This page is copyright by mike@butkus.org M. Butkus, N.J.

This page may not be sold or distributed without the expressed permission of the producer

I have no connection with any camera company

If you find this manual useful, how about a donation of \$3 to: M. Butkus, 29 Lake Ave., High Bridge, NJ 08829-1701 and send your E-mail address too so I can thank you. Most other places would charge you \$7.50 for a electronic copy or \$18.00 for a hard to read Xerox copy. These donations allow me to continue to buy new manuals and maintain these pages. It'll make you feel better, won't it?

If you use Pay Pal, use the link below. Use the above address for a check, M.O. or cash. Use the E-mail of butkusmi@ptd.net for PayPal.



back to my "Orphancameras" manuals /flash and light meter site

Only one "donation" needed per manual, not per multiple section of a manual!

The large manuals are split only for easy download size.

# Mamiya 645 AFD

Instructions

# Congratulations on your purchase of the Mamiya 645 AFD and welcome to the world-wide family of happy Mamiya camera owners!



Mamiya pioneered the 645 SLR system camera three decades ago and the Mamiya 645 AFp, 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.



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 diecast aluminum camera body, designed for heavy professional use.



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 37 how the camera can be tested without film.

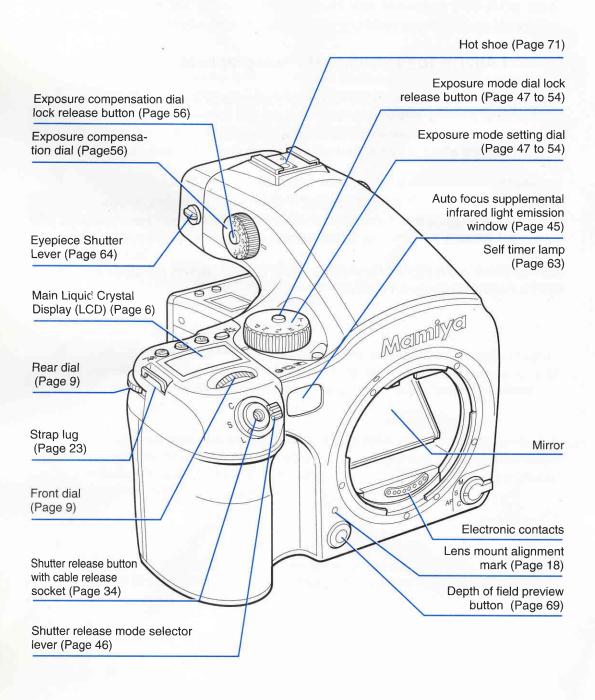
# Special Advice To Professional Photographers

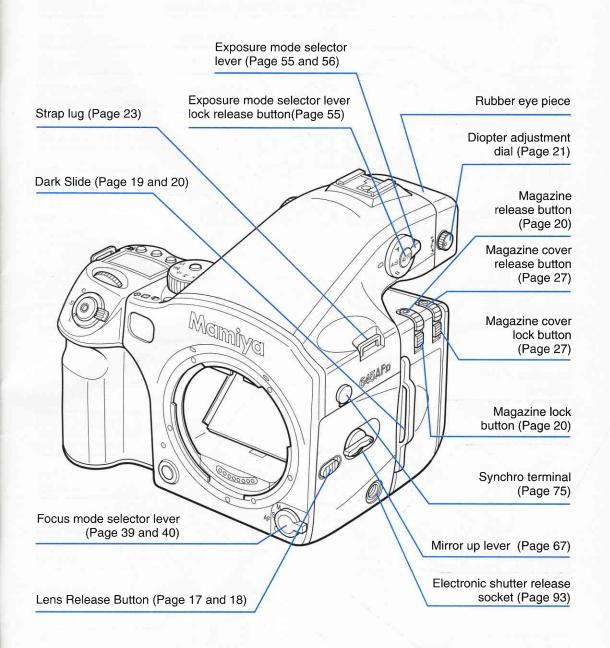
Your Mamiya 645 AFD is designed for heavy professional use and will give you a long service life if properly maintained. Your camera and lenses have many moving parts which require periodic lubrication. Its electronic components, too, are subject to wear and tear and are affected by ambient conditions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

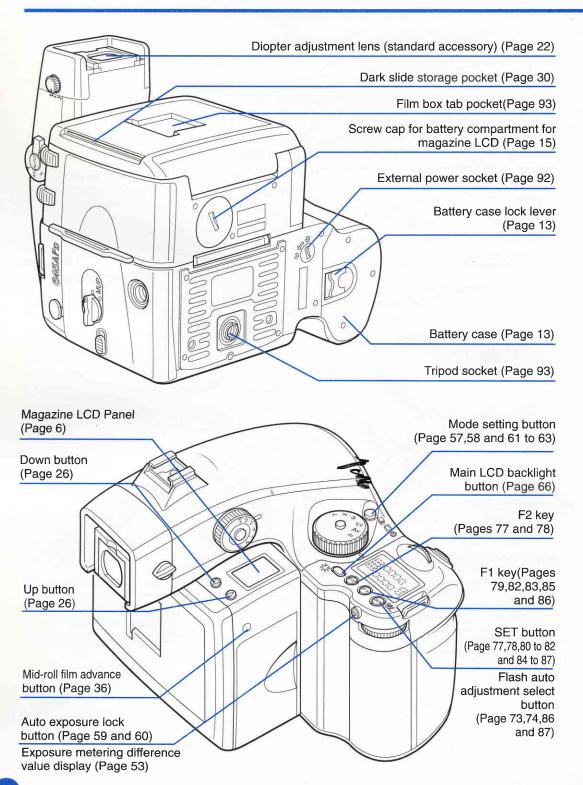
If cameras had odometers like automobiles, it would be easier to specify servicing schedules. May we suggest that if you shoot thousands of film rolls per year, you send your equipment annually for servicing by the Mamiya distributor in your country.

Mamiya 645AFp corresponds with digital backs compatible with MSCE (Mamiya Serial Communication of External) system.

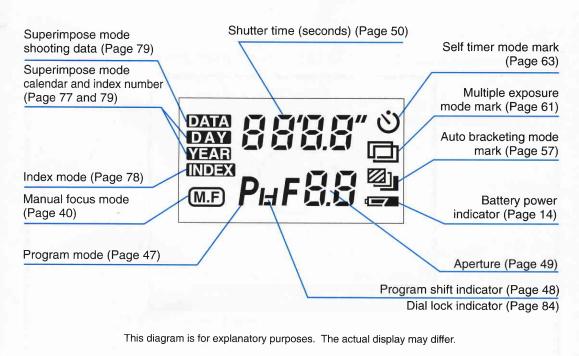
# Names of Parts and Functions



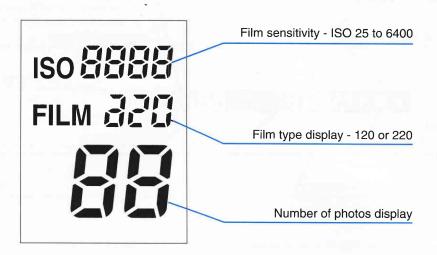




# **Main Liquid Crystal Display (LCD)**

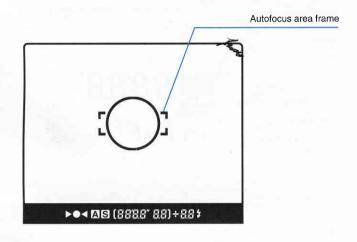


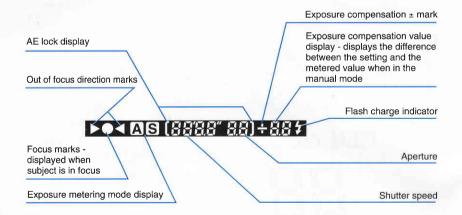
# Magazine LCD



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.

# **Liquid Crystal Display**

All displays on the liquid crystal display consist of " \( \frac{1}{6} \)" and the number of places is limited. For this reason, some letters and words are abbreviated.

5EŁ → SET	
Func → Function	
dLac → Dial Lock	
### AF Light (AF supplem	ental infrared light)
F5EL Flash Sel (Flash com	pensation)
FL Flash	
bdtt ──► Battery	
End → END	
Fd → Finder Display	
Error → Error	
OF → OFF	
<b>∷</b> n	
Fb ──── Film Back	
+ (Plus)	
Under →	
o ──── Over	

# **Electronic Dial Operations**

	Position	Front dial	Rear dial	
Exposure mode	P	Program shifting (P <sub>H</sub> ⇔ P ⇔P <sub>L</sub> )		
	Av	Aperture adjustment		
	Tv	Shutter speed adjustment		
	M	Shutter speed adjustment	Aperture adjustment	
	X	Aperture adjustment		
	Т	Aperture adjustment		
Mod	Auto bracketing	±0.3, ±0.5, ±0.7, ±full f-stops		
Mode setting button	Multiple exposure	No. additional ex	posures (2 to 6)	
ting	Self timer	Self timer operating time (3 to 60 sec.)		
	When Func displayed	Func⇔Fd⇔dLoc⇔AFLt⇔FSEL		
	When Func selected	DATA ⇔ DAY ⇔ OF		
<b>(3)</b>	When Fd selected	On⇔OF		
key	When dLoc selected	On⇔OF		
	When AFLt selected	On⇔OF		
	When FSEL selected	0⇔1		
	When SEt 1 displayed	SEt 1 ⇔SEt 2		
<b>②</b>	SEt 1  DAY selected  YEAR	Place shift	Numeric adjustment	
key	SEt 2 displayed	SEt 1 ⇔SEt 2		
	SEt 2 selected	Place shift	Numeric adjustment	
SEI key	0.0 FL selected	Flash adjustment: ±3EV (Settable to 1/3EV) (when using Metz flash and SCA3952 adapter)		

# Contents

	Names of Parts and Functions	3′	~5
	Main Liquid Crystal Display		6
	Magazine LCD		
	Viewfinder with LCD read-outs on bottom		7
	Liquid Crystal Display		8
	Electronic Dial Operations		
В	efore taking photographs	12~	23
	Inserting the Batteries		
	Checking the Battery Power		
	Installing the Battery in the Magazine		
	Batteries Care		16
	Attaching / Removing the Lens		
	Attaching / Detaching the Magazine		
	Diopter Adjustment		
	Replacing the diopter correction lens		
	Strap		
В	asic Operation		
	Attaching the lens / Setting the Film Speed		
	Loading Film in the Magazine		
	Taking Photos in the Full Automatic Mode		
	Shutter Release Button / Holding the Camera		
	Removing a partially exposed roll of film		
	Camera Operation Test		
A	pplied photography and various functions		
	Focus Modes		
	Single Focus Mode		
	Continuous Focus Mode		
	Manual Focus Mode		
	Lenses having the focus mode selector		
	Manual focusing using the focus mark		
	Subjects With Which Auto Focusing May Not Work		
	Using the Focus Lock Function		
	AF Supplemental Infrared Light		
	Single-Frame Mode / Continuous Mode		
	Exposure Modes		
	Program AE		
	Shifting the Program		
	Aperture Priority AE		
	Shutter Priority AE		
	Manual Mode		
	One-push shift mechanism		53

X Mode	
Time Mode	54
Exposure Metering Modes	<b>55</b> ~56
Center Average Exposure Metering Mode	55
Spot Exposure Metering Mode	55
Average / Spot Auto Switching Exporsure Metering Mode	56
Exposure Compensation	56
Auto-Bracketing Mode	57~58
AE Lock Mode	59~60
Multiple Exposure Mode	61~62
Self Timer Mode	63
Eyepiece Shutter	64
Extended Exposure Modes (Bulb and Time Modes)	65
Bulb Mode	65
Time Mode	65
Backlight Button	66
Taking Photos with the Mirror Up	67~68
Depth of Field / Depth of Field Preview	69
Infrared Photography	70
Flash Photography	<b>71</b> ~75
Flash Compensation Settings	73~74
Setting functions	76~87
Superimposing Data	<b>7</b> 7~81
Changing the Viewfinder Display in the Manual Mode "M"	82
Front/Rear Dial Lock Mechanisms	83~84
AF supplemental infrared light canceling function	85
Changing the Flash Auto Adjustment Procedure	86~87
Miscellaneous operations	88~102
Changing The Focusing Screen	89~90
Using the M645 Manual Focus Lenses	
External battery socket	92
Using a Tripod/Electronic Shutter Release Contact/Memo Clip	93
When you think something might be "faulty."	94
When any of these displays appear	95~96
Specifications of 645AFp	97~98
Common Sense Camera Care and Practice	99~100
After-Sale Servicing	
<b>5</b>	

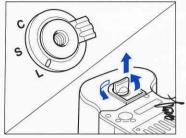
# Before taking photographs

Preparation before taking photographs

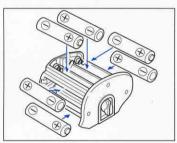
This chapter describes how to put in the batteries, how to install and remove the lens, and how to install and remove the magazine.

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

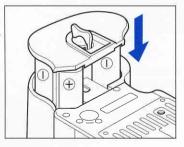
Be sure to turn the switch of the Shutter Release Button to "L" as shown in the top illustration, to turn the power off. This prevents electrical damage to the circuits. Set the shutter release mode selector lever to "L" (to turn the power off). Use six "AA"alkaline or lithium batteries.



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



- 2. Insert fresh batteries with the  $\oplus$  and  $\ominus$  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 77.)

# 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.



- ★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)

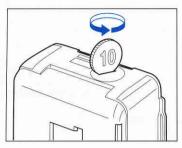
	Alkaline battery	Lithium batteries
120 type film	Approx. 140	Approx. 340
220 type film	Approx. 110	Approx. 170
Bulb time	Approx. 15 hours	Approx. 20 hours

- 10°C (14°F)

	Alkaline battery	Lithium batteries
120 type film	Approx. 20	Approx. 230
220 type film	Approx. 20	Approx. 110
Bulb time	Approx. 4 hours	Approx. 18 hours

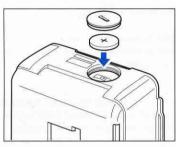
# Installing the Battery in the Magazine

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.



# 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

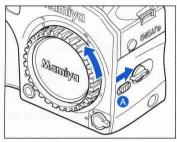
- ★When the magazine is installed onto the body, the power will be supplied to the magazine from the camera body.
- ★You can take shots without installing the battery into the magazine. However, if you remove the magazine from the body, the camera does not indicate film sensitivity or number of shots.
- ★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.

# **Batteries Care**

- 1. The sealed, new battery which is supplied with this camera may have been subject to storage conditions which have reduced its service life. Therefore it is desirable to replace it with a fresh battery as soon as possible.
- Carefully wipe the battery contacts before inserting into the chamber. Failure to do so may result in poor electrical contact and consequent malfunctioning of the camera.
- Always remove battery when camera is not used for a while. Always carry spare batteries.
- Battery life differs, depending on type, age, storage condition, ambient temperature, frequency of use etc.
- 5. Be sure to match the poles of the battery with those shown in the diagram in the chamber.
- 6. Always keep batteries out of the reach of children and never throw used batteries into a fire or expose to excessive heat.
- 7. When going on trips be sure to carry spare batteries to ensure that the camera will function. Also, as batteries tend to temporarily malfunction at temperatures below freezing, when photographing in extremely cold climates, carry the External Battery Case.
- 8. When the battery is exhausted, remove it immediately and replace with a new battery. Otherwise accidental battery fluid leakage may damage the contacts.
- 9. When you carry spare batteries, leave them in the original factory packaging. If they are "unpackaged", be sure to wrap them carefully in order to prevent them touching each other or any metal objects which can cause them to short circuit and become useless.

# Attaching / Removing the Lens

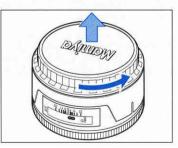
# **Attaching**



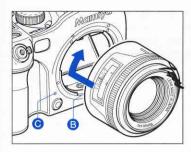
1. Remove the front body cap, just like you would remove a lens, by pushing the lens release button a backward and then turn the front body cap or the lens itself counter clockwise and lift out.



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



To remove rear lens cap turn it counter clockwise.

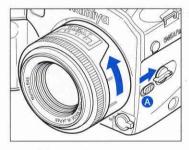


### 2. Attaching the lens

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-removing button **②**.

# Removing



While sliding the lens release button back (a), rotate the lens counter clockwise until it stops and lift it off.

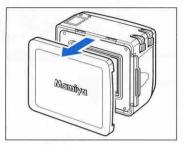
- ★After removing the lens from the camera body, protect both ends by attaching the caps.
- ★Oil, dust, fingerprints or water on the electronic contacts could result in malfunction or corrosion. Wipe such impurities off with a clean piece of cloth.

# 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.

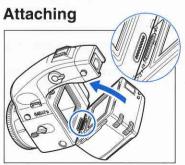
#### Before installation



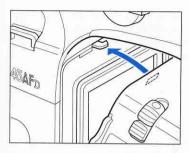
1. Remove the magazine protection cap.



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



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.

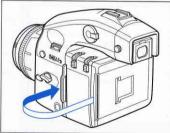


★Then you move them together like you close a book until they lock and you hear the focal plane shutter open.

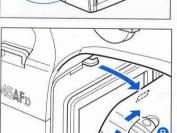
#### **Shutter Safety Retraction**

The precision shutter blades are made of very thin hyper-duraluminum 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



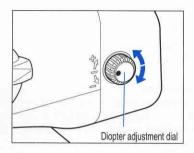
1. Insert the dark slide into the magazine.



- With your thumb first push button down and then simultaneously button 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.
- ★A double locking mechanism prevents accidental detaching of the magazine. With a little practice you will soon learn how to hold the magazine with your right hand while pushing the lower button down and the upper button in simultaneously to release the back.

# **Diopter Adjustment**

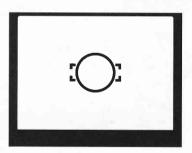
Look through the viewfinder and make sure that the focus frame (Rectangle with Circle) is in sharp focus. If it is not, turn the diopter adjustment dial in the "–" direction if you are nearsighted, in the "+" direction if you are farsighted. If this is not sufficient you may require an optional diopter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

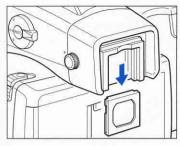


Diopter matches.

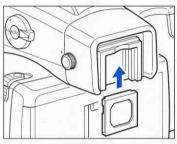
# Range of adjustment of diopter correction lenses (Optional accessory)

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

# Replacing the diopter correction lens



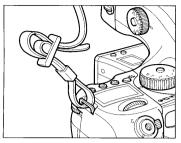
**1.** Remove the lens supplied with the finder by pulling it downward.



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.

# 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.

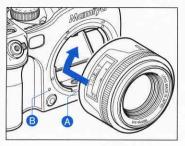


This section describes basic camera operations, how to load film and basic full automatic photography.

When we refer to "left or right" we assume you are holding the camera in shooting position.

# Attaching the lens / Setting the Film Speed

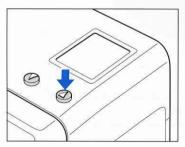
# Attaching the lens



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.

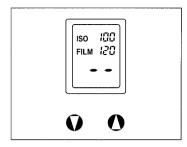
# **Setting the Film Speed**

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.



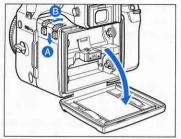
#### 2. Set the film speed.

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.
- ★The information on the film in use, such as the type, ISO sensitivity value and number of exposures, is stored in the back-up memory. However, when the battery capacity has dropped during stand-alone use of the magazine, the information may not be shown by the LCD panel.
- ★The information on the film (type, ISO sensitivity and number of exposures) is stored in the memory, but when the battery power is low this information may be displayed erroneously. Be sure to replace the battery or new one.

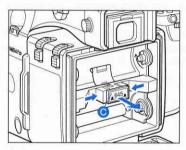
# **Loading Film in the Magazine**

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.

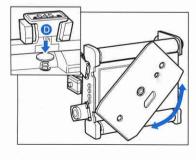
Simultaneously push down (A) while pressing button (B) in.



#### 2. Take out the roll-film insert.

Squeeze the center block "645" **(6)** 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.



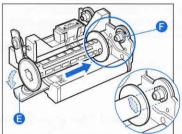
# 3. Set the film type (120 or 220).

Push and hold the pressure shaft **1** 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.

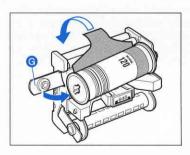
# When the pressure plate (120/220) is set erroneously:

Plate Setting   Loaded Film   Result		Result	
120	220 type	Inaccurate focusing.     Film winding after 16 exposures.	
220	120 type	<ul> <li>•Inaccurate focusing.</li> <li>•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.</li> </ul>	
		Insert the dark slide in the magazine and press the shutter button and the mid-roll film advance button simultaneously.	



### 4. Attach an empty spool to the rollfilm insert.

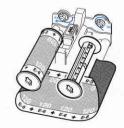
Flip the roll-film insert's lower spool clip **③** "SPL" away from the spool, fit an empty spool between take-up spool studs **⑤**, and return the spool clip "SPL" to the original position.

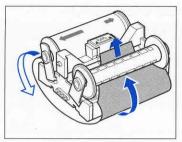


#### 5. Set the film.

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 **6** "FILM" to the original position.

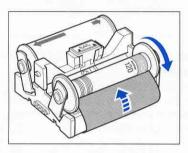




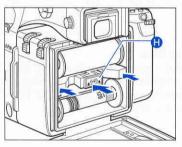


# 6. Attach the leader paper of the film to the empty spool.

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.

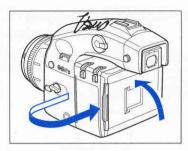


★ Turn the spool tight so that the film does not sag.



# 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 ① push it into proper position. (You will hear a click).



#### 8. Close the back cover.

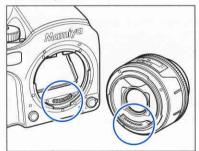
Push in the upper part of the back cover firmly to close it.

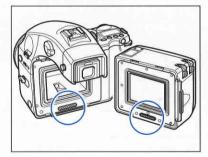
**9.** After attaching the magazine onto the camera body, pull out the dark slide and press the shutter button halfway; this will feed the film automatically to frame No. 1.

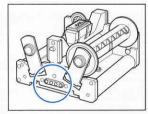
Place the dark slide in the magazine's rear storage pocket.

- ★When the film is not wound properly, the counter display disappears and 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.

# Contact points of each electric component



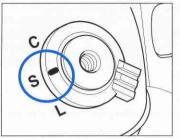




★When oil, dirt, fingerprints, or moisture adheres to the contact points, malfunction or corrosion may occur. When the contact points are dirty, wipe them off using a dry clean cloth.

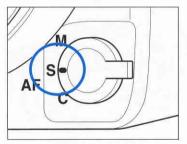
# **Taking Photos in the Full Automatic Mode**

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.

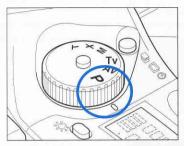
# 2. Set the focus mode selector lever to "S" (single focus mode). (This control is located at the lower left front of the camera.)



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

	Focus mode	Focusing
Single focus mode  Half-press the shutter release button to focus. When the focus in lights, the focus is fixed and the shutter can be released. (See page 39.)		
С	Continuous focus mode  Focusing is performed continuously while the shutter release butto is half-pressed. The shutter can be released regardless of whether or not the focus mark is lit. (See page 39.)	
М	Manual focus mode	Focus manually. (See page 40.)

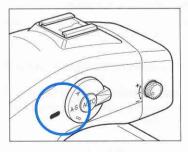
# 3. Set the exposure mode selector dial to "P" (program auto exposure).



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

Exposure mode Features		Features
Р	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. The $\pm 1.0$ EV shutter speed can be adjusted by shifting the program. (See page 47and 48.)
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 49.)
Tv	Shutter priority AE	Set the desired shutter speed and the camera selects the correct aperture. Use this mode to stop motion. (See page 50.)
М	Manual mode	Set this mode when you want to use special combinations of the aperture and shutter speed. (See page 51 to 53.)

# 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 and sets the distribution ratio of the exposure metering modes within an intermediate range. (See page 55 and 56.)

#### 5. Focus.

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



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



When the focus mark ● lights······The picture is focused.

**3.** When lacktriangle lights, press the shutter release button to make exposure(s).

#### **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 lever (45, 55, and 80 mm lenses) will turn their focusing rings automatically to adjust focus. Do not touch the focus ring.

# **Shutter Release Button / Holding the Camera**

#### **Shutter Release Button**

The shutter release button has a two-step action, A half-press (light pressure) will activate the camera, heavier pressure will release the shutter. When pressed lightly it stops at a certain point. In this manual this position is called the "half-press" position. When half-pressed, the power turns on and the camera becomes functional.





Release position

Half-press

# **Holding the Camera**



Horizontal



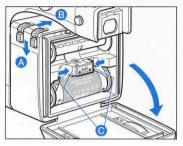
Vertical

Grasp the camera firmly when taking photos. If the camera moves during exposure, the picture will be out of focus.

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

## 6. Unloading the exposed film.

When the roll of film is completely exposed, the camera will automatically advance the film completely onto the take up spool. The LCD panel will display "END" now.



#### 1. Open the back cover.

While holding down the magazine's back cover lock release button (a), push the back cover release button in (b) to open the back cover.

#### 2. Remove the roll-film insert.

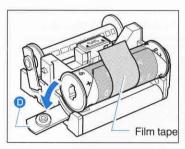
Squeeze the release latches **()** of the roll-film insert in the film chamber with your fingers and take the roll-film insert out.



Flip the roll-film clip's spool clip **①** "SPL" away from the spool, and take out the film roll.

#### 4. Seal the film with the film tape.

After unloading the roll film, attach the provided film tape onto it to prevent unwinding.

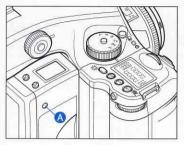


★ Move the empty spool from the top (FILM) to the lower take-up compartment (SPL), ready for loading the next film roll.

#### **Precautions for Film Unloading**

- Do not unload an exposed film in direct sunlight.
- The exposed film should promptly be put in a light tight bag or box and send to the processing lab as soon as possible.
- Never try to remove the magazine from the camera body in the middle of film winding. Otherwise malfunction will result.

# Removing a partially exposed roll of film



To remove partially exposed film, insert the dark slide in the magazine and press the shutter button and the mid-roll film advance button (A) simultaneously. This causes the film to be advanced completely onto the take up spool. And the magazine's LCD panel shows "End".

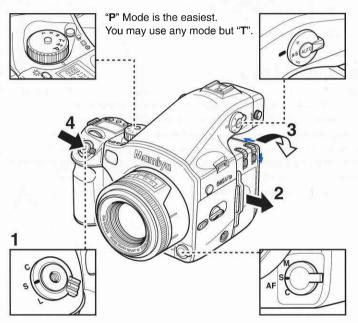
## 6-exposure film

If you continue photographing after the 8th exposure when using 6-exposure film, the shutter blades may be damaged by the leader paper at the film end or by the film's sticker. Use the procedure described below.

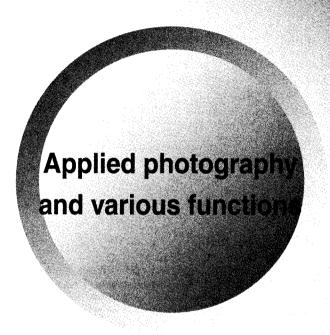
Photograph in the same way as with 120 film. Eight exposures can be taken. After taking the 8th exposure, insert the dark slide in the magazine, then half-press the shutter release button while pressing in the mid-roll film advance button to wind up the film.

# **Camera Operation Test**

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



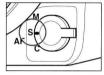
- 1. Set the shutter release mode selector lever to "S" (to turn the power on).
- 2. Remove the Dark Slide from the magazine.
- 3. Open the back cover.
- 4. Set the autofocus mode selector lever to "S".
- 5. Release the shutter.



### **Focus Modes**

## Single Focus Mode (S)



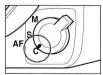


This mode uses the focus priority mechanism. The shutter can be released when the focus mark in the viewfinder is lit. This mode is suited for still subjects. The focus is locked when the ● focus mark lights in the viewfinder's LCD.

- ★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)**



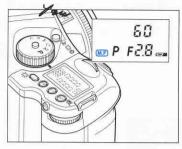


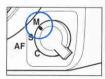
This mode uses the release priority mechanism. The shutter can be released regardless of whether the ● focus mark in the viewfinder's LCD is lit. The focus is adjusted continuously while the shutter release button is half-pressed. This mode is suited for moving subjects.

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

# Manual Focus Mode (M)

The auto focus function can be turned off so that focus can be adjusted manually.





# 1. Manual focus Mode (M) for 35mm, 45mm, 55mm, and 80mm lenses.

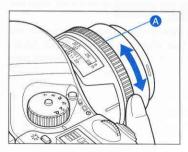
Turn the focus mode selector lever and set it to "M" (manual focus mode). (M.F) appears on the external liquid crystal display panel.

# 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.E. 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 .

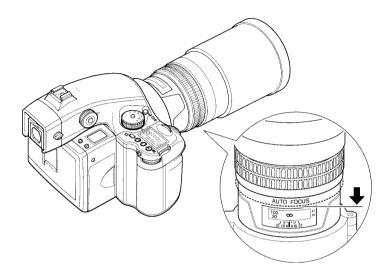
This method applies to Mamiya 645 AF Telephoto and Zoom lenses only.



#### 3. Adjust the focus.

Turn the lens focusing ring ♠ and adjust the focus to the subject. When the subject is in focus, the ● focus mark lights on the viewfinder's LCD.

#### Lenses having the focus mode selector



- ★ When you install a lens having the focus mode selector, you can change between auto and manual focus on the lens regardless of the position of the camera body focus mode selector lever ("S" or "C").
- ★To take photos in the auto focus mode, select the auto focus mode for both the lens and the camera body focus mode selector.
- ★ If you select the manual focus mode on the camera body focus selector or the focus mode selector on the lens, you cannot take photos in the auto focus mode.
- ★To change the focus mode of the lens, see the instruction manual supplied with the lens.

# Manual focusing using the focus mark (Focus confirmation method)

With this camera, a 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

► AS 125 5.5

Turn the focusing ring clockwise.

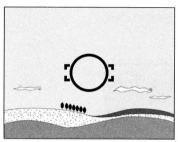


Turn the focusing ring counterclockwise.

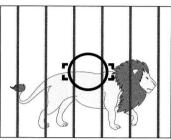
- ★Use the focus mark when taking photos in manual focus mode or using the M645 lens.
- ★ If you adjust focus using the focus mark through the M645 lens, make sure to open the aperture. You can use this function with a lens of F5.6 aperture or larger.

# **Subjects With Which Auto Focusing May Not Work**

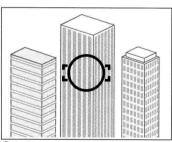
The auto focus function requires subject contrast. Auto focusing may not be possible with the types of subjects described below. If this is the case, either switch to the manual focus mode and focus manually or point the camera at an object the same distance as the object you want to photograph, lock the focus using the focus lock mechanism, then take the picture. (See next page)



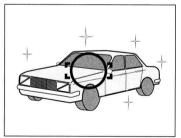
When differences between light and shade are not clear (blue skies, white walls and other objects with no contrast)



When there are two or more objects at different distances within the focus frame [ ] (animals in cages, etc.)



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



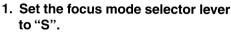
Brightly shining subjects like the sun or light sources or objects in which these are reflected (car bodies, water surfaces, etc.)

When the object on which you want to focus is far smaller than the focus frame

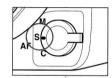
# **Using the Focus Lock Function**

If the object that you want to focus on is not in the focus frame  $\Gamma$   $\Gamma$ , the camera focuses on the background at the center. In such cases use the focus lock mechanism to lock the focus before taking the picture.





Put the object that you want to focus in the focus frame [ ] and half-press the shutter release button. The • focus mark lights and the focus is locked.



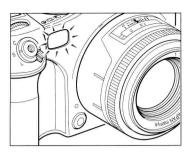


# 2. Change the composition.

With the shutter release button half-pressed, move the camera to achieve the desired composition, then release the shutter.



# AF Supplemental Infrared Light



When the subject is dark or the contrast is low and the camera is having trouble focusing automatically, a red lamp may light on the front of the camera when the shutter release button is half-pressed. This is a supplemental light that assists the camera's auto focus function.

- ★The AF supplemental infrared light is only emitted when the focus mode is set to "S" (single focus mode).
- ★The AF supplemental infrared light's reach 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 bellows lens hood (sold separately) with a diameter larger than that of the lens, focus before mounting the hood.



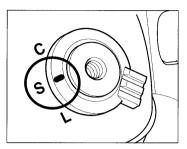
If you do not need the AF supplemental infrared light, you can set the camera to prevent the AF supplemental infrared light from flashing.

see page 85

# **Single-Frame Mode / Continuous Mode**

### **Single-Frame Mode**

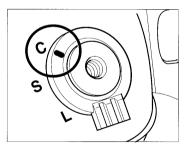
The film is advanced one frame at a time each time the shutter release button is pressed.



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

#### **Continuous Mode**

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



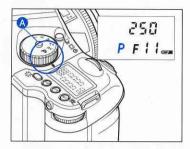
Set the shutter release mode selector lever to "C". Photographs are taken continuously at a rate of about 1.2 frames per second.

If you reach the end of the film when shooting in the continuous mode, "End" flashes on the Magazine LCD panel.

# **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.

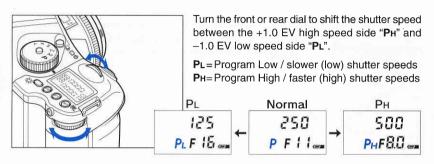


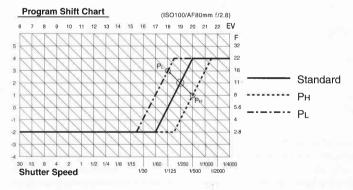
While pressing the exposure mode-setting dial lock release button in  $\bf A$ , turn the exposure mode-setting dial to " $\bf P$ " (program AE) position.

- ★If the metered result is out of the exposure metering range, the shutter speed and aperture indicators blink. In this case, the camera cannot get a proper exposure. Readjust the shutter speed or aperture so that these indicators do not blink.
- **★**AE = Auto Exposure mode.

## **Shifting the Program**

When the camera is in "P" (program AE) mode, you can change the shutter speed to a higher speed "PH" or lower speed "PL" in increments of ±1.0EV by turning the front or rear dial.

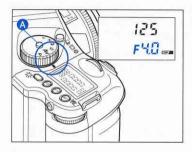




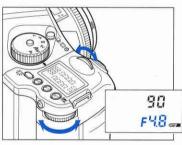
- ★If the shutter speed and aperture values flashes on the main LCD and in the viewfinder display when the program is shifted, the proper exposure cannot be achieved. Please select a different Program mode.
- ★When the Program mode is shifted, the aperture changes along with the shutter speed to maintain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

## **Aperture Priority AE**

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. While pressing the exposure mode-setting dial lock release button in (a), turn the exposure mode-setting dial to the "Av" (aperture priority AE) position.



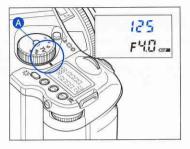
2. Turn the front or rear dial to set the desired aperture.

The aperture value is adjusted in 1/2 stop increments.

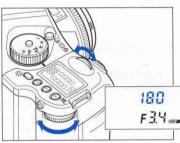
★The shutter speed value on the main LCD and in the viewfinder display will flash when photographing objects that are too bright or too dark for proper exposure. The proper exposure cannot be achieved at the present settings. Change the aperture value by turning the front or rear dial until the shutter speed value stops flashing and remains lit.

## **Shutter Priority AE**

Set the desired shutter speed and the camera selects the optimum aperture accordingly. Use the Tv mode to maintain specific control over action, i.e. shooting sporting events or deliberately blurring your subject.



1. While pressing the exposure mode-setting dial lock release button in (a), turn the exposure mode-setting dial to the "Tv" (shutter priority AE) position.



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

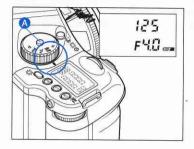
The shutter speed value is adjusted in 1/2 stop increments.

★The aperture value on the main LCD and in the viewfinder display will flash when photographing objects that are too bright or too dark for proper exposure. The proper exposure cannot be achieved at the present settings. Change the shutter speed value by turning the front or rear dial until the aperture value stops flashing and remains lit.

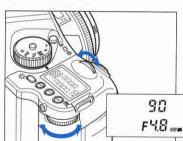
## Manual Mode (M)

This mode is used to set the aperture and shutter speed manually.

Shutter speeds can be selected from B (bulb), 30 seconds to 1/4000 of a second (in 1/2 steps). Aperture values can be set from wide open to minimum aperture value (in 1/2 steps). B (bulb) can also be specified in this mode.



1. While pressing the exposure mode-setting dial lock release button in (a), turn the exposure mode-setting dial to the "M" (manual mode) position.



2. Turn the rear dial to set the desired aperture. The aperture value is adjusted in 1/2 stop increments.

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

The shutter speed value is adjusted in 1/2 stop increments.



- 1. The selected shutter speed and aperture value can be locked.
- → see page 83 to 84
- 2. The camera can be set to eliminate the LCD read-outs inside the viewfinder in the manual "M" mode. see page 82



- 4. When the shutter release button is half-pressed, the difference between the manual 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  $\pm 6$  EV.
- ★For example, "+2.3" indicates  $42\frac{1}{3}$  EV, "-5.7" indicates  $-5\frac{2}{3}$  EV.
- ★To adjust the exposure in the manual mode, the viewfinder LCD displays the difference between the set value and the metered value after adding or deducting the exposure compensated value. When the B (bulb) is selected, the camera does not display this difference.



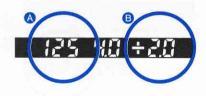


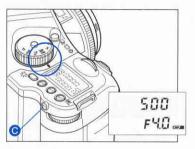
★When the set value matches the aperture-metered value, the exposure-metered value difference indicator in the viewfinder LCD shows "0.0". When the difference between the set value and the metered value exceeds ±6EV and the set value is under the metered value, the viewfinder LCD shows "- u -". When the set value is over the metered value, the viewfinder LCD shows "- u -".

#### One-push shift mechanism

In manual "M" mode, press the AEL button for approximately one second while the viewfinder LCD read-out displays the aperture difference, the camera then automatically adjusts shutter speed to the appropriate level giving priority to the currently set aperture value.



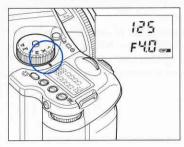




While the difference ③ between the set value ④ and the metered value is displayed on the viewfinder LCD read-outs, press the AEL button ⑤ for approximately one second, the camera then changes the shutter speed to an appropriate level.

★Stop half-pressing shutter release button before pressing AEL button.

## X Mode (X)



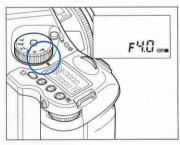
Select when you use a flash. The shutter speed will be fixed to 1/125 second of the synchronized speed.

- ★When you take a photograph with TTL light adjustment using a Metz flash, see page 71 and 72.
- ★For taking photos using a flash, see pages 71 to 75.



The selected aperture value can be locked. -> see page 83 to 84

## Time Mode (T)



Use this mode for long time exposures.

★For details about long exposure times, see page 65.