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PayPal Name   Lynn@butkus.org

PENTAX®
SFX

Your Pentax camera is a high-precision 35mm SLR camera incorporating such advanced mechanisms as auto focusing, auto exposure, auto film winding and rewinding, and a built-in Retractable TTL-Auto Flash (RTF). Please read this operating manual carefully to get a good idea of the camera's functions and operations before you begin using it.
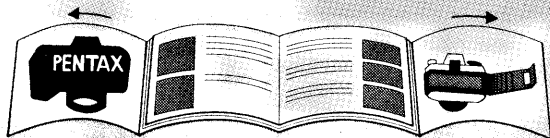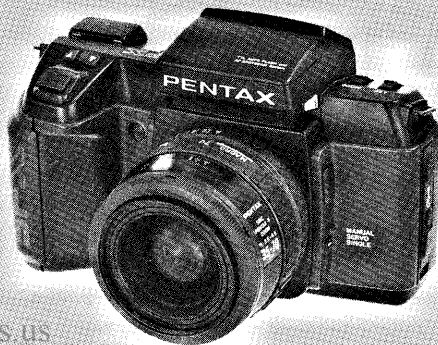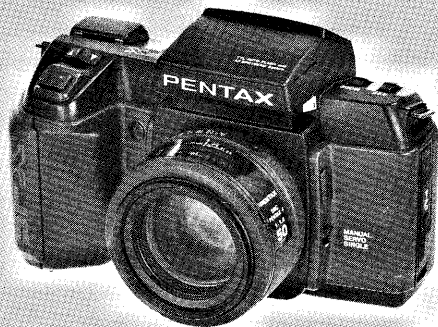
The names of the camera's working parts are listed in the nomenclature sections on the front and back flaps of this booklet, so please read this booklet with the flaps unfolded for easy reference. We hope that you will enjoy taking memorable, high-quality pictures with this remarkable camera for many years to come.
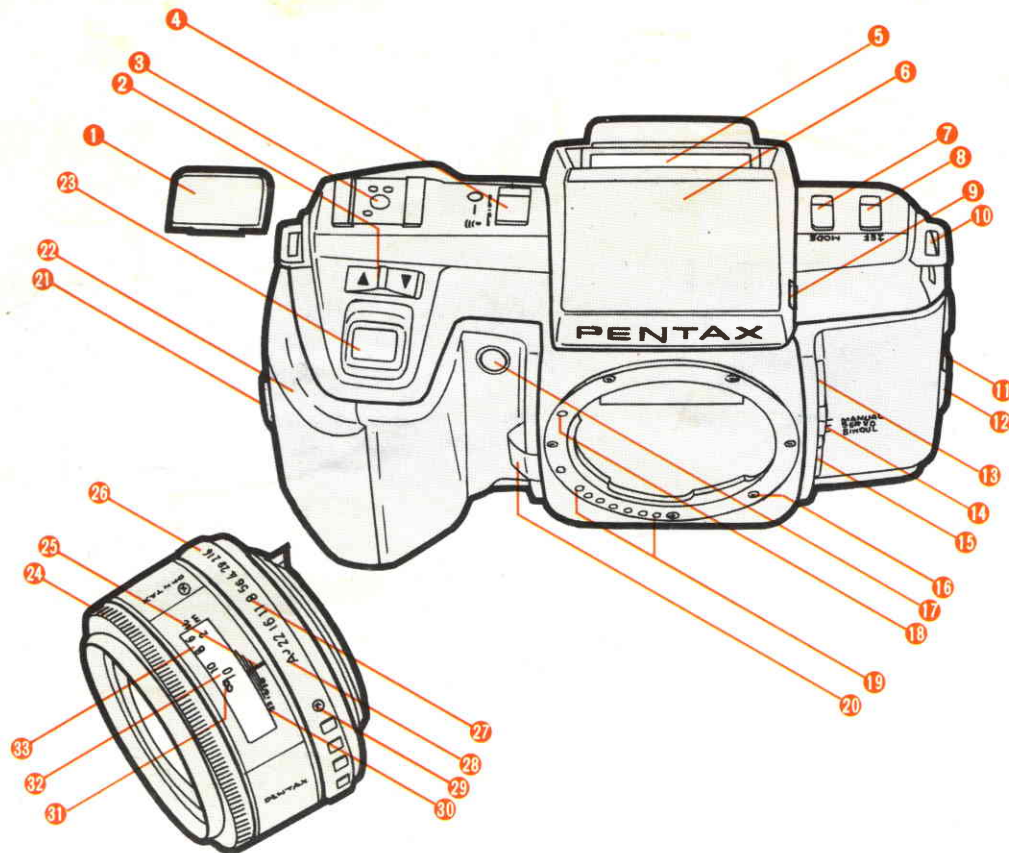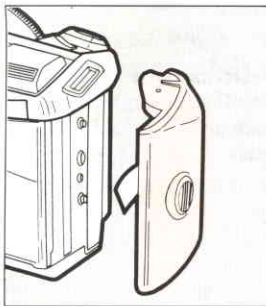
1. Hot-shoe cover
2. Select switch
3. Hot shoe
4. Main switch
5. CENTIC display panel
6. TTL auto flash (RTF)
7. Mode/Drive switch
8. ISO/Exposure-compensation switch
9. Flash-pop-up button
10. Strap lug
11. Back-cover-lock button
12. Back-cover-release lever
13. Release socket F
14. Manual-focus button
15. Focus-mode switch
16. AF coupler
17. Self-timer lamp
18. Mount index
19. Lens-information contacts
20. Lens-lock-release lever
21. Battery-grip screw
22. Lithium-battery grip
23. Shutter-release button
24. Focusing ring
25. Distance/Aperture index
26. Aperture ring
27. Aperture scale
28. Aperture-A index
29. Aperture-auto-lock button
30. Depth-of-field scale
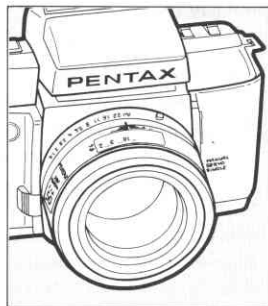31. Infrared index
32. Distance scale
33. Distance scale window

TABLE OF CONTENTS

1. Remove the battery grip and insert a lithium battery. (pages 4 & 5)

2. Attach a Pentax-F lens. (page 6)

3. Open the back cover and load the film. (pages 11~13)
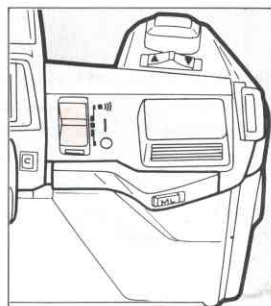
4. Turn the main switch on. (page 7)

Since this camera is an auto-focus camera, taking pictures with it is extremely simple. However, it will not operate properly if you set it up or handle it incorrectly. Perform the following operations, referring to the pages listed, before you begin taking pictures.

There are also many ways to shoot photographs with this camera. Please refer to the section about the specific mode you want to use before going on to page 3.

● After adjusting the diopter of the eyepiece to your eyesight, insert the Eyecup F into the accessory groove. (page 28)
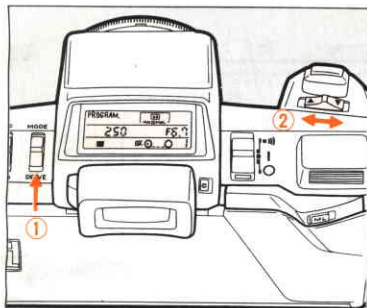
1. Set the desired exposure mode by sliding the select switch to the UP or DOWN position while holding the mode/drive switch at the MODE position. (pages 7 & 14~25)
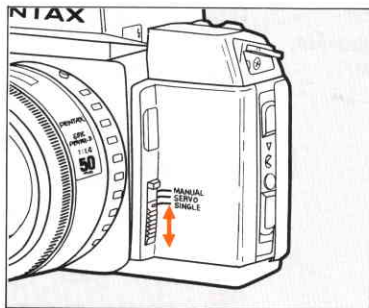
2. Set the focus mode switch at the SINGLE position. (page 29) When you press the shutter release button halfway down, the auto-focusing mechanism is activated and the lens starts moving. (pages 30~35)
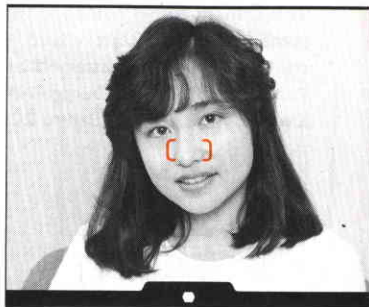
3. Position the subject within the viewfinder's focus frame [[ ]]. If the green in-focus signal [○] at the bottom of the viewfinder lights up when you press the shutter release button halfway down, the subject is in focus. (pages 30~35)

● After shooting the designated number of frames, rewind the film into its cartridge and take it to a photo service for development as soon as possible. (pages 36 & 37)

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3●

INSERTING BATTERY

This camera comes equipped with the standard Lithium Battery Grip. For this grip, use one 6V lithium battery (National/Panasonic BR-P2$_{DP}$, Duracell DL-223A, Eveready EL2CR5 or Sanyo 2CR5).

(Lithium Battery Grip)

BR-P2$_{DP}$/DL-223A   EL2CR5/2CR5
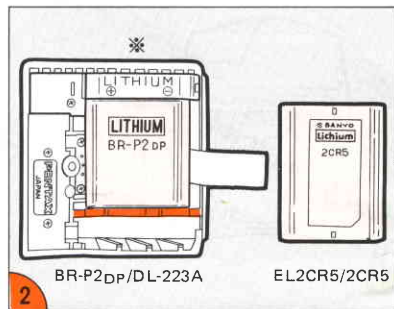
● When you change batteries, the CENTIC (Central Information Cluster) LCD display panel will be activated, and all its indicators and the flash-ready indicator of the RTF will light up.

1. Remove the grip by turning its mounting screw counterclockwise with a coin.
2. Position the lithium battery properly by matching its polarity marks ("+" and "−") with those inside the grip, then mount the grip at the original position. (The old battery can easily be removed by pulling the band.)

　※ Insert BR-P2$_{DP}$ and DL-223A within the inner frame of the battery chamber as shown above.
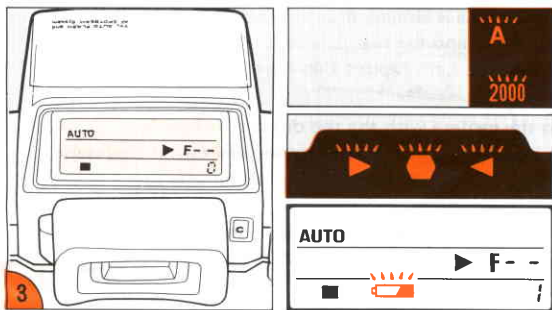
3. As illustrated, the CENTIC panel shows the selected exposure mode. If the panel remains inactive or all its indicators light up, the battery is either exhausted or not inserted properly, so check it again.

As illustrated, the "AA" Battery Grip (optional) can be used with four "AA"-size alkaline batteries of the same type. Make sure they are inserted properly.

*Battery Warning Mark

When the battery weakens, the battery warning mark [⊂▪] on the CENTIC panel and the viewfinder indicators will start blinking to inform you of this condition. Replace the battery as soon as possible. If the battery drops below the required voltage, the shutter release button will lock automatically, and the indicators on the CENTIC panel will all light up.
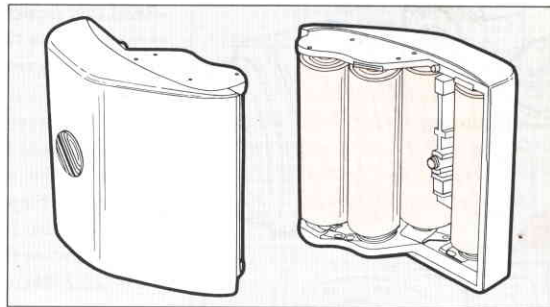
● "AA"-size manganese batteries are also usable. However, their power supply is limited and use of alkaline batteries is recommended.

5 ●

Read this section even if the lens is already mounted on the camera.
● Remove the body-mount cap and the rear lens cap.
The Body-Mount Cap F and the Lens-Mount Cap K are available as options.

1. Align the red dot on the camera with the red dot on the lens (see Ⓐ and Ⓑ), place the lens onto the camera's lens mount, and turn it clockwise until the lens locks with a click. When mounting the lens by touch under dim light, method Ⓒ is recommended.
2. To remove the lens cap, press in the tabs on both sides.
3. To remove the lens, turn it counterclockwise while pressing the lens release lever toward the camera body.

● Attach the front and rear lens caps on the detached lens to protect it from dust and scratches. The lens should be set down with the front lens side down, as illustrated.
* If a Pentax-A or -M lens is mounted directly onto the camera, it can be used only in the manual-focus mode (page 34). It can also be used as an auto-focus lens in combination with the AF Adapter 1.7X (optional).
* Old Screw-mount Takumar lenses can be used with the Mount Adapter K (optional). However, focusing must be made using the viewfinder's matte area.

Do not damage or stain the lens information contacts or the AF coupler on the mount surfaces of the camera and the lens. If this occurs, wipe them gently with a clean dry cloth.

Control Switches

The mode/drive and ISO/exposure compensation switches can be operated by moving the switch to the desired position (MODE or DRIVE, ±EF or ISO) and sliding the select switch to the UP or DOWN position. The select switch is also used to set a shutter speed.

MODE = Exposure mode (Programmed AE, etc.)

DRIVE = Self-timer, single advance, consecutive advance

±EF = Exposure compensation

ISO = Film speed

Main Switch

Whenever setting an exposure mode or releasing the shutter, make sure you turn the main switch on [I · •)))] first. Turn it off [○] when you are not using it to avoid accidental shutter releases.

● When the main switch is set at the [•)))] position, a PCV tone will inform you of correct focusing and self-timer operation.

Shutter Release Button

When the main switch is turned on and the shutter release button is pressed halfway down, the auto-focusing and light-metering mechanisms are activated, and the CENTIC panel and viewfinder display indicators light up. (The indicatots remain on for approximately 10 seconds even after the shutter release button is released.) To release the shutter, press the shutter release button all the way down.
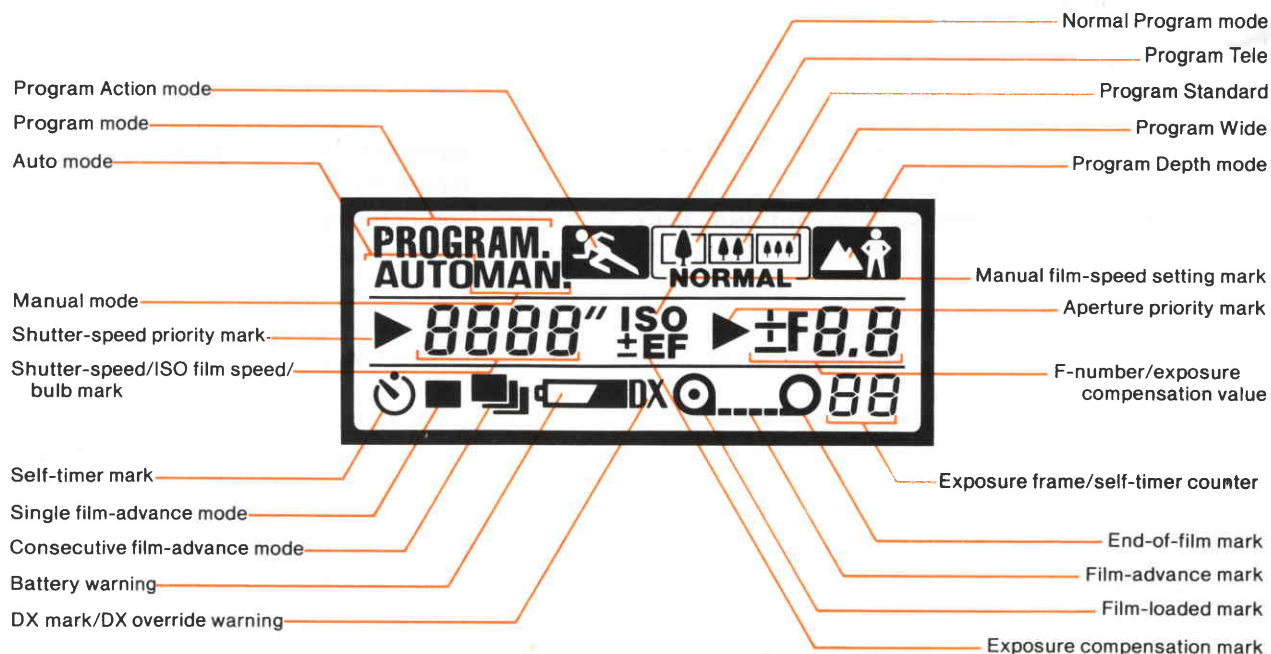
● If you press the shutter button with the back cover open, the shutter will be released at a fixed speed.

CENTIC Indications

• Shutter speed indication: from 1/2000 second to 30 seconds ("2000" ~ "30") for the Programmed AE and Aperture-priority AE modes, and from 1/2000 second (2000) to 1 second (1) for the Shutter-Priority AE and Metered Manual modes.

• F-number indication: from f/1.2 to f/90 in 1/2 steps.

• ISO film-speed indication: from ISO 6 to ISO 6400 in 1/3 steps.

• Exposure compensation indication: from —4 to +4 in 1/2 steps.

• Exposure counter indication: from 0 to 99.

Program Action mode
Program mode
Auto mode

Manual mode
Shutter-speed priority mark
Shutter-speed/ISO film speed/ bulb mark

Self-timer mark
Single film-advance mode
Consecutive film-advance mode
Battery warning
DX mark/DX override warning

Normal Program mode
Program Tele
Program Standard
Program Wide
Program Depth mode

Manual film-speed setting mark
Aperture priority mark

F-number/exposure compensation value

Exposure frame/self-timer counter

End-of-film mark
Film-advance mark
Film-loaded mark
Exposure compensation mark

• 8

Viewfinder Indications

|	
[　]	Focus frame indicator
▶ ○ ◀	Focus indicator (front-focus, in-focus and back-focus signals)
🔆	Flash-ready indicator (A flash-ready indicator for the built-in RTF is located next to the viewfinder eyepiece)
M	Metered Manual indicator
A	Shutter-Priority AE/Aperture-Priority AE indicator
P	Programmed AE indicator
2000~2	Shutter speed indicator ("2000" for 1/2000 second and "2" for 1/2 second)
LT	Long-Time exposure indicator
±EF	Exposure compensation indicator

Film cartridge

Color Film

100

135-36

36 EXP.

DX
35
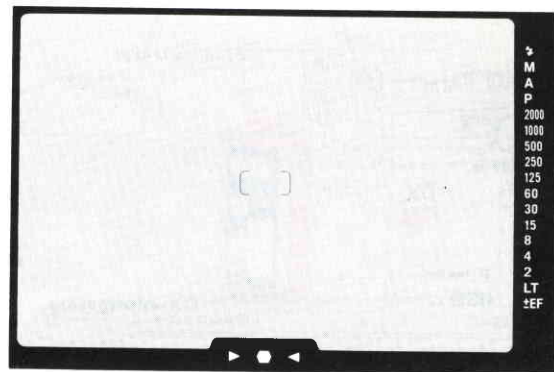
Film speed
(ISO rating)
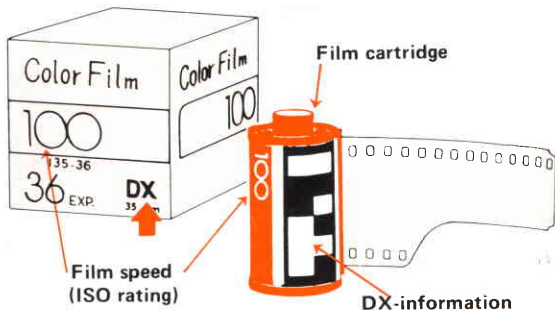
DX-information

DX-Coded film

When DX-coded film is loaded in the camera, the ISO
film speed is set automatically. This type of film will
have a DX mark on its package and/or a DX information
panel on its cartridge.

● The automatic ISO film-speed setting for DX film is
available only for film with an ISO rating between 25
and 5000, so make sure you use film in this range.
● If the automatic ISO film-speed setting for DX film is
cancelled by the override mechanism described at right,
the DX mark on the CENTIC panel will blink to
warn you.
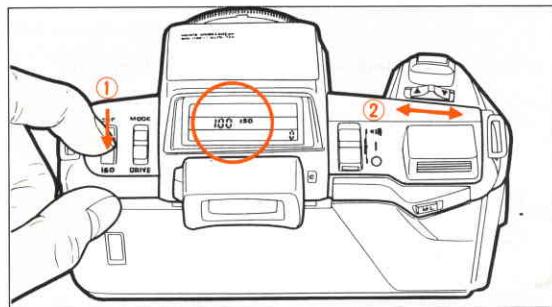
Non-DX-Coded Film

When loading film that is not DX-coded, make sure you
set the ISO film speed indicated on the package manually.
When the ISO/exposure compensation switch is pushed to
the ISO position, the ISO film speed of the film used
previously is indicated on the CENTIC panel. While
holding the compensation switch at this position, slide
the select switch to the UP or Down position to set the
desired film speed. One move of the select switch either
increases or decreases the film speed by 1/3 of a step in
the range between ISO 6 and ISO 6400. If the select
switch is held at one position, the speed is changed
continuously.

**UP:**   Heightens the sensitivity of the film, up to ISO
6400.

DOWN: Lowers the sensitivity of the film, down to ISO 6.
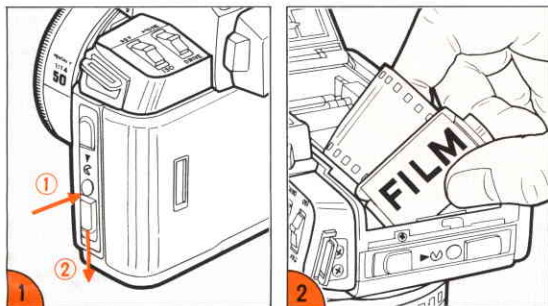
Always load or unload film in a shady spot, or shield it from direct sunlight with your body.

1. Open the camera's back cover by sliding down the back-cover release lever while depressing the back-cover lock button.
2. A film cartridge can be easily inserted by sliding its upper part into the film chamber first.

Film leader
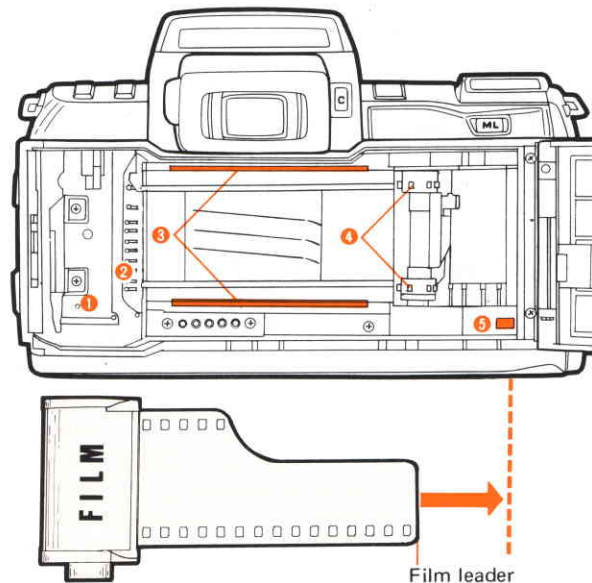
The DX-information pins are very important for correct automatic ISO film speed setting. Do not bend them, and keep them free from scratches, stains, dirt and dust.

❶ Film chamber
❷ DX-information pins
❸ Guide rails
❹ Sprocket teeth
❺ Film loading mark

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11●
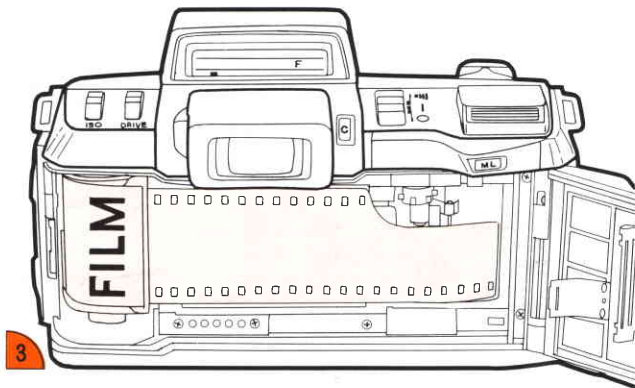
3. As illustrated, pull the film leader out until its end
aligns with the film loading mark of the camera
body.

● Do not leave the film slack.

● If the film leader is sharply bent, straighten it or cut it
out before loading.
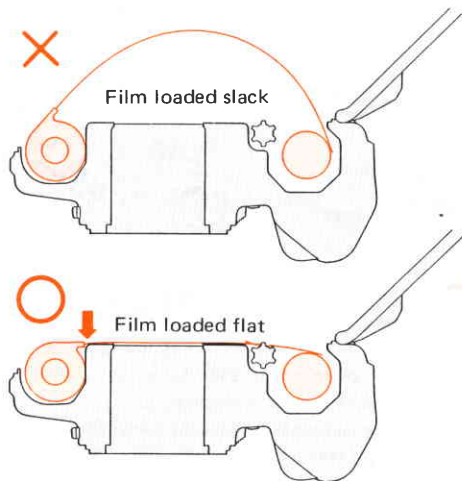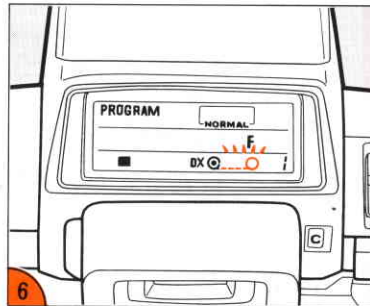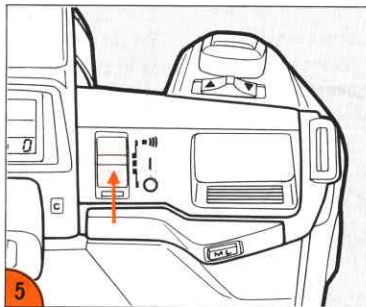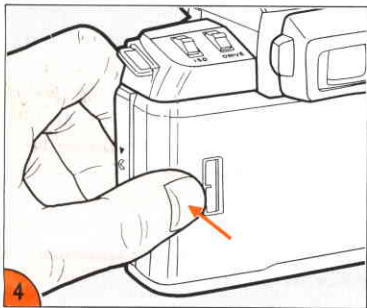
4. Close the back cover, as illustrated.
5. Turn the main switch on. The shutter automatically releases to advance the film to the first frame.

● The type of film loaded in the camera can be checked in the film information window.

● The film is advanced to the first frame, even if the back is closed after the main switch is turned on.

6. Film advance automatically stops when the exposure counter reaches the first frame, and the CENTIC panel appears as it does above.
The film-loaded mark lights up, and the film-advance and end-of-film marks blink each time the film is advanced to the next frame.

If the film-loaded, film-advance and end-of-film marks do not appear on the CENTIC panel, the film is not loaded properly. Open the back cover and reload the film.

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BASIC OPERATIONS

- "A"-lock button
- Aperture-"A" index
- Aperture scale
- Select switch
- Main switch
- Mode/drive switch
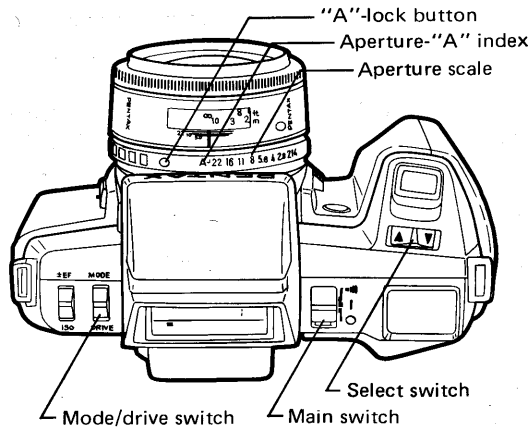
Setting and Releasing the Auto Lock

To set the lens aperture ring to the "A" (Auto) position as in the illustration at left, align the ring's aperture-"A" index (green line) with the distance/aperture (red line) index while pressing the "A"-lock button. To release the auto lock, turn the ring to the desired f-number (except "A") while pressing the "A"-lock button.

● Press the aperture auto lock button only when turning the ring from the "A" position to the largest f/number (f/22 in this case) or vice versa.

The following exposure modes can be set depending on the position of the aperture ring:

"A" setting:
- Programmed AE
  (Program Action)
  (Normal Program)
  (Program Depth)
- Shutter-Priority AE

Any f-number:
- Aperture-Priority AE
- Metered Manual
- 100 (fixed at 1/100 sec.)
- Bulb

Setting an Exposure Mode

To set an exposure mode, turn the main switch on
[I · ◦ıı)]. Then, slide the select switch to the UP or
DOWN position while pressing the mode/drive switch to
the desired mode position. One move of the select switch
changes the mode once, and the mode is shifted
continuously if the switch is held at the position. The
selected mode is indicated on the CENTIC panel each
time the mode is shifted. The chart at right indicates
how the CENTIC panel indicators shift.

Setting a Shutter Speed

In the Shutter-Priority AE and Metered Manual modes,
the desired shutter speed can be selected by sliding
the select switch to the UP or DOWN position. One push
of the switch changes the shutter speed to the next
setting, and the shutter speed can be changed continuously
if the switch is held at one position. The changes are
indicated on the CENTIC panel. The indication stops
at "2000" (1/2000 sec.) for the UP position and at "1"
(1 sec.) for the DOWN position.

With the aperture ring set at "A"

Up position   Down position

= Program Action

= Normal Program
  (Wide, Standard, Tele)

= Program Depth

= Shutter-Priority AE
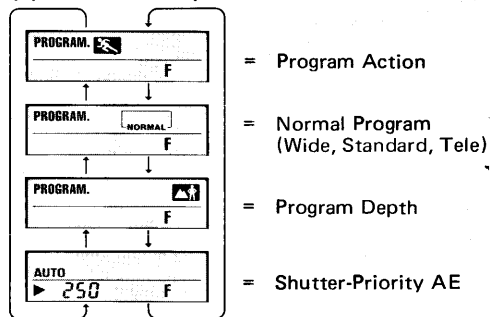
With the aperture set at any f-number except "A"

Up position   Down position

= Aperture-Priority AE

= Metered Manual

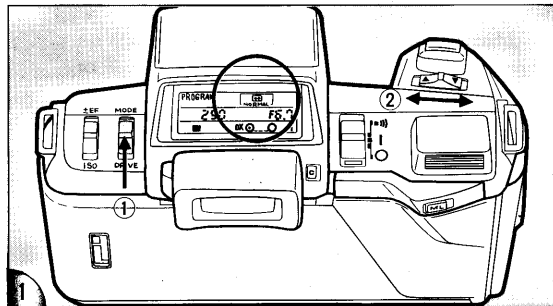= 100 (fixed at 1/100 sec.)

= Bulb

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Exposure Modes When Aperture Ring is Set at "A"

- Programmed AE modes
  · Program Action
  · Normal Program
  · Program Depth
- Shutter-Priority AE mode

• The exposure modes mentioned above can be used only in combination with SMC Pentax-F or -A lenses.

Programmed Auto Exposure System

The camera automatically selects the optimum combination of aperture and shutter speed to ensure correct exposure according to the lighting conditions surrounding the subject. The Programmed AE modes free you from complicated exposure controls and allow you to concentrate on the subject, so take advantage of them for standard shooting and in situations when shutter speed is crucial. This camera features three Programmed AE modes suitable for a wide range of photographic situations.

1. When the Programmed AE mode is selected, the CENTIC panel confirms it by activating the [PROGRAM] indicator and one of three other indicators — [▧] for Program Action, [NORMAL] for Normal Program and [▨] for Program Depth. Set the desired Programmed AE mode by moving the select switch to the UP or DOWN position while pressing the mode/drive switch at the MODE position.

Exposure Modes When Aperture Ring is Set at "A"

- **Programmed AE modes**
  - **· Program Action**
  - **· Normal Program**
  - **· Program Depth**
- **Shutter-Priority AE mode**

● The exposure modes mentioned above can be used only in combination with SMC Pentax-F or -A lenses.

Programmed Auto Exposure System

The camera automatically selects the optimum combination of aperture and shutter speed to ensure correct exposure according to the lighting conditions surrounding the subject. The Programmed AE modes free you from complicated exposure controls and allow you to concentrate on the subject, so take advantage of them for standard shooting and in situations when shutter speed is crucial. This camera features three Programmed AE modes suitable for a wide range of photographic situations.

1. When the Programmed AE mode is selected, the CENTIC panel confirms it by activating the [PROGRAM] indicator and one of three other indicators — [▨] for Program Action, [NORMAL] for Normal Program and [◪] for Program Depth. Set the desired Programmed AE mode by moving the select switch to the UP or DOWN position while pressing the mode/drive switch at the MODE position.
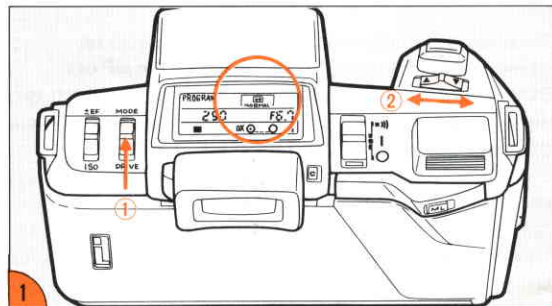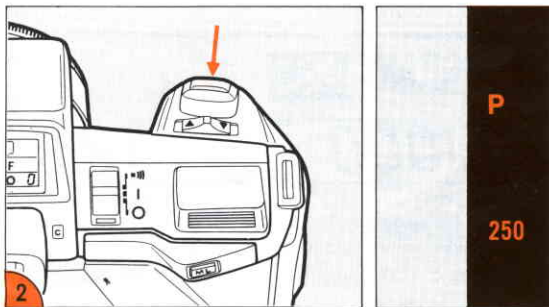
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2. When you press the shutter release button halfway down, the camera displays "P" and a shutter speed in the viewfinder, as well as a shutter speed and aperture value on the CENTIC panel.
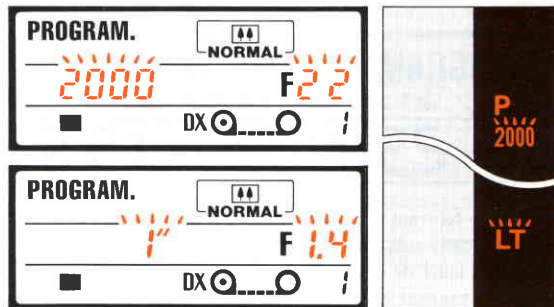
Programmed AE Mode Warnings

If the subject is too bright or too dark, the viewfinder and CENTIC indicators blink to warn you. When the selected shutter speed is 1/30 second or slower (shown by orange indicators in the viewfinder), the use of a flash or tripod is recommended to avoid camera shake. (See page 26 for more detailed information on warnings.)

● When the Normal Program mode is selected, the CENTIC panel also displays a sub-mode indicator ([▦], [▦] or [▦]), depending on the focal length of the lens in use.

Normapl Program Mode

PROGRAM. [▲▲ NORMAL]

250   **F5.6**
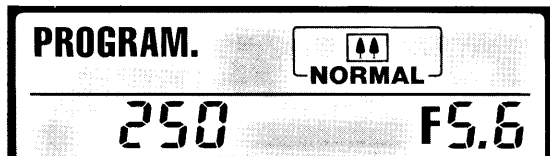
When the Normal Program mode is selected, the camera automatically sets one of the sub-modes (Wide [▦], Standard [▦] or Tele [▦]), depending on the focal length of the lens in use. The sub-mode is also automatically switched when the focal length of the zoom lens changes. When the macro setting of a zoom lens is used, the Normal Program Tele [▦] is automatically set.

When an SMC Pentax-A lens is used, the camera automatically selects the Normal Program Standard mode.

Normal Program Sub-Modes and Lens Focal Lengths

Sub-mode	Focal length of lens
Wide [▦]	Shorter than 40mm
Standard [▦]	Between 40mm and 110mm
Tele [▦]	Longer than 110mm

Program Action Mode

PROGRAM. 🏃

1000   **F2.8**

This mode is programmed to select a relatively high shutter speed, making it ideal for action shooting such as sports and wildlife photography. It also minimizes camera shake and vibration to prevent blurred images.

Program Depth Mode

PROGRAM. ⛰️👤

60   **F11**
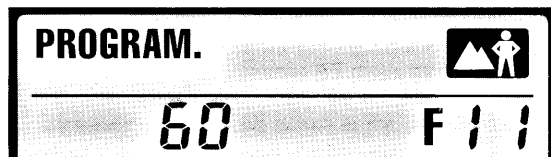
This mode is programmed to maximize the depth of field. Use it for subjects requiring both near and distant elements to be in sharp focus, such as portrait shots with a background setting (buildings, landscapes, etc.), or taking close-ups.
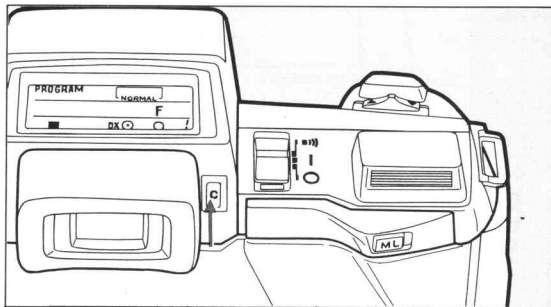
Exposure Mode Clear Button
Pushing this button instantly resets all the current settings
(exposure mode, drive mode, exposure compensation,
etc.) to the settings described below.

Exposure Mode:	Lens at "A" setting	→ Normal Program
	Lens at any f-number	→ Aperture-Priority AE
Drive Mode:		→ Single Advance
Exposure Compensation:		→ ±0.0
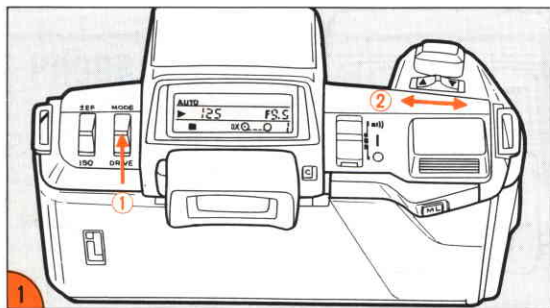
Shutter-Priority AE Mode

Once the desired shutter speed is set, the camera automatically selects an appropriate aperture according to the lighting conditions surrounding the subject for a perfect exposure. Use this mode to capture a fast-moving subject (as in sports) as well as for taking ordinary snapshots.

1. When you select the Shutter-Priority AE mode, the CENTIC panel confirms it by displaying [AUTO], [▲] and the shutter speed selected. If any other indicator on the panel lights up, use the mode/drive switch and the select switch to set this mode.
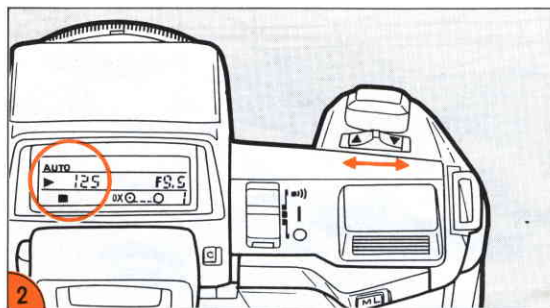
2. To select a faster shutter speed, slide the select switch to the UP position. Slide it to the DOWN position to select a slower shutter speed. One push moves the shutter speed to the next setting, and the speed is shifted continuously if the select switch is held at one position.

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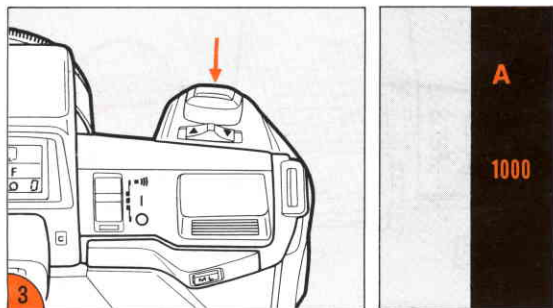
3. When you press the shutter release button halfway down, "A" and a selected shutter speed will appear in the viewfinder, while the CENTIC panel indicates the aperture suitable for the selected shutter speed.
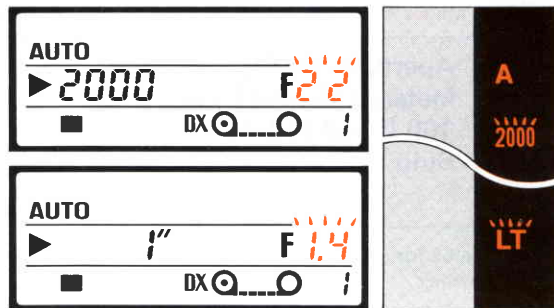
Shutter-Priority AE Mode Warnings

When the subject is too bright or too dark, the viewfinder and CENTIC indicators blink to warn you. If this occurs, shift the shutter speed either to a faster setting (toward "2000") or to a slower one (toward "LT") until the indicators stop blinking. When selecting a shutter speed of 1/30 second or slower (shown by the orange indicators in the viewfinder), the use of a flash or tripod is recommended to avoid camera shake. (See page 26 for more detailed information on warnings.)

Exposure Modes When Aperture Ring is Set at an F-Number

- **Aperture-Priority AE mode**
- **Metered Manual mode**
- **100 (fixed at 1/100 sec.)**
- **Bulb**

• See page 52 for detailed information on "100" and "bulb" settings.

• The exposure modes mentioned above can be used in combination with SMC Pentax-F, -A, -M and SMC Pentax lenses.

Aperture-Priority AE Mode

Once the desired aperture is set, the camera automatically selects an appropriate shutter speed according to the lighting conditions surrounding the subject for the best possible exposure. Use this mode for photographing subjects in which the depth of field is crucial, such as close-ups, landscapes and portraits.
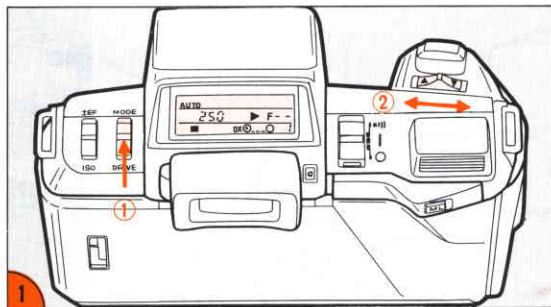
1. When you select the Aperture-Priority AE mode, the CENTIC panel confirms it by activating its [AUTO], [▲] and [F--] indicators. If the camera is set at any other mode, use the mode/drive switch and the select switch to set this mode.

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● 22
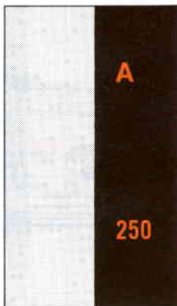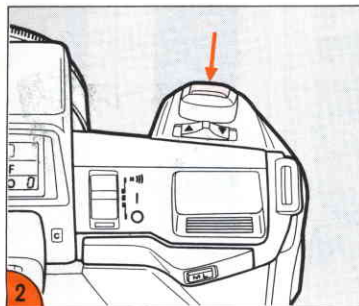
2. When you press the shutter release button halfway down, "A" and a shutter speed will appear in the viewfinder, while the CENTIC panel indicates the shutter speed.
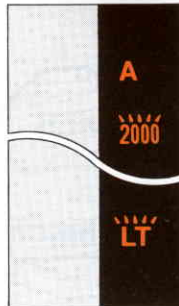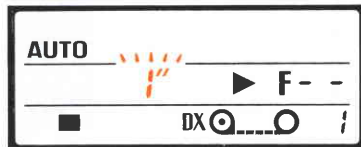
Aperture-Priority AE Mode Warnings

When the subject is too bright or too dark, the viewfinder and CENTIC indicators blink to warn you. Turn the aperture ring either to a smaller f-number (toward f/1.4, etc.) or to a larger one (toward f/22, etc.) until the indicators stop blinking. When the selected shutter speed is 1/30 second or slower (shown by orange indicators in the viewfinder), the use of a flash or tripod is recommended to avoid camera shake. (See page 26 for more detailed information on warnings.)
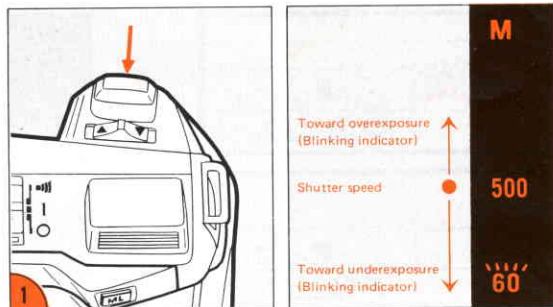
Metered Manual Mode

To obtain the correct exposure in this mode, set a shutter speed and an aperture according to the exposure meter's reading. It is also possible to intentionally over- or under-expose the subject for a special visual effect or a photographic theme.

When the Metered Manual mode is selected, the CENTIC panel confirms it by activating its [MAN.], [▶] shutter speed and [▶] aperture indicators. If the camera is set at any other mode, use the mode/drive and select switches to set this mode.
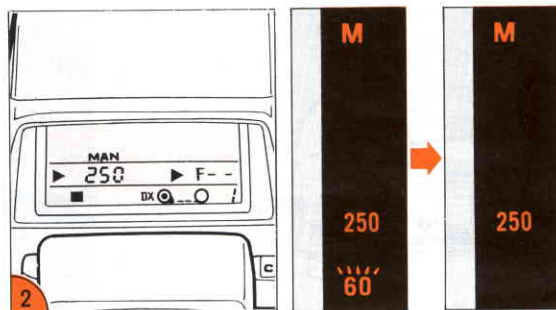
1. When you press the shutter release button halfway down, the viewfinder displays "M" and a shutter speed. If, as illustrated above, two indicators — one solidly lit and another blinking — appear at the same time, it indicates an incorrect exposure. If this occurs, adjust either the shutter speed or the aperture so that only one solidly lit indicator remains. This indicates that the exposure is correct.

2. **To determine the shutter speed first**
   Turn the lens aperture ring one way or the other until only one solidly lit indicator remains in the viewfinder. If the correct exposure cannot be obtained this way, reset the shutter speed.
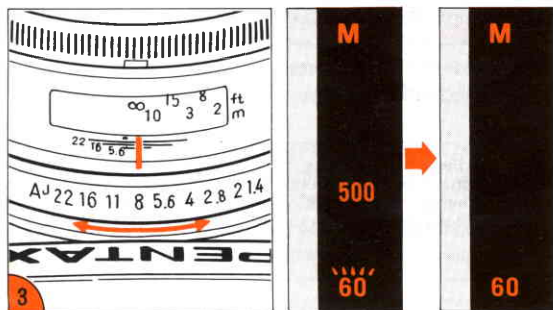
3. To determine the aperture first

Slide the select switch to the UP or DOWN position until only one solidly lit indicator remains in the viewfinder. If the correct exposure cannot be obtained in this way, reset the aperture.
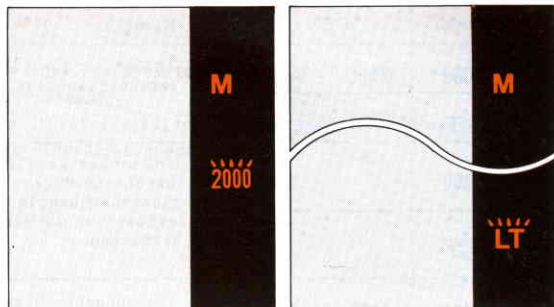
Metered Manual Mode Warnings

When the subject is too bright or too dark, the viewfinder indicators blink to warn you. Turn the aperture ring either to a smaller f-number (toward f/1.4, etc.) or to a larger f-number (toward f/22, etc.) until the indicators stop blinking. When the selected shutter speed is 1/30 second or slower (shown by the orange indicators in the viewfinder, the use of a flash or tripod is recommended to avoid camera shake. (See page 26 for more detailed information on warnings.)

Viewfinder		CENTIC		Remarks
P	2000	2000	F 22	The subject is out of the metering range of the Programmed AE modes. The correct exposure cannot be obtained using the current settings.
P	LT	1″	F 1.4	
A	2000		F 22	The subject is out of the shutter-speed/aperture coupling range or the metering range in the Shutter-Priority AE mode. The correct exposure cannot be obtained using the current settings. In the former case, change the shutter speed to obtain the correct exposure. in the latter case, the indicators will keep blinking even if the shutter speed is changed.
A	LT		F 1.4	
A	2000	2000		The subject is out of the shutter-speed/aperture coupling range or the metering range in the Aperture-Priority AE mode. The correct exposure cannot be obtained using the current settings. In the former case, change the aperture to obtain the correct exposure. In the latter case, the indicators will keep blinking even if the aperture is changed.
A	LT	30″		
M	500 125			The subject is out of the Metered Manual mode's correct exposure range. Change the shutter speed and/or the aperture until only one solidly lit indicator remains; this indicates correct exposure is possible.
M	250 60			
M	2000			The subject is out of the Metered Manual mode's metering range. The indicators will keep blinking even if the shutter speed and/or the aperture are changed. The correct exposure cannot be obtained using the current settings.
M	LT			
P	250			When the exposure memory lock is in use, the viewfinder indicators blink to confirm it.
P	60			The low battery level is warned by blinking indications.

• All warnings are given by blinking the indicators on the CENTIC panel and in the viewfinder.

• The out-of-metering range warning means the subjects is too bright or too dark to be measured with the camera's built-in exposure meter.

• The out-of-coupling range warning means the current combination of shutter speed and aperture cannot be used even if it is within the metering range.

• See page 38 for the metering and coupling ranges.

• The symbol [\\\\\\ ] in the table at left indicates blinking.

How to photograph a subject in the out-of-metering range

• If the subject is too bright, use ND filters (available commercially).

• If the subject is too dark, you will have to use a flash or other lighting equipment.
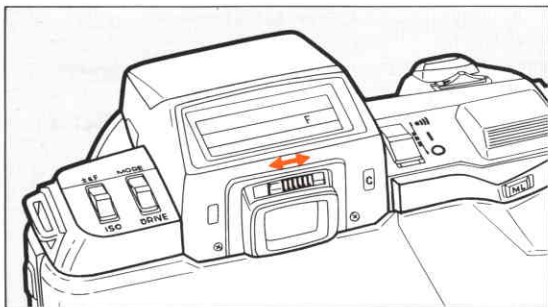
Eyecup F

The Eyecup F is attached to the viewfinder accessory groove.

To use the diopter adjustment slide or attach the viewfinder cap (standard) and an optional viewfinder accessory such as the Magnifier F, remove the Eyecup F by pushing up its sides as in the illustration.
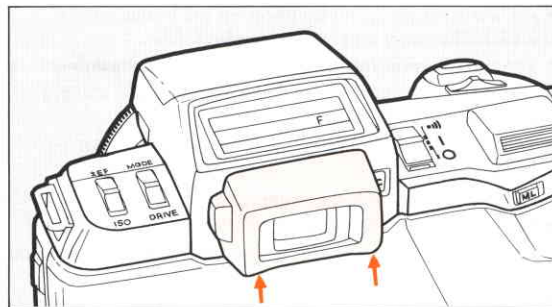
Diopter Adjustment Mechanism

Unless the diopter is correctly adjusted, the viewfinder image cannot be viewed clearly. Adjust the diopter to your eyesight before using the camera.

To adjust the diopter, point the camera to a bright area without focusing. Move the diopter adjustment slide sideways until you can find a point where the focus frame at the center of the viewfinder can be seen most clearly. The diopter adjustment range is between −1.5 and +1.5 diopters.

• The Eyecup F cannot be used in combination with an optional viewfinder accessory such as a diopter correction lens.

• SMC Diopter Correction Lenses-M are also available as options.

• 28
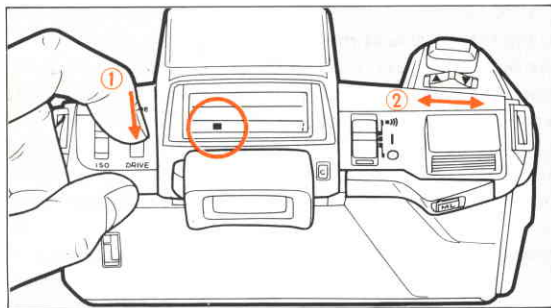
Drive Modes

To set a drive mode, slide the select switch to the UP or DOWN position while pressing the mode/drive switch to the DRIVE position until the mark representing the desired mode appears on the CENTIC panel. If the select switch is held at one position, the marks will change continuously.

[☼] = **Self-timer mark** (see page 49.)

[■] = **Single advance**

When you press the shutter release button, the motor drive advances the film to the next frame and stops.

[⧈] = **Consecutive advance**

As long as you hold the shutter release button down, the motor drive keeps advancing the film at a speed of approx. 1.8 frames per second.
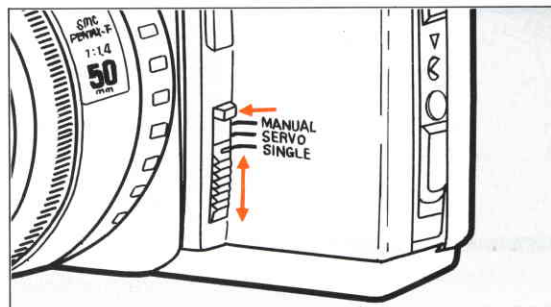
Focusing Modes

Auto-Focus (AF) Modes

❶ **AF SINGLE**

Focusing continues until the subject is captured in focus. The shutter can then be released.

❷ **AF SERVO**

If the subject moves, the camera continues focusing on it. The shutter can be released anytime, even if the subject is not in focus.

Manual Focus Mode

❸ **MANUAL**

Push up the focus-mode switch while pressing the manual-focus button. Focusing can be done manually with the assistance of the FI (Focus Indication) system.

Matte area

[   ] Focus frame

Focus indicators

▶ ● ◀
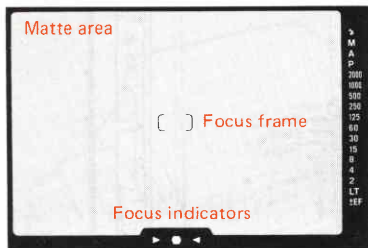
Auto-Focus Modes (AF SINGLE and AF SERVO)

● Position the subject at the focus frame at the viewfinder's center.
● Press the shutter release button halfway down. If the green in-focus indicator at the bottom of the viewfinder lights up, the subject is in focus and you can release the shutter. When the main switch is set at the [◦)] position, the correct focus is also confirmed by a PCV tone.

● With F-series zoom lenses, the image size can be adjusted by turning the zooming ring of the lens.
● Do not touch or impede the focusing ring of the lens as it rotates during auto focusing.

FI Indicator	Remarks
◯ (Solid green signal)	The in-focus signal: The subject is in focus and the picture can be taken.
▶ ◀ (Blinking red signals)	Out-of-focusing range warning: You can focus by pointing the camera at a brighter area of the subject. If it still will not focus, see page 33 on "Difficult Subjects for auto focusing." In dark locations, the use of a flash is recommended.
◀ (Solid red signal)	The subject is too close for auto focusing, so move back.
▶ ◀ (Blinking red signals)	The macro setting of the F-series zoom lens is being used. [▶] = Out of focus because the subject is too close, so move back. [◀] = Out of focus because the subject is too far away, so move forward.

AF SINGLE Mode

• The shutter cannot be released until the subject is in focus.

• Focusing is fixed as long as you press the shutter release button halfway down with the green in-focus signal [○] on. (See page 32 about the focus-lock function.) To change the direction of shooting after focusing is fixed, it is necessary to let the shutter release button go and press it again.

• If you press the shutter release button all the way down in one movement, the shutter is released after the subject is in focus.

• The "Snap-in-Focus" can be used in combination with a Pentax K_A- or K-mount lens. Adjust the focus manually at the point you expect to capture the subject and hold the shutter release button all the way down. The shutter will release automatically as soon as the subject moves into the prefocused area.

AF SERVO Mode

• In the AF SERVO mode, you can release the shutter anytime, regardless of the focusing situation. As long as you press the shutter release button halfway down, the camera continues focusing on the subject even when it is moving.

• If you release the shutter when the green in-focus signal [○] lights up, the subject is captured in focus.
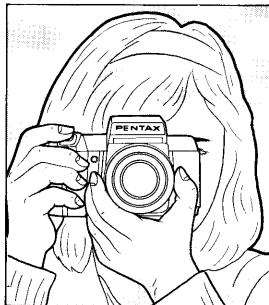
How to Hold the Camera

To take sharply focused pictures, it is essential to hold the camera properly. The shutter release button should be pressed softly while you hold your breath, since a sudden, rough release can cause camera shake and produce blurred images. Brace the camera and your body on a tree, building or table. When using a slow shutter speed or a telephone lens, the use of a tripod and the Cable Switch F is recommended.

FOCUS LOCK

Be careful!

If the shutter is released at this moment, the subjects will be out of focus. The background will be in focus instead.

If the subject is not positioned in the focus frame [[ ]] at the center of the viewfinder, use the focus lock by following the procedures described at right. The focus lock can be used only in the AF SINGLE mode.

1. Position the subject in the focus frame at the center of the viewfinder and press the shutter release button halfway down. The green in-focus signal [○] and the PCV tone confirm that the subject is in focus.
2. While you hold the shutter release button halfway down, recompose the image to your liking and release the shutter.

● As long as you hold the shutter release button halfway down and the green in-focus signal is on, the focus remains locked. When you remove your finger, it is unlocked. This procedure can be repeated any number of times.

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Difficult Subjects for Auto Focusing

This camera's auto-focusing system is extremely precise and highly sophisticated, yet there are certain types of subjects (due to their brightness, contrast, shape and size) that make focusing very difficult. For these situations, use the focus lock or manual focusing, or take advantage of the built-in RTF (Retractable TTL-Auto Flash) in dark locations.

● Extremely low-contrast subjects (little difference between the bright and dark areas), such as a white wall.
● Extremely dark subjects.
● Extremely fast-moving subjects.
● Subjects with only horizontal lines.
● Subjects with detailed and/or complex patterns.
● Subjects positioned against harsh reflected light, strong backlight or an extremely bright background.
● Subjects composed of elements both near and far within the focus frame.

Accessories Not Usable in Auto Focusing

The following accessories cannot be used in the auto-focus mode or the FI (Focus Indication) system. Use the matte area of the viewfinder for focusing.
● Special-effect filters, magic-image attachments or stereo adapters.
● Linear polarizing filters because this camera has a half-mirror. Use the circular polarizing filters.
● Extension Tubes and Auto Bellows.
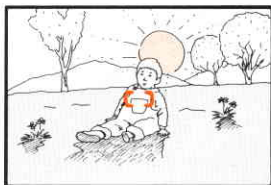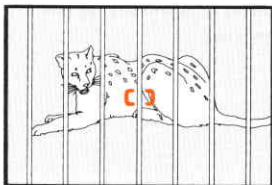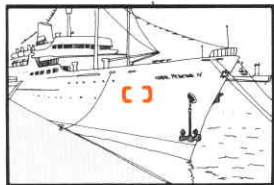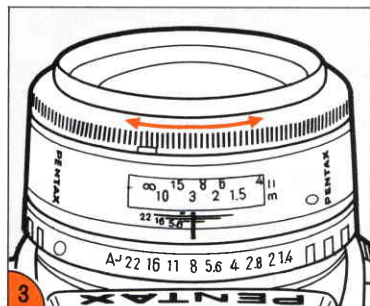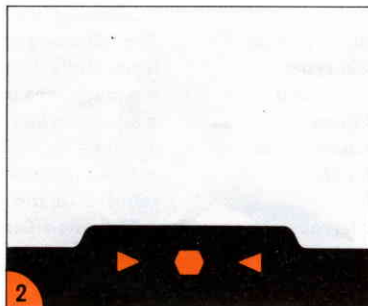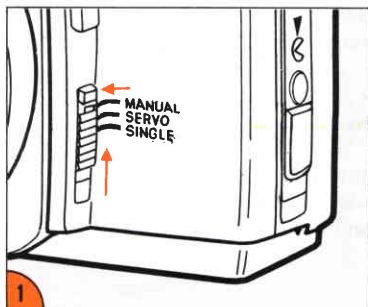
When using existing Pentax A- and M-series lenses, focusing needs to be done manually with the assistance of the FI (Focus Indication) system. The same operations can be applied to the F-series lenses if the auto-focus system is not used.

Usable SMC Pentax Lenses

The following lenses with a maximum aperture of f/5.6 or larger can be used:

- F-series (KAF mount) and A-series (KA mount) lenses,
- M-series and Pentax lenses (K mount).

1. Set the focus-mode switch to the MANUAL position.
2. As illustrated, one or more of the FI signals light up when you press the shutter release button halfway down.
3. Turn the lens focusing ring to the right for the [▶] signal and to the left for the [◀] signal. If the green in-focus signal [○] lights up, the subject is in focus. When the main switch is set at the [•))] position, the correct focus is also confirmed by a PCV tone.

FI Signal

[▶] = Front-focus signal: Turn the focusing ring to right.

[◀] = Back-focus signal: Turn the focusing ring to left.

[○] = In-focus signal: The subject is in focus.

▶ ◀ = Out-of focus-range warning: Unable to focus.

Only lenses with a maximum aperture of f/5.6 or larger can be used in the FI system. The FI signals may appear in the viewfinder even when some other slower lens (such as 1000mm f/8) is mounted for high-contrast subjects, but the accuracy is not at the optimum level. For such lenses, use the matte area of the viewfinder for focusing.

* SMC Pentax Bellows 100mm f/4, SMC Pentax Shift 28mm f/3.5 (when shifted) and reflex-type lenses cannot be used in the FI system. Use the matte area of the viewfinder for focusing.

Focusing Using the Viewfinder Matte Area

For subjects that are difficult to focus on automatically or measure the distance to, and when using an old Takumar-series lens with the Mount Adapter K (optional), use the matte area of the viewfinder for manual focusing.

● Set the focus-mode switch at the MANUAL position.
● Turn the lens focusing ring to the point where the subject appears most clearly, then release the shutter.
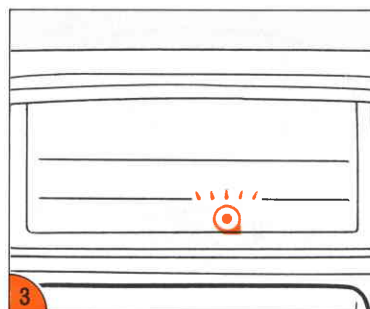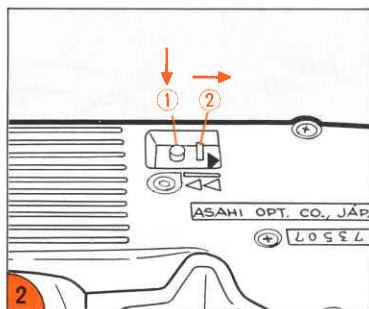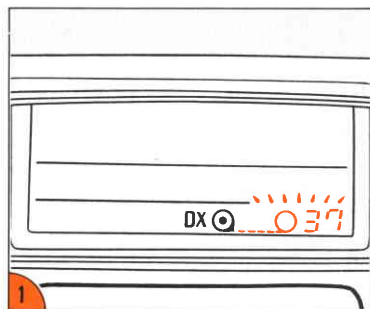
When the film reaches its end, the motor drive automatically stops winding. However, do not open the camera's back cover immediately. The exposed film must be returned to its cartridge before removing it from the camera.

1. When the film reaches its end, the film-advance and end-of-film marks as well as the exposure frame counter will blink to inform you of the fact.

2. Slide the rewind switch ❷ at the bottom of the camera toward the direction of an arrow while depressing the rewind bottun ❶ The camera's motor will start rewinding the film. Remove your finger once the motor is activated.

3. During rewinding, the film-advance mark flashes from left to right. When rewinding is completed, the shutter is released once and the motor stops. The film-loaded mark then blinks to inform you that the rewind operation is finished.
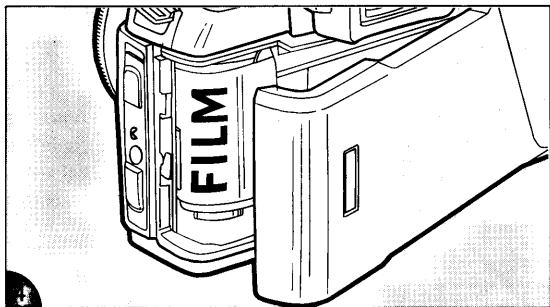
4. Open the back cover and remove the film by pulling out the bottom of the film cartridge with your finger.

● Rewind time is approximately 20 seconds for a 24-exposure roll of film.
● Open the back cover only after confirming completion of the rewind operation by the blinking film-loaded mark.
● If the film is exposed for a greater number of frames than designated on the film cartridge, the extra frames may be cut off at the developing laboratory.

Aperture

Out of Shutter-Speed/
Aperture Coupling Range

Out of Metering Range

Shutter/Aperture-Coupling
and Metering Range

45
32
22
16
11
8
5.6
4
2.8
2
1.4
1.2

Program Depth

Normal Program

Wide, Standard, Tele

Program Action

30" 15" 8" 4" 2" 1" 2 4 8 15 30 60 125 250 500 1000 2000

Shutter speed

Out of Shutter-Speed/
Aperture Coupling Range

ISO 6400
ISO 3200
ISO 1600
ISO 800
ISO 400
ISO 200
ISO 100
ISO 50
ISO 25
ISO 12
ISO 6

EV 1 2 3 4 5 6

The Shift of Metering Range by
ISO Film Speed

Metering Sensitivity Distribution
(with EV 10 at center)

Out of Metering Range

(At ISO 100 with 50mm f/1.4 lens)

Programmed AE Diagram

This camera has three Programmed AE modes — Normal Program, Program Action and Program Depth. The thick solid lines of the diagram at left represent the shift in the combination of shutter speeds and apertures. This combination can be shifted up to the maximum aperture of the lens in use: the combination of an f/2.8 lens is indicated by a red dotted line as an example.

In the Normal Program mode, the combination is automatically shifted to a program for one of three sub-modes — Wide, Standard and Tele — depending on the lens in use.

The Program Action mode is programmed to select a high shutter speed.

The Program Depth mode is programmed to increase the depth of field by selecting a small aperture.

The thin solid lines and thin dotted lines on both sides of the diagram indicate different coupling ranges when lenses with different maximum and minimum apertures are used, or when the ISO film speed is changed. As the aperture range of the lens (f/1.4 — f/22) changes, the limits of the metering range change as well.

Metering Range and Shutter-Speed/Aperture Coupling Range

Metering range refers to the range of subject illumination within which the built-in exposure meter can operate to control an exposure. The shutter-speed/aperture coupling range is a part of the metering range within which possible combinations of shutter-speed and aperture values for proper exposure control can be found. For example, the metering range for a 50mm f/1.4 standard lens with ISO 100 film is from EV 1 (f/1.4, 1 sec.) to EV 20 (f/22, 1/2000 sec.).

As the ISO film speed changes, the metering range changes as well. The thin slanted red lines in the diagram at left indicate the change in metering ranges in relation to ISO film speed. The inside of the center frame represents the meter and shutter-speed/aperture coupling range.

EV (Exposure Value)

EV represents the brightness of the subject and is indicated by a number.

This camera is equipped with a built-in Retractable TTL-Auto Flash (RTF) unit. The RTF is ideal for use in dark locations where the auto-focus system does not work, and for flash photography. Even when photographing a person under the shade of a tree or in a dark location during the daytime, the RTF can be used as a fill-in flash in the Programmed AE mode for daylight flash-sync photography.
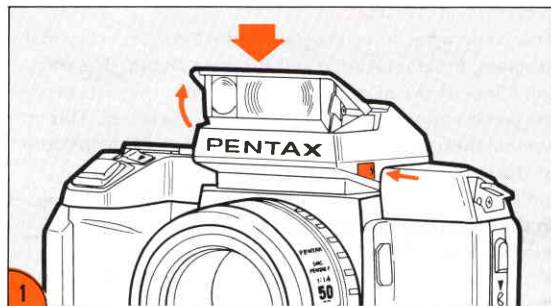
1. When the flash pop-up button is pushed, the RTF swings up and forward and starts charging. After use, push it back down into the housing.

- **Guide Number:** 14 (ISO 100/m)
- **Usable Lenses:** 35mm to 210mm (excluding Macro 100mm)
- **Recycle Time:** Approximately 3 seconds (using a 6V lithium battery)
- **Effective Flash Range:** Approximately 1m to 5m (ISO 100, f/2.8)
- **Usable Films:** ISO 25 to 400

PROGRAM. NORMAL
100   F *11*

PROGRAM. NORMAL
60   F*2.8*

(m)
5.6
4
2.8
2
1.4
1
0.7
0.5

ISO 400
ISO 200
ISO 100
ISO 400
ISO 200
ISO 100

6 7 8 9 10 11 12 13 14 15 16 17 EV
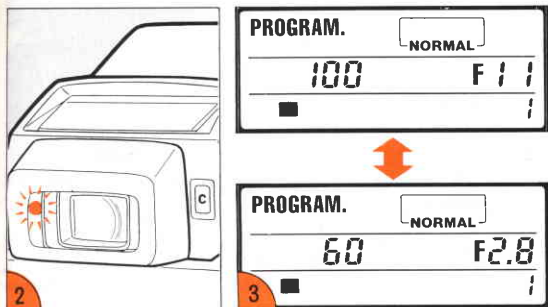
2. When the RTF is fully charged, the red flash-ready
   indicator next to the viewfinder eyepiece (inside
   Eyecup F) lights up to confirm it.

3. If the lens aperture ring is set at the "A" position for
   the selected exposure mode (e.g. the Programmed AE
   modes), the flash-sync shutter speed (1/60 sec.~1/100
   sec.) and the aperture (f/2.8~f/11 at ISO 100) are
   automatically changed according to the brightness of
   the subject, making the daylight flash-sync photography
   extremely simple.
   The flash-sync shutter speed and the aperture are
   displayed on the CENTIC panel when the shutter release
   button is depressed halfway down. In the viewfinder,
   the exposure mode ["P" or "A"] and the sync speed
   ["60"] are indicated, but the flash-ready indicator [4]
   is not.
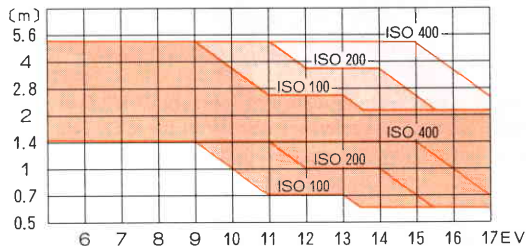
The chart above shows the RTF's effective flash ranges in
the Program Flash system for lenses with a maximum
aperture of f/2.8 or larger. For lenses with a smaller
maximum aperture (f/4, for example), the range is
extended another block at the bottom (from 1.4m to
1m, for example).

• If the lens aperture ring is set at any f-number for the selected exposure mode, the effective flash range is determined by the selected aperture (G.N. $14 \div f/4 =$ 3.5m), and the flash-sync shutter speed is set at 1/100 sec.

• When a lens with a maximum aperture of f/2.8 or smaller is used, the aperture display in the CENTIC panel starts from that maximum aperture of the lens.

• The Program Flash system can be used in combination with a Pentax-F or -A lens. Be aware that the RTF's discharge may be cut off by wide-angle lenses or lenses with a large diameter.

• When a Pentax-F lens that may cut off the RTF's discharge is mounted (e.g., some zoom, telephoto and macro lenses), the red flash-ready indicator [⚡] blinks to warn the photographer. In this case, the shutter can be released but the RTF will not discharge.

• Do not use a lens hood. The RTF's discharge is also cut off within the distance of 1m when a 35mm wide angle is mounted, so do not use the RTF in such cases.

• Be aware that photographing a person straight on from the front using a flash beyond a distance of 3m may cause the "red-eye" phenomenon produced when light reflects off the retinas. (This can be avoided by directing the subject's gaze away from the camera.)

AF Spotbeam Projector

When using the RTF in a dark location, the AF spotbeam projector automatically emits an infrared beam to assist the auto-focus system.

The spotbeam projector can also be used in dim locations where the auto-focus system may not work effectively.

• The AF spotbeam projector can be used only when the focus-mode switch is set at the SINGLE position. It will not work at any other position.

• The AF spotbeam projector's effective range is approximately 1m to 4m. If flash illumination is unnecessary, push down the RTF unit after the AF system captures the subject in focus.

• The AF spotbeam projector does not operate for bright subjects.

• If the [►◄] indication appears, auto-focusing is impossible. (See pages 33 to 35.)

• When the AF400FTZ's AF spotbeam projector is used, the AF spotbeam projector built into the camera does not operate.

If the camera is set in an AE (automatic exposure) mode or the Metered Manual mode, a Pentax dedicated auto flash unit can be used anytime.

How to Use an Accessory Flash

1. Remove the camera's hot-shoe cover and attach the flash unit.
2. Set the flash mode to TTL Auto or Programmed Auto.
3. Turn the flash's main switch on.
4. The completion of the flash-charging operation can be confirmed by checking the flash unit's flash-ready indicator, as well as the flash-ready indicator [⅕] in the viewfinder and the flash-sync speed display on the CENTIC panel, both of which are turned on when the shutter release button is pressed halfway down. (The indications for the RTF are slightly different.)

• When the exposure meter's timer goes off, the [⅕] and flash-sync shutter speed indicators also switch off.

• For this camera, please take advantage of the new AF400FTZ dedicated auto zoom flash, which possesses the many capabilities shown at right.

Functions of RTF and Dedicated Auto Flash Units

• When using an old-type flash unit (AF160S or AF200S), use the lens aperture ring to select the desired f-number.

• * The red flash-ready indicator located to the left of the viewfinder eyepiece lights up when the flash is fully charged.

• The flash unit may not discharge if the subject is too bright to require a flash.

• ☆ AF200SA, AF240Z and AF160SA apply.

TTL Auto Flash System

When you attach a Pentax dedicated TTL auto flash unit, the camera's metering circuits automatically control the flash output for a proper exposure by measuring the incoming light reflected off the film plane. Since this system measures only the light reflected by the subject, it ensures accurate exposure control.

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Functions of RTF and Dedicated Auto Flash Units

Camera's Functions	RTF	AF400FTZ	AF400T AF280T AF200T AF080C	AF200SA AF240Z AF160SA AF200S AF160S
When flash charging is completed and the shutter release button is depressed halfway down, the flash-ready indicator [⚡] appears in the viewfinder, and the shutter speed "100" (1/100 sec.) appears on the CENTIC panel. When using the older models such as the AF160S and AF200S, set an f-number using the lens aperture ring.	O* (60-100)	O (60-100)	O (100)	O (100)
With the lens aperture ring locked at the "A" position, the appropriate aperture value is set automatically.	O	O	O	☆
Successful flash discharge is confirmed by the flash-ready indicator [⚡] in the viewfinder, which either turns off briefly and back on again or blinks after exposure.		O	O	
Flash output is automatically controlled by measuring the amount of light striking the film plane during exposure. (TTL Auto Flash)	O	O	O	
Slow shutter-speed sync operation under 1/100 second is possible in the Metered Manual mode.	O	O˙	O	O
Built-in AF spotbeam projector for assisting auto focusing in dark locations.	O	O		
Selection of the leading shutter-curtain or trailing shutter-curtain sync mode.		O		

TTL Auto Flash Mode
For Programmed AE and Shutter-Priority AE Modes
• Like the built-in RTF unit, the AF400FTZ, which is designed exclusively for use with this camera, automatically adjusts the shutter speed and aperture according to the subject's brightness, making it easy to accomplish even complicated daylight flash synchronization. (See the operating manual of the AF400FTZ for more detailed information.)

• With a conventional dedicated flash unit (AF400T, AF280T, AF200T and AF080C), a flash-sync speed of 1/100 second and an aperture of f/4 (f/8 for AF080C) are set as soon as the flash is fully charged (at ISO 100). However, these units are not recommended for daylight flash sync photography.

* With zoom lens whose maximum aperture changes (from f/3.5 to f/4.5, for example) according to the focal length, the f-number indication (e.g. f/4, ISO 100) may start blinking to indicate that exposure is out of the coupling range, depending on the focal length selected. Be aware that this might result in underexposed images with the current settings.

For Aperture-Priority AE and Metered Manual modes
• Select the desired f-number using the lens aperture ring.

• The flash-sync speed of 1/100 second is set as soon as the flash is fully charged.

Programmed Auto Flash Mode
For Programmed AE and Shutter-Priority AE Modes
• Set the flash's mode switch at one of the AUTO (red, green or yellow) positions for dedicated flash units such as the AF400T, AF280T, AF200T and AF200SA.

• A combination of a flash-sync speed of 1/100 second and a lens aperture is selected as soon as the flash is fully charged, as indicated in the chart below.

(at ISO 100)

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

(AF200SA: f/4 at ISO 100)

For Aperture-Priority AE and Metered Manual Modes
• Set the flash's mode switch at one of the AUTO (red, green or yellow) positions.

• Set the same f-number on the lens as the one indicated by the flash's exposure scale.

• The flash-sync speed of 1/100 second is set as soon as the flash is fully charged.

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Common Functions of TTL Auto Flash and Programmed Auto Flash Modes

In the Metered Manual mode, slow-shutter-speed synchronization can be used by selecting a shutter speed between 1/60 second and one second. The shutter speed can be selected by sliding the select switch to the UP or DOWN position until the desired speed appears on the CENTIC panel.

● When the shutter speed is set between 1/2000 second and 1/125 second, it is switched to the flash-sync speed of 1/100 second when the flash is fully charged.

Flash Confirmation Signal (ϟ)

When a proper flash exposure is made in the TTL Auto Flash or Programmed Auto Flash mode while the camera is set in an AE or Metered Manual mode, the flash-ready indicator [ϟ] in the viewfinder confirms it right after the discharge, either by disappearing for a moment and coming back on again or by blinking.

* The AF200SA does not have the flash confirmation signal function.

Precautions for Using Pentax Dedicated Flash Units

● When using a flash unit in the manual sync (MS) or manual (M) mode, select an f-number using the lens aperture ring. If the ring is set at the "A" position, a correct exposure cannot be made. The functions in the MS and M modes may vary depending on the type of flash used, so check the operating manual of the flash in use for details.

● Multi-flash photography in the TTL Auto Flash mode can be done by combining the RTF with the AF400FTZ. In this case, the AF400FTZ attached to the camera's hot shoe has a priority for different functions over the RTF. When combining conventional dedicated flash units, use the lens aperture ring to select the aperture. Be sure to check the flash-ready indicator of the attached flash unit before shooting.

● The TTL Auto Flash or Programmed Auto Flash mode can be used even when the camera is set at the "100" (1/100 sec.) or "B" (bulb) settings.
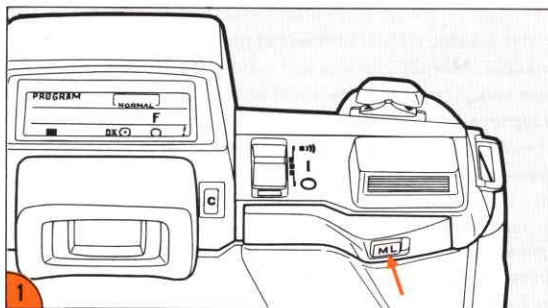
The exposure memory lock is a mechanism that tempo-rarily memorizes exposure data measured before a shutter release in the AE modes. It is very useful when photographing subjects against strong backlight or when there is a large, extremely bright or dark background area.

1. Move in to capture the main subject (a person's face, for example) in full frame in the viewfinder and then press the exposure memory lock button [ML] to memorize the exposure data. The viewfinder indicators will blink rapidly to indicate the function is operating.
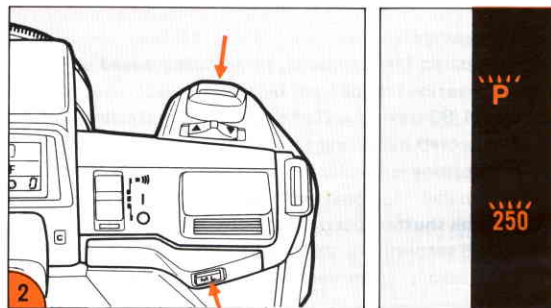
2. To extend the exposure memory, press the shutter release button halfway down while also pressing the ML button. As long as the shutter release button is held at this position, the measured exposure data is kept in memory.
Move back, recompose the image and release the shutter. The subject is correctly exposed. Once the shutter is released, the memory is canceled.

Precaution

● If the ML button is pressed while the camera is in the Metered Manual mode, the shutter speed indicator in the viewfinder locks and starts blinking.
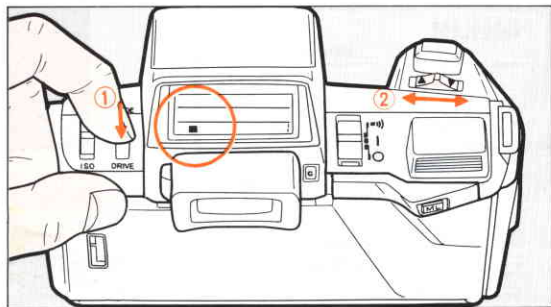
Take advantage of the self-timer when you wish to be in your own photograph.

Set the self-timer by sliding the select switch to the UP or DOWN position while holding the mode/drive switch at the DRIVE position. The [⟲] mark on the CENTIC panel will light up. After focusing on the subject, press the shutter release button. This delays the shutter release for approximately 12 seconds.

● If the main switch is set at the [•⟩⟩] position, self-timer operation is indicated not only by the LED self-timer indicator but also a PCV tone. For the final two seconds before the shutter release, the indicator blinks and the PCV tone changes to a short, intermittent beep.
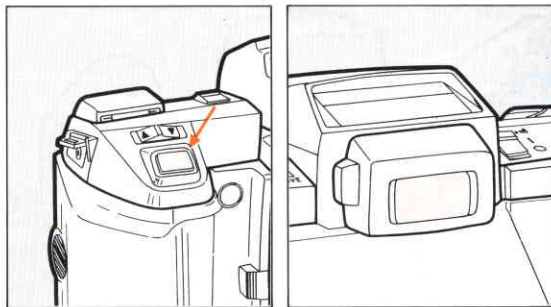
● The exposure-frame/self-timer counter on the CENTIC panel counts down the delay time from 12 seconds to shutter release.
● To cancel the self-timer operation, turn the main switch off.
● The self-timer cannot be used in combination with the bulb setting.

Since your eye isn't covering the viewfinder when you use the self-timer, light entering the eyepiece can cause exposure errors (underexposing the subject) in the AE modes. To prevent such errors, remove the Hot Shoe Cover F from the hot shoe and insert it inside the Eyecup F.
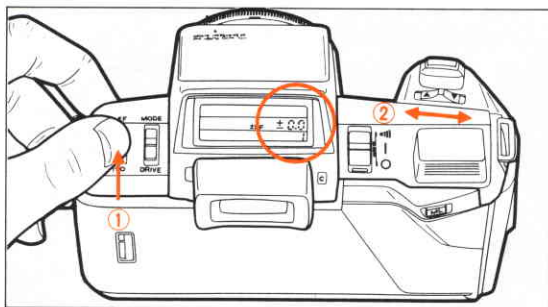
The exposure compensation system is used to change the basic exposure value or to intentionally under- or overexpose the subject in the AE modes.

Sample Subjects	Compensation Value
• Back-lit subjects • Landscapes with a large amount of blue sky • Person(s) on the snow • Person(s) with the sky in background	Approx. +1 to +3.5 EV
• Subjects with dark background • Subjects on stage • Night scenes	Approx. -1 to -3.5V

To use the exposure compensation feature, set the desired compensation value by sliding the select switch to the UP or DOWN position while holding the ISO/exposure compensation switch at the ±EF position.
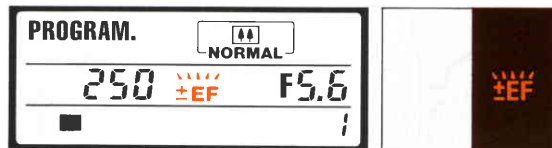
The exposure value can be adjusted in the range between -4 EV and +4 EV in 1/2 steps.

The exposure compensation mark [±EF] on the CENTIC panel blinks while the exposure compensation is being used. When you press the shutter release button halfway down, the ±EF indicator in the viewfinder blinks.

Be sure to reset the value to "0.0" by pushing the exposure mode clear button as soon as you finish using the feature.

• Exposure compensation can also be used in combination with the TTL Auto Flash or Programmed Auto Flash mode.

• In the Metered Manual mode, it is easier to change the shutter speed or aperture after obtaining the correct exposure.

▲ UP position ←————————→ ▼ DOWN position		
+4.0	~ ±0.0 ~	-4.0
(Displayed in 1/2 steps)		

±0.0

+2.0

±0.0

−2.0
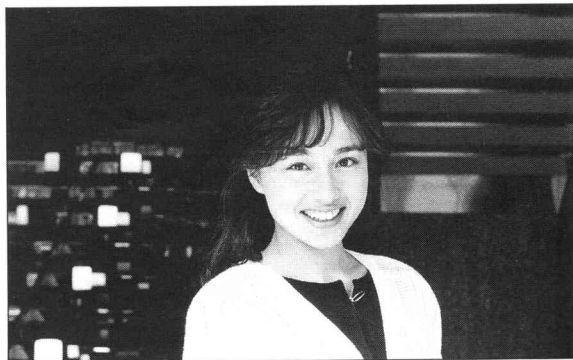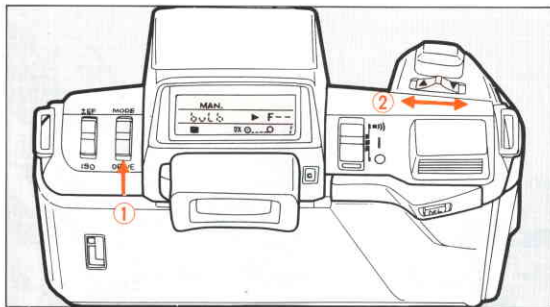
Select the "B" (bulb) or "100" (1/100 sec.) setting by sliding the select switch to the UP or DOWN position while holding the mode/drive switch at the MODE position. The appropriate indicator will appear on the CENTIC panel. When you press the shutter release button halfway down, the indicator "M" will appear in the viewfinder.

Using the "B" (Bulb) Setting

Use this setting for long-time exposures of subjects such as fireworks and night scenes. The shutter remains open as long as the shutter release button is held down.

● When using the bulb setting, stabilize the camera with a solid tripod and connect the optional Cable Switch F (with a lock mechanism) to the camera's release socket, as illustrated.
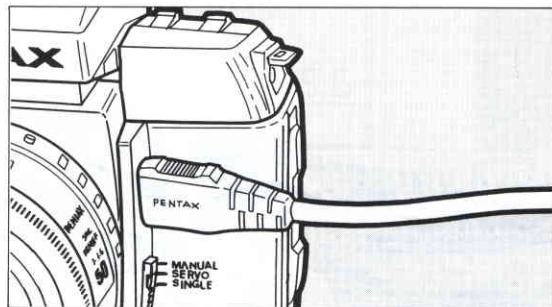
● With one fresh 6V lithium battery or four fresh "AA"-size alkaline batteries, a long-time exposure of approximately 7 hours is possible under normal temperatures.

Using the "100" (1/100 sec.) Setting

This setting is used for flash photography using a general clip-on type flash unit with a fixed shutter speed of 1/100 second.

● When using a general clip-on type flash unit, the aperture must be set manually with the lens aperture ring according to the ISO speed of the film in use, the distance to the subject and the flash's guide number. (See the operating manual of the flash unit concerned.)
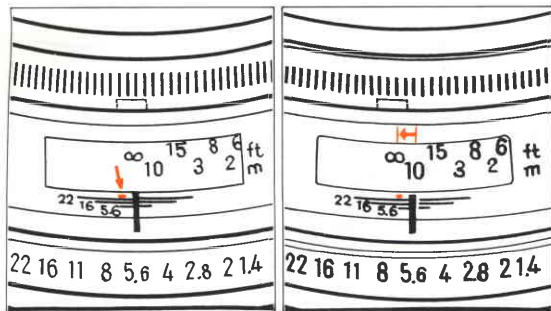
In infrared photography when using infrared film and an R2 or O2 filter, you need to adjust the focusing to compensate for infrared rays, which are different from the visible rays of normal photography.

As illustrated at left, memorize the subject's distance indicated on the lens distance scale after focusing, then turn the focusing ring to align that distance setting with the red infrared index before shooting. (See the film's instructions for exposure settings.)

● Be sure to set the focus-mode switch at the MANUAL position before turning the focusing ring manually.
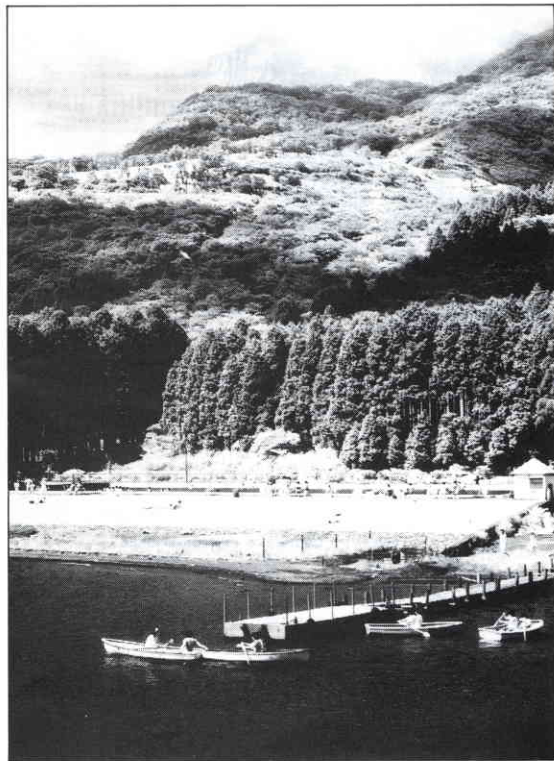
DEPTH OF FIELD
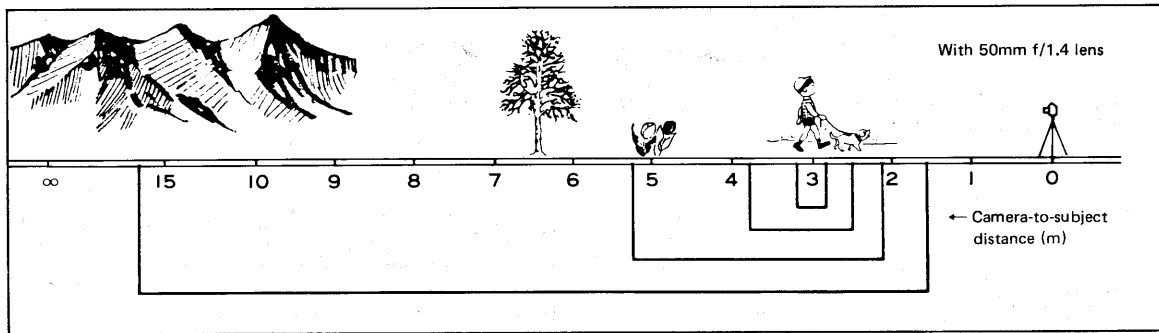
With 50mm f/1.4 lens

∞ 15 10 9 8 7 6 5 4 3 2 1 0

← Camera-to-subject distance (m)

Depth of field refers to the range around the optimum focusing point of the subject in which the elements at different distances are in focus.

Camera-to-subject distance

Depth of field

The depth of field increases as the aperture becomes smaller, as the focal length of the lens becomes shorter, and as the subject is positioned farther away. By changing apertures, you can control the depth of field and create different visual effects.
As illustrated in the examples at right (using f/1.4 and f/22 settings), the in-focus range can be confirmed by the depth-of-field scale on the lens.

* Some zoom lenses do not have a depth-of-field scale due to mechanical reasons.

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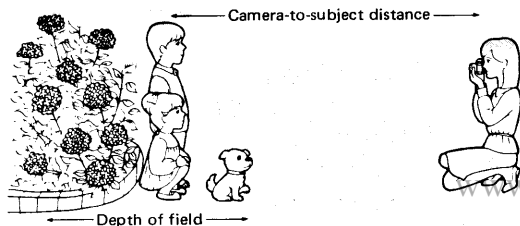
Aperture set at f/1.4 (2.85m~3.16m)
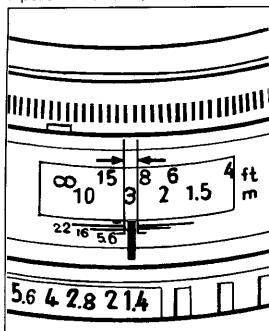
Aperture set at f/22 (1.6m~16.88mm)
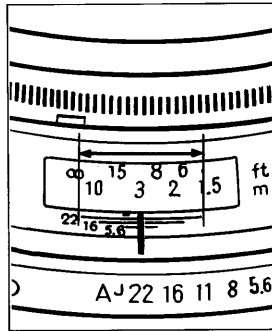
Depth-of-field Table: SMC Pentax-F 50mm Lens

unit-meter

Distance scale	f/1.4	f/2	f/2.8	f/4	f/5.6	f/8	f/11	f/16	f/22
0.45m	0.448 ~ 0.453	0.446 ~ 0.454	0.445 ~ 0.455	0.443 ~ 0.457	0.440 ~ 0.460	0.436 ~ 0.465	0.431 ~ 0.471	0.423 ~ 0.481	0.414 ~ 0.493
0.5m	0.497 ~ 0.503	0.495 ~ 0.505	0.494 ~ 0.507	0.491 ~ 0.509	0.487 ~ 0.513	0.482 ~ 0.519	0.476 ~ 0.527	0.466 ~ 0.540	0.454 ~ 0.557
0.6m	0.595 ~ 0.605	0.593 ~ 0.607	0.590 ~ 0.610	0.586 ~ 0.615	0.581 ~ 0.621	0.573 ~ 0.630	0.564 ~ 0.642	0.549 ~ 0.663	0.532 ~ 0.691
0.8m	0.791 ~ 0.810	0.787 ~ 0.814	0.781 ~ 0.820	0.774 ~ 0.828	0.764 ~ 0.840	0.749 ~ 0.859	0.732 ~ 0.883	0.705 ~ 0.927	0.675 ~ 0.987
1.0m	0.985 ~ 1.016	0.978 ~ 1.023	0.970 ~ 1.032	0.958 ~ 1.046	0.942 ~ 1.066	0.919 ~ 1.098	0.892 ~ 1.140	0.851 ~ 1.218	0.806 ~ 1.328
1.5m	1.464 ~ 1.538	1.449 ~ 1.555	1.430 ~ 1.578	1.402 ~ 1.613	1.366 ~ 1.664	1.316 ~ 1.746	1.259 ~ 1.861	1.174 ~ 2.093	1.086 ~ 2.462
2.0m	1.935 ~ 2.070	1.908 ~ 2.101	1.874 ~ 2.144	1.825 ~ 2.213	1.764 ~ 2.312	1.679 ~ 2.478	1.584 ~ 2.724	1.449 ~ 3.265	1.314 ~ 4.298
3.0m	2.853 ~ 3.164	2.794 ~ 3.239	2.719 ~ 3.346	2.615 ~ 3.521	2.487 ~ 3.785	2.318 ~ 4.265	2.137 ~ 5.073	1.892 ~ 7.426	1.665 ~16.883
10.0m	8.488 ~ 12.171	7.973 ~ 13.421	7.375 ~ 15.552	6.631 ~ 20.422	5.846 ~ 35.101	4.966 ~ ∞	4.181 ~ ∞	3.313 ~ ∞	2.655 ~ ∞
∞	55.370 ~ ∞	38.772 ~ ∞	27.707 ~ ∞	19.408 ~ ∞	13.876 ~ ∞	9.726 ~ ∞	7.086 ~ ∞	4.885 ~ ∞	3.565 ~ ∞
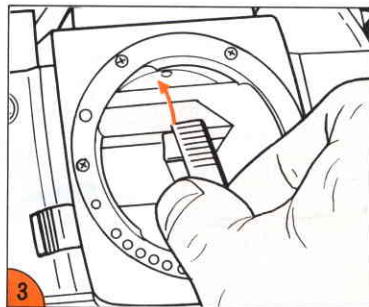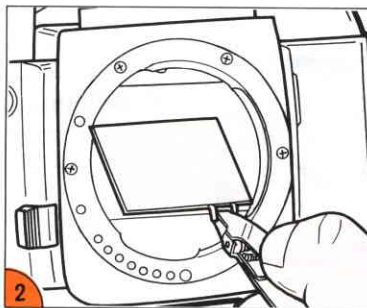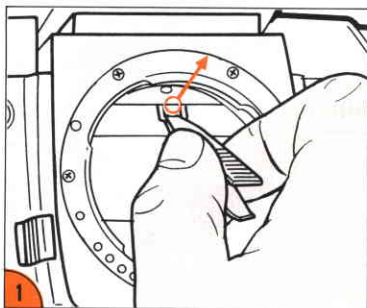
In addition to the standard all-surface-matte focusing screen, two other optional screens are available. The screens can easily be changed by using a pair of tweezers included in the focusing screen's case.
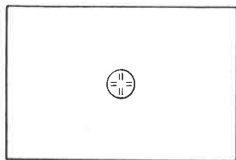
Scale Matte Screen (FD-41): for photomicrography and macrophotography.
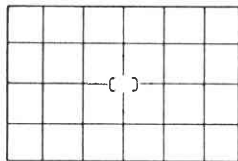
Cross-Lined Matte Screen (FG-40): for copying work and general-purpose photography.

1. As illustrated, the focusing screen hangs down when the pressure plate (behind the "O" mark) is pulled down (toward an arrow "⟶").
2. Take the screen out by grasping its projected part with the tweezers and stand it up at the groove of the case to avoid damages or scratches.
3. As illustrated, place the new screen on the frame with the tweezers and push the frame up until it locks with a click.

The focusing screens are made of plastic. Be careful not to damage them when handling. To clean a screen, use a blower to blow away the dust.

Strap clasp

Belt ring

PENTAX

1

PENTAX

2

3
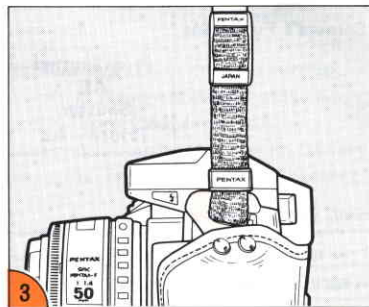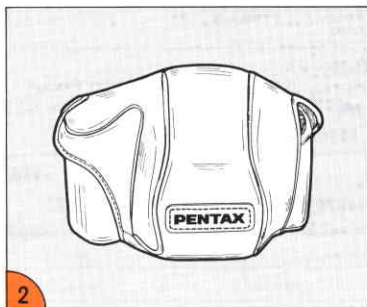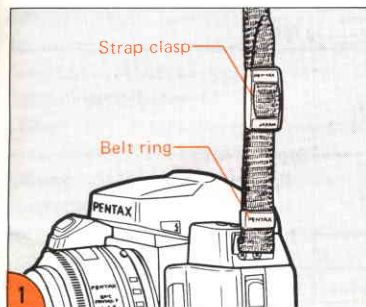
1. To attach the strap to the camera, first pass its end through the camera's strap lug, then fold it backwards. Next, pass it through the strap ring and the strap clasp, in that order. The end of the strap may be passed through the inside or outside of the clasp.

2. The soft case consists of a front and a back cover, which are connected by hooks.

3. Open up the front cover, and place the camera in the back cover. The camera is firmly secured in the case by hooking up the back cover's hook with the front cover's fitting.

● A soft case is available as an option, and consists of a back cover and two differnt front covers (small and large).
Small front cover: for a camera with a standard lens (such as the Zoom 35mm—70mm).
Large front cover: for a camera with a telephoto zoom lens (such as the Zoom 70mm—210mm).

● A back cover for a camera equipped with an accessory data back is also available as an option.

CAMERA'S COMPATIBILITY WITH PENTAX LENSES

Camera's Functions	Exposure Mode		Focusing Mode			
	Programmed AE Shutter-Priority AE	Aperture-Priority AE Metered Manual	Auto Focus (AF SINGLE/AF SERVO)		Manual Focus	
SMC Pentax Lenses				With AF Adapter 1.7X	FI System	Matte Screen Focusing
F-series lenses	o	o	o	———	o	o
A-series lenses	o	o	x	o*	o*	o
M-series lenses	x	o	x	o*	o*	o
Pentax lenses	x	o	x	o*	o*	o
Takumar lenses	x	o*	x	x	x	o

The lenses have the following limitations:
● Only lenses with a maximum aperture of f/5.6 or larger can be used with the FI (Focus Indication) system of the manual focusing mode.
● Only lenses with a maximum aperture of f/2.8 or larger can be used in the auto-focusing mode in combination with the AF Adapter 1.7X. (See the AF Adapter 1.7X's operating manual for more detailed information.)
* Can be used only in the stop-down metering.

● The FI (Focusing Indication) system of the manual focusing mode indicates the in-focus point with an LED indicator in the viewfinder and a PCV (piezo-ceramic vibration) tone. The camera automatically selects the manual focusing mode for all the lenses other than the F-series lenses no matter what position the focus mode switch is set to.
● Matte-screen focusing can be done in the viewfinder area excluding its central portion, regardless of the focus indication. When the Takumar lens is used, the focus indicator does not work.

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PRECAUTIONS ON BATTERIES

- Always handle batteries properly. Incorrect handling or use may result in leakage, heat generation and explosion. Always check the batteries' polarity markings when inserting them.
- When replacing batteries, do not mix battery brands and types, or old batteries with new ones.
- When you will not be using the camera for a long period of time, remove the batteries from it. Old batteries are apt to leak and can cause damage to the battery compartment.
- Never try to break, recharge or throw used batteries into a fire; they can explode.
- Keep the batteries warm in cold locations to ensure a stable power supply and to prevent camera malfunctions.

- Carry a spare set of new batteries during trips and when photographing outdoors.
- When keeping the camera in a bag or case, be sure to turn the main switch off to avoid accidental shutter releases and unnecessary battery consumption.
- When the RTF is used continuously, the lithium battery may become slightly warm. This is natural, and nothing to worry about.
- With one fresh 6V lithium battery or four fresh "AA"-size alkaline batteries, approximately 55 rolls of 24-exposure film can be exposed (under the experimental conditions of the Pentax laboratory).
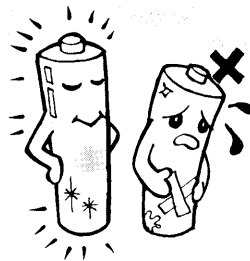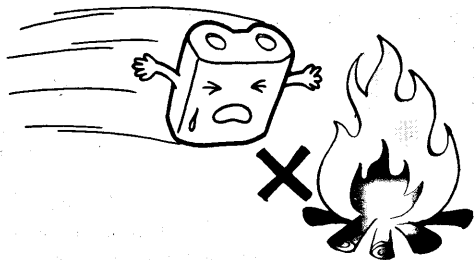
Your Pentax camera is a sophisticated, precision instrument built to give long-lasting, reliable service. It will serve you well if you treat it right, with proper handling and reasonable care. The major cause of damage are:

1. Dropping or banging the camera against immovable objects, which can damage the camera in many ways.
2. Water damage, particularly if the camera is submerged in salt water. Your camera is not water-proof! It must be protected from salt breeze, salt spray at the beach, splashing of any kind, and shielded from the rain. If your camera does get soaked, wipe it dry immediately and rush it to a Pentax service center.
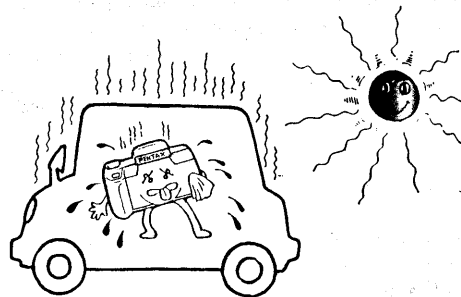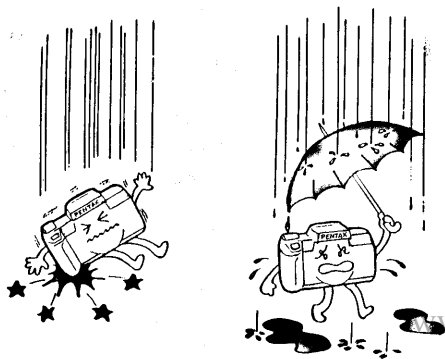
3. Dirt and sand can cause serious damage to the shutter and other moving parts of the camera. Your camera needs periodic cleaning to keep it operating properly. To remove dirt and dust, you need lens-cleaning fluid, lens-cleaning tissues, bulb-type ear syringe, camel's hair-brush, etc. Never use a solvent such as thinner or alcohol.
4. Humidity and temperature extremes should be avoided. Keep your camera out of direct sunlight, car trunks, and glove compartments.
   Shooting outdoors in winter presents a problem since batteries won't function if they get too cold. In cold weather carry your camera under your coat or jacket to keep the batteries warm. The temperatures at which this camera should function properly are approx. 50°

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~-10°C. Sudden changes in temperature will often cause moisture to condense inside or outside your camera. This is a possible source of rust, which may be extremely harmful to the mechanism. Furthermore, if the camera is taken from a warm temperature to a sub-freezing one, further damage may result from the formation of icelets. Thus, sudden temperature changes should be avoided as much as possible, As a guide, a temperature change of 10°C should be allowed to take place gradually over a period of at least 30 minutes. If this is not possible, keeping the camera in its case or bag will help somewhat in minimizing the effects of a rapid temperature change.

5. Vibration experienced when you are traveling in a car, plane, or ship, can cause screws to loosen. To minimize this problem use foam-rubber padding about one inch thick to line the buttom of your camera bag.

6. When mounting your camera on a tripod, make sure the tripod screw is no longer than 5.5mm, which is the depth of your camera's tripod socket. If you use a longer screw, you will possibly puncture the tripod socket, after which the camera will not function properly.

Precautions on CENTIC Panel's LCD Display
● In temperatures over approximately 60°C, the CENTIC panel's LCD display may darken. It will return to its normal condition under normal temperatures.
● In low temperatures, the LCD display may respond more slowly. This is due to the characteristics of the liquid used and is not a malfunction.
● When a battery grip is detached, the CENTIC panel shows its entire display. It will return to its normal display condition after proper operation is resumed.

Backup Circuits for LCD Display
Even when the battery is removed for replacement during shooting, the built-in backup circuits retains data such as the frame number and the ISO film speed in memory until a new battery is inserted.
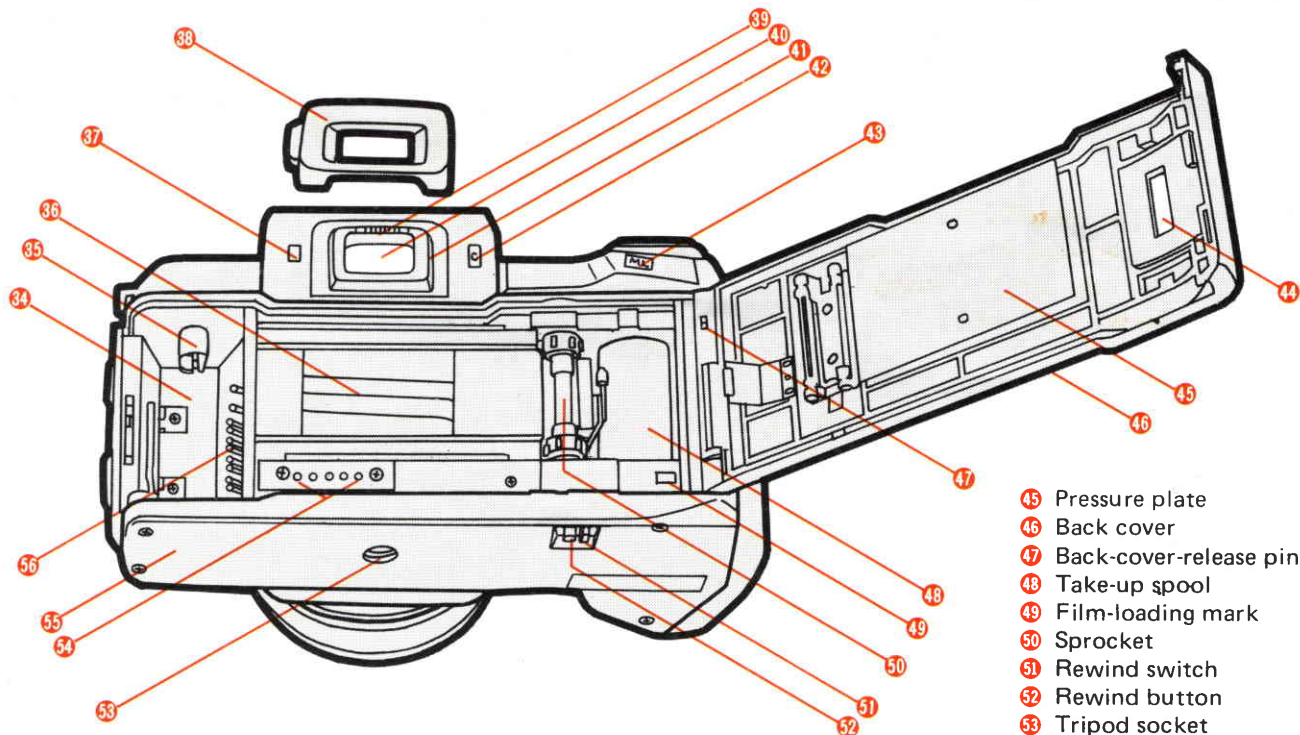
SPECIFICATIONS

Type:	TTL auto-focus, multi-program, fully-automatic 35mm SLR with built-in TTL auto flash.
Film:	35mm cartridge film. DX-coded film with ISO 25–5000; non-DX-coded film with ISO 6–6400 in 1/3 steps.
Exposure modes:	Programmed AE (Normal Program, Program Action, Program Depth), Aperture-Priority AE, Shutter-Priority AE, and Metered Manual.
Shutter:	Electronically-controlled vertical-run focal-plane shutter. Programmed AE and Aperture-Priority AE from 1/2000 to 1/30 sec. Shutter-Priority and Metered Manual from 1/2000 to 1 sec. Flash sync at 1/100 sec. Shutter lock with main switch off.
Lens mount:	Pentax KAF mount with AF coupler and lens-information contacts.
Lens:	SMC Pentax-F lenses (K- and KA-mount lenses with maximum aperture of f/5.6 or faster usable in Focus-Indication mode, and also ones with maximum aperture of f/2.8 or faster usable in AF mode through aid of AF Adapter 1.7X).
Focusing modes:	AF SINGLE, AF SERVO and MANUAL-focus modes. Focusing system: Pentax TTL phase-matching auto-focus system. Usable illumination range from EV 2 to EV 18 at ISO 100. Focusing response: approx. 0.3 sec. from infinity to minimum focus distance (0.7m) using SMC Pentax-F 35–70mm zoom lens. Effective range of AF Spotbeam Projector: 1 to 4 meters.
Viewfinder:	Pentaprism with diopter-adjustment mechanism. 92% field of view. 0.81 magnification with 50mm lens set at infinity. Diopter adjustment ranges from –1.5 to +1.5 Diopters. Interchangeable Clear-Bright-Matte focusing screens.
Viewfinder LED indications:	Focus information: in-focus, front-focus and back-focus signals. Exposure information: Programmed AE, Aperture-Priority / Shutter-Priority AE, Metered Manual, shutter speed, exposure compensation and flash readiness / flash exposure confirmation for dedicated accessory flash.
External LCD (CENTIC) indications:	Programmed AE, Program Action, Program Depth, Normal Program (Wide, Tele, Standard), Aperture-Priority / Shutter-Priority AE, Metered Manual, Bulb, X-sync, shutter speed / Bulb / ISO film speed, manual ISO override, exposure compensation, exposure compensation / aperture value, film-wind / rewind, motor drive mode, battery warning, self-timer, DX-coded film and exposure frame / self-timer counter.

Self-timer:	Electronically-controlled type. 12-sec. delay time. Start by shutter release button. Operation confirmation by LED indicator, PCV sound and CENTIC panel. Cancellation by exposure-mode-clear button or main switch off.
Mirror:	Swing-up-type instant-return mirror with AF secondary mirror.
Film advance / rewind:	Auto wind / rewind and auto rewind stop by built-in wind motor. Consecutive or single advance mode. Approx. 1.8-frame-per-second advance speed.
Exposure control:	TTL center-weighted, averaged-area metering by GPD cell. Metering range from EV 1 to EV 20 at ISO 100 with 50mm f/1.4 lens.
Exposure compensation:	EV –4 to EV 4 in 1/2 steps.
Exposure-memory lock:	By exposure-memory-lock (ML) button.
Built-in flash:	Parallel-controlled retractable TTL Auto Flash (RTF) with AF Spotbeam Projector. Guide number: 14 (ISO 100 in meters). Covers angle of view for 35mm wide-angle lens.
Flash sync:	Via hot shoe with X-contact which couples with Pentax dedicated auto flashes.
Power source:	One 6V lithium battery pack for standard Lithium Battery Grip, or four 1.5V AA-size alkaline batteries for optional AA-size Battery Grip.
Low battery warning:	By blinking battery warning mark in CENTIC panel and blinking viewfinder LED under standard voltage supply.
Back cover:	Interchangeable for accepting Data Back F or Interval Data Back F.
Dimensions / weight:	157(W) x 99(H) x 63.5(D)mm (6.1 x 3.9 x 2.5 in.). 665 grams (23.3 oz) without batteries.
Standard accessories:	Hot-shoe cover, Release-socket cap F, Eyecup F, Body-mount cover F, and Camera strap F.

NOMENCLATURE

- ㉞ Film chamber
- ㉟ Rewind shaft
- ㊱ Shutter curtains
- ㊲ Flash-ready lamp
- ㊳ Eyecup F

- ㊴ Diopter-adjustment slide
- ㊵ Viewfinder eyepiece
- ㊶ Viewfinder-accessory groove
- ㊷ Exposure-mode-clear button
- ㊸ Exposure-memory-lock button
- ㊹ Film-information window

- ㊺ Pressure plate
- ㊻ Back cover
- ㊼ Back-cover-release pin
- ㊽ Take-up spool
- ㊾ Film-loading mark
- ㊿ Sprocket
- ⑤ Rewind switch
- ㊾ Rewind button
- ㊾ Tripod socket
- ㊾ Cordless contacts
- ㊾ Bottom cover
- ㊾ DX-information pins

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(5) ABOUT EXPOSURE COMPENSATION
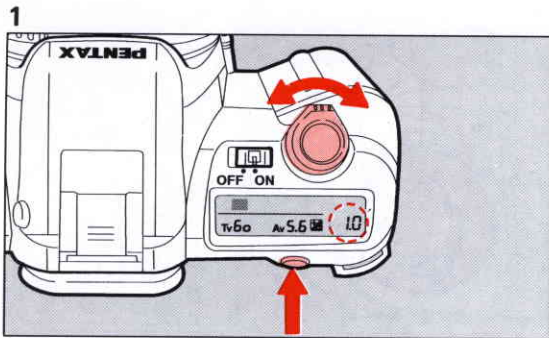
Purpose

The exposure compensation allows you to deliberately overexposure (brighten) or underexposure (darken) a subject, or compensate for difficult lighting conditions which may fool the camera's built-in exposure meter.

How to set

1. **While holding down the exposure compensation button, move the select switch to the desired compensation value.**
2. **The bar graph and [⚡] appear in the viewfinder. [⚡] is displayed on the LCD panel.**
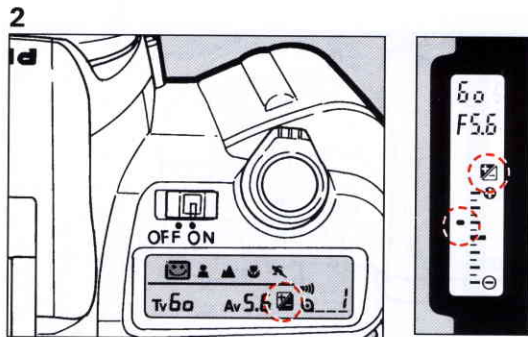
- Exposure compensation does not work in the Metered Manual Mode and Bulb Exposure Mode.
- The exposure compensation range is -3EV to +3EV in 0.5EV stops.
- Moving one dot on the bar graph indicates 0.5EV step. However, when under or over exposure is set beyond +3 or - 3 steps (3EV), the dot will blink.

How to cancel

Set the compensation value to [0]. The exposure compensation cannot be canceled even if the power is turned OFF or any other exposure mode is set.
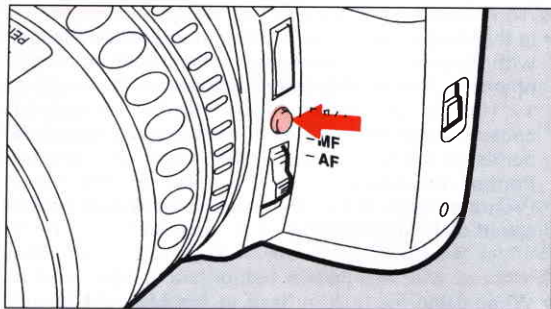
The audible In-Focus PCV signal can be turned off.

How to cancel

Depress the multi-function button to erase [◾»] from the LCD panel.
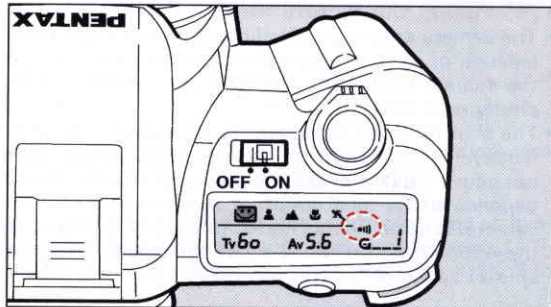
- Change the PCV Signal Mode only when the built-in flash is retracted. If the PCV Signal Mode is switched with the built-in flash popped up, the flash mode will be changed.
- The audible PCV signal is not turned off when the Self-Timer is in operation.
- To turn the audible PCV signal back on, depress the multi-function button to make the [◾»] appear on the LCD panel.

ADVANCED OPERATIONS

When using the Picture Mode

• The camera automatically chooses an optimum combination of shutter speed and aperture according to the subject brightness, allowing you to take a flash photograph with ease.
• The shutter speed automatically changes to approximately 1/100 sec. or to a slower speed which does not cause camera shake. The slowest shutter speed depends on the focal length of the lens fitted to the camera. When a Pentax non-autofocus lens is used or the Action Program Mode is set, the camera uses the shutter speed of 1/100 second.

When using the Shutter-Priority AE Mode

• Shutter speeds slower than 1/100 of second can be set.
• In this mode, the aperture automatically changes according to the ambient brightness, making flash photography easy.

When using the Aperture-Priority AE Mode

• In this mode, the shutter speed automatically changes with the ambient brightness, making flash photography easy. The shutter speed changes in the range of 1/100 sec. to a slower shutter speed which does not cause camera shake. The slowest shutter speed depends on the focal length of the lens in use. When a Pentax non-autofocus lens is used or the Action Program Mode is set, the camera uses the shutter speed of 1/100 second.

Metered Manual Mode

• When using the built-in flash in the Metered Manual Mode, any combination of aperture and shutter speed slower than 1/100 can be set. In this mode, the exposure of the background can be controlled by the manual exposure while the flash properly exposes the foreground subject.

Calculating the flash effective distance according to the camera-to-subject distance.

Maximum flash distance = Guide Number ÷ Selected aperture
Minimum flash distance = Maximum flash distance ÷ 5 *

When the distance to the subject is less than 0.7m (2.3ft), the flash cannot be used. If the flash is used within that distance, it causes vignetting in the picture corners, light is distributed unevenly and the picture may be overexposed.

• The value 5 used in the formula above was obtained from the built-in flash.

The guide number (GN) depends upon the film speed used as shown below.

ISO25 → GN5.5	ISO200 → GN15.6
ISO50 → GN7.8	ISO400 → GN22
ISO100 → GN11	

If an ISO100 film is used at an aperture of f/2.8, the flash effective distance is obtained as follows: www.butkus.us

Guide Number (11) ÷ f/2.8 = 3.9m
3.9 ÷ 5 = 0.8m

Thus, the flash effective distance is from approx. 0.8m to 3.9m.

Calculating the aperture according to the camera-to-subject distance

Aperture = Guide Number ÷ Camera-to-subject distance

If the calculated aperture value is different than an indicated f-stop on the aperture ring, for instance f/3, choose the next smallest aperture ring number (f2.8 in this case).

Calculating the camera-to-subject distance in the Shutter-Priority AE Mode

The camera-to-subject distance can be calculated using the above mentioned formula. However, in the Shutter-Priority AE Mode, the camera-to-subject distance will change depending on what aperture is set.

ADVANCED OPERATIONS

COMPATIBILITY OF F AND FA LENSES WITH THE BUILT-IN FLASH
[○ = **compatible**   × = **incompatible because of vignetting**]

Lens name	Compatibility
F Fish-Eye Zoom 17-28mm f/3.5-4.5	×
F Zoom 24-50mm f/4	△ * 1
FA Zoom 28-70mm f/4	○
FA*Zoom 28-70mm f/2.8	×
FA Zoom 28-80mm f/3.5-4.7	○
F Zoom 28-80mm f/3.5-4.5	△ * 2
FA Zoom 28-105mm f/4-5.6	△ * 3
FA Zoom 28-200mm f/3.8-5.6AL	△ * 4
F Zoom 35-70mm f/3.5-4.5	○
F Zoom 35-80mm f/4-5.6	○
F Zoom 35-105mm f/4-5.6	○
F Zoom 35-135mm f/3.5-4.5	○
FA Zoom 70-200mm f/4-5.6	○
F Zoom 70-210mm f/4-5.6	○
FA*Zoom 80-200mm f/2.8	△ * 5
F Zoom 80-200mm f/4.7-5.6	○
F Zoom 100-300mm f/4.5-5.6	○

Lens name	Compatibility
FA Zoom 100-300mm f/4.5-5.6	○
F or FA* Zoom 250-600mm f/5.6	×
FA20mm f/2.8	×
FA*24mm f/2	×
F or FA 28mm f/2.8	○
F or FA 50mm f/1.4	○
F or FA 50mm f/1.7	○
FA*85mm f/1.4	○
F or FA 135mm f/2.8	○
FA*200mm f/2.8	○
FA*300mm f/2.8	×
F or FA*300mm f/4.5	×
F or FA*600mm f/4	×
F or FA MACRO 50mm f/2.8	○
F or FA MACRO 100mm f/2.8	○

* 1 : Focal lengths between 28-50mm lens, vignetting will not occur. But the inappropriate lens warning will appear at focal lengths between 24-35mm.
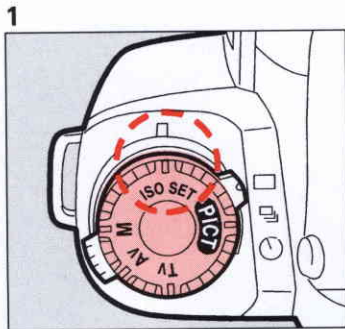* 2 : Vignetting will occur at focal lengths between 28-35mm.
* 3 : Vignetting will occur at focal lengths between 28-35mm. With the focal length set at 35mm, it will occur when the camera-to-subject distance is closer than 1.5m.
* 4 : Vignetting will occur at focal lengths between 28-70mm.
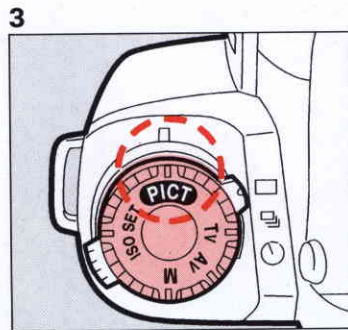* 5 : Vignetting will occur at focal lengths between 80-90mm.

ADVANCED OPERATIONS

This camera automatically reads the film speed from the 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.

How to set

1. **Set the mode dial to [ISO SET].**
2. **Move the select switch until the desired ISO is displayed on the LCD panel.**
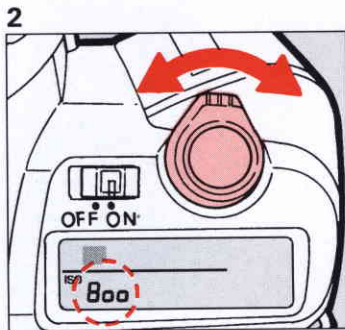
3. After the ISO is set, set the mode dial to any other position other than [ISO SET].

- To change the ISO, turn the select switch to the left for a smaller number (lower film speed, or right for a larger number (higher film speed).
- The shutter cannot be released with the mode dial set at [ISO SET].
- [ISO] is displayed when the film speed is set manually.

ADVANCED OPERATION

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(9) INSTALLING THE BATTERY IN THE DATA BACK
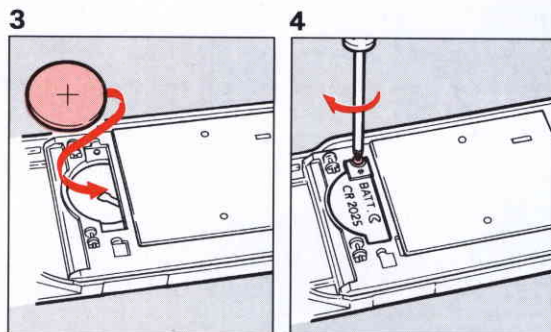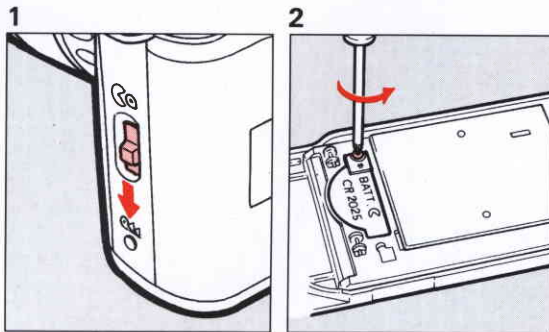
If you purchased the DATE MODEL, read this section.

Replace the battery when the data information on a picture or the LCD panel becomes weak or invisible.
The battery will last for approx. 3 years.

1. **Open the back cover. Ensure that a film is not loaded.**
2. **Loosen the battery cover fixing screw with a phillips head screwdriver, and then remove the battery chamber cover.**
3. **Replace the old battery with a new battery with the + side facing up.**
4. **Reinstall the battery chamber cover, and tighten the battery chamber fixing screw.**
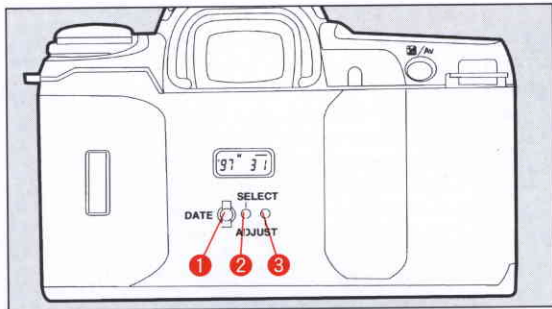
- If the data indication does not appear on the LCD panel, it means that the battery has not been installed properly or the battery voltage is too low.
- After the battery is replaced, adjust the data by the following adjustment procedures described on the next page.
- The data back uses one 3V lithium battery, type CR2025.

If you purchased the DATE MODEL, read this section.

❶ DATE button
❷ SELECT button
❸ ADJUST button

Note:
Carefully press the button with the protrusion part of the camera's strap clamp.
Do not press the buttons with an object having have a sharp tip.

Adjusting the year／month／day
1. **Press the SELECT button ❷ to make the year, month or day you want to change blink.**
2. **Change the date with the ADJUST button ❸.**
3. **Press the SELECT button ❷ to stop the digit from blinking, after you have changed the date. The adjusted date has been entered.**

• The digit increases by one each time the ADJUST button is depressed. Holding the button for about 2 to 3 seconds will change the digits continuously.

ADVANCED OPERATION

Adjusting the hour/minute

1. Press the SELECT button ❷ to make the hour, minute or second (:) you want to change blink.
2. Change the data (hour or minute) with the ADJUST button ❸.
3. To change the second (:), press the SELECT button ❷ until " : " will blink. And press the ADJUST button ❸ in sync with a time signal to set the second to zero.
4. Press the SELECT button ❷ to stop the adjusted hour/minute from blinking.

• The digit increases one each time you press the ADJUST button. Holding the button for 2 to 3 seconds will change the digits continuously.

Operational precautions
• The working temperature for data printing is 0-50℃.
• Use DX-coded films with ISO rating from 25 - 1600.
• If high-speed film with an ISO rating of 1000 - 1600 is used, the imprinted characters may blur.
• If film with ISO rating of 50 or slower is used, the printed characters may be dark or dim.
• If you release the shutter while the blinking data is being corrected, the data cannot be imprinted.

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

Using the TTL Auto Flash Mode
1. Remove the hot shoe cover F_c and attach a Pentax dedicated flash unit.
2. Turn ON the flash.
3. Set the flash unit to the TTL Auto Mode.
4. Ensure that the flash is fully charged.
5. Proceed as if the built-in flash were being used.

• When the flash is fully charged, the ready lamp on the flash unit lights up. When the shutter release button is depressed halfway down, [⚡] appears in the viewfinder indicating the flash is ready.

Using the built-in flash and the external flash simultaneously
An external flash cannot be used when the built-in flash is in its popped up position. When the built-in flash and the external flash are used simultaneously, use the following optional accessories.

• Hot Shoe Adapter F_G
• Off-Camera Shoe Adapter F
• Extension Cord F5P

HOTSHOE ADAPTER F_G
OFF-CAMERA SHOE ADAPTER F
5P SYNC CORD F
(EXTENSION CORD F5P)

ADVANCED OPERATIONS

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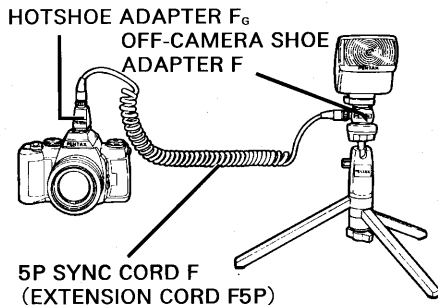
AF500FTZ and AF330FTZ

- These flash units feature a built-in infrared spotbeam to assist the autofocus system in dim light and low-contrast conditions.
- The auto zoom function will automatically adjust the angle of discharge according to the lens focal length only when an F or FA lens is in use.
- The AF500FTZ features a wireless slave-sync flash function.
- The flash effective range appears on the LCD panel only when an A, F, or FA lens is in use.
- Multiple flash burst on a single frame is possible with the AF500FTZ.
- These flash units feature the contrast-control-sync flash. See page 79 for more details.
- In the Picture Mode, Shutter-Priority AE, or Aperture-Priority AE, the TTL Auto Flash Mode will be set automatically even if the flash is set to the Manual Mode.
- When the flash is charged and left unused for about 3 minutes, the power automatically switches off to save battery power. Depressing the shutter release button halfway down will restart charging of the flash units.

AF240FT and AF400FTZ

- These flash units feature a built-in infrared spotbeam to assist the autofocus system in dim light and low-contrast conditions.
- In the Picture Mode, Shutter-Priority AE, or Aperture-Priority AE, the TTL Auto Flash Mode will be set automatically even if the flash unit is set to Manual Mode.
- When the flash unit is charged and left unused for about 5 minutes, the power will automatically switch off to save battery power. Depressing the shutter release button halfway down will restart charging of the flash unit.

AF200T, AF220T, 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 according to the ambient brightness. The slower shutter speed varies according to the lens focal length. The shutter speed varies within the shutter speed range of $1/100$ second to a slower speed which does not cause camera shake. However, when a non-autofocus lens (A-lens) is in use, the shutter speed is set to $1/100$ second. The aperture value will also be fixed but will vary depending on what ISO film is loaded.

• When using the Three-Level Auto (red, green, and yellow settings) Mode, the aperture value is fixed as shown in the table. When the flash is fully charged, the shutter speed varies within the shutter speed range of 1/100 of second to a slower speed which does not cause camera shake. The slowest shutter speed varies according to the lens focal length. When a non-autofocus (A-lens) lens or the Action Program Mode is in use, the shutter speed will be set to 1/100 of second.

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

with ISO 100

Notes on Pentax dedicated flash units

When the built-in flash is used in combination with a Pentax dedicated flash unit, if the trailing-shutter-curtain-sync flash mode is set for the dedicated flash unit, the built-in flash also operates in the trailing-shutter-curtain-sync flash mode. Ensure that both flash units are fully charged before releasing the shutter.

Contrast-Control-Sync Flash Photography

Using the AF330FTZ or AF500FTZ in combination with the built-in flash allows twin flash photography (contrast-control-synch flash photography). This is based on the difference between the amount of light discharged from two units.

1. **Put the AF500FTZ or AF330FTZ in the Contrast-Control-Sync Flash Mode. See the flash connection on page 77.**
2. **Ensure that both flash units are fully charged and then shoot.**

• The ratio of the amount of flash light is 1 (built-in flash) : 2 (dedicated flash unit).
• Do not combine an accessory with a different number of contacts such as a "Hot Shoe Grip" as a malfunction may occur.
• In the Contrast-Control-Sync Flash Mode, the top flash sync speed is 1/60 of second.

Multi-burst flash with the Pentax dedicated flash

When discharging more than 2 Pentax dedicated flashes, make sure that they are of the same type, combine the Type B with Type C or Type D with Type E. (refer to the overview of Flash Function on page 80. The Built-in flash can be operated with any type of Pentax TTL dedicated flash unit.

ADVANCED OPERATIONS

Overview of Flash Function

CAMERA FUNCTION	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E
After the flash is charged, the camera automatically switches to the flash-sync speed.	○	○	○	○	○
Automatic aperture setting in the Picture Mode or Shutter-Priority AE Mode	○	○	○	○ * 1	○ * 1
Flash confirmation in the viewfinder		○	○		×
TTL auto flash	○	○	○	○ * 2	×
Slow-speed sync in the Shutter-Priority AE Mode or Metered Manual Mode	○	○	○	○	○ * 3
AF spotbeam	×	○	○	×	×
Trailing-shutter-curtain sync flash (* 4)	* 5	○	○	×	×
Contrast-control flash mode (* 4)	×	○	○	×	×

TYPE A : Built-in flash
TYPE B : AF500FTZ(* 6), AF330FTZ
TYPE C : AF400FTZ, AF240FT
TYPE D : AF400T, AF280T, AF220T, AF200T, AF080C, AF140C, AF200Sₐ
TYPE E : AF200S, AF160, AF140,

* 2. Only the AF200Sₐ flash does not operate.
* 3. Only the Metered Manual Mode can be used.
* 4. The shutter speed is 1/60 of second or slower.
* 5. Trailing-shutter-curtain sync flash combined with TYPE B or TYPE C flash.
* 6. Multi-burst and slave-sync flash are possible.

Notes:

* 1. When using a Type D flash (except AF200Sₐ and AF220T) in the MS (Manual Sync) or M (Manual) Mode or when using a Type E flash, set the camera's exposure mode to the Aperture-Priority AE Mode, Metered Manual or Bulb. The Picture Mode and Aperture-Priority AE Modes cannot be used because the actual required aperture value may change.

Using other type of a flash

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

ADVANCED OPERATIONS

Without Daylight-Sync

With Daylight-Sync

Purpose

In daylight conditions, when a portrait picture is taken with a person's face cast in shadow, discharging the flash will eliminate the shadow.

Daylight-sync photography is obtained in the same manner as the normal flash photography, so you simply depress the shutter release button.

• If the background is too bright, it may be overexposed.
• When taking a daylight-sync photograph in the Picture Mode, the flash may not discharge even if the flash is in the popped-up position. Before shooting, confirm that [⚡A] is not displayed on the LCD panel.

ADVANCED OPERATIONS

(13) SLOW-SPEED-SYNC SHOOTING

Purpose
It is possible to balance the exposure of a foreground subject against a dimly-lit background by using the flash to properly expose the foreground subject and a slow-shutter-speed to expose the low light background.

How to set
With the Metered Manual Mode set
1. Depress the flash pop-up button to activate the built-in flash.
2. Set the camera's exposure mode to the Metered Manual Mode.
3. Select an appropriate shutter speed(slower than 1/100 of second) and aperture combination for a correct exposure.
4. Release the shutter.

How to set
With the Shutter-Priority AE Mode set
1. Set the camera's exposure mode to the Shutter-Priority AE Mode.
2. Set the desired shutter speed.

• If the aperture in the viewfinder and the LCD panel blink, a correct exposure will not be obtained for the background. Adjust the shutter speed until the blinking stops.

3. Depress the flash-pop up button to activate the built-in flash.
4. Release the shutter.

• In the slow-speed-sync shooting, use of a tripod is recommended to prevent camera shake.

ADVANCED OPERATIONS

A number of dedicated accessories are available for this camera.

- **Cable Switch F**

  A shutter release cord designed for use with the MZ–50/ZX–50, MZ-10/ZX-10, MZ-5/ZX-5, Z-70/PZ-70, Z-1/PZ-1, Z-20/PZ-20, Z-10/PZ-10.

- **Magnifier FB**

  A viewfinder accessory for magnifying the central area of the viewfinder.

- **AF500FTZ**

  A TTL Auto Zoom flash with a built-in AF spotbeam and large guide number of 50 in meters (ISO 100). It features the slave-sync flash function, multiple flash burst, contrast-control-sync flash, leading/trailing-curtain-sync flash mode.

- **AF330FTZ**

  A TTL Auto Zoom flash with a built-in AF spotbeam and guide number of 33 in meters (ISO 100). It features contrast-control-sync flash, leading/trailing-curtain-sync flash mode.

- **AF220T**

  A TTL Auto flash with the guide number of 22 in meters (ISO 100). It features the bounce-flash.

- **Hot Shoe Adapter FG and Extension Cord F5P and Off-Camera-Shoe Adapter**

  The adapters and cord which allow the AF220T, AF240FT, AF330FTZ, AF400FTZ and AF500FTZ to be used off the camera, while maintaining full electronic coupling to the camera.

- **Macro Flash AF140C**

  A TTL macro flash unit with a guide number of 14 in meters (ISO 100).

- **Refconverter A**

  Right angle finder which attaches to the grooves on both sides of the viewfinder. The viewfinder magnification is able to switch from 1X to 2X.

- **Filters**

  Skylight, Cloudy, UV, Y2, O2, R2, and Circular Polarizing Filter are available. Each filter is available in sizes of 49mm, 52mm, 67mm and 77mm.

- **AA Battery Pack FG**

  The battery pack which takes four AA batteries can attach at the bottom of the camera, instead of using the lithium batteries.

* If the MZ-50 is being used while connected to Cable Switch F and/or Extension Cord F5P in an area where a high electromagnetic field is discharged, the battery warning indicator (▭) may appear and start blinking. If this condition arises, the shutter cannot be released.

ADVANCED OPERATIONS

ADVANCED OPERATIONS

Notes on accessories

• The following conditions, a correct exposure may not be obtained because the camera always set the maximum aperture even if you set your desired f∕stop.

1. When a lens without the A position on the aperture ring is attached.

2. When an F or FA lens with the aperture set to a position other than the A position is used.

• Above mentioned inconvenience will occur when an F ∕ FA 85mm Soft lens or FA 28mm Soft lens is attached because these lenses do not have the A position on the lens aperture ring.

When the following accessories are combined with this camera, a correct exposure may not be obtained.

Accessories for close-up photography
Auto extension tube set K
Auto extension tube K 50mm
Auto extension tube 100mm
Helicoid extension tube K
Auto bellows-A
49mm and 52mm Reverse Adapter K
Extension tube K
Microscope adapter K

Mount adapters
Adapter K for 645 lens
67 lens adapter K

1

2

3

PENTAX

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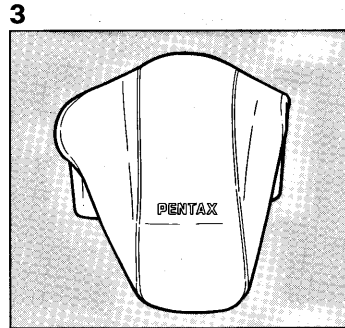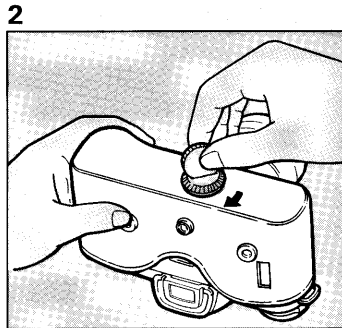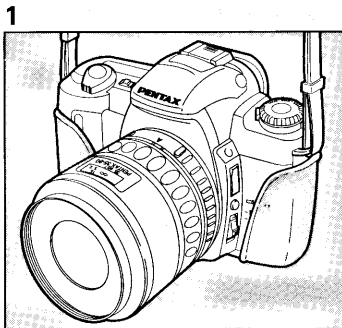
The soft case is available as an option and consists of a front and a back case.

1. **Open the front case and place the camera body in the back case.**
2. **Fasten the back case to the camera body by tightening the fitting screw in the tripod socket.**
3. **Attach the front case.**

• Choose one of the front cases in accordance with the table to the right.
• The back case F_G is the same back case indicated with the Soft case S,M and L.

Front case comes in three sizes, S, M and L

Case	Applicable F, FA-lens
F_GS	20mm, 28mm, 50mm f/1.4, f/1.7, Fish-Eye Zoom 17-28mm, Zoom 35-80mm
F_GM	24mm, Macro 50mm, 135mm, Zoom 28-70mm f/4, Zoom 28-80mm, Zoom 28-200mm
F_GL	85mm f/1.4, Macro 100mm, Zoom 28-105mm, Zoom 70-200mm, F Zoom 80-200mm

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(16) EFFECT OF APERTURE AND SHUTTER SPEED
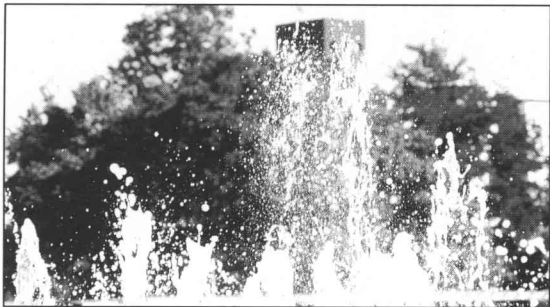
High shutter speed

Slow shutter speed

A correct exposure is established by a combination of shutter speed and aperture setting according to the subject brightness. There are many correct combinations of shutter speed and aperture for a particular subject brightness. Different shutter speed and aperture settings produce different effects.
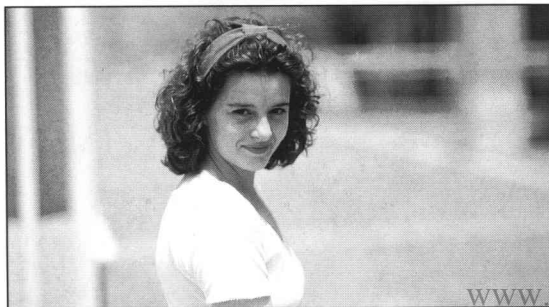
Effect of Shutter Speed

The shutter speed determines the film exposure time, or the length of time that light is allowed to strike the film. If the subject is moving the image will be blurred when a slow shutter speed is used. It is possible to enhance the effect of motion, (The movement of a wave or waterfall) by intentionally using a slower speed. Choosing a high shutter speed will allow the image of a moving subject to be frozen. A higher shutter speed also helps prevent camera shake.

Closed-down aperture

Open aperture

Effect of Aperture

The aperture increases or reduces the amount of reflected light from an object which passes through the lens, controlling how much light strikes the film. If the aperture is opened up to increase the amount of light, 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 instance, if you shoot a person against 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. By contrast, closing down the aperture increases the in-focus range.

ADVANCED OPERATIONS

(17) DEPTH OF FIELD

Zoom 35-80mm f/4-5.6 lens focused at the distance of 2m with the lens focal length 35mm.

Camera-to-subject distance(m)

Depth of field refers to the range around the optimum focusing point of the subject in which the elements at different distances are in focus. The depth of field increases as the aperture is closed down, the focal length of the lens becomes shorter, or the subject is positioned farther away.

The Range Allowed for Focusing

The in-focus range varies depending on the aperture in use. Zoom lenses do not have a depth-of-field scale for mechanical considerations.

ADVANCED OPERATIONS
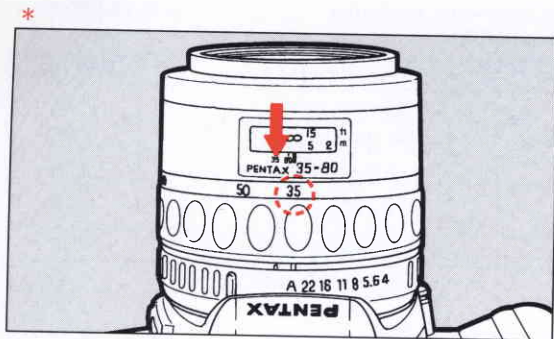
When infrared film and an "R2" or "O2" filter are used, the focal point is different from that of ordinary film exposed in visible light. The autofocus system cannot compensate for this difference automatically.

1. **Set the focus mode switch to [MF]**
2. **Focus on a subject manually and turn the focusing ring to the left by the distance indicated on the infrared index.**
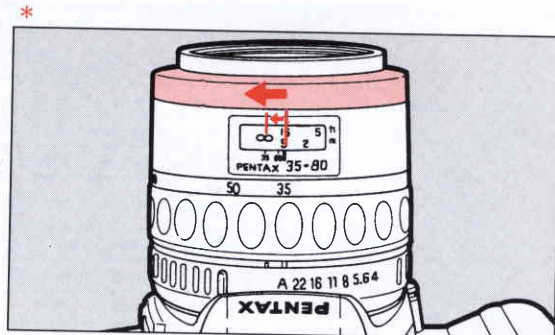
* **As shown in the illustration, if 35 is read from the zoom scale, adjust the distance scale to 35 on the infrared index (red line).**

• In the autofocus mode, the focus cannot compensate for infrared pictures.
• To set the proper exposure level for infrared pictures, refer to the instructions accompanying the film. The Auto Exposure Mode does not give a correct exposure. Use the Metered Manual Mode.

ADVANCED OPERATIONS

What appears troublesome may be easily remedied. Here are some problems that may occur and their remedies. Before contacting a Pentax service center, check the following items.

Symptoms	Causes	Remedies	Reference
The shutter does not release.	The main switch is [OFF]	Turn ON the main switch.	P.20
	The low battery warning [▭] appears.	Replace the battery.	P.14
	The battery is improperly installed.	Install the battery properly.	P.14
	The mode dial is set at [ISO SET].	Set the mode dial to the another position.	P.73
	Self-timer mode is being set.	Cancel the self-timer mode.	P.48
	The built-in flash is being charged.	Wait until the flash is fully charged.	P.39
Indicators do not appear on the LCD panel.	The main switch is [OFF].	Turn ON the main switch.	P.20
	No battery has been installed.	Install the battery.	P.14
	The battery is improperly installed.	Install the battery properly.	P.14
	The battery is dead.	Replace the battery.	P.14
The camera does not focus.	AF frame is not placed over the subject.	Move the camera until the AF frame [[ ]] covers the subject.	P.34
	The subject is too close.	Increase the camera-to-subject distance.	P.35
	The focus mode is set to [MF].	Set the focus mode switch to [AF].	P.33
	The subject is difficult to autofocus.	Focus manually by using the matte field.	P.51

OTHERS

Symptoms	Causes	Remedies	Reference
Pictures are overexposed.	A non-A position lens is used.	Attach an A, F, or FA lens.	P.10,P27,P60
[○] blinks in the viewfinder.	The subject is too close or difficult to autofocus.	Focus manually by using the matte field.	P.51
The built-in flash does not charge.	The battery is dead.	Replace the battery.	P.14
The power zoom system does not function.	The camera does not have the power zoom function.	Push the power zoom ring forward until the words [**POWER ZOOM**] appear.	P.31

OTHERS

Type — TTL autofocus, auto-exposure 35mm SLR 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 films with ISO 6-6400

Exposure Modes — Picture Mode (Green Operation Mode, Portrait Program Mode, Landscape Program Mode, Close-up Program mode, Action Program Mode), Aperture-Priority AE Mode, Shutter-Priority AE Mode, Metered Manual Mode, Bulb Mode, TTL Flash Mode

Shutter — Electronically controlled vertical-run focal-plane shutter, Electromagnetic release, Speed range (1)Auto 1/2000-30 sec.(stepless),(2)Manual 1/2000-30 sec.(3)Bulb, Shutter lock by setting Main switch in OFF position.

Lens Mount — Pentax K_{AF} bayonet mount (K-mount with AF coupler, lens information contacts)

Compatible Lens — Pentax K_{AF2}, K_{AF}, and K_A lenses are usable. Autofocus is possible using AF Adapter with K_A-mount lenses. With the K-mount lens attached, only the maximum aperture can be used.

Autofocus System — TTL phase-matching autofocus system, AF operational brightness range: EV0 to 18(at ISO 100 with f/1.4 lens), Focus lock available using shutter release button, Focus Mode: AF (predictive AF provided), Manual [MF]

Viewfinder — Pentamirror finder, Natural-Bright-Matte focusing screen, Field of view:92%, Magnification 0.77(with 50mm lens at ∞), Diopter: -1 diopter, Autofocus frame

Viewfinder 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 indication, Flash ready indication [⚡] is lit, Bar graph(exposure compensation),Over or Under exposure indication in Metered Manual Mode, [🖾] exposure compensation indication,

External LCD panel Indication — [M] = Metered Manual Mode, [🖾] = Green Operation Mode, [🔟] = Portrait Program Mode, [🔟] = Landscape Program Mode, [🔟] = Close-up Program Mode, [🔟] = Action Program Mode, Shutter speed indication, Aperture indication, [⚡] = Built-in flash ready indication, [⚡] = blinking slowly flash recommended warning, [⚡] = blinks rapidly Inappropriate lens warning, [◉] = Red-eye reduction flash mode, [🖾] = Automatic flash function, ISO indication, [◎___] = Film status information, [▭] = Battery exhaustion warning, Exposure counter, [◗] = PCV signal indication, [🖾] = Exposure compensation, Exposure compensation value

Self-timer — Electronically-controlled type with delay time of 12 sec. Start by depressing of shutter release button, Operation confirmation : By PCV beep tone. Cancelable after operation

Mirror — Instant-return mirror with AF secondary mirror

Film Loading — Film advances automatically to 1st frame after back cover is closed, Film information window is provided

Film Wind & Rewind — Auto wind/rewind by built-in motor, Consecutive or Single advance mode, Approx.2 frames/sec.(consecutive mode), Auto rewinding starts at end of roll, Film rewind/completion of rewinding is displayed on the LCD panel, Mid-roll rewind button will rewind film in mid-roll

Exposure Meter — TTL multi(2)-segment metering, Metering range from EV1 to EV17.5 at ISO100 with 50mm f/1.4 lens

Exposure Compensation: ± 3EV in 0.5EV step increments

Flash — Series-control, Retractable TTL Auto Flash (RTF), Guide number:11 (ISO100/m), Illumination angle covers 28mm lens angle of view, Flash-sync-speed in the range from 1/100 sec. to a slower speed, Day-light-sync flash, Slow-speed-sync flash, Contrast-control-sync flash (ISO range = 25 - 400), Automatic flash function, Red-eye reduction flash function

Flash sync — Hot shoe with X-contact with couples with Pentax dedicated auto flashes, ISO range = 25-800

Power Source — Two 3V lithium batteries (CR2 or equivalent)

Battery Exhaustion Warning — Battery exhaustion symbol [⊏▬] is lit (blinking when the shutter is locked; no indication on the right-hand edge of the viewfinder.)

Dimension and Weight - 135.0mm(W)x90.5mm(H)x62.5mm(D) (5.3"x3.6"x2.5") 345g(12.2 oz) body only without batteries

Date model : Crystal quartz controlled LCD with digital clock, auto calendar up to 2019. 7 segment, 6-digit LCD display

Power source — 3V lithium battery (CR2025 or equivalent)

Number of prints — Approx. 5000

Dimension and Weight - 135. 00mm (W) x 90.5mm (H) x 62.5mm (D) (5.3" x 3.6" x 2.5") 360g (12.6oz) body only without batteries

Supplied Accessories — Hot Shoe Cover F$_C$, Release Socket Cap F, Camera Strap F$_G$, Eye Cup F$_H$, Finder Cap

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

OTHERS

Self-timer	Electronically-controlled type with delay time of 12 sec. Start by depressing of shutter release button, Operation confirmation : By PCV beep tone. Cancelable after operation
Mirror	Instant-return mirror with AF secondary mirror
Film Loading	Film advances automatically to 1st frame after back cover is closed, Film information window is provided
Film Wind & Rewind	Auto wind/rewind by built-in motor, Consecutive or Single advance mode, Approx.2 frames/sec.(consecutive mode), Auto rewinding starts at end of roll, Film rewind/completion of rewinding is displayed on the LCD panel, Mid-roll rewind button will rewind film in mid-roll
Exposure Meter	TTL multi(2)-segment metering, Metering range from EV1 to EV17.5 at ISO100 with 50mm f/1.4 lens
Exposure Compensation:	± 3EV in 0.5EV step increments
Flash	Series-control, Retractable TTL Auto Flash (RTF), Guide number:11 (ISO100/m), Illumination angle covers 28mm lens angle of view, Flash-sync-speed in the range from 1/100 sec. to a slower speed, Day-light-sync flash, Slow-speed-sync flash, Contrast-control-sync flash (ISO range = 25 - 400), Automatic flash function, Red-eye reduction flash function
Flash sync	Hot shoe with X-contact with couples with Pentax dedicated auto flashes, ISO range = 25-800
Power Source	Two 3V lithium batteries (CR2 or equivalent)
Battery Exhaustion Warning	Battery exhaustion symbol [▭] is lit (blinking when the shutter is locked; no indication on the right-hand edge of the viewfinder.)
Dimension and Weight	135.0mm(W)x90.5mm(H)x62.5mm(D) (5.3"x3.6"x2.5") 345g(12.2 oz) body only without batteries

OTHERS

Date model : Crystal quartz controlled LCD with digital clock, auto calendar up to 2019. 7 segment, 6-digit LCD display

| Power source	3V lithium battery (CR2025 or equivalent)
Number of prints	Approx. 5000
Dimension and Weight	135. 00mm (W) x 90.5mm (H) x 62.5mm (D) (5.3" x 3.6" x 2.5") 360g (12.6oz) body only without batteries
Supplied Accessories	Hot Shoe Cover Fc, Release Socket Cap F, Camera Strap FG, Eye Cup FH, Finder Cap

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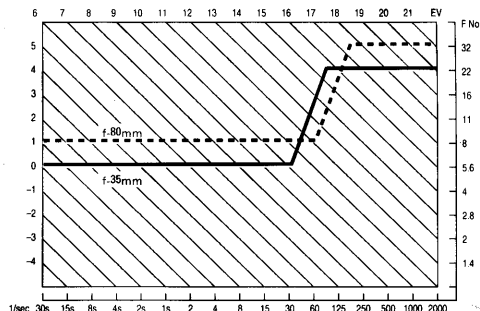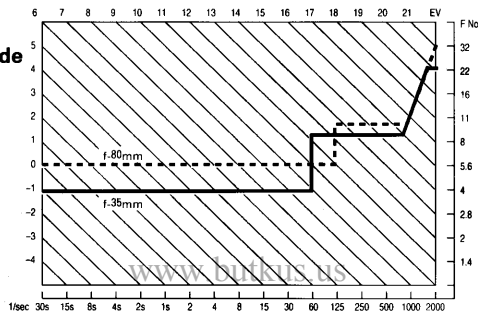
PROGRAM LINE

Green Operation Mode
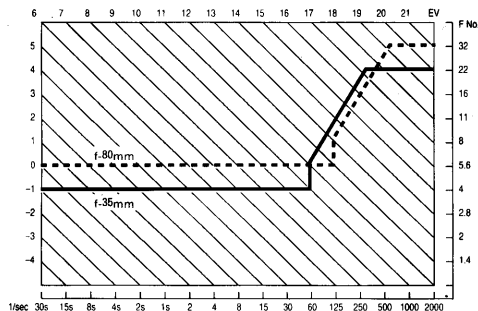
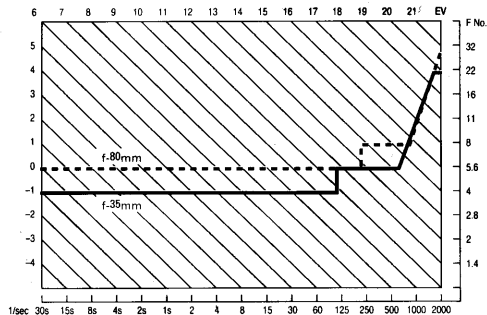At ISO 100 with F35 - 80mm f / 4 - 5.6 lens

Landscape Program Mode

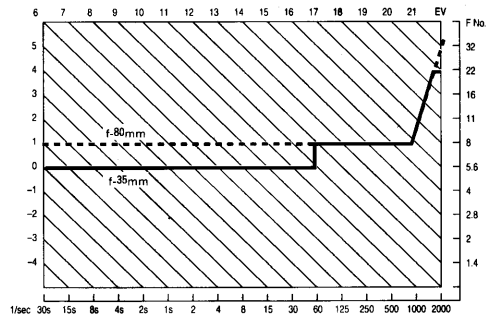

At ISO 100 with F35 - 80mm f / 4 - 5.6 lens

Portrait Program Mode

At ISO 100 with F35 - 80mm f / 4 - 5.6 lens

OTHERS

Action Program Mode

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 EV

F No.

32
22
16
11
8
5.6
4
2.8
2
1.4

f-80mm

f-35mm

1/sec 30s 15s 8s 4s 2s 1s 2 4 8 15 30 60 125 250 500 1000 2000

At ISO 100 with F35 - 80mm f/4 - 5.6 lens

Close-up Program Mode

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 EV

F No.

32
22
16
11
8
5.6
4
2.8
2
1.4

f-80mm

f-35mm

1/sec 30s 15s 8s 4s 2s 1s 2 4 8 15 30 60 125 250 500 1000 2000

At ISO 100 with F35 - 80mm f/4 - 5.6 lens

NAMES OF WORKING PARTS II

1. Shutter curtain
2. Viewfinder eyepiece
3. Eyecup F_H (p.48)
4. Exposure compensation button (p.65,67,68)
5. Film information window
6. Pressure plate
7. Back cover
8. Film leader end mark (p.23)
9. Battery chamber cover screw (p.14)
10. Battery chamber cover (p.14)
11. Sprocket (p.23)
12. Tripod socket
13. DX information pins (p.23)
14. Film chamber

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