dark to meter and the correct exposure cannot be obtained.

MEMO

- The shutter speed can be set in increments of 1/3 or 1/2 steps. → Custom setting menu [1] (P.140)
- The shutter speed can be changed by the rear dial. → Custom setting menu [12] (P.143)
- The selected shutter speed can be locked. (P.97)
- The rotation direction of the dial to increase and decrease the values can be changed. → Custom setting menu [14] (P.144)

Manual Mode (M)

This mode allows the user to set both the desired aperture and shutter speed for total exposure control.
Shutter speeds can be selected from B (bulb) and 30 sec. to 1/4000 sec. The aperture can be set from maximum to minimum aperture. B (bulb) can also be set in this mode.



M

1. **Press the MODE button and turn the front or rear dial to [M] (manual mode).**

M 400 F2.8 [35]

2. **Turn the front dial to set the desired shutter speed.**
3. **Turn the rear dial to set the desired aperture.**

MEMO

- The selected shutter speed and aperture value can be locked. (P.97)
- The shutter speed and aperture can be set in increments of 1/3 or 1/2 steps. → Custom setting menu [1] (P.140)
- The functions of the front and rear dials can be switched. → Custom setting menu [12] (P.143)
- The rotation direction of the dial to increase and decrease the values can be changed. → Custom setting menu [14] (P.144)

Metered Value Difference Indicator

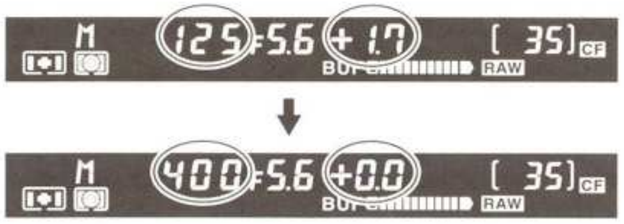
When the shutter release button is half-pressed in manual mode [M], the difference between the set shutter speed and aperture and the metered value measured by the camera appears in the viewfinder LCD. It is called as metered value difference.
[+] indicates that the exposure determined by the selected shutter speed and aperture is higher than the exposure metered by the camera, and [–] indicates that it is lower. When [+] is displayed, increase the shutter speed or reduce the aperture, and when [–] is displayed, reduce the shutter speed or increase the aperture. When the set value matches the metered value, the difference indicator shows [0.0].
The value is displayed in increments of 1/3 steps in the range of ±6EV. When the difference is below the display range, [-u-] blinks for underexposure, and when the difference exceeds the display range, [-o-] blinks for overexposure. In B (bulb) mode, the difference with the metered value is not displayed.

Metered value difference after exposure compensation

When the exposure is compensated in manual mode, the difference with the set value is displayed, based on the compensated value.

One-Press Shift Function

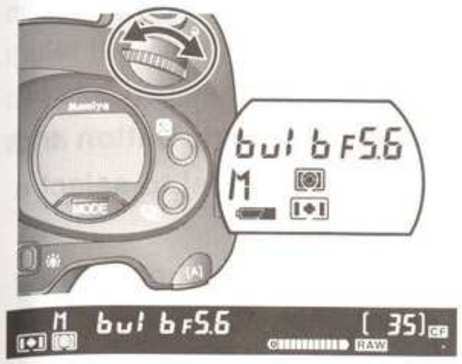
When the difference between the set value and the metered value is displayed in manual mode, press the AEL button for 1 second. The camera adjusts the shutter speed to match the metered value. At this time, the difference is displayed as [0.0]. It is called as the one-press shift function.



MEMO

- The one-press shift function can be disabled. → Custom setting menu [21] (P.146)
- You can select whether the aperture value is adjusted. → Custom setting menu [21] (P.146)
- You can select whether or not to display the difference with the metered value. → Custom setting menu [20] (P.146)

Long Exposure Mode (Bulb Mode)



To take pictures with the shutter open as long as the shutter release button is pressed, set the shutter speed to [B] (bulb).
Pictures taken in long exposure mode are susceptible to noise and graininess. Make sure that there is plenty of power left in the battery before using bulb exposure.

* The bulb time is to longest 1 minute. When the longest exposure time which it sets elapses, continuing to push the button, the shutter closes automatically.

MEMO

- The default bulb time is 30 seconds. The time can be changed up to 1 minute. → Custom setting menu [22] (P.147)
- The bulb mode can be set by pressing the shutter release button twice. → Custom setting menu [23] (P.146)

X (Synchro) Mode (X)

Select this mode when you use the flash. The shutter speed is locked at 1/125 sec. for synchronization.

* For TTL light metering photography using a Metz flash, see P.101 and P.102.
* For flash photography, see P.99 to P.102.

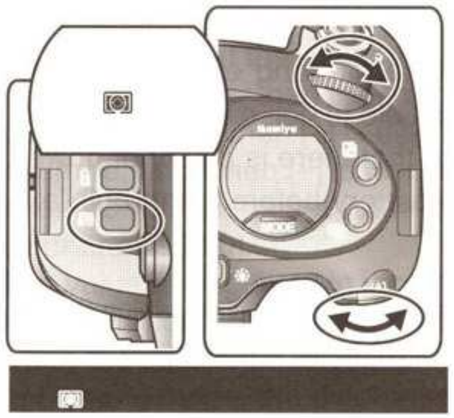
MEMO

- The synchronized speed can be changed. → Custom setting menu [24] (P.147)
- The selected aperture value can be locked. (P.97)

Exposure Metering Modes

Press the metering mode button, optimum metering mode can be selected from four metering modes, according to the condition per light of subject.

How to Change the Exposure Metering Mode



1. **Press the metering mode button and turn the front or rear dial to select a mode.**
   The metering mode icon appears on the top LCD panel when the MODE button is pressed.
2. **Press the metering mode button to set the selected mode.**

Exposure Metering Modes

	Average/spot auto-select metering mode	Average or spot metering is selected automatically. • Center weighted average metering or spot metering is selected according to the subject and the correct exposure is set accordingly. • Spot metering mode is selected automatically when the brightness within the spot metering area is darker than the brightness of the entire picture area. • When there is little difference between the spot metered value and the center weighted average metered value, the correct exposure is obtained by the intermediate value.
	Center weighted average metering mode	The average brightness of the entire picture area is measured with emphasis on the center.
	Center metering mode	The brightness in 7.6% of the central picture area is measured to determine the exposure. Use the circle in the middle of the picture area as a guide. This mode is suited for high contrast subjects or when you want to meter a specific area.
	Spot metering mode	The brightness in 1.2% of the central picture area is measured.

Important

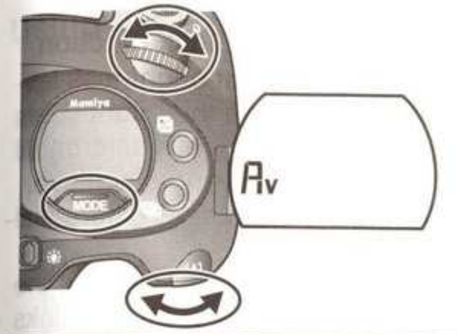
- If a polarizing filter is necessary, use a circular polarizing filter. The correct exposure may not be obtained with a normal polarizing filter.

MEMO

- The metering time can be changed. → Custom setting menu [6] (P.141)

AE Lock Mode

The AE lock mode is useful when the subject used for metering the exposure is different from the subject used for adjusting the focus or when you want to meter the area for adjusting the exposure using the spot metering mode. You can also use this mode for taking continuous shots without changing the exposure.



Av

1. **Set the shutter release mode selector lever to [S] or [C].**
2. **Press the MODE button and turn the front or rear dial to select [Av], [Tv] or [P].**
3. **Focus on the subject for metering the exposure and press the AEL button.**
   In order to surround shutter speed indicator and aperture value, [ ] appears in the viewfinder LCD, indicating that the exposure is locked.
4. **Move the camera to recompose the picture and release the shutter.**
5. **Press the AEL button to cancel AE lock mode.**

* When you continue to take pictures in AE lock mode, [ ] blinks in the viewfinder LCD to indicate that the AE lock is enabled.
* AE lock mode is cancelled when the shutter release mode selector lever is set to [L] (power OFF).
* The AE lock function is not available in [M] (manual exposure mode) or [X] (synchro mode).

AE Lock Mode

Electronic Dial Operation in AE Lock Mode

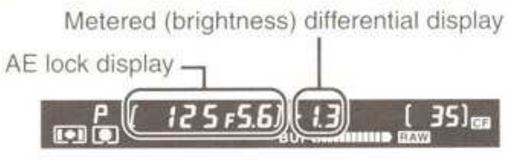
By turning the front or rear dial in AE lock mode, you can change the shutter speed and aperture without changing the exposure value that was set when AE lock mode was enabled.

Exposure compensation and auto-bracketing in AE lock mode

The exposure compensation and auto-bracketing functions can be used when the camera is in the AE lock mode.

Displaying the brightness difference of the subject using the AE lock function

When, for instance, the subject you want to take has very different brightness levels, if you know the difference in brightness between the dark and the bright spots in the picture area, you can use the spot metering mode and brightness differential display to determine the appropriate exposure for the effect you want to achieve.
By setting the metering mode to spot metering and using the brightness differential display, you can obtain the differential of very bright subjects.
The brightness is displayed in 1/3 steps in the range of +/-6EV for as long as the AEL button is pressed down. If the value is outside the metering range, [-u-] blinks to indicate underexposure or [-o-] blinks to indicate overexposure.



There are two ways to display the brightness differential: simultaneously performing AE lock and displaying the brightness differential, or displaying the brightness differential after performing AE lock.

Simultaneously performing AE lock and displaying the brightness differential

By measuring the brightness of the area of the subject that you want to meter using the spot metering mode and pressing the AEL button, the AE lock function is activated and the metered differential appears in the viewfinder LCD. When you alter the camera angle while pressing the AEL button, the metered differential changes according to the brightness.
Knowing the difference between the brightest spot and the darkest spot of the subject you want to take can help you determine the appropriate exposure for the picture you want to create.

Displaying the brightness difference after performing AE lock

By first performing AE lock according to the subject and then metering the targeted spot using spot metering and holding down the AEL button for at least 1 second, the metered differential appears in the viewfinder LCD.
Knowing the brightness of the bright area and dark area of the subject you want to take can help you adjust the exposure compensation to create the effect you want to achieve.

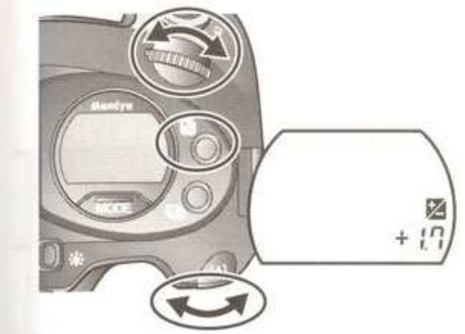
MEMO

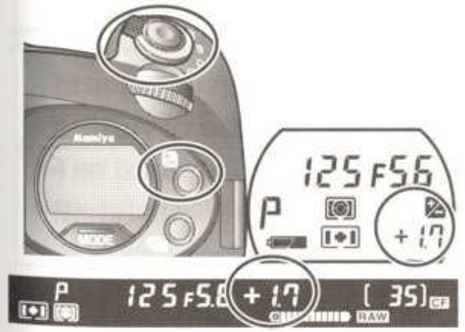
- You can change how the AE lock mode is cancelled. → Custom setting menu [18] (P.146)
- You can change the setting so that half-pressing the shutter release button activates the AE lock mode. → Custom setting menu [17] (P.145)
- The functions of the AEL button and AFL button can be switched. → Custom setting menu [16] (P.145)

Exposure Compensation

In some situations, such as when there is a conspicuous difference between the subject and background brightness or when the correct exposure cannot be obtained because the overall picture area is black or white, the resulting picture may be under- or overexposed. In such situations, use the exposure compensation function. Exposure compensation can also be used when you select any exposure modes except for synchro mode (X) or AE lock mode.

Using the Exposure compensation button





1. **Press the Exposure compensation button.**
   The exposure compensation ±/- icon and value (0.0) appear on the top LCD panel and the exposure compensation value (0.0) appears in the viewfinder LCD.
2. **Turn the front or rear dial to select the desired exposure compensation value.**
   Turn the dial counterclockwise to increase the compensation and clockwise to decrease the compensation. You can check the exposure compensation value on the top LCD panel or the viewfinder LCD.
3. **Press the Exposure compensation button or half-press the shutter release button to set the exposure compensation value and return to the normal display mode.**
   The exposure compensation value is automatically set if no operations are performed for 5 seconds. (Automatic setting)

MEMO

- You can set the exposure compensation increment to 1/3, 1/2, 2/3 or 1.0 f/stop. Custom setting menu [2] (P.140)
- You can increase the exposure compensation range to +/-5EV. → Custom setting menu [6] (P.141)

Exposure Compensation

Using the Rear Dial

Turn the rear dial in P, Tv or Av mode to adjust the exposure compensation.

MEMO

- You can change the setting to disable exposure compensation with the rear dial. → Custom setting menu [13] [15] (P.144, P.145)

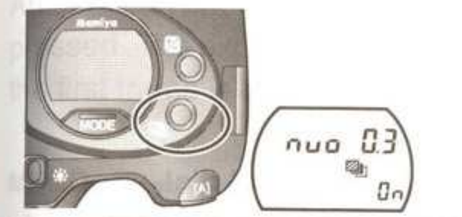
Exposure compensation display on top LCD panel/viewfinder LCD
(when not using a Metz flash)

Exposure mode		Exposure compensation display
P	Program AE	Aperture-priority AE
Av	The set value is displayed.	
Tv	Shutter-priority AE	
M	Manual mode	The difference between the metered value and the set exposure value plus the exposure compensation value is displayed.
X	Synchro mode	Not displayed

Autobracket Photograhy (Autobracket Mode)

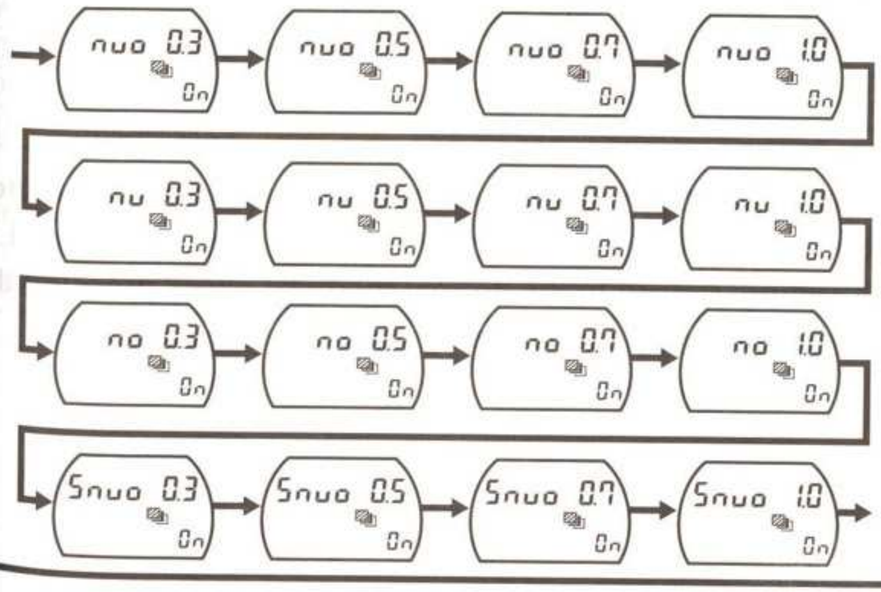
This mode (Normal-Under-Over) is used when taking photographs of subjects for which the exposure compensation value is difficult to determine and when you wish to gradually amend the exposure value when taking shots that do not require normal exposure. You can select and set the number of autobracket frames, autobracket sequence and bracket width.

1. **Set the shutter release mode selector lever to either [S] or [C].**
   When set at [S], the photographs will be taken frame by frame whenever the shutter release button is pressed. When set at [C], the photographs will be taken continuously for the preset number of frames when the shutter release button is pressed.

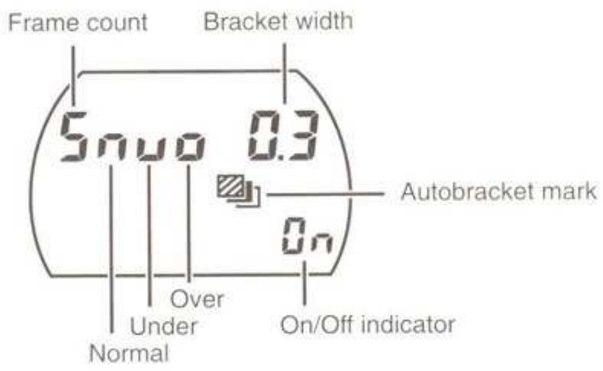


2. **Press the autobracket button to activate the autobracket mode.**
   The Autobracket Setup Screen will be displayed in the upper LCD panel.

3. **Select the number of autobracket frames and the step width of the brackets with the front control dial, and then press the autobracket button to set the selected parameters.**
   The parameters that can be selected and set on this screen are 3-frame, 5-frame and bracket width, and 2-frame, sequential and bracket frame.



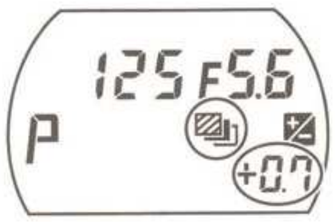
* The alphabet letters represent the sequence of autobracket shooting, with [N] standing for [Normal], [U] standing for [Under] and [O] standing for [Over]. The numerals represent the autobracket step width, with [0.3] standing for [1/3EV], 0.5 standing for [1/2EV], [0.7] standing for [2/3EV] and 1.0 standing for [1EV].
* Registered even when no operations are performed for five or more consecutive seconds.



4. Set the autobracket mode at [ON] with the rear control dial.

5. Press the shutter release button to take the photograph.

The overbracket mark on the LCD panel in the viewfinder will flash in accordance with the set sequence during autobracket shooting. The autobracket mark will flash and the bracket step width will be displayed on the upper LCD panel when the shutter release button is half-pressed to enable confirmation of the shooting sequence.



Flashing during [Normal] shooting.
Flashing during [Under] shooting.
Flashing during [Over] shooting.

6. When shooting has been completed, press the autobracket button and set the autobracket mode to [OFF] with the rear control dial to cancel the setting. Return to the normal mode by either pressing the autobracket button or by half-pressing the shutter release button.

Single-frame Photography (S)

Takes only one photograph when the shutter release button is pressed.
The exposure value is not fixed during photography, and autobracketing (automatic step exposure) is performed for each photograph based on the photometry value that is registered each time.

* Switch across to the [C] mode during shooting in the [S] mode to end the standard setting and commence autobracket shooting.

Continuous Photography (c)

Performs autobracket shooting for the number of preset frames whenever the shutter release button is pressed.
Autobracket shooting will be repeated whenever the shutter release button is pressed. The exposure value established as the standard value is fixed when the first frame is taken.

MEMO

- It is possible to amend the sequence of bracket shooting. → See [Custom Setting Menu [9]] (page 142).
- You can change how the autobracket mode is canceled. → See [Custom Setting Menu [10]] (page 143).

Controlled AE photography in the autobracket mode

Exposure Mode		Details
[P]	Program AE	Amends the shutter speed.
[Av]	Aperture Priority	AE Amends the shutter speed.
[Tv]	Shutter Speed Priority AE	Amends the aperture.
[M]	Manual Mode	Amends the shutter speed.
[X]	Synchro Mode	Cannot be amended.

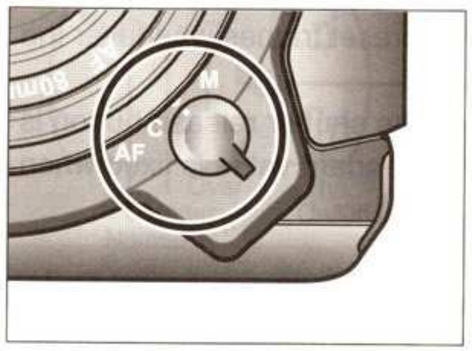
MEMO

- The shutter speed is amended when using the Manual Mode, but it is possible to set the parameter so that the aperture is also amended on the Custom Setting Menu [11] (see page 143).

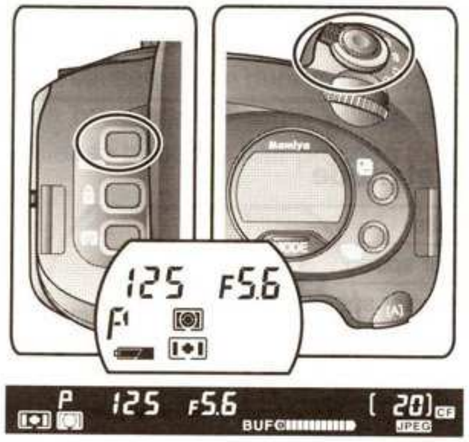
Mirror-Up Photography

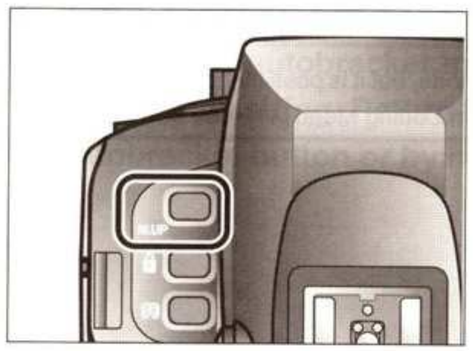
As only the shutter operates when taking photographs with the mirror pre-set in the raised position, it is possible to avoid small shocks to photographs, close-ups and copies taken with slow shutter speeds and telephoto lenses.
To avoid camera shake, it is best to use this setting together with the RE401 electromagnetic cable release and a tripod, which are sold separately.

When Using the Autofocus and AE



1. **Set the focus mode lever to the [S] position (single focus mode.)**
2. **Press the exposure mode button, select either [P], [Av] or [Tv] with the front or rear control dials, and then set the required shutter speed and aperture.**
3. **Look through the viewfinder and half-press the shutter release to align the focus and structural outline.**
4. **Half-press the shutter release button and maintain the pressure, and then press the mirror-up button.**



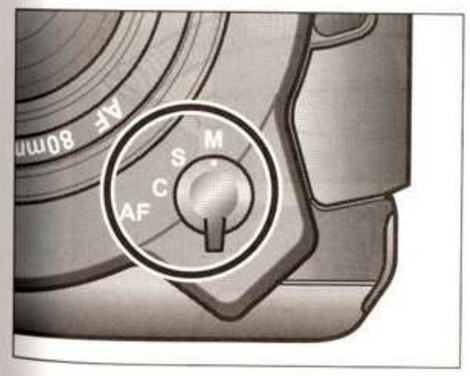


5. **Press the shutter release button to take the photograph.**

* Continue half-pressing the shutter release button when take mirror-up photographs. The shutter won't operate if the half-press button is released midway through the process.
* When the AF lock function is enabled, it is possible to operate the shutter without keeping the shutter release button half-pressed.

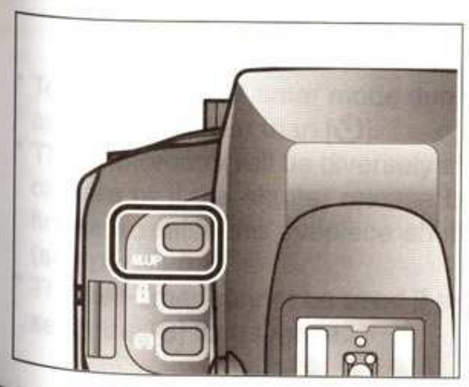
* When the shutter release mode is set at [C], it is possible to continue taking mirror-up photographs after a small interval if the shutter release button is pressed continually. The process will be ended with the mirror still in the raised position if pressure on the shutter release button is relaxed, so press the mirror-up button once more to cancel the mirror-up mode.
* Autobracket photography is possible prior to mirror-up photography by setting up the parameters for the autobracket mode. Autobracket shooting will be continued which the shutter button is pressed in the [C] mode.
* If the mirror-up mode is continued for a period of thirty seconds, the mirror will be lowered and mirror-up photography canceled. It is possible to change this to sixty seconds or deactivate automatic canceling on the Custom Setting Menu. However, note that if this is set so that the mode is not automatically canceled or if the mirror is raised for long periods of time, the consumption of battery power is speeded up. → See the [Custom Setting Menu [8]] (page 142).
* The mirror-up mode is automatically canceled if the lens is removed when photographs are being taken with this mode activated. It is also not possible to activate the mirror-up button when the lens is detached.
* If you remove your eye from the viewfinder in the mirror-up mode when the light is behind the camera, light may enter the viewfinder and prevent the correct exposure from being obtained. You are recommended to use the AE lock function or set AE lock in [17] Half-Press Release Button in the Custom Setting Menu.

Manual Focus



The operations for this are the same those already explained for autofocus up until procedure #2.

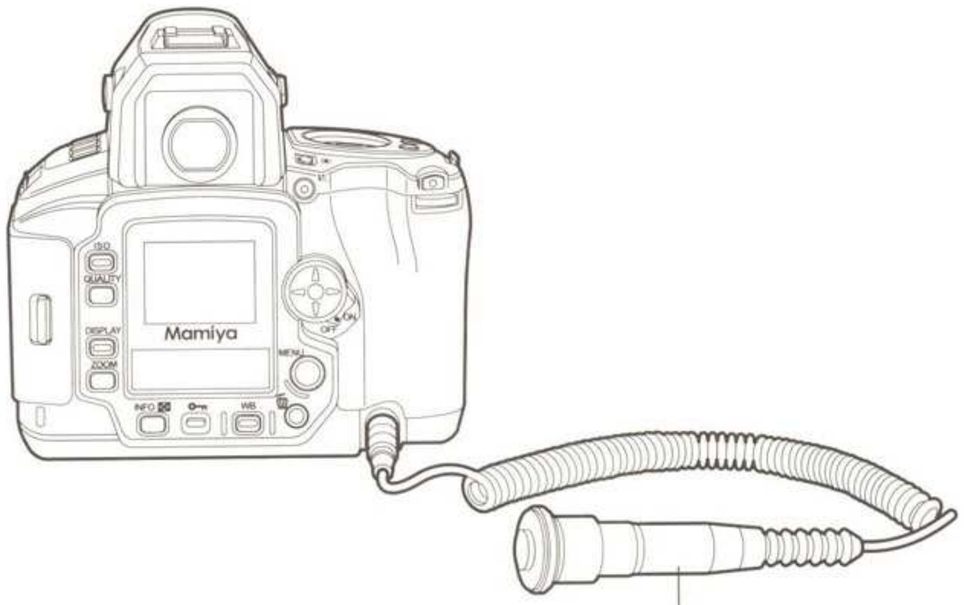
1. **Set the focus mode lever to the [M] position (manual focus.)**
2. **Look through the viewfinder and half-press the shutter release to align the photometry, focus and structural outline.**
3. **Press the mirror-up button to raise the mirror.**
4. **Press the shutter release button to take the photograph.**
   Photography in this mode only requires the shutter release button to be pressed, not half-pressed.



Auxiliary Release Contact

The optional RE401 electromagnetic cable release and the RS402 remote controller are used when taking photographs in the mirror-up mode, the long-exposure mode, the low shutter speed mode and similar modes. The cables for these items of equipment are plugged into the auxiliary release contact on the camera.

Remove the cover to the auxiliary release contact before use. Store to the cover in a safe location to prevent loss.



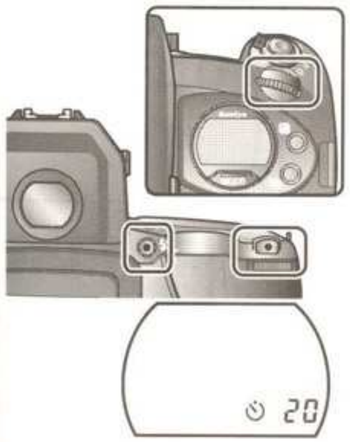
RE401 electromagnetic cable

Self-Timer Photography (Self-Timer Mode)

The self-time mode is very useful when taking group photographs or other photographs in which the photographer wishes to appear. Make sure the camera is secured firmly on a tripod or similar piece of apparatus when taking photographs in this mode.

1. **Set the shutter release mode lever to the [⏲] mark.**
2. **Look through the viewfinder and align the structural outline and the focus.**
3. **Press the shutter release button.**
   The self-timer lamp will begin to flash when the shutter release button is pressed, and the shutter will operate when ten seconds have elapsed.
   The self-timer lamp will flash intermittently for the first seven seconds, and this will speed up for the final three seconds.
4. **Return the shutter release mode lever to the [L] position.**

Amending the Self-Timer Operation Time

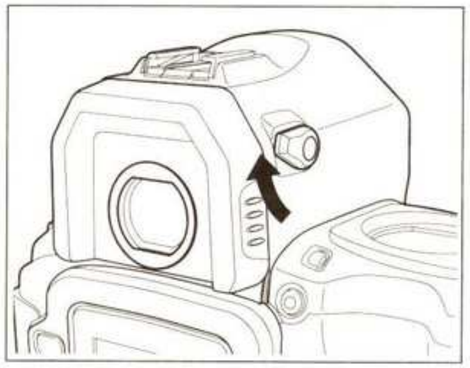


1. **Set the camera in the self-timer mode.**
2. **Press the [Cancel] button for one second, and then set the operation time with the front or rear control dials.**
   The [⏲] self-timer mode mark will be displayed on the upper LCD panel together with the default setting of [10] (10 seconds.)
   This can be set in units of one second between [2] and [10], and in units of ten seconds thereafter.

* To cancel the self-timer mode during operations, set the shutter release mode lever to any position other than [⏲].
* The photometry will be diversely affected if a bright light is shining onto the back of the camera or if the shutter release button is pressed without looking through the viewfinder, so raise the eyepiece shutter lever to close the eyepiece shutter accordingly (see page 96.)
* The self-timer cannot be used if the focus mark (●) is illuminated when the camera is set in the [S] focus mode.

Eyepiece Shutter

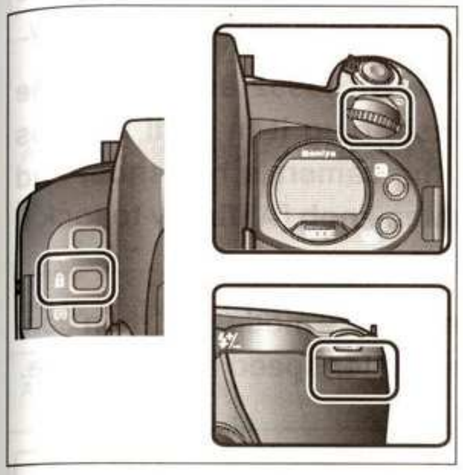
There are cases where photographs will be taken with the wrong exposure if a bright light is shining onto the back of the camera or if the shutter release button is pressed without looking through the viewfinder. Raise the eyepiece shutter lever to close the eyepiece shutter, it can avoid this.



The red eyepiece shutter will be lowered to close the viewfinder when the eyepiece shutter level is raised.

Activating and Deactivating the Front and Rear Control Dial Lock

This function is set to fix the shutter speed and aperture values when the exposure mode is set at [Av] (aperture priority AE,) [Tv] (shutter priority AE,) [M] (manual mode) and [X] (synchro mode.)

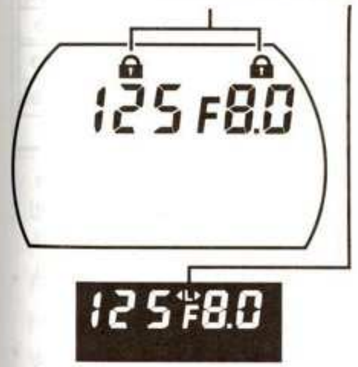


Activating the Dial Lock

Keep pressing down on the dial lock button and rotate the front control dial clockwise to display the lock mark above the shutter speed shown at the top and lock the front control dial. Keep pressing down on the dial lock button and rotate the rear control dial clockwise to display the lock mark above the aperture value and lock the front control dial.

* Registered when one second has elapsed.

With the lock activated.



Deactivating the Dial Lock

Keep pressing down on the dial lock button and rotate the control dial that is to be reactivated counter-clockwise to erase the lock mark and release the dial.

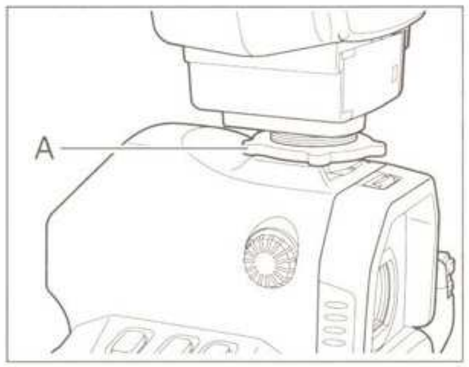
Display shown in the viewfinder when the dial lock is set.

An [L] with the lock ◄► mark on either side, indicating the lock status, will be displayed between the shutter speed and aperture values on the LCD panel inside the viewfinder when the dial lock is set.

* When the lock is activated, the shutter speed and aperture values will not change even if the front or rear control dials are operated.
* When the lock for the front and rear control dials is activated, the lock mark will flash on the upper LCD panel and the viewfinder's LCD panel for three seconds if either of the dials are operated to indicate that the dial lock mechanism is in operation.
* The dial lock cannot be activated when in the [P] mode.
* The control dials cannot be used for any of the various setup functions when the lock has been activated.

Flash Photography

The Flash TTL Direct Control mechanism is a function that controls the amount of light emitted by the flash with the use of a sensor built into the camera, which can be used in combination with the mesh flash (optional) attached to the Mamiya ZD and Metz SCA3952 adapter (optional.) This mechanism enables synchronization during daylight and a wide range of other flash photography.



1. **Attach the SCA3952 adaptor to the mesh flash, plug it in until it stops against the camera's hot shoe, and then tighten knob [A] firmly to lock it in position.**
2. **Set the exposure mode, and then confirm the shutter speed and aperture.**

Exposure mode		Shutter speed	Aperture
P	Program AE	Set the automatic value to [1/60] if the time of photometry is 1/60th of a second or less and to [1/125] if it is 1/125th of a second or more.	Automatic setup
Av	Aperture priority AE		Random aperture
Tv	Shutter priority AE	Set the automatic value to [1/125] if it is 1/125th of a second or more.	Automatic setup
M	Manual mode		Random aperture
X	Synchro mode	1/125th second	Random aperture

⚠Important

- TTL photochromic photography aligns the photometry with the use of the light reflected from the flash and automatically adjusts the amount of light emitted by the flash, but note that this is not always possible for every situation. It is therefore recommended that the amount of light emitted by the flash is verified with the use of a flash meter, or that photographs are taken in the manual flash mode in the following cases.
  For example:
  (1) When the size of the subject that is to be photographed with normal flash light occupies a relatively small percentage of the viewfinder.
  (2) When the background to the subject is extremely bright, or a highly reflective object exists in the background.
  (3) When the background to the subject is extremely dark (outdoor darkness, etc.)
  (4) When the subject that is to be photographed with normal flash light is quite a distance away from the center of the viewfinder.

MEMO

- It is possible to operate the shutter with photometric time in the [P] and [Av] modes when the background to the subject is extremely dark (outdoor darkness, etc.)
- The synchronization speed when in the [X] mode can be amended between 1/40th* and 1/125th of a second. → See the Custom Setting Menu [24] (page 147.)
  * The parameter can be set from 1/45th of a second when the shutter speed has been set at 1/2 steps.

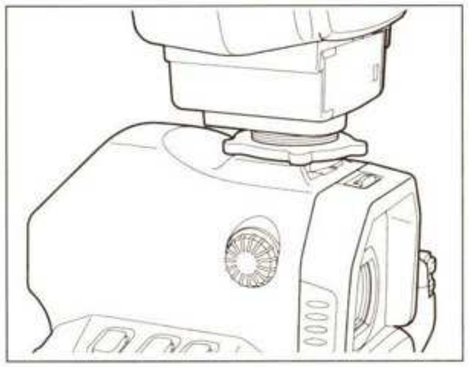
SCA3952 Metz Flash System Functions

Full Charge Viewfinder Display	A mark indicating a full charge is displayed in the LCD panel inside the viewfinder when the flash is fully charged.
Automatic Flash Attunement Speed	Set automatically at between 1/60th and 1/125th of a second when the flash is fully charged in the [P] (Program AE) and [Av] (Aperture Priority AE) modes. Set automatically at 1/125th seconds or lower when the shutter speed is 1/125th seconds in the [Tv] (Shutter Priority) and [M] (Manual) modes.
Photochromic Flash Compensation	The amount of light emitted by the flash can be compensated for within a range of +/-2EV.
Auto-Zoom Control	Operations of the power zoom reflector are linked to the lens focus distance (with the exception of 32Z-2.)
AF Assist Beam	Operations are linked to AF with low-brightness levels when in the [S] focus mode, and a beam is automatically emitted (with the exception of 32Z-2.)
Photochromic Range (Distance) Display	Displayed on the flash LCD panel. (With the exception of 32MZ-3 / 32Z-2.)
Miscellaneous	Information on ISO sensitivity, exposure compensation and aperture is transferred to the flash by the camera.

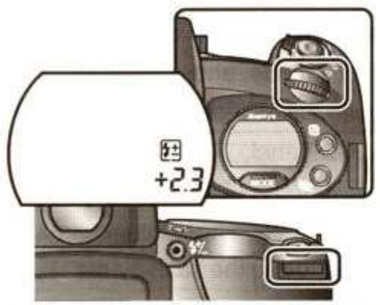
* Use the SCA3000C converter (optional) when using a SCA300 system flash (Metz 60CT-4 / 45CL-4, etc.)
* Refer to the instruction manuals provided with the flash and adapter for further information.
* When using the maximum guide number displayed on the flash unit, wait for a few moments after the [ϟ] full-charge mark has been displayed before taking the photograph.

Flash Compensation

The flash photochromic compensation function can be used when a mesh flash and the SCA3952 adaptor are used in combination. Photochromic compensation can be set within a range of +/-2EV for each 1/3 step.



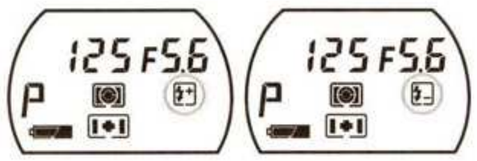
1. **Switch on the power.**
   Attach the SCA3952 adaptor to the mesh flash, and then connect it to the camera. Set the shutter release mode lever to the [S] or [C] position, and then switch on the power to the flash.



2. **Press the flash photochromic compensation button when the lamp verifying the flash charge is illuminated to display the [⚡±] mark, indicating the flash photochromic compensation mode, on the upper LCD panel.**

3. **Select the flash photochromic compensation value with the use of the front or rear control dials.**

External LCD Panel



4. **Half-press the shutter release button to display "⚡+" for positive compensation and "⚡−" for negative compensation on the external LCD panel and on the LCD panel inside the viewfinder.**

LCD Panel inside the Viewfinder

- Press the cancel button to enter the flash photochromic compensation mode so that the exposure compensation value can be verified.
- Set the shutter release mode lever to the [L] (Power OFF) position to cancel the compensation value.
- It is not possible to operate the flash photochromic compensation button if the full charge mark is not displayed.

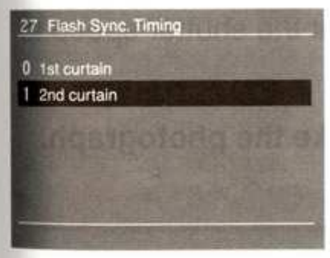
2nd Curtain Synchronization Mode

By setting the timing for emitting the flash to immediately prior to the start of shutter curtain release, it is possible to express streaks of light that emulate the movement of the subject immediately behind it when taking flash photographs of moving subjects.

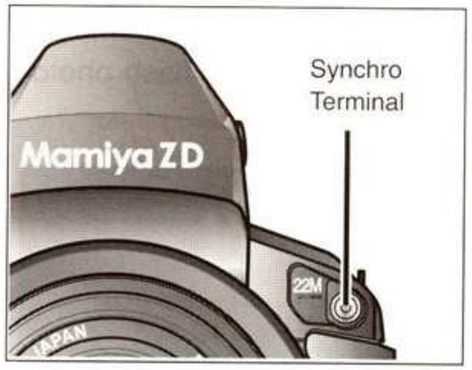
2nd Curtain Synchronization Mode

1st Curtain Synchronization Mode

Select [27] Flash Sync. Timing on the Custom Setting Menu and turn the front dial or press [▲] [▼] on the toggle key to select [2nd Curtain].



Flash Photography with Flash Units other than Metz Flash Units



1. **Attach the flash to the camera.**
   When connecting flash units that have a different power connection point on the hot shoe to the X point or flash units that are not of the hot-shoe type, connect them to the synchro terminal on the camera with the use of a synchro cord.

* Remove the synchro terminal cover when connecting the synchro cord.
Make sure that the cover is replaced to protect the synchro connection terminal after finishing with the use of the flash.

2. **Press the exposure mode button, and set it to [X] (Synchro Mode: 1/125) or [M] (Manual Mode) with the use of the front or rear control dials.**
   When the [M] mode (Manual) has been selected, set the shutter speed to 1/125 or lower with the front control dial.

3. **Set the aperture with the rear control dial and take the photograph.**

NOTE:

- The camera's synchro contact point is the X point.
- There is a risk of damaging the internal mechanisms of the camera if a flash unit designed for use with special cameras manufactured by other companies is used.
- The flash time with large flash equipment, such as that used professionally in studios, is longer than usual, so there are cases where sufficient exposure cannot be achieved with fast synchronized shutter speeds. It is therefore recommended that tests are carried out prior to actual use.

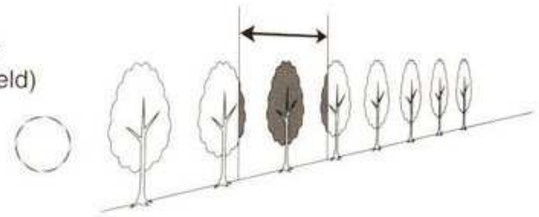
MEMO

- It is possible to link the operations of normal light compensation (exposure compensation on the camera) to flash photochromic compensation. → See [Custom Setting Menu [26]] (page 148.)
- It is possible to lock the selected shutter speed and aperture value (see page 97.)
- The synchronization speed can be amended between 1/40th* and 1/125th of a second. → See the Custom Setting Menu [24] (page 147.)
  * The parameter can be set from 1/45th of a second when the shutter speed has been set at 1/2 steps.

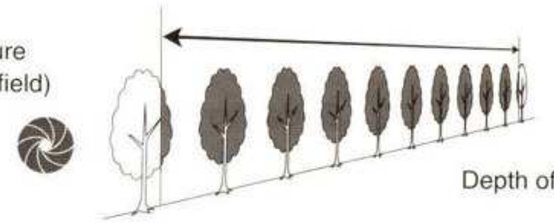
Depth of Field

There is a range before and after the distance to which the focus has been aligned that also provides sharp photographs. This range is known as the depth of field. The depth of field is reduced when the lens aperture is narrowed and expanded when the aperture is widened. A pair of aperture values are displayed on both sides of the depth of field calibrations. The distance between these two aperture values indicates the field of depth.

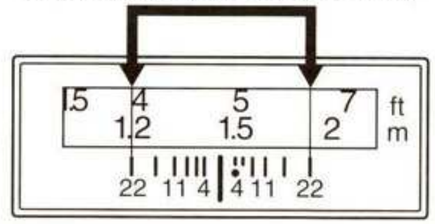
With a wide aperture
(Reduced depth of field)



With a narrow aperture
(Expanded depth of field)



Depth of Field (aperture value F22)



Preview Function

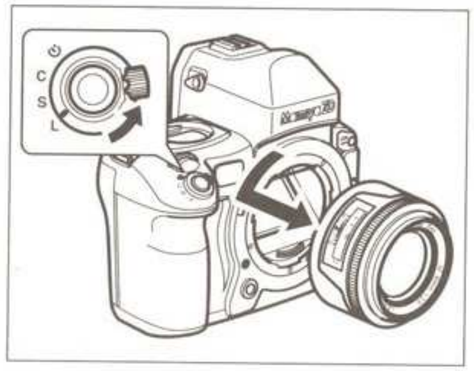
Press the preview button to check the aperture's depth of field (focusing range) that has been set for the camera.

Press the preview button after the focus has been aligned to narrow the aperture to the value preset.

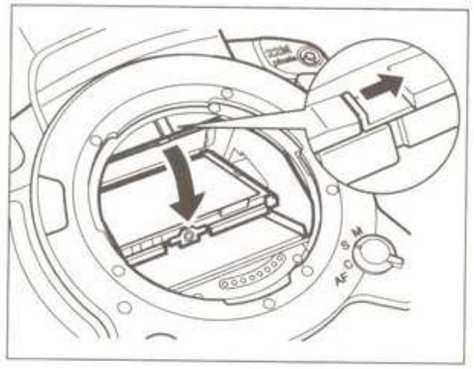
* The shutter cannot be operated when the preview button is being pressed.

Replacing the Viewfinder Screen

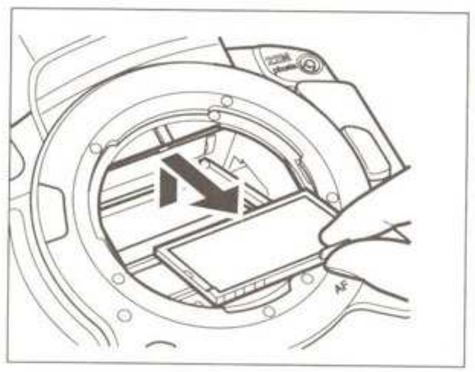
The Type A SA301 viewfinder screen, which is suitable for normal photographs, is included with the standard package, but the Type A4 SD301 viewfinder screen, which is suitable for photographing buildings and copies and which is sold separately, is also available.
It is possible to replace the screen to match up with the objectives of the photographs and the conditions of the subject.



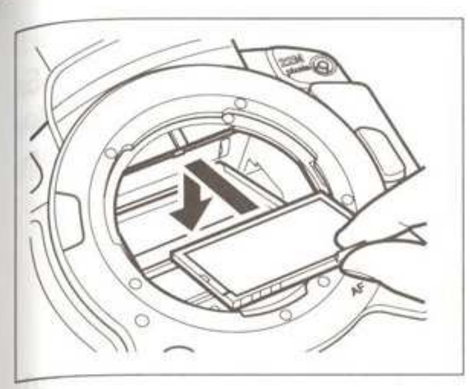
1. **Detach the lens from the body.**
   Set the shutter release mode lever to [L] (Power OFF) before removing the lens.



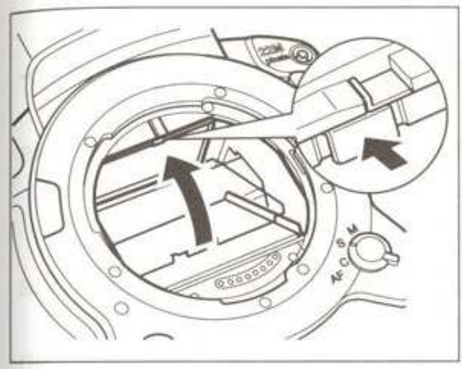
2. **Slide the screen attachment lever located at the top of the front side of the camera in the direction of the arrow to lower the viewfinder screen frame.**



3. **Grip the viewfinder screen with the tab provided and remove it while taking care not to scratch it.**
   * Do not touch the mirror under any circumstances.



4. **Grip the replacement viewfinder screen with the tab provided and place it onto to attachment frame.**



5. **Tilt the camera sideways, raise the viewfinder screen frame, and then press the plate beneath the tab on the attachment frame until it is secured firmly in place.**
   * Note that focusing defects may develop if anywhere other than the correct plate is pressed.

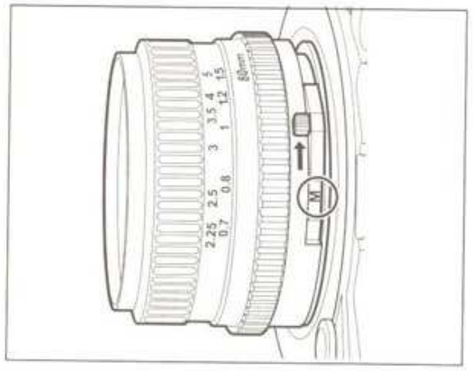
Precautions when Handing the Viewfinder Screen

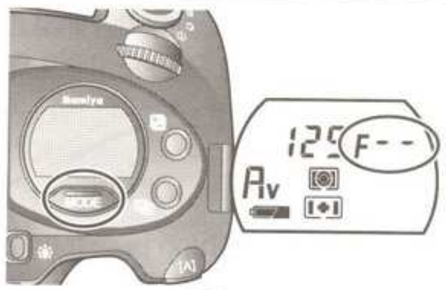
- The viewfinder screen is made of acryl resin, the surface of which is soft and easily scratched. It is therefore necessary to handle it with great care.
- To clean the viewfinder screen of fingerprints or other soiling, wipe it with a clean, soft piece of gauze. Do not use a solvent. If the screen becomes dusty, remove the dust with an air-blower.
- Leaving the viewfinder screen for long periods of time in locations that contain naphthalene, formalin or other chemical gas compounds may result in it being diversely affected.

Using the M645 Lens

Telemetry Mode and Aperture Value Display during AE Photography

It is possible to attach a M645 Series lens to the Mamiya ZD that enables AE photography with aperture photometry in the [Av] (aperture priority) mode. No matter what telemetry mode the camera is set in, proportional telemetry intervenes to provide the required levels of telemetry.
The aperture value displayed on the LCD panel appears as [F - -].





1. **Attach the lens to the camera.**
   Set the A-M lever on the lens to [<].
2. **Set the exposure mode to the [Av] mode.**
3. **Open the aperture and align the focus.**
   The focus can be aligned with the use of the focusing mark.
4. **Determine the aperture value.**
   The viewfinder will become darker the more the aperture is narrowed.
   The aperture value is not displayed on the LCD panel.
5. **Commence taking photographs.**

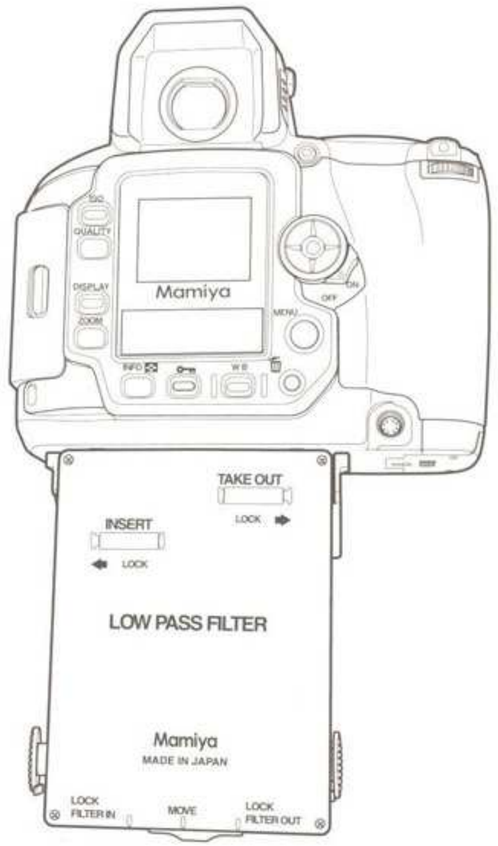
Camera Functions with the M645 Lens Attached

	P	Av	Tv	M	X
Exposure Mode	NG	OK	NG	OK	OK
Telemetry Mode (Aperture Telemetry)	NG	OK	NG	OK	NG
Exposure Compensation	NG	OK	NG	OK	NG
Autobracket Mode	NG	OK	NG	OK	NG

- It is possible to align the focus with the use of the focusing mark when lens brightness (release F value) is set at F5.6 and when a brighter lens is being used. However, the focusing mark cannot be used to align the focus if the A-M lever on the lens is set to [M] and the aperture is F5.6 or higher when narrowed. In this event, the defocus direction mark (► ◄) will flash to indicate that the camera cannot measure the distance.
- The shutter can be released no matter what AF mode has been set.
- The AF infrared assist beam is not emitted.

IR Cut Filter (Standard)/Low-pass Filter (Option)

It is possible to replace the IR cut filter and low-pass filter on the Mamiya ZD in accordance with the conditions of the subject being photographed. Refer to the instruction manual supplied with the IR Cut Filter and Low-Pass Filter for the replacement procedure.

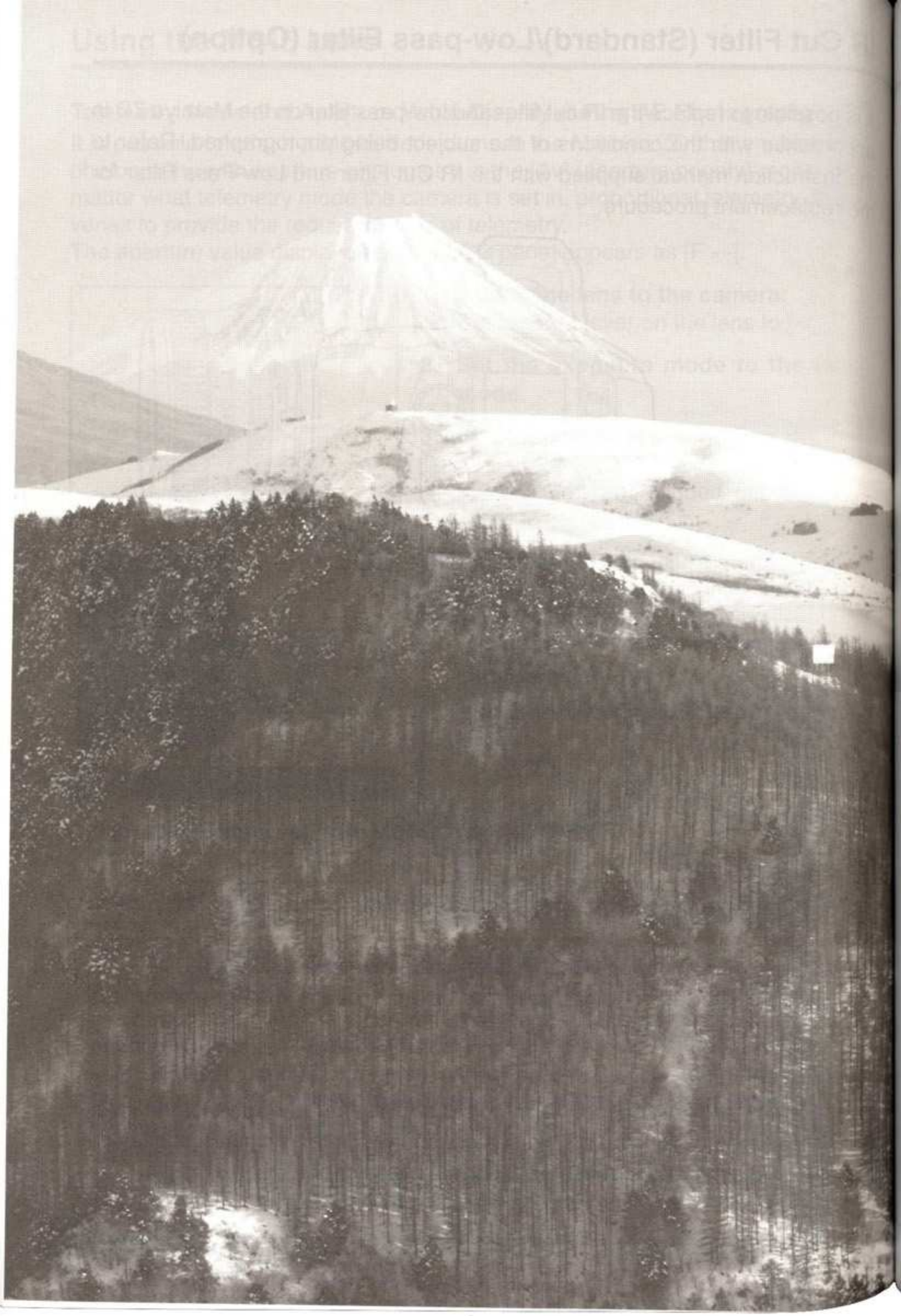


IR Cut Filter

- The IR cut filter only allows visible light to pass through it, cutting out infrared and other non-visible light.
- Using the IR cut filter produces higher levels of image resolution.
- The IR cut filter does not reduce false colors, moiré and other phenomena that are unique to digital images.

Low-Pass Filter

- The low-pass filter reduces false colors, moiré and other phenomena that are produced depending on the subject and which are unique to digital images, and is therefore suitable for normal photography.
- Low-pass filters have the same capabilities as IR cut filters.

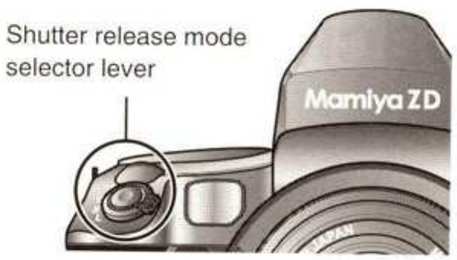


Playing Back Images

This chapter explains how to view and delete images on the digital camera.
Refer to the instruction manual for the software in use when playing back images on a computer.

Playing Back Images

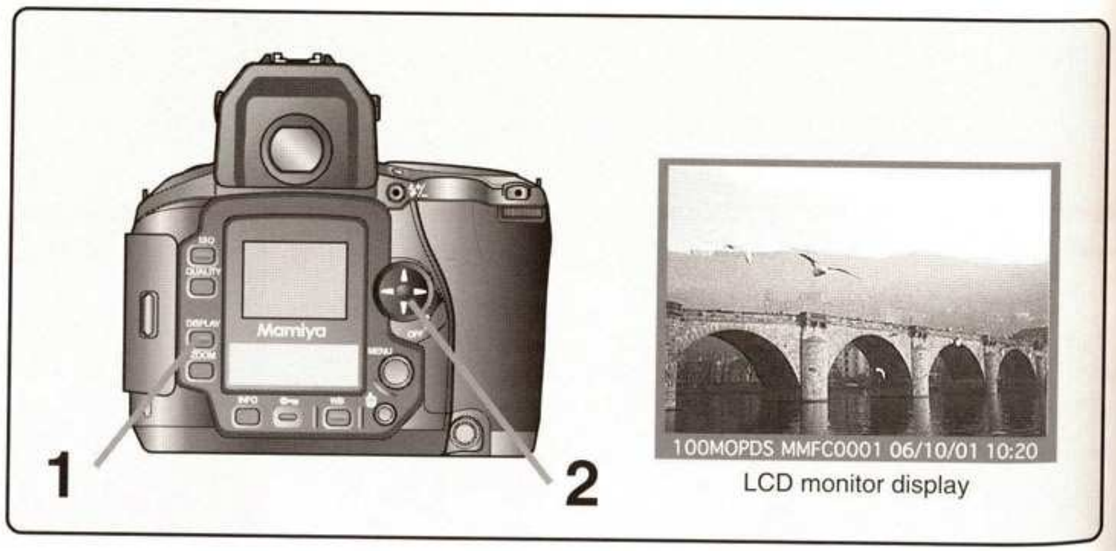
This section explains the various methods of viewing images on the camera's LCD monitor.
Set the shutter release mode selector lever to any position other than L to view images.



Playing Back Frames

Displays the images frame by frame on the LCD monitor.

1. **Press the Display button.**
   The most recently recorded image will be displayed on the LCD monitor.
2. **Select the image you wish to display with the toggle key.**
   Press [◄] to display the previous image, and [►] to display the next image. Or, with the finder pointed towards you, rotate the rear control dial to the left to display one subsequent frame for each click of the dial, or to the right to display one previous frame for each click of the dial.

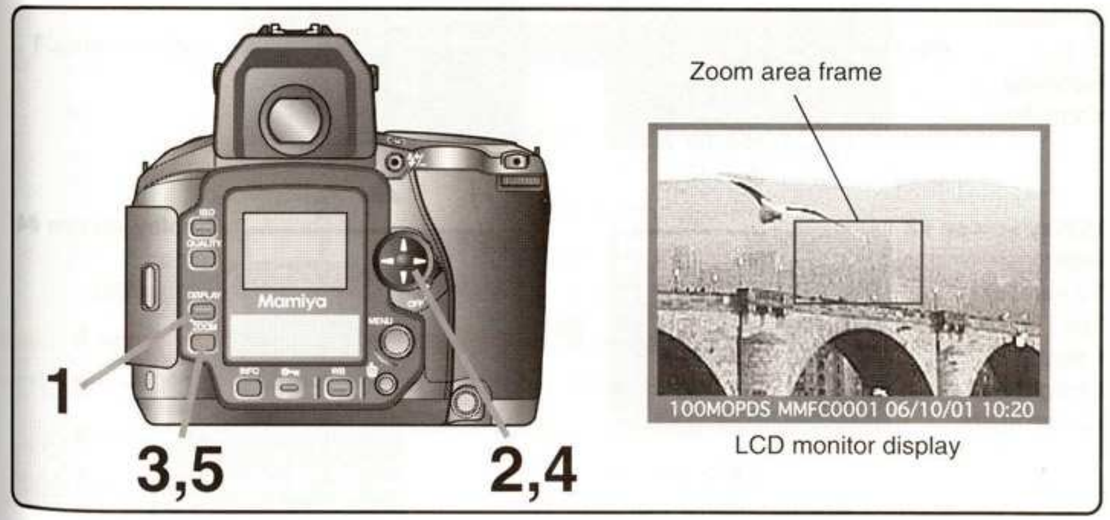


LCD monitor display

Zoom-in Display

Zooms in on the frame being displayed.

1. **Press the Display button to display the frame.**
2. **Select the image you wish to zoom in on with the toggle key.**
3. **Press the ZOOM button. Keep your finger pressed down on the button.**
   A frame that indicates the area to zoom in on will be displayed on the screen.
4. **With your finger pressed on the ZOOM button, move the frame to the area you wish to zoom in on with the toggle key or front/rear control dial.**
5. **Release the ZOOM button.**
   A zoom-in image of the area selected with the frame will be displayed. Use the toggle key or front/rear control dials to scroll around the zoomed-in image.
6. **Press the ZOOM button once again to return to the normal viewing screen.**



LCD monitor display

Memo:

- Press the shutter release button half-way to cancel the playing back images and switch off the monitor.
- The magnification ratio of the zoom can be changed with the [7 Set Magnification] function (see page 128.)

Displaying the Information Screen

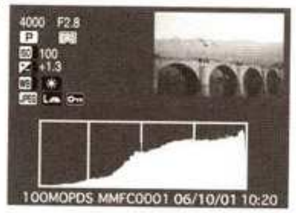
Displays information on the recorded images.
The file number, date and time of recording and other information will be displayed below the image being displayed, and recording information will be displayed at the top left of the image. Use the toggle key or front control dial to switch between different display formats.

1. **Press the Display button to display the frame.**
2. **Keep your finger pressed down on the Info button, and then select the required LCD monitor with the [▲] and [▼] toggle keys.**

Display screen #1
Folder
File number
Date
Protection mark

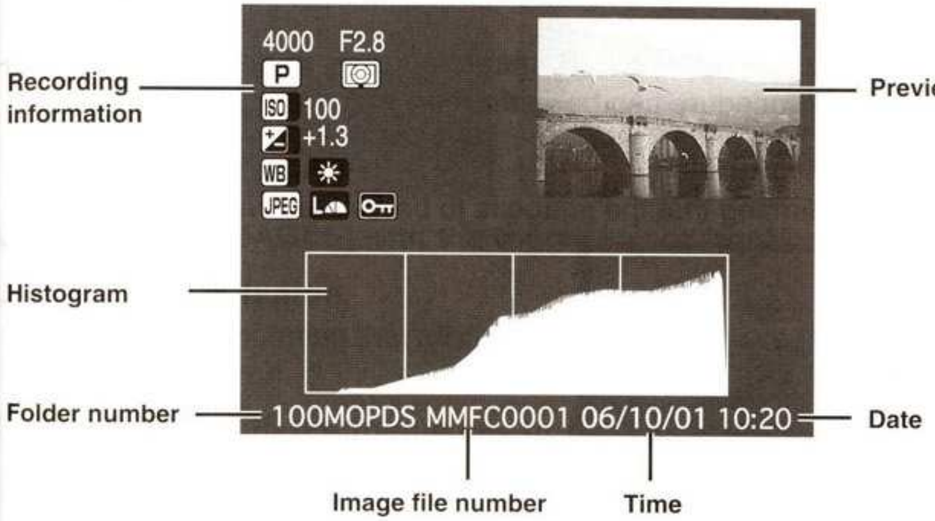
Display screen #2
Folder
File number
Date
Recording information

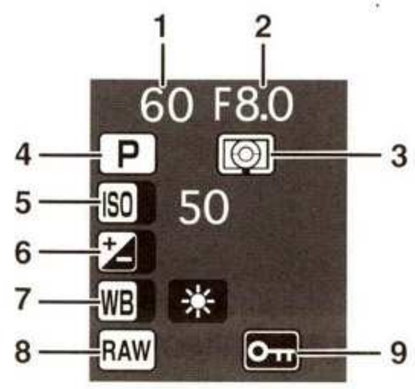
Display screen #3
Folder
File number
Date
Histogram
Highlight and shadow alerts



Display screen #4
Folder
File number
Date
Histogram

Display screen #5
Image only





Recording Information

1 Shutter speed
2 Aperture
3 Metered mode
4 Exposure mode
5 ISO sensitivity
6 Exposure compensation
7 White balance
8 Image Quality mode
Only "RAW" will be displayed if recording together with JPEG is selected.
9 Image protection
Displayed when the image is protected.

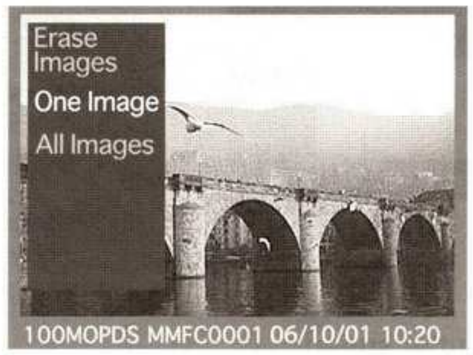
Erasing Images

This section explains how to delete taken images. There are two ways of deleting images: [One Image] which deletes one frame at a time and [All Images] which deletes all the images stored in the folder.

Erasing1 Frame

Enables frames to be deleted one by one while confirming the process on the LCD monitor.

1. **Press the Display button to display the frame.**
   The most recently recorded image will be displayed on the LCD monitor.
2. **Select the image you wish to delete with the toggle key or rear control dial.**
   Press [◄] to display the previous image, and [►] to display the next image. The same procedure can be performed with the rear control dial.
3. **Press the Delete button.**
   A message confirming that the image is to be deleted will be displayed.



4. **Select [1 Frame] with the [▲] and [▼] toggle keys**
   The same procedure can be performed with the front control dial.
5. **Press the OK button.**
   The frame being displayed will be deleted.
   Once the image has been deleted, the subsequent image will be displayed.
   Repeat the above procedure from #3 to continue deleting images. To end the procedure, either press the Cancel button or the shutter release button.

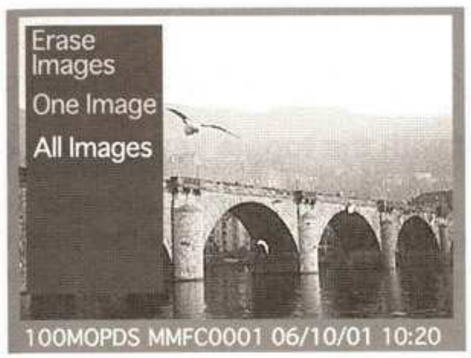
Important:
Note that deleted images cannot be restored.

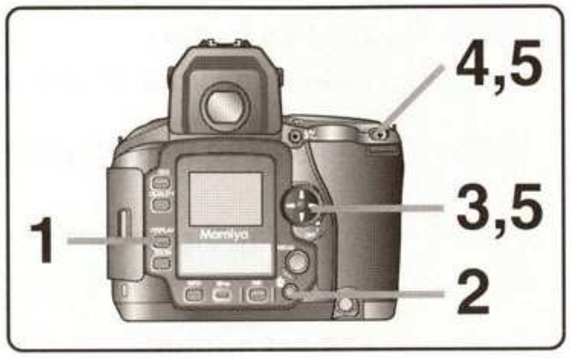
NOTE:
Protected images cannot be deleted.

Erasing All Images (Entire Folder)

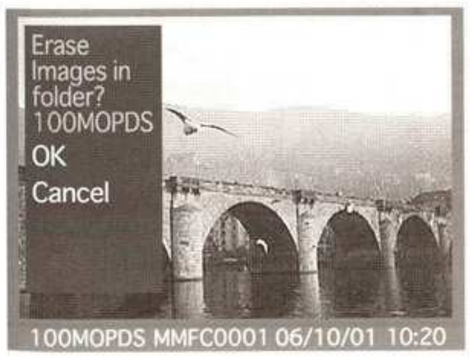
Deletes all of the images stored in a folder.

1. **Press the Display button.**
   The most recently recorded image will be displayed on the LCD monitor.
2. **Press the Delete button.**
   A message confirming that the image is to be deleted will be displayed.





3. **Select [ALL IMAGES] with the toggle key or front control dial.**
4. **Press the OK button.**
   A message confirming that all images in the folder are to be deleted will be displayed.
5. **Select [OK] with the toggle key or front control dial, and then press the OK button.**



All of the images in the folder will be deleted.

NOTE:
Note that deleted images cannot be restored.

Memo:
Protected images cannot be deleted.

Protecting Images

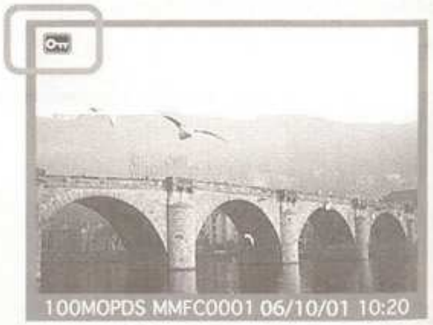
This section explains how to protect images.
Set the shutter release mode selector lever to any position other than L to protect images.

Protecting Images

Enables frames to be protected one by one while confirming the image on the LCD monitor.

1. **Press the Display button.**
   The most recently recorded image will be displayed on the LCD monitor.
2. **Select the image you wish to protect with the toggle key or rear control dial.**
   Press [◄] to display the previous image, and [►] to display the next image.
3. **Press the Protect button.**
   The protection symbol will be displayed on images that have been protected.

Protected image symbol



LCD monitor display

Memo:

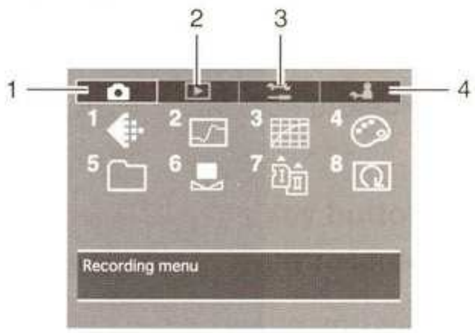
Images that have been protected cannot be deleted with the [1 FRAME] or with [ALL IMAGES] deletion procedures, but they will be erased completely if the memory card is formatted.

Menus

This chapter explains the functions that can be selected from the digital camera's menu.
There are four types of menu mode available; Recording Menu, Playback Menu, Setup Menu and Custom Setting Menu.

Menu Screen Operations

The following screen will be displayed on the LCD monitor when the MENU button is pressed. This screen enables all of the various camera settings to be modified.



1 Recording Menu
The Recording Menu includes the settings for color mode, sharpness, tone, saturation and other elements related to taking photographs.

2 Playback Menu
The Playback Menu includes the settings for erasing images, enlarging images and other parameters related to playing back images.

3 Setup Menu
The Setup Menu includes all of the basis settings relating to the camera, such as memory card formatting, date setup, and other settings.

4 Custom Setting Menu
The Custom Setting Menu includes the parameters for amending the various camera function settings, including shutter speed, aperture step width and other settings.

- To set up each parameter, select the required parameter symbol with the use of the toggle key or front/rear control dials, and then press the camera's OK button.
- Press the Cancel button to return by one step.
- The front control dial performs the same functions as the [▲] and [▼] toggle keys, and the rear control dial performs the same functions as the [◄] and [►] toggles keys.

The toggle key operations are shown below.

1 Cancel button
Returns to the previous screen.

2 OK button
Confirms the selection.

3 Toggle key
Selects the required parameter.

4 MENU button
Displays the menu screen.

* The toggle key lock lever must be set at [ON] to enable usage.

Recording Menu

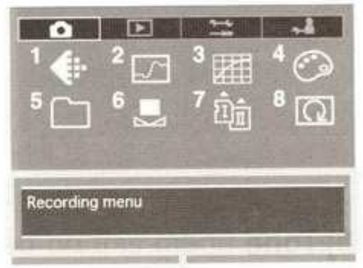
The following screen will be displayed on the LCD monitor when the MENU button is pressed.

The [📷] symbol displayed in the top left-hand corner indicates the Recording Menu. Press [▼] on the toggle key with this symbol selected to display the contents of the Recording Menu.

Recording Menu

The Recording Menu contains the following parameters:

- : **[1]** Shooting Mode
- : **[2]** Sharpness
- : **[3]** Tone
- : **[4]** Saturation
- : **[5]** Folder Setting
- : **[6]** Customize White Balance
- : **[7]** Storage
- : **[8]** Auto Rotation

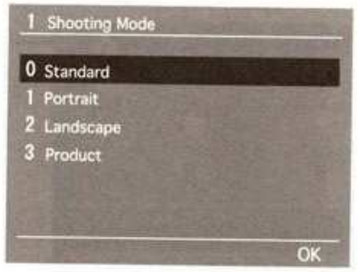


Parameter status display area

- The name of the menu currently selected and the current parameter setting will be displayed at the bottom of the menu.
- The Shooting Mode, Sharpness, Tone and Saturation settings are activated for the JPEG images generated by the camera. These settings can be amended for RAW images while confirming the effects during development with the Mamiya Digital PhotoStudio.

[1] Shooting Mode

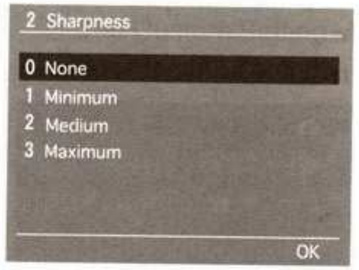
The shooting mode for images is set up on this menu suitable for the subject being photographed.



The default setting is [Standard].
See "Camera Functions: Setting the Shooting Mode" (page 58) for further details.

[2] Sharpness

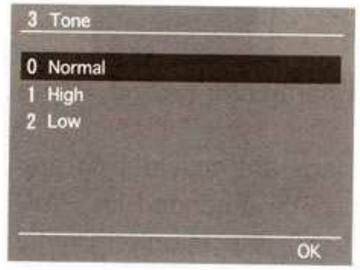
The sharpness (strength of the outlines) for images is set up on this menu.



The default setting is [None].
See "Camera Functions: Setting the Sharpness, Tone and Saturation" (page 59) for further details.

[3] Tone

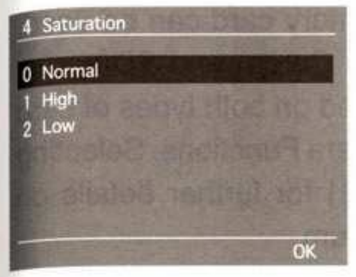
The tone for images is set up on this menu.



The default setting is [Normal].
See "Camera Functions: Setting the Sharpness, Tone and Saturation" (page 59) for further details.

[4] Saturation

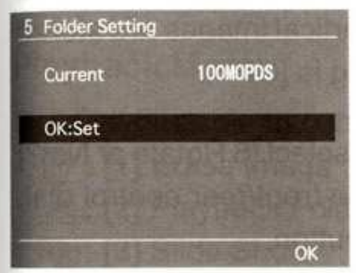
The saturation for images is set up on this menu.



The default setting is [Normal].
See "Camera Functions: Setting the Sharpness, Tone and Saturation" (page 59) for further details.

[5] Folder Setting

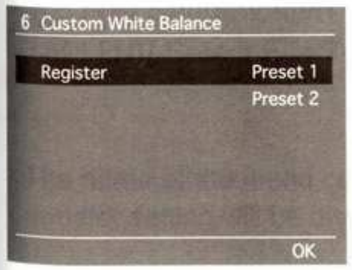
The folder in which recorded images are to be stored is set up on this menu.



See "Camera Functions: Creating a Folder" (page 62) for further details.

[6] Custom White Balance

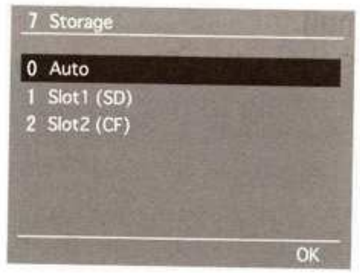
The customized white balance for images is acquired on this menu. A maximum of two customized white balances can be registered.



See "Camera Functions: Customized White Balance" (page 54) for further details.

[7] Storage

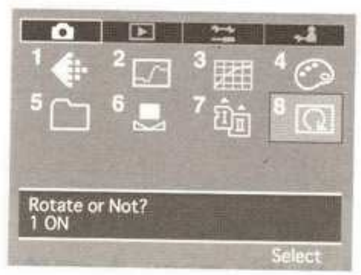
The memory card onto which images are to be stored is selected on this menu.



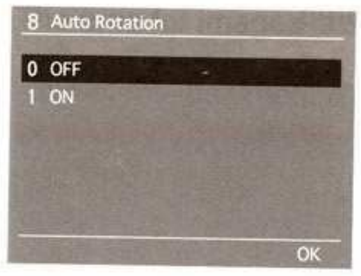
Two different types of memory card can be used, CF cards (Compact Flash Cards) and SD cards, but images cannot be stored on both types of card simultaneously. See "Camera Functions: Selecting a Memory Card" (page 61) for further details on selecting the storage medium.

[8] Auto Rotation

This menu sets up whether to rotate images or not.
When set at [OFF], horizontal and vertical images are stored in the horizontal display format, and when set at [ON], horizontal and vertical images are stored and displayed in the vertical format. The default setting is [OFF].



1 Press the MENU button, select [8 Rotate or Not?] with the toggle key or the front/rear control dial, and then press the OK button.



2 Select [ON] or [OFF] with the toggle keys or the front control dial.
3 Press the OK button.

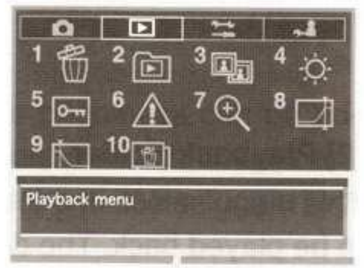
The following screen will be displayed on the LCD monitor when the MENU button is pressed.

The [▶] symbol displayed second from the left indicates the Playback Menu. Press [▼] on the toggle key with this symbol selected to display the contents of the Playback Menu.

Playback Menu

The Playback Menu contains the following parameters:

- : **[1]** Erase Image
- : **[2]** Playback Folder
- : **[3]** Slide Show
- : **[4]** LCD Brightness
- : **[5]** Protect/Unprotect
- : **[6]** Highlight/Shadow Alerts
- : **[7]** Set Magnification
- : **[8]** Highlight Alert Level 1
- : **[9]** Shadow Alert Level
- : **[10]** Select File Type to Erase



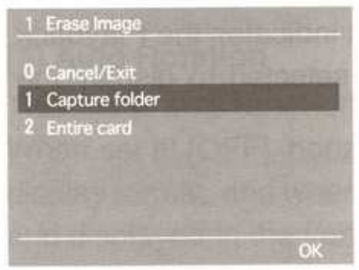
Parameter status display area

* The name of the menu currently selected, the details of the icon, and the current parameter setting will be displayed at the bottom of the menu on the digital LCD panel.

[1] Erase Image

Images stored in either each individual folder or the entire contents of the memory card are erased on this menu.

1 Select the Playback Menu, and then select [1 Erase Image] with the toggle key.
2 Press the OK button.



3 Select erasing the contents of the folder or erasing all images stored on the memory card, with the toggle key .
4 Press the OK button to erase the images.

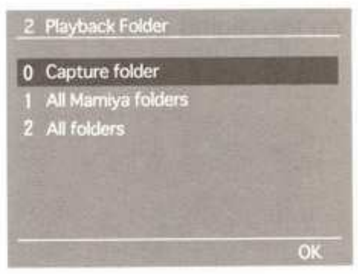
Important:

- When Deleting All Images at a Time
  When the [2 All folders] has been select and all images are erased at a time, note that all images in the folder currently being played back will be erased together will all images in every other folder. Images that have been deleted cannot be restored.

[2] Playback Folder

This menu selects the folder for which images stored on the memory card are to be played back. The default setting is [Capture folder].

1 Select the Playback Menu, and then select [2 Playback Folder] with the toggle key.
2 Press the OK button.

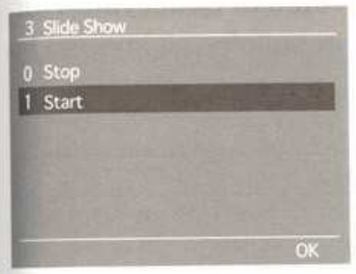


3 Select the folder in which the images to be played back are stored with the toggle key.
4 Press the OK button.

[3] Slide Show

This activates the slide show in which the images stored on the memory card are displayed sequentially.

1 Select the Playback Menu, and then select [3 Slide Show] with the toggle key.
2 Press the OK button.

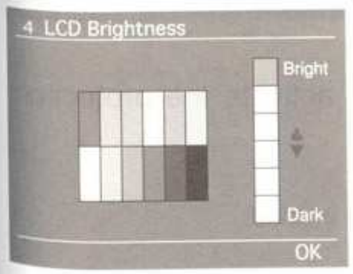


3 Select [Start] with the toggle key.
4 Press the OK button to start the slide show. Press the Cancel button to end the slide show.

[4] LCD Brightness

This adjusts the brightness of the LCD monitor. The brightness can be adjusted to six different stages to match the environment in which images are being played back. The adjustments are made with the use of the toggle key. The default setting is the brightest display.

1 Select the Playback Menu, and then select [4 LCD Brightness] with the toggle key.
2 Press the OK button.



3 Adjust the brightness level with the toggle keys.
4 Press the OK button.

Switching Across to the High Contrast Screen

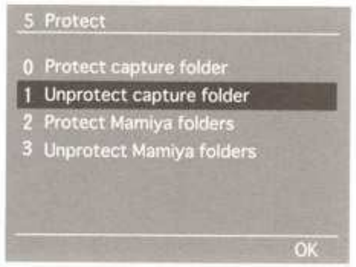
It is possible to switch the display across to the high contrast screen when images are difficult to see on the LCD monitor owing to the surrounding environment being so bright that the brightness adjustment is ineffective.
Press the MENU button for one or more consecutive seconds with the LCD display switched off to switch across to the high contrast screen.
To return to the normal brightness display, press and hold the MENU button again with the LCD display switched off.

[5] Protect/Unprotect

This function enables the protection function to be activated or deactivated for the images stored on the memory card individually or in bulk for all images in the folder.

Parameter	Details
Protect capture folder:	Activates the protection function for all images in the selected playback folder or the recording folder.
Unprotect capture folder:	Deactivates the protection function for all images in the selected playback folder or the recording folder.
Protect Mamiya folders:	Activates the protection function for all of the images stored in multiple Mamiya folders on the memory card.
Unprotect Mamiya folders:	Deactivates the protection function for all of the images stored in multiple Mamiya folders on the memory card.

1 Select the Playback Menu, and then select [5 Protect/Unprotect] with the toggle key.
2 Press the OK button.



3 Select the required parameter with the toggle keys.
4 Press the OK button to activate the protection function.

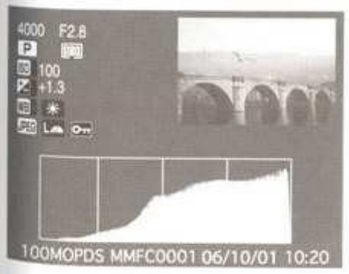
* Protected images cannot be erased.

[6] Highlight/Shadow Alerts

This establishes the setting to display highlight and shadow alerts in order to avoid the white blurs caused by over-exposures and black smudging caused by under-exposures when preview format Type 3 has been selected with [6 Image Review] on the Setup Menu.
These alerts can be selected for highlights only, shadows only, or both highlights and shadows.
White blurs and black smudges will flash when this has been activated, providing an indication that exposure compensation needs to be carried out. The default setting is [No].

1 Select the Playback Menu, and then select [6 Highlight/Shadow Alerts] with the toggle key.
2 Press the OK button.

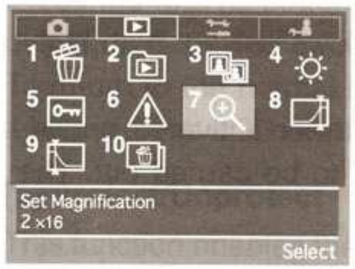
3 Select the required parameter with the toggle keys.
4 Press the OK button.



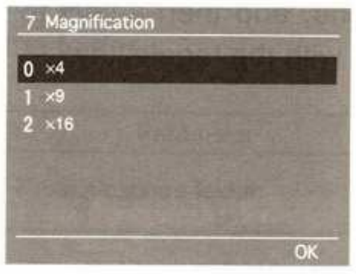
- The highlight/shadow alerts for played-back images are displayed with preview format Type 3, which has been selected with [6 Image Review] on the Setup Menu.

[7] Set Magnification

This sets the magnification ratio for enlarging a certain area of an image being played back with the use of the ZOOM button. You can choose from three magnification levels: x4, x9 and x16. The default setting is [x4].



1 Select the Playback Menu, and then select [7 Set Magnification] with the toggle key.
2 Press the OK button.



3 Select the required parameter with the toggle keys.
4 Press the OK button.

[8] Highlight Alert Level

This sets the level of the highlight for which an alert is to be displayed when the highlight and shadow alert function has been activated. The value for this can be set within a range of 255 to 246. The default setting is [255].

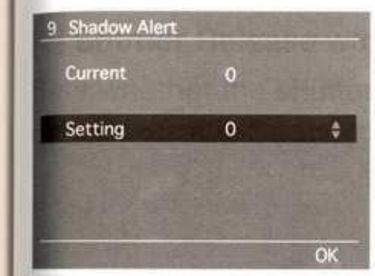
1 Select the Playback Menu, and then select [8 Highlight Alert Level] with the toggle key.
2 Press the OK button.

3 Select the required highlight alert level with the toggle keys.
4 Press the OK button.

[9] Shadow Alert Level

This sets the level of the shadow for which an alert is to be displayed when the highlight and shadow alert function has been activated. The value for this can be set within a range of 0 to 9. The default setting is [0].

1 Select the Playback Menu, and then select [9 Shadow Alert Level] with the toggle key.
2 Press the OK button.

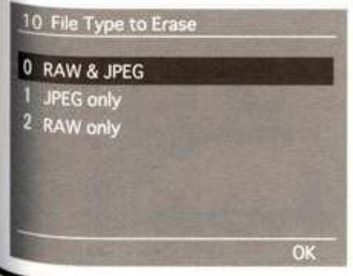


3 Select the required shadow alert level with the toggle keys.
4 Press the OK button.

[10] Select File Type to Erase

This sets the method in which RAW images and JPEG images stored simultaneously on the memory card are to be erased. The method selected here will be used when erasing single images and when erasing all images. The default setting is [RAW & JPEG].

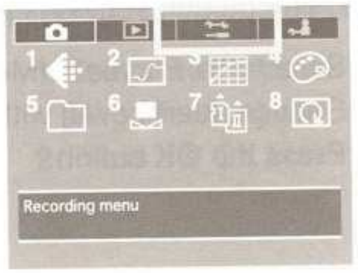
1 Select the Playback Menu, and then select [10 Select File Type to Erase] with the toggle key.
2 Press the OK button.



3 Select the required parameter with the toggle keys.
4 Press the OK button.

Setup Menu

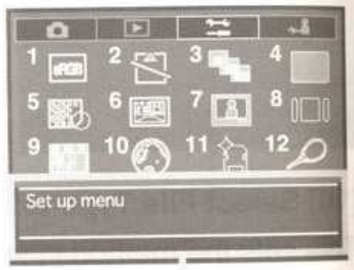
The parameters required when using the camera are set up on this menu. Press the MENU button, and then move the cursor to the Setup Menu's [ ] symbol with the toggle key or the rear control dial.



Setup Menu

The Setup Menu contains the following parameters:

- : **[1]** Color Space (JPEG)
- : **[2]** Shutter Release w/o Card
- : **[3]** File Numbering
- : **[4]** Power Saving Mode
- : **[5]** Noise Reduction
- : **[6]** Image Review
- : **[7]** Video Output
- : **[8]** Auto Monitor OFF
- : **[9]** Set Date/Time
- : **[10]** Language
- : **[11]** Format
- : **[12]** CCD Cleaning



Parameter status display area

[1] Color Space (JPEG)

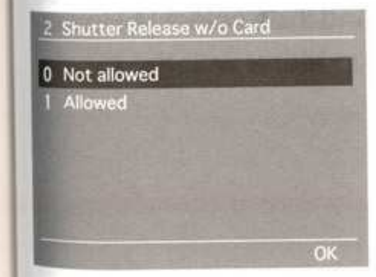
The color space for images to be recorded in the JPEG format is set up on this menu. The default setting is [s RGB].

See "Camera Functions: Color Space" (page 50) for further details.

[2] Shutter Release w/o Card

Sets whether the shutter release is to be deactivated or not when no memory card has been inserted into the camera. The default setting is [Not allowed].

1 Press the MENU button, and then select [2 Shutter Release w/o Card] on the Setup Menu with the toggle key or front/rear control dial.
2 Press the OK button.



3 Select either [Yes] or [No] with the toggle keys or the front control dial.
4 Press the OK button.

[3] File Numbering

Sets whether or not to save images under sequential file numbers even when the memory card or folder is changed.
The default setting is [OFF].

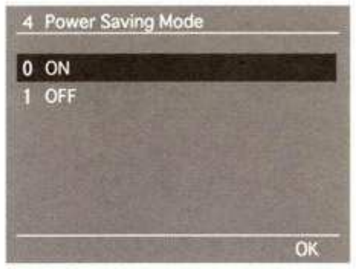
See "Camera Functions: File Numbering" (page 64) for further details.

[4] Power Saving Mode

This setting activates the low-power consumption mode to restrain battery consumption.
The default setting is [ON].

Parameter	Details
ON:	Activates the low-power consumption mode, but it slows down the activation of the sleep mode.
OFF:	Activation from the sleep mode is speeded up.

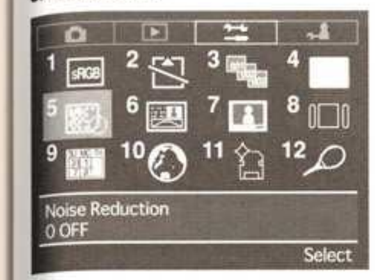
1 Press the MENU button, and then select [4 Power Saving Mode] on the Setup Menu with the toggle key.
2 Press the OK button.

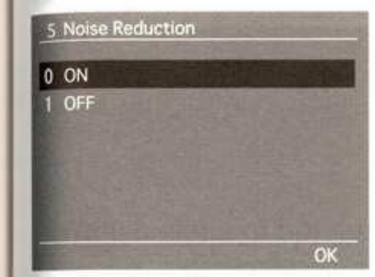


3 Select either [ON] or [OFF] with the toggle keys.
4 Press the OK button.

[5] Noise Reduction

Images taken with the ISO sensitivity set high or with long exposures tend to be grainy. This phenomenon is reduced when the noise reduction function is activated.



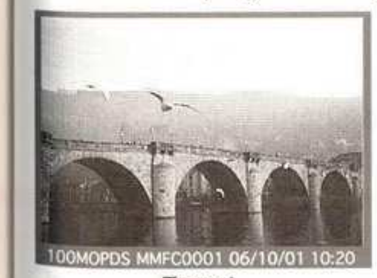


The default setting is [OFF].
1 Press the MENU button, and then select [5 Noise Reduction] on the Setup Menu with the toggle key.
2 Press the OK button.
3 Select either [ON] or [OFF] with the toggle keys.
4 Press the OK button.

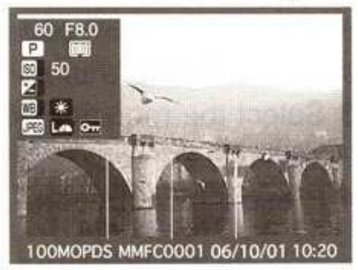
* Image resolution is reduced when noise reduction is activated.
* This function cannot be cancelled for images recorded in the RAW format with Mamiya Digital PhotoStudio.
* Refer to ISO Sensitivity Setup (page 56) when setting up this parameter.

[6] Image Review

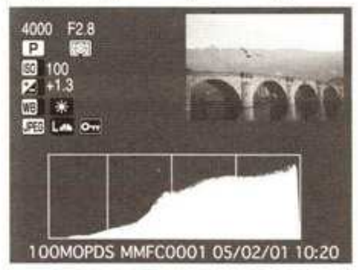
This function sets up the display format and display time of images that are to be displayed on the monitor at the same time as recording. There are four different types of display format, and the display time can be selected from three different choices of 2 seconds, 4 seconds, and continuous. This parameter can also be set not to display the images. The default settings are [Type 3] and [2 sec.].



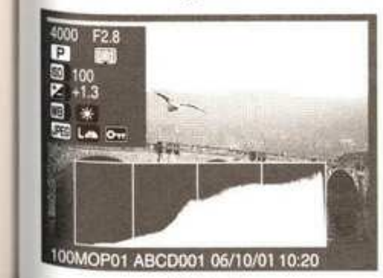
Type 1



Type 2

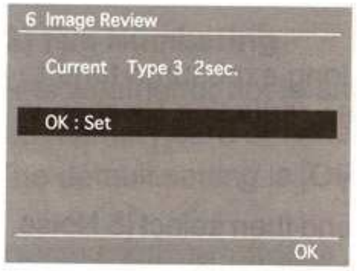


Type 3

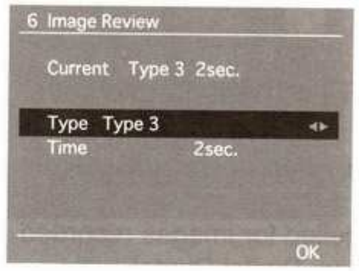


Type 4

1 Press the MENU button, and then select [6 Image Review] on the Setup Menu with the toggle key.
2 Press the OK button.
The [6 Image Review] screen will be displayed.



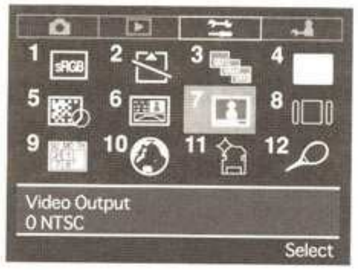
3 Press [OK].



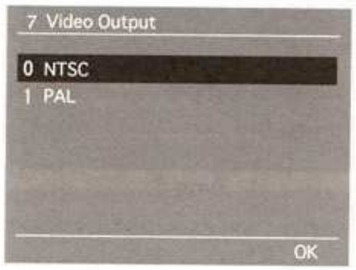
4 Select the required display format with the toggle key.
5 Select [Time] with the toggle key.
6 Select the required display time with the toggle key.
7 Press the OK button.

[7] Video Output

Sets whether the video output when the camera is connected to a television or other monitor is to be NTSC or PAL. The default setting is [NTSC].



1 Press the MENU button, and then select [7 Video Output] on the Setup Menu with the toggle key.
2 Press the OK button.



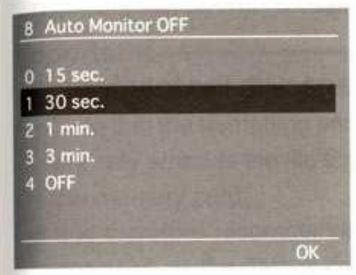
3 Select the required video output with the toggle keys.
4 Press the OK button.

- Images can also be viewed on the camera monitor at the same time when it is connected to a television.

[8] Auto Monitor OFF

This menu sets the display time for displaying playback images and menu screens on the digital LCD display. The default setting is [15 sec.].

1 Press the MENU button, and then select [8 Auto Monitor OFF] on the Setup Menu with the toggle key.
2 Press the OK button.

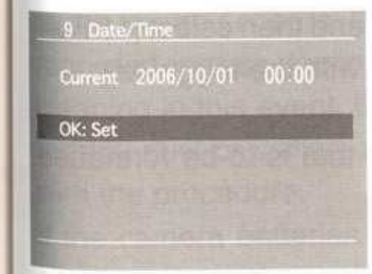


3 Select the required display time with the toggle key.
4 Press the OK button.

* When [4 OFF] has been selected, the display will continue until the power is switched off or the shutter button pressed half-way down. But battery power is consumed more quickly.

[9] Set Date/Time

Sets the date and time to be recorded when an image is taken.



See "Before Taking Picture: Preparing to Take Picture" (page 24) for further details.

- The Mamiya ZD clock is powered by a lithium manganese secondary battery contained in the camera and charged from the camera battery.
- Provided that the clock battery is adequately charged, the set date and time will be maintained for about two months even if the camera battery is not charged in that time.
- The date and time may not be correctly displayed if the camera is left unused for a long period of time or the clock battery is not adequately charged. If this happens, set the date and time again.

[10] Language

This menu sets the language to be used on the menu screens displayed on the LCD monitor. A total of five different languages can be selected; Japanese, English, German, French and Spanish.
The default setting is [Japanese].

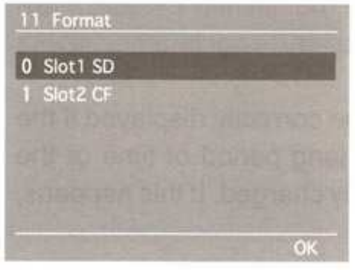
1 Press the MENU button, and then select [10 Language] on the Setup Menu with the toggle key.
2 Press the OK button.

3 Select the required language with the toggle keys.
4 Press the OK button.

[11] Format

Memory cards must be formatted before they can be used. The formatting procedure is performed from this menu.

1 Press the MENU button, and then select [11 Format] on the Setup Menu with the toggle key.
2 Press the OK button.
3 Select the memory card that is to be formatted with the toggle key.
4 Press the OK button.
A message to confirm that formatting is to be performed will be displayed.
5 Press the OK button to start the formatting process. Press the Cancel button to abort formatting.



- Before Performing the Formatting Process
  Note that all images on the memory card will be deleted when the formatting process is executed, even if they are protected.
  It is recommended that the contents of the memory card are re-confirmed once again before going ahead with the formatting process.
- Precautions during Formatting
  Do not switch off the power or open the slot cover to the memory card when formatting is in progress.
  Do not remove the batteries or the memory card when formatting is in progress under any circumstances.
- File Formatting
  Memory cards with a capacity of up to 2 GB will be formatted in the FAT16 format, and memory cards with a capacity that exceeds 2 GB will be formatted in the FAT32 format.

Important:

Precautions When Memory Cards are to be Disposed of or Given to Third Parties

- Note that the formatting and deletion procedures carried out by the camera or personal computers only amends the file's management information, and the data is not completely wiped from the memory card.
- It is therefore recommended that the memory card is physically destroyed before being disposed of, or the data is completely wiped from the card with the use of special data erasure software sold on the open market before it is given to a third party.
- The data recorded on memory cards is the full responsibility of the user.

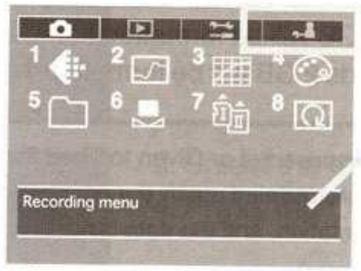
[12] CCD Cleaning

If dust or other soiling adheres to the IR cut filter or the low pass filter attached to the image sensors, there is a chance that this will show up as shadows on recorded images depending on the photographic conditions. In order to enable cleaning in this event, the mirror can be raised and locked in position. Check for any dust or soiling, and then perform the cleaning process in accordance with the procedure.
If the camera batteries run out during cleaning, the shutter will automatically close and result in it being damaged, so make sure that an AC adaptor plugged into a domestic power supply is used.
If cleaning is to be carried out with the use of the camera batteries, make sure they have sufficient remaining power before starting.

Refer to "Maintenance: Cleaning the Camera"(page 158) for details on the procedure for cleaning dirt and other soiling from the image sensors.

Custom Setting Menu

The custom settings enable the photographer to change the camera functions according to personal preferences for taking images. The details for three users can be registered in addition to the default setting to enable the parameters for different applications, such as portrait photography, commercial photography and scenery photography to be set.
In order to preset the parameters and take photographs with the custom settings, it is necessary to follow the user registration procedures for users A to C in [0 Custom Setting]. The custom settings cannot be used unless the users are registered first.



Displays the parameter settings

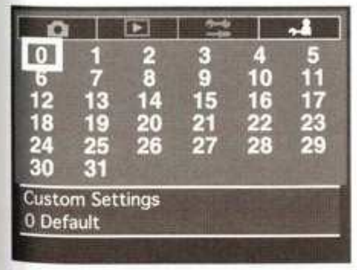
Custom Setting Menu

The Custom Setting Menu contains the following parameters.

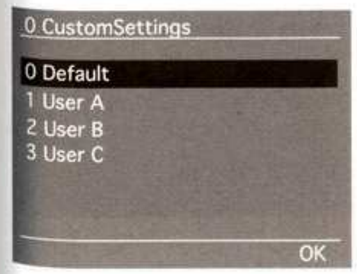
Custom Setting Parameter	Details	Default Setting	Page
[0] Custom Setting	Switches across to the setting registration function.	—	140
[1] Shutter/Aperture Step	Sets the aperture and the step width for shutter speed.	1/3 f/stop	140
[2] Exp. Compensation Step	Sets the step width for exposure compensation.	1/3 f/stop	140
[3] AF Focusing Area	Switches across to the AF focusing area function.	Normal	140
[4] Aperture after Lens-change	Sets the aperture for when the lens is changed.	Hold value	141
[5] Sleep Mode	Sets the sleep mode timer.	15 sec	141
[6] Exp. Compensation Range	Sets the exposure compensation range.	+/– 3.0 f/stop	141
[7] Top LCD Illumination	Sets the method of illumination the Upper LCD and the Digital LCD display backlight.	ON/OFF w/button	142
[8] Hold Time of Mirror-Up	Sets the amount of time photographs can be taken with the mirror raised.	30 sec.	142
[9] Autobracket Sequence	Sets the autobracket sequence for taking photographs.	Normal-Under-Over	142
[10] Cancel Autobracket	Sets the method of canceling the autobracket setting.	Power OFF	143
[11] Sub-dial in M Mode	Specifies bracket operations when in the M mode.	Bracket of shutter speed.	143
[12] Dial Func. In M Mode	Sets the front/rear control dial functions when in the M mode.	Front: TV Rear: AV	143
[13] Sub-dial in AV/TV Mode	Sets the sub-dial function when in the AV/TV mode.	Same as main dial func.	144
[14] Dial Direction	Sets the rotation direction of the electronic dial.	CW: Down ACW: Up	144
[15] Program Shift	Sets the program shift method.	Normal	145
[16] AE/AF Lock Buttons	Sets the AE/AF lock method.	Front: AFL Rear: AEL	145
[17] Half-Press Release Button	Sets the operations when the release button is half-pressed.	Auto focus	145
[18] AE Lock w/Button	Sets the method of canceling the AE lock.	Hold	146
[19] Focus/Defocus Marks	Displays the AF focus mark.	ON	146
[20] Gap w/Standard Exp.	Displays the difference in photometry values when in the M mode.	Display	146
[21] One-Press Exp. Correction	Sets the one-push function when in the M mode.	Shutter speed shift	146
[22] Time of Bulb	Sets the time that photographs can be taken with the bulb.	30 sec.	147
[23] Bulb Exposure	Sets the bulb exposure method.	While Pressing	147
[24] Shutter Speed in X Mode	Sets the shutter speed when in the X mode.	1/125	147
[25] Shutter Speed w/Flash	Sets the shutter speed when the Metz flash is mounted.	1/125 - 1/60 sec.	148
[26] Flash Compensation	Sets the exposure compensation method when the Metz flash is TTL light adjusted.	No couple w/exp. comp.	148
[27] Flash Sync. Timing	Sets the synchronization timing of the flash.	1st curtain	149
[28] AF Assist Beam	Sets the AF assist beam for usage.	ON	149
[29] Copy Custom Setting	Copies the contents of the custom setting.	No	149
[30] Default Current User	Returns the settings to the default settings.	No	150
[31] Index	Sets the index.	—	150

Setting up the Custom Setting Menu

This section explains how to set up the basic parameters for the Custom Setting Menu. [0 Custom Setting] is used here for explanatory purposes.

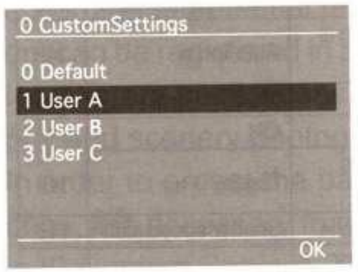


1 Press the MENU button, and then select the Custom Setting Menu with the toggle key or front/rear control dial.
2 Select [0. Custom Setting] with the toggle key.
3 Press the OK button.



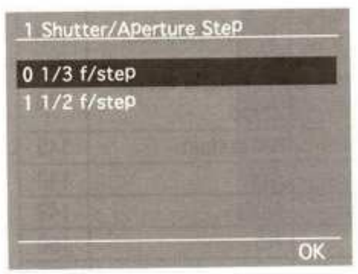
4 Select the user symbol that you want to set or use with the toggle keys.
5 Press the OK button.
Press the Cancel button to abort the process.

[0] Custom Setting



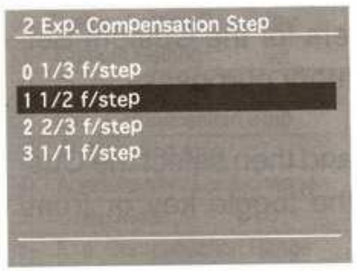
Enables the selection and registration of the user to be registered for the relevant set of custom settings.
The other custom functions cannot be set up unless a user is selected and registered.

[1] Shutter/Aperture Step



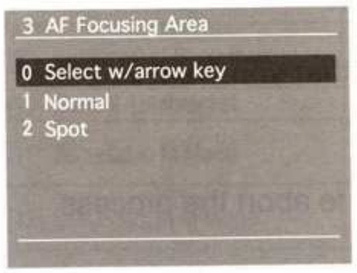
The default setting for the aperture and shutter speed is [1/3 f/step], but this can be amended to [1/2 f/step].

[2] Exp. Compensation Step



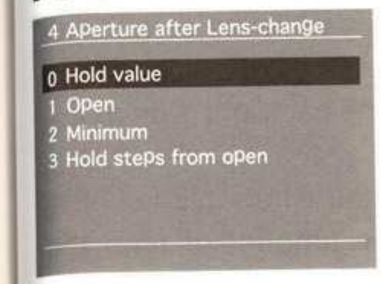
The default setting for the exposure compensation step width is [1/3 f/step], but this can be amended to [1/2 f/step], [2/3 f/step] or [1 f/step].

[3] AF Focusing Area



The default setting for the AF focusing area is [▣], but this can be amended to center or 3-point with the use of the toggle key.

[4] Aperture after Lens-change



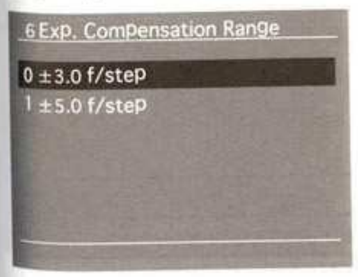
The default setting for the aperture when the lens is changed is [Hold value], but this can be amended to [Open], [Minimum] or [Hold steps from open].

Parameter	Details value
0. Hold	Sets the aperture set for the original lens in the replaced lens.
1. Open	Sets the release value for the replaced lens.
2. Minimum	Sets the small aperture for the replaced lens.
3. Hold steps from open	Sets the aperture stage from release of the original lens in the replaced lens.

[5] Sleep Mode

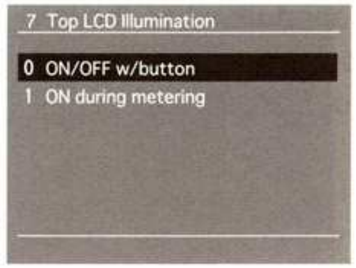
Sets the amount of time that the camera is to be turned off automatically after use has been terminated in units of five seconds between 5 seconds and 30 seconds, and in units of 10 seconds between 30 seconds and 60 seconds.
It can also be set so that is stays on permanently. The default setting is [15 sec.]. Note that additional battery life is used the longer this parameter is set.

[6] Exp. Compensation Range



The default for exposure compensation is set within a range of [+/– 3.0 f/step], but this can be amended to within a range of [+/– 5.0 f/step].

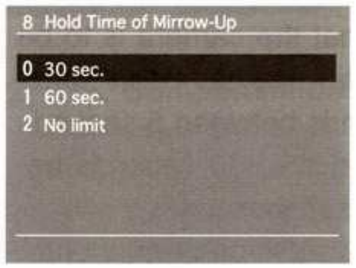
[7] Top LCD Illumination



Pressing the backlight button while the default settings are enabled turns the backlight on. You can change the setting so that the backlight is on all the time.
Additional battery life is used when this is set at constant illumination. The amount of time the backlight is illuminated is the parameter set with Custom Setting [5].

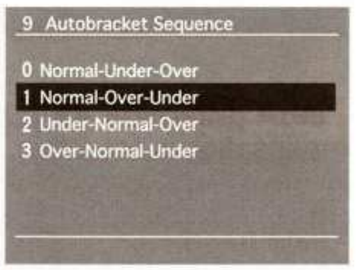
Parameter	Details
0. ON/OFF w/button	Illuminated when the backlight button is pressed.
1. ON during metering	Illuminated for the time set in Custom Setup [5] when the shutter release button is half-pressed.

[8] Hold Time of Mirror-Up



The default setting for the amount of time photographs can be taken with the mirror raised is [30 sec], but this can be amended to [60 sec.] or unlimited.
Note that additional battery life is used the longer the hold time of mirror-up parameter is set.

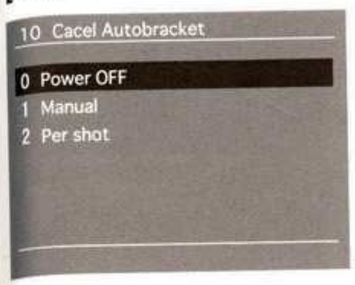
[9] Autobracket Sequence



The default setting for the autobracket sequence when taking photographs is [Normal-Under-Over], but this can be amended to other bracket sequences.

Parameter	Details
0. Normal-Under-Over	Takes photographs in the Normal-Under-Over sequence.
1. Normal-Over-Under	Takes photographs in the Normal-Over-Under sequence.
2. Under-Normal-Over	Takes photographs in the Under-Normal-Over sequence.
3. Over-Normal-Under	Takes photographs in the Over-Normal-Under sequence.

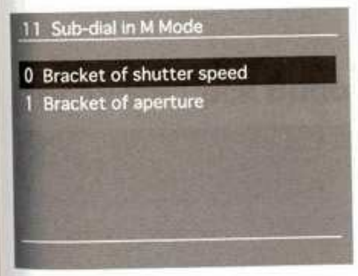
[10] Cancel Autobracket



The default setting for canceling the autobracket setting after autobracket photography has been completed is [0 Power OFF], but this can be amended so that it is not canceled until the autobracket setting is changed, or so that it is canceled after each series of autobracket photography.

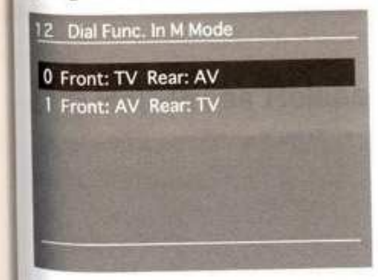
Parameter	Details
0. Power Off	Cancels the autobracket sequence when the power is switched off.
1. Manual	Enables continual autobracket photography until the autobracket button is pressed to manually disable it. The autobracket mode cannot be canceled even by switching off the power when this setting is selected.
2. Per shot	Cancels the autobracket sequence after each shot.

[11] Sub-dial in M Mode



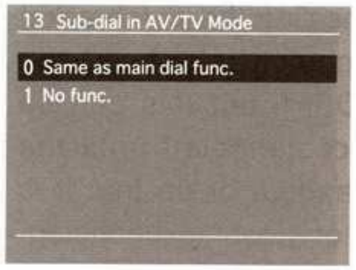
The default setting for autobracket operations when in the M mode is [Bracket of shutter speed], but this can be amended to the aperture bracket.

[12] Dial Func. In M Mode



The camera is set so that the front control dial operates the shutter speed and the rear control dial operates the aperture when in the M mode, but this can be amended to the opposite settings.

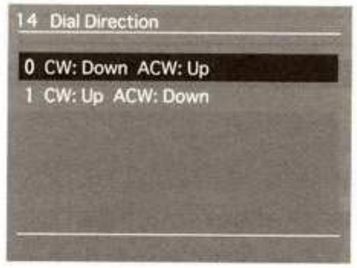
[13] Sub-dial in AV/TV Mode



The default settings for the sub-dial function when in the AV/TV mode is [Same as main dial func.], but this can be amended to [No func.].

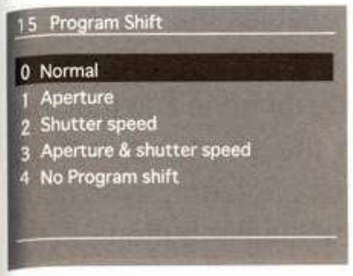
Parameter	Details
0. Same as main dial func.	Enables exposure compensation to be performed with the sub dial.
1. No func.	Disables the dial's functions.

[14] Dial Direction



It is possible to change the direction in which the dial is rotated for the shutter speed, aperture and exposure compensation settings. The default setting is set so that the values increase when the dial is turned to the right, and the values diminish when the dial is turned to the left.

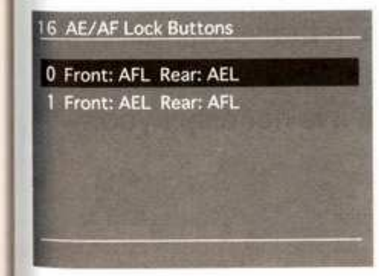
[15] Program Shift



The default setting for the program shift when taking photographs with the program AE is [Normal], but this can be amended to aperture-priority or shutter-priority.

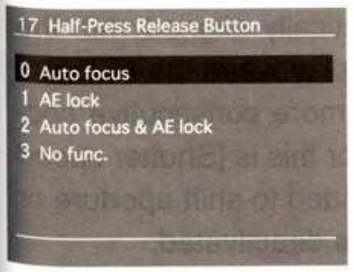
Parameter	Details
0. Normal	Shifts on the program line. Exposure compensation is possible with the rear control dial.
1. Aperture	Enables aperture-priority program shift. Exposure compensation is possible with the rear control dial.
2. Shutter speed	Enables shutter-priority program shift. Exposure compensation is possible with the rear control dial.
3. Aperture & shutter speed	Enables shutter-priority program shift with the front control dial, and aperture-priority program shift with the rear control dial.
4. No Program Shift	Both the front and rear control dials become the exposure compensation dials.

[16] AE/AF Lock Buttons



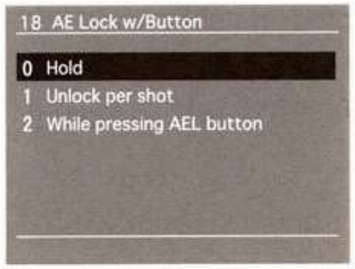
The functions of the front and rear AE/AF lock buttons can be amended so that they are opposite.

[17] Half-Press Release Button



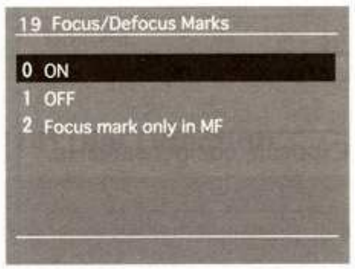
The default setting for operations when the release button is half-pressed is [Metered] and [Auto focus], but this can be amended to only the AE lock, both the AF and AE locks, or can be disabled.

[18] AE Lock w/Button



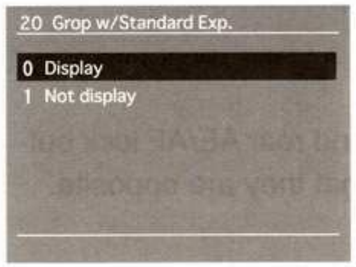
The default setting for this enables the AE lock to be activated and canceled when the AE lock button is pressed, but this can be amended so that the AE lock is released when the shutter button is pressed, and so that AE lock photography is activated with a half-press of the shutter button.

[19] Focus/Defocus Marks



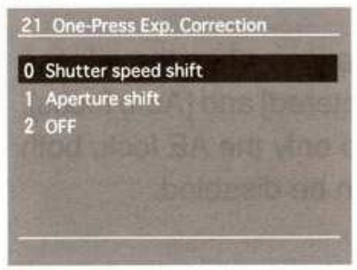
The default setting for displaying the AF focus mark is [ON], but this can be amended to [OFF].

[20] Gap w/Standard Exp.



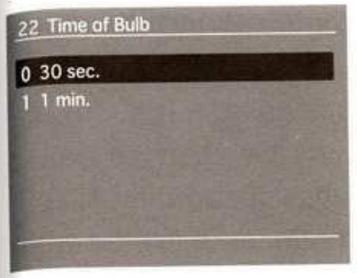
When in the manual mode, the default setting displays the difference between exposure photometry values measured by the camera, together with the shutter speed and aperture in the viewfinder. This is known as [Gap w/Standard Exp.]. It is possible to set the parameter so that it is not displayed.

[21] One-Press Exp. Correction



When in the manual mode, the camera's exposure telemetry value is automatically aligned with the [Gap w/Standard Exp.] display when the AEL button is pressed for one or more consecutive seconds. The default setting for this is [Shutter speed shift], but this can be amended to shift aperture or so the one-press function is deactivated.

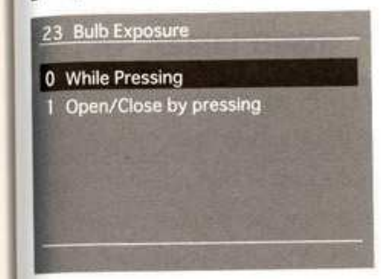
[22] Time of Bulb



The default setting for the time that photographs can be taken with the bulb is [30 sec.], but this can be amended to [1 min].

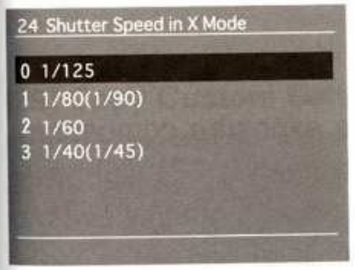
* Images taken with long bulb exposures have a tendency to become grainy.

[23] Bulb Exposure



The default setting for the bulb exposure method is [While pressing], but it can be amended so that the shutter is opened and closed whenever the shutter button is pressed.

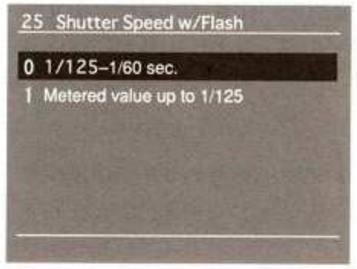
[24] Shutter Speed in X Mode



The default settings for the synchronized shutter speed when in the X mode is [1/125], but this can be amended to [1/125], [1/80], [1/60] and [1/40] when the 1/3 step has been set, and [1/125], [1/90], [1/60] and [1/45] when 1/2 step has been set.

* The flash time with large flash equipment, such as that used professionally in studios, is longer than usual, so sufficient exposure may not be achieved with fast synchronized shutter speeds. It is therefore recommended that tests are carried out prior to actual use.

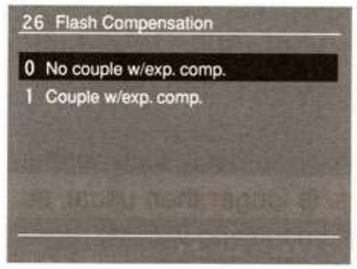
[25] Shutter Speed w/Flash



When the Metz flash is being used and when the exposure mode is either the program AE mode or the AV mode, the default settings is [1/125 - 1/60], but this can be amended to [1/125] when the exposure value has a faster shutter speed than 1/125 seconds, and so that the shutter is activated with the metering value when the shutter speed is slower than 1/125 seconds.

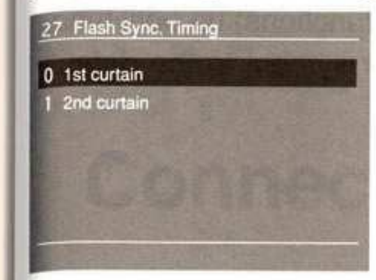
Parameter	Details
0. 1/125 - 1/60	Automatically sets the time between 1/125 and 1/60 when the Metz flash is being used and when in the P mode or AV mode.
1. Metered value up to 1/125	Set at 1/125 when the exposure metering value has a faster shutter speed than 1/125 seconds, or adjust the shutter speed with the metering value when the shutter speed is slower than 1/125 seconds (when the Metz flash is being used and when in the P mode or the AV mode.)

[26] Flash Compensation



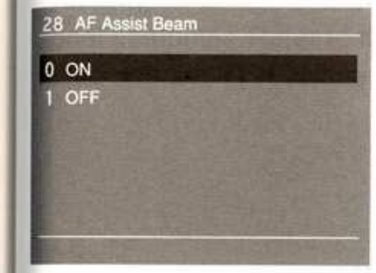
The default settings for the exposure compensation method when the Metz flash is TTL light adjusted is [No couple w/exp. comp.], but this can be amended so that adjustment is carried out in combination with exposure compensation.

[27] Flash Sync. Timing



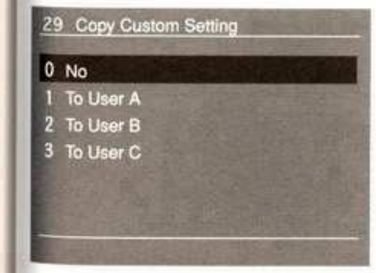
With the default setting for taking photographs with the flash of moving subjects, streaks of light appear in the direction the subject is moving ([1st curtain]), but this can be amended so that streaks of light are recorded behind the moving subject.
See "Camera Functions: 2nd Curtain Synchronization Mode" (page 103) for further details.

[28] AF Assist Beam



The AF assist beam is automatically shone when it is difficult to perform auto-focusing on a subject that has low luminance or low contrast. The AF assist beam can be amended so that this function is deactivated.

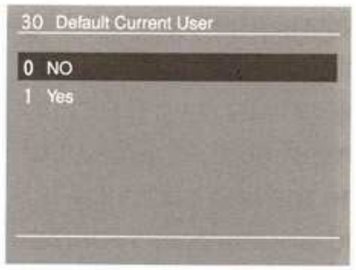
[29] Copy Custom Setting



Copies the entire contents (functions) of the custom setting for the current user symbol to another user symbol.

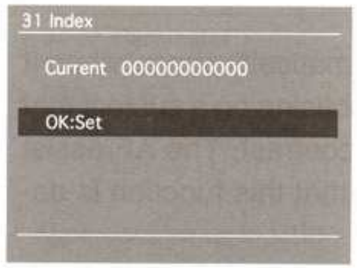
Parameter	Details
0. No	Default setting.
1. To User A	Copies the entire contents of the current custom setting to User A.
2. To User B	Copies the entire contents of the current custom setting to User B.
3. To User C	Copies the entire contents of the current custom setting to User C.

[30] Default Current User

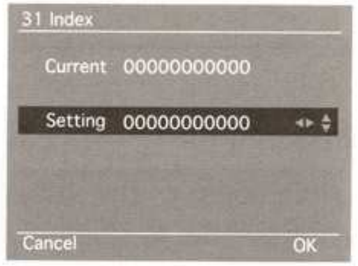


Returns all of the settings (functions) up until function 28 for the current user symbol to the default settings.

[31] Index



This enables an eleven-digit index to be set. This is used to identify users.



Connecting to the PC

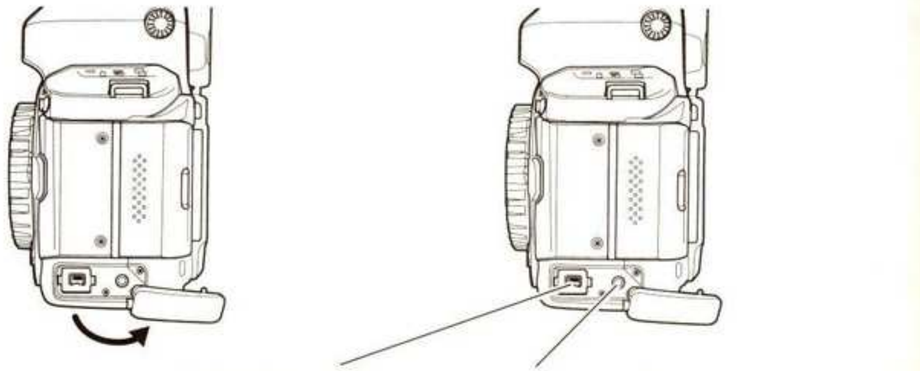
This chapter explains how to connect the digital camera to a personal computer. Refer to the software instruction manual for detailed operation procedures.

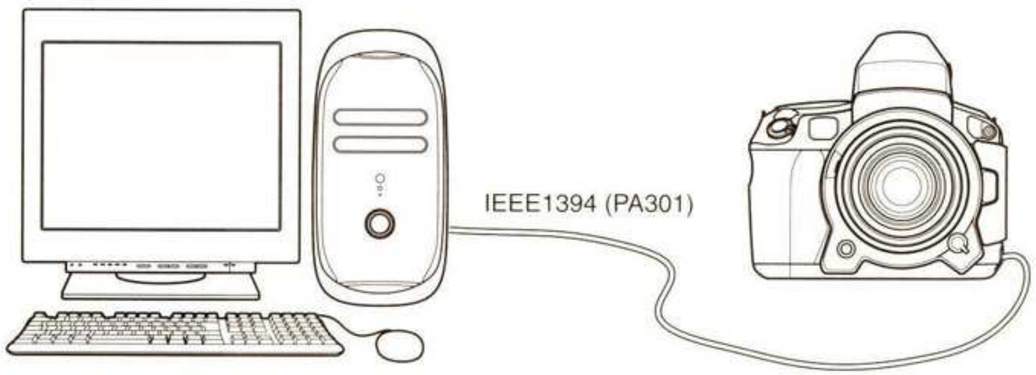
Connection

By connecting the camera to a TV using a video cable (sold separately), you can display the content of the camera's LCD monitor on the TV screen.
In addition, when the camera is connected to a PC on which Mamiya Digital PhotoStudio has been installed, you can operate the camera from the PC to take photos or transfer images to the PC.

Connecting to the PC

When you connect the camera to a PC on which Mamiya Digital PhotoStudio is installed with the IEEE1394 cable BL301, you can transfer images to the PC, and control the camera from the PC to take photos or change settings.
Refer to the Mamiya Digital PhotoStudio manual for details about installing, connecting and use.





* Use the AC adapter PA301 when using the camera connected to a PC.

Memo:

To connect the camera to a PC, it is necessary to install the driver (Windows).
Refer to the Mamiya Digital PhotoStudio manual for instructions on installing the driver.

Connecting to the PC

Taking Photographs with the Use of the Software

By connecting the camera to a personal computer onto which Mamiya Digital PhotoStudio has been installed enables the camera to be controlled and photographs taken with software. Refer to the instruction manual provided with the software for further details.

Setting up the Custom Functions for the Camera

All of the thirty-one custom settings, including the date, can be set up with the software from the PC. Refer to the instruction manual provided with the software for further details.

Transferring Image Data

There are two methods available for transferring image data to the PC: using a card reader (sold separately) and using Mamiya Digital PhotoStudio.

Transferring images from a card reader

Remove the memory card from the camera. Connect the card reader(Optional) to the PC, insert the memory card into the card reader and transfer the images.

Transferring images using Mamiya Digital PhotoStudio

Connect the camera to the PC and transfer the images from the camera memory card to the PC using the Mamiya Digital PhotoStudio image transfer function.

1. **Connect the card reader to the PC.**
2. **Open the My Computer folder and double click on the card reader drive.**

3. **Double click on Mamiya Folder DCIM to display the folders containing images.**

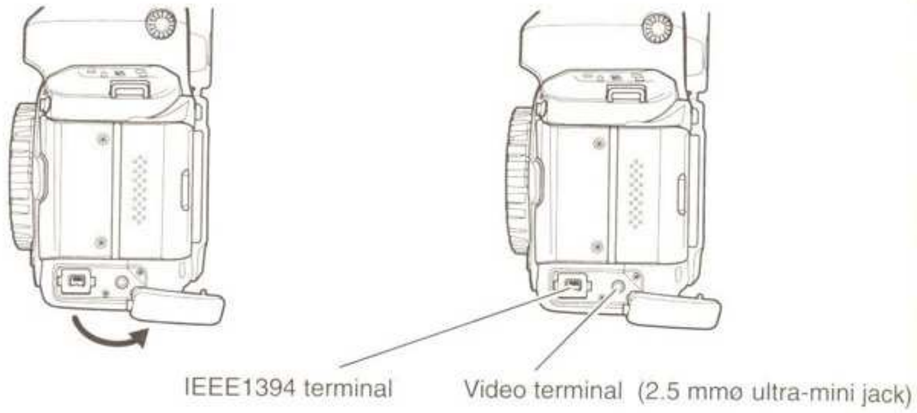
4. **Open My Documents — My Pictures and create a [New Folder].**

5. **Drag and drop the folder containing the images to [New Folder].**
   Transfer of the images starts.
   Changing the name of the transferred folder to the shooting date or place will facilitate management of your pictures.

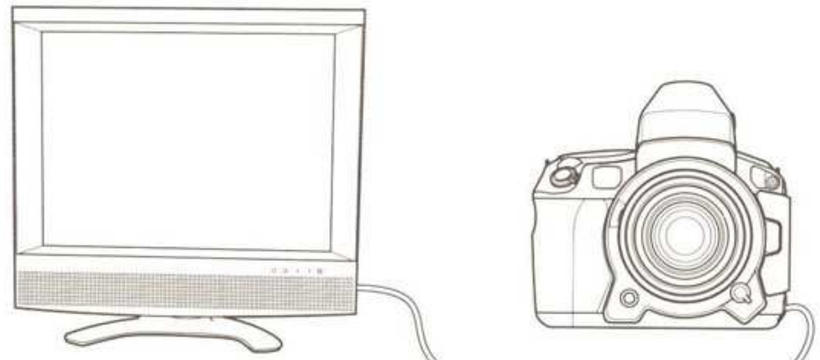
Connecting to the TV

By connecting the camera to a TV, you can display the content of the camera's LCD monitor on the TV screen.

1. **Open the terminal cover in the direction indicated by the arrow.**



2. **Connect the camera and the TV with a video cable (sold separately), as shown in the diagram.**



3. **Turn on the TV and select video input as the input source.**
4. **Press DISPLAY to play back an image. The same image appears on the TV screen.**

* Use the AC adapter (PA301) if you intend to connect the camera to a TV for an extended period of time.

Maintenance

This chapter explains the daily maintenance procedures for the camera.

Cleaning the Camera

When cleaning the outside of the camera, set the shutter release mode selector lever to L and remove the batteries.

Cleaning the Outside of the Camera

Wipe the body of the camera with a soft, dry cloth. If the soiling is bad, moisten the cloth with water and then dab at the soiling after it has been wrung out to remove excess water.

LCD Display and Viewfinder

Wipe with a soft, dry cloth.

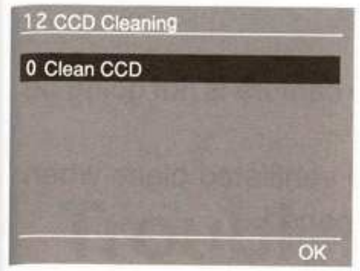
Lens

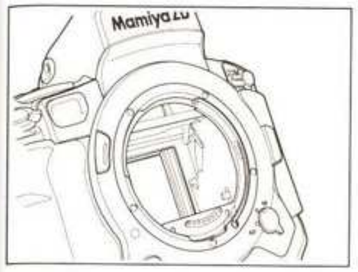
Remove all dust with a lens blower that is available on the open market. The lens can then be wiped with a piece of lens cleaning paper.

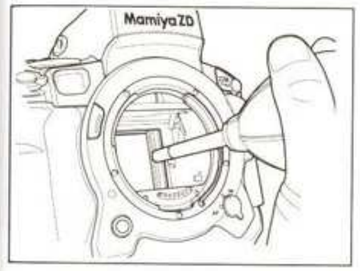
Cleaning the Inside of the Camera

It is recommended that you contact a Mamiya Camera Service Center when the inside of the camera needs to be cleaned.
When cleaning the inside of the camera yourself, use a domestic power supply with the use of an AC adapter (PA301). (If cleaning is to be carried out with the use of the camera batteries, make sure they have sufficient remaining power before starting.)
The procedure for cleaning dust and soiling from the image sensors is explained below.

1 Remove the lens from the camera.
2 Select [12. CCD Cleaning] on the Setup Menu, and then press the OK button. The selection screen for performing cleaning will be displayed.







3 Press the OK button.
The execution screen will be displayed with the message [Cancel by turning power OFF].
Press the Cancel button to abort cleaning.

4 Press the OK button to raise the mirror and open the shutter.
5 Check that dust or dirt does not adhere to the IR/Low Pass Filter by holding the camera and light shines on the filter.
* Dust and dirt is more conspicuous when light is shined on the filter.
6 Carefully remove all dust with a lens blower that is available on the open market.
* Use a lens blower that is not equipped with a brush. The use of a blower with a brush may result in the surface of the filter being scratched.
7 Once cleaning has been completed, switch off the power to the camera (L) to cancel the cleaning mode.

Important:

- Do not switch off the power during cleaning under any circumstances. Failure to observe this may result in the shutter closing and the shutter curtains being damaged.
- Do not clean the camera when the remaining capacity of the batteries is low. If the batteries run out while cleaning is in progress, the shutter closes and the shutter curtains may be damaged.
- Do not insert the lens blower further than the lens mount. If the shutter closes during cleaning, the shutter curtains may be damaged.
- Do not clean the camera with high-pressure are or with an air-spray, etc. Failure to observe this may result in damage to the shutter curtains.

Camera maintenance/checks

- Always place the lens selector lever in the L when the camera is not going be used.
- Remove the lithium ion battery and store it in a well ventilated place when the camera is not going to be used for an extended period.
- Never try to dismantle or modify the camera in any way.
- The connections could become loose or corroded if they are damaged or become dirty.
- Use the camera carefully to avoid dropping or banging against other items.
- Use a damp cloth that has been soaked in water and then wrung to clean the camera if it has been exposed to salty air.
- The camera may be damaged if used/stored in areas where chemical gasses are present.
- Wipe with a soft, dry cloth when cleaning. Do not use solvents, etc. The product can cause discoloration.
- Before using the camera after it has been in storage for an extended period, it is important that either you or your nearest customer service center carry out a few simple checks to make sure the camera is operating correctly.

Troubleshooting

This chapter contains information that should be read thoroughly before problems occur with the camera.

Being Prepared for Problems

Before deciding that you have a problem with the camera, check the problem against the following list to ascertain its cause.

- I cannot recharge the battery.
  - Are you using the correct battery?
    Make sure you use the special lithium ion battery (BA701).
  - Is the lithium ion battery properly set in the special battery charger?
    Set the lithium ion battery (BA701) properly in the special battery charger.
  - Has the lithium ion battery run out?
    Recharge the lithium ion battery.
  - Is the lithium ion battery properly set in the camera?
    Set the lithium ion battery (BA701) properly in the camera.

- The battery runs out quickly.
  - Are you sure you have fully charged the lithium ion battery?
    Make sure it has been fully charged.
  - Has the lithium ion battery reached the end of its life-span?
    Purchase a new lithium ion battery (BA701).

- The access lamp flashes on and off even when the shutter release mode switching lever is set at the L position.
  The access lamp flashes for several seconds after a photograph has been taken, even when the power is switched off immediately, in order to store the image on the memory card.
  Wait until the image has been completely stored on the memory card.

- I can't take photographs or store images
  - Have you left the memory card slot cover open?
    Make sure the memory card has been fully inserted, and then close the memory card slot cover firmly.
  - Has the memory card been set in place correctly?
    Set the memory card firmly in place.
  - Is the memory card full up?
    Either replace the memory card with a new one, or erase unwanted images.
  - Is the camera focusing correctly? (Is the <●> focus mark in the viewfinder flashing?)
    Half-press the shutter button once again to realign the focus. If it will still not focus, focus it yourself manually.

- The LCD monitor displays and images are blurred.
  - Is the screen dirty or otherwise soiled?
    Wipe the screen with a lens cleaner or similar type of soft cloth.
  - Has the LCD reached the end of its life-span?
    Contact our Customer Service Center.

- I can't erase images.
  - Are the images protected?
    Cancel the protect function.
  - Is the SD card protected?
    Unprotect the SD card.

- The date and time of taking the images are not correctly displayed.
  - Have you set the date/time parameters correctly?
    Set the date/time parameters correctly.

- Images are not clear.
  - Is the lens focus mode switch set at MF?
    Set the lens focus mode switch to AF and try again.
  - Are you shaking the camera when you press the shutter button?
    Press the shutter button gently to prevent camera shake.

Error Messages and Recovery

Error messages are displayed on the LCD monitor when errors occur with the camera.

Error Messages and Recovery

Error Message	Recovery
The card cover is open.	Close the memory card cover.
A card does not exist in the specified slot.	Place a memory card in the specified slot, or change the memory card setting with [7 Storage].
Replace the card.	Remove the memory card, and then replace it. If the same message is displayed, replace it with a different memory card.
The card is not formatted.	Format the memory card.
FOLDER No. FULL. Cannot create folder.	Format the memory card.
CARD FULL. Cannot create folder.	The card is full up. Erase all unwanted images, and then try again to create a folder.
CARD FULL. The card is full.	The card is full up. Either erase all unwanted images, or replace the memory card.
Protected.	The images on the memory card are protected. Release the SD memory card lock switch.
No images.	Replace the memory card with one that contains recorded images.
Cannot playback this image.	The image format cannot be played back with the camera.
Cannot zoom this image.	The image cannot be enlarged.
⧗	Processing. Please wait.

Appendix

This chapter provides information on digital terminology, an index, and the camera specifications.

Channel

The image's color component. On a "Curve/histogram" screen, there are four channels, "RGB", "R-ch (red)", "G-ch (green)", "B-ch (blue)", and the component distribution in each channel can be adjusted.

CMS

Abbreviation for "Color Management System". Refer to "Color management system".

CMYK

A method of expressing color. By changing the mix ratio of Cyan (C), Magenta (M), Yellow (Y), and Black (K), all colors can be expressed.
It is a method originally used in color printing.
Theoretically is possible to express every color using only the three primary colors, CMY, however black is added to the three primary colors in order to facilitate clean printing of the color black.
CMY are complimentary colors to RGB, and CMY is known as a subtractive color mixture method, as opposed to RGB, which is known as an additive color mixture method.

Color management system

A system for correcting any discrepancy in the color space depending on the output device and ensuring the same color is reproduced for the same data.
Typical examples are Macintosh's "ColorSync" and Windows' "ICM".

Color space

This refers to the area where color can be displayed. Color space varies depending on the output device. To match the colors from input through to output it is necessary to correct and manage the different color spaces of each device and then match the colors reproduced (color management).

Compression

The process of reducing the size of a file using a predetermined method.
Conversely, the process of restoring compressed data is known variously as, "decoding", "unpacking", "expansion", "decompression", or "extraction".
Compression is necessary for saving or transmitting full color high resolution image data as the file sizes become large.
There are two types of compression method: "Reversible compression", in which the image quality is not lost, and "non-reversible compression", in which the compression ratio can be dramatically increased in return for allowing a certain amount of loss of image quality.

Crop

Selecting a range to be outputted in the case where only part of the file is to be outputted rather than the whole file. Crop is also used to denote the selected range.

FireWire

This is the nick name of the "IEEE1394" standard, which is a transmission mode/protocol that connects a computer and a peripheral device.
Refer to "IEEE1394".

Gamma value

The ratio of the change in image brightness and output voltage.
Where the gamma value is greater than 1, the image is darker than at the time of input, and in the case of a gamma value less than 1, the image is brighter than at the time of input.

Gradation

The degree of fineness refers to the slight changing gradation of color. It is expressed in units of n bits, or n gradations. The higher the number of gradations, the smoother the expression of color.

Histogram

A distribution graph of the image's luminance.
The horizontal axis represents the level luminance, and the vertical axis represents the occurrence rate of each level luminance.

IEEE 1394

A high speed serial transmission system/protocol that connects a computer with a peripheral device such as an MO drive or digital camera. High speed data transmission is performed through a connection cable.

JPEG

Abbreviation for "Joint Photographic Experts Group".
A compression system for still image data, the JPEG file format takes the name of a professional organization established by ISO.
During compression, the operator may choose between a compression method that entails slight loss of image quality (irreversible compression), or a method with no loss of quality (reversible compression), and in the case of the image quality loss compression, the degree of quality loss can be specified.

LCD

Abbreviation for "Liquid Crystal Display". A display device that uses liquid crystal.
LCD is thinner and lighter than other display devices, and consumes comparatively less power. It is often used in digital equipment.

Mired

This value is one million times the reciprocal number of the color temperature.
Even where the difference in color temperature is the same, where the color temperatures are low the color change in the color temperature is large, and where the color temperatures are high, the color change in the color temperatures is small.
For example, for a color temperature difference of 100K, in the 6000K range the color will hardly change at all, while in the 3000K range the difference will be 100K.
Mired is a standard for expressing the variation widths that are substantially the same. Mired is also used as a unit for color temperature correction filters.

Noise

Conventionally, noise was unnecessary in an image and caused the image to deteriorate.

ppc

This is an abbreviation for a unit of resolution, "pixels per centimeter".
It expresses the number of pixels in one centimeter. A higher number relates to a higher resolution.

ppi

This is an abbreviation for a unit of resolution, "pixels per inch".
It expresses the number of pixels in one inch. A higher number relates to a higher resolution.

Profile

A file that defines the color characteristics, and the color reproduction area of each input device.
In a color management system, this profile is used to correct color differences between input devices and to perform color matching.

RAW image

An image captured with the picture quality mode set to "RAW", in which the raw output from the CCDs (image capture element) is stored in non-compressed, 12 bit format.
These images can only be opened with this software, and if the image is to be used in another application it is necessary to develop it and save it in JPEG or TIFF format first.
The settings of various types of image retouch information such as tone curve, white balance, or color balance can be stored in a RAW image, so the image can be adjusted without any loss of image quality.

Resolution

A standard for expressing the fineness of an image and the smoothness of the image quality.
Resolution is expressed as how many points can be expressed as a cluster within a unit width. The higher this value is, the finer the image that can be obtained.
The number of dots displayed on the screen represents the quality of the picture. Printed or scanned documents are expressed in dpi or ppi.

Digital Terminology

RGB

A method of expressing color.
Colors are expressed by overlaying and combining the three colors, red (R), green (G), and blue (B). These three colors are called the three primary colors of light, and by overlaying and combining them, every color can be expressed. Like light, the image becomes brighter as more colors are overlaid and combined, (if red, green and blue are all combined at 100%, they become white), so this method is known as the additive color mixture method.

TIFF

An abbreviation for "Tagged Image Format".
TIFF is an image data format developed by Aldus and Microsoft.
It is able to organize and store the data of a single image into a single file with various different resolution, encoding systems and number of colors.
During compression, non-quality loss systems (irreversible compression) such as LZW or pack bit can be selected.

Thumbnail

An image that has been compressed in order to display a number of such images together in a list format.
Originally this comes from the words "thumb" and "nail". In this software, thumbnails are displayed when the imported images are displayed in list format on the thumbnail screen.

Threshold value

The boundary limit where some photographic processes do not work.
For example, the UnSharp Mask process defines the applicable criteria of whether or not an edge is added.

Tone Curve

When the shape of a curve is changed, the relationship between the input (original image color) and output (image color after adjustment) changes, and the brightness and contrast within a certain gradation range can be finely adjusted.

Unsharp mask

One of the sharpness processes, when unsharp mask is applied the color and brightness of outline parts is accentuated.

Index

Index

Specifications

Camera Type	: AF single-lens reflex digital camera
Image sensor	: 48mm x 36mm full-frame-transfer CCD
Aspect ratio	: 4:3
Total Pixels	: Approximately 21.7 mega pixels
Effective pixels	: Approximately 21.3 mega pixels
Lens mount	: Mamiya 645AF mount * M645 lenses are can be used with the focus mark focus aid in the manual mode.
Lens conversion factor	: Equivalent to 1.16 of the lens' focal length
A/D conversion	: 14 bit A/D conversion, 12 bit recording
ISO sensitivity	: ISO 50 to 400 (1/3 steps)
Recording format	: RAW/JPEG (Exif 2.2 compliant), simultaneous RAW & JPEG
Image quality mode	: JPEG: L (5,328 x 4,000 pixels), M (4,096 x 3,072 pixels), S (3,008 x 2,256 pixels)
File size	: RAW: 35 MB (5,328 x 4,000 pixels) without compression JPEG L: Fine approximately 10MB, L: Normal approximately 5MB, L: Basic approximately 2.5MB JPEG M: Fine approximately 6MB, M: Normal approximately 3MB, M: Basic approximately 1.5MB JPEG S: Fine approximately 3MB, S: Normal approximately 1.5MB, S: Basic approximately 0.8MB * File sizes may differ depending on ISO sensitivity and subject.
Shooting speed	: 1.2 frames/second, 10-frame continuous burst possible
Color space	: sRGB /Adobe RGB
White balance: Auto	: Daylight/Overcast/Shade/Light bulb/Fluorescent/Flash (all of these six can be finely adjusted) Preset 1/Preset 2/Color Temperature (can be set in units of 100K between 2,800K and 10,000K)
Storage Medium	: Compact flash card (Type I & II) 256MB and higher, SD card 5MB to 2GB
LCD monitor	: 1.8 inch low-temperature polysilicon TFT (thin-film transfer) LCD, Field of view = 100%, luminance adjustable, with white LED back light
Playback function	: Zoom, slideshow, histogram, highlight alert, shadow alert
Erase function	: Frame (selected image,) all images, card formatting
Language	: Japanese/English/German/French/Spanish (total of five languages)
Video Output	: Switching between NTSC and PAL
External I/F	: IEEE1394 4-pin
Filter	: Interchangeable cartridge filter, IR cut filter (standard), Low-pass filter (optional)
Viewfinder	: Eye-level pentaprism finder, diopter adjustment between –2.5 and +0.5dpt/Eye point: 15 mm/Built-in eyepiece shutter
Viewfinder magnification	: 0.75x (when 80mm F2.8 lens used: infinity to -0.8 dpt)

Specifications

Viewfinder field of view	: 98% (of actual screen)
Finder screen	: Interchangeable, All matte /Grid screen
Auto focus	: TTL phase-difference-detection system, 3 focusing areas
AF area selection	: Auto/Single area selection, AF area display: LCD in finder/LCD monitor on camera
AF mode	: Focus mode single (S)/Continuous (C)/Manual (M), Locking possible with the AF lock button
AF assist beam	: Built-in AF assist beam, Possible to emit an assist beam from the flash in combination with the Metz flash (depending on the model of the flash)
Exposure control	: Aperture priority AE (Av)/Shutter speed priority AE (Tv)/Program AE (P) with shift function (no shift control)/Manual (M)/X mode/Bulb (B) This is automatically cancelled when a maximum of one minute has elapsed.
AE lock	: AE lock with the AE lock button/AE lock possible with half-push release with the custom setting/Metering differential displayed when locked by continual pressing of the AE lock button
Metering mode	: Four telemetry modes: Center-weighted average metering, Partial metering, Spot metering, Metering when switching between Average and Partial
Telemetry range	: EV2 to EV19 (with 80mm F2.8 lens at ISO100), During spot metering: EV5 to EV19
Shutter	: Electronically controlled metal focal-plane shutter
Shutter speed	: 30 to 1/4000 seconds (possible to switch between 1/3 and 1/2 steps), Synchronization speed: 1/125 seconds 1st curtain synchronization (2nd curtain synchronization can be set)
Synchronization	: Hot shoe, synchronization terminal available
Mirror	: Quick return
Mirror up	: Electronic with mirror up button
Release mode	: Lock (L)/Single (S) /Continual (C)/Self timer (SELF) * The self timer can be set between 2 seconds and 60 seconds. Set in calibrations of 10 seconds above ten seconds.
Preview	: Automatic return (push-button control). Aperture operations enabled when the preview button is being pressed and held.
Release connector	: electro-magnetic cable release RE401 and RE402 for 645AF/the RS402 remote control set can be used
Custom setting	: 31 settings available
Autobracket function	: Can be set for 2, 3 and 5-frame shots and conforms with continuous and single release modes. Bracket step width: Can be selected from 1/3 step, 1/2 step, 2/3 step and 1 step.
Exposure compensation	: +/–3EV (can be set with 1/3 step, 1/2 step, 2/3 step and 1 step. Compensation range can be set up to +/– 5EV with the custom setting.

Tripod screw	: U1/4 inch and U3/8 inch screws
Power supply	: BA701 lithium ion battery (7.2V-DC 1700mmAh) AC power supply can also be used with the PA301 AC adapter set (sold separately)
Battery check	: Remaining battery power indicator on LCD monitor
Dimensions	: 161.5 mm (W) x 152 mm (H) x 90.8 mm
Weight	: 1,300g (camera only), Battery: 100g
Working environment	: Working temperature: 0 deg. C to 40 deg. C, Working humidity: 75% or less

* These specifications are subject to change without prior notice for quality improvements.
* Although the LCD monitor is manufactured with extremely high-precision technology, there are cases in which pixels may be missing or constantly illuminated.

Mamiya

英　語

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