

Congratulations on your purchase of the Mamiya 645 AFDII Camera.

1

Mamiya pioneered the 645 SLR system camera three decades ago and the Mamiya 645 AFDII, with its TTL auto-focus, auto-exposure, auto-flash and auto-film winding features is the latest Mamiya masterpiece and reflects its long tradition of medium format camera expertise.

2

Combining 35mm handling ease and speed with the advantages of an almost 3x larger image size, it is a full-featured camera, utilizing many digital controls, LCD displays and is ready for the age of digital photography.

3

Its high-tech focal plane shutter with speeds up to 1/4000 sec. permits flash sync up to 1/125 sec. and has an exclusive "Safety Retraction" feature, which protects it against accidental damage.

4

The AE Prism Finder with its many features, protected by a sturdy magnesium housing, and also the Power Drive Grip, are now integral components of the die cast aluminum camera body, designed for heavy professional use.

5

All the many features, safety interlocks and other important information are covered in detail in these instructions. It is imperative that you read them thoroughly before you put your camera to work, in order to ensure proper operation and maximum results.

Note:

In order to acquaint yourself with the functions of the camera, you will want to practice without film. Please see bottom of page 11 how the camera can be tested without film.

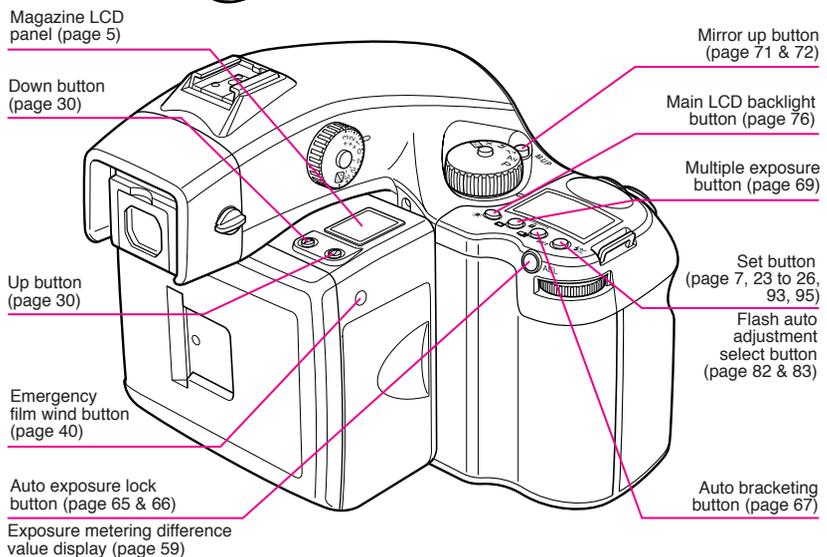
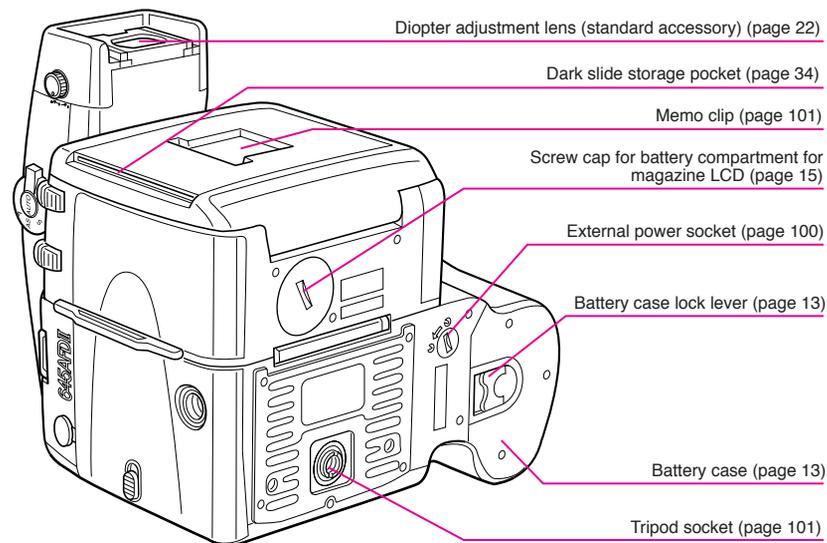
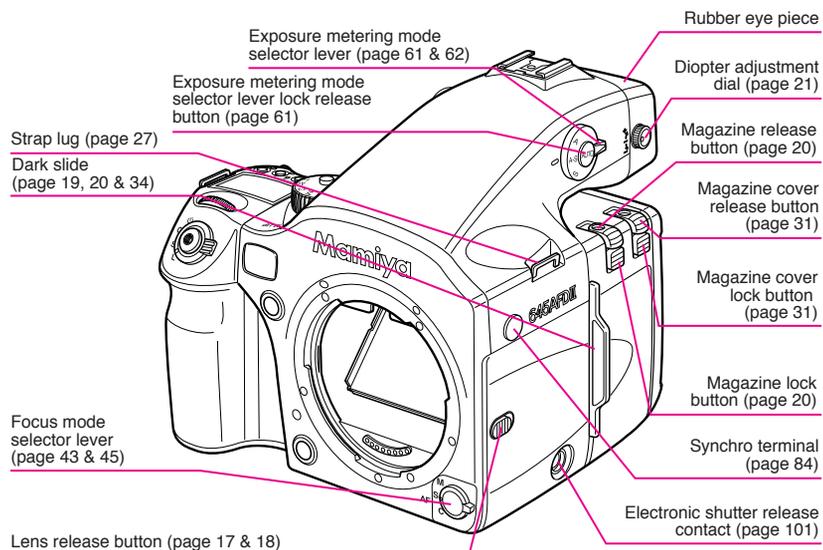
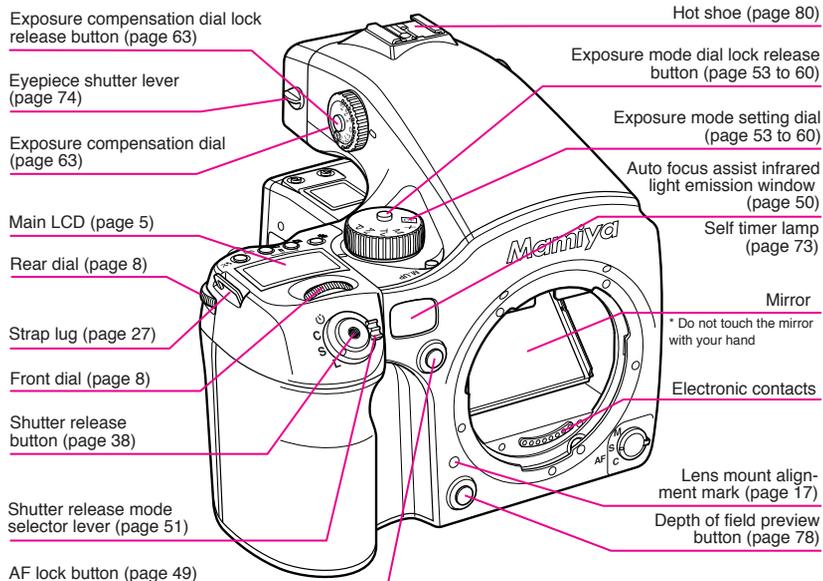
Special Advice To Professional Photographers

Your Mamiya 645 AFDII is designed for heavy professional use and will give you a long service life if properly maintained. Your camera and lenses have many moving parts which require periodic lubrication. Its electronic components, too, are subject to wear and tear and are affected by ambient conditions like dust, sand, sea air, heat and moisture.

If cameras had odometers like automobiles, it would be easier to specify servicing schedules. May we suggest that if you shoot thousands of film rolls per year, you send your equipment annually for servicing by the Mamiya distributor in your country.

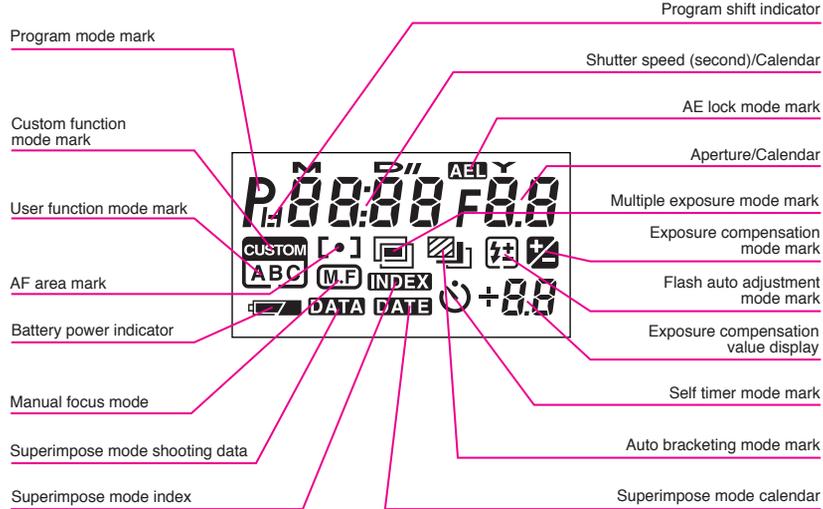
Mamiya 645 AFDII corresponds with digital backs compatible with MSC (Mamiya Serial Communication of External) system.

Names of Parts and Functions



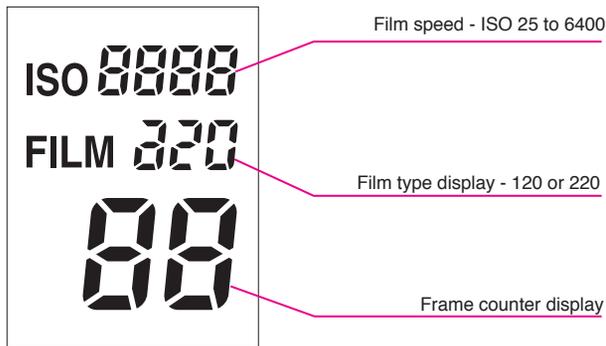
Each Liquid Crystal Display (LCD)

Main LCD



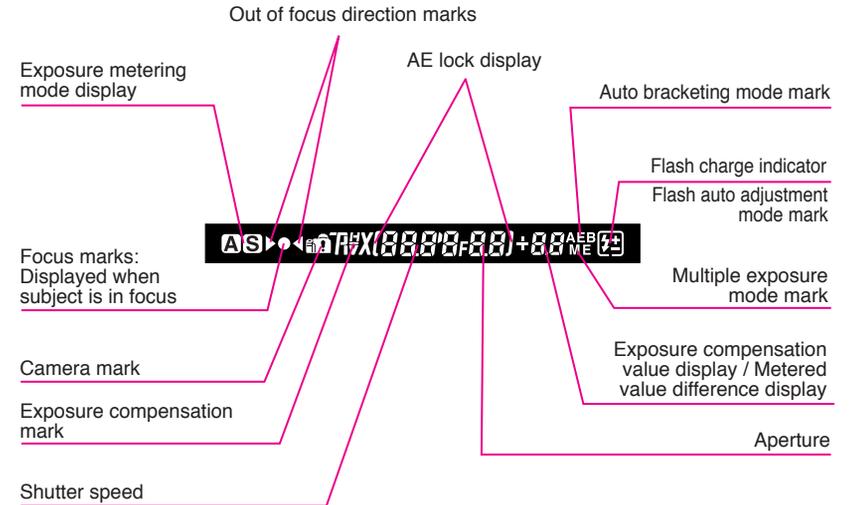
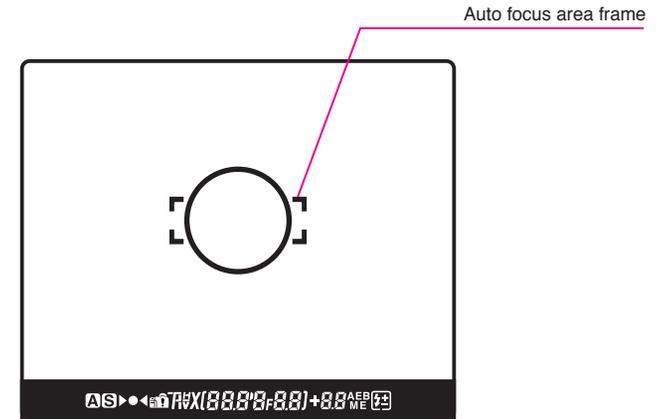
This diagram is for explanatory purposes. The actual display may differ.

Magazine LCD



This diagram is for explanatory purposes. The actual display may differ.

Viewfinder with LCD read-outs on bottom



This diagram is for explanatory purposes. The actual display may differ.

Electronic Dial Operations / Liquid Crystal Display

Electronic Dial Operation

	Position	Front dial	Rear dial
Exposure mode	P	Program shift (P \leftrightarrow P \leftrightarrow PL)	
	Av	Aperture adjustment	
	Tv	Shutter speed adjustment	
	M	Shutter speed adjustment	Aperture adjustment
	X	Aperture adjustment	
Multiple exposure button	 displayed	Number of additional exposure	
Auto-bracketing button	 displayed	Specify the auto bracketing width Select the number of frames for auto bracketing	Turn the auto bracket ON/OFF
SET button	 displayed	Flash metering compensation (when using Metz flash and SCA3952 adaptor)	

Liquid Crystal Display

All displays on the liquid crystal display consist of “” and the number of places is limited. For this reason, some letters and words are abbreviated.

Display examples of the main LCD

SEt	→	SET
dL oC	→	Dial Lock
AF Lt	→	AF Light (AF supplemental infrared light)
FSEL	→	Flash Sel (Flash compensation)
Fl	→	Flash
batt	→	Battery
End	→	END
Fd	→	Finder Display
Err	→	Error
OFF	→	OFF
On	→	On
Fb	→	Film Back
+	→	+ (Plus)
u	→	Under
o	→	Over
n	→	Normal

Display examples when one of the custom functions is specified

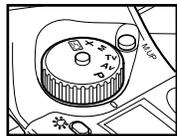
SEL	→	Select function No. (Select one of the user functions)
SEtEP	→	Tv, Av step (Select step width for Tv and Av)
C_5t	→	Compensation Value (Set the step width for exposure compensation)
AFAR	→	AF area (Select an AF area)
SP	→	Spot (Spot)
InPr	→	In Print (Select a data type for superimposing info on the picture)
Iris	→	Iris (Hold a specific lens iris value)
HL	→	Hold (Hold)
OP	→	OP (Not held, released)
LE	→	LEast (Minimum)
St	→	STep (Number of steps from the release)
HOLD	→	Power HOLD (Hold the power setting)
Cv r	→	Cv range (Specify the range of exposure compensation)
ILL	→	Illumination (backlight illumination)
Mir UP	→	Mirror UP (Mirror up)
br c	→	Bracket Cancel (Stop auto bracketing)
C	→	Cancel (Cancel)
OS	→	One Shot (One shot)
Mbr	→	Manual Bracket (Use bracketing in M mode)
MdF	→	Manual Dial Function (Swap the dial functions in the manual mode)
d_Rc	→	Dial Action (Specify a sub-dial for Tv and Av mode)
d_d!	→	Dial Direction (Dial rotation direction)
P_Sh	→	Program Shift (Shift programs)
C	→	Tv,Av Compensation (Shift Tv and Av)
AEL	→	AE,AF Lock (Swap the AEL/AFL button functions)
HRlF	→	Half Release (Enable a half-press release on the button)
AEL	→	AE Lock (Specify the operation of the AE lock button)
AF d!	→	AF Display (Display an AF focus mark)
Fc	→	Focus in (Display just the focus mark)
dbS	→	Difference Between the Setting (Display the difference in metered brightness in the M mode)
OnEP	→	One Push Action (Select the operation of a one push shift in the M mode)
b_L!	→	Bulb Limit Time (Specify the max time for a bulb shot)
b_FU	→	Bulb Function (Bulb exposure method)
SynC	→	Synchronize (Specify the synchronous speed in the X mode)
UFLS	→	Use Flash Shutter Speed (Select a synchronous speed to use in the Av and P modes)
L!	→	Limit (Specify a synchronous speed limit in the Av and P modes)
FU	→	Full Range (Specify a synchronous speed to use in the Av and P modes)
TLc	→	TTL Compensation (Link the compensation between TTL metering and exposure compensation)
AF_L	→	AF Light (Specify an AF compensation light operation)
COPY	→	Function Copy (Copy a function)
dEF	→	Default (Default)
Ini	→	Function Initialize (Initialize the functions)
noFl	→	No Film (Shutter release operation when no film is in the camera)
L	→	Lock (Does not release the shutter unless film is present)
En	→	Enable (Release the shutter without any film in the camera)
nEFU	→	Multi Exposure Function (Multiple exposure operation)
dbC	→	Use Digital Back Custom No. (Identify the digital back)
UP	→	Up

MEMO The functions controlled by the front and back dials can be changed using the custom settings feature (See C-13, 14, 15, 16 on page 90 to 91).

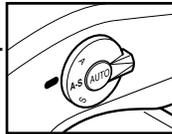
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Camera Operation Test

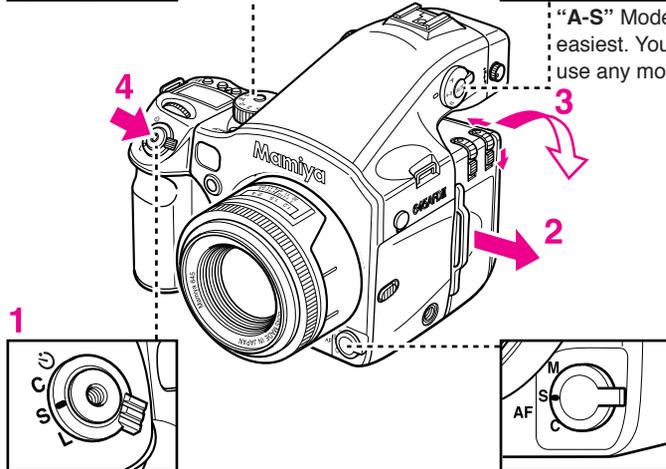
This is a simple way to test the camera and auto focus without film.



"P" Mode is the easiest.
You may use any mode but "CF".



"A-S" Mode is the easiest. You may use any mode.



1. Set the shutter release mode selector lever to "S" (to turn the power on).

2. Remove the Dark Slide from the magazine.

3. Open the back cover.

4. Set the auto focus mode selector lever to "S".

5. Release the shutter.

MEMO

The camera can be set to release the shutter when the back cover is closed.

➔ Custom settings (C-31 on page 94).

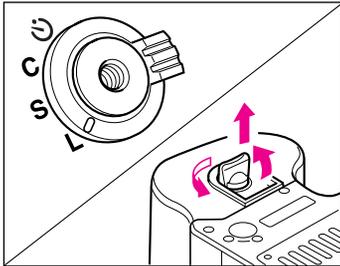
Before Taking Photographs

Preparation before taking photographs

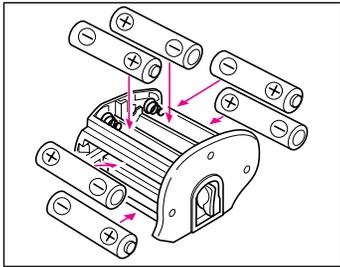
This chapter describes how to put in the batteries, how to install and remove the lens, and how to install and remove the magazine.

Inserting the Batteries (The camera will not operate without batteries)

Be sure to turn the switch of the Shutter Release Button to “L” as shown in the top illustration, to turn the power off. This prevents electrical damage to the circuits. Set the shutter release mode selector lever to “L” (to turn the power off). Use six “AA” alkaline or lithium batteries.

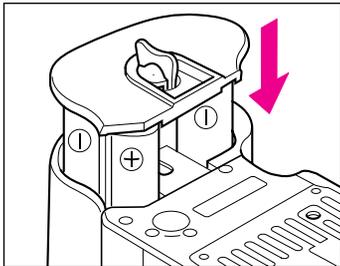


1. Lift the battery case lock lever, turn it counter clockwise and pull out the battery holder.



2. Insert fresh batteries with the ⊕ and ⊖ ends as shown in the drawing.

■ Be sure the batteries are placed with proper polarity



3. Return the battery holder to its case and lock it by turning the lever clockwise. Make sure it is firmly attached.

★ After inserting the batteries, set the date and time. (See page 25.)

Checking the Battery Power

Set the shutter release mode selector lever to “S” (to turn the power on). Check the battery condition in the lower right corner of the main LCD.



The batteries are sufficiently charged.



There is little power remaining. Have new batteries on hand. Camera will still operate.



Flashing

There is very little power remaining. Camera will not operate.

★ Set the shutter release mode selector lever to “L” (to turn the power off) and replace the batteries with new ones.



Flashing

★ When the batteries are spent, “batt” flashes on the main LCD and the viewfinder's LCD when the shutter release button is pressed.

■ When replacing the batteries, be sure to use six new batteries of the same type. Do not mix different types of batteries or old batteries with new ones.

Number of rolls that can be exposed with a new set of batteries

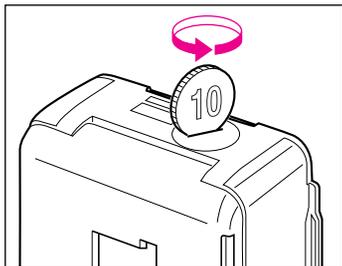
At normal temperature (20°C (68°F) (under our test conditions)

	Alkaline battery	Lithium batteries
120 type film	Approx. 150	Approx. 400
220 type film	Approx. 130	Approx. 220
Bulb time	Approx. 18 hours	Approx. 24 hours

-10°C (14°F)

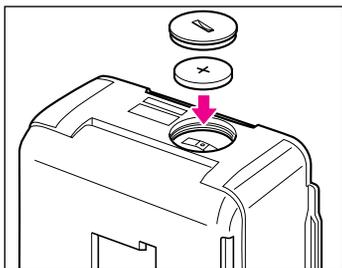
	Alkaline battery	Lithium batteries
120 type film	Approx. 25	Approx. 280
220 type film	Approx. 25	Approx. 200
Bulb time	Approx. 8 hours	Approx. 24 hours

The button battery supplies power to the magazine's LCD when the film magazine is detached from the camera. When the film magazine is attached to the camera body, it is powered by the camera's batteries.



1. Remove the battery compartment cover screw.

Use a coin or suitable screw driver and turn it counter clockwise.



2. Insert a battery.

Insert the battery according to the polarity indication \oplus in the battery compartment, and close the battery cover.

Battery used: Sony CR2032 or equivalent

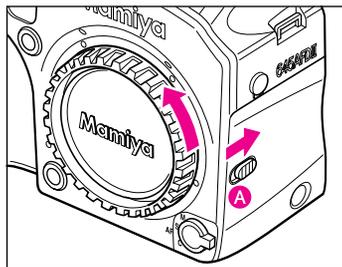
■ Be sure to watch correct polarity

- ★ When the magazine is installed onto the body, the power will be supplied to the magazine from the camera body.
- ★ You can take shots without installing the battery into the magazine. However, if you remove the magazine from the body, the magazine does not indicate film sensitivity or number of shots.
- ★ The magazine battery is not equipped with a battery level indicator. When the magazine LCD panel becomes dark or disappears, replace the battery. As a rough guideline, the battery should last approx. one year.

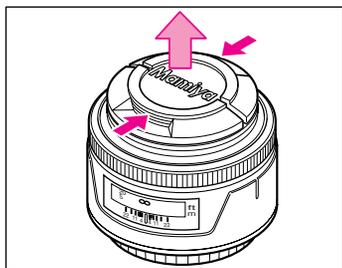
1. Life of the batteries that come with the camera body is subject to storage conditions.
2. Bolts and fingerprints on terminals may cause loose connection and corrosion. Wipe them off before loading the batteries.
3. It is advised to carry spare batteries when you travel where they may be difficult to obtain.
4. Performance of the battery degrades in low temperature. Keep them warm when in cold climate.
External battery case PE401 is available as an optional accessory.
5. Store the batteries in a cool and dry place, away from direct sunlight.
6. Keep the batteries out of the camera body, when it is not used for a long time. Leaving them in the camera may cause corrosion.
7. Replace the batteries with new ones as soon as they are exhausted. Liquid leakage from the battery may damage the camera.
8. Read the warning labels of the batteries for handling of the batteries.

Attaching / Removing Lens

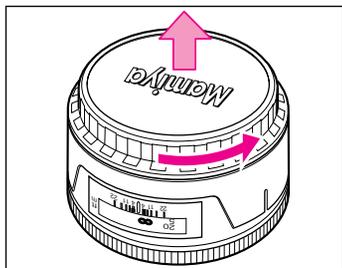
Attaching



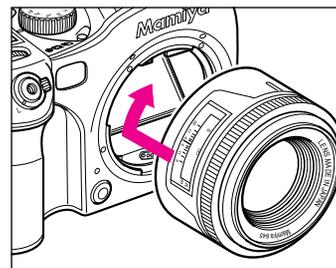
1. Remove the front body cap, just like you would remove a lens, by pushing the lens release button **A** backward and then turn the front body cap or the lens itself counter clockwise and lift out.



To remove the front lens cap, squeeze the shiny sections together and lift out.



To remove rear lens cap turn it counter clockwise.

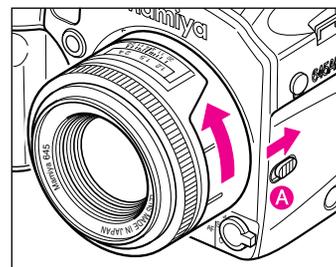


2. Attaching the lens

Align the white alignment dot of the lens (on the shiny flange) with the camera's white dot, fit the lens into the camera and rotate it clockwise until it clicks into place.

- ★ Do not touch the distance ring or other rotating parts during the auto focus operation.
- ★ When installing a lens, do not press the lens release button **A**.

Removing



While sliding the lens release button back **A**, rotate the lens counter clockwise until it stops and lift it off.

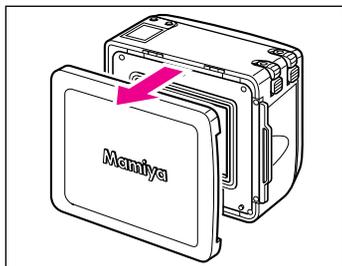
- ★ After removing the lens from the camera body, protect both ends by attaching the caps.
- ★ Oil, dust, fingerprints or water on the electronic contacts could result in malfunction or corrosion. Wipe such impurities off with a clean piece of cloth.

Attaching / Detaching the Magazine

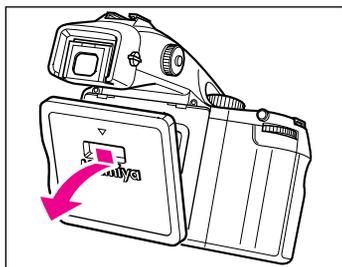
Installation and removal of the magazine and its dark slide

Unless the dark slide is inserted in the magazine, you cannot install and remove the magazine. When the camera batteries are low or they are not installed, the dark slide cannot be removed although the magazine can be mounted or removed.

Before installation

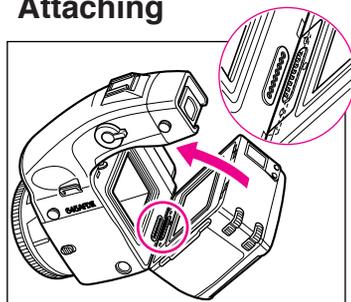


1. Remove the magazine protection cap.

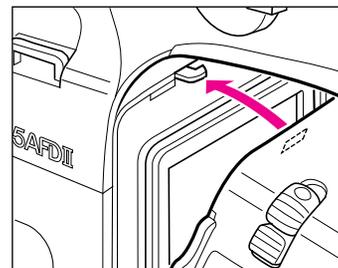


- Remove the camera rear body cap while putting a finger into the notch and slide the cap down.

Attaching



2. Match the groove on the magazine body coupler with the holder bracket (lower) of the camera body and snap the magazine into the body.

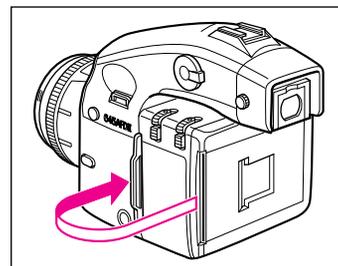


3. Then you move them together like you close a book until they lock and you hear the focal plane shutter open.

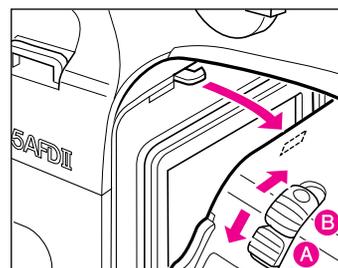
Shutter Safety Retraction

The precision shutter blades are made of very thin hyper-duralumin and could be damaged if unprotected. Therefore the camera is designed to automatically retract the shutter into the open position when the magazine is removed. When it is reattached the shutter automatically closes and is ready for normal function. (Batteries must be in camera).

Detaching



1. Insert the dark slide into the magazine.

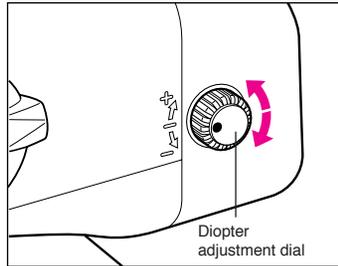


2. With your thumb first push button **A** down and then simultaneously button **B** in. The magazine will separate itself from the camera body.

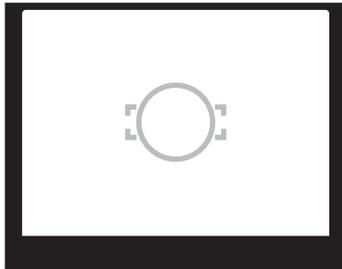
★ When the magazine is removed, the shutter will automatically open, as explained above, under “Shutter Safety Retraction”
Film winding and shutter release are also locked.

Diopter Adjustment

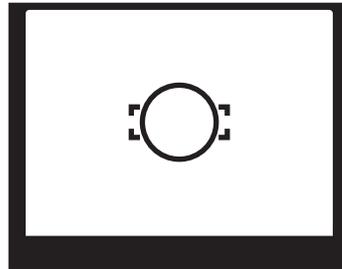
Look through the viewfinder and make sure that the focus frame (Rectangle with Circle) is in sharp focus. If it is not, turn the diopter adjustment dial in the “-” direction if you are nearsighted, in the “+” direction if you are farsighted. If this is not sufficient you may require an optional diopter correction lens. See below.



★ Point the camera at a bright, plain object such as a white wall when making this adjustment.



Diopter does not match.

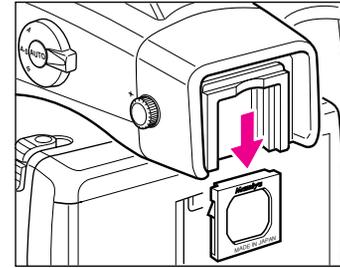


Diopter matches.

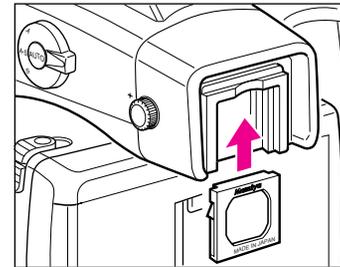
Range of adjustment of diopter correction lenses (Optional accessory)

Diopter correction lens	Range of adjustment
DE401 (standard)	-2.5 to +0.5
DE402 (for nearsighted users)	-5.0 to -2.0
DE403 (for farsighted users)	0 to +3.0

Replacing the Diopter Correction Lens



1. Remove the lens supplied with the finder by pulling it downward.



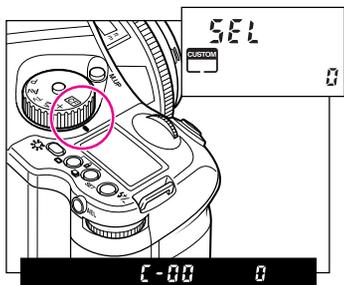
2. Push the replacement diopter correction lens upward into the viewfinder's eyepiece frame until it clicks into place.

- ★ If there is dirt or dust on the lens surface, remove it with a blower or sweep it off gently with a lens brush.
- ★ If there are fingerprints or dirt on the lens surface, wipe it off with a piece of clean, soft gauze.
- ★ Using solvents could discolor the diopter correction lens frame.

Setting the Index Number

The index number consists of 4 digits (0000 to 9999). The index number is stored in the camera body so that when replacing a series of roll film holders, the camera will superimpose sequential index numbers on exposures. This is effective when exposing and managing a large number of rolls of different types of film.

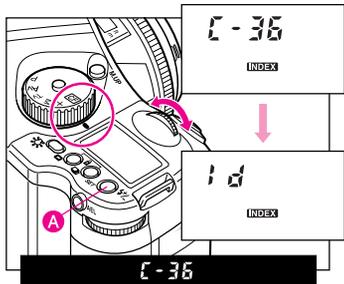
■ Although the index number consists of 4 digits, only the lower 3 digits are superimposed on the exposure



1. Turn on the power.
Set the shutter release mode selector lever to "S" or "C."

2. Press and hold down the exposure mode dial lock-release button. Then, turn the exposure mode dial to the CF position.

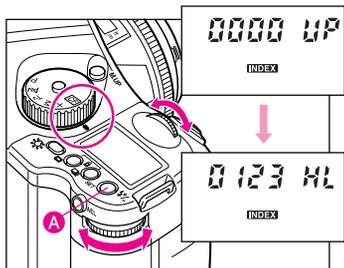
3. Turn the front dial to select custom number C-36.
The display will immediately show C-36.



★ Turn the dial on either side to select a custom number.

4. Press the set button
After pressing the set button (A), you will see the index setting display.

5. Turn the front and back dials to set the index number. (4 digits). Turn the front dial to select a digit in the index number (the selected digit blinks) and then change the number by turning the rear dial.



★ Turn the front dial until "HL" blinks, so that the camera always superimposes the index number specified. When "UP" is blinking, each time you release the shutter the index number will increase and be superimposed on the next exposure.

6. After the index number is specified, press the set button (A) for approximately one second to store the setting.

★ The custom setting mode of the superimpose is not set under default. Please set at custom setting (C-4 on page 88). If a film is not loaded, the index number does not count.

★ The starting index number can be set at will. For example, when shooting in different places or for different purposes, you can classify the photos by changing the starting number of any of the digits.

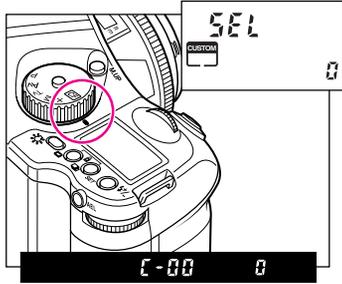
★ Once the total number of photos taken reaches 999, counting starts over from 001. 000 can also be set using the index number setting procedure.

★ After 60 seconds, the index number setting mode is canceled and the setting is not registered in memory.

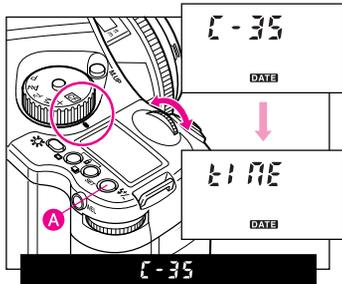
★ Custom settings remain in the memory even when the shutter release mode selector lever is set to "L" (turning the power off).

★ When the exposure mode is not set to the CF position and you press the set button for approximately 2 seconds, you can check the index number previously stored. Pressing the set button again will let you to check the "month-date-year" and "hour-minute-seconds" settings.

Setting Date and Time



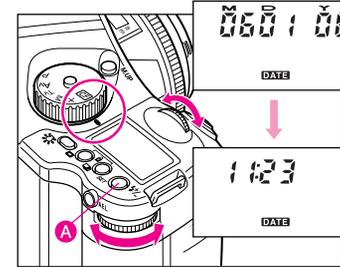
1. Turn on the power.
Set the shutter release mode selector lever to "S" or "C."
2. Hold down the exposure mode dial lock-release button and turn the exposure mode dial to the CF position.



3. Turn the front dial to select custom number C-35.
The display will immediately show C-35.

★ Turn the dial on either side to select a custom number.

4. Press the set button
After pressing the set button **A**, the display will change to the date setting mode.

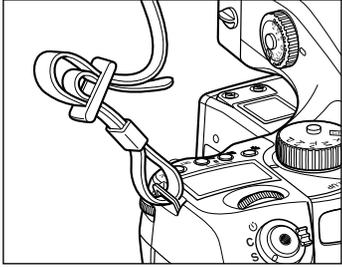


5. Turn the front and back dials to set the date and time.
Turn the front dial to select "month-date-year" or "hour-minutes-seconds" and change the value by turning the rear dial.

6. After the date and time are set, press the set button **A** for approximately one second to store the settings.

- ★ If you stop pressing buttons or turning dials while changing settings for 60 seconds or more, the camera will automatically exit the setting mode and any changes to the current setting will not be stored.
- ★ When not in the CF exposure mode, if the set button is pressed for approximately two seconds the display will show the index number. Press the set button again to check the date and time.

Strap



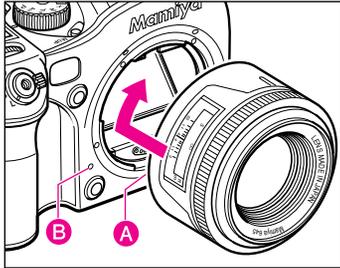
Put the neck strap through the camera's strap lugs as shown on the diagram and tighten it. For safety, check that the strap is securely fastened to the strap mount.

★ For safety, pull the strap strongly to check if it is secured to the strap mounts.

Basic Operation

This section describes basic camera operations, how to load film and basic full automatic photography.

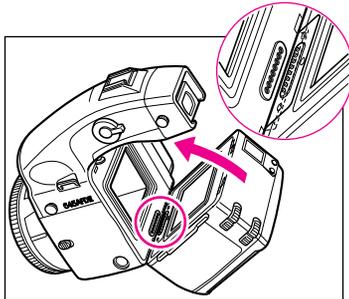
Attaching the lens



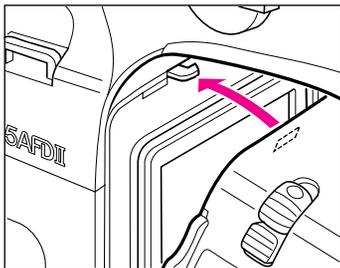
1. Attach the lens.

Align the white alignment dot **A** of the lens (on the shiny flange) with the camera's white dot **B**, fit the lens into the camera and rotate it clockwise until it clicks into place.

Attaching the magazine

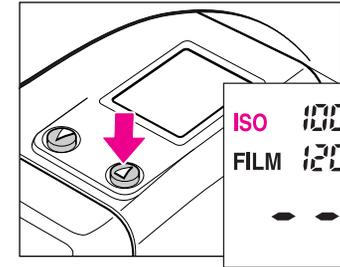


1. Match the groove on the magazine body coupler with the holder bracket (lower) of the camera body and snap the magazine into the body.



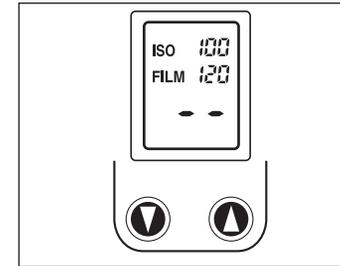
2. Then you move them together like you close a book until they lock and you hear the focal plane shutter open.

The film speed (ISO sensitivity value) is the reference for all exposure and must be set correctly. If the set value differs from the actual value of the film in use, under- or over-exposure may occur.



1. Press the ▲ (up) button.

When the LCD panel displays information, press and hold the ▲ (up) button on the bottom part of the LCD for more than 1 second. The ISO indicator will blink.



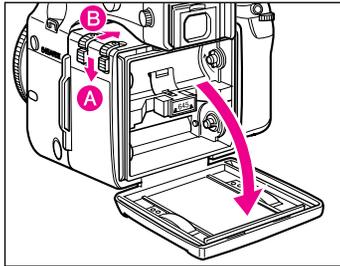
2. Set the film speed.

Set the film speed of the film by pressing the ▲ (up) or ▼ (down) button. To lock the speed setting, press and hold the two buttons simultaneously for more than one second; the film speed will be written in memory in 5 seconds.

- ★ The setting is not complete while the ISO indicator is blinking.
- ★ For a power-saving purpose, display on the LCD panel disappears in 5 seconds, when the roll film holder is detached from the camera body. The display resumes by pressing the ▲ button.
- ★ When the battery of the roll film holder is exhausted and it is not attached to the camera body, no information will be displayed on the LCD panel. As it may cause malfunction, replace the battery with a new one.

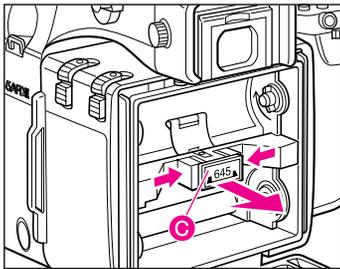
Loading Film in the Magazine

A roll of film can be inserted into the magazine whether the magazine is installed onto the camera body or not.



1. Open the back cover of the magazine.

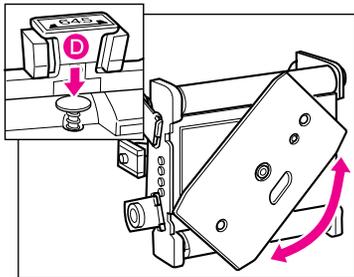
Hold down the **A** button and press the **B** button to the right.



2. Take out the roll-film insert.

Squeeze the center block "645" **C** between your fingers and pull it out.

■ When you load film for the first time, remove and discard the protective paper cover which is attached to the film rails in the magazine.



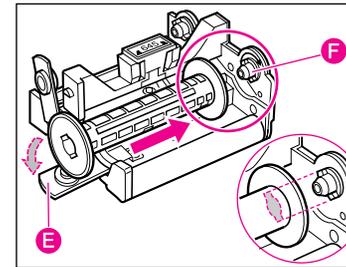
3. Set the film type (120 or 220).

Push and hold the pressure shaft **D** located under the 645 center block. This frees the pressure plate and permits it to be turned and set for either 120 or 220 film.

★ Be sure to align the lock pins with the holes on the pressure plate. The film type should be displayed on the LCD of the magazine when the film insert is loaded.

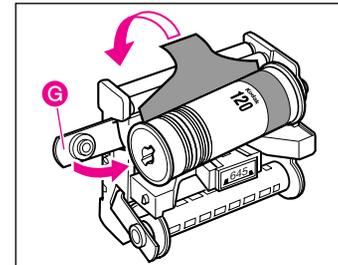
When the pressure plate (120/220) is set erroneously:

Plate Setting	Loaded Film	Result
120	220 type	- Inaccurate focusing. - Film winding after 16 exposures.
220	120 type	- Inaccurate focusing. - After the 16th exposure has been made, the shutter can be released a few times until the film's leader paper has run out, but the shutter blades may be damaged by the leader paper at the film end or by the film's sticker. Insert the dark slide in the magazine and press the shutter button and the mid-roll film advance button simultaneously. (See page 40)



4. Attach an empty spool to the roll-film insert.

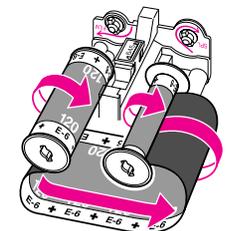
Flip the roll-film insert's lower spool clip **E** "SPL" away from the spool, fit an empty spool between take-up spool studs **F**, and return the spool clip "SPL" to the original position.

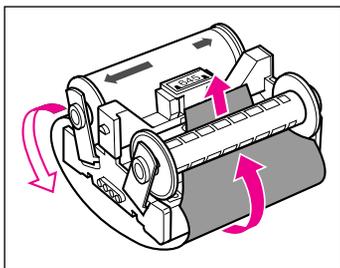


5. Set the film.

Flip the roll-film insert's upper spool clip "FILM" away from the spool, fit a roll of film as shown in the illustration, and return the spool clip **G** "FILM" to the original position.

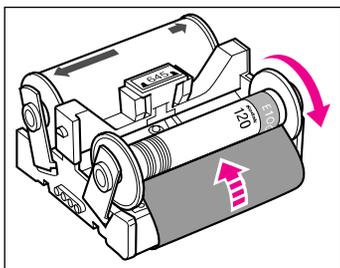
Film path



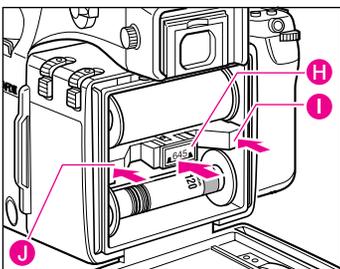


6. Attach the leader paper of the film to the empty spool.

As shown in the figure left, gently insert the leader paper tip into the groove on the empty spool that is on the "SPL" side, and turn the spool one or two turns to wrap the leader tape around it. It is not necessary to finely adjust the position of the film's starting edge manually as the film will be wound into the correct position automatically.



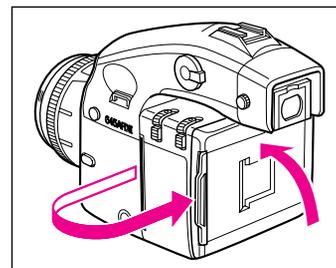
★ Turn the spool tight so that the film does not sag.



7. Insert the loaded film insert into the magazine.

While squeezing the center latches together, place the film insert, with the feed spool on top, in the magazine and with pressure on the left and right blocks **H** and **I** push it into proper position. (You will hear a click).

★ Make sure that the film insert is properly fixed. When one or both white latches are out of position, press the projecting portion **I** or **J** until it clicks.



8. Close the back cover.

Push in the upper part of the back cover firmly to close it.

After attaching the magazine onto the camera body, pull out the dark slide and press the shutter button halfway; this will feed the film automatically to frame No. 1. Place the dark slide in the magazine's rear storage pocket.

★ When the film is not wound properly, the "- -" mark appears in the LCD.

- Do not wrap too much leader paper around the empty spool. Otherwise the film section may be exposed to light.
- To prevent accidental film fogging, do not pull out the leader paper too far or load/unload film under direct sunlight.

6-exposure film

If you take more than 8 pictures when using a 6-exposure film, the shutter blades may be damaged by the leader paper at the film end or by the film tape. Follow the procedure below.

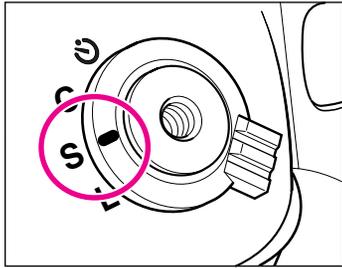
Photograph in the same way as with 120 film. Eight exposures can be taken. After taking the 8th exposure, insert the dark slide in the magazine. Then hold down the emergency film wind button and half-press the shutter release button.

- MEMO**
1. The camera can be set to wind the film to the 1st frame position automatically after the back cover is closed.
 - ➔ Custom settings (C-32 on page 94)
 2. Normally, after the rear cover is closed the shutter cannot be released without any film in the camera. However, the camera can be set to allow you to release the shutter without any film.
 - ➔ Custom settings (C-31 on page 94)

★ If you do not operate the camera for 60 seconds, the camera will automatically enter the sleep mode in order to save battery power. In the sleep mode the camera will not automatically wind the film to the 1st frame, even if the custom setting is enabled (C-31 on page 94). In this case, press the shutter release button halfway down to feed the film to the 1st frame position.

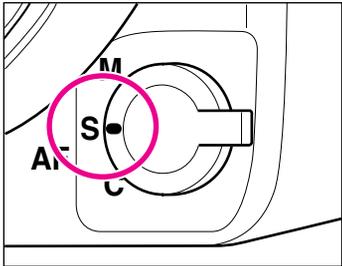
Taking Photos in the Full Automatic Mode

1. Set the shutter release mode selector lever to “S” (single-frame advance mode).



There are two shutter release modes: “S” (single-frame advance mode) and “C” (continuous advance mode). (See page 46.) When set to “L,” the power is turned off.

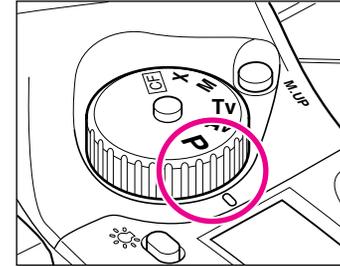
2. Set the focus mode selector lever to “S” (single focus mode). (This control is located at the lower left front of the camera.)



There are three focus modes: “S” (single focus mode), “C” (continuous focus mode) and “M” (manual focus mode).

Focus mode	Focusing	
S	Single focus mode	Half-press the shutter release button to focus. When the focus mark lights, the focus is fixed and the shutter can be released. (See page 43.)
C	Continuous focus mode	Focusing is performed continuously while the shutter release button is half-pressed. The shutter can be released regardless of whether or not the focus mark is lit. (See page 43.)
M	Manual focus mode	Focus manually. (See page 45.)

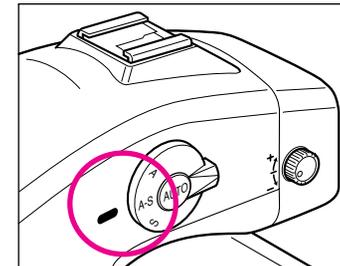
3. Set the exposure mode selector dial to “P” (program auto exposure).



There are four exposure modes: “P” (program AE), “Av” (aperture priority AE), “Tv” (shutter priority AE) and “M” (manual mode).

Exposure mode	Features	
P	Program AE	The aperture and shutter speed are determined automatically according to the shooting conditions. This mode is best suited for general photography, since it allows you to concentrate on the shooting. You can change the shutter speed and aperture by turning the front and rear dials while the “P” (Program AE) mode is selected. (See page 53 and 54.)
Av	Aperture priority AE	Set the desired aperture and the camera selects the correct shutter speed. Use this mode to control depth of field. (See page 55.)
Tv	Shutter priority AE	Set the desired shutter speed and the camera selects the correct aperture. Use this mode to stop motion. (See page 56.)
M	Manual mode	Set this mode when you want to use special combinations of the aperture and shutter speed. (See page 57 to 59.)

4. Set the exposure metering mode selector lever to “A-S” (average/spot auto switching).



There are three exposure metering modes: “A” in which the average light of the entire picture is measured with emphasis on the center of the picture, “S” in which the light in a spot at the center of the picture is measured, and “A-S” which combines these two to automatically switch the mode according to the extent of difference between the brightness of the light metered in the two modes.  sets the distribution ratio of the exposure metering modes within an intermediate range. (See page 61 and 62.)

5. Focus

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



2. Half-press the shutter release button, and focus will be adjusted automatically.



When the focus mark ● lights, the picture is in focus.

3. When ● lights, press the shutter release button further down to release the shutter.

Out of focus Marks

- ▶ ◀ **Flashing:** The picture is not focused and the shutter cannot be released. Either 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 operated in the auto focus mode, lenses not equipped with the focus mode selector ring (45, 55, and 80 mm lenses) turn their focusing rings automatically to focus. Do not touch the focus ring.

Shutter Release Button

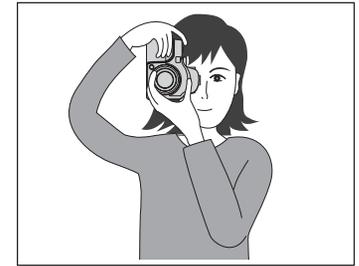
The shutter release button has a two-step action. When pressed lightly it stops at a certain point. In this manual this position is called the “half-press” position. When you “half-pressed” this button, camera functions are activated.



Holding the Camera



Horizontal



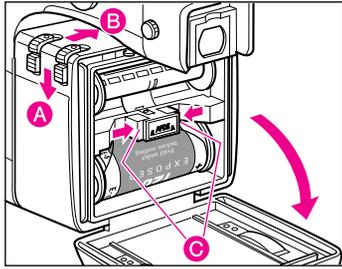
Vertical

Hold the camera still when taking photos to obtain sharp pictures.

- ★ Grasp the grip firmly, press your both elbows against your body and support the camera at the bottom with your left hand.
- ★ At slow shutter speeds, or when using the self timer, it is best to use a tripod and a cable release or an electromagnetic cable release (Optional accessories).

6. Unloading the exposed film.

When the roll of film is completely exposed, the camera automatically advances the film completely to the end. The LCD panel displays “End.”

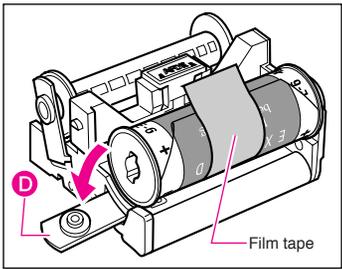


1. Open the back cover.

Hold down the button **A** and press the button **B** to the right.

2. Remove the roll-film insert.

Pinch the knobs **C** of the roll-film insert in the film chamber with your fingers and take out the roll-film insert.



3. Remove the film.

Push down the backing plate **D** away from the spool, and take out the film roll.

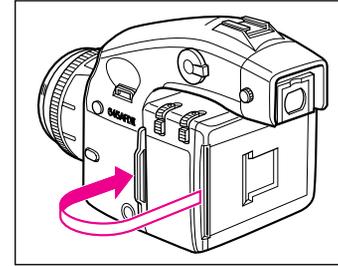
4. Seal the film with the film tape.

Secure with the provided film tape so that the roll will not come loose.

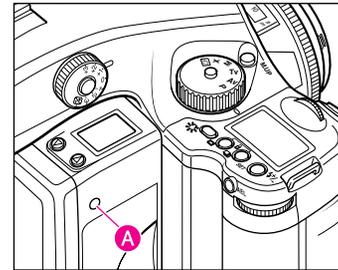
★ You can smoothly load the next roll of film, if you move the empty spool to the lower compartment (printed “SPL”).

Precautions for Film Unloading

- Do not unload an exposed film in direct sunlight.
- The exposed film should promptly be put in a light shielding container and sent for development.
- Never detach the magazine from the camera body in the middle of film winding.



1. Insert the dark slide in the magazine.

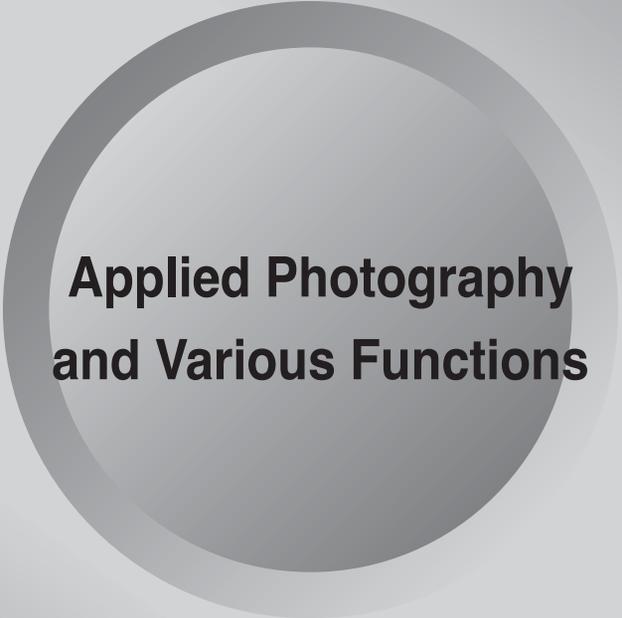


2. Press the shutter release button and the emergency film wind button **A** simultaneously. The film will be advanced to the end. And the magazine’s LCD panel will show “End.”

6-exposure film

If you take more than 8 pictures when using a 6-exposure film, the shutter blades may be damaged by the leader paper at the film end or by the film tape. Follow the procedure below.

Photograph in the same way as with 120 film. Eight exposures can be taken. After taking the 8th exposure, insert the dark slide in the magazine. Then hold down the emergency film wind button and half-press the shutter release button.



Applied Photography and Various Functions

**This chapter describes various
functions of the camera.**

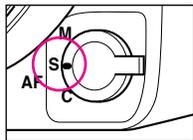
Focus Modes

Single focus mode (S)



This mode uses a focus-priority mechanism. The shutter cannot be released when the focus mark ● in the viewfinder is lit. This mode is suited for still subjects. Focus is locked when the ● focus mark lights in the viewfinder's LCD.

- ★ The shutter cannot be released if the subject is not in focus (if the ● focus mark does not light).
- ★ To take another photo with a different composition, take your finger off the shutter release button then press the shutter release button again.

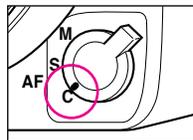


Continuous focus mode (C)



In this mode shutter release has priority to focusing. The shutter can be released regardless of whether the ● focus mark in the viewfinder's LCD is lit. Focus is adjusted continuously while the shutter release button is half-pressed. This mode is suited for moving subjects.

- ★ Focus is not locked even if the ● focus mark is lit.
- ★ The shutter can be released even if the ● focus mark is not lit.

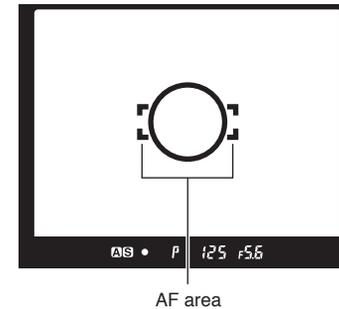


MEMO You can select whether or not to display the focus mark and the out-of-focus direction mark.
→ Custom settings (C-20 on page 91)

Focus Area

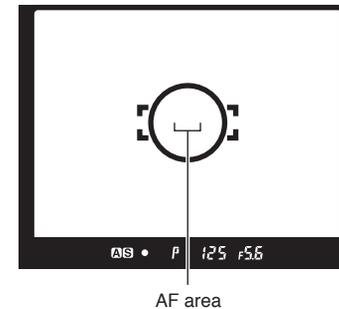
With custom functions (C-03 on page 88) you can select a focus area that suits the subject.

Normal focus area



Position the subject within frame : ◯ in the focus frame : ◯ in the viewfinder. If there are multiple objects in the focus frame located at various distances, the camera will focus the nearest object.

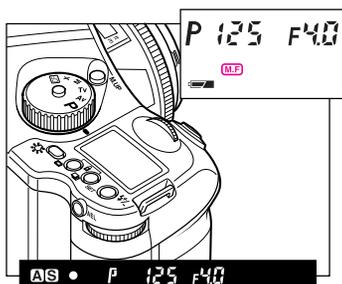
Spot focus area



The camera focuses at the center of the ◯ mark in the focus frame : ◯ in the viewfinder.

Manual Focus Mode (M)

The auto focus function can be cancelled, and you can focus manually.



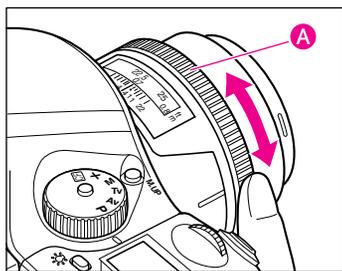
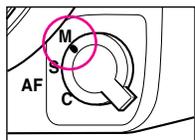
1. Switch to “M” (manual focus mode).

Turn the focus mode selector lever and set it to “M” (manual focus mode). **M.F.** appears on the external LCD panel.

2. Manual Focus Operation for Telephoto and Zoom lenses.

All Mamiya 645 AF Telephoto and Zoom lenses can be switched from Auto Focus to Manual Focus by sliding the focusing ring on the lens FORWARD until it clicks. When this is done, the “Auto Focus” inscription on the lens barrel is covered and the lens can then be focused manually. When the FOCUSING RING is set in this position the external LCD display on the top of the camera will show **M.F.** It is not necessary to set the FOCUS MODE SELECTOR on the body to “M”. To switch back to auto focus, simply slide the focusing ring BACK towards the camera and the “Auto Focus” inscription on top of the lens will again be visible.

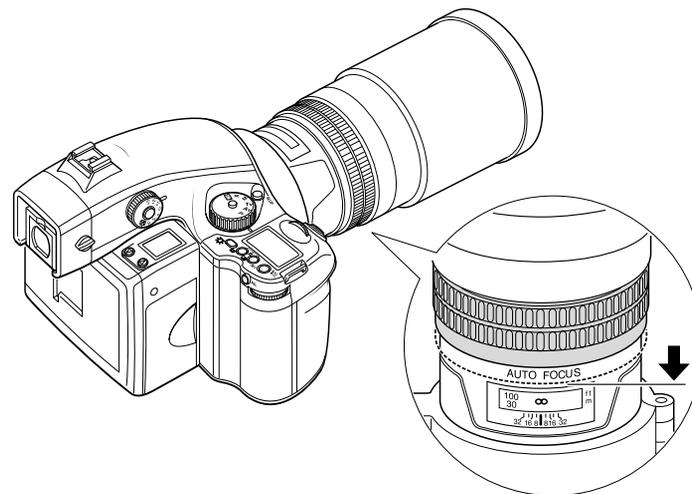
This method applies to Mamiya 645 AF Telephoto and Zoom lenses.



3. Adjust the focus.

Turn the lens focusing ring **A** until the subject is in focus. When it is in focus, the ● focus mark lights on the viewfinder LCD.

Lenses with the focus mode selector



- ★ When a lens with the focus mode selector is attached and the focus mode selector lever of the camera body is set at “S” or “C”, you can change focus modes between automatic and manual with the selector of the lens.
- ★ To use the auto focus function, both the camera body and the lens have to be set in the auto focus mode.
- ★ When either the camera body or the lens is set in the manual focus mode, auto focus does not function.
- ★ See the instruction manual for each lens for the way to switch focus modes on the lens.

Manual focusing using the focus mark

(Focus confirmation method)

With this camera, the focus mark ● lights in the viewfinder's LCD when the picture is in focus. With the shutter release button half-pressed, turn the lens focusing ring to focus on the subject. When the subject is in focus, the ● focus mark lights in the viewfinder's LCD.

If ► is lit in the viewfinder's LCD, the camera is focused on a point behind the object.

If ◀ is lit, the camera is focused on a point in front of the object.



In focus



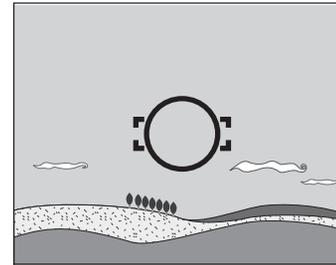
Turn the focusing ring clockwise.



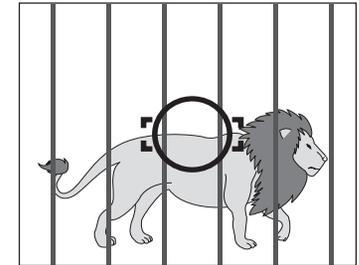
Turn the focusing ring counterclockwise.

- ★ Use the focus mark when taking photos in manual focus mode or using the M645 manual lens.
- ★ If you adjust focus using the focus mark with an M645 lens, make sure to open the aperture. You can use this function with a lens of f/5.6 aperture or higher.

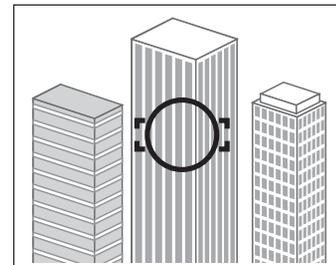
The auto focus function requires contrast on subject. Auto focusing may fail to achieve focus with certain subjects described below. In such cases, either switch to the manual focus mode and focus manually or focus an object at the same distance as the object you want to photograph, lock the focus using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



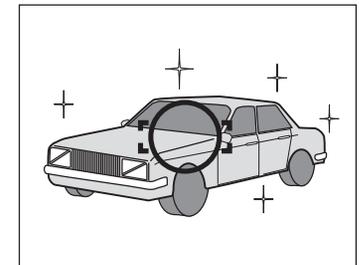
❶ Low-contrast subject (blue skies, white walls and other objects)



❷ Two or more objects overlapping at different distances within the focus frame : : (animals in cages, etc.)



❸ Subjects with continuous repeated patterns (building exteriors, blinds, etc.)



❹ Extremely backlit reflective subjects (car bodies, water surfaces, etc.)

❺ When the subject is far smaller than the focus frame

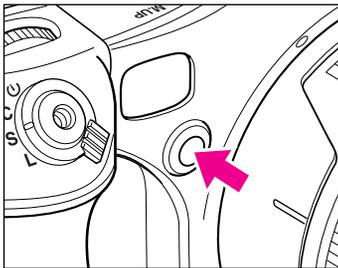
Using the Focus Lock Function

If the object that you want to focus on is not in the focus frame : , the camera focuses on the background at 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.”

Put the subject in the focus frame : and half-press the shutter release button.



2. Locked focus.

When the ● focus mark in the viewfinder LCD is lit, press the AF lock button on the front of the camera to lock the focus.



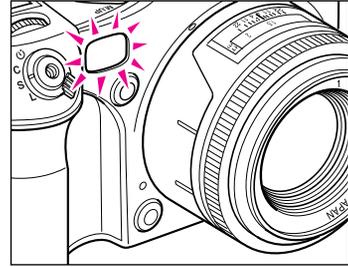
3. Adjust the composition.

With the shutter release button half-pressed, slide the camera to achieve the desired composition, and release the shutter.

★ When the focus mode is set at “S” (single focus mode) and the ● focus mark is lit, hold the shutter release button halfway down to lock the focus.

MEMO Assignment of the AEL and AFL buttons can be swapped.
➡ Custom settings (C-17 on page 91).

AF Assist Infrared Light



When the subject is dark or the low-key and the camera fails to auto-focus, a red lamp may light on the front of the camera when the shutter release button is half-pressed. This is a light that assists the camera's auto focus function.

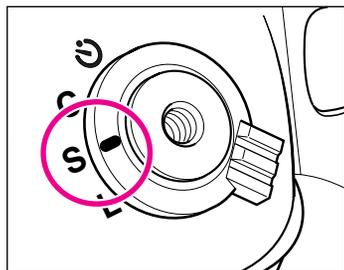
- ★ The AF assist infrared light is emitted only when the focus mode is set to “S” (single focus mode).
- ★ Effective range of the AF assist infrared light is limited. It does not reach distant subjects.
Range: 9m/29.5 ft. (using 80 mm f/2.8 lens under our test conditions)
- ★ When using a lens hood or a bellows lens hood (sold as an optional accessory) that may interfere the assist light, set focus before mounting the hood.

MEMO The AF assist infrared light can be disabled.
➡ Custom settings (C-28 on page 93)

Shutter Release Modes

Single-Frame Mode

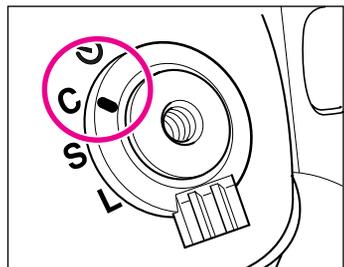
The film is advanced by one frame at time the shutter is released.



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

Continuous Mode

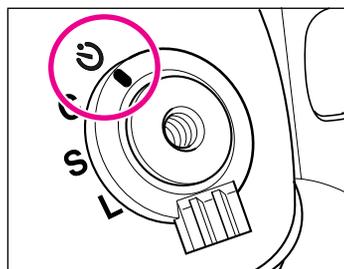
Photographs are taken continuously as long as the shutter release button is pressed.



Set the shutter release mode selector lever to "C". Photographs are taken continuously at a rate of about 1.2 frames per second. If you reach the end of the film when shooting in the continuous mode, "End" flashes on the LCD panel of film holder.

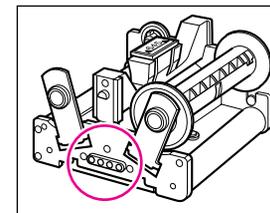
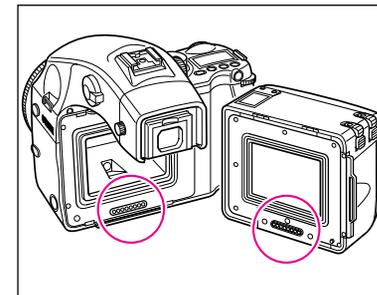
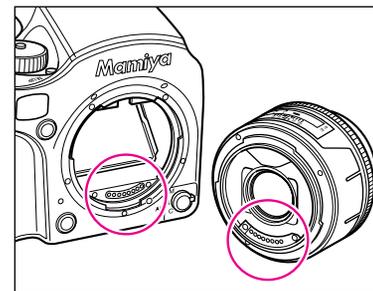
Self-Timer Mode (⌚)

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



Turn the shutter release mode selector lever to the "⌚" position. When the shutter release button is pressed, the self timer lamp will blink for 7 seconds. Then, it will blink more rapidly for 3 more seconds and the camera releases the shutter. For instructions about the self timer function, see page 73.

Electrical Contacts

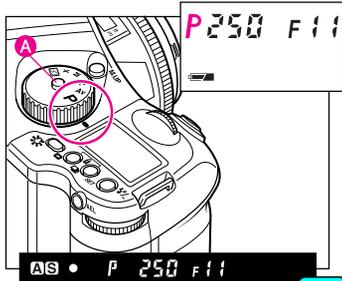


★ Oil, dirt, fingerprint, or moisture on the electrical contacts may cause malfunction or corrosion. Keep the contacts clean with a dry clean cloth.

Exposure Modes

Program AE (P)

The aperture and shutter speed are determined automatically for the optimum exposure, according to the existing ambient light. This mode is best suited for general photography, allowing the user freedom to concentrate on the subject.

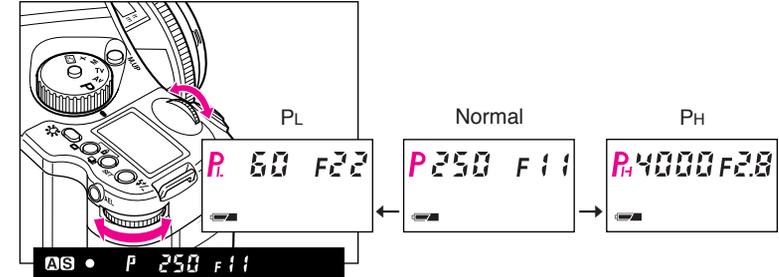


Hold down the button **A** and turn the exposure mode setting dial to "P" (program AE) position.

★ If a correct exposure cannot be obtained, the shutter speed and aperture value blink. In such cases, the pictures can be taken but they may be too bright or too dark.

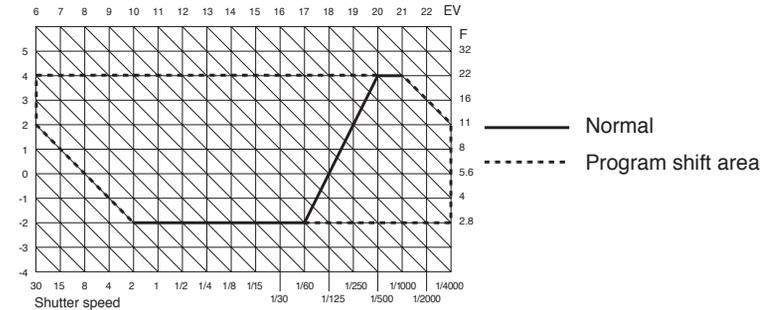
Program Shift (P_H/P_L)

You can change the shutter speed and aperture by turning the front and rear dials in the "P" (Program AE) mode. In order to avoid blurred images (shake while releasing the shutter), or to open the aperture, change to "P_H" (high speed). For slower shutter speeds and wider depth of field, change to "P_L" (low speed). This function allows you to make these changes quickly.



645AFDII program shift chart

(ISO100/AF80mm F2.8)

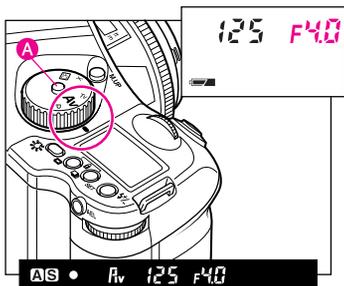


- ★ If the shutter speed and aperture values blink on the main LCD and in the viewfinder display when the program line is shifted, the proper exposure cannot be achieved. Please select a different Program mode.
- ★ When the Program line is shifted, the aperture value changes along with the shutter speed to maintain the proper exposure.

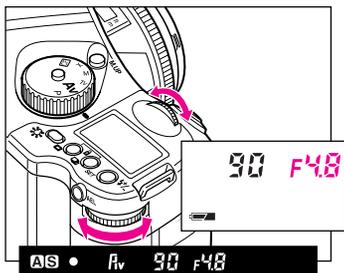
- MEMO**
1. You can choose either aperture or shutter-speed to give priority in program line shift. ➔ Custom settings (C-16 on page 91)
 2. Increment of the aperture and shutter speed can be set at either 1/3 or 1/2-stop. ➔ Custom settings (C-01 on page 88)

Aperture Priority AE (Av)

Set the desired aperture, and the camera selects the optimum shutter speed accordingly. Use the Av mode to maintain specific control over depth of field, i.e. taking portraits or landscapes.



1. Hold down the button **A** and turn the exposure mode setting dial to “Av” (aperture-priority AE) position.



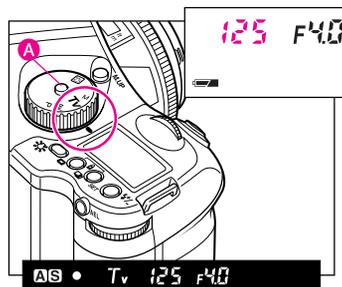
2. Turn the front or rear dial to set the desired aperture.

- ★ The shutter speed value will blink when the subject is too dark or too bright for a correct exposure. To obtain the correct aperture, adjust the aperture value until the shutter speed value stops blinking and remains lit.
- ★ When the exposure is compensated with the rear dial (see pages 63 and 64), the aperture can be set with the front dial only.

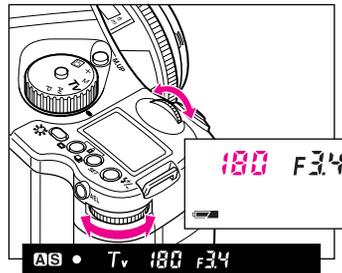
- MEMO**
1. Increment of the aperture can be set at either 1/3 or 1/2-stop.
➔ Custom settings (C-01 on page 88)
 2. Rotation direction of the dials to change the values can be altered.
➔ Custom settings (C-15 on page 90)
 3. The selected aperture level can be locked. ➔ Page 77

Shutter Priority AE (Tv)

Set the desired shutter speed and the camera selects the optimum aperture accordingly. Fast shutter speed can be used to freeze motion, and slow shutter speed can be used to blur motion on purpose.



1. Hold down the button **A** and turn the exposure mode setting dial to “Tv” (shutter-priority AE) position.



2. Turn the front or rear dial to set the desired shutter speed.

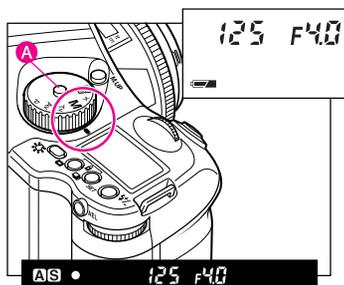
- ★ The aperture value will blink when the subject is too dark or too bright for a correct exposure. To obtain the correct aperture, adjust the shutter speed value until the aperture value stops blinking and remains lit.
- ★ When the exposure is compensated with the rear dial (see pages 63 and 64), the shutter speed can be set with the front dial only.

- MEMO**
1. Increment of the shutter speed can be set at either 1/3 or 1/2-stop.
➔ Custom settings (C-01 on page 88)
 2. Rotation direction of the dials to change the values can be altered.
➔ Custom settings (C-15 on page 90)
 3. The selected aperture level can be locked. ➔ Page 77

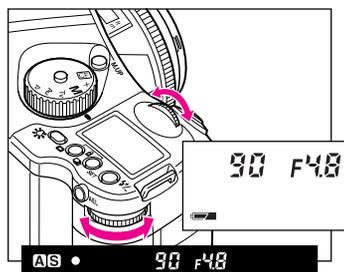
Manual Mode (M)

This mode is used to set both the aperture and shutter speed for total exposure control.

Shutter speeds can be selected from B (bulb), 30 seconds to 1/4000 of a second. Aperture values can be set from the maximum aperture to the minimum aperture. B (bulb) can also be specified in this mode.



1. Hold down the button **A** and turn the exposure mode setting dial to "M" (Manual) position.

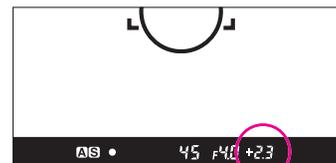


2. Turn the rear dial to set the desired aperture.

3. Turn the front dial to set the desired shutter speed.

MEMO

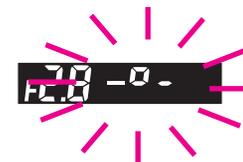
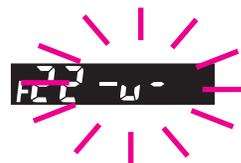
1. Increment of the aperture and shutter speed value can be set at either 1/3 or 1/2-stop. → Custom settings (C-01 on page 88)
2. The assignments of the front and rear dials can be swapped. → Custom settings (C-13 on page 90)
3. Rotation direction of the dials to change the values can be altered. → Custom settings (C-15 on page 90)
4. The dial selected aperture level can be locked. → Page 77



4. When the shutter release button is half-pressed, the difference between the present settings and the metered value is displayed in the viewfinder's LCD panel. The value is displayed in 1/3 stop increments within a range of ± 6 EV.

★ Example: "+2.3" indicates $+2\frac{1}{3}$ EV, "-5.7" indicates $-5\frac{2}{3}$ EV.

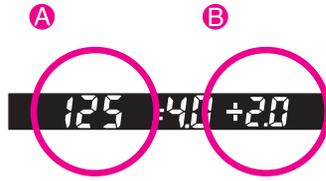
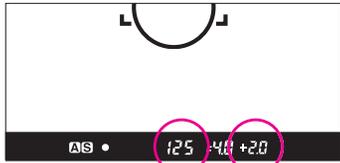
★ When the exposure is compensated in the Manual mode, the difference between the metered value and the compensated value will be displayed on the viewfinder LCD. In the B (Bulb) mode, the difference with the metered value is not displayed.



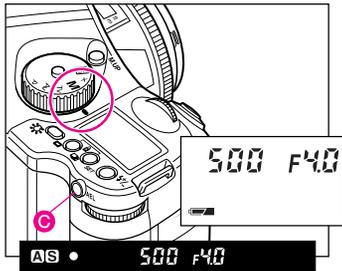
★ When the set value matches with the metered value, the difference indicator will show "0.0". When the difference between the set value and the metered value is greater than ± 6 EV and the set value is lower the metered value, the indicator in the viewfinder LCD shows "- u -." Contrarily when the set value is higher than the metered value, the indicator shows "- o -."

One-push shift function

When difference between the set value and metered value is displayed on the viewfinder LCD in the Manual "M" mode, press the AEL button for approx. 1 second and the camera will automatically adjust the shutter speed to achieve the correct exposure based on the set aperture value.

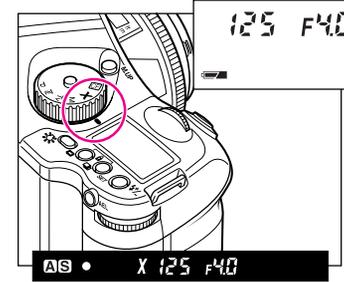


While the difference **B** between the set value **A** and the metered value is displayed on the viewfinder LCD, press the AEL button **C** for approximately one second. The camera changes the shutter speed to an appropriate level.



- MEMO**
1. The one push shift function can be disabled.
➔ Custom settings (C-21 on page 92)
 2. The aperture level can be selected for the parameter to shift.
➔ Custom settings (C-22 on page 92)

X Mode (X)

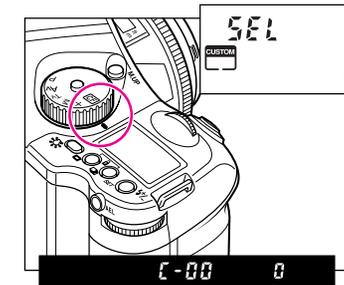


Select this mode when you use a flash. The shutter speed will be fixed of 1/125 second of the synchronized speed.

- ★ When you take a photograph with TTL light metering with a Metz flash, see pages 81 and 82.
- ★ For flash photography, see pages 80 to 84.

- MEMO**
1. The selected aperture value can be locked. ➔ See page 77
 2. The synchronizing speed can be changed.
➔ Custom settings (C-25 on page 92)

CF (Custom Function) mode (CF)



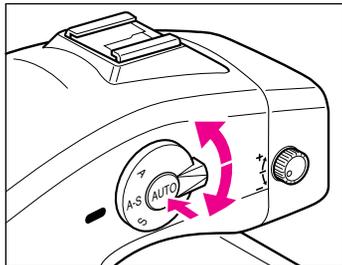
You can change the camera functions and methods for using the camera using custom functions.

- ★ For the details of the custom functions, see pages 86 to 95.

Exposure Metering Modes

How to change to the Exposure Metering Modes

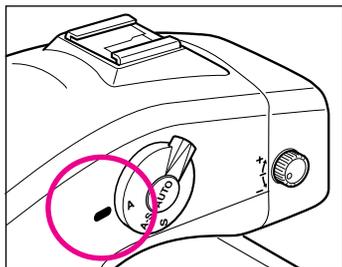
While pressing the exposure metering mode selector lever lock release button in, turn the exposure metering mode selector lever up or down.



■ If a polarizing filter is necessary, use a circular polarizing filter. A linear polarizing filter is not compatible with the Mamiya 645 AFDII and its operations.

Center average exposure metering mode (A)

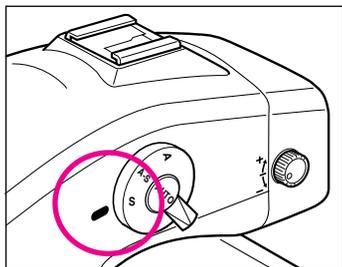
(Set the exposure metering mode selector lever to "A".)



The average light of the entire picture area is measured, with emphasis on the center.

Spot exposure metering mode (S)

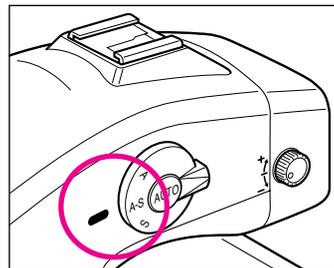
(Set the exposure metering mode selector lever to "S".)



The light in the circle at the center of the picture area is measured to determine the exposure. This mode is best suited for strongly high-key subjects, or when you desire to measure a specific area. When the spot you want to measure is not at the center of the frame, use the AE lock function. (See pages 65-66 AE Lock Mode.)

Average/spot auto switching exposure metering mode (A-S AUTO)

(Set the exposure metering mode selector lever to "A-S".)



With the A-S auto metering mode, average or spot exposure metering is selected automatically and the appropriate exposure is set accordingly.

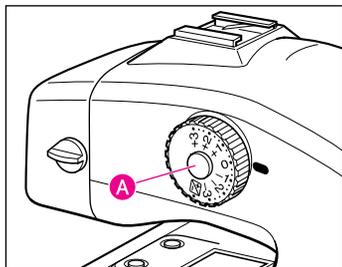
The spot mode is selected automatically when the brightness within the spot metering area is lower than the brightness of the average metering area by about 1.5 EV or greater. The average mode is selected when the spot exposure metering value is the same or brighter than the average value. When the difference between the spot value and average value is between 0.75 and 1.5 EV, the appropriate exposure is achieved at an intermediate value.

MEMO Holding time of the metered exposure value can be altered.
➔ Custom settings (C-06 on page 89)

Exposure Compensation

In some situations, such as a great difference between the subject and background brightness or overall subject tones that will not meter correctly because they are all black or white, the resulting photograph may be under- or overexposed. When this occurs, use the exposure compensation function. Exposure compensation can also be used when you want to intentionally create overexposed or underexposed pictures.

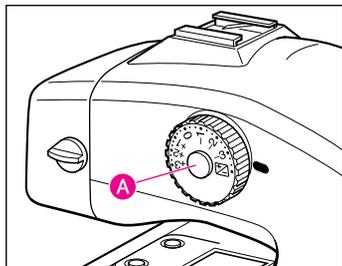
With the exposure compensation dial



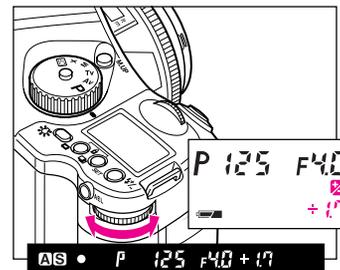
Turn the exposure compensation dial while pressing the exposure compensation dial lock release button in **A** located on the right side of the viewfinder.

★ The exposure can be adjusted up to ± 3 EV in 1/3 steps.

With the rear dial



Hold down the button **A** on the side of the viewfinder, and turn the exposure compensation dial until the **∞** mark lines up with the white line.



Turn the rear dial left to increase the compensation. Turn it right to decrease the compensation. You can check the exposure compensation value in the main LCD display and in the LCD readout in the viewfinder.

- ★ After taking pictures using the exposure compensation feature, be sure to return the exposure compensation dial to the “0” position.
- ★ The exposure compensation dial is locked at the “0” and **∞** positions.
- ★ The exposure compensation feature is available during AE locked operation.

- MEMO**
1. If you adjust the compensation value with the rear dial, the increment can be set to 1/3, 1/2, 2/3 or 1.0-stop. → Custom settings (C-02 on page 88).
 2. The maximum amount of the compensation can be set either at ± 3 or ± 5 . → Custom settings (C-07 on page 89).

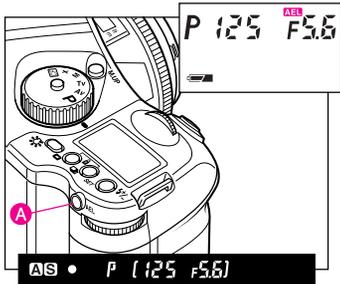
Display of the exposure compensation of the viewfinder LCD

(When a Metz flash is not equipped.)

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

AE Lock Mode

The AEL button will lock the Auto-exposure value as the photo is being recomposed.



1. Turn the shutter release mode selector lever to "S" or "C."

2. Turn the exposure mode setting dial and select any of "P," "Av," or "T."

3. Focus on the subject for metering exposure, and press the AEL button **A** on the rear of the grip. [] will appear on the viewfinder LCD, indicating that the exposure value is locked.

4. Slide the camera to recompose the shot, and take the picture.



★ [] on the viewfinder LCL blinks to indicate the exposure is locked, when you continue to take the next picture in the AE lock mode.

★ When the exposure is compensated with the rear dial (see pages 63 and 64), the shutter speed can be set with the front dial only.

★ If you turn the shutter release mode selector lever to the "L" (power OFF) position, or after elapse of one hour, the AE lock mode will automatically be cancelled.

★ In the Manual "M" exposure mode, you cannot use the AE lock function. When the difference between the metered value and the set value is displayed, press the AEL button for approximately one second, and one-push shift function will be activated and the camera will automatically adjust the shutter speed. (See page 59)



Metered-value difference indicator



Keep pressing the AEL button **A**, and the difference between the metered exposure value and the exposure of the new composition will be displayed on the viewfinder LCD. This function can be used to see if an object of very different brightness levels can be properly photographed.



★ If the difference between the set value and the metered value exceeds 6EV, the viewfinder LCD blinks " - 0 - " for underexposure and " - 0 - " for overexposure.

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

In the "P" mode (Program AE) mode, turning either the front or rear dial shifts the program to "PH" and "PL." When in "Av" (Aperture-priority AE) or "Tv" (Shutter-priority AE), turning one of the dials changes both the aperture and shutter speed values.

★ Exposure compensation and auto-bracketing function can be used when the camera is in the AE lock mode in normal operation or with the mirror locked up.

MEMO

1. The way to cancel the AE lock can be changed.

➡ Custom settings (C-19 on page 91)

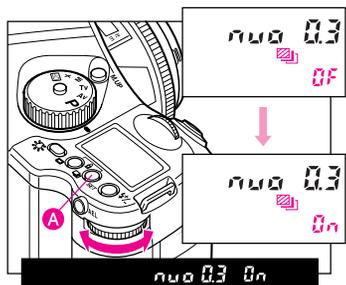
2. Half-pressing of the shutter release button can activate the AE lock mode. ➡ Custom settings (C-18 on page 91)

3. The assignment of the AEL button and AFL button can be swapped.

➡ Custom settings (C-17 on page 91)

Auto-Bracketing Mode

With auto exposure bracketing, you can bracket the exposure automatically for three (or two) successive frames, when it is difficult to determine an exposure compensation value.

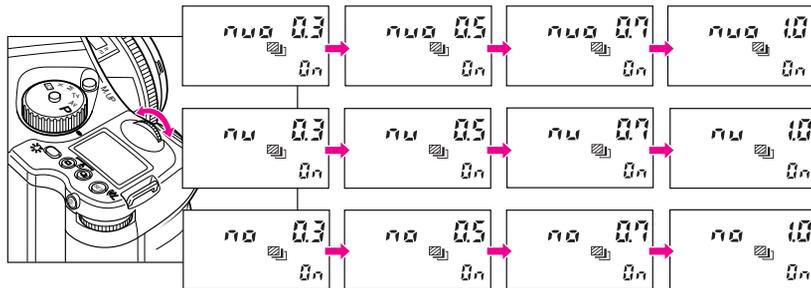


1. Turn the shutter release mode selector lever to the “S” or “C” position.

When set at the “S” position, you can shoot one frame with each press of the shutter release button. In the “C” mode, the camera takes three (or two) frames successively with one press of the shutter release button.

2. Keep pressing the auto-bracketing button **A** for approximately one second, and the auto bracketing mark will blink on the top LCD panel. Turn the rear dial before this indicator goes out, and change “OF” on the display to “On”.

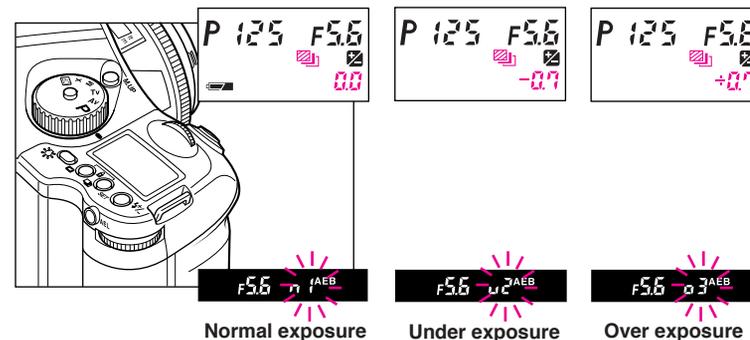
★ When you want to cancel the auto-bracketing mode, turn the rear dial to change “On” to “OF”.



3. While the auto bracketing mark is blinking, turn the front dial to change number of frames (3 or 2), sequence of the shorts in 2-shot mode (shown above), and increment (1/3, 1/2, 2/3 or 1-stop).

★ The letters (n, u, o) indicate the type of exposure (“n” for normal, “u” for under-exposure and “o” for over-exposure) and numbers indicate increment (0.3 for 1/3, 0.5 for 1/2, 0.7 for 2/3, and 1.0 for 1/1)

★ By pressing any other button or leaving the camera for 5 seconds, setting for the auto bracketing will be stored.



4. Press the shutter release button.

★ In the auto-bracketing mode, type of exposure, order of the next shot and “AEB” mark blink in the viewfinder LCD. With the auto bracketing mark on the top LCD, you can check the type of the next exposure by half-pressing the shutter release button.

- Normal exposure
- Under exposure
- Over exposure

Single-Frame Mode (S)

Press the shutter release button for each shot.

The camera meters adequate exposure value for each shot and performs auto-bracketing. The camera stays in the auto-bracketing mode until the last frame of the roll film is exposed or you cancel the auto-bracketing mode manually.

★ If you turn the shutter release mode selector to the “C” position before taking three (or two) frames, the camera will restart the auto-bracketing from the initial frame (normal exposure in the default setting).

Continuous Mode (C)

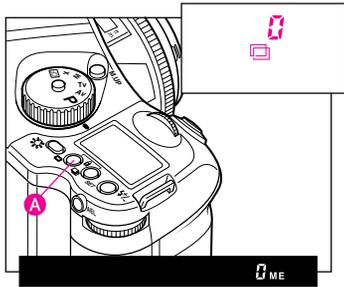
By pressing the shutter release button once, the camera takes 3 (or 2) shots in series. With each press of the shutter release button, the camera repeats auto-bracketing. The standard (normal) exposure value will be fixed when you take the first frame.

★ When the number of available frames of the current film is less than 3 (or 2) in the auto-bracketing mode, the “- no - ” mark blinks and the camera automatically cancels the auto-bracketing mode.

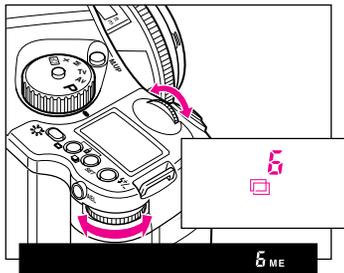
- MEMO**
1. Order of the exposures in 3-shot auto-bracketing can be changed.
 - ➡ Custom settings (C-10 on page 90)
 2. The way to cancel auto-bracketing mode can be changed.
 - ➡ Custom settings (C-11 on page 90).

Multiple Exposure Mode

Using the multiple exposure mode, you can expose several shots on the same frame.



1. Turn the shutter release mode selector to the "S" or "C" position.
2. Keep pressing the multiple exposure setting button **A** for approximately one second to enter the multiple exposure mode. You will see the multiple exposure mark "ME" and number of exposures (0 is default) on the top LCD panel.



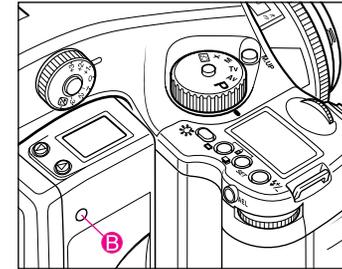
3. Turn the front or rear dial to set the number of desired exposures. By turning the front or rear dial, you can specify 2 to 6 multiple exposures. After 5 seconds with no operation or if you press any of the other buttons, the setting will be stored.
4. Press the shutter release button. The camera will make multiple exposures on the same frame. After exposures of the specified number have been made, the camera will automatically cancel the multiple exposure mode.

- ★ When the camera is in the multiple exposure mode, it shows the multiple exposure mark "ME" on the main LCD panel.
- ★ To check number of the remaining shots, press the multiple exposure setting button.
- ★ To increase number of exposures to more than six in the middle of multiple exposures, or to decrease the number of exposures, press the multiple exposure setting button and turn the front or rear dial.
- ★ When number of the exposures is terminated in the "C" (continuous) shutter release mode, the top LCD panel shows "End", and the camera automatically cancels the multiple exposure mode.
- ★ To cancel the multiple exposure mode before taking the first shot, press the multiple exposure setting button and change the displayed number to 0.



MEMO Multiple exposure can be made each time the shutter is released without setting number of the exposures in advance.
 → Custom settings (C-33 on page 94)

To cancel the Multiple Exposure Mode



Make sure to pull the dark slide out. And hold the emergency film winding button **B** and half-press the shutter release button. The camera advances the film by one frame and then exits from the multiple exposure mode.

- ★ If the film holder is detached in the middle of multiple exposure, "ME" will blink on the top LCD and go out in 3 seconds. The multiple exposure mode is now cancelled. However, as the film holder is still in the multiple exposure mode, the camera will resume the multiple exposure mode when the same film holder is attached. The multiple exposure mark "ME" will blink on the LCD, and number of the remaining exposure will be automatically set at "1".

Guideline for exposure compensation during Multiple Exposure Mode

As in the multiple exposure mode, several shots are exposed on a single frame, exposure compensation may be needed depending on the subjects and the backgrounds.

Exposure compensation in typical multiple exposures

Number of exposures	Exposure compensation
2	-1.0
3	-1.5
4	-2.0

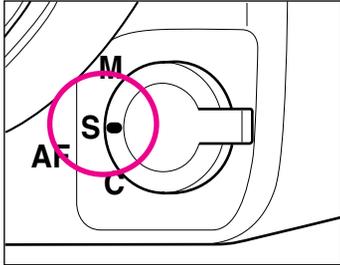
- ★ The optimum exposure compensation value will vary depending on actual photographic conditions. We recommend taking test shots.

Taking Photos with the Mirror Up

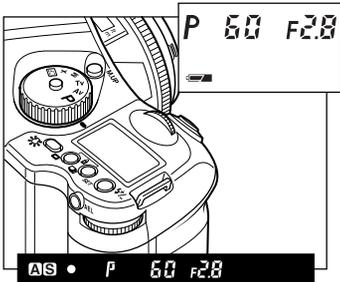
This function prevents mirror-caused vibrations which may blur the image in close-up photography, when shutter speed is slow, when a telephoto lens is used, or when photographing a poster or another picture.

When using the mirror-up, Electromagnetic Cable Release RE401 (optional) is recommended.

Using auto focus and auto exposure

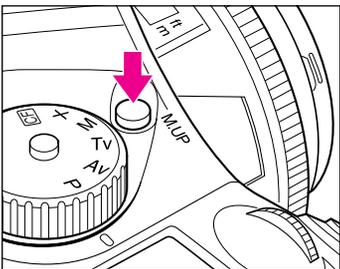


1. Select "S" (single focus mode) by turning the focus mode selector lever.
2. Turn the exposure mode-setting dial to choose any of "P", "Av", or "Tv" exposure mode.
3. Focus the subject, and determine composition and exposure.



4. Hold the shutter release button pressed halfway down, and press the mirror up button on the camera body. The mirror will be locked up.
5. Press the shutter release button to take the picture.

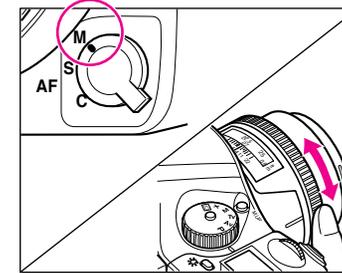
- ★ Hold the shutter release button pressed halfway down. If released before an exposure, the shutter will not be released.
- ★ When the shutter release mode selector lever is set at the "C" position, the shutter will be released continually at a certain interval with the mirror locked up. The mirror remains locked up when the shutter release button is released. So press the mirror-up button once to cancel the mirror-up mode.



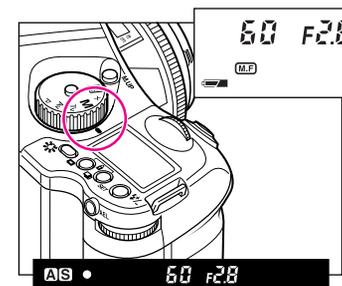
- ★ Turn the shutter release mode selector to the "C" position and set the auto bracketing before starting the mirror-up shot. Then, you can take 3 or 2 pictures in a row in the auto bracket mode.
- ★ The mirror goes back to the normal position in 30 seconds. This can be changed to 60 seconds or no limitation by the custom setting function. (See page 89) Not that keeping the mirror up consumes more power.
- ★ The mirror will return to the original position if the lens is removed from the camera body.

■ Do not point the lens at the sun during the mirror up mode. The sun's intense light can scorch and damage the shutter curtain.

In the manual mode

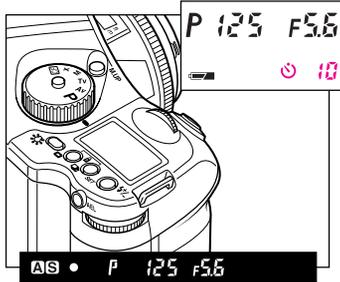


1. Set the focus mode selector lever at "M" (manual focus mode) position. Turn the lens-focusing ring to focus. Half-press the shutter release button to meter exposure.



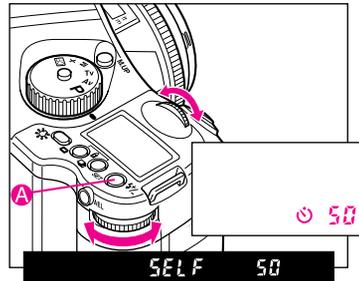
2. Turn the exposure setting dial to "M" (manual mode) position. Turn either the front or rear dial to adjust the shutter speed and aperture with the metered values.
3. Lock the mirror up by pressing the mirror-up button.

With this function, under the default setting the shutter is released 10 seconds after the shutter release button is pressed. The self timer lamp flashes slowly for the first 7 seconds, then flashes quickly for the last 3 seconds before the shutter is released. Use this function to take group photos or to photograph yourself.



1. Mount the camera to a tripod.
2. Turn the shutter release mode selector to the “” (self timer mode) position.
3. Check the view by looking through the viewfinder. Make sure that the focus is correct, press the shutter release button and the shutter will be released after 10 seconds.

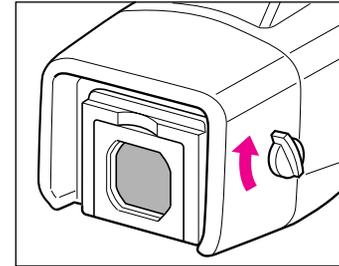
Change the self timer time



1. While in the self timer mode, hold down the set button **A** approximately one second.
2. The main LCD panel will display the self timer mode mark “” and the default value 10 (a 10 second interval). Now you can change the self timer by turning the front or rear dial. It can be set from 2 to 10 seconds in units of 1 second and for more than 10 seconds in 10 second units.

- ★ To cancel the self timer mode or to stop it while the self timer is counting down, turn the shutter release mode selector any other position than “”. By turning the selector to “L” (power OFF) the self timer interval will be reset to the default value (10 seconds).
- ★ If there is a bright light source behind the camera, light enters the viewfinder’s eyepiece, affecting exposure metering. Close the eyepiece shutter with the lever.

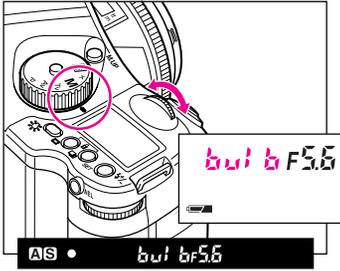
Close the eyepiece shutter when there is a strong light source behind the camera or when pressing the shutter release button without looking through the viewfinder. (This prevents exposure error due to light entering from the viewfinder.)



Turn the eyepiece shutter lever in the direction of the arrow.

Extended Exposure Modes (Bulb Modes)

To expose film longer than 30 seconds, adjust the shutter speed to “B” (bulb). In order to prevent camera shake, use an electromagnetic shutter release and tripod.

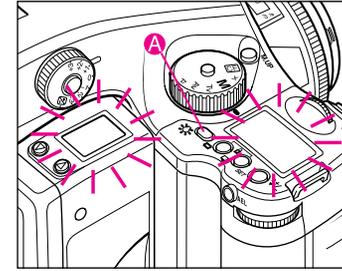


1. While pressing the unlock button, turn the exposure mode dial and set it to “M” (manual mode).
2. Turn the front dial to select “bulb”, then turn the rear dial to set the aperture.
3. Determine the composition, focus, then take the picture. The shutter remains open as long as the shutter release button is pressed.

★ Bulb mode is controlled by an electronic circuit so that the camera consumes battery power while taking a photo. (See page 13)

- MEMO**
1. Normally the camera can take a picture with a bulb shot up to 60 minutes. However, the bulb shot time can be changed from one minute to infinite. ➔ Custom settings (C-23 on page 92)
 2. It is possible to set the camera as the shutter remains open until the button is pressed once again. ➔ Custom settings (C-24 on page 92)

Backlight Button

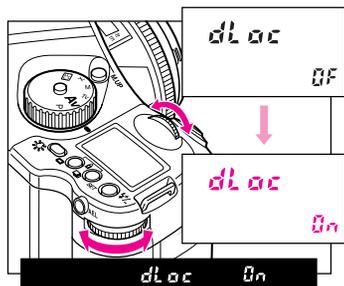


To see the main panel at night or in dark places, press the backlight button **A**/. The backlight will go on approximately 10 seconds and go off unless there is another operation.

- ★ When releasing the shutter, or pressing the backlight button **A**/ while the backlight is on, the backlight will go OFF.
- ★ When operating the camera while the backlight is on, the backlight will light on for approximately another 10 seconds.

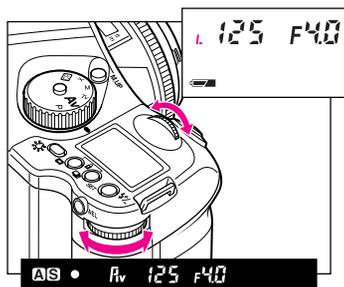
- MEMO**
- The backlight can be set to turn on during the camera is holding metered value. ➔ Custom settings (C-8 on page 89)

When the Electronic Dial Lock is “On,” all currently set values in “Av” (Aperture Priority AE), “Tv” (Shutter Priority AE) and “M” (Manual mode) cannot be adjusted with the front or rear dials. This prevents accidental change of shutter speed or aperture values.



1. Set the shutter release mode selector lever to “S” or “C” (to turn the power on).
2. Hold down both the multiple exposure mode button and the auto bracketing mode button for approximately one second, until the “On” indicator blinks. To release the mode, hold down the buttons until “OF” blinks.

★ The setting will be stored after one second.



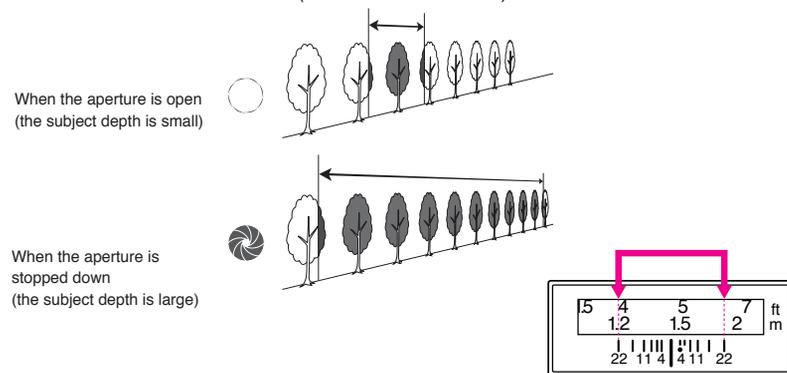
3. When this mechanism is selected, the “L” is displayed on the LCD.

- ★ When the dial lock is ON, the shutter speed and aperture will not change even if you turn the front or rear dial.
- ★ When you activate the electronic dial lock, and if you then operate the electronic dial, the dial lock indicator “L” on the main panel blinks for three seconds to show that the electronic dial lock is functioning.

Depth of Field

Depth of field (D.O.F.) is defined as the zone of sharpness before and behind the plane of focus. It depends on distance to subject, focal length of lens, aperture setting and distance the lens is focused at.

In addition to visual observation via the depth of field preview button (See page 66.), the D.O.F. can be determined by using the depth of field scale on each lens. The f/stop numbers appear on both the right and left side of the white index mark in the center of the scale. Simply read the figures which appear above the f/stop numbers on the distance scale of the lens. (see illustration below)

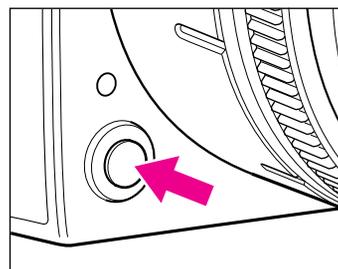


When the aperture is open (the subject depth is small)

When the aperture is stopped down (the subject depth is large)

Depth of Field Preview Button

When the preview button is pressed in, the depth of field for the aperture set on the camera can be checked by looking through the viewfinder.

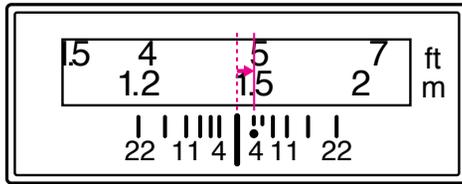


After focusing, press the preview button. The diaphragm will be stopped down to the set aperture.

- ★ While operating the preview button, you cannot release the shutter.

When taking photos using infrared film, the position at which the subject is in focus is slightly different than that of regular films. This is because the infrared rays have a longer wavelength and the image converges behind the film plane of regular film. Use the procedure described below when taking photos using infrared film.

1. Set the focus as usual. Read the point on the distance scale matching the center index of the depth scale.
2. Set the focus mode selector lever to "M" (manual focus mode). Turn the focusing ring clockwise and align the read point to the infrared index.



- ★ Use a red filter when taking photos using infrared film.
- ★ Be sure to read the infrared film's usage instructions.
- ★ You cannot take photos in AE mode when using an infrared film.

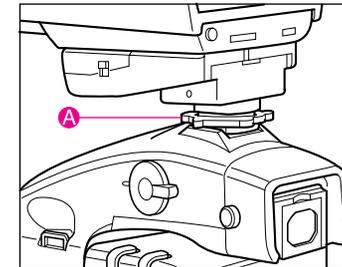
In addition to its standard flash sync system, the Mamiya 645 AFDII features TTL (through the lens), off the film (OTF), electronic flash exposure metering. A flash sensor located inside the camera body reads the flash reflected off the film surface at the moment of exposure. The sensor is connected via the Mamiya 645 AFDII's dedicated hot-shoe to a shoe- or handle-mount style Metz flash unit via the Metz SCA 3952 TTL Adapter. Maximum flash sync speed is 1/125 sec., making daytime synchronization possible.

The ISO of the flash is automatically set through the TTL connection from the camera's Film Magazine; any adjustment to this is instantly recognized after the setting is locked and the shutter release is half-pressed. Also, when Film Magazines with different ISO settings are switched on the camera body, the TTL flash connection instantly recognizes the change.

To utilize the TTL flash feature with all TTL-operable Metz flash units, a Metz SCA 3952 Module is required. Please see the chart below for compatibility and/or additional adapters that may be necessary.

Metz Flash Unit	Adapter	Type of Flash	SCA3952 Module	SCA3000C Converter
Metz 44 MZ-2		Shoe-mount	x	
Metz 54 MZ-3		Shoe-mount	x	
Metz 45 CL-3 and -4		Handle-mount	x	x
Metz 60 CT-4		Handle-mount	x	x
Metz 70 MZ-5 and -4		Handle-mount	x	

The resulting flash exposure automation determines correct flash exposure and automatically adjusts the output of the flash. It also automatically corrects for exposure compensation normally required when using filters, close-up bellows or extension tubes. However, as with all TTL systems, it requires manual compensation for differences in film surface reflection characteristics. The amount of compensation is determined by experimentation and is performed on the Mamiya Film Magazine ISO setting.



1. Mount the SCA3952 adapter onto the Metz flash, insert fully into the camera's hot shoe, then tighten with the locking knob **A**.
2. Set the exposure mode, then check the shutter speed and aperture.

Exposure mode	Shutter speed	Aperture
P Program AE	Automatically set by camera to 1/60 sec. when the metered shutter speed is 1/60 or slower, and 1/125 when it is 1/125 sec. or faster.	Automatically set by camera
Av Aperture priority AE		Any aperture
Tv Shutter priority AE	Automatically set by camera to 1/125 when the set shutter speed is 1/125 sec. or faster.	Automatically set by camera
M Manual mode		Any aperture
X Synchro mode	1/125 sec.	Any aperture

- ★ With TTL flash photography, the reflection of the flash is metered and the intensity of the flash is adjusted automatically, so TTL flash photography may not be able to suit to all conditions. In the cases described below, we recommend that you use a flash meter to check the intensity of the flash or to use a manual flash setting.

For example:

- (1) When the size of the subject you want to light with the flash is relatively small within the picture
- (2) When the background behind the subject is extremely bright or when there is a strongly reflective object in the background
- (3) When the background behind the subject is extremely dark (outdoors at night, etc.)
- (4) For flash photography with a narrow film latitude

MEMO

1. While in the P or Av modes, the camera can be set to release the shutter at the metered value, even the background behind the subject is dark. ➔ Custom settings (C-26 on page 93)

2. The sync. speed in the X mode can be set between 1/40 and 1/125 seconds. ➔ Custom settings (C-25 on page 92)

* When the shutter speed is set to 1/2 increments, the sync. speed can be set between 1/45 and 1/125 seconds.

Metz Flash SCA3952 System Functions

Charging completed indicator in viewfinder	When charging of the flash is completed, a charging completed flash icon  will illuminate in the viewfinder's liquid crystal display panel.
Automatic setting of flash synchronizing speed	When exposure mode is set at "Av" or "P", the shutter speed will be automatically set to 1/60 to 1/125 sec. when charging of the flash is completed. When exposure mode is at "Tv" or "M" and the shutter speed is at faster than 1/125 sec., the shutter speed will be automatically set to 1/125 sec.
Flash compensation	The flash charge mark  flashes after the shutter is released to indicate that the flash was emitted properly.
Auto zoom control	The power zoom reflector is linked to the lens focal length. (Excluding the Metz 32Z-2)
Auto AF assist beam	When the focus mode is set to "S", the auto focus assist beam is emitted automatically in low light. (Excluding the Metz 32Z-2)
Display of flash range (distance)	Displayed on the flash's liquid crystal display panel. (Excluding the Metz 32MZ-3 and Metz 32Z-2)
Data transfer	The film sensitivity data, exposure compensation data and aperture data are sent from the camera to the flash.

★ When using an SCA300 system flash (Metz 60CT-4, 45CL-4, etc.), use the SCA3000C converter (sold separately).

★ For details, refer to the operating instructions of the flash and the SCA adapter.

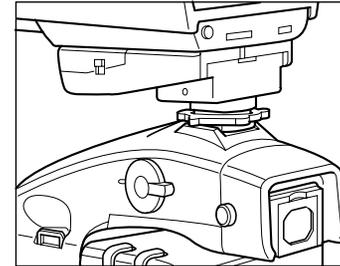
★ To use the guide number indicated on the flash fully, wait several seconds after the charging completed indicator lights.

★ Cautions on using instant film

Instant films (Polaroid 100-600 series and Fuji FP series), have a lower reflectivity rate than regular film. Exposure compensation is necessary when using the flash in the TTL mode.

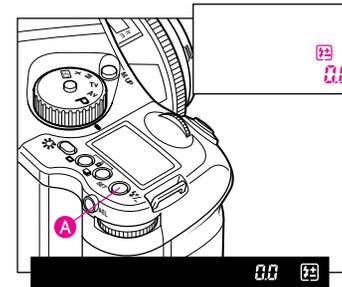
In general, set the exposure compensation to about minus 1 or 1 1/3 EV.

By combined use of a Metz flash and the SCA3952 adapter, the camera adjusts for flash. It can be adjusted within $\pm 3\text{EV}$ in increments of 1/3 steps.

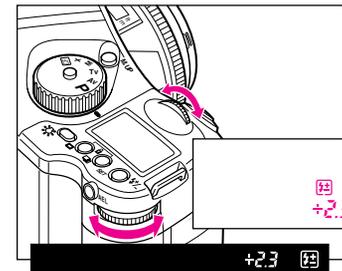


1. Turn on the power

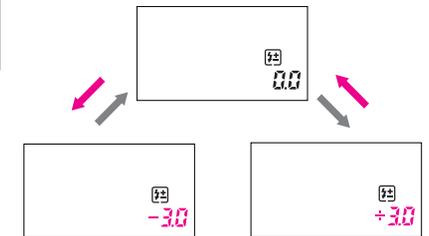
Install the SCA3952 adapter on the Metz flash, and put it on the camera then lock the flash in place using the locking knob on the flash shoe. Turn the shutter release mode selector lever to the "S" or "C" position, and turn ON the flash power switch.



2. When the flash charge confirmation lamp lights, press the set button (A) in. The "0.0" is displayed on the main LCD panel.



3. Turn the front or rear dial to select the flash compensation value.

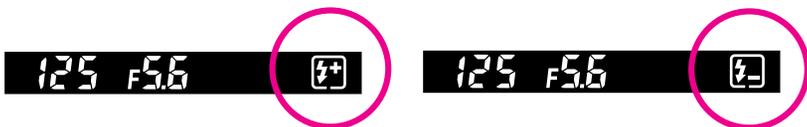


External LCD Panel (normal display)



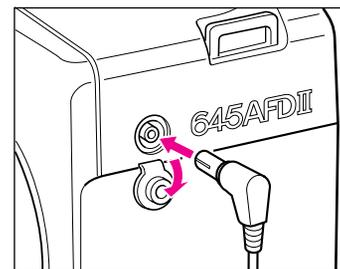
4. Half press the shutter release button, the “” (when positive adjustment) or “” (when negative adjustment) displays.

Viewfinder LCD read-outs.



- ★ Keep pressing the set button to activate the flash compensation mode. You can check the exposure compensation value.
- ★ If you turn the shutter release mode selector lever to the “L” (power OFF) position, the compensation value will be canceled.

Flash Photography with electronic flash models other than Metz



1. To use a grip type flashgun strobe with other electric contacts than X contact, connect the sync. cord to the camera's sync. terminal. (See note below about flashes designed exclusively for other camera makes.)

- ★ Remove the rubber cover when connecting the sync. cord. After shooting, be sure to attach the rubber cover in order to protect the synchro terminal's contacts.
- 2. While pressing the unlock button, turn the exposure mode setting dial and set it to “X” (1/125 sec.) or “M” (manual). When “M” (manual) is selected, turn the front dial and set the shutter speed to 1/125 sec. or slower.
- 3. Turn the rear dial to set the aperture, then take the picture.
- ★ This camera's synchro contact is an X contact.

! WARNING

- Using flashes designed exclusively for other makers of cameras may damage the camera's internal mechanisms if connected to the camera's hot-shoe. In this situation, use an off-camera flash bracket and connect a sync. cord to the camera's synchro terminal.
- When using flashes with a flash duration of 1/500 sec. or longer, set the shutter speed to 1/30 sec. or less.

MEMO Exposure compensation and flash compensation can be linked.
➔ Custom settings (C-27 on page 93)

- MEMO**
1. The selected shutter speed and aperture level can be locked.
➔ See page 77
 2. The sync. speed can be set between 1/40 and 1/125 seconds.
➔ Custom settings (C-25 on page 92)

* When the shutter speed is set to 1/2 increments, the sync. speed can be set between 1/45 and 1/125 seconds.

Superimposing Data

This is a function to allow various pieces of shooting information to be superimposed on the edge of the film. The info that is superimposed can be selected from the following three modes. To specify this function, use the Custom settings (C-04 on page 88).

This section describes the details of the information that can be superimposed.

- ① Exposure mode
- ② Aperture value
- ③ Shutter speed
- ④ Exposure compensation value / frame order with auto bracketing function: N, U, and O
- ⑤ Metering mode*
- ⑥ Index number



DATA/INDEX mode →
(Superimpose shooting info and an index number)

Data superimposed in manual mode →

- ① Exposure mode
- ② Aperture value
- ③ Shutter speed
- ④ AE mode
- ⑤ Exposure metering difference display
- ⑥ Metering mode*
- ⑦ Index number



★ When manual exposure is selected and when the exposure metering difference exceeds ±6EV, "– □ –" or "– □ –" will be superimposed on ⑤.

DATE/INDEX mode →
(Superimpose the date and an index number)

- ① Year, month, and date
- ② Time
- ③ Index number



INDEX mode →
(Superimpose only an index number)



* When the metering mode is selected as AUTO A-S (automatic change between average and spot), and if "A" is selected, "A" will be superimposed. If "S" is selected, "S" will be superimposed. If "AUTO A-S" is selected, "As" will be superimposed.

★ The data superimpose function is available with films having sensitivity from ISO25 to 1600. When using other films, even if the data superimpose function is used, data will not be superimposed.

■ Although the index number is displayed as 4 digits on the screen, only the lower 3 digits are superimposed on the image.



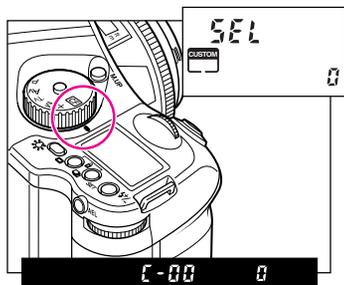
These functions allow the owner to change the camera functions and settings as they prefer.

Setting Custom Functions

The custom functions allow you to change the method for using or accessing the camera functions as you like. Take photographs the way you are most comfortable with.

The custom functions can store separate settings for 3 users. You can preset the functions for indoor, outdoor or portrait photographs and for other conditions. When at C-00, chose 1 (A), 2 (B), or 3 (C) to store a specific set of user function selections for the group of custom settings from C-01 to C-30.

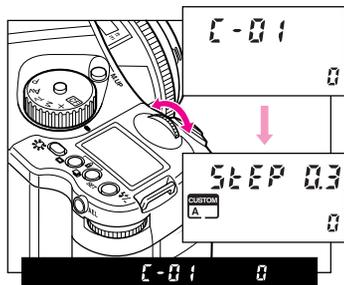
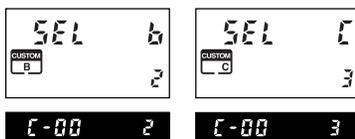
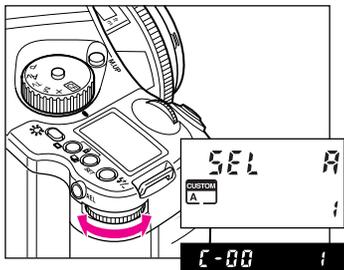
However, if you set C-00 to 0, the settings used will be the default set. With this choice you can change only C-31 to 36.



1. Turn on the power.
Turn the shutter release mode lever to the "S" or "C" position.

2. Turn the exposure mode dial to select "CF" (Custom Function mode).

3. Turn the rear dial to select the settings for user A, B, or C.



4. Turn the front dial to select the item you want to set.

★ There are 36 items from C-01 to C-36.

Types of Custom Functions

C-00: Choose a set of user functions



Choose user
Default settings
You cannot change the C-01 to C-30 settings.
Three sets of user functions can be stored.

C-01: Specify the Tv and Av step Select increments of the shutter speed and aperture value, from 0.3 (1/3 EV) to 0.5 (1/2 EV).

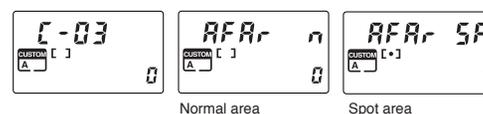


* This example shows how to store the settings for the CUSTOM-A user.
* If you try to change the settings while in the default mode (C-00 = 0), the CUSTOM mark will blink.

C-02: Specify the step for exposure compensation Select increments for exposure compensation. The electronic dial can be used to select 0.3 (1/3EV), 0.5 (1/2 EV), 0.7 (2/3 EV), or 1.0 (1EV).



C-03: Select the auto focus area



Normal area
Spot area

C-04: Select the data to superimpose Select the details to superimpose



Don't superimpose any information
Shooting data and index number
Date and index number
Index number only

Types of Custom Functions

C-05: Select a way of setting aperture after changing lenses.

0	1	2	3	4

The aperture is set to the same.

After replacing the lens, the aperture is always set to the open.

After replacing the lens, the aperture is always set to the minimum.

The camera stores the number of stops from the open.

C-06: Select an amount of time until the camera enters sleep mode. Select an amount of time to keep displaying the exposure meter status in the LCDs after the last time the shutter release button was pressed halfway down: 5, 10, 15, 20, 25, 30, 40, 50, 60 seconds, or infinite (always on). * The default is 15 seconds. If you select infinite (always on), you have to pay attention to the drain on the batteries.

0	1	2	3	4	5
	6	7	8	9	10

C-07: Select the range of exposure compensation. Select ±3 EV or ±5EV.

0	1	2

C-08: Select the method for turning on & off the backlight on the main LCD display.

0	1	2

Turn the backlight on using the backlight button (goes off automatically after approximately 10 seconds)

Turn on when the release button is pressed halfway down. Always lit when metered value is indicated on the LCD. (Linked to the C-06 power hold time.)

C-09: Select the time to cancel the mirror up status automatically. Select 30 or 60 seconds, or on (no auto cancel).

0	1	2	3

C-10: Specify the order for taking pictures in an auto bracket shot.

0	1	2	3	4

Normal, under, and over (N-U-O)

Normal, over, and under (N-O-U)

Under, normal, and over (U-N-O)

Over, normal, and under (O-N-U)

C-11: Select how to cancel auto bracketing.

0	1	2	3

Cancel by turning off the camera power.

Cancel manually.

Release after each auto bracket sequence.

C-12: Select the bracket shot operation method to use in the manual mode. Choose whether or not to change shutter speed or aperture level in bracket shots made in M mode.

0	1	2

Make bracket shots by changing the shutter speed.

Make bracket shots by changing the aperture value.

C-13: Swap the function of the front and rear dials in M mode.

0	1	2

Front: Shutter speed
Rear: Aperture level

Front: Aperture level
Rear: Shutter speed

C-14: Enable operation of a sub-dial in Tv and Av modes. Select whether or not to assign the same function as the front dial to the rear dial when it is not assigned any other function. Even if you have assigned the rear dial, it will still control exposure compensation in the electronic dial exposure compensation setting.

0	1	2

On: Same function as the front dial
OF (OFF): No function

C-15: Set the direction for increasing or decreasing numbers by turning the dials.

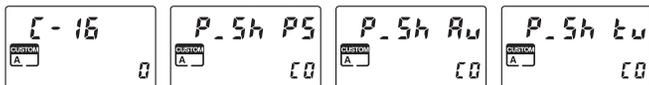
0	1	2

Left turn: Decrease
Right turn: Increase

Left turn: Increase
Right turn: Decrease

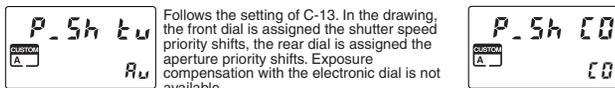
Types of Custom Functions

C-16: Select a way for the program shift.



Shift along the program line
Shift by putting priority on the aperture value
Shift by putting priority on the shutter speed

* The rear dial has the same function as the front dial. When electronic dial exposure compensation is selected, the rear dial is dedicated to control of the exposure compensation.



Follows the setting of C-13. In the drawing, the front dial is assigned the shutter speed priority shifts, the rear dial is assigned the aperture priority shifts. Exposure compensation with the electronic dial is not available.

When program shift is not selected, exposure correction can be made using the electronic dial.

C-17: Swap the functions of the AEL and AFL buttons.



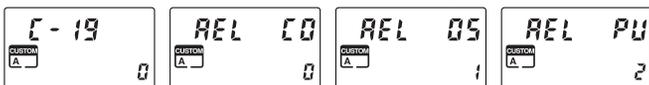
Front: Lock AF
Rear: Lock AE
Front: Lock AE
Rear: Lock AF

C-18: Specify the AE and AF lock operation when the shutter release button is pressed halfway down.



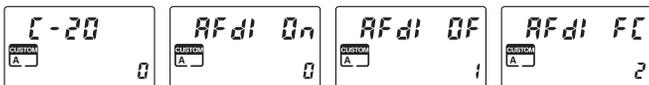
Lock AF
Lock AE
Lock both AF and AE
No lock function

C-19: Select the AE lock method when operating the AE lock button.



Hold the AE lock after releasing the button.
* Release it by pressing of the AE lock button again.
Cancel the AE lock after shutter release.
Only locked during the AE lock button is pressed down.

C-20: Method for displaying the AF focus mark in the viewfinder.



Display ON.
Display the defocus mark in the manual focus mode.
Don't display the mark
Display only the focus mark

C-21: Select whether or not to display the exposure meter difference in the M mode.



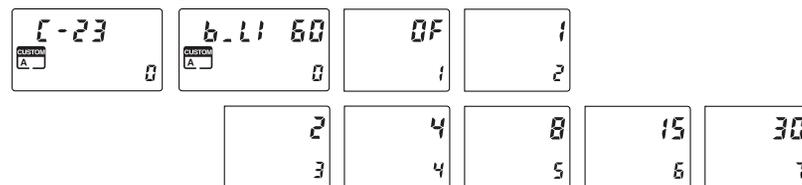
Displayed
Not displayed

C-22: Select whether the shutter speed or aperture value is shifted using the one-push shift function to the metered value in the M mode.



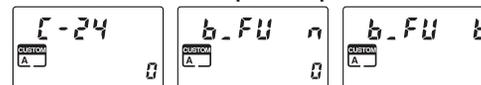
Shift the shutter speed
Shift the aperture level
Do not use this function

C-23: Select the maximum exposure time in a bulb shot: 1, 2, 4, 8, 15, 30, or 60 minutes or infinite (OF). The default time is set to 60 minutes. When infinite (OF) is selected, pay attention to the drain on the batteries.



If the shutter is not closed in a bulb shot, the camera will force the shutter to close after the specified time. This function also can be used as a long exposure timer in a bulb shot.

C-24: Select the bulb exposure operation method.



Expose while pressing down the shutter release button (bulb mode)
Press the shutter release button to open the shutter and press again to close.

C-25: Select shutter speed for the X mode



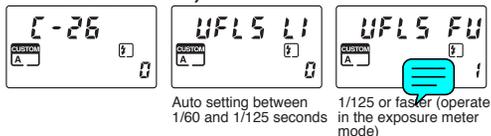
Default (1/125)
1/80 seconds (when 0.3 is selected in C-01)
1/60 seconds
1/40 seconds (when 0.3 is selected in C-01)



1/90 seconds (when 0.5 is selected in C-01)
1/60 seconds
1/45 seconds (when 0.5 is selected in C-01)

Types of Custom Functions

C-26: Select a way of setting shutter speed when using the dedicated flash (in the P and Av modes).

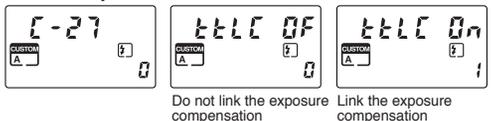


* Dedicated flash: Metz flash and SCA3952 adapter

Auto setting between 1/60 and 1/125 seconds (operate in the exposure meter mode)

1/125 or faster (operate in the exposure meter mode)

C-27: Select whether or not to link camera exposure compensation with the flash compensation.



* This function is only enabled when a Metz flash is installed.

Do not link the exposure compensation

Link the exposure compensation

C-28: Select whether or not to light an auxiliary AF light



Light

Do not light

**C-29: Copy the custom functions
Copy the current function details to another user channel.**



Copy the details from A into B

Copy the details from A into C

Press the set button for one second to start copying.

* The figure shows the user A function settings. When user B functions are selected, the 1 will be an A and the 2 will be a C. When user C functions are selected, the 1 will be an A and the 2 will be a B.

**C-30: Initialize the function details.
Reset the current user function settings to the default settings.**



Select "do" and press the set button for one second. The user functions will be initialized.

Common setting items

C-31 to C-36 are common settings. Each of these settings is reflected in other users. Therefore, these items cannot be set differently for each user. Even if the default function settings are selected (C-00 = 0), these items are still be active.

C-31: Enable/disable releasing the shutter, even when there is no film in the magazine.



Shutter release disabled

Shutter release enabled

C-32: Select a way of winding the film to the 1st frame position. Select whether pressing the shutter release button halfway down or closing the rear cover will start winding the film.



Start winding when the shutter release button is pressed halfway down (manual)

Start winding when the rear cover is closed (auto)

* When the camera enters the sleep mode, the film will not be wound by closing the rear cover. In this case, press the shutter release button halfway down.

C-33: Select the multiple exposure mode by specifying a number of shots or an arbitrary exposure.



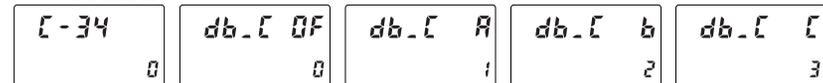
Specify the number of shots. Auto cancel the setting after making the exposures.

On and off arbitrary

How to enable and cancel the multiple exposure mode

1. Press the multiple exposure setting button for 1 second, and the multiple exposure mode mark "NEFU" and "OF" will blink on the top LCD panel.
2. Turn the front or rear dial to change the display from "OF" to "On".
3. Press the multiple exposure button again or leave the camera for 5 seconds, and the multiple exposure mark "NEFU" will stop blinking. The camera is now ready for multiple exposures. You can press the other buttons, or half-press the shutter release button to settle the setting.
4. To cancel the multiple exposure mode, change the display from "On" to "OF" in the item 2 above.
5. When the multiple exposure mode is cancelled, the camera advances the film by one film and returns to the normal mode.

C-34: Select whether or not to change the user functions when a digital back is installed.



Do not switch (keep the current settings)

Switch (select user A, B, or C)

Types of Custom Functions

C-35: Adjust the date and time.



Press the set button



Select the month (M), date (D), year (Y), hour, or minute using the front dial. The selected item will blink. Change the value using the rear dial.

Press the set button for one second to store the settings

C-36: Set the index number



Press the set button



Set the index number
Select the digit to change using the front dial. The selected digit will blink.
Change the value using the rear dial.

Press the set button for one second to store the setting

Setting up superimpose

Select HL using the front dial. (HL will blink.) Change the value using the rear dial. (HL and UP will blink alternately.)

HL: Always superimpose the specified index number.

UP: The index number is increased and superimposed each time the shutter is released.

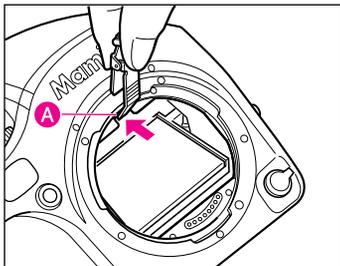
* When superimpose is not selected in C-04, the camera does not increase the index number. The camera also does not increase the number if no film is loaded.

* The index number is increased frame by frame when multiple exposure mode.

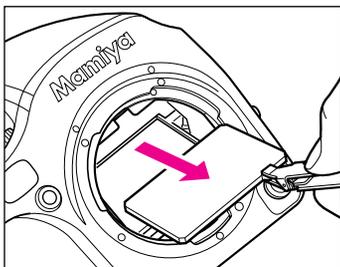
If arbitrary ON/OFF is selected for the multiple exposure shot method, the camera will not increase the index number.

Miscellaneous Operations

Changing the Focusing Screen

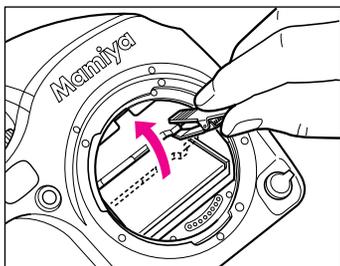


1. Remove the lens.
2. Pull the Focusing Screen Release lever **A** forward, as illustrated as shown, with the tweezers to let the Focusing Screen down.

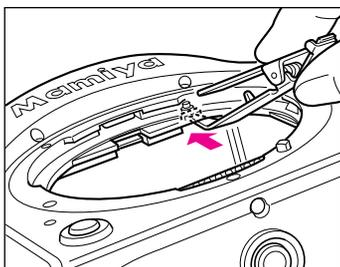


3. Remove the Focusing Screen from the Focusing Screen Frame by grasping the tab on the edge of the screen with tweezers as illustrated.

★ Do not touch and damage the mirror in any way.



4. When installing the screen, pinch the tab of the screen with tweezers, and put the screen on the screen frame.



5. Push up the screen frame up using the tweezers until hearing a clicking sound. The screen is now properly installed.

★ Never press down on other parts as this will affect the focus function.

Caution

- ★ Since the Focusing Screens' surfaces are soft and easily damaged, handle them carefully.
- ★ Never touch the surface with bare fingers. Should dust settle on it, merely blow away by using a blower.
- ★ If the Focusing Screen needs cleaning, send it to the nearest authorized Mamiya service center. Do not attempt to clean the surface of the Focusing Screen, as it is very delicate.

Using the M645 Manual Focus Lenses

When using the MAMIYA M645 manual focus lens, mount the focusing screen for manual focus lenses (sold separately).

1. Mount the M645 lens on the camera body, turn the A/M lever on the lens to the "M" position. Set the lens to maximum aperture compose and focus. You may use the focus mark to adjust focus.
2. Select exposure mode and set the desired aperture on the lens.
- ★ For auto exposure, select the "Av" (aperture priority AE) and choose the spot exposure metering mode "S", you can use the lens in conjunction with stop-down metering.
3. Half press the shutter release button to show shutter speed.

Available functions with M645 lens

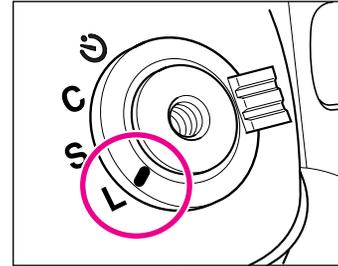
	P	Av	Tv	M	X
Exposure mode	×	○	×	○	○
Metering mode	×	○	×	○	×
Exposure compensation	×	○	×	○	×
Auto-bracketing mode	×	○	×	○	×
Multiple-exposure mode	×	○	×	○	○

- × = not an available function
- = available function

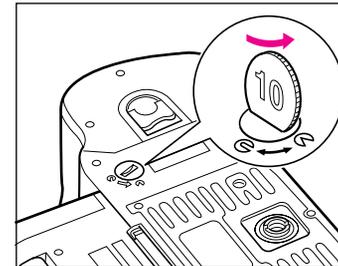
- ★ You can adjust focus with assistance of the focus mark in the viewfinder LCD. When stopping down slower than f/5.6, the focus mark will be unworkable. In this case, the out of focus direction marks ► ◄ will blink and show that the picture is out of the focus adjustment range.
- ★ The AF assist beam does not emit with these lenses.

External Battery Socket

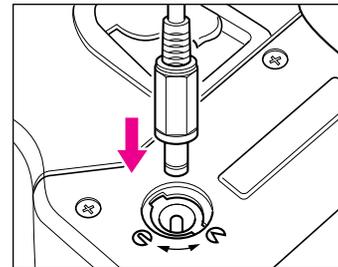
When using the camera at cold temperatures where the battery capacity may drop, use a External Battery Case PE401 (sold separately; PE401).



1. Turn the shutter release mode selector lever to the "L" position (power OFF).



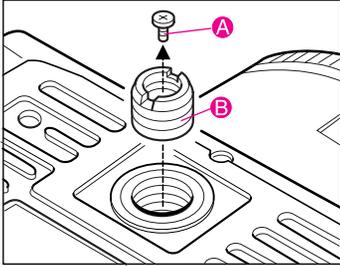
2. Use a coin or the like to turn and remove the external power socket cap.
3. Remove the battery case from the camera body.



4. Connect the External Battery Case to the body. Connect the plug of the External Battery Case in which the batteries are installed, to the external power socket.
5. Reinstall the original battery case, from which the batteries were removed, in the body. Turn the battery case lock lever to lock it in the body.

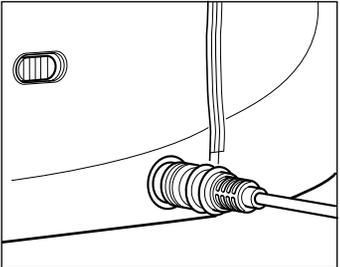
- ★ Make sure to reinstall the empty battery case into the body.

Using a Tripod



When using a tripod with 3/8 inch screw thread (instead of 1/4 inch screw thread) remove the small screw **A** from the tripod screw hole on the bottom of the body using a plus screwdriver, then use a coin to remove the tripod screw adapter bushing **B**.

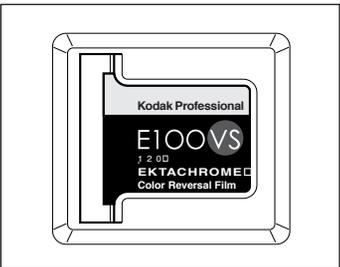
Electronic Shutter Release Contact



This is the socket for connecting a Mamiya electromagnetic cable release (sold separately) helpful when taking photos with the mirror up, with long exposures or with slow shutter speeds.

#804821 1 m (3')
#804822 5 m (15')

Memo Clip



The Memo Clip on the Back Cover accepts the box top of the film carton and can also be used for other reminders.

In the conditions below or when the LCDs display the items listed in pages 103 and 104, they are not necessarily faults. Check the camera while referring the descriptions below.

- Unable to release the shutter

- Check to see if the batteries are installed. Check to see if the batteries are dead.
- Check to see if the power is on (the shutter release selector lever should be set to “S” or “C” position).
- Check to see if the dark slide has been removed.
- Check to see if the film back is set to the correct ISO sensitivity (ISO indicator blinks).
- Check to see if the camera is advancing the film.
- Check to see if the rear door is open for shutter release tests without film.

- The viewfinder does not show LCD read-outs.

- Check to see if the batteries are installed. Check to see if the batteries are dead.
- Check to see if the power is on (the shutter release selector lever is other than in the “L” position).
- Check to see if the magazine is installed.
- If the camera has not operated for longer than 15 seconds, the viewfinder LCD read-outs will automatically disappear.

- The dark slide cannot be pulled out

- Check to see if the batteries are installed. Check to see if the batteries are dead.
- The magazine is not mounted onto the camera.

- Film cannot be wound.

- Check to see if the batteries are dead.
- The film still has some remaining frames.
- Check to see if there is film loaded into the camera.
- Check to see if the camera is in multiple exposure mode.

This camera employs a microcomputer. It is possible that the camera may malfunction when exposed to static electricity or the like. In this case, turn OFF the camera power and then remove the batteries. Reinstall the batteries, then turn the power on. If the camera does not function properly after these steps, contact our sales office or service center.

When Any of These Displays Appear

LCD display			Causes and remedies		Reference page
Main LCD panel	Viewfinder LCD read-outs	Magazine LCD	Problems	Remedies	
End	 End		<ul style="list-style-type: none"> * When operating the camera in the shutter release "C" mode (continuous winding mode), if the number of frames exceeds the if the number of frames possible to exposure is reached, this indicator appears for three seconds. * When operating with multiple exposures and in shutter release "C" mode (continuous winding mode), if you keep pressing the shutter release button, and after completing the set number of multiple exposure, this indicator appears for 3 seconds and cancels the multiple exposure mode. 		51 69
		End	<ul style="list-style-type: none"> * When there are no frames left on the film and the camera has completed winding of the film, this indicator appears. 	<ul style="list-style-type: none"> - Take out the film and the "End" indicator will disappear. - Install a roll of film into the camera. 	39 34
		- -	<ul style="list-style-type: none"> * When a roll of film is not loaded, this indicator appears. * When a roll of film is not rewound properly, this indicator appears. 	<ul style="list-style-type: none"> - Install a roll of film into the film back. 	40
			<ul style="list-style-type: none"> * When operating in the AF "S" mode if the camera cannot adjust focus with the auto focus function, you cannot release the shutter. * When a M645 lens is installed and the aperture is less than f/5.6, this indicator appears. 	<ul style="list-style-type: none"> - Try to adjust focus again, or change to the focus lock mode or manual focus mode. - Make the lens aperture faster than f/5.6. 	37 47
batt	 batt		<ul style="list-style-type: none"> * This indicator appears when the battery capacity is low. 	<ul style="list-style-type: none"> - Replace with new batteries. 	14
-no-Fb	 -no-Fb	AEB	<ul style="list-style-type: none"> * In auto-bracketing mode and when the exposure mode is "P" "Av", "TV", or "M", and operating in continuous "C" mode, if the number of frames remaining on a film is less than three, and you try to press the shutter release button, this indicator will appear and the auto-bracketing function will be deactivated. 	<ul style="list-style-type: none"> - Continue to shoot in the multiple-exposure mode, or pull the dark slide and simultaneously press the film winding button and shutter release button. 	68
-no-	 -no-	ME	<ul style="list-style-type: none"> * When the multiple-exposure mode is selected if you remove the magazine, this indicator will appear and the camera will exit the multiple-exposure mode. However, the magazine does not exit from multiple-exposure mode. 	<ul style="list-style-type: none"> - Remove the dark slide from the film back. 	70
-no-Fb	 -no-Fb	Fb	<ul style="list-style-type: none"> * The shutter will not operate when the dark slide is inserted into the magazine. If you try to press the shutter release button, this indicator will appear. * The shutter will not operated when the magazine is not installed onto the camera body. If you try to press the shutter, this indicator appears. 	<ul style="list-style-type: none"> - Install the film back onto the camera body. 	34
			<ul style="list-style-type: none"> * This symbol appears when setting the custom functions but you have not selected user A, B, or C. 	<ul style="list-style-type: none"> - Select a user before changing the custom function settings. 	87
	- u - - o -		<ul style="list-style-type: none"> * While in manual exposure mode, and when the difference between the set value and metered value exceeds 6EV, this indicator will appear. 	<ul style="list-style-type: none"> - Change aperture or shutter speed. 	58,66
F- -	 - -		<ul style="list-style-type: none"> * This will appear when a lens is not installed. * When a M645 lens is installed. 	<ul style="list-style-type: none"> - Install a lens on the camera body. 	99
Err-01 Err-02 Err-03 Err-04 Err-05 Err-06 Err-07			<ul style="list-style-type: none"> When "Err" appears, some abnormality has been detected in the course of taking photos. 	<ul style="list-style-type: none"> - Replace with new batteries and press the shutter release button. If the "End" indicator still does not disappear, put the dark slide into the magazine. While pressing the film-rewinding button, half press the shutter release button to rewind and take out the film. Then contact our sales office or service center. 	102

★ The camera caution mark  will blink when the dark slide has not been pulled out, no film is present, or when the camera detects an abnormality.

Specifications

Camera Type	: 6x4.5cm format, electronically controlled focal-plane shutter, TTL multiple mode AE, AF single lens reflex	Auto bracket shot	: Enable with auto bracket button (2 frame shots, or 3 frame shot with auto bracketing). Specify 1/3, 1/2, 2/3 or 1EV steps.
Actual Image Size	: 56x41.5 mm	Flash Synchronization	: X contact point, 1/125 seconds (when 1/3 step is selected it can be set between 1/40 and 1/125 seconds).
Film Type	: 120 roll film (16 exposures); 220 roll film (32 exposures); Polaroid Land Pack Film (requires special HP402 magazine)	Flash control	: TTL direct flash control, supports Metz SCA3002 system (SCA3952 Adapter)
Lens Mount	: Mamiya 645 AF Mount, compatible with M645 Mount (manual focus confirmation, focus aid, stopped-down exposure metering)	Film transport	: Automatic via built-in motor, single or continuous exposures
Viewfinder	: Fixed prism viewfinder magnification x0.71; built-in diopter adjustment (-2.5 to +0.5, optional diopter correction lenses provide adjustment ranges of -5 to -2 diopter and 0 to +3 diopter); built-in eye-piece shutter	Film loading	: Automatic advance to first frame when shutter release button is pressed once (Easy Loading)
Focusing Screen	: Interchangeable, Matte (standard), Checker, and Microprism Type C for Non-AF M645 lenses.	Multiple Exposure	: Enable with multiple exposure button (the number of exposures can be set from 2 to 6). It can be canceled in the middle and the number of exposures can be changed, or you can switch to an arbitrary multiple exposure style.
Field of View	: 94%* of actual image	Mirror up shot	: Select by pressing the mirror up button.
Viewfinder Information	: Focus mark, defocus mark, warning mark, aperture value, shutter speed, metering mode (A, S, A/S), exposure compensation value (difference between set value and metered value) and flash ready / OK lamp with TTL Metz connection.	LCD displays	: Main LCD display: Program mode mark, custom function mode mark, AF area mark, battery level indicator, manual focus mode, superimpose mode, dial lock mark, shutter speed, AE lock mark, aperture value, multiple exposure mode mark, exposure compensation mode mark, flash compensation mark, exposure compensation value, self-timer mark, auto bracket mark, time mark (while setting the clock). Magazine LCD panel: ISO sensitivity, 120/220, number of shots.
Auto focus method	: TTL phase difference detection method; sensor: CCD line sensor (I+I type); operating range: EV0 to EV18 (ISO 100)	Data Imprinting	: 7 segment dot matrix; DATA mode: exposure mode, aperture value, shutter speed value, exposure compensation, metering mode, ID number; DAY mode; year, month, date, time, ID number, ID mode; ID number
Focus area	: Display the focus area in the viewfinder screen	Sync terminal	: X contact (sync speed 1/125 sec.)
AF assist beam	: Activates automatically under low light, low contrast. Range: 9m, Automatic switching to flash unit's built-in assist beam when Metz flash unit is attached.	Cable release socket	: On shutter button
AF Lock	: By pressing the shutter release button halfway down in the AF-S mode, or by pressing the AFL button.	Remote-control terminal	: On side of body; electromagnetic cable release
Exposure Modes	: Aperture-priority AE, shutter-priority AE, programmed AE (PH, PL setting possible), and manual	Self-Timer	: 2 to 60 sec. (standard: 10 sec., can be set in 1 sec. steps between 2 and 10 sec., and in 10 sec. steps between 10 and 60 sec.)
AE metering mode	: TTL metering, center-weighted average (AV), spot (S), and variable ratio (A-S auto)	Depth-of-field confirmation	: Preview Button on body
Increments of shutter speed and aperture	: Both the shutter speed and the aperture can be set to 1/3 or 1/2 using the electronic dial lock function	Custom settings	: 36 items
Metering Range	: EV 2 to EV 19 (with ISO100 film, f/2.8 lens)	Tripod Socket	: U 1/4 inch and U 3/8 included
Exposure compensation	: ±3 EV (1/3 step) Expandable to ±5 EV	Power Requirements	: 6 AA-size batteries (alkaline-magnesium, lithium)
Film speed	: ISO 25 to 6400	External power socket	: An external battery case can be connected.
AE lock	: With AEL button; canceled by pressing the button again or shutter release	Size & Weight	: 6 "(W)X5 "(H)X7.3 "(D) / 153(W)X128(H)X184(D)mm : 3.8 pounds / 1,730 g (W/O battery)
Shutter	: Electronically controlled vertical metal focal-plane shutter. (vertical travel)		
Shutter speed	: AE 30 to 1/4000 sec. (1/8 step), manual 30 to 1/4000 sec. (1/2 or 1/3 steps), X, B (Bulb, electronically controlled), shutter curtain protection mechanism (open when magazine is removed, automatically closed when magazine is attached)		

* This information is based on a linear (horizontal/vertical) measurement.

Common Sense Camera Care and Practice

Maintenance and check of the camera

- Read instructions before using camera.
- Protect camera against shocks and falls. Use the neck strap supplied with it, whenever possible.
- Check the battery frequently and always carry spares. The sealed battery supplied with the camera may have been subject to storage conditions which have reduced its service life.
- Be sure to wipe battery contacts before installation and watch correct polarity.
- Battery life differs, depending on frequency of use, type, age, storage condition, ambient temperature (use External Battery Case in very cold weather), etc.
- Always remove the battery (and film) when camera is not used for a long period of time.
- Always keep covers on lenses and camera body.
- Do not store the camera at temperatures exceeding 40°C (105°F) and -10°C (15°F). Also avoid humid or sea air environment.
- Prolonged disuse shortens camera life. Periodically exercise the shutter (at different speeds), lens diaphragms (at different apertures) and focusing mechanism.
- Protect camera against rain and moisture.
- Do not touch lens surfaces. Use blower or lens tissue to remove dust particles.
- Always test your equipment before going on important assignments.

The Importance of Proper Maintenance

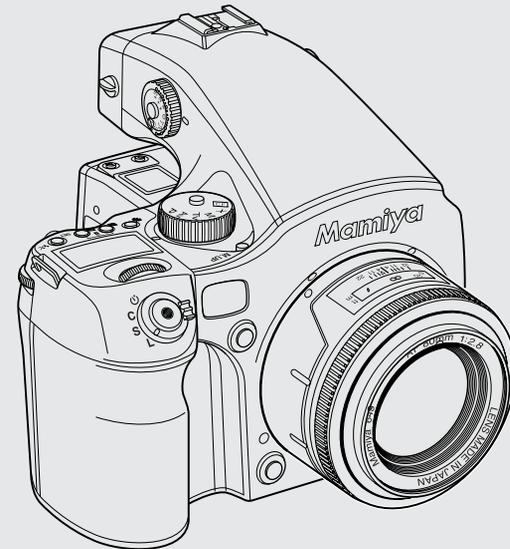
Your camera has mechanisms like film transport, shutter and diaphragm blades etc. They are controlled by gears, levers, springs, and so on. All require special lubrication from time to time. Ambient conditions can also affect these mechanisms, as well as the electronic components and the optical glass of your lenses. We therefore suggest that you have your camera and lenses checked, and if necessary serviced, periodically.

After-Sale Servicing

- ☆ Be sure to read the terms and conditions in the warranty card.
 1. For inquiries, opinions or questions concerning the product, please contact your nearest Mamiya agent or service center.
 2. Servicing after the expiration of the period specified in the warranty card will be charged to the user. The freight and transport costs should always be paid by the user.
 3. The servicing parts for use in repair of the product will be retained at the factory for ten years from the date of discontinuation of production.
- ◎ The servicing is available for the same period as the servicing part retention period. As the product may be serviceable even after this period, please consult your dealer or nearest Mamiya service center for the serviceability.
- ☆ Servicing of malfunction or damage due to dropping, impact, fire, flood, etc.
 - 1) The degree of such a malfunction or damage will be judged by the Mamiya service department.
 - 2) Such a malfunction or damage will be classified either non-serviceable or serviceable. When the product is classified to be serviceable, it will be repaired at the expense of the user, even if the malfunction or damage occurred within the warranty period.

Mamiya 645AFDII

Mamiya



英語

Printed in Japan
320100-EH-01E

100% Recycled Paper

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Instructions