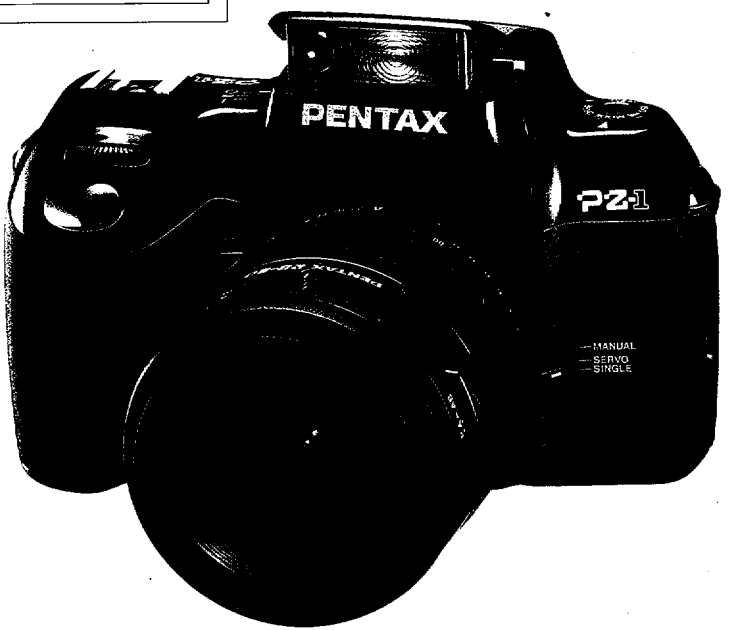
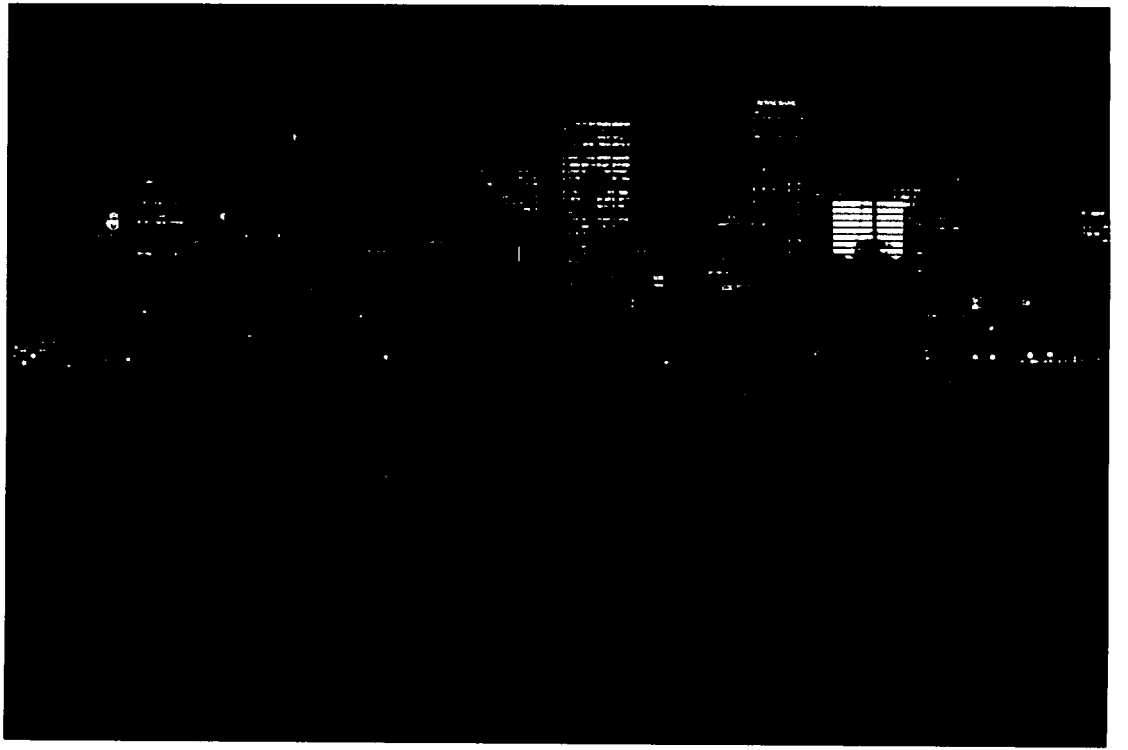
PENTAX®

PZ-1

OPERATING MANUAL





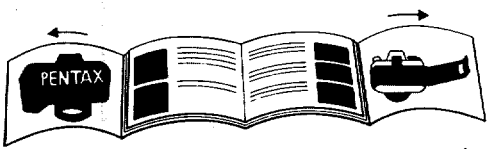
Welcome to the exciting world of Pentax autofocus SLR photography! This camera is an autofocus 35mm SLR camera featuring 18 different Pentax exclusive functions, a power zoom mechanism, and one-touch switching between three programmable modes. It's all a photographer could wish for in an automated camera.

With an easy-to-use power zoom lens action, this camera gives photographer complete control over magnification and focal length.

Highlights of this camera are:

- Predictive Autofocus
- Multi(8)-Segment Metering
- Interval timer
- Multiple exposures of up to 9 frames
- Choice of multi(8)-segment metering and spot metering

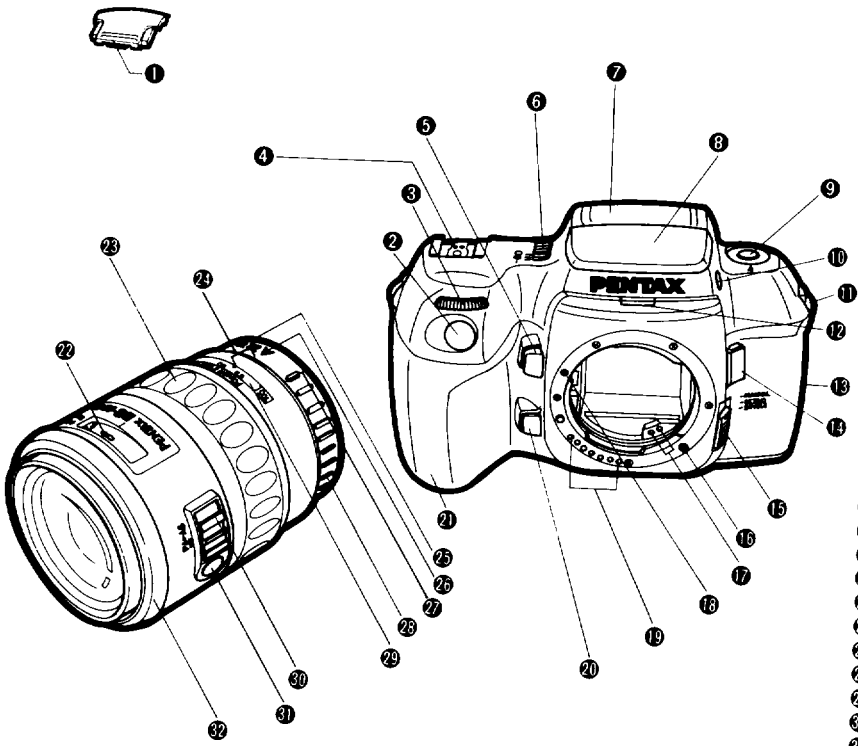
Please read this operating manual thoroughly before use.



The names of the working parts are shown on the front and back flaps, so keep them unfolded for quick reference.

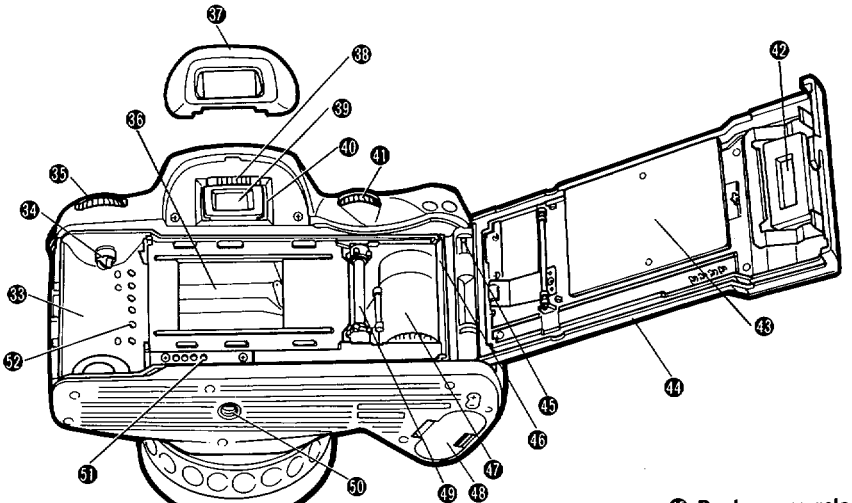
Commercially available lenses and accessories produced by other manufacturers are not made to our precise specifications and therefore, may cause difficulties with — or actual damage to — your Pentax camera. We do not assume any responsibility or liability for difficulties resulting from the use of lenses and accessories made by other manufacturers.

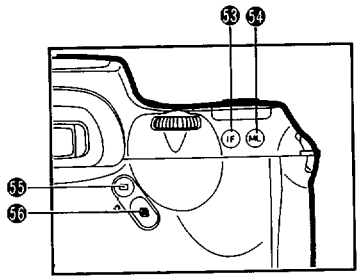
NAMES OF WORKING PARTS



1. Hot shoe cover FD
2. Shutter release button
3. Tv direct dial
4. Hot shoe
5. Preview button
6. Main switch
7. LCD panel
8. RTF built-in flash
9. Mode set button
10. Flash pop-up button
11. Strap lug
12. Self-timer lamp
13. Back cover release lever
14. Release socket cap FD
15. Focus mode switch
16. AF coupler
17. Power supply contacts
18. Lens mount index
19. Lens information contacts
20. Lens lock button
21. Hand grip
22. Distance scale window
23. Power zoom ring
24. Aperture/zoom index
25. Aperture scale
26. Aperture-A index
27. Aperture-A lock button
28. Aperture ring
29. Zoom scale window
30. Auto zoom switch
31. Zoom set button
32. Focusing ring

NAMES OF WORKING PARTS (BACK)



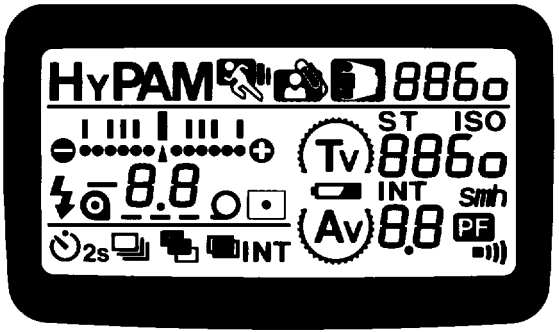


㉝ Film chamber
㉞ Rewind shaft
㉟ Mode dial
㊱ Shutter curtains
㊲ Eyecup FD
㊳ Diopter adjustment lever
㊴ Viewfinder eyepiece
㊵ Viewfinder accessory groove
㊶ Av direct dial
㊷ Film information window
㊸ Pressure plate
㊹ Back cover

㊺ Back cover release pin
㊻ Film leader end mark
㊼ Take-up spool
㊽ Battery chamber cover
㊾ Sprocket
㊿ Tripod socket
(51) Cordless contacts
(52) DX-information pins
(53) IF button
(54) Memory lock button
(55) Metering mode switch button
(56) Exposure compensation button

TABLE OF CONTENTS

LCD PANEL INDICATION

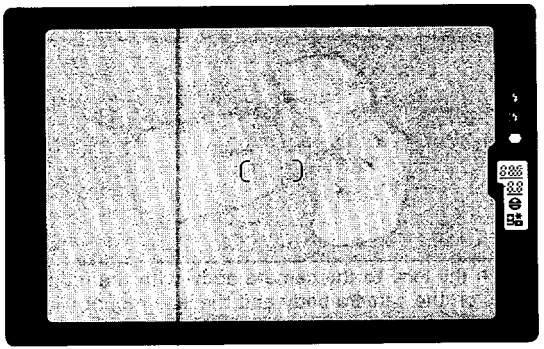


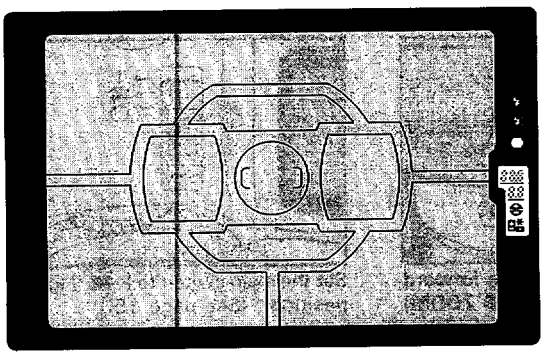
HyP — Hyper Programmed AE
P — Programmed AE
A — Aperture-Priority AE
A — Shutter-Priority AE
HyM — Hyper Manual
— Image Size Tracking
— Zoom Clip Mode
— Zoom Effect
8000 — Shutter Speed
32 — Aperture
— Metering Mode

— Self-Timer with 12-Sec Delay
2s — Self-Timer with 2-Sec Delay
— Triple-Frame Consecutive Self-Timer
INT — Interval Shooting
— Exposure Compensation
ISO — ISO Film Speed
Tv — Tv Value
Av — Av Value
PF — Pentax Function
— PCV Beep Tone
— Battery Exhaustion Warning
— Flash Information
24 — Frame Counter Indication
— Film Status Information
— Single-Frame Mode
— Multi-Frame Consecutive Mode
— Auto Bracketing
— Multi-Exposure

* By pressing the exposure compensation button [ ] and metering mode switch button [⊙] simultaneously, the LCD panel will stay illuminated for about 5 seconds.

VIEWFINDER INDICATION





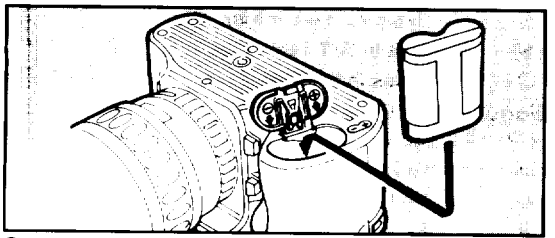
( ) —— Autofocus Frame
ϟ —— External Flash Information
[ϟ] —— Built-in RTF Information
⬡ —— Focus indication
8000 —— Tv Value (Shutter Speed)
32 —— Av Value (Aperture Value)
—— Overexposure indication
—— Underexposure indication
—— Exposure Compensation
—— Metering Mode
✱ —— Exposure-Value Memory Lock

MULTI(8)-SEGMENT METERING

This camera incorporates a high-precision eight-segment TTL metering system. Light values are measured in eight segments within the image field, enabling the optimal exposure to be made under a variety of lighting conditions. With conventional averaged metering systems, underexposure of the subject results from the brightness of the background affecting the overall metering. With multi(8)-segment metering, the camera records the brightness in eight zones within the image field and uses these measurements to choose an exposure that will not underexpose the subject. The multi(8)-segment metering system also calculates exposure values for a scene to automatically compensate for high-contrast and other difficult lighting conditions. Even the beginner can achieve excellent results with ease.

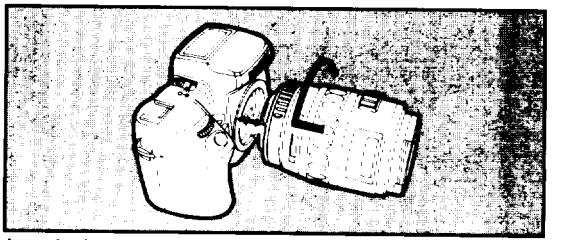
EASY TO USE! (For Beginners)

1. Battery installation



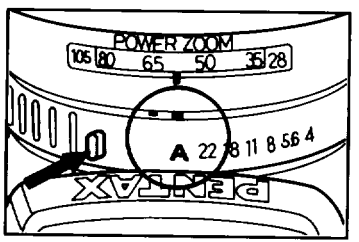
Open the battery chamber cover and put in a battery (2CR5) according to the markings (+, −) on the camera base. (See page 10.)
Remember to re-latch the cover to secure the battery.

2. Mounting the lens



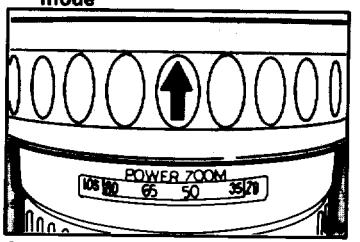
Attach the lens to the camera body with the red index marks on the camera body and the lens mount aligned. Then turn the lens fully to the right, until you hear a clicking sound. (See page 12.)

3. Positioning the aperture ring



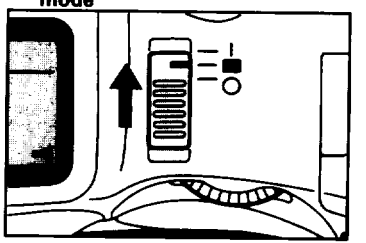
Hold the aperture-A-lock button in and turn the aperture ring to the **[A]** position. (See page 23.)

4. Selecting the power zoom mode



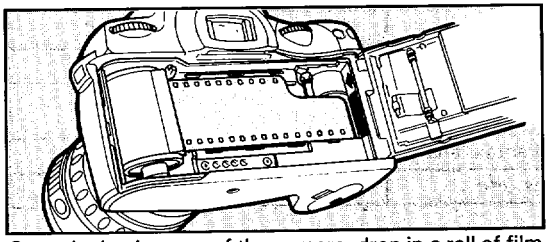
Slide the power-zoom ring forward until it clicks and **[POWER ZOOM]** can be seen on the top of the lens. Ensure that the auto-zoom switch is at **[P]**. (See page 27.)

5. Selecting the basic exposure mode



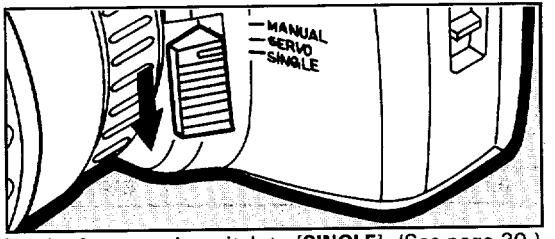
Set the main switch to [■] (green position). (See page 15.)

6. Film loading



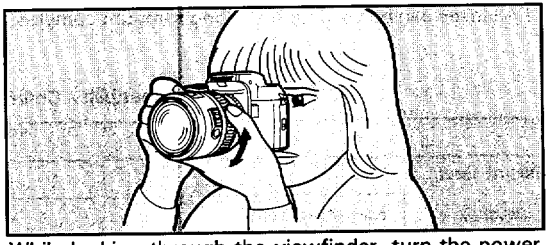
Open the back cover of the camera, drop in a roll of film, align the end of the film leader with the red mark, and close the back cover. The film should advance to the first frame automatically. (See page 16.)

7. Selecting the autofocus mode



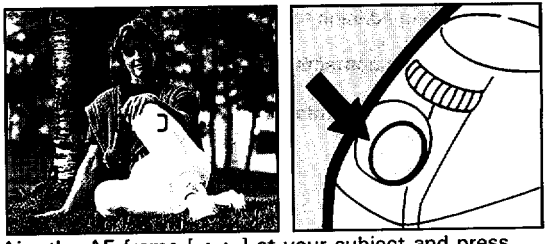
Set the focus mode switch to **[SINGLE]**. (See page 30.)

8. Composing with the power zoom ring



While looking through the viewfinder, turn the power zoom ring to obtain the subject size you want. (See page 26.)

9. Focus on subject and shoot



Aim the AF frame [‹ ›] at your subject and press lightly on the shutter release button to lock focus. (See page 34.) Depress the shutter release button fully to expose frame.

* If the mode dial is set to [PF⊙▭], the shutter will not release. Use another mode setting when you are taking photos.

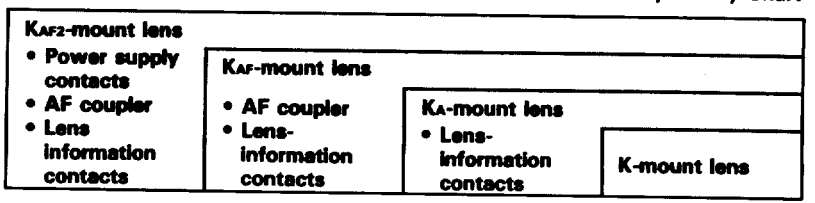
CAMERAS AND LENS MOUNTS

Mount	Lens type	Camera name
(A) K_{AF2}-mount	Pentax-FA lens	Z−1/PZ−1, Z−10/PZ−10
(B) K_{AF}-mount	Pentax-F lens	SFX_N/$SF1_N$, SF7/SF10
(C) K_A mount	Pentax-A lens	Super-A/Super Program, $P30_N$/$P3_N$, $P30_T$
(D) K-mount	Pentax-M lens and Pentax lens	LX, K1000
(E) Screw mount	SMC TAKUMAR lens, etc.	ESII, SP

(A) through (D) are K-mount (bayonet) lenses.
(A) and (B) are autofocus lenses.
(C) through (E) are manual-focus lenses.
(E) is an old screw mount lens. Mount Adapter K is needed for use on this camera.
(A) through (C) are lenses with an "A (auto)" position on the aperture ring. Pentax-FA lenses have the following attachments in addition to those of the K-mount lenses. Pentax-FA lenses can be used with existing K-mount cameras.

- Power supply contacts
- AF coupler
- Lens-information contacts

K-Mount Lens Compatibility Chart



CAMERA FUNCTIONS AVAILABLE WITH VARIOUS LENSES

Function / Lens [Mount type]	FA lens [K AF2]	F lens [K AF]	A lens [K A]	M lens [K]	S lens [P]
Autofocus (Lens only)	○	○	×	×	×
(Lens with AF Adapter 1.7x)	—	—	○*1	○*1	×
Manual focus (FI) *2	○*3	○*3	○*3	○*3	×
(Matte field)	○	○	○	○	○
Power zoom	○*4	×	×	×	×
Zoom clip	○*4	×	×	×	×
Image size tracking	○*4	×	×	×	×
Auto zoom effect	○*4	×	×	×	×
Hyper Programmed AE	○	○	○	×	×
Programmed AE	○	○	○	×	×
Aperture-Priority AE	○	○	○	○*5	○*5
Shutter-Priority AE	○	○	○	×	×
Hyper Manual	○	○	○	○*5	○*5
Programmed TTL Auto Flash	○	○	○	×	×
TTL Auto Flash	○	○	○	○	○

○: Can be used ×: Cannot be used

Notes:

*1. Lenses with a maximum aperture of f/2.8 or brighter. (Details are found in the instruction manual for the AF adapter.)
*2. Manual focusing using the focus indicator (FI) [◯] in the viewfinder.
*3. Lenses with a maximum aperture of f/5.6 or brighter.
*4. Pentax-FA zoom lenses only
*5. When the aperture ring is at **[A]**, the aperture cannot be set using the **Av** direct dial.
* For lenses made earlier than Pentax-M (lenses without lens information contacts), center weighted metering system is used instead of the multi(8)-pattern metering. However, the spot metering system can be used.

HOW TO USE THIS GUIDE

This guide is divided into the following sections to help you make best use of your camera:

I. BASIC OPERATION (PREPARATION)

II. BASIC OPERATION (SHOOTING)

III. ADVANCED OPERATIONS

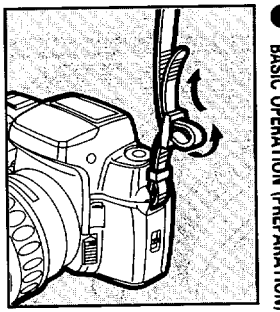
IV. SOME BASIC PRINCIPLES OF PHOTOGRAPHY

V. OTHERS

- If you want to begin taking pictures with this new camera as soon as possible, read sections I and II, "BASIC OPERATION (PREPARATION)" and "BASIC OPERATION (SHOOTING)." These sections introduce only the basic functions of this camera — details can be found in the following sections.
- Be sure to read "BATTERY PRECAUTIONS" (page 107), "TAKING CARE OF YOUR CAMERA" (page 108), and "WARRANTY POLICY" (page 116) before using your camera.

I. BASIC OPERATION (PREPARATION)

(1) ATTACHING THE CAMERA STRAP

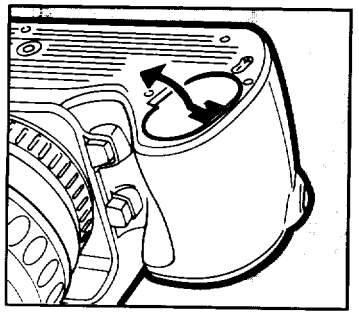


Attach the enclosed camera strap as shown in this illustration.

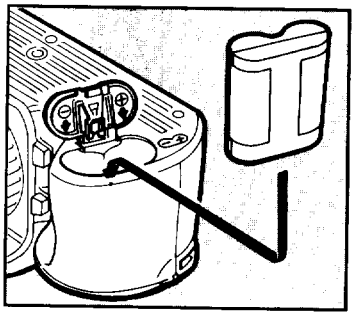
* To stop the camera from swinging excessively while walking, adjust the strap so the camera hangs.

(2) INSERTING THE BATTERY

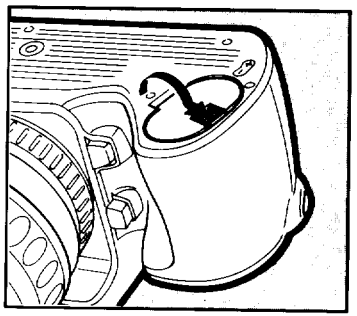
1



2



3



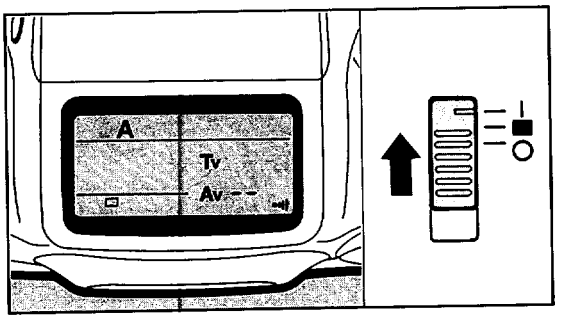
1. Open the battery cover by sliding the release lever in the direction of the arrow.

* This camera will not operate without a battery. Be sure to use the specified lithium battery (2CR5).

2. Insert the battery electrode-end first. Make sure that the battery polarity matches the markings (+, −) on the camera base.

3. To close the battery cover, apply pressure while moving the release lever back to its original position.

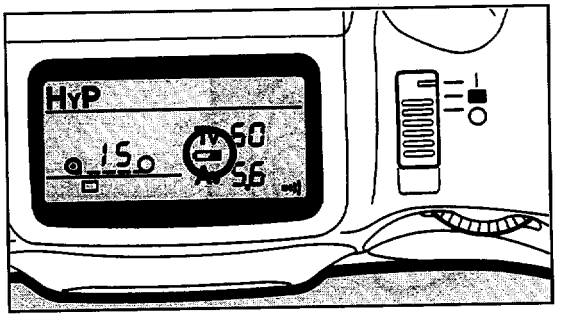
4



4. Set the main switch to [■] or [▌] and check that the LCD panel shows the information in this illustration.

* This may be displayed if the battery polarity is reversed, but the shutter will not operate. Be sure to insert the battery properly.

*



*** Low Battery Warning**

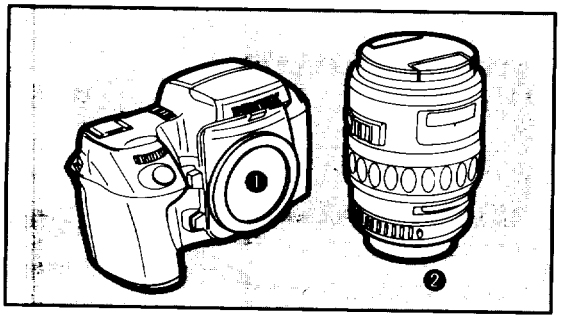
Towards the end of the battery's life, the low battery warning [▭] appears on the LCD panel. Change the battery as soon as possible after this symbol appears. Later, when the low battery warning [▭] starts blinking, the shutter cannot be released.

* When the low battery warning [▭] starts blinking, all indications in the viewfinder disappear.

* Whenever the battery is replaced, all camera settings except the exposure count, [DF] settings, and film speed (ISO) are reset.

(3) MOUNTING THE LENS

1

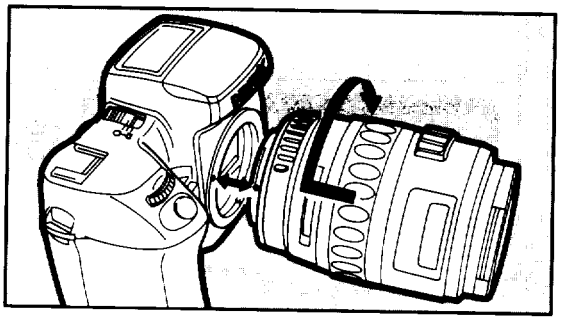


1. Remove the cap from the body mount ❶ and the rear lens cap ❷ as shown in the illustration.

* The body mount cap protects the camera against scratches and dust at the factory. For storage after purchase, an optional accessory called the "Body Mount Cap K" is available.

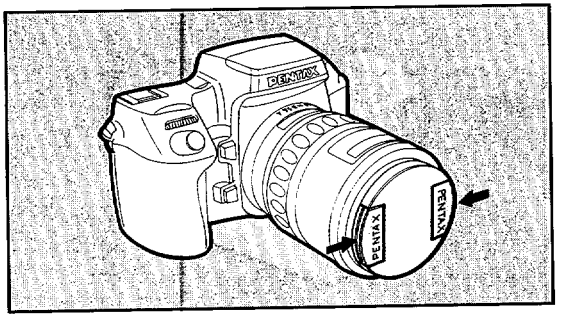
* To prevent unexpected operation of the FA zoom lens while you are mounting it, ensure that the main switch is at [○].

2



2. Align the red index marks on the camera and lens mount, attach the lens to the camera body, and turn it fully to the right until you hear a clicking sound.

3

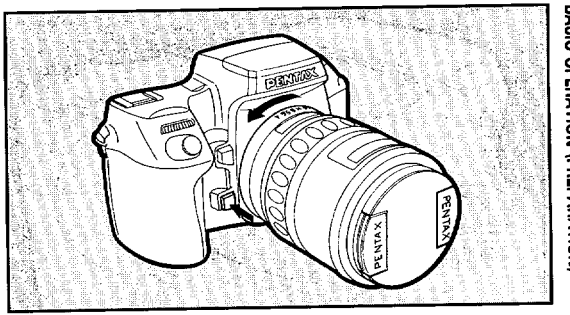


3. To remove the lens cap, squeeze the tabs on both sides in the direction of the arrows.

* We assume no responsibility nor liability for damage resulting from the use of lenses made by other manufacturers.

* The camera body and lens mounts incorporate lens information contacts and an AF coupler. Dirt, dust, or corrosion may lead to problems with the electrical system. Clean the contacts with a soft, dry cloth.

*

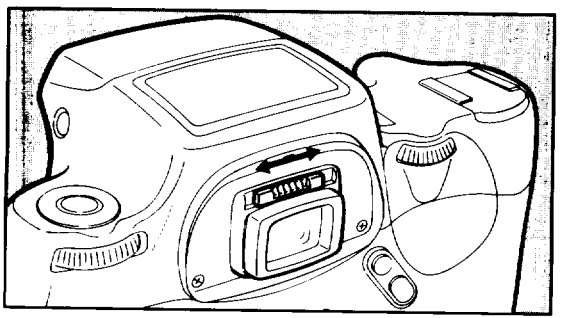


* To remove the lens, turn it to the left while holding in the lens-lock-release button.

* To protect the contacts and coupler of the lens after removal, be sure to set it down with the mount upward.

(4) ADJUSTING THE VIEWFINDER DIOPTER

1

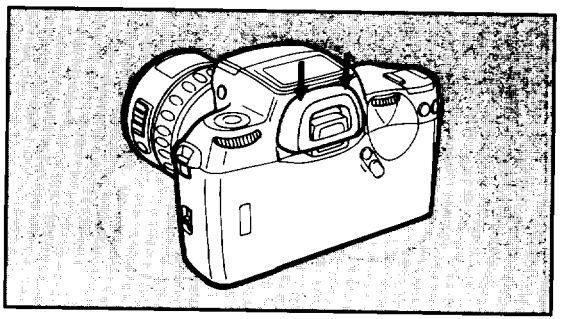


1. Aim the camera at a bright object. While looking through the viewfinder, move the diopter adjustment lever to the left or right until the autofocus frame [‹ ›] appears to be clearest.

* If the viewfinder is fitting with an Eyecup FD, remove it by sliding it upward before adjusting the diopter.

* The adjustment range is + 1.5D to − 2.5D (diopters).

2



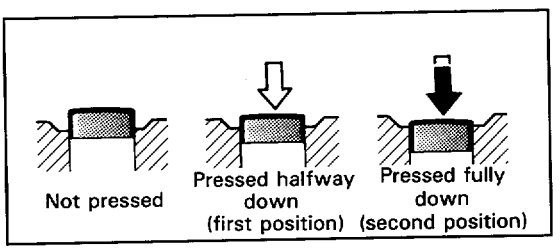
2. After adjustment, reattach the Eyecup by sliding it down the accessory mounting grooves on both sides of the viewfinder.

* To attach the Eyecup FD, slide it down the grooves on both sides of the viewfinder.

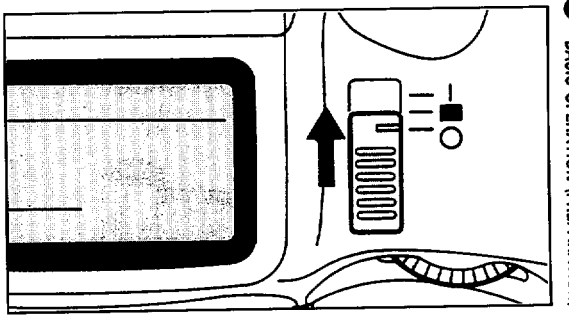
(5) USING THE SHUTTER RELEASE BUTTON

The shutter release button has two positions. Pushing it halfway down (first position) turns on the exposure meter and the autofocus mechanism. Pushing it fully down (second position) releases the shutter to take a picture. When taking a picture, hold your breath and gently press the shutter release button down to prevent camera shake.

* Before loading a roll of film, slowly press the shutter release button to learn where the first position is.
* When the mode dial is at [PF], the exposure meter and autofocus mechanism do not switch on when the shutter release button is depressed halfway. Additionally, the shutter will not release if the button is pressed fully down.
* The exposure meter stays on for about five seconds after the button is released from the halfway position. If the shutter release button is held at the halfway position, the exposure meter stays on.



(6) MAIN SWITCH OPERATION

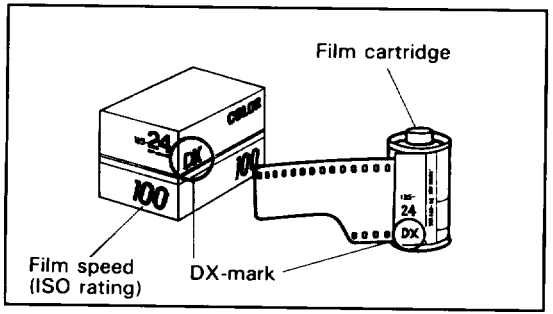


The main switch has three positions.

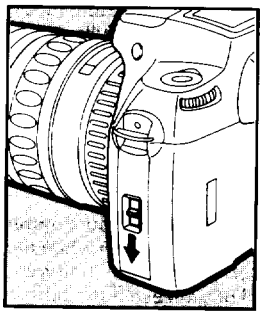
[▌] : Full-feature position (all functions of this camera available).
[■] : Green position (for easy picture taking in either Programmed AE or Aperture-Priority AE mode).
[○] : OFF position (for when the camera is not in use).

(7) FILM LOADING

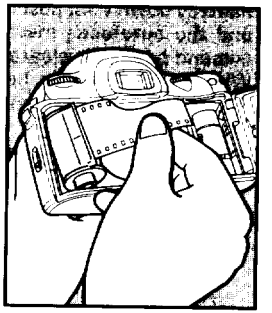
1



2



3



* We suggest that first you operate this camera with no film loaded to become familiar with its operation.

1. When DX-coded film is used, the correct film speed is automatically set for the camera. This camera can set a DX-coded film speed within the range ISO 25 to ISO 5000.

* The shutter curtain is a high-precision mechanism, and is very delicate. Accidental contact with the shutter curtain while loading film can damage it.

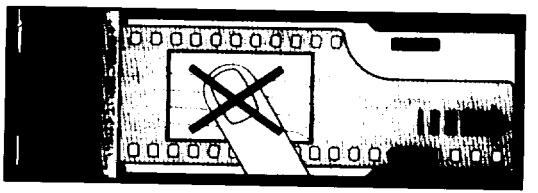
* Do not expose the film to direct sunlight during loading.

* If a non-DX-coded film is used, manually set the film speed (ISO) as described on page 94.

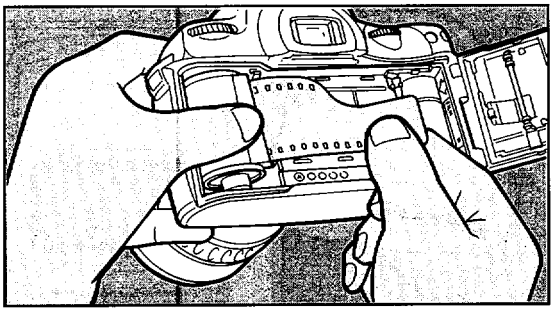
2. To open the camera back, slide the back-cover-release lever in the direction of the arrow.

3. Hold the film cartridge with the protruding end down and slide the top end in first.

* Before loading the camera with film for the first time after purchase, open the camera back and remove the protective card as shown in the photo. Take care not to touch the shutter curtain.



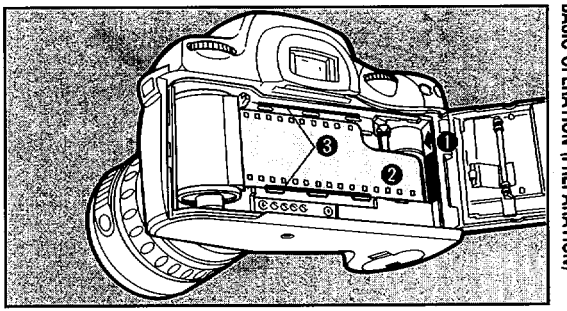
4



4. Hold the film cartridge with a finger and draw out the film leader as shown in the illustration. Ensure that your finger or the film end does not touch the shutter curtain. If you have pulled out too much film, push it back into the cartridge to reduce the slack.

* The DX information pins in the film chamber read the film speed information from the cartridge. Keep them clean and free of scratches. If necessary, clean the pins with a soft, dry cloth.

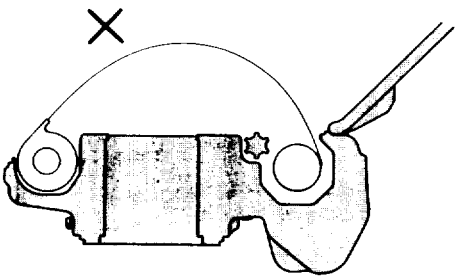
5



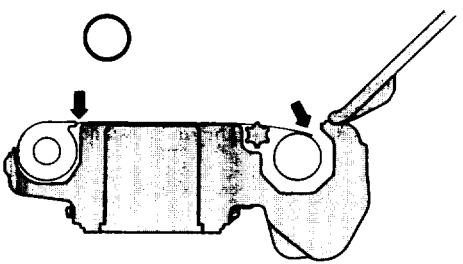
5. Align the film leader and the red leader end mark ❶ as shown in the illustration.

* Ensure that the film perforations are properly engaged with the sprocket teeth ❷ and that the film lies between the guide rails ❸ (shown as red lines in the illustration).

Film loaded with slack

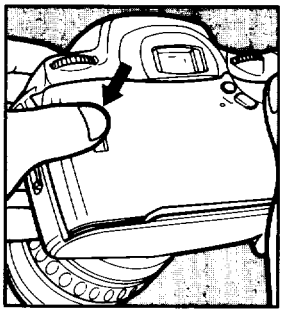


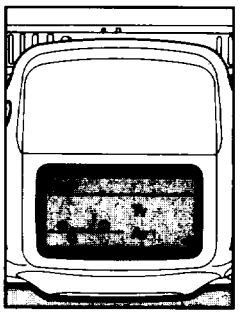
Film loaded flat



* If the film leader is very distorted, flatten with your fingers or cut off the distorted portion.

6

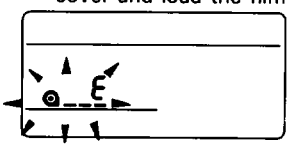




6. Close the back cover and set the main switch to [■] or [▌]. The film automatically advances to the first frame. Check that [1] and [⊙___○] are displayed on the LCD panel.

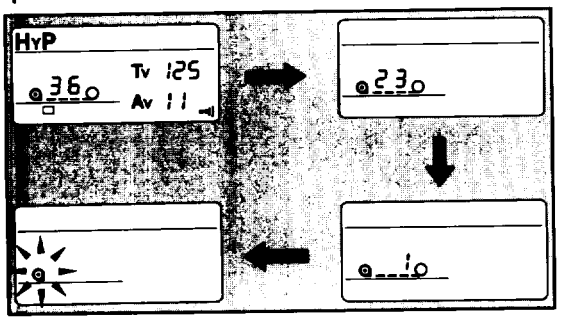
* The exposure count on the LCD panel is incremented by one each time the shutter is released.

* If [⊙___E] is blinking on the LCD panel, it indicates that the film has not loaded properly. Open the back cover and load the film once again.



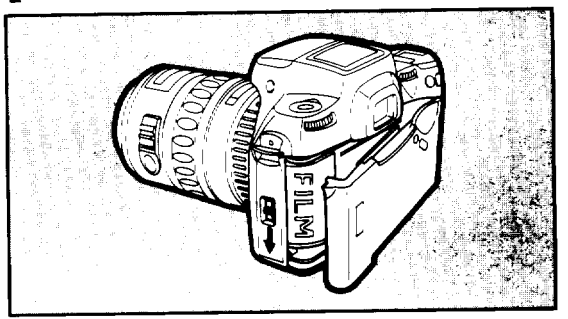
(8) UNLOADING THE FILM

1



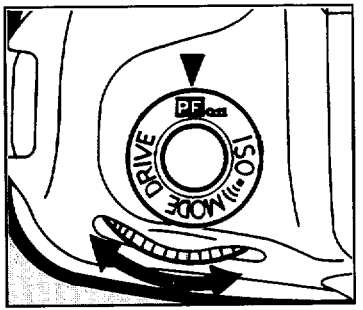
1. When the end of the roll is reached, the camera automatically rewinds the film.
* When automatic rewinding is not specified with a Pentax function [PF], rewind the film as explained in "Rewinding a Film in Mid-Roll" on the next page. Then remove the film.
* While the film is rewinding, [ ] blinks on the LCD panel.
* As the film rewinds, the exposure numbers are displayed in descending order.
* When the film is fully rewound, the LCD panel displays a blinking [ ] and the exposure counter disappears.
* When removing the film from the camera, protect it from exposure to direct sunlight.

2

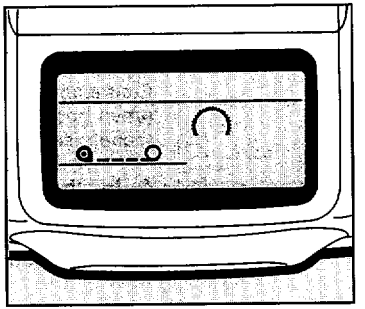


2. Open the back cover and remove the film.
* It takes about 10 seconds to rewind a 24-exposure roll of film.
* When you are not using the camera, be sure to set the main switch to [○].
* Before opening the back cover, check that a blinking [ ] is displayed.
* It may be possible to take more pictures than the number of frames specified on the film package. However, these pictures may be cut off during development.
* If the camera stops operating during rewinding due to a low battery, replace the battery without opening the back cover.
* Using a Pentax function, you can leave the rewound film leader outside the film cartridge. (See page 89.)

1



2



3

Rewinding a Roll of Film in Mid-Roll

Use this function to rewind and unload a film before the end of a roll.

* This function cannot be used when the main switch is at [○].

1. Set the mode dial to [PF].
2. While holding down the mode set button, turn the **Tv** direct dial to the left to clear [PF] from the LCD panel, then release the mode set button.
3. Turning the **Tv** direct dial three positions to the left will initiate rewinding. After the film is rewound, check that [◎] is blinking on the LCD panel and then remove the film.

* To cancel this function before rewinding starts, simply press the mode set button.

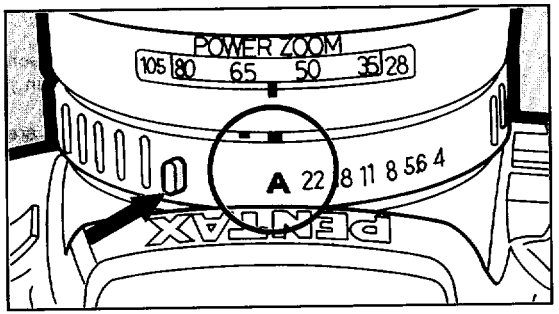
II. BASIC OPERATION (SHOOTING)

(1) USING THE BASIC EXPOSURE MODE

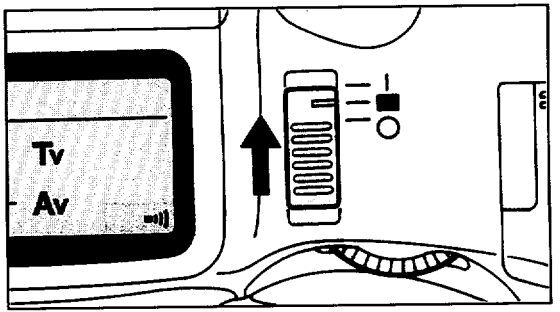
This camera offers an advanced range of automatic exposure modes. For easy picture-taking, select the basic Programmed AE mode by turning the main switch to the green position (■). For the uses of other exposure modes, see the respective explanations on page 42.

* In the Programmed AE mode, the camera automatically selects the combination of aperture and shutter speed, allowing you to take pictures simply by pressing the shutter release button.

1



2



SELECTING THE PROGRAMMED AE MODE

1. Turn the aperture ring to [A] as shown in the illustration.

* When turning the aperture ring to or from the [A] position, hold in the aperture-A lock button.

2. Set the main switch to [■].

* [P] appears on the LCD panel to indicate that the Programmed AE mode is selected.

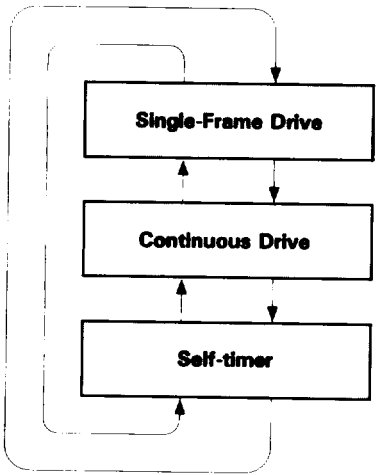
* If the mode dial is at [PF], [P] is not displayed. Change the mode dial to another setting.

* If the aperture ring is not at [A], the Aperture-Priority AE mode is selected automatically. (See page 50.)

* If the main switch is at [■], you cannot manually compensate the exposure. (See page 58.)

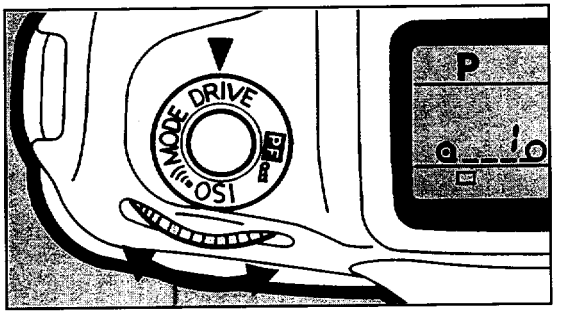
(2) BASIC DRIVE MODES

Assuming that the main switch is at [■], one of three drive modes can be selected. For the use of other drive modes, see the explanation of the drive modes applicable to each operation on page 59.

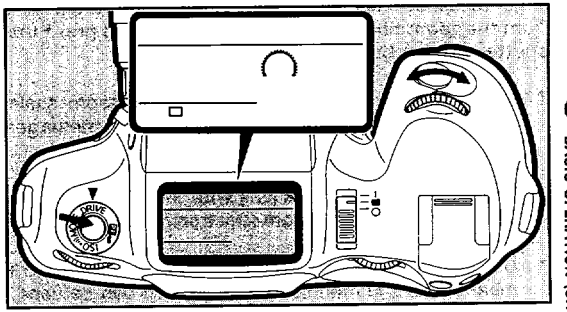


- [□]: Single-Frame Drive (One picture is taken each time you press the shutter release button.)
- [▣]: Continuous Drive (Two or more pictures are taken by holding down the shutter release button.)
- [⏲]: Self-timer (The shutter is released about 12 seconds after the shutter release button is pressed.) See page 68 for details.

1



2



Changing the Drive Mode

1. Set the mode dial to **[DRIVE]**.

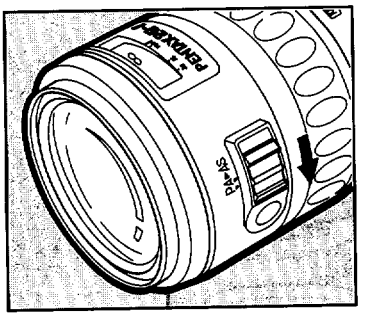
2. Change drive mode by turning the **Tv** direct dial while holding down the mode set button. To start with, select the Single-Frame mode [□].

(3) USING ZOOM LENSES

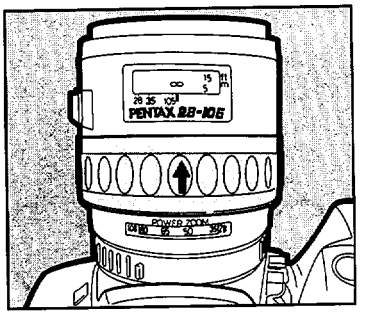
The zoom function allows you to make the subject appear larger (telephoto) or smaller (wide angle) in the viewfinder. Turn the zoom ring to the desired position and press the shutter release button.

* The smaller the number shown in the zoom scale window, the wider the angle. Conversely, the larger the number, the more magnified the image.
* Using a Pentax-FA zoom lens with this camera allows you to use the power zoom (electronic zoom) function.
* Using a conventional Pentax-F lens on this camera means only the manual zoom function can be used.

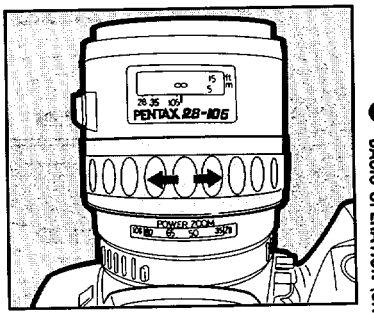
1



2



3



Using the Power Zoom Function

* Only Pentax-FA zoom lenses offer the power zoom function.

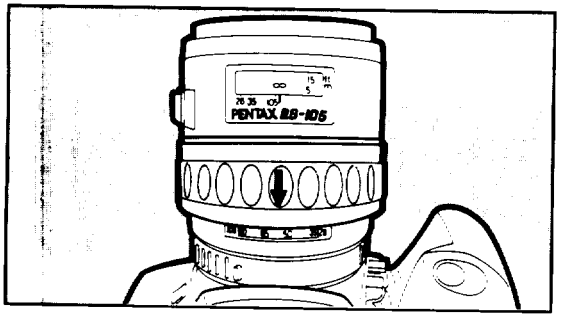
1. Pentax-FA zoom lenses have an auto-zoom switch. Set this switch to [**P**].

2. Push the power zoom ring forward until [**POWER ZOOM**] can be seen on the top of the lens.

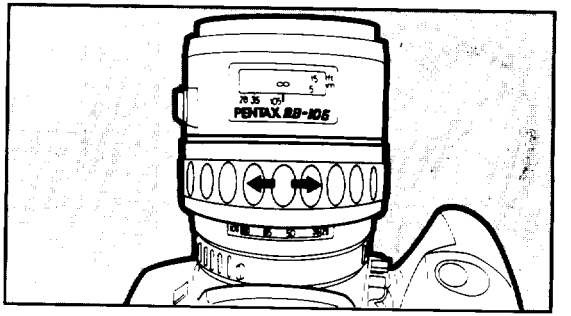
3. Turning the power zoom ring to the right brings the subject closer (telephoto) and turning it to the left makes the subject appear smaller (wide angle). To stop zooming, release the power zoom ring.
   There are three zooming speeds. Turning the power zoom ring fully to the right or left zooms the lens quickly. Turning it slightly gives slow operation. At an intermediate position, the lens zooms at medium speed.

* If the power is turned off while a Pentax-FA zoom lens (except Pentax-FA zoom lenses 100-300mm and 250-600mm) is in use, the lens automatically retracts to its smallest focal length position. The focusing ring turns to the ∞ position.

1



2



Using the Manual Zoom Function

* Pentax-FA zoom lenses can be zoomed as manually if the power zoom ring position is changed. In the manual zoom mode, these lenses act like conventional Pentax-F lenses.

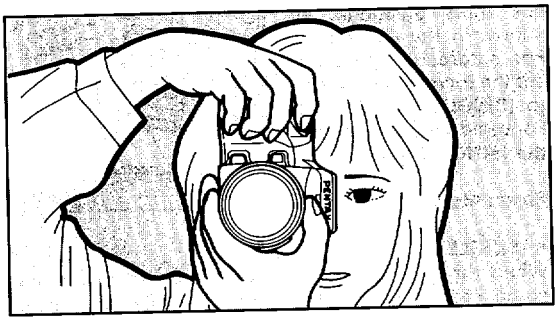
1. Pull the power zoom ring toward the camera body until [**POWER ZOOM**] is hidden.

2. Turning the power zoom ring to the right makes the subject appear larger (telephoto) and turning it to the left makes the subject appear smaller (wide angle). Select the desired focal length manually.

(4) HOLDING THE CAMERA

Camera held horizontally

Camera held vertically



For best results, be sure to hold the camera correctly.

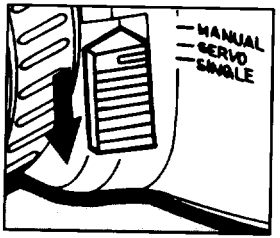
* While taking a picture, hold your breath and gently press the shutter release button. (Sudden force on the shutter release button will cause camera shake.)

* To reduce camera shake, support your body or the camera on a solid object — a table, tree, or the wall of a building, for instance.

* For shutter speeds of 1/30 seconds or slower, or when using a telephoto lens, use a tripod and optional cable switch F.

* To further reduce camera shake use a tripod.

(5) SELECTING AN AUTOFOCUS MODE



The focus mode switch has three positions, as shown in the illustration. For autofocus operation, set the focus mode switch to **[SINGLE]** or **[SERVO]**. For basic shooting, choose the **[SINGLE]** mode.

Focus Modes

• **[SINGLE]**:
When the shutter release button is pressed, the lens automatically focuses. As soon as the subject is in focus, the shutter is released. For normal use, select this position.

• **[SERVO]**:
If the shutter release button is held at the halfway position, the lens focuses continuously to follow the subject. The predictive autofocus function is effective in this mode.

• **[MANUAL]**:
You can focus on a subject manually. Select this position when the subject is difficult to focus. (See page 40.)

(6) AUTOFOCUSING

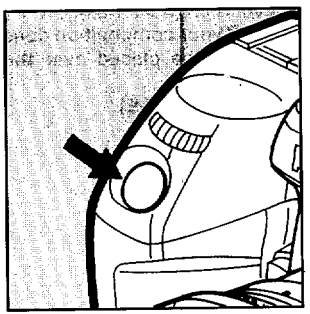
1

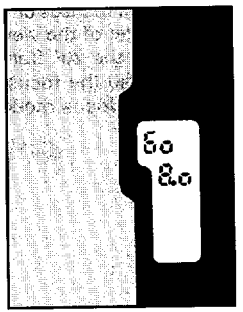
1. Aim the AF frame [‹ ›] at your subject.

* If the mode dial is set to [P], the autofocus function is not engaged. For normal use, set the mode dial to another position.

* If your composition does not allow the AF frame [‹ ›] to be aimed at the subject, use the focus lock function. (Page 32.)

2





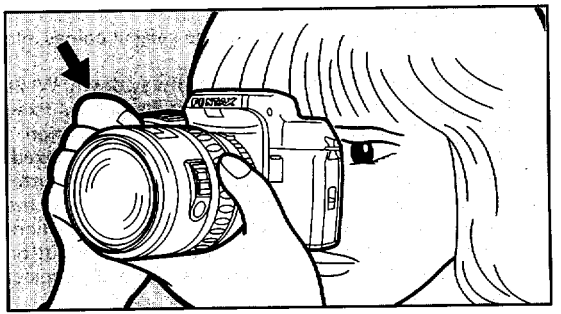
2. If your subject comes into focus while the shutter release button is still in the halfway position, the green indicator [⬡] inside the viewfinder lights up and an electronic beep is heard.

* To avoid damage to the zooming mechanism, do not prevent the lens from rotating.

* If [⬡] blinks continuously, autofocusing is impossible for one of the following reasons:
  ❶ The subject is too close.
  ❷ The subject is difficult to focus. (Page 40.)

* The electronic beep can be turned off by clearing [◂))] on the LCD panel. (See page 95.)

3



3. To take the picture, press the shutter release button fully down.

* When using the SMC Pentax-F Soft 85mm f/2.8 lens, set the aperture between f/2.8 and f/4.5. (See page 40.)

Shooting in the Single Autofocus Mode (Focus Mode Lever at [SINGLE].)

* The shutter is not released until the subject comes into focus.
* Press the shutter release button halfway down. While [○] is on, the camera-to-subject distance is fixed (focus lock). See "Using The Focus Lock Function."
* Once [○] is lit in the viewfinder, the focus is fixed. To focus on something else, let go of the shutter release button, aim the camera again, and return the shutter release button back to the halfway position.
* Even if you quickly press the shutter release button fully down, the shutter is not released until the subject comes into focus.
* The predictive autofocus function is not active in this mode.

Shooting in the Servo Autofocus Mode (Focus Mode Switch at [SERVO].)

* The shutter is released whether or not your subject is in focus. If the shutter release button is held in the halfway position, the camera continuously focuses on anything within the AF frame [‹ ›].
* The Servo Autofocus mode allows sharp pictures to be taken of moving subjects because of the predictive autofocus function.
* In the Continuous Drive mode ([▭] displayed on the LCD panel), the subject may be out of focus in the first frame.
* The focus lock function is not active.

Using the Focus Lock Function

The camera focuses on whatever is in the AF frame [‹ ›] in the center of the viewfinder. If your composition does not allow the AF frame [‹ ›] to be placed over the subject, use the focus lock function.

* Set the focus mode switch to [**SINGLE**].

1. Normally if you depress the shutter release button fully down when the AF frame [‹ ›] is not over the subject, the camera will focus on the background as shown in the photo.

2. To prevent this, press the shutter release button halfway down while the AF frame [‹ ›] is over the subject. While the shutter release button is held in the same position (the in-focus indicator [⬡] should be on), the camera locks the focus.

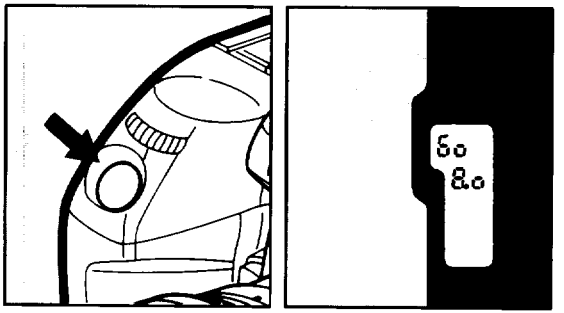
3. While holding the shutter release button halfway down, return to your original composition. Press the shutter release button fully down.

* Lifting your finger off the shutter release button clears the in-focus indicator [⬡] in the viewfinder and cancels the focus lock function.

* To reset the focus, lift your finger off the shutter release button and repeat the procedure.

* The focus lock function is canceled after each picture is taken.

(7) TAKING A PICTURE



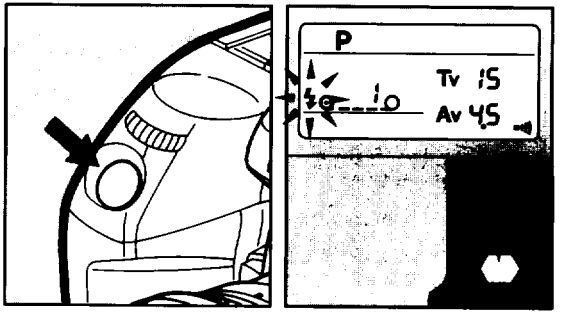
When the shutter release button is pressed halfway down, the shutter speed and aperture setting are displayed in the viewfinder and on the LCD panel. To release the shutter, gently press the shutter release button fully down. The camera automatically winds the film and increments the exposure counter by 1.

* If the mode dial is at [PF], the shutter will not release. For normal use, set the mode dial to another position.

* If the subject is dark or backlighted, the flash recommendation indicator [[ϟ]] blinks, advising use of flash. (The [ϟ] indicator also blinks on the LCD panel.)

* When flash is recommended by the indicator [[ϟ]], use the built-in flash.

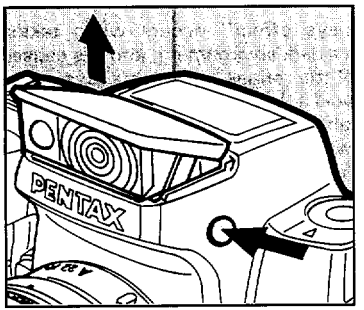
(8) USING THE BUILT-IN FLASH (RTF)



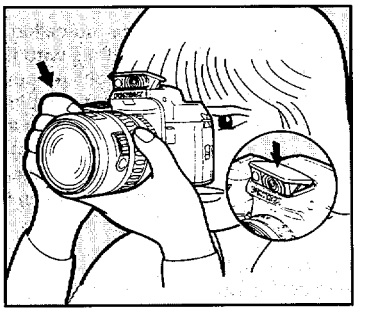
The Flash Recommendation Indicator [[ϟ]]

In the Hyper Programmed, Programmed, or Aperture-Priority AE mode, the flash recommendation indicator [[ϟ]] in the viewfinder and [ϟ] on the LCD panel may blink if the shutter release button is pressed halfway. This indicator may also blink in the Shutter-Priority or Hyper Manual mode when the shutter release button is pressed halfway in backlit situation.

1



2



Maximum Lens Aperture	Effective Range
f/1.4 ~ 2.8	About 1 ~ 5 m
f/3.5	About 0.8 ~ 4 m
f/4.7	About 0.7 ~ 3 m
f/5.6	About 0.7 ~ 2.5 m

1. Press the flash pop-up button to release the flash.

* The flash unit starts charging automatically. When the flash is ready, [ϟ] appears on the LCD panel. In addition, [[ϟ]] appears in the viewfinder if the shutter release button is pressed halfway. (Charging takes about 3 seconds.)

2. Press the shutter release button halfway down. The flash-sync speed and aperture setting appear on the LCD panel and in the viewfinder.
The flash will discharge when the shutter release button is fully depressed. After use, return the built-in flash into the camera by pressing at the point shown by the arrow in the illustration.

Effective Range for Programmed TTL Auto Flash (at ISO 100)

The effective range of the flash depends on the maximum aperture of the lens in use. A lens with a maximum aperture of f/1.4 is marked as 1:1.4 on its barrel.

* In the Hyper Programmed AE or Programmed AE mode, the built-in flash functions as a programmed TTL auto flash.

Notes on Flash Usage

Unsuitable Lens Warning
With the F or FA lenses listed below and other F or FA lenses not suitable for use with the built-in flash, [ϟ] on the LCD panel and [[ϟ]] in the viewfinder will blink when the shutter release button is pressed halfway down after the flash has been charged.

Lenses wider than 35mm
Macro lenses

Ignoring this warning and taking a picture will result in vignetting in the four corners of the frame or semicircular vignetting at the bottom of the picture. For lenses other than FA and F lenses, these indicators do not blink.

* Using a Pentax function, you can suppress discharge of the flash if an inappropriate lens is used. (See Page 89.)

* Do not use a lens hood as it may obstruct the path of the light coming from the flash.

* When shooting at a focal length of 35mm, do not take pictures at a distance less than 1m because light may be distributed unevenly.

* With FA 28 - 105mm zoom lenses, use of the built-in flash in the wide-angle range (40mm or shorter focal length) may result in semicircular vignetting at the bottom of the frame.

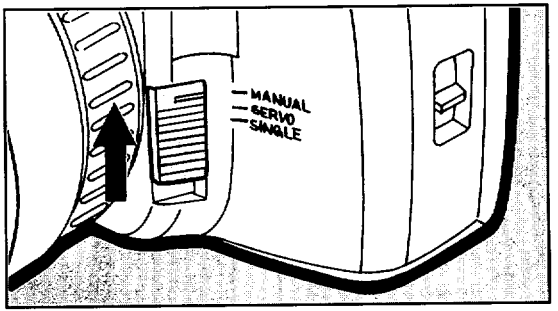
About "Red-Eye"

The so-called "red-eye effect" occurs when taking pictures with flash in a dark environment, and it is caused by light reflecting off the retinas of subjects' eyes. You cannot completely avoid it, but it can be reduced by taking your pictures in a brighter place or by shooting wide angle at a closer distance when using a zoom lens. When using a Pentax dedicated flash unit, red-eye can also be reduced by positioning the flash as far from the camera as possible.

III. ADVANCED OPERATIONS

(1) FOCUSING ON A SUBJECT MANUALLY

1



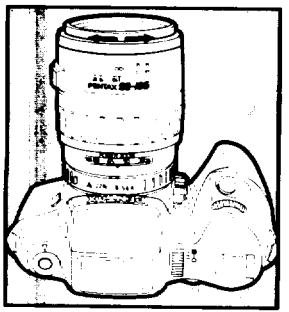
1) With a manual-focus lens

When using an existing KA- or K-mount lens with a maximum aperture of f/5.6 or brighter (f/1.2 to f/5.6), you can focus on the subject using the in-focus indicator [⬡] in the viewfinder.

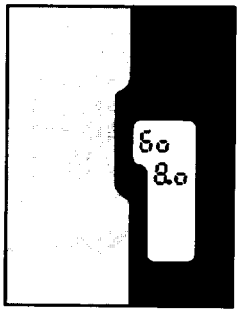
How to Focus

1. Set the focus mode switch to **[MANUAL]**.

2



3



2. Looking through the viewfinder, turn the focusing ring while holding the shutter release button halfway down.

3. When the subject comes into focus, the in-focus indicator [⬡] in the viewfinder lights up. Press the shutter release button fully down to take the picture.

* When using the KAF- or KAF2-mount lenses, you can also use this method if the focus mode switch is set to [**MANUAL**].

* If an old type screw-mount lens is used with a Mount Adapter K, the in-focus indicator [⬡] in the viewfinder cannot be used.

* When the subject comes into focus, the in-focus indicator [⬡] in the viewfinder lights up and an electronic beep is heard. The beep can be turned off by clearing [•))] from the LCD panel. (See page 95.)

Using the Snap-in Focus Function

If the focus mode switch is at [**SINGLE**] when a KA- or K-mount lens is used together with the optional "Cable Switch F," the shutter is automatically released when a subject comes into focus (snap-in focus shooting).

1. Use a KA- or K-mount lens.

2. Set the focus mode switch to [**SINGLE**].

3. Focus at the point where you wish the subject to be taken as it passes by.

4. Using the Cable Switch F, press the shutter release button fully down.

5. The camera releases the shutter automatically when the subject comes into focus at the point selected.

When autofocus cannot be used

When the autofocus function or the in-focus indicator [⬡] in the viewfinder cannot be used, focus on the subject manually using the matte field in the viewfinder as with a conventional SLR camera. This is necessary in the following circumstances:

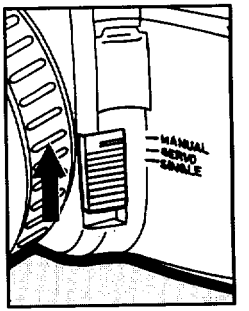
a) The in-focus indicator blinks because the subject is difficult to focus.

b) The maximum aperture of the lens is smaller than f/5.6.

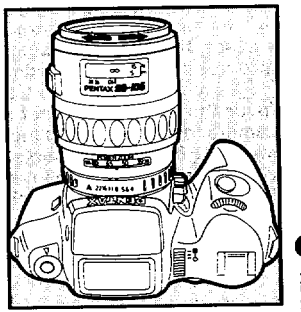
c) A Bellows 100mm f/4, Shift 28mm f/3.5 (shifted), or Reflex-type lens is in use.

d) An old type screw-mount lens is fitted using an optional Mount Adapter K.

1



2



How to Focus on the Subject

1. Set the focus mode switch to [**MANUAL**].

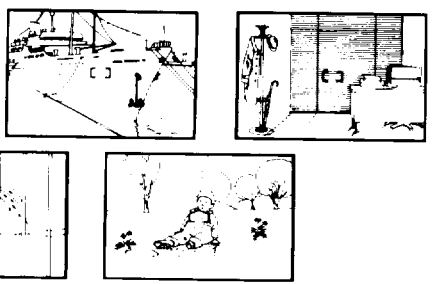
2. Looking through the viewfinder, turn the focusing ring until the image in the matte field is clearest. Press the shutter release button fully down to take the picture.

(2) HARD-TO-AUTOFOCUS SUBJECTS

The autofocus system is an exceptionally high-performance mechanism, but it is not perfect. Depending on the brightness, contrast, shape, and size of your subject, the autofocus system may not operate. This is also true for manual focusing using the in-focus indicator [⬡] in the viewfinder. Use the focus-lock function to focus the lens on an object at a similar distance from the camera, or set the focus mode switch to **[MANUAL]** and manually focus on the subject using the matte field in the viewfinder as with a conventional SLR camera.

Factors Making Autofocusing Difficult

a) The AF frame [‹ ›] is placed over an extremely low-contrast subject such as a white wall.
b) The AF frame [‹ ›] is placed over a subject which does not reflect much light.
c) The subject is moving very fast.
d) The AF frame [‹ ›] is placed over a subject with horizontal lines or a detailed pattern.
e) The AF frame [‹ ›] is placed over both foreground and background at the same time.
f) The AF frame [‹ ›] is placed over a backlit subject (extremely bright background).



Notes on Accessories

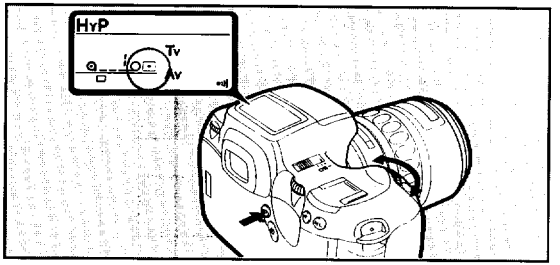
Autofocusing and manual focusing using the in-focus indicator [⬡] in the viewfinder are disabled when using the following accessories. Focus on the subject manually using the matte field in the viewfinder.

a) When a special effect filter, a "Magic Image Attachment," or a "Stereo Adapter" is used.
b) When an ordinary polarizing filter is used. (This is because a half-mirror is incorporated into the autofocus system.) Use a circular polarizing filter instead.
c) When an Extension Tube Set or Auto Bellows is used.

Notes on Using the SMC Pentax-F Soft 85mm f/2.8 Lens

If the subject is closer than about 1.5m, choose an aperture between f/2.8 and f/4.5. A smaller aperture (f/5.6 to f/32) may cause malfunction of the autofocus system (and the focus indicator). To prevent this, temporarily set the aperture to f/4.5 and focus on the subject. Then choose the desired aperture setting with the focus locked.

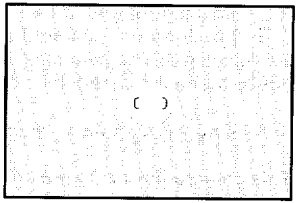
(3) SWITCHING METERING MODES



This camera can be switched between multi-pattern metering and spot metering modes.
To measure the exposure on only a small portion of the frame, select the spot metering mode.
To switch between the metering modes, set the main switch to [▌] and turn the **Tv** direct dial while pressing the metering mode button [⊡] on the back cover of the camera.

* When the main switch is at [■], the multi-pattern metering mode is selected automatically and spot metering cannot be used.
* When the spot metering mode is selected, [⊡] is displayed on the LCD panel. When the shutter release button is pressed halfway down, [◘] is displayed in the viewfinder.
* Using a Pentax function, you can switch between the multi-pattern metering and center-weighted metering modes. (See page 86.)
* When a lens with no lens information contacts (lenses made before M lenses) is used, the center-weighted metering mode is selected instead of the multi-pattern metering mode.

About Spot Metering
The spot metering measures light in only the small area in the center of the viewfinder. When shooting using the spot metering mode, place the part of the subject you wish to measure in the center of the viewfinder.



About Memory Lock
The memory lock function enables an exposure level to be memorized before shooting. The memory lock function is very effective when used along with spot metering. Use the memory lock function to get a correct exposure when the subject occupies only a small part of the viewfinder.

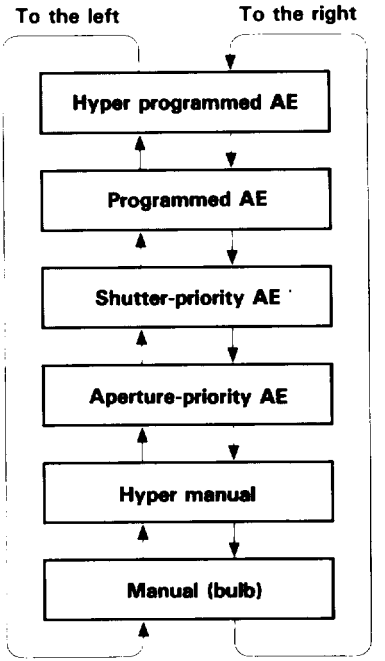
1. Position the area to be measured fully in the spot metering area and press the memory lock button [**ML**].
   * As soon as the memory lock button [**ML**] is pressed, a 5-second timer starts and the camera stores the measured exposure level until the time expires.
   * If the shutter release button is pressed halfway down while the memory lock timer is operating, the memory will be retained even when the memory lock button is released.
2. Move the camera to obtain the desired composition and shoot.
   * During memory lock operation, [✱] is displayed in the viewfinder.
   * To cancel memory lock, press the memory lock button again while the memory is locked.

(4) SELECTING AN EXPOSURE MODE

If the aperture ring is at [**A**], setting the main switch to [▌] (full-feature position) allows any exposure mode available on this camera to be selected. The aperture need not be manually changed if you switch exposure modes.

Switching the Exposure Mode

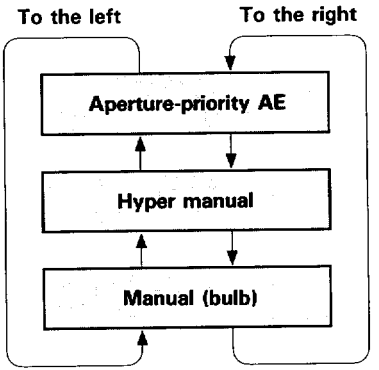
This camera has six exposure modes. Set the mode dial to [**MODE**]. Rotating the **Tv** direct dial to the left or right while holding down the mode set button will change the exposure mode in the direction of the arrow. For details of each exposure mode, see the related page.

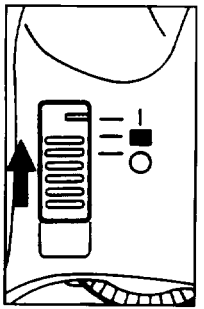


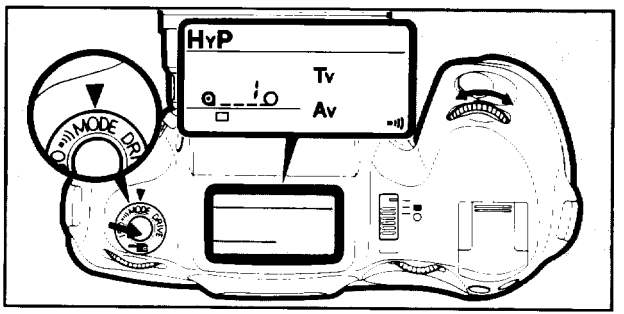
Move the aperture ring from the [**A**] position to another position in the following cases. (When using a conventional lens without the [**A**] position, you can switch between this camera's exposure modes in the similar way as when setting a lens having the [**A**] position to a proper f-stop other than the [**A**] position.)

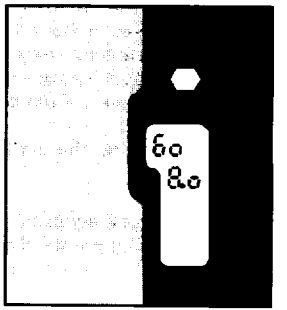
- When checking the depth of field using the preview button
- When using an accessory, such as an Extension Tube Set, which prevents the camera setting the proper aperture value automatically
- When an old type flash unit is used

When the aperture ring is in a position other than [**A**], one of the three exposure modes shown to the right must be used. Turning the **Tv** direct dial to the left or right while holding down the mode set button will change the mode in the direction of the arrow.









1) Using the Hyper Programmed AE Mode

This mode is basically a Programmed AE mode (see page 46.). A switch to the Shutter-Priority or Aperture-Priority AE mode requires only a single action.

Set the aperture ring to [A].

1. Set the main switch to [▌].
2. Set the mode dial to **[MODE]**. While holding down the mode set button, turn the **Tv** direct dial until **[HyP]** is displayed on the LCD panel.
3. Pressing the shutter release button halfway down will turn on the display of shutter speed and aperture setting in the viewfinder and on the LCD panel.

* Using a Pentax function, you can change the program line from the normal program to the Program Action (High-speed-shutter-priority), Program Depth (depth-of-field-priority), or MTF (Modulation Transfer Function) program.

Changing the Shutter Speed

Turning the **Tv** direct dial while in Hyper Programmed AE mode will select the Shutter Priority AE mode directly. Select the desired shutter speed using this dial. (For details of the Shutter-priority AE mode, see page 48.)

* You can set the shutter speed only within the range of available aperture values.

* If the proper aperture setting cannot be automatically selected because of a change in brightness, the shutter speed automatically changes. The [☼] mark on the LCD panel blinks and a bar blinks under the shutter speed indication in the viewfinder.
  Using a Pentax function, you can override the shutter speed shift. (See page 87.)

* Pressing the [IF] button will return you to the Hyper Programmed AE mode.

* **Exposure Warning**

  If the subject is too bright or dark, the shutter speed and aperture setting in the viewfinder and on the LCD panel blink. Use a neutral density (ND) filter if the subject is too bright. Use flash if the subject is too dark.

Changing the Aperture

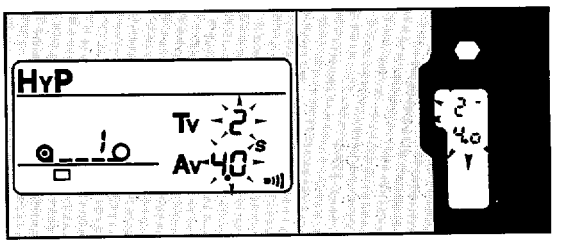
Turning the **Av** direct dial while in Hyper Programmed AE mode will access the Aperture-Priority AE mode. Select the desired aperture with this dial. (For details on the Aperture-Priority AE mode, see page 50.)

* You can choose aperture settings only within the range of available shutter speeds (1/8000 to 30 seconds).

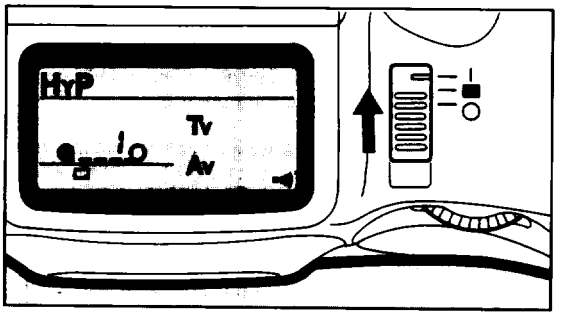
* Pressing the [IF] button will return you to the Hyper Programmed AE mode.

* If the shutter speed cannot be selected automatically because of a change in brightness, the aperture changes automatically. The [☼] mark on the LCD panel blinks and a bar blinks under the aperture setting in the viewfinder.

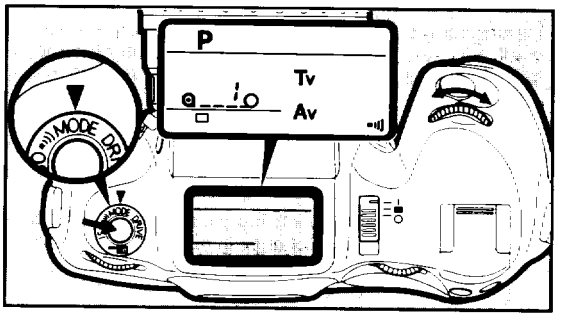
With a Pentax function, this shift in aperture can be suppressed. (See page 87.)



1



2



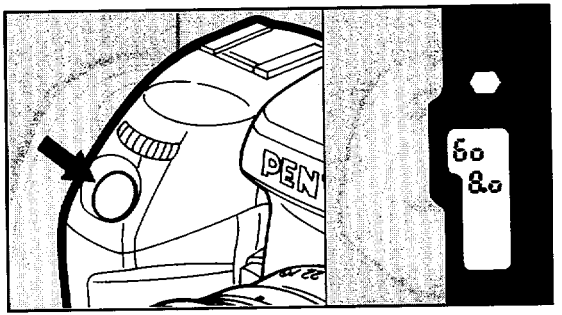
2) Using the Programmed AE Mode

In this mode, the camera sets both shutter speed and aperture setting automatically. Enjoy taking pictures just by pressing the shutter release button.

Set the aperture ring to [A].

1. Set the main switch to [▌].
2. Set the mode dial to [**MODE**]. While holding down the mode button, turn the **Tv** direct dial until [**P**] is displayed on the LCD panel.

3

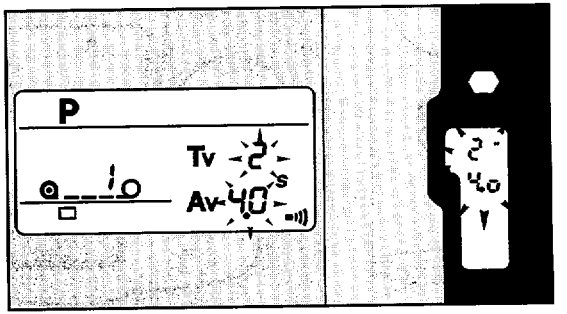


3. Pressing the shutter release button halfway down will turn on the display of shutter speed and aperture setting in the viewfinder and on the LCD panel.

* If the aperture ring is at [A] when the main switch is set to [■], this mode is selected automatically.

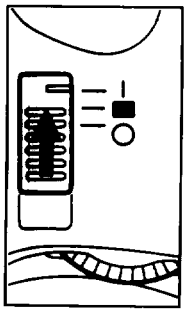
* Using a Pentax function, you can change the program line from the normal program to the Program Action (high-speed-shutter-priority), Program Depth (depth-of-field-priority), or MTF (Modulation Transfer Function) Program. (See page 86.)

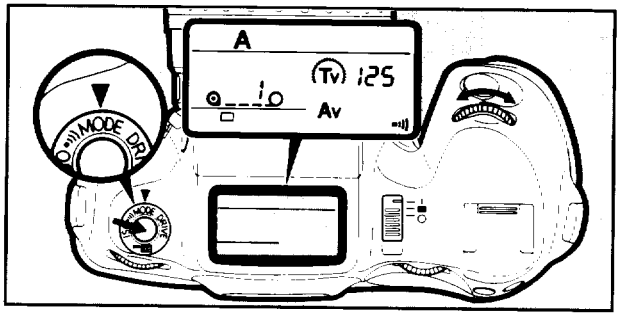
*



* **Exposure Warning**

If the subject is too bright or dark, the information indicators in the viewfinder and on the LCD panel blink as shown in the illustration. Use an ND filter if the subject is too bright. Use flash if the subject is too dark.





3) Using the Shutter-Priority AE Mode

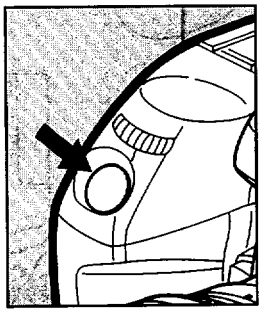
When you select the shutter speed you desire, the camera will automatically set the proper exposure value according to the brightness of the subject by adjusting the aperture. This mode is suitable for shooting a clear image of a fast-moving subject at a high shutter speed or a dynamic image of a moving subject at a slow shutter speed.

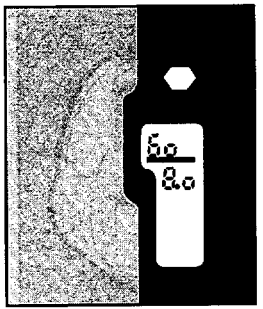
Set the aperture ring to [A].

1. Set the main switch to [▌].
2. Set the mode dial to [**MODE**]. While holding down the mode set button, turn the **Tv** direct dial until [**A**] and [Tv] are displayed on the LCD panel.
3. Select the desired shutter speed using the **Tv** direct dial.

* Turning the **Tv** direct dial to the right increases the shutter speed, while turning it to the left reduces it.

4





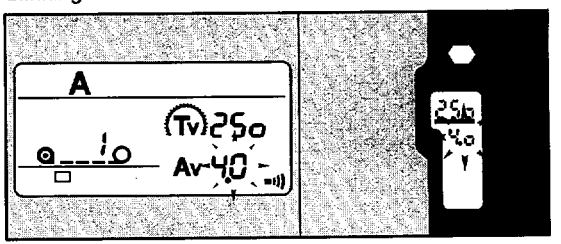
4. Pressing the shutter release button halfway down will turn on the display of shutter speed and aperture value in the viewfinder and on the LCD panel.

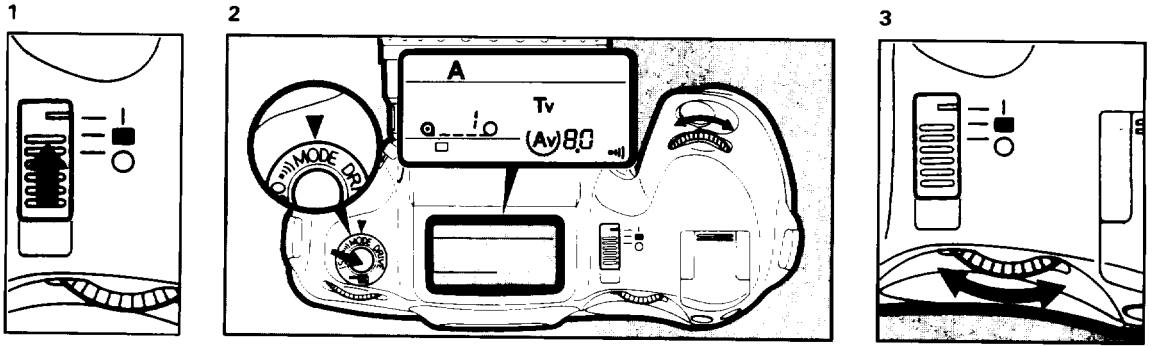
* The bar under the shutter speed in the viewfinder indicates that you can change the shutter speed.

* Using a Pentax function, you can change the shutter speed increment from 1.0 EV to 0.5 EV. (See page 87.)

* **Exposure Warning**

If the subject is too bright or dark, the aperture setting in the viewfinder and on the LCD panel blinks as shown in the illustration. If the subject is too bright, choose a faster shutter speed. If the subject is too dark, choose a slower shutter speed. When the chosen shutter speed is suitable for exposure, the aperture setting stops blinking.





4) Using the Aperture-Priority AE Mode

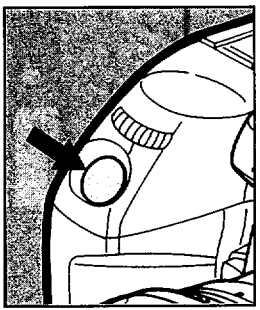
When you select the aperture you desire, the camera will automatically set the appropriate shutter speed according to the brightness of the subject. This mode is suitable for shooting landscapes requiring a large depth of field and for placing a person in front of a vignetted background.

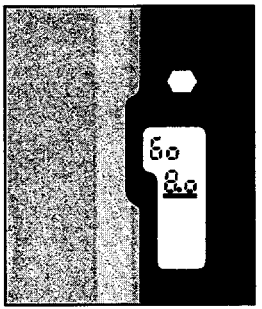
With the Aperture Ring at [A]

1. Set the main switch to [▌].
2. Set the mode dial to **[MODE]**. While holding down the mode set button, turn the **Tv** direct dial until **[A]** and [(Av)] are displayed on the LCD panel.
3. Select the desired aperture using the **Av** direct dial.

* Turning the **Av** direct dial to the right (larger number) reduces the aperture and turning it to the left (smaller number) increases the aperture.

4



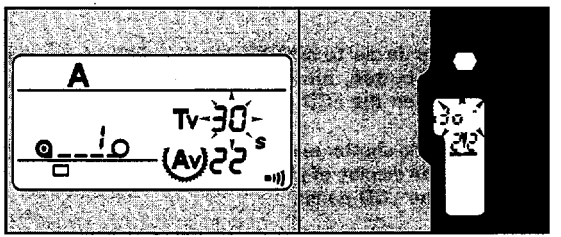


4. Pressing the shutter release button halfway down will turn on the display of shutter speed and aperture in the viewfinder and on the LCD panel.

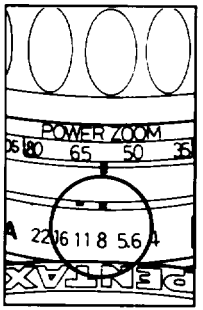
* The bar under the aperture value in the viewfinder indicates that you can change the aperture value.

* **Exposure Warning**

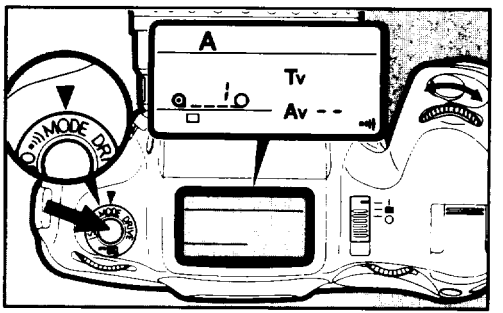
If the subject is too bright or dark, the shutter speed in the viewfinder and on the LCD panel blink as shown in the illustration. If the subject is too bright, reduce the aperture (larger number). If the subject is too dark, increase the aperture (smaller number). When the chosen aperture is suitable for exposure, the shutter speed stops blinking.



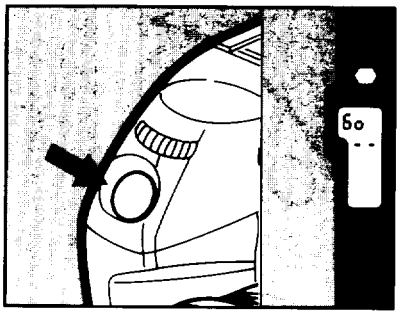
1



2



3



With the Aperture Ring Not Set at [A]

If the aperture ring is not set to [**A**], you can use the Aperture-Priority AE mode.

1. Turn the aperture ring to the desired setting other than [**A**].

2. Set the mode dial to [**MODE**]. While holding down the mode set button, turn the **Tv** direct dial until [**A**] is displayed on the LCD panel.

3. Pressing the shutter release button halfway down will turn on the display of shutter speed in the viewfinder and on the LCD panel.

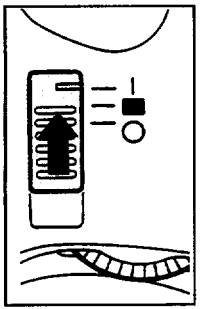
* With FA and F lenses, pressing the shutter release button halfway down will display the approximate aperture value on the LCD panel and in the viewfinder. With other lenses, [— —] is displayed.

* If the aperture ring is at a position other than [**A**] when the main switch is set to [■], this mode is selected automatically.

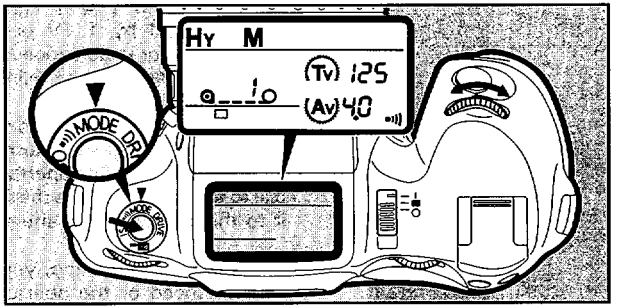
* If the aperture ring is at a position other than [**A**] in the Aperture-Priority AE mode, pressing the preview button closes the lens down to the set aperture. This allows you to check the depth of field in the viewfinder.
If the exposure value is set with the preview button held down, the set exposure will not be correct.

* **Exposure Warning**
The exposure warning is as explained on page 51.

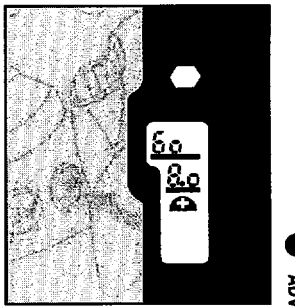
1



2



3



5) Using the Hyper Manual Mode

You can obtain a correct exposure by manually adjusting the shutter speed and aperture according to the readings of the exposure meter. In the Hyper Manual mode, you can set an exposure value suitable for your requirements.

With the Aperture Ring at [A]

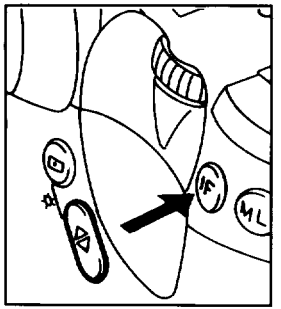
1. Set the main switch to [▌].
2. Set the mode dial to **[MODE]**. While holding down the mode set button, turn the **Tv** direct dial until **[HY M]** is displayed on the LCD panel.

* The shutter speed and aperture are displayed on the LCD panel.

3. Pressing the shutter release button halfway down will turn on the display of shutter speed, aperture, and [▲] or [▼] in the viewfinder.

* The bars under the shutter speed and aperture setting in the viewfinder indicate that you can change these values.

4



4. Pressing the [IF] button will immediately adjust the shutter speed and aperture automatically to obtain the correct exposure. [ ] is displayed in the viewfinder. To set any desired exposure, manually change the aperture using the **Av** direct dial and the shutter speed with the **Tv** direct dial.

* Pressing the [IF] button will shift the aperture value and shutter speed according to the program line selected with the Pentax function. (See page 86.)

* If [ ] lights up, the subject is overexposed by 1 EV or less. If [ ] lights up, the subject is underexposed by 1 EV or less. If the subject is overexposed or underexposed by more than 1 EV, the [ ] or [ ] symbol blinks.

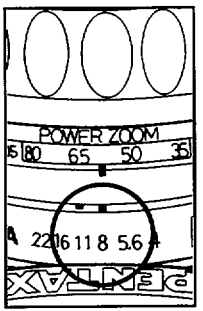
* Turning the **Av** direct dial to the right (larger number) reduces the aperture and turning it to the left (smaller number) increases the aperture. Turning the **Tv** direct dial to the right increases the shutter speed and turning it to the left decreases the shutter speed.

* Using a Pentax function, you can change either the shutter speed or the aperture by pressing the [IF] button. (See page 88.)

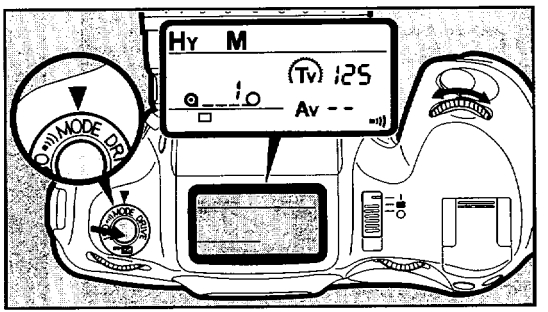
Hyper Manual Mode Combined with Memory Lock Function

If the Hyper Manual mode is selected with the aperture ring at [A], the camera will memorize the exposure level if the [ML] button is pressed. (See the explanation of the Memory Lock Function on page 41.) If the shutter speed is changed by turning the **Tv** direct dial, the aperture also changes to maintain the same exposure value. If the aperture is changed using the **Av** direct dial, the shutter speed also changes to maintain the same exposure value.

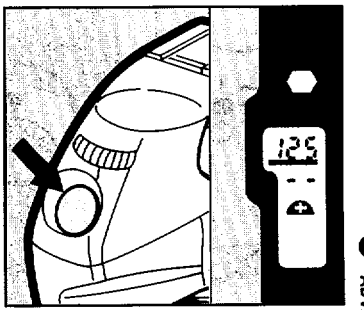
1



2



3



With the Aperture Ring Not at [A]

1. Set the aperture ring to the desired position (other than [**A**]).

2. Set the mode dial to [**MODE**]. While holding down the mode set button, turn the **Tv** direct dial until [**Hy M**] is displayed on the LCD panel.

* The shutter speed is displayed on the LCD panel.

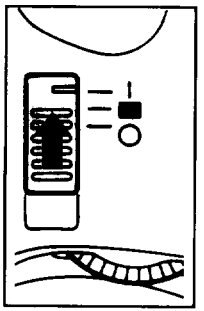
3. Pressing the shutter release button halfway down will turn on the display of shutter speed in the viewfinder. Adjust the aperture using the aperture ring and the shutter speed using the **Tv** direct dial.

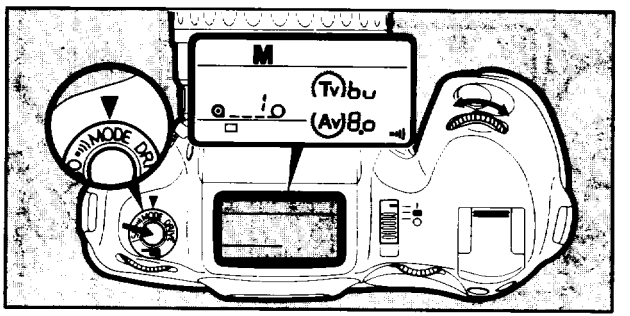
* Adjust the exposure as when the aperture ring is set to [**A**].

* With FA and F lenses, pressing the shutter release button halfway down will display the approximate aperture value on the LCD panel and in the viewfinder. With other lenses, [— —] is displayed.

* Pressing the [**IF**] button will immediately adjust the shutter speed to give the correct exposure value.

* If the aperture ring is at a position other than [**A**] in the Hyper Manual mode, pressing the preview button closes the lens down to the selected aperture to allow the depth of field to be checked in the viewfinder. If the exposure value is set with the preview button held down, the set exposure will not be correct.





6) Using the Manual (Bulb) Mode

Select the bulb mode for scenes, such as fireworks and night shots, that require a long exposure. The shutter stays open as long as the shutter release button is held down.

With the Aperture Ring at [A]

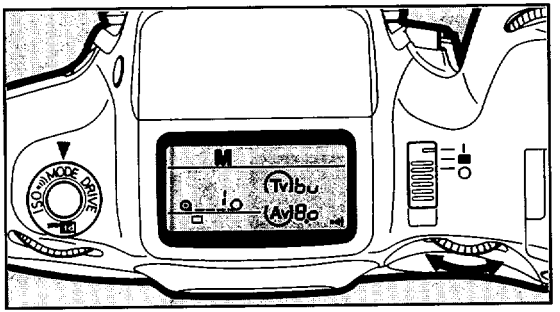
1. Set the main switch to [▌].
2. Set the mode dial to [**MODE**]. While holding down the mode set button, turn the **Tv** direct dial until [**M**] and [bu] are displayed on the LCD panel.

* The aperture value appears on the LCD panel.

3. Pressing the shutter release button halfway down turns on the display of [bu] and aperture value in the viewfinder.

* The bar under [bu] in the viewfinder indicates that you can select the desired exposure time by holding down the shutter release button. The bar under the aperture setting indicates that you can change the aperture value.

4



4. Select an aperture using the **Av** direct dial.

* Turning the **Av** direct dial to the right (larger number) reduces the aperture and turning it to the left (smaller number) increases the aperture.

With the Aperture Ring Not at [A]

1. Set the aperture ring to the desired position (other than **[A]**).

2. Set the mode dial to **[MODE]**. While holding down the mode set button, turn the **Tv** direct dial until **[M]** and [bu] are displayed on the LCD panel.

3. Pressing the shutter release button halfway down turns on the display of [bu] in the viewfinder.

* With FA and F lenses, pressing the shutter release button halfway down will display the approximate aperture value on the LCD panel and in the viewfinder. With other lenses, [— —] is displayed.

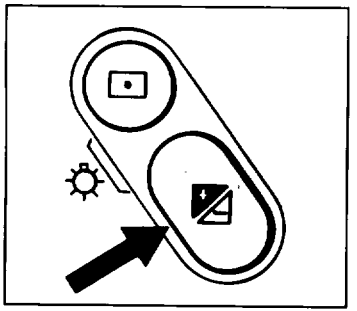
* When using the Manual (bulb) mode, use a sturdy tripod and use the optional Cable Switch F.

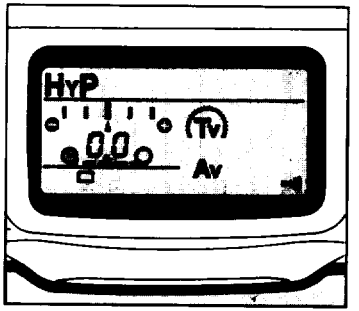
* With a new lithium battery, time exposures of up to approximately 6 hours are possible at room temperatures.

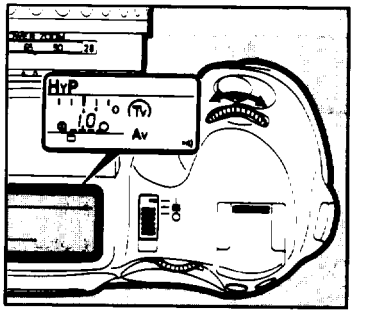
* If the aperture ring is at a position other than **[A]** in the Manual (bulb) mode, pressing the preview button closes the lens down to the set aperture, allowing you to check the depth of field in the viewfinder.

* While the shutter release button is held down, the elapsed exposure time appears in the upper-right corner of the LCD panel.

(5) ABOUT EXPOSURE COMPENSATION







The exposure compensation system is used to deliberately overexpose (brighten) or underexpose (darken) a subject or to compensate for an exposure which even the multi-pattern metering function cannot correctly evaluate.

Pressing the exposure compensation button [▨] displays the exposure indicator and the initial compensation value on the LCD panel. Display the desired compensation by rotating the **Tv** direct dial while pressing the exposure compensation button.

* You can compensate in 0.3 EV steps within the range −4 EV to +4 EV.
* The exposure indicator is calibrated from −2 EV to +2 EV (in 0.3 EV step). If the compensation exceeds this range, the [⊕] or [⊖] indicator blinks.
* When exposure compensation is being used, the exposure indicator appears on the LCD panel and [▨] appears in the viewfinder.
* Exposure compensation is not canceled even if the main switch is set to [○].
* If the main switch is set to [■], the exposure compensation system has no effect.
* Using a Pentax function, you can change the exposure compensation increment from 0.3 EV to 0.5 EV step. In this case, the [⊕] or [⊖] indicator blinks when the compensation exceeds +3 EV. (See page 87.)
* By pressing the exposure compensation button [▨] and metering button [⊡] simultaneously, the LCD panel will stay illuminated for about 5 seconds.

(6) SELECTING A DRIVE MODE

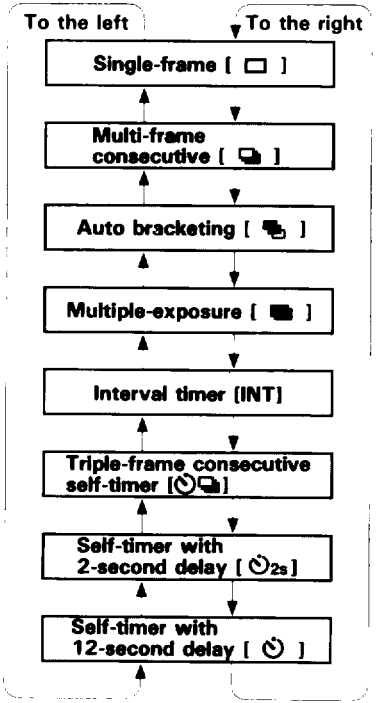
This camera has various drive modes as listed below. Set the mode dial to **[DRIVE]**. To select a drive mode, turn the **Tv** direct dial while holding down the mode set button. The possible drive modes depend on the exposure mode.

* If the power switch is set to [■] or when the Hyper Manual **[HvM]** or Manual (bulb) **[Mbu]** mode is selected, certain drive modes cannot be used.

Drive mode	Green position	Full-feature position					
		HvP	P	AAV	ATV	HvM	Mbu
Single-frame [□]	○	○	○	○	○	○	○
Multi-frame consecutive [□]	○	○	○	○	○	○	○
Auto bracketing [▣]	×	○	○	○	○	×	×
Multiple-exposure [▣]	×	○	○	○	○	○	○
Interval timer [INT]	×	○	○	○	○	○	×
Triple-frame consecutive self-timer [⏲□]	×	○	○	○	○	○	×
Self-timer with 2-second-delay [⏲2s]	×	○	○	○	○	○	×
Self-timer with 12-second delay [⏲]	○	○	○	○	○	○	×

○ : Usable × : Not usable

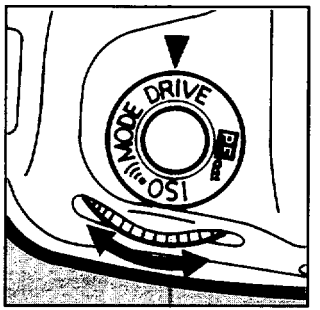
HvP : Hyper programmed
P : Programmed
AAV: Aperture-Priority Programmed
ATV : Shutter-Priority Programmed
HvM : Hyper Manual
Mbu: Manual (bulb)



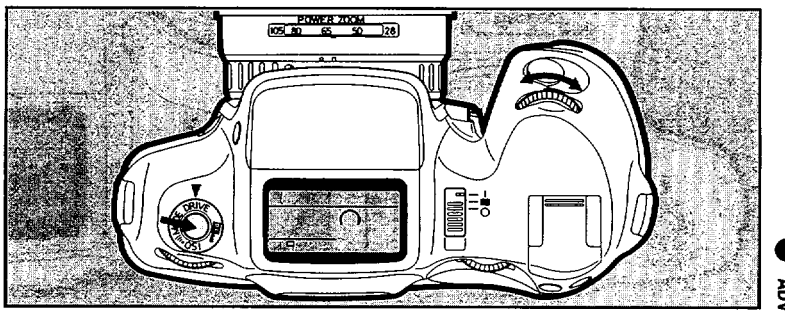
Types of Drive Modes

[□] : One picture is taken each time you press the shutter release button.
[ ] : Two or more pictures can be taken by holding down the shutter release button.
[ ] : Takes three pictures at different exposure levels. (See page 62.)
[ ] : Allows you to expose one frame up to nine times.(See page 64.)
[INT] : Allows you to take pictures at specified intervals. (See page 65.)
[ ] : Takes three pictures consecutively with the self-timer. (See page 70.)
[2s] : Takes a picture with a 2-second-delay self-timer. (See page 69.)
[ ] : Takes a picture with a 12-second delay. (See page 68.)

1



2

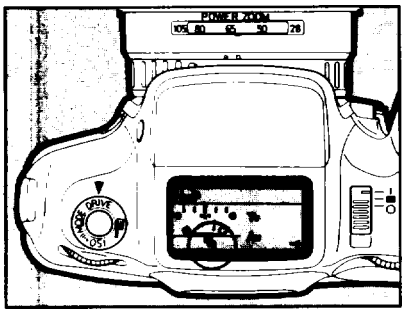


Changing the Drive Mode

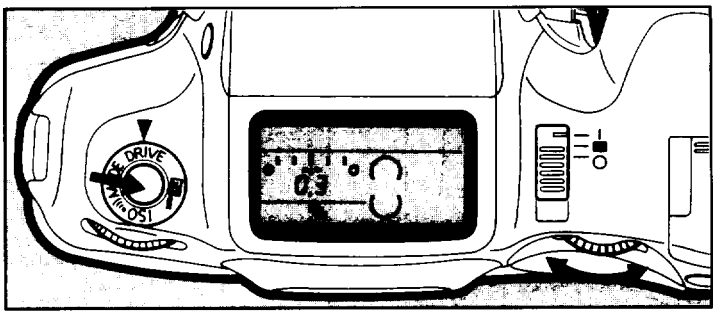
1. Set the mode dial to **[DRIVE]**.

2. While holding down the mode set button, turn the **Tv** direct dial to select a drive mode. When the desired drive mode appears on the LCD panel, release the mode set button.

1



2



1) Using the Auto Bracketing Mode

If you cannot decide the correct exposure when in an AE mode, use the auto-bracketing mode to make three bracketed exposures with different exposure levels.

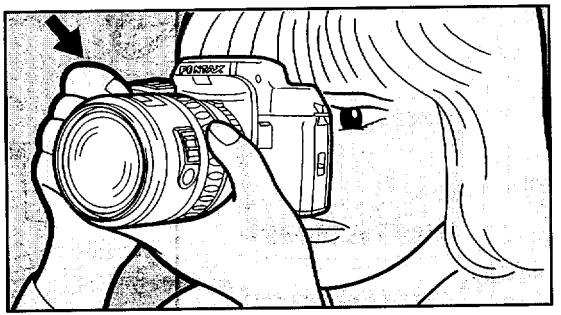
1. Set the mode dial to [**DRIVE**] and select the auto-bracketing drive mode [ ]. (See page 61.)

2. While holding down the mode set button, turn the **Av** direct dial to choose the desired exposure compensation value.

* The initial increment of exposure compensation is +0.3 EV. Using a Pentax function, you can change it to +0.5 EV. (See page 87.) This change is retained until you replace the battery.

* The exposure compensation is shown on the LCD panel. Select the desired compensation and release the mode set button so the camera memorizes this value.

3



3. When the shutter release button is pressed fully down, the camera automatically takes three pictures according to the memorized compensation value.

* The first frame is taken at the exposure level the meter indicates, the second is underexposed, and the third overexposed.

* If you press the shutter release button halfway after the first frame, [▣] blinks on the LCD panel to indicate that the camera is ready to take the second frame at any time. If you raise your finger off the button, [▣] blinks for 5 seconds and then stays on to indicate that the camera is ready to take another shot in the auto-bracketing mode.

* When the built-in flash is used, the auto-bracketing mode is switched automatically to the single-frame *drive* mode.

* A very small compensation value will have almost no effect when using negative film (especially in negative color auto development).

* In the auto-bracketing mode, the camera automatically measures the exposure for each shot.

* The camera-to-subject distance used for the first frame is carried over to the second and third frames.

Auto Bracketing Mode with the Exposure Compensation Function

You can combine the auto bracketing mode with exposure compensation (page 58) to compensate exposures only in the overexposure (+) or underexposure (−) direction.

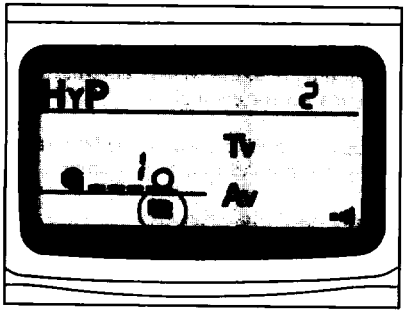
Example: Bracketing in 0.3 EV steps in the overexposure direction

1. Select the auto-bracketing mode and set the exposure compensation increment at 0.3 EV.

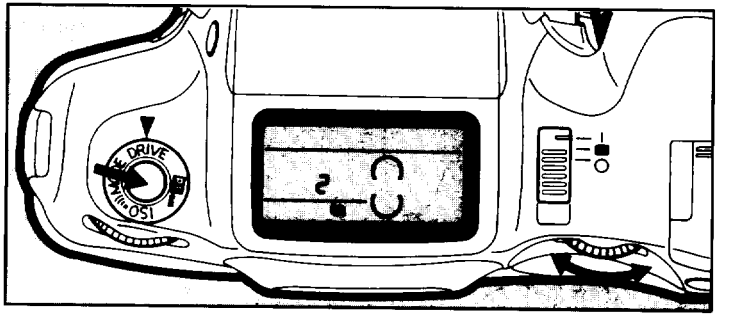
2. While holding down the exposure compensation button on the camera back, turn the **Tv** direct dial to change the overall exposure value by 0.3 EV in the overexposure (+) direction.

3. At this setting, the first frame is overexposed by 0.3 EV, the second frame is exposed at the exposure level indicated by meter, and the third frame is overexposed by 0.6 EV.

1



2



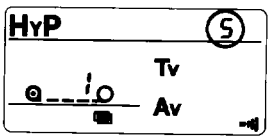
2) Using the Multi-Exposure Mode

With this function, you can take a number of overlapping images on a single frame.

1. Set the mode dial to **[DRIVE]** and change to the multi-exposure drive mode [▣]. (See page 61.)

2. While holding down the mode set button, turn the **Av** direct dial to set the multi-exposure count (up to nine images can be taken in one frame).

3. The selected multi-exposure count appears on the LCD panel, as shown in the illustration. This number is decremented each time the shutter is released.



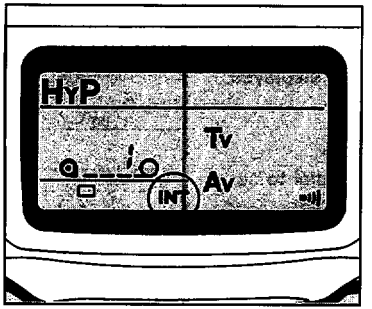
* While pictures are being taken in the multi-exposure mode, [▣] blinks on the LCD panel.

* To cancel the multi-exposure mode, change to another drive mode or set the main switch to [○] or [■]. If the main switch is used to cancel the multi-exposure mode, the single-frame mode is selected next time the main switch is set to [▌].

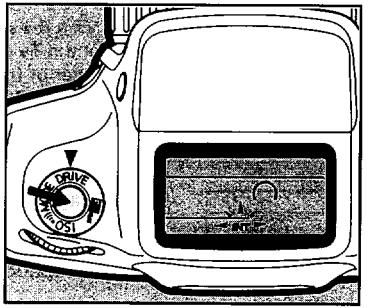
* For best results with multi-exposure mode, shoot a subject (such as a person) using flash against a dark background (such as a night scene).

* After all the exposures are taken, the multi-exposure count is reset to 2 and the multi-exposure mode is switched to the single-frame mode.

1



2



3

3) Using the Interval Shooting Mode

After setting the time to elapse until shooting starts, exposure interval, and the number of frames to be taken, the camera will take pictures automatically.

Settings

1. Set the mode dial to **[DRIVE]**. While pressing the mode set button, turn the **Tv** direct dial until the **[INT]** indication appears on the LCD panel. (See page 61.)

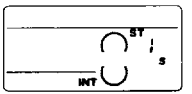
2. Hold the mode set button down for 2 seconds, causing **[INT]** to blink on the LCD panel, and then release the mode set button.

3. To set each item, turn the **Tv** direct dial as shown in the illustration. For details on the settings, see the next page.

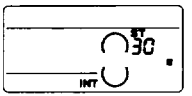
* When the setting is complete, press the mode set button to select the normal shooting mode again.

① **Setting the time until shooting starts**

1. Turn the **Tv** direct dial until **[ST]** is displayed on the LCD panel.

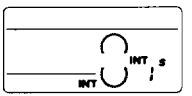


2. Turn the **Av** direct dial to set the unit of time before shooting starts.
* While this is being set, the unit of time (s, m, or h) blinks.

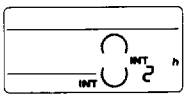


② **Setting the interval between exposures**

1. Turn the **Tv** direct dial until two **[INT]** indicators are displayed on the LCD panel.

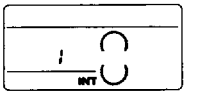


2. Turn the **Av** direct dial to set the unit of time between exposures.
* While this is being set, the unit of time (s, m, or h) blinks.

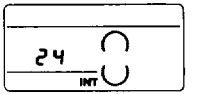


③ **Setting the number of frames**

1. Turn the **Tv** direct dial until the number of frames is displayed on the LCD panel.



2. Turn the **Av** direct dial to set the number of frames.
* When setting is complete, press the mode set button to select the shooting mode.

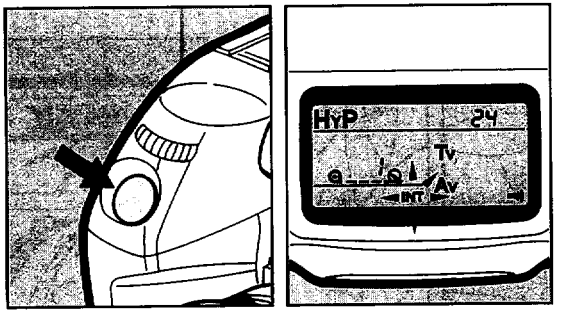


Setting Up Interval Shooting

(s: Seconds; m: Minute; h: Hour)

① Time until shooting starts and ② Exposure interval: 1 second to 24 hours (in 1-second steps between 1 second and 10 seconds, in 10-second steps between 10 seconds and 1 minute, in 1-minute steps between 1 minute and 10 minutes, in 10-minutes steps between 10 minutes and 1 hour, in 1-hour steps between 1 hour and 24 hours).

③ Number of frames: 1-36 frames



Starting the Interval Shooting Mode

Ensure that the camera is well supported (on a tripod preferably) and press the shutter release button fully down. The selected number of frames will be exposed at the set interval once the time until starting has elapsed.

* The camera-to-subject distance used for the first frame is also used for all succeeding frames, but the exposure level is automatically adjusted at each shutter release.

* While in the interval shooting mode, you can also press the shutter release button to make a normal exposure.

* During interval shooting, **[INT]** blinks on the LCD panel.

* After the selected number of frames have been exposed, the interval shooting mode is canceled and the single-frame drive mode is selected automatically.

* To cancel the interval shooting mode at any time, select another drive mode or set the main switch to [○] or [■].

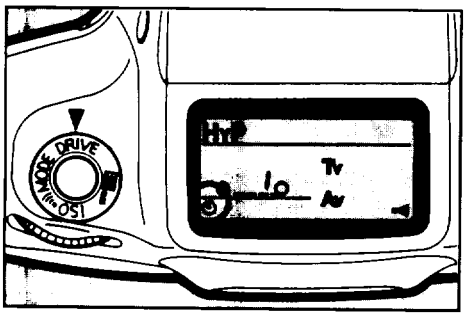
* When interval shooting is in progress, the interval timer can be stopped by keeping the mode set button pressed. If the mode dial is at **[DRIVE]**, holding down the mode set dial for more than 2 seconds allows you to set new start time, interval, and number of frames. After the new values have been set, the camera begins shooting according to these values.

* The interval shooting values are held until the battery is replaced. Remember to change them before starting interval shooting next time.

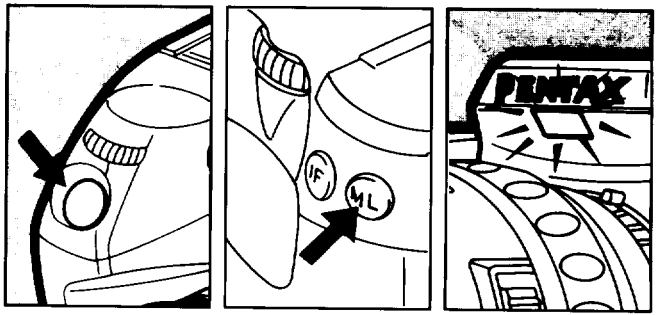
* If the film ends before the specified number of frames has been taken, it is rewound automatically (if automatic rewinding has been designated using a Pentax function).

* If you back away from the viewfinder during interval shooting, the exposure may be adversely affected by light entering the opening. Attach the viewfinder cap (supplied) when taking pictures with your eye away from the viewfinder.

1



2



4) Using the 12-Second-Delay Self-Timer Mode

The self-timer delays the release of the shutter, and is particularly useful for taking group shots including the photographer.

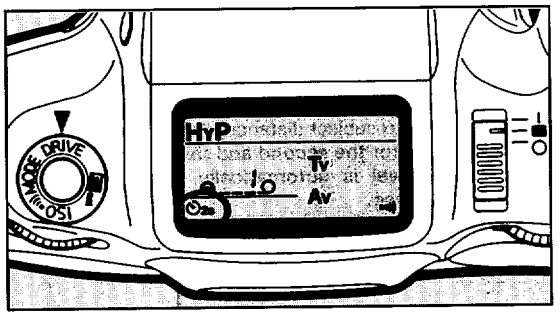
1. Set the mode dial to [**DRIVE**] and change to the self-timer drive mode [⏲]. (See page 61.)

2. While focusing on the subject with the shutter release button held halfway down, press the memory lock button [**ML**], and then press the shutter release button fully down. The shutter will actually be released about 12 seconds later.

* The self-timer lamp and an electronic beep indicate that the self-timer is operating. About two seconds before the shutter releases, the self-timer lamp starts blinking and the interval between beeps becomes shorter. The electronic sound can be switched off by clearing [◂))] on the LCD panel. (See page 95.)

* To stop the self-timer before the shot is taken, set the main switch to [○]. (The self-timer mode is not canceled.)

* If you back away from the viewfinder during self-timer shooting, the exposure may be adversely affected by light entering. Attach the viewfinder cap (supplied) when taking pictures without using the memory lock button [**ML**] in an AE mode.



5) Using the 2-Second-Delay Self-Timer Mode

When shooting objects at close range or copying pictures, you can use the 2-second-delay self-timer instead of using the Cable Switch F to prevent camera shake.

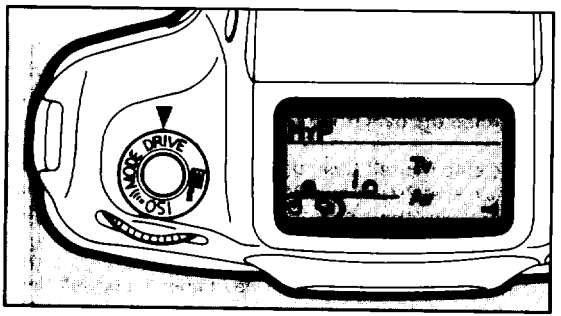
1. Set the mode dial to **[DRIVE]** and change to the 2-second-delay self-timer drive mode [$\overset{2s}{\circlearrowleft}$]. (See page 61.)

2. Focus on the subject and press the memory lock button **[ML]** in the same way as when using the 12-second-delay self-timer. Then press the shutter release button fully down. The shutter will be released about 2 seconds later.

* When the 2-second-delay self-timer starts, the self-timer lamp blinks and an electronic beep is sounded at short intervals. The electronic beep sound can be turned off by setting [•))]. (See page 95.)

* To stop the self-timer before the shot is taken, set the main switch to [○]. When the main switch is turned on again, the single-frame mode [□] is selected automatically.

* If you back away from the viewfinder during self-timer shooting, the exposure may be adversely affected by light entering the opening. Attach the viewfinder cap (supplied) when taking pictures without using the memory lock button **[ML]** in an AE mode.



6) Using the Triple-Frame Self-Timer Mode

In the triple-frame self-timer mode, three consecutive frames are taken about 12 seconds after the shutter release button is pressed. This mode allows you to get two additional prints of a group shot, for example, or three different pictures of yourself.

1. Set the mode dial to **[DRIVE]** and change to the triple-frame self-timer mode [⏲]. (See page 61.)

2. Start the triple-frame self-timer mode in the same way as the 12-second-delay self-timer, and press the shutter release button.

The timer releases the shutter at the following timings:

- 12 seconds later (First frame) → 2 seconds later (Second frame) → 2 seconds later (Third frame)

* The camera-to-subject distance used for the first frame is also used for the second and third frames, but the exposure level is automatically adjusted at each shutter release.

* After three frames, the single-frame mode [□] is selected automatically.

* When using flash, check that it is fully charged before starting the triple-frame self-timer. The second and third frames are taken 2 seconds after the flash has charged. If the flash takes 7 seconds or more to charge, this mode is canceled.

* To stop the triple-frame consecutive self-timer before all the shots are taken, set the main switch to [○]. When the main switch is turned on again, the single-frame mode [□] is selected automatically.

* If you back away the viewfinder during self-timer shooting, the exposure may be adversely affected by light entering the opening. Attach the viewfinder cap (supplied) when taking pictures without using the memory lock button **[ML]** in an AE mode.

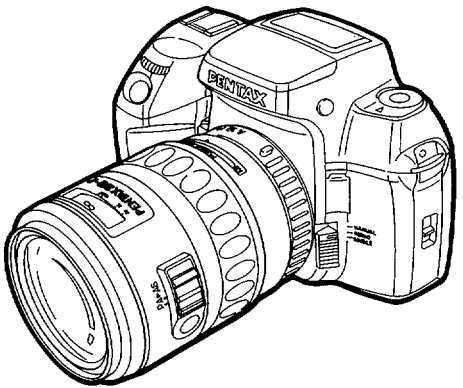
(7) EXTENDED POWER ZOOM FUNCTIONS

Using a Pentax-FA lens on this camera allows the following auto zoom functions to be used:

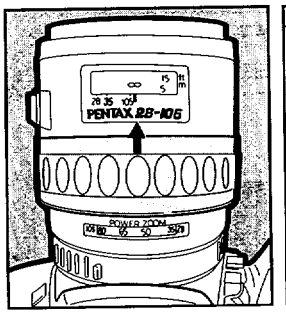
① Zoom-clip mode

② Image size tracking mode

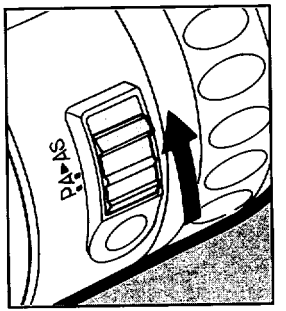
③ Auto zoom effect mode



1



2



Preparing to Use the Auto Zoom Function

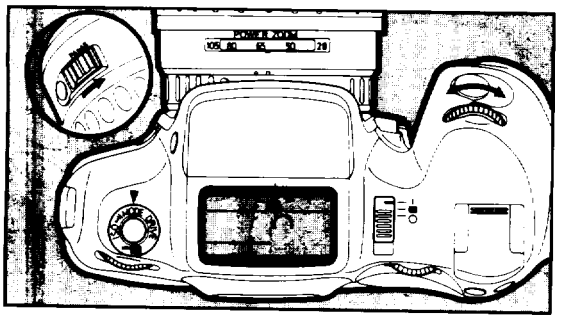
1. Push the power zoom ring forward until **[POWER ZOOM]** can be seen on the top of the lens as shown in the illustration.

* The power zoom ring is in this position when the camera is delivered from the factory.

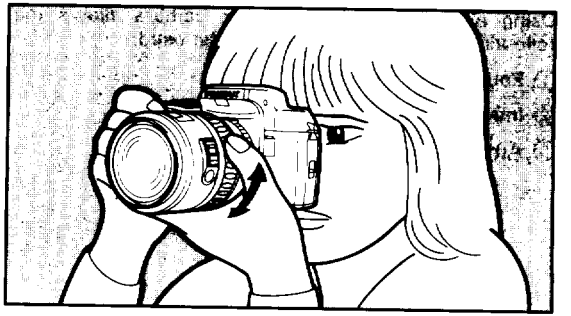
2. Set the auto zoom switch on the lens to **[A]**.

* The auto zoom functions are now ready for operation. For details of the available functions, see the corresponding page.

1



2



① Using the zoom-clip mode

In the zoom-clip mode, a pre-set focal length can be called up with a single touch of the zoom set button on the lens.
In this mode, you can take fast moving sports shots easily by storing the focal length for a desired picture area in the camera.

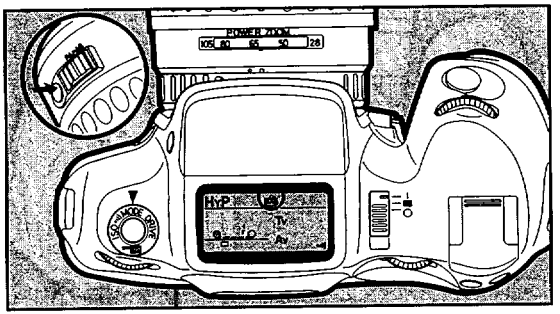
* Using a Pentax function, the camera can remember two focal lengths. Alternate between them by pressing the zoom set button. (See page 91.)

1. While holding the auto zoom switch toward **[AS]**, turn the **Tv** direct dial until [📷] blinks on the LCD display.

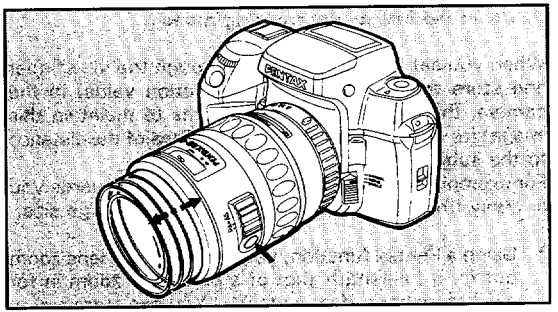
* To cancel the zoom-clip mode, return the auto zoom switch to [**P**].

2. Looking through the viewfinder, turn the power zoom ring until the desired focal length is obtained.

3



4



3. Now press the zoom set button on the lens, making [📷] light up. This indicates that the camera has stored the focal length.

* Whenever a new focal length is set, the previous focal length is cleared from the memory.

* Using a Pentax function, the camera can memorize two focal lengths. (See page 91.) The second focal length is set by carrying out steps 1 to 3 above. If the new first and second focal lengths are set, the previous focal lengths are cleared from memory.

* The focal lengths in memory are not cleared even if the main switch is set to [○]. They are cleared when the battery is replaced.

* If the lens is removed or replaced while the power switch is set to [▌] or [■], the focal lengths are cleared from memory. To avoid this, set the main switch to [○] in advance.

4. Press the zoom set button to call up a focal length from memory. Then press the shutter release button.

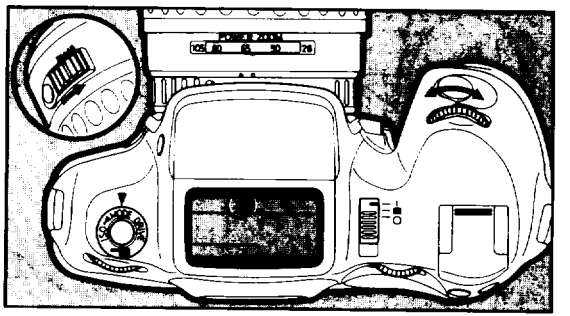
* If two focal lengths have been stored using a Pentax function (see page 91.), they are called up alternately by pressing the zoom set button.

② Using the image size tracking mode

When you set up a composition through the viewfinder and store the image size (magnification value) in the camera, the lens automatically zooms to maintain this image size (magnification value) regardless of the distance to the subject.
For example, you can shoot a child moving towards you or away from you without a change in the image size.

* Using a Pentax function, you can make the lens zoom out for a full-length shot of a person or zoom in for a waist-up shot. (See page 91.) You can store a new image size in the camera regardless of the Pentax function setting. (This image size is cleared when the main switch is set at [○].) When the main switch is set to [▌] or [■] again, the selected image size (full-length or waist-up shot) previously set using a Pentax function is restored.

1

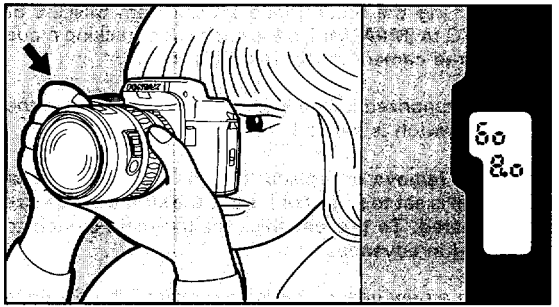


1. While holding the auto zoom switch toward **[AS]**, turn the **Tv** direct dial until [🏃] is displayed on the LCD display.

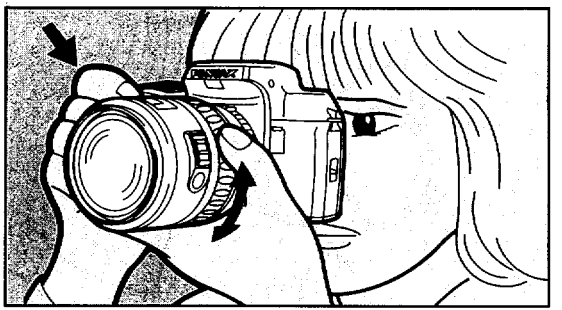
* The image-size tracking mode cannot be used when the focus mode switch is set to **[MANUAL]**.

* To cancel the image-size tracking mode, move the auto zoom lever to **[P]**.

2



3



2. Press the shutter release button halfway down to focus on the subject and keep the in-focus indicator [⬡] in the viewfinder on.

* The lens automatically zooms to the previously memorized image size.

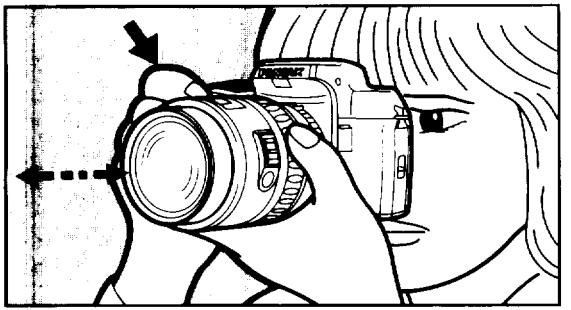
3. While holding the shutter release button halfway down, turn the power zoom ring to obtain the desired image size. The camera stores this new image size.

* Zooming the lens after it has focused on a subject may alter the focus slightly. Should this happen, raise your finger off the shutter release button and press it halfway down again to re-focus.

* Using this function with the focus mode switch at **[SINGLE]** makes it easier for the camera to memorize the image size.

* If the focus mode switch is set to **[SERVO]**, the image size of a moving subject can be easily stored. While pressing the zoom set button, focus on the subject continuously with the shutter release button pressed halfway down, then release the zoom set button when the desired subject size is obtained.

4



4. While the shutter release button is held halfway down, the lens automatically zooms to maintain the same image size. When the camera stops zooming, press the shutter release button fully down.

* Pressing the shutter release button to take the shot while the lens is zooming will yield an image size different from the preset one. Wait until the camera stops zooming.

* If the subject is too near or too far, the specified image size will not be obtained because it is out of range of the zoom lens. Additionally, since the stored image size applies only to the lens currently in use, the specified image size may not be obtained if the lens is changed.

* Switching the focus mode switch from SINGLE or SERVO to [**MANUAL**] in the image size tracking mode puts the camera in the zoom clip mode.

* The memorized image size is not erased even if the main switch is set to [○].

* If you remove or replace the lens while the power switch is set to [▌] or [■], the stored image size is cleared. To prevent this, set the main switch to [○] in advance.

* When a new image size is memorized, the previous size is cleared from memory.

* When defining the image size, setting the lens to the middle of its focal length range will give the greatest versatility. For example, with a 28 - 105mm lens, set the focal length to around 65mm.

* Removing the battery will clear the stored image size.

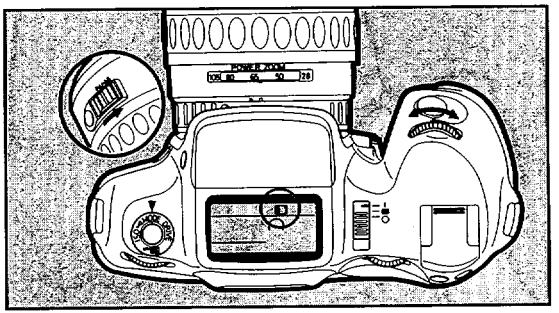
③ Using the Zoom Effect Mode

In the zoom effect mode, the camera zooms the lens from wide-angle to telephoto during the exposure, creating a special effect in which the subject diffuses radially outward.

* Using a Pentax function, you can reverse the zooming direction. (See page 92.)

* In the zoom effect mode, leading-shutter curtain synch flash is selected for the flash even if trailing-shutter-curtain synch flash has been selected.

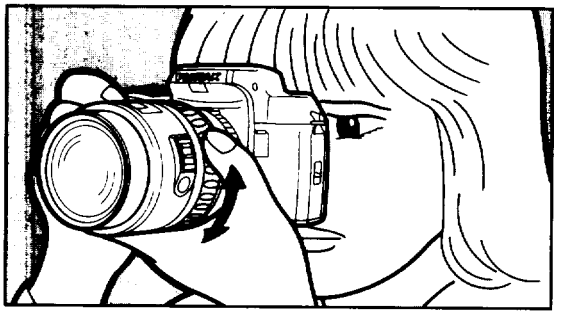
1



1. While holding the auto zoom switch toward **[AS]**, turn the **Tv** direct dial until [◘] is displayed on the LCD panel.

* To cancel the zoom effect mode, set the auto zoom switch to **[P]**.

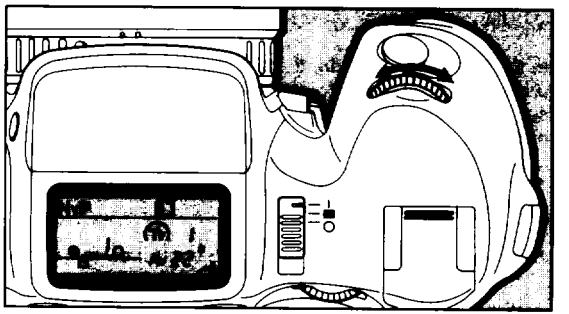
2



2. Turn the power zoom ring to a wide-angle setting.

* If zooming from telephoto to wide-angle has been specified using a Pentax function, turn the power zoom ring to a telephoto setting.

3

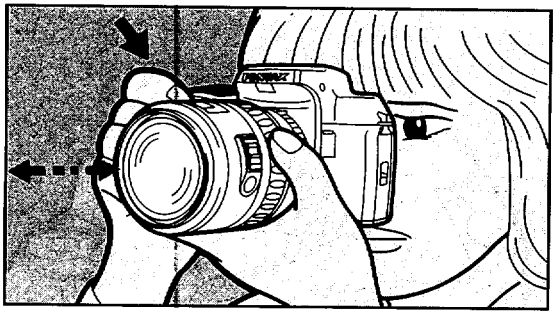


3. To emphasize the effect, choose an exposure setting with the slowest possible shutter speed.

* In the Hyper Programmed AE or Programmed AE mode, an exposure is automatically chosen which makes the shutter speed as slow as possible.

* When half the designated exposure time has elapsed, zooming starts automatically. For example, if the shutter speed is 1 second, zooming starts 0.5 seconds after the shutter is released.

4.



4. Press the shutter release button fully down. The lens zooms according to the set shutter speed, creating a dynamic zoom effect.

* A fast shutter speed reduces the zooming time and almost no zoom effect is obtained. For example, a 28-105mm zoom lens takes about 1 second to zoom from the 28mm position to the 105mm position. That is, a shutter speed of at least 2 seconds is required for a full zoom effect to be produced. If the shutter speed is too slow, the shutter remains open after zooming has been finished, creating two images of one subject in two different sizes on a single frame.

* If the zooming range is too large, the image becomes difficult to see.

* In the zoom effect mode, the lens zooms at its maximum zooming speed.

* Use of a tripod is recommended because of slow shutter speed used in the zoom effect mode.

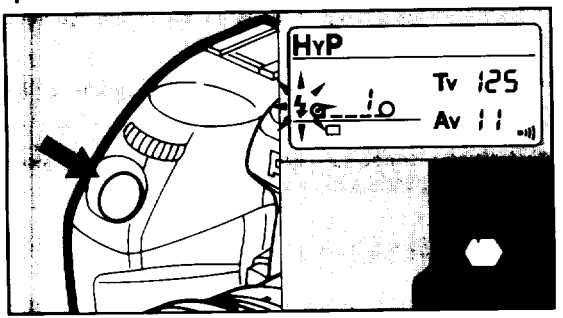
About Manual Zoom Effects

If power zooming during exposure is enabled using a Pentax function (see page 92.), the focal length can be changed with the power zoom ring during exposure. Interesting images can be created by adjusting the zooming speed and timing manually.

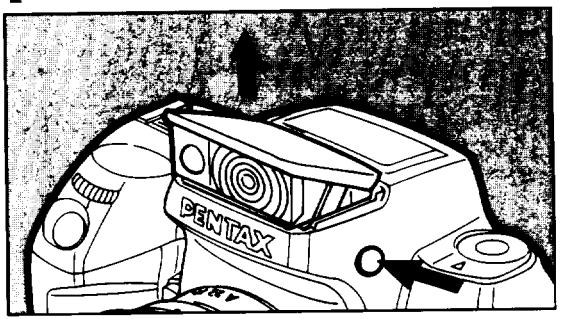
* To create manual zoom effects, set the auto zoom switch to [P] (as for the ordinary power zoom function).

(8) USING THE BUILT-IN FLASH (RTF)

1



2



When you pop up the built-in flash of this camera in a dark or backlit situation, the camera chooses the optimum combination of shutter speed and aperture. This allows you to do complicated flash photography with ease.

1. Select the Hyper Programmed AE mode and press the shutter release button halfway down.

* In a dark or backlit situation, [ϟ] on the LCD panel and [[ϟ]] in the viewfinder will blink to recommend the use of flash.

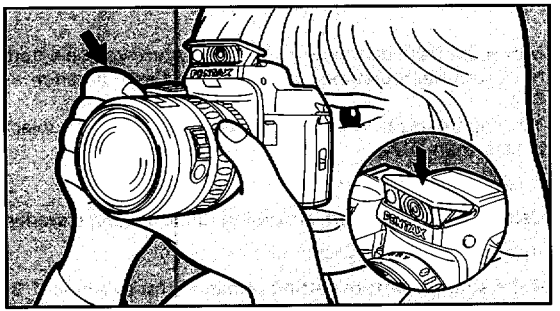
2. Press the flash pop-up button.

* The flash starts charging automatically. When fully charged, [ϟ] lights up on the LCD panel. In addition, [[ϟ]] lights up in the viewfinder when the shutter release button is pressed halfway down.

* If the focus mode switch is set to **[SERVO]**, the flash does not charge while the shutter release button is pressed halfway down.

* Using a Pentax function, you can override shutter release while the flash is being charged. (See page 89.)

3



3. Press the shutter release button fully down.

* The shutter speed ranges from 1/250 to 1/30 second. The slowest shutter speed depends on the focal length of the lens fitted to the camera (FA and F lenses only).

* After shooting with the flash, retract the built-in flash into the camera body by pushing it in the direction indicated by the arrow.

When in Shutter-Priority AE Mode

Using the flash at shutter speed of 1/250 second or slower allows you to freeze images of fast-moving subjects.
In the Shutter-Priority AE mode, the aperture setting automatically changes according to the ambient brightness, making flash photography simple.

* When the Hyper Programmed AE mode is changed to the Shutter-Priority AE mode by turning the **Tv** direct dial, the shutter speed can be set from 1/250 second up to the value that results in the minimum aperture setting.

* If the automatic shift in shutter speed has been overridden using a Pentax function, the shutter speed can be set anywhere within the range 1/250 to 30 second.

When in Aperture-Priority AE or Hyper Manual Mode

To take pictures with a selected in-focus depth of field, the flash can be discharged at a specific aperture.
In the Aperture-Priority AE mode, the shutter speed changes with the ambient brightness, making flash photography simple.

* The shutter speed changes within the range 1/250 to 1/30 second. The slowest shutter speed depends on the focal length of the lens fitted to the camera (FA and F lenses only).

* When the Hyper Programmed AE mode is changed to the Aperture-Priority AE mode with the **Av** direct dial, any aperture can be set within the shutter speed range depending on the focal length of the lens fitted to the camera.

* If the automatic shift of shutter speed is overridden using a Pentax function, any available lens aperture can be selected.

Calculating Flash Distance According to the Selected Aperture

Maximum flash distance = GN ÷ Aperture you selected
Minimum flash distance = Maximum flash distance ÷ 4.9
You cannot use the flash when the distance to the subject is less than 0.7m.

* GN: Guide Number

Calculating the aperture according to the subject distance

Aperture = GN ÷ Distance to subject

If the actual aperture setting obtained (for example, f/3) does not exist on the aperture ring, choose the next smallest aperture setting (f/2.8 in this case).

The guide numbers for different film speeds are as follows:

ISO25 → GN7	ISO200 → GN20
ISO50 → GN10	ISO400 → GN28
ISO100 → GN14	

If an ISO 100 film is used at an aperture of f/3.5, the flash distance is obtained as follows:

GN14 ÷ f/3.5 = 4
4 ÷ 4.9 = Approx. 0.8

Pictures can be taken using the flash within the distance range 0.8m to 4m.

Daylight Synchronization Function

In the Hyper Programmed AE, Programmed AE, Shutter-Priority AE, or Aperture-Priority AE mode, the shutter speed or aperture changes according to the ambient brightness. Simply using the flash invokes the daylight synchronization function, which would otherwise require complicated exposure control.

About Slow-Speed-Synch

1. Turn the **Tv** direct dial to switch from the Hyper Programmed AE mode to the Shutter-Priority AE mode.

* This operation is not necessary if the Shutter-Priority AE mode has already been selected. However, if the aperture setting on the LCD panel and in the viewfinder blinks, the correct aperture is not available. Adjust the shutter speed until the aperture setting stops blinking.

2. Select the desired shutter speed.
3. Press the flash pop-up button.
4. Take the photo.

* In the slow-speed synch mode, use a tripod to prevent camera shake.

* The slow-speed synch is also possible in the Hyper Manual mode.

About the AF Spot Beam

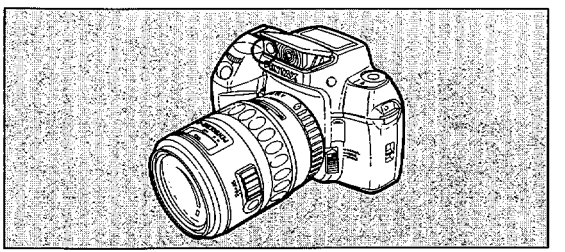
The accuracy of the autofocus system is reduced in the dark. When the shutter release button is pressed halfway down after popping up the flash, a red beam (AF spot beam) is projected to help the camera accurately focus on any subject within a 1m to 4m range.

* The AF spotbeam can be used when a KAF2- or KAF-mount lens or other lens (A or M lens) is combined with an AF adapter 1.7x in the AF-Single mode.

* If you do not wish to use flash, first lock the focus with the flash released and then retract the built-in flash.

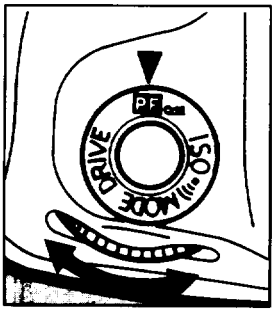
* If the external flash unit in use projects an AF spotbeam as in the case of the AF330FTZ, the built-in AF spotbeam does not operate.

* The AF spotbeam will not project in a bright place.

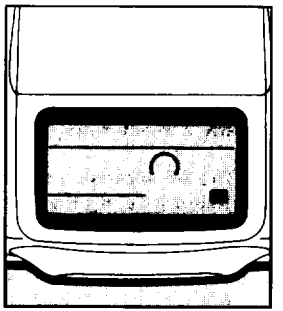


(9) PENTAX FUNCTIONS [PF]

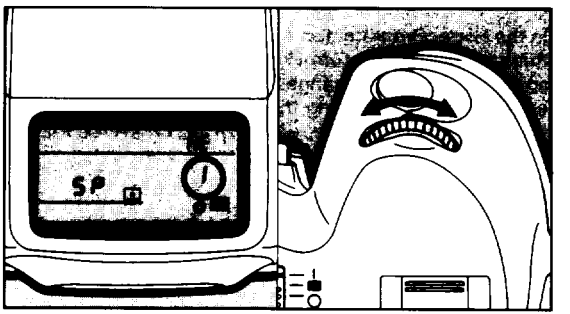
1



2



3

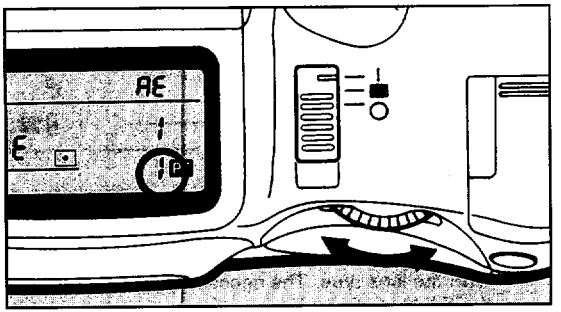


This camera incorporates 18 Pentax functions which can be used to customize camera functions to your taste and convenience.

Setting Pentax Functions

1. Set the mode dial to [PF].
2. While holding down the mode set button, turn the **Tv** direct dial to clear [0 ___ O]. Then release the mode set button.
3. Turn the **Tv** direct dial to select the desired Pentax function number.

4



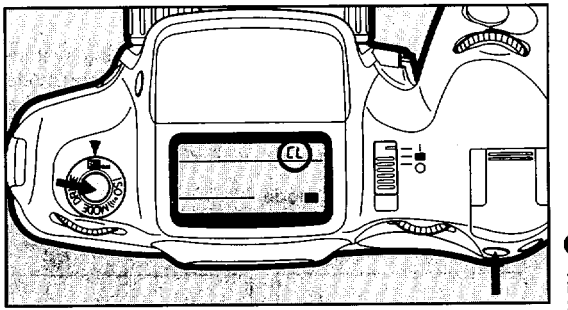
4. Turn the **Av** direct dial to set the status of the chosen Pentax function.

* The status of a Pentax function is usually either 0 or 1. For some Pentax functions, select from 0, 1, 2, and 3. For further details, see the description of each Pentax function.

* Upon delivery from the factory, the status of all Pentax functions is set to zero.

* After setting the desired Pentax functions, turn the mode dial to a position other than [PF⊙⎓].

*



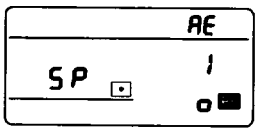
* **Initializing Pentax functions**

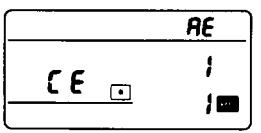
Set the mode dial to [PF⊙⎓]. While holding down the mode set button, turn the **Tv** direct dial to clear [⊙___⊙]. Depressing the [IF] button with the mode set button held down will bring up [CL] on the LCD panel to indicate that the Pentax functions have been reset.

① Selecting the spot or center-weighted metering system

Details:
Select the spot or center-weighted metering system when switching from multi(8)-segment metering mode using the metering mode button. Upon delivery, the spot metering system is selected.

Settings:
0 = Spot metering mode
1 = Center-weighted metering mode

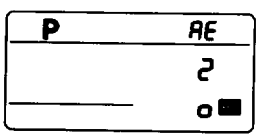


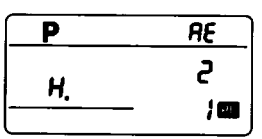


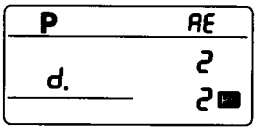
② Selecting a program line

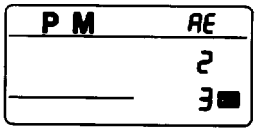
Details:
Select the program line to be used in the Programmed or Hyper Programmed AE mode. Upon delivery, the normal program line is selected.

Settings:
0 = Normal program line
1 = Program Action line (High-speed-shutter-priority)
2 = Program Depth line (Depth-of-field-priority)
3 = MTF Program line









Remarks:
* Select the normal program line for general photography. See the programmed AE diagram on pages 114 and 115. (The MTF Program line varies with the lens type. The necessary data is stored in the FA lens in use.)

* The Program Action line is programmed to choose the fastest possible shutter speed.

* The Program Depth line is designed to obtain the greatest depth of field possible.

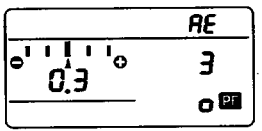
* The MTF Program line is effective when combined with an FA lens. It is programmed to choose the aperture at which the lens is sharpest.

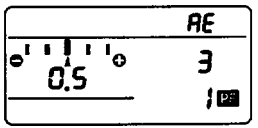
* When the main switch is set to [■], the normal program line is always followed.

③ Selecting the exposure compensation increment

Details:
Select an exposure compensation increment of 0.3 or 0.5 EV. Upon delivery, 0.3 EV is selected.

Settings:
0 = 0.3 EV
1 = 0.5 EV

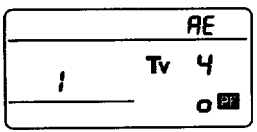


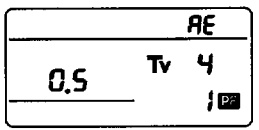


④ Selecting the shutter speed increment

Details:
Select a shutter speed increment of 1 or 0.5 EV. Upon delivery, 1 EV is selected.

Settings:
0 = 1 EV
1 = 0.5 EV

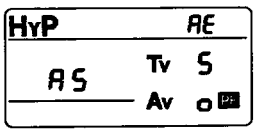


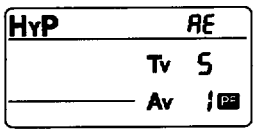


⑤ Selecting the type of automatic Tv/Av shift in the Hyper Programmed AE mode

Details:
Choose whether the shutter speed (**Tv**) or the aperture setting (**Av**) should shift automatically for a correct exposure, or only a warning should be indicated without **Av** and **Tv** being shifted (in this case the correct exposure will not be obtained). This occurs when the shutter speed or aperture value assigned by the Hyper function exceeds the coupling range in the Hyper Programmed AE mode. Upon delivery, auto shutter speed/aperture shift is selected.

Settings:
0 = The shutter speed (**Tv**) or aperture setting (**Av**) will shift automatically.
1 = A warning will be issued and the shutter speed (**Tv**) or aperture setting (**Av**) will not shift automatically.

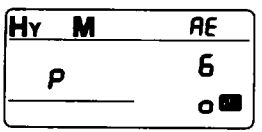


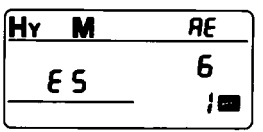


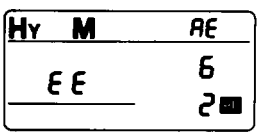
⑥ **Selecting the type of Tv/Av shift made when the [IF] button is pressed in the Hyper Manual mode**

Details:
Select the method used to set the correct exposure with the [IF] button when the aperture ring is set to [**A**] in the Hyper Manual mode. Upon delivery, the proper exposure level is taken from the program line.

Settings:
0 = The correct exposure level is taken from the program line.
1 = The aperture setting (**Av**) is fixed and the shutter speed (**Tv**) is shifted to obtain the correct exposure level.
2 = The shutter speed (**Tv**) is fixed and the aperture setting (**Av**) is shifted to obtain the correct exposure level.



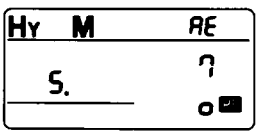


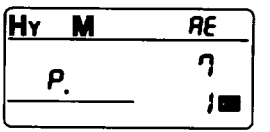


⑦ **Selecting the type of Tv/Av values used when the [IF] button is pressed in the Hyper Manual mode**

Details:
Select stepped or stepless values of shutter speed (**Tv**) and aperture setting (**Av**) for adjusting the exposure in the Hyper Manual mode. Upon delivery, stepped values are selected.

Settings:
0 = The shutter speed (**Tv**) and aperture setting (**Av**) are adjusted in steps.
1 = The shutter speed (**Tv**) and aperture setting (**Av**) are adjusted continuously.

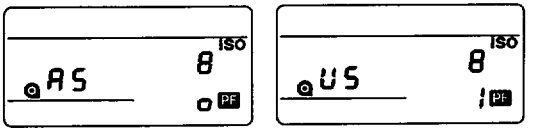




⑧ **Selecting the method of film speed setting**

Details:
To choose whether the film speed (ISO) is set automatically according to the DX code or manually set by the user. Upon delivery, automatic DX setting has priority.

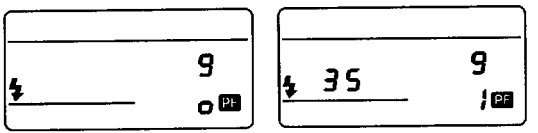
Settings:
0 = Automatic setting of film speed (ISO) according to the DX code has priority.
1 = Manual setting of film speed (ISO) by the user has priority.



⑨ Selecting the built-in flash discharge mode

Details:
To choose whether or not the built-in flash is to automatically fire when a warning is issued to indicate that the lens range is not covered by the built-in flash.

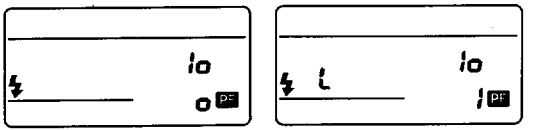
Settings:
0 = Built-in flash fire.
1 = Built-in flash does not fire.



⑩ Selecting whether or not the shutter will release before the built-in flash is fully charged

Details:
Selects whether the shutter can be released before the built-in flash is fully charged or if release is locked until charging is complete. Upon delivery, the shutter is allowed to release even if the flash is not fully charged.

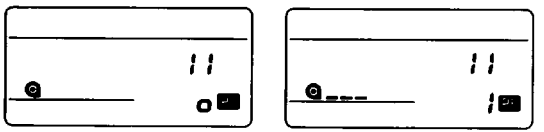
Settings:
0 = The shutter can be released before the built-in flash charges completely.
1 = Shutter release is locked until the built-in flash charges completely.



⑪ Adjusting the film rewind

Details:
Choose whether the film leader rewinds completely into the cartridge or is left slightly unwound. Upon delivery, complete rewinding is selected.

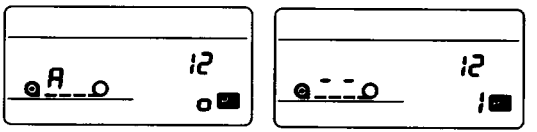
Setting:
0 = The film is rewound completely into the film cartridge.
1 = The film leader is left outside the cartridge.



⑫ Selecting the film rewinding mode

Details:
Choose whether the film rewinds automatically or manually (as for mid-roll rewinding) when it reaches the end of the roll. Upon delivery, automatic rewinding is selected.

Settings:
0 = Automatic start of rewinding
1 = Manual start of rewinding

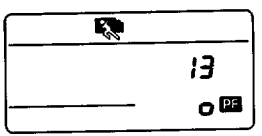


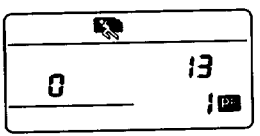
Remarks:
If manual rewinding [**1**] is selected, the exposure count and film transport mark blink when the end of the film is reached. The only operation possible then is to rewind the film. Manually rewind the film with reference to "Rewinding the Film in Mid-Roll" (on page 21).

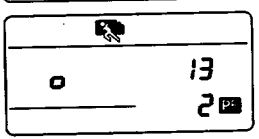
⑬ Selecting the initial magnification in the Image Size Tracking mode

Details:
Choose the image magnification to be used until a new image size (magnification) is set when in the Image Size Tracking mode. Upon delivery, the previously stored image size is used.

Settings:
0 = The previously stored image size.
1 = The initial magnification is set to take a full-size shot of a person.
2 = The initial magnification is set to take a waist-up shot of a person.







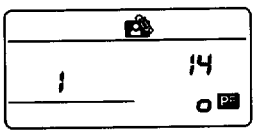
Remarks:
The chosen initial magnification is used when the main switch is turned on next time.

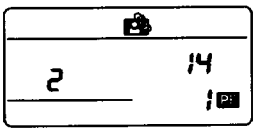
* If [0] is selected, replacing the battery will erase the previous data and set the initial magnification to take a waist-up shot, in the same way [2] is selected.

⑭ Selecting the number of focal length settings memorized in the zoom clip mode

Details:
Select whether the zoom-clip mode is to store 1 or 2 focal length settings. Upon delivery, one focal length is selected.

Settings:
0 = One focal length setting.
1 = Two focal length settings.

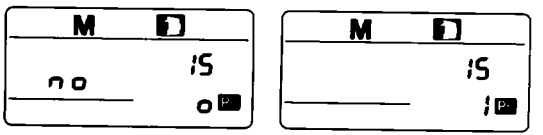




⑮ Selecting power zoom operation

Details:
To choose whether the power zoom ring can be used during an exposure (while the shutter is open) after pressing the shutter release button fully down. Upon delivery, the power zoom ring is disabled.

Settings:
0 = Power zoom ring disabled.
1 = Power zoom ring enabled during exposure.

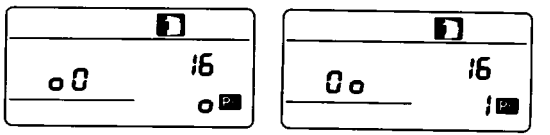


Remarks:
To use the power zoom function during exposure with the setting of [**1**], set the auto zoom switch on the lens to [**P**] position.

⑯ Selecting the zoom direction in the zoom effect mode

Details:
To choose whether the lens automatically zooms from wide-angle to telephoto or vice versa. Upon delivery, the lens zooms from wide-angle to telephoto.

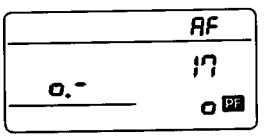
Settings:
0 = The lens zooms from wide-angle to telephoto.
1 = The lens zooms from telephoto to wide-angle.

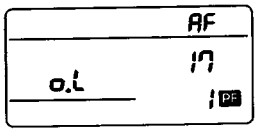


⑰ Selecting function of the [ML] button

Details:
When the focus mode switch is set to **[SINGLE]** and the **[ML]** button is pressed, determine whether the subject is focused automatically (and the focus is locked) before the exposure is fixed or only the exposure is fixed. Upon delivery, only the exposure is fixed.

Settings:
0 = When the **[ML]** button is pressed, only the exposure is fixed without autofocusing.
1 = When the **[ML]** button is pressed, the exposure level is fixed after autofocusing (and locking the focus).

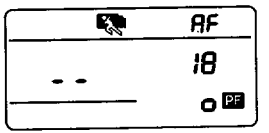


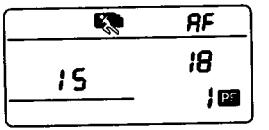


⑱ Selecting the shutter release timing in image size tracking mode

Details:
To choose whether the shutter is to release when the subject comes into focus or not to until the subject's size becomes constant in the Image Size Tracking mode with the focus mode switch set to **[SINGLE]**. Upon delivery, the shutter releases when the subject comes in focus.

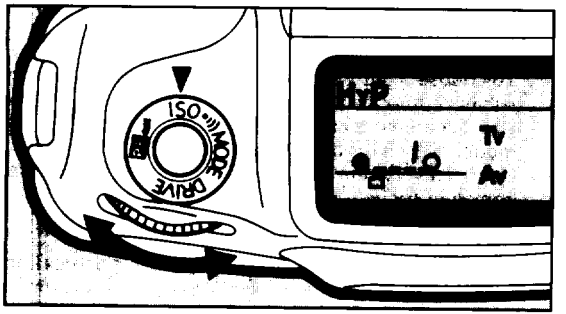
Settings:
0 = The shutter releases when the subject comes into focus even if the image size is not constant.
1 = The shutter releases when the image size is constant.



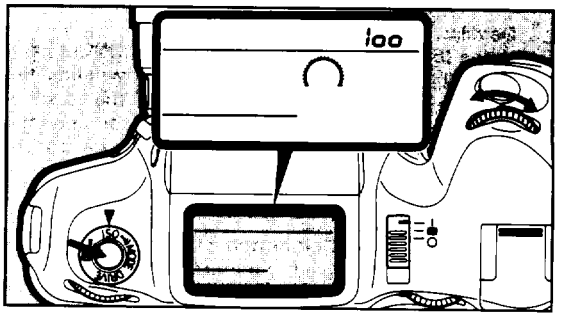


(10) SETTING THE FILM SPEED (ISO) MANUALLY

1



2



This camera reads the speed from a loaded film's DX code. However, the film speed setting can be changed. If you use a non-DX-coded film, set the film speed manually.

* Using a Pentax function, manual setting of the film speed can have priority over the auto film setting with the DX-coded film.

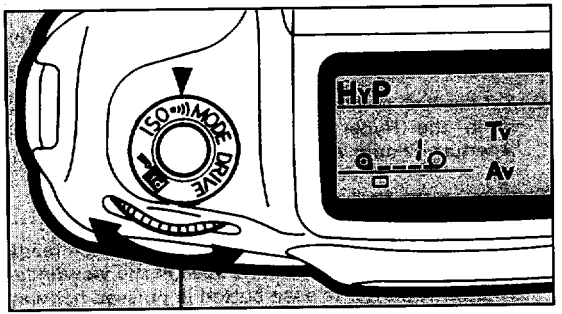
Manually Changing Film Speed

1. Set the mode dial to [**ISO**].
2. While holding down the mode set button, turn the **Tv** direct dial to set the desired film speed (ISO).

* To display the current film speed (ISO), press the mode set button after setting the mode dial to [**ISO**].
* If the film speed according to the DX code is different from the manually set film speed, [**ISO**] appears on the LCD panel.
* If a non-DX-coded film is used, the previously-set film speed is used.

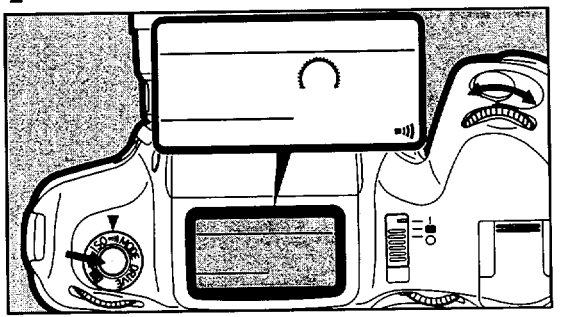
(11) STOPPING THE ELECTRONIC BEEP

1



This camera issues an electronic beep sound when a subject comes into focus and during self-timer operation.

2



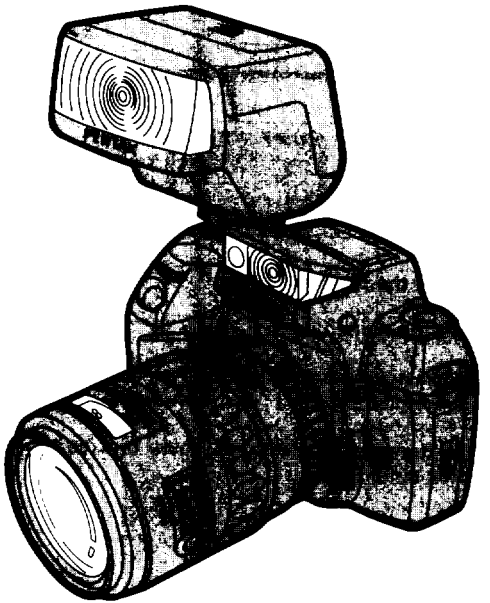
Stopping the Electronic Beep

1. Set the mode dial to [ )))].
2. While holding down the mode set button, turn the **Tv** direct dial to clear [ )))] from the LCD panel.

* To turn on the electronic beep, reverse the above procedure.

(12) USING A PENTAX DEDICATED EXTERNAL FLASH

If the built-in flash is not powerful enough, a Pentax dedicated external flash should be used.



Using the Flash in TTL Auto Mode

1. Remove the hot shoe cover and attach the Pentax dedicated flash.
2. Set the flash to the TTL Auto mode. Ensure the camera is in the Hyper Programmed, Programmed, or Aperture-Priority AE mode.
3. Turn on the flash.
4. Check that the flash charges. When the flash ready lamp lights up, [ϟ] can be seen in the viewfinder when the shutter release button is pressed halfway down.

* After charging, a shutter speed within the range 1/250 to 1/30 second is automatically selected depending on the ambient brightness. The slowest shutter speed depends on the focal length of the lens (FA and F lenses only).

5. Focus on the subject and shoot.

* In the Shutter-Priority AE or Hyper Manual mode, slow-shutter-speed-sync photography is enabled (see page 83.).

* Quantum Turbo Batt. Pack QTB with CN3 cord

Overview of Flash Functions

Quantum Ph # 516-222-0611

Camera function	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E
After charging, the camera automatically selects the flash sync speed.	○	○	○	○	○
The aperture is set automatically in the Hyper Programmed, Programmed, or Shutter-Priority AE mode.	○	○	○	○	Note 1
Flash confirmation in the viewfinder		○	○		
TTL auto flash mode	○	○	○	○	
Slow-speed synchronization in Hyper Manual or Shutter-Priority AE mode	○	○	○	○	○
AF spotbeam	○	○	○		
Trailing-shutter-curtain sync (Note 2)	Note 3	○	○		
Contrast-control flash mode		○			

Notes:
1. Only the AF200SA flash allows automatic aperture setting.
2. The shutter speed is 1/125 second or slower.
3. When combined with flash types B or C, trailing-curtain sync is enabled.

Type A: Built-in flash
Type B: AF330FTZ
Type C: AF400FTZ, AF240FT
Type D: AF400T, AF280T, AF200T, AF140C, AF080C
Type E: AF260SA, AF240Z, AF200SA, AF200S, AF160SA, AF160, AF140

* If using an older type flash unit, such as the AF140, AF160, or AF200S, set the aperture according to the calculator board on the back of the flash unit.

Caution:
* Use of non Pentax flash units may damage the camera. For the best results, use a Pentax dedicated flash unit.

* OR "PENTAX" TR Power Pack II
Holds 6 "C" Size Batt.

AF330FTZ

- This flash unit can be used for daylight-sync photography because the shutter speed and aperture are adjusted according to the ambient brightness.
- If focusing on a subject is difficult in low light, the camera automatically projects an AF spotbeam to accurately measure the distance to the subject.
- This flash unit has an auto zoom feature. The angle of its discharge automatically changes according to the focal length of the lens in use.
- This flash unit has a contrast-control flash mode. (See page 99.)
- If the camera is in the Hyper Programmed, Programmed, Shutter-Priority, or Aperture-Priority AE mode, the TTL auto flash control system operates even if the flash unit is in the manual mode.
- If the flash is not used within about 3 minutes after charging, it is turned off automatically. Pressing the shutter release button halfway down will recharge the flash unit again.

AF240FT and AF400FTZ

- These flash units can be used for daylight-sync photography because the shutter speed and aperture are adjusted according to the ambient brightness.
- If focusing on a subject is difficult in low light, the camera automatically projects an AF spotbeam to accurately measure the distance to the subject.
- If the camera is in the Hyper Programmed, Programmed, Shutter-Priority, or Aperture-Priority AE mode, the TTL auto flash control system operates even if the flash unit is in the manual mode.
- If the flash is not used within about 5 minutes after charging, it is turned off automatically. Pressing the shutter release button halfway down will charge the flash unit again.

AF200T, AF280T, and AF400T

- If the TTL auto mode is selected, these flash units can be used for daylight-sync shooting, because the shutter speed is adjusted (1/250 to 1/60 second) according to the ambient brightness.

- When using the Three-Level Auto (red, green, and yellow settings) mode, the aperture value is adjusted as shown in the table and the shutter speed also varies within the range 1/250 to 1/60 second.

	AF200T	AF280T	AF400T
Red	f/2.8	f/4	f/4
Green	f/5.6	f/8	f/8
Yellow			f/11

(ISO 100)

Notes on the Use of Pentax Dedicated Flash Units

1) When using a type D flash unit in the MS (Manual Sync) or M (Manual) mode, adjust the aperture according to the calculator board on the back of the flash unit.

2) A Pentax dedicated flash unit has priority over the built-in flash unit when both are used. Before releasing the shutter, make sure that both flash units are charged.

Contrast-Control Flash Photography

Using the AF330FTZ in combination with the built-in flash allows twin-flash photography (contrast-control flash photography). This is based on the difference between the amount of light discharged from the two units. The AF330FTZ gives out twice as much light as the built-in flash unit.

1. Put the AF330FTZ in the contrast-control flash mode.

2. Ensure that both flash units are charged and then shoot.

* Separating the AF330FTZ from the camera increases the effect of contrast control. Use an optional "Hot Shoe Adapter F" (two) and "Extension Cord F5P."

If an accessory with a different number of contacts is used, such as a Hot Shoe Grip, a malfunction may occur.

* In the contrast-control flash mode, the shutter speed is fixed at 1/60 second. However, a shutter speed of 1/60 or slower can be set in the Hyper Manual mode, the Shutter-Priority AE mode, or the Shutter-Priority AE mode switched from the Hyper Manual mode.

(13) ACCESSORIES

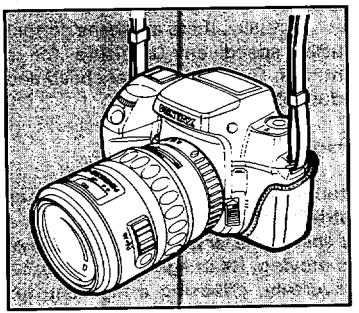
1) Accessories (Optional)
Various accessories are available for this camera. For details, please see our brochures.

- **Cable Switch F**
A shutter release cable for the Z-1/PZ-1, Z-10/PZ-10, SFXN/SF1N and SF7/SF10.
- **Magnifier Fs**
A close-up accessory for magnifying the central area of the viewfinder.
- **AF330FTZ Flash**
An auto zoom flash unit with an AF spotbeam (guide number = 33) which allows contrast-control flash and leading-/trailing-curtain-sync photography.
- **AF240FT and AF400FTZ Flashes**
Auto flash with AF spotbeam, guide number 24 for AF240FT and guide number 40 for AF400FTZ. AF400FTZ also incorporates a zoom flash head. Leading and trailing flash synchronization.
- **Hot Shoe Adapter F and Extension Cord F5P**
An adapter and cord which allow the AF240FT, AF330FTZ, and AF400FTZ to be used away from the camera.
- **AF Adapter 1.7X**
An adapter for autofocus photography using KA- or K-mount lens with a maximum aperture of f/2.8 or brighter.
- **Macro flash AF140C**
A close-up flash unit (guide number = 14).

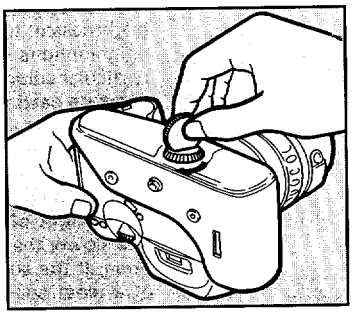
Notes on Accessories

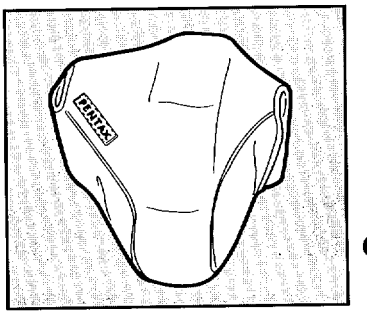
- When using "Auto Bellows A," the double cable release is disabled. To shoot in the vertical position, hold the camera with the grip up.
- If the camera is supported vertically with the grip down when using the tripod mount on the "PENTAX-F*300mm f/4.5ED[IF]" lens, the tripod mount may strike the camera body. Position the camera with the grip up.
- When attaching the "ADAPTER K FOR 645 LENS," the fixing screw may strike the camera body. To avoid this, change the position of the fixing screw.
- When attaching a Reflex 1000mm f/11 or 2000mm f/13.5 lens, the camera position shift lock screw may strike the camera body. To prevent this, change the locking screw position.
- The camera mounting base on the Macro Focus Rail III and copy stand has a leveling protrusion, which does not match the body of this camera. Tightening this camera against the protrusion may scratch the camera body. Do not use these accessories.

1



2





2) Soft Case

The soft case is available as an option and consists of a front cover and a back cover.

1. Open the front cover and locate the camera body in the back cover.
2. Fasten the back cover to the camera by tightening the fitting screw.

Three types of soft case are available.

Case	Suitable for F and FA lenses
S	50mm f/1.4 or f/1.7, zoom 35-70mm, etc.
M	Zoom 28-80mm, zoom 35-105mm, etc.
L	Macro 100mm, zoom 28-105mm, zoom 70-200mm, etc.

IV. SOME BASIC PRINCIPLES OF PHOTOGRAPHY

1) EFFECTS OF APERTURE AND SHUTTER SPEED

A correct exposure is achieved by a combination of shutter speed and aperture setting according to the brightness of the subject. Actually, there are many correct combinations of shutter speed and aperture for a particular subject brightness. Different shutter speed and aperture settings produce different effects.

Effect of Shutter Speed

The shutter speed determines the film exposure time, or the amount of light striking the film.
The slower the shutter speed, the longer the shutter stays open. If the subject is moving, its image will be blurred at a slow speed. Conversely, choosing a high shutter speed allows a stationary image to be taken of a moving subject. If the subject is not moving, a high shutter speed prevents camera shake.

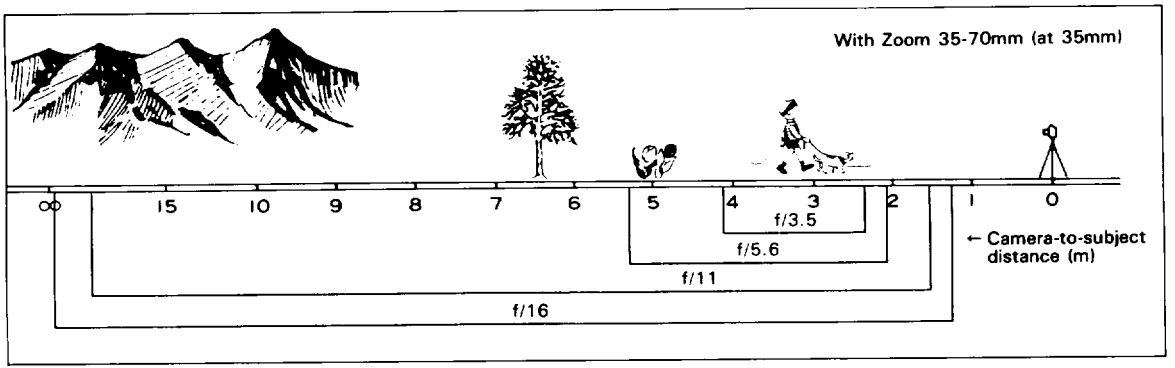
Effect of Aperture

The aperture increases or reduces the amount of the reflected light from an object through the lens, controlling how much light strikes the film. If the aperture is opened up to increase the amount of light, any objects in front of and behind an in-focus subject will not be focused. That is, the range of focus (depth of field) becomes small. If the aperture is closed down to reduce the amount of light, the depth of field increases.
For example, if you shoot a person in a landscape with the aperture open, the landscape in front of and behind the person will be blurred, making the person appear to rise out of the landscape.

Aperture set at f/4

Aperture set at f/22

2) DEPTH OF FIELD

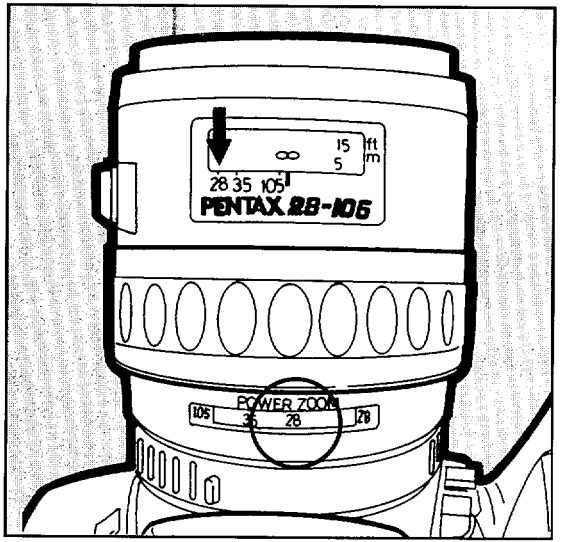


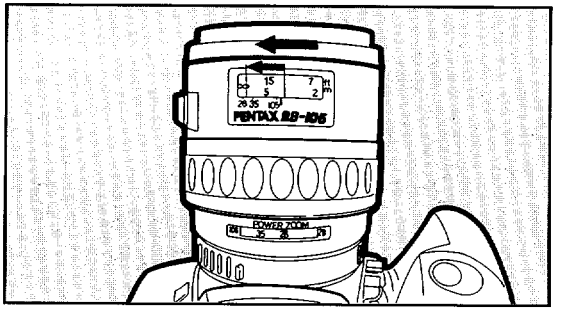
When one point on a subject is brought into focus, the in-focus range extends in front of and behind it. This range is called the depth of field.

The range allowed for focusing

The depth of field increases as the aperture is closed down, the focal length of the lens becomes shorter, or the subject is positioned further away.
Zoom lenses do not have a depth-of-field scale for mechanical reasons.

3) ABOUT THE INFRARED INDEX





When an infrared film and an "R2" or "O2" filter are used, the focal point is different from that when ordinary film (exposed in visible light) is used. The autofocus system cannot compensate for this difference automatically. After focusing on the subject as usual, set the focus mode switch to [**MANUAL**] and turn the focusing ring to the left by the distance indicated on the infrared index.
As shown in the illustration, if 28 is read from the zoom scale, adjust the distance scale to 28 on the infrared index (red line).

* To set the proper exposure level for infrared pictures, refer to the instructions accompanying the film. The Programmed AE mode does not give a correct exposure. Use the Manual mode.

V. OTHERS

1) PRECAUTIONS ON BATTERY

* Use one lithium battery (2CR5).
* Use the battery as instructed. Incorrect use may damage the camera. Be sure to check the polarity before installing the battery.
* Keep the battery out of the reach of children.
* Short-circuiting, disassembling, charging, or burning the battery may cause the battery to rupture or explode.
* When traveling, shooting in a cold environment, or taking high number of photographs, carry a spare battery.
* Battery performance may be hindered at low temperatures. When the temperature rises, the battery performance returns to normal.
* When storing the camera in its bag or case, ensure that the main switch is turned off to avoid accidental shutter release and unnecessary battery drain.
* If the built-in flash is used for an extended period, the battery may become warm. This does not mean that the battery is faulty; it is a characteristic of the battery.

Battery Life

General photography	About 80 rolls
Flash photography (with a flash use ratio of 50%)	25 rolls
Flash photography (with a flash use ratio of 100%)	14 rolls
Bulb exposure time	About 6 hours

These battery life figures were measured using a fresh lithium battery (2CR5) and 24-exposure roll of film at room temperature under Pentax testing conditions.
Actual battery life/performance may vary drastically depending on either usage of Auto-Focus, Power Zoom and Flash and external conditions such as temperature and freshness.

2) TAKING CARE OF YOUR CAMERA

Your Pentax camera is a high-precision mechanism. Handle it with care.

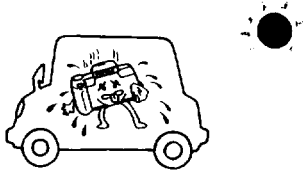
* Do not drop the camera or allow it to hit a solid object. If the camera suffers a severe shock or impact, take it to a Pentax service center for inspection.

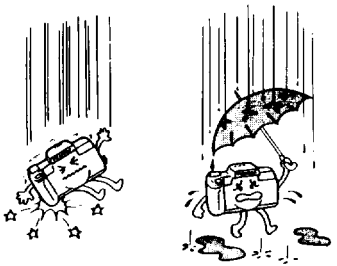
* If the lens and viewfinder become dusty, use a blower followed by a clean lens brush to remove the dust.

* Do not store the camera for long periods where the humidity and temperature are very high. In particular, keep your camera out of the car, where temperatures sometimes rise extremely high.

* Do not store the camera in a closet with mothballs or in a area where chemicals are handled. Store it in a place with good air circulation.

* The camera's operating temperature range is 50° to −10°C.





* Taking the camera into a warm room from the cold outside may cause condensation both inside and outside the camera. Put the camera in a case or bag to minimize the effect of sudden temperature changes and only remove it after it has warmed up.

* Do not use an organic solvent such as paint thinner or alcohol to remove dirt and dust.

* Dirt, sand, dust, water, poisonous gas, or salt inside the camera will cause various problems. A camera suffering such effects will be repaired only at your expense even within the warranty period. If rain, or water from any other source, gets on the camera body, wipe it with a clean cloth and allow it to dry naturally.

* Never touch the shutter curtains or mirror.

* There are high-voltage parts inside the camera, so never disassemble it.

* Most electrical problems are caused by dirt and dust on the contacts. If any symptoms of electrical failure are detected, check that the contacts are free from finger marks, salt, special gas, and dust.

* The outer edge of the image may be cropped in regular-size color prints. Choose your composition carefully.

* A camera which has been submerged in water cannot usually be repaired. However, contact a Pentax service center if such an accident should occur.

* To maintain factory performance, it is recommended that your camera be inspected every 1-2 years. If your camera has not been used for a long period and before taking important pictures, have it checked or take a roll of film for test purposes.

* When a macro or telephoto lens is used, the upper portion of the viewfinder may be darkened by the mirror. This darkening, however, does not appear on the developed prints.

About the LCD Backup Circuit

If the battery is replaced before the end of a roll film, the exposure count and film speed are not lost from memory.

About the LCD Display

* At temperatures over approximately 60°C, the LCD display may darken. It will return to normal at lower temperatures.

* At low temperatures, the LCD display may respond more slowly. This is a characteristic of liquid crystals and is not a malfunction.

3) TROUBLESHOOTING

Before contacting a Pentax service center, check the following points:

Symptom	Cause	Remedy	Reference
The shutter does not release.	The main switch is off.	Turn on the main switch.	P.15
	The low battery warning [▭] appears.	Replace the battery.	P.10
	The battery is improperly installed.	Install the battery properly.	P.10
	The self-timer mode is selected.	Cancel the self-timer.	P.68
	The mode dial is set to [PZ⊙▭].	Turn the mode dial to another position.	P.23
Indicators do not appear on the LCD panel.	The Main Switch is not on.	Turn on the Main Switch.	P.15
	No battery has been installed.	Install a battery.	P.10
	The battery is improperly installed.	Install the battery properly.	P.10
	The battery is dead.	Replace the battery.	P.10
The camera does not focus.	The AF frame [( )] is not over the subject.	Move the camera until the AF frame [( )] covers the subject.	P.30
	The subject is too close.	Move away from the subject.	P.31
	The focus mode switch is set to **[MANUAL]**.	Set the focus mode switch to **[SINGLE]** or **[SERVO]**.	P.30
	The subject is difficult for the autofocus to handle.	Use the focus-lock technique or focus manually using the matte field.	P.32 P.39
[◯] blinks in the viewfinder.	The subject is too close or is difficult to autofocus.	Use the focus-lock technique or focus manually using the matte field.	P.32 P.39
The built-in flash does not charge.	The battery is dead.	Replace the battery.	P.10
	The shutter release button was pressed while the focus mode switch was set to **[SERVO]**.	Release the shutter release button.	P.80
The shutter speed cannot be set when the manual exposure mode is selected.	The manual exposure mode is only for bulb shooting.	Select the Hyper Manual mode.	P.53
The focus cannot be locked.	The focus mode lever is set to **[SERVO]**.	Set the focus mode lever to **[SINGLE]**.	P.32
The auto bracketing mode cannot be set.	Neither manual nor Hyper Manual is selected.	Select a Hyper Programmed, Programmed, Aperture-Priority, or Shutter-Priority mode.	P.42

Symptom	Cause	Remedy	Reference
The multi-exposure mode cannot be set.	The main switch is set to [■].	Set the main switch to [▌].	P.15
The interval mode cannot be set.	The main switch is set to [■].	Set the main switch to [▌].	P.15
The triple-frame self-timer mode cannot be set.	The main switch is set to [■].	Set the main switch to [▌].	P.15
The 2-second-delay self-timer mode cannot be set.	The main switch is set to [■].	Set the main switch to [▌].	P.15
The Hyper Programmed AE mode cannot be set.	The main switch is set to [■].	Set the main switch to [▌].	P.15
The Shutter-Priority AE mode cannot be set.	The main switch is set to [■].	Set the main switch to [▌].	P.15
The manual (bulb) mode cannot be set.	The main switch is set to [■].	Set the main switch to [▌].	P.15
	Neither single-frame, consecutive nor multi-exposure mode is selected.	Select either single-frame consecutive or multi-exposure mode.	P.59
An exposure compensation value cannot be set.	The main switch is set to [■].	Set the main switch to [▌].	P.15
The zoom-clip mode cannot be set.	The lens is in the manual zoom position.	Push the power zoom ring forward until **[POWER ZOOM]** appears.	P.71
	The auto zoom switch on the lens is set to **[P]**.	Set the auto zoom switch on the lens to **[A]**.	P.71
The image size tracking mode cannot be set.	The focus mode switch is set to **[MANUAL]**.	Set the focus mode switch to **[SINGLE]** or **[SERVO]**.	P.74
	The lens is in the manual zoom position.	Push the power zoom ring forward until **[POWER ZOOM]** appears.	P.71
	The auto zoom switch on the lens is set to **[P]**.	Set the auto zoom switch on the lens to **[A]**.	P.71
The power zoom system does not function.	The lens is in the manual zoom position.	Push the power zoom ring forward until **[POWER ZOOM]** appears.	P.27
While shooting, the power zoom system operates automatically.	The image size tracking mode is selected.	Cancel the image size tracking mode.	P.74
The zoom effect mode cannot be set.	The lens is in the manual zoom position.	Push the power zoom ring forward until **[POWER ZOOM]** appears.	P.71
The zoom effect function does not work.	The power zoom ring is turned to the telephoto side (larger number).	Turn the power zoom ring to the wide-angle side (smaller number).	P.78

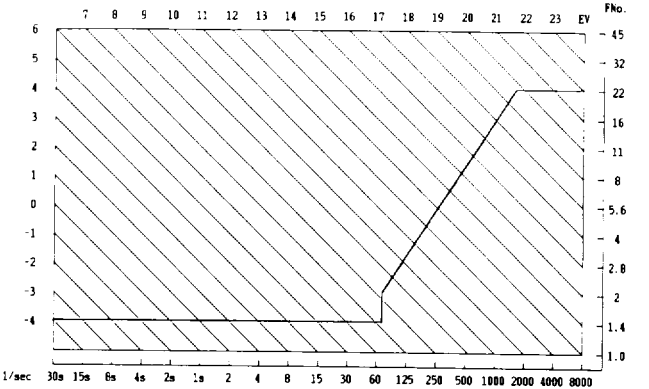
SPECIFICATIONS

Type:	Through-the-lens(TTL) autofocus, auto-exposure 35mm SRL with built-in TTL auto flash (RTF)
Format:	24x36mm
Usable Film:	35mm perforated cartridge film. DX-coded film with ISO 25-5000; non-DX-coded film with ISO 6-6400
Exposure Mode:	(1) Hyper Programmed AE; (2) Programmed AE; (3) Shutter-Priority AE; (4) Aperture-Priority AE; (5) Hyper Manual; (6) Manual (Bulb)
Shutter:	Electronically controlled vertical-run focal-plane shutter. Electro-magnetic release. Shutter speed range: (1) Auto: 1/8000-30 sec. (stepless); (2) Manual: 1/8000-30 sec. (3) Bulb. Shutter lock by turning main switch off.
Lens Mount:	Pentax KAF2 bayonet mount (=K-mount with AF coupler, lens information contacts and power contacts)
Compatible Lens:	Pentax KAF2-, KAF-, KA-, and K-mount lenses are usable. Autofocus possible using AF Adapter.
Autofocus System:	TTL phase-matching system (SAFOX II). AF operational brightness range: EV:-1 to 18 (at ISO100 with 50mm f/1.4 lens) Focus lock available using shutter release button in AF single mode, Focus mode: AF single, AF-Servo (predictive AF provided) and Manual
Power Zoom:	Intelligent Power Zoom lens with built-in motor. (1) Power zoom (2) Image-Size Tracking (3) Zoom Clip and (4) Auto Zoom Effect
Viewfinder:	Pentaprism finder, Interchangeable Aspheric-Micro-matte focusing screen. Field of view: 92%, Magnification: 0.8X (with 50mm f/1.4 lens at ∞), Diopter adjustment: −2.5 to +1.5 diopters.
Viewfinder LED & LCD indication:	Focus information: in-focus (green lamp (○) is lit), front or back focus signals and unable-to-focus indicator (green lamp blinks)/Shutter speed indication /Aperture value indication/Accessory flash ready indication ([ϟ] is lit), RTF ready indication ([[ϟ]] is lit), Flash-recommended display or inappropriate lens warning ([[ϟ]] blinking)/Hyper manual mode: (▲) is overexposure; (▼) is underexposure; (●) is correct exposure/ Exposure compensation indication (±)/Memory lock (✱)/Spot metering, Center-weighted metering (▣)
External LCD Panel Indication:	(HyP) = Hyper Programmed AE, (P) = Programmed AE, (A) = Shutter-Priority AE, Aperture-Priority AE, (Hy M) = Hyper Manual, (M) = Manual (Bulb), (▣) = Image Size Tracking, (▣) = Zoom Clip, (▣) = Auto Zoom Effect, Shutter speed = 1/8000-30s/(ϬU)/Aperture value = 1.2-90/ISO film speed = 6-6400/Bulb timer = 1-59S, 1m-59m, 1h-24h/Exposure compensation indication/Exposure compensation = −4 to +4, (○ _ _ ○) = Film load, advance, rewind/(▭) = Battery exhaustion warning/Exposure counter = 0-99/ (ϟ) = RTF ready indication/Accessory flash-recommended display ([ϟ] blinking slowly/Inappropriate lens warning([ϟ] blinking rapidly)/(▫) = Spot Metering, Center-weighted metering/(ST) = Interval shooting start indication/(INT) = Interval shooting; Interval time and start time = 1S-9S, 10S, 20S-50S, 1m-9m 10m, 20m-50m 1h-24h; Number of exposures in Interval shooting = 1-36/(PF) = Pentax function/(●)))) = Beep indication when focused or when using the self-timer/(⏲) = Self-timer/(⏲2s) = Self-timer with 2-sec. delay/(⏲ ▣) = Triple-frame self-timer/(▣) = Autobracketing/(Tv) = Tv value/(Av) = Av value/**Tv** = Tv indication/**Av** = Av indication/(▣) = Multi-Exposure

Self-Timer:	Electronically-controlled type with delay time of 12 sec. Start by depression of shutter release button. Delay time:12 sec. Operation confirmation: by red lamp blinking, PCV beep tone and LCD panel (Self-timer indication counts in reverse), Cancelable after operation, 2-sec. mode, 3 consecutive exposures
Mirror:	Instant-return mirror with AF secondary mirror
Film Loading:	Film advances automatically to 1st frame after the back cover is closed. Film information window is provided.
Film Wind & Rewind:	Auto wind/rewind and auto rewind stop by built-in motor. Consecutive or single advance mode. Approx. 3 frames/sec. (continuous mode), Auto rewinding starts at end of roll. Film rewinding/completion of rewinding is displayed on the LCD panel. Mid-roll rewind provided.
Exposure Meter/ Metering Range:	TTL multi(8)-segment metering, Metering range from EV0 to EV20 at ISO 100 with 50mm f/1.4 lens. Spot Metering can be set.
Exposure Compensation:	+/-4EVs in 1/3 stop increments
Auto Bracketing:	Three-frame consecutive shots with exposure bracketing from +/-0.3EV to +/-4EV. Possible to use with exposure compensation.
Memory Lock:	Set by ML button. Exposure value remains locked as long as the ML button is kept depressed or by half depression of the shutter release button, or for 5 seconds after either button is released.
Built-in Flash:	Retractable TTL Auto Flash (RTF) with AF spotbeam projector. Guide number:14 (ISO 100/m). Illumination angle: covers 35mm lens angle of view. Flash-synch-speed: 1/250-1/30 sec. set automatically with RTF or Pentax dedicated auto flash upon full charge. Daylight sync; Slow-shutter-speed sync; Contrast-control-flash-sync
Flash Sync:	Hot shoe with X-contact which couples with Pentax dedicated auto flashes.
Power Source:	One 6V lithium battery (2CR5)
Battery Exhaustion Warning:	Battery exhaustion symbol (▭) is lit. (blinking when the shutter is locked; no indication on the right-hand edge of the viewfinder.)
Pentax Functions:	18 user-defined functions
Back Cover:	Interchangeable
Dimensions & Weight:	152.0mm(W)x95.5(H)x74.0mm(D)(6"x3.8"x2.9")/650g (22.9oz.) without lithium battery
Supplied Accessories:	Hot shoe cover FD, Release socket cap FD, Camera strap FC, Eyecup FD, Finder cap

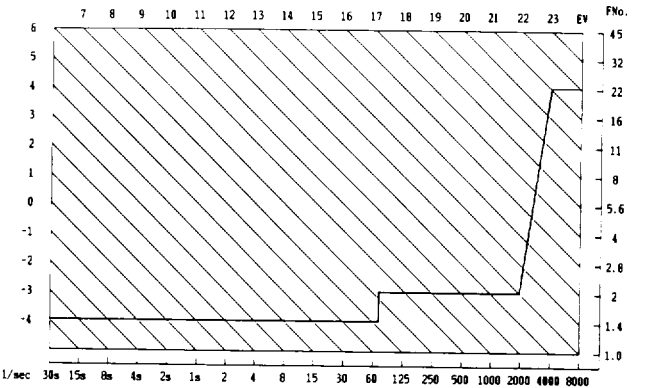
SPECIFICATIONS ARE SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTIFICATION OR ANY OBLIGATION ON THE PART OF THE MANUFACTURER.

Program Line (Normal Program)



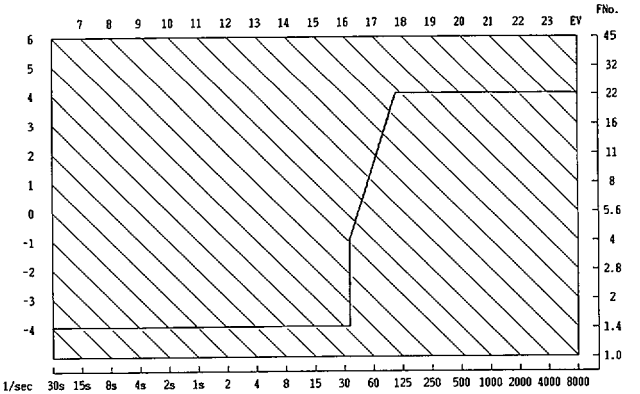
At ISO100 with 50mm f/1.4 lens ——

Program Line (High-shutter-speed-priority Program)



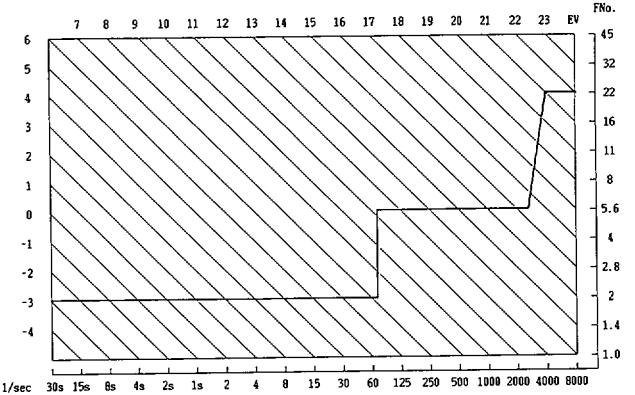
At ISO100 with 50mm f/1.4 lens ——

Program Line (Depth-of-field-priority Program)



At ISO100 with 50mm f/1.4 lens

Program Line (MTF Program)



At ISO100 with 50mm f/1.4 lens

WARRANTY POLICY

All Pentax cameras purchased through authorized bona fide photographic distribution channels are guaranteed against defects of material or workmanship for a period of twelve months from date of purchase. Service will be rendered, and defective parts will be replaced without cost to you within that period, provided the equipment does not show evidence of impact, sand or liquid damage, mishandling, tampering, battery or chemical corrosion, operation contrary to operating instructions, or modification by an unauthorized repair shop. The manufacturer or its authorized representatives shall not be liable for any repair or alterations except those made with its written consent and shall not be liable for damages from delay or loss of use or from other indirect or consequential damages of any kind, whether caused by defective material or workmanship or otherwise; and it is expressly agreed that the liability of the manufacturer or its representatives under all guarantees or warranties, whether expressed or implied, is strictly limited to the replacement of parts as hereinbefore provided. No refunds will be made on repairs performed by non-authorized Pentax service facilities.

Procedure During 12-month Warranty Period

Any Pentax which proves defective during the 12-month warranty period should be returned to the dealer from whom you purchased the equipment or to the manufacturer. If there is no representative of the manufacturer in your country, send the equipment to the manufacturer, with postage prepaid. In this case, it will take a considerable length of time before the equipment can be returned to you owing to the complicated customs procedures required. If the equipment is covered by warranty, repairs will be made and parts replaced free of charge, and the equipment will be returned to you upon completion of servicing. If the equipment is not covered by warranty, regular charges of the manufacturer or of its representatives will apply. Shipping charges are to be borne by the owner. If your Pentax was purchased outside of the country where you wish to have it serviced during the warranty period, regular handling and servicing fees may be charged by the manufacturer's representatives in that country. Notwithstanding this, your Pentax returned to the manufacturer will be serviced free of charge according to this procedure and warranty policy.

In any case, however, shipping charges and customs clearance fees are to be borne by the sender. To prove the date of your purchase when required, please keep the receipts or bills covering the purchase of your equipment for at least a year. Before sending your equipment for servicing, please make sure that you are sending it to the manufacturer's authorized representatives or their approved repair shops, unless you are sending it directly to the manufacturer. Always obtain a quotation for the service charge, and only after you accept the quoted service charge, instruct the service station to proceed with the servicing.

The warranty policy does not apply to Pentax products purchased in the U.S.A., UK. or Canada. The local warranty policies available from Pentax distributors in those countries supersede this warranty policy.

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