ADVANCED OPERATIONS

1

Using the Shutter-Priority AE Mode

Purpose

When the desired shutter speed is selected, the appropriate aperture is automatically set by the camera for a proper exposure according to the brightness of the subject. This mode is suitable for freezing the action with a fast shutter speed or capturing a flowing dynamic image with a slow shutter speed. For details on the effect of the shutter speed, see page 86.

2
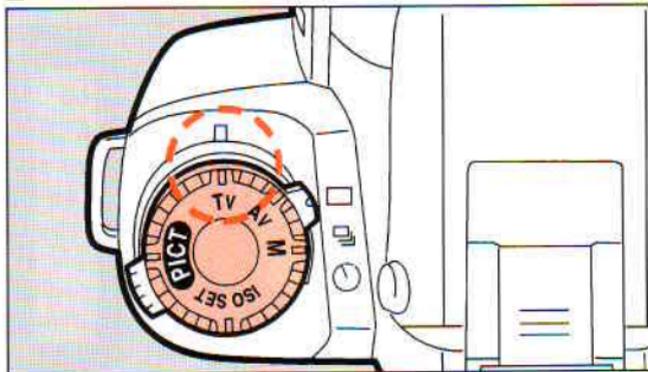
How to set

1. Set the lens aperture ring to the A position.
• When the lens aperture ring is set to a position other than the A position, a correct exposure may not be obtained.

2. Set the mode dial to [Tv].

3
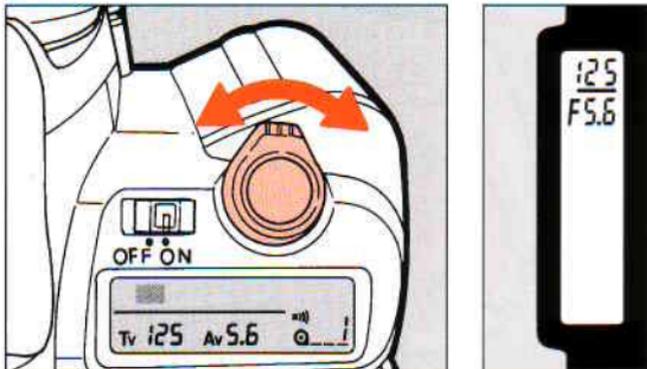
3. Select the desired shutter speed by moving the select switch.

- When the shutter release button is depressed halfway down, the shutter speed and aperture indication will be displayed in the viewfinder and on the LCD panel.
- The bar underneath the shutter speed will also be displayed.
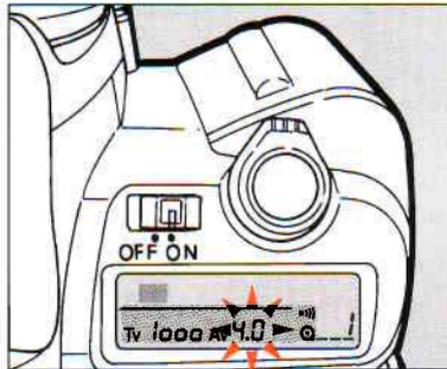
* Exposure Warning

If the subject is too bright or too dark, the aperture setting in the viewfinder blink. When the subject is too bright, choose a faster shutter speed. If it is too dark, choose a slower shutter speed. When the shutter speed indication stops blinking, you can take the picture. If both selected shutter speed and aperture blink, it means that the exposure is out of metering range, unable to obtain a correct exposure even if the shutter speed is adjusted. Select a darker subject if the subject is too bright. Use a flash if it is too dark.

ADVANCED OPERATIONS
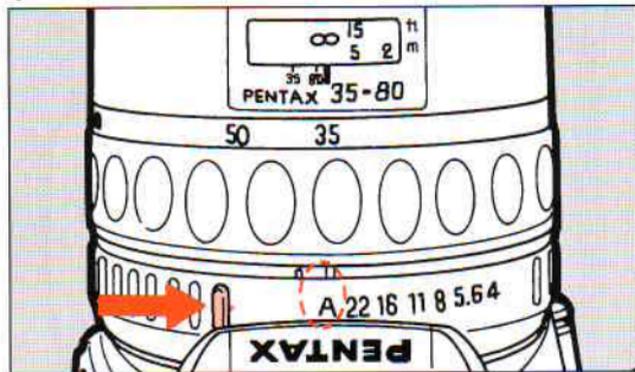
Using the Aperture-Priority AE Mode

Purpose

When the desired aperture is selected, an appropriate shutter speed is automatically set by the camera for a proper exposure. This mode is ideal for shooting landscapes with increased depth of field, or a portrait against a blurred background. For details on the effect of the aperture setting, see page 87.
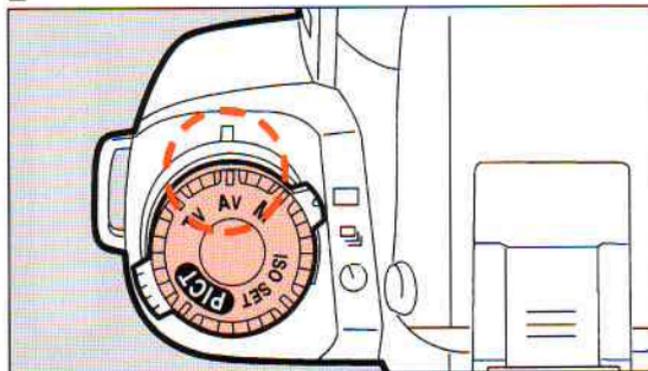

How to set

1. Set the lens aperture ring to the A position.
- When the lens aperture ring is set to a position other than the A position, a correct exposure may not be obtained.

2. Set the mode dial to [Av].

3
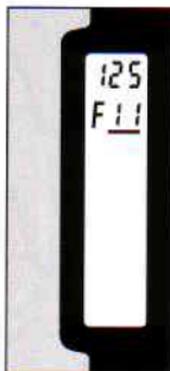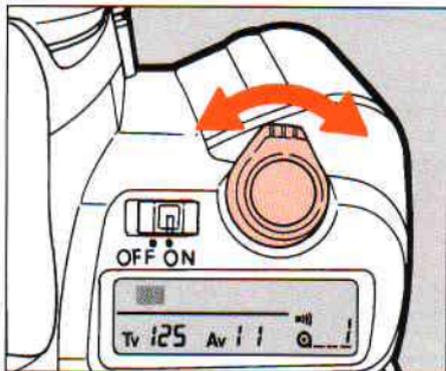
**3. Set the desired f-stop by moving the select switch.**

- When the shutter release button is depressed halfway down, the shutter speed and the aperture indication will be displayed in the viewfinder and on the LCD panel.
- The bar underneath the aperture indication will also be displayed.

*
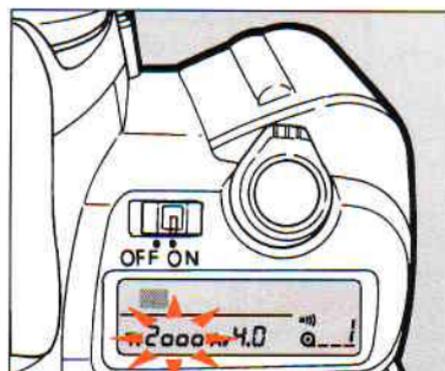
* Exposure Warning

If the subject is too bright or too dark, the selected shutter speed will blink in the viewfinder and on the LCD panel as a warning as shown. When the subject is too bright, choose a smaller aperture, if available; when it is too dark, choose a larger aperture, if available. When the shutter speed indication stops blinking, you can take the picture. If both shutter and aperture blink, it means that the exposure is out of metering range, unable to obtain a correct exposure even if the aperture is adjusted. Select a darker subject if it is too bright, or use a flash if it is too dark.

ADVANCED OPERATIONS

1
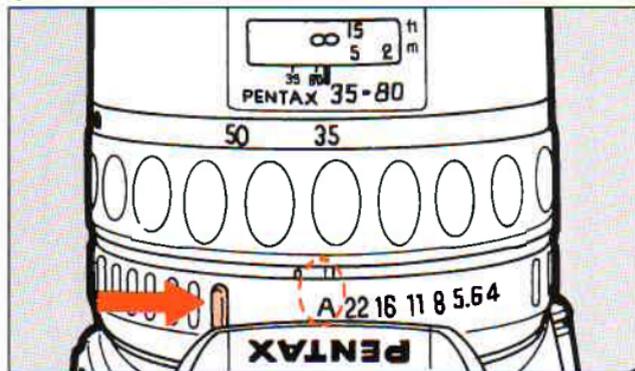
Using the Metered Manual Mode

Purpose
The manual exposure mode is a convenient exposure mode for taking pictures using the same shutter speed and aperture setting combination, or taking creatively under or overexposured photographs.

2
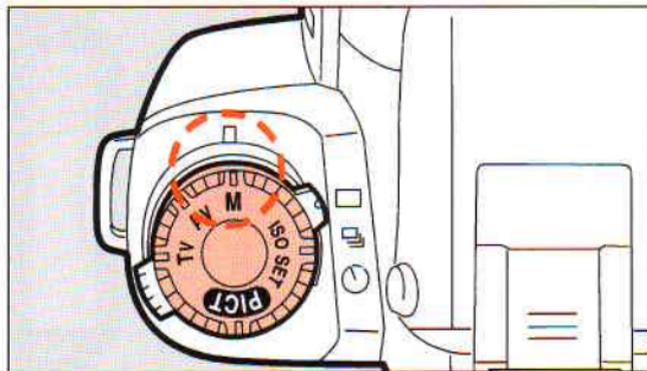
How to set
1. Set the lens aperture ring to the A position.
2. Set the mode dial to 〔 M 〕.

• 〔 M 〕 appears on the LCD panel to indicate that the Manual Exposure Mode is set.
• If a lens without the A position or an F or FA lens with the aperture set other than A position is attached, the bar graph in the view finder will blink.
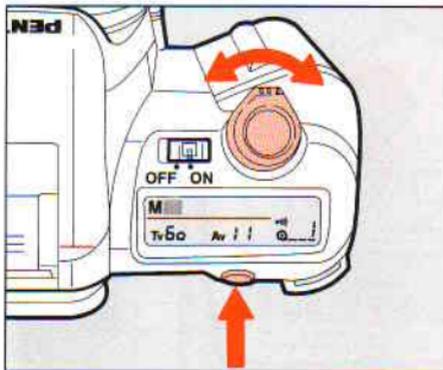
3. Change the shutter speed by moving the select switch or the aperture by moving the select switch while holding down the exposure compensation button.

- To obtain the proper exposure, change the aperture setting or the shutter speed until the dot is displayed in the center of the bar graph in the veiwfinder.
- When the shutter release button is depressed halfway, the shutter speed, aperture and bar graph will be displayed in the viewfinder.
- The bar underneath the shutter speed will be displayed and the bar underneath the aperture indication will also be displayed when the exposure compensation button is depressed.

- When the dots are displayed to the [⊕] side on the bar graph, it indicates overexposure and when the dots are displayed to the [⊖] side, it indicates underexposure.
- Moving one dot on the bar graph indicates 0.5 step (0.5EV). However, when under or over exposure is set beyond + 3 or - 3 steps (3EV), [⊕] or [⊖] indicator will blink.

✳ Exposure Warning

If the subject is too bright or too dark, both shutter speed and aperture setting will blink in the viewfinder as a warning as shown. It means that the exposure is out of metering range, unable to obtain a correct exposure even if the aperture is adjusted. Select a darker subject or use a flash if it is too dark.

ADVANCED OPERATIONS

ADVANCED OPERATIONS
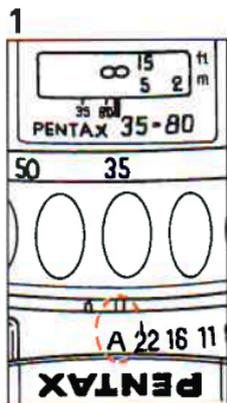
Bulb Exposure Mode

Purpose

This mode is useful for the long exposures required for shooting night scenes and fireworks. The shutter remains open as long as the shutter release button is held down.

How to set

1. Set the lens aperture ring to the A position.
2. Set the mode dial to [M].
3. Adjust the shutter speed to slower side by moving the select switch until [bu] appears on the LCD panel.
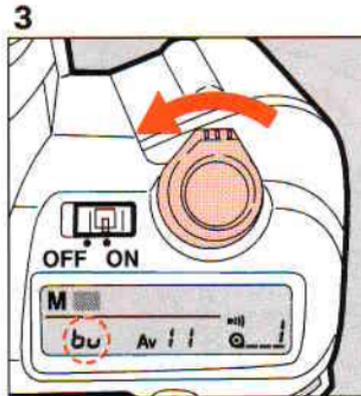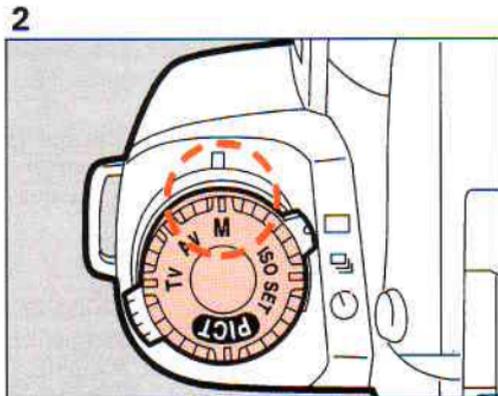
- [M] appears on the LCD panel.
- When the shutter release button is depressed halfway, [bu] and the aperture indication appear in the viewfinder and on the LCD panel.
- The bar underneath [bu] appears in the viewfinder.

4
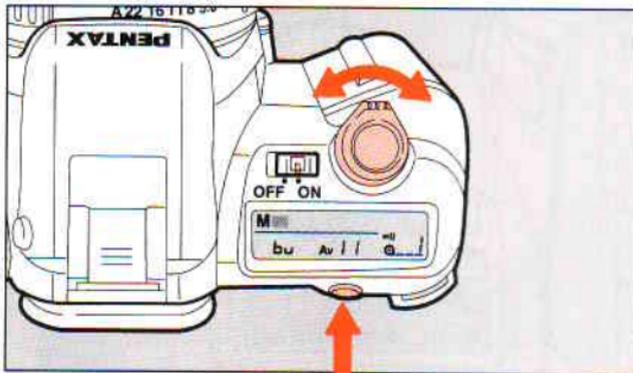
4. Select the desired aperture by moving the select switch while depressing the exposure compensation button.

• Up to approx. 8 hours of time exposure are possible with a new lithium battery at room temperatures.

*
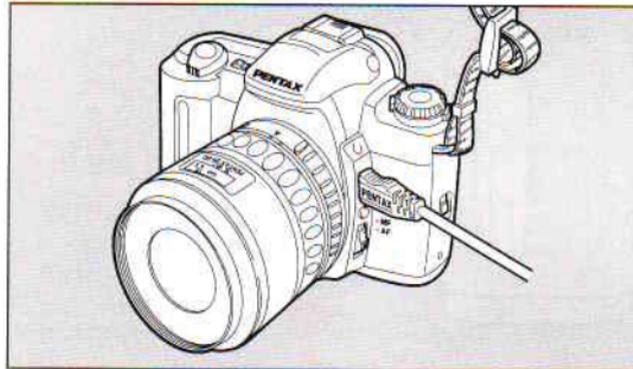
* **When using this mode, use a steady tripod to prevent camera shake and attach the optional "Cable Switch F" after removing the Release Socket Cap F.**

ADVANCED OPERATIONS
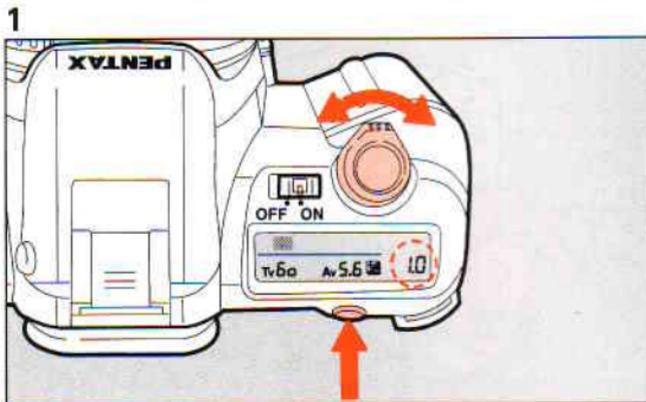
Purpose

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.**
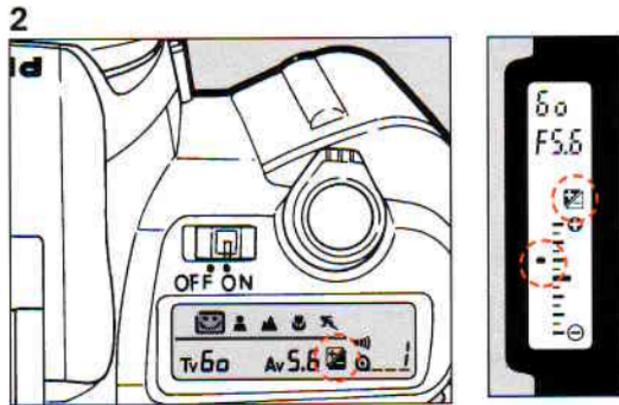
- Exposure compensation does not work in the Metered Manual Mode and Bulb Exposure Mode.
- The exposure compensation range is -3EV to +3EV in 0.5EV stops.
- Moving one dot on the bar graph indicates 0.5EV step. However, when under or over exposure is set beyond +3 or -3 steps (3EV), the dot will blink.

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.
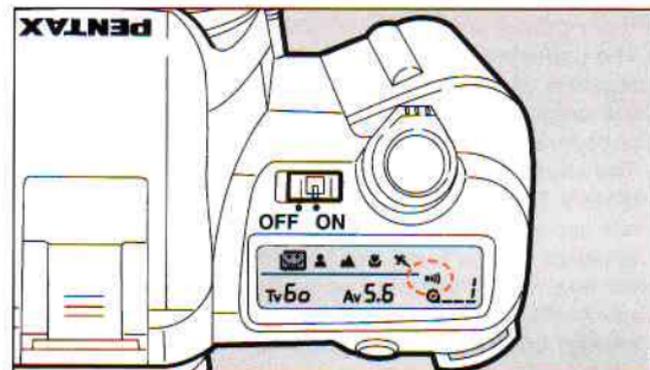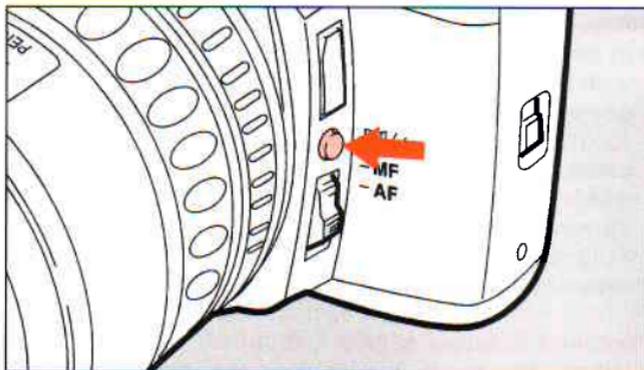
The audible In-Focus PCV signal can be turned off.

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.

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:

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.

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 35-80mm f／4-5.6	○
FA Zoom 70-200mm f／4-5.6	○
FA*Zoom 80-200mm f／2.8	△ * 5
F Zoom 80-200mm f／4.7-5.6	○
FA Zoom 80-320mm f／4.5-5.6	○
F Zoom 100-300mm f／4.5-5.6	○
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	×

Lens name	Compatibility
F or FA 28mm f／2.8	○
FA 43mm f／1.9 Limited	○
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	○
FA*400mm f／5.6	○
F or FA*600mm f／4	×
F or FA MACRO 50mm f／2.8	○
F or FA MACRO 100mm f／2.8	○
FA Soft 28mm f／2.8	○
F or FA Soft 85mm 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.

1

2

OFF ON

150 800

3
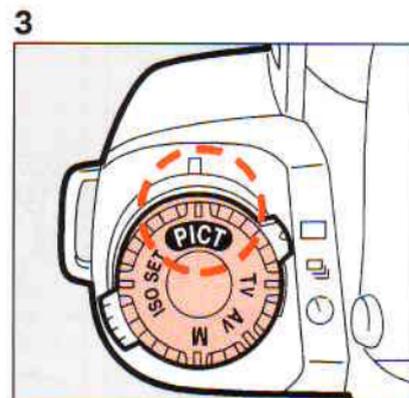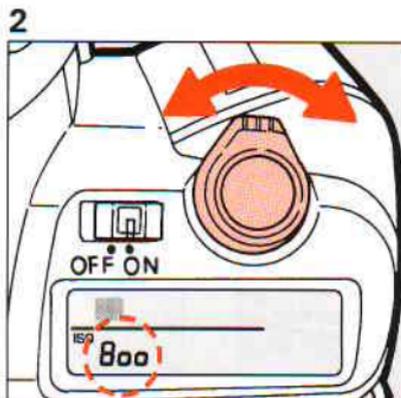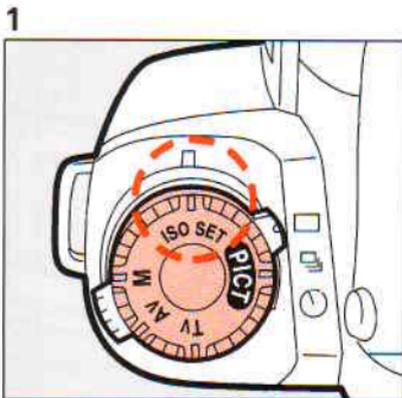
This camera automatically reads the film speed from the film's DX code. However, the film speed setting can be changed. If you use a non-DX coded film, set the film speed manually.

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.

(9) INSTALLING THE BATTERY IN THE DATA BACK

1   **2**

3   **4**
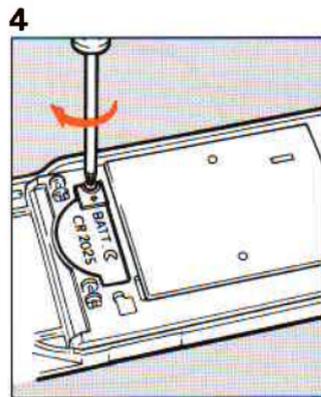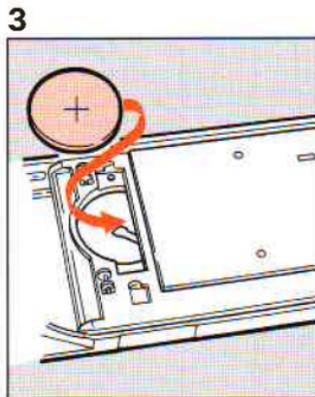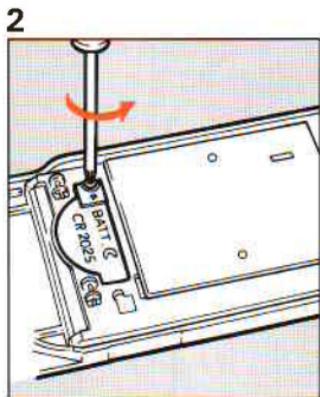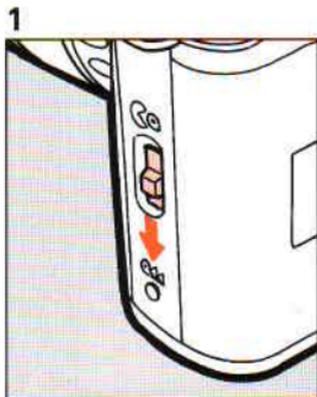
If you purchased the DATE MODEL, read this section.

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.

(10) ADJUSTING THE DATA
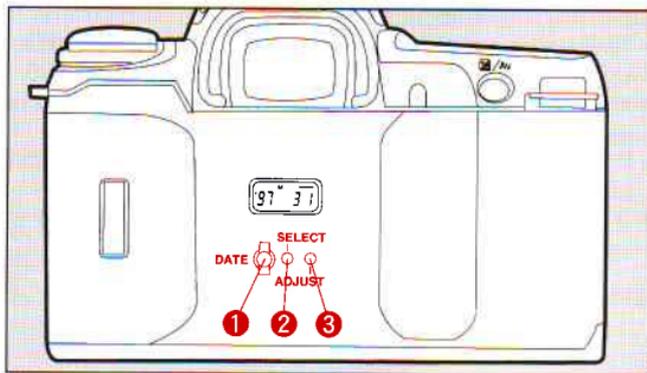
If you purchased the DATE MODEL, read this section.

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.

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
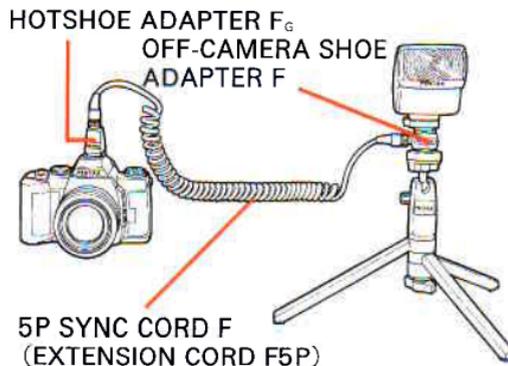
AF500FTZ and AF330FTZ

- 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.

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, AF201Sₐ
TYPE E : AF200S, AF160, AF140,

* 2. The AF200Sₐ and AF201Sₐ flashes do 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.

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.

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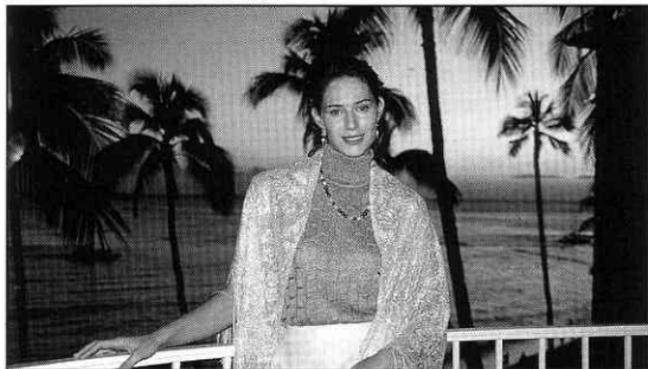
Purpose
It is possible to balance the exposure of a foreground subject against a dimly-lit background by using the flash to properly expose the foreground subject and a slow-shutter-speed to expose the low light background.

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.

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-1$_P$／PZ-1$_P$, Z-70／PZ-70,Z-1／PZ-1, Z-20／PZ-20, Z-10／PZ-10.

• Magnifier F$_B$
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 the 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 F$_G$, 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 the guide numbers 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 F$_G$
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／ZX-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.

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
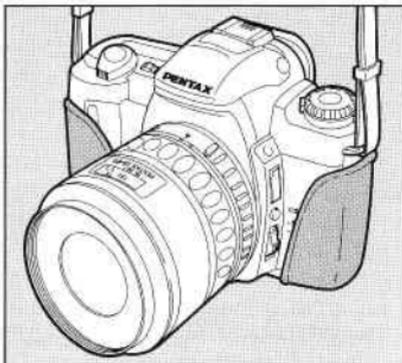
2
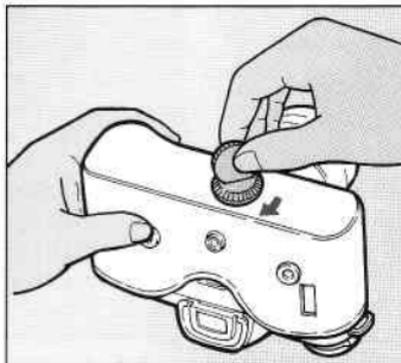
3
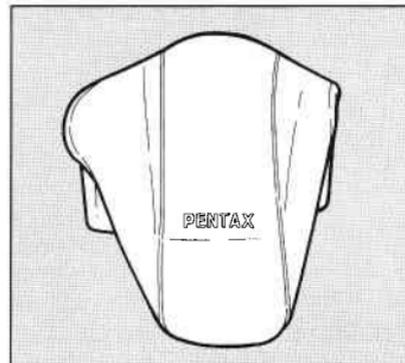
The soft case is available as an option and consists of a front and a back case.

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, Soft28mm
F_GM	24mm, Macro 50mm, 135mm, Zoom 28-70mm f/4, Zoom 28-80mm, Zoom 28-200mmAL, Soft85mm
F_GL	85mm f/1.4, Macro 100mm, Zoom 28-105mm, Zoom 70-200mm, F Zoom 80-200mm

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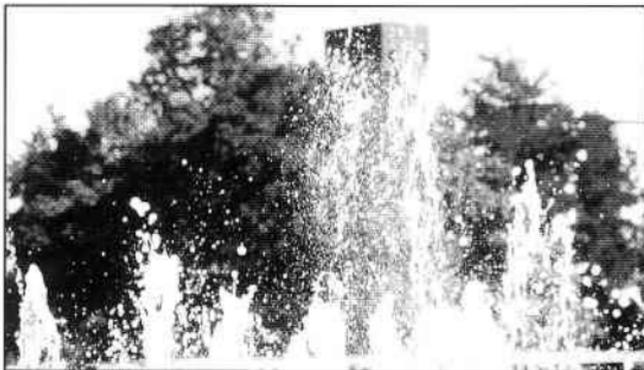
High shutter speed

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 re-flected 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 be-hind the person will be blurred, making the person ap-pear 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)

F4
F5.6
F8
F11
F16
F22

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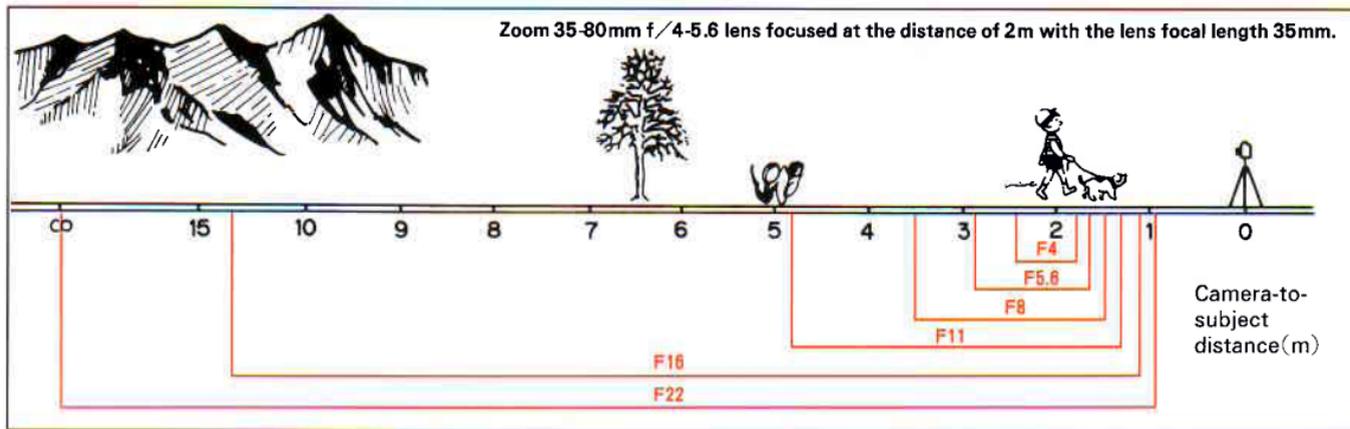
Depth of field refers to the range around the optimum focusing point of the subject in which the elements at different distances are in focus. The depth of field increases as the aperture is closed down, the focal length of the lens becomes shorter, or the subject is positioned farther away.

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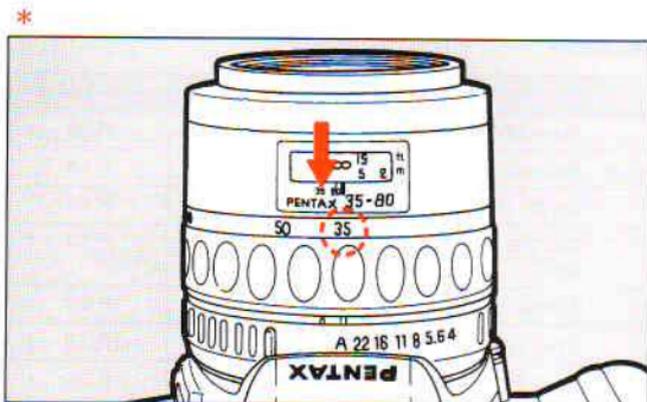
When infrared film and an "R2" or "O2" filter are used, the focal point is different from that of ordinary film exposed in visible light. The autofocus system cannot compensate for this difference automatically.

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.
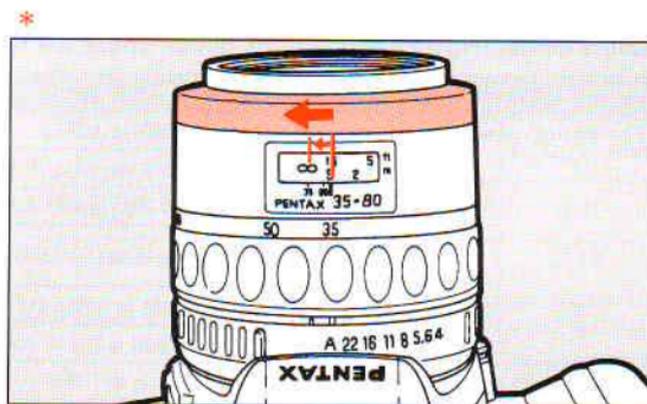
* **As shown in the illustration, if 35 is read from the zoom scale, adjust the distance scale to 35 on the infrared index (red line).**

- 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

SPECIFICATIONS

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, [🔲A] = 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꜀, 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

PROGRAM LINE

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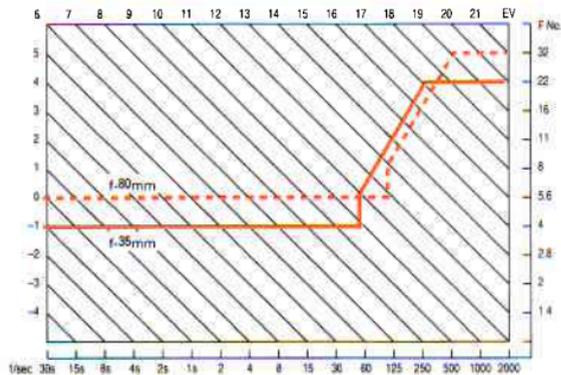
At ISO 100 with F35 - 80mm f／4 - 5.6 lens

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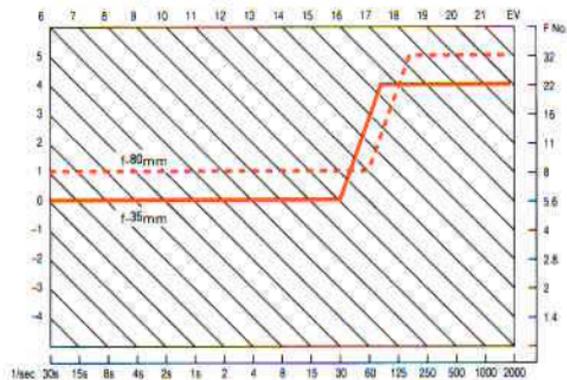
At ISO 100 with F35 - 80mm f／4 - 5.6 lens

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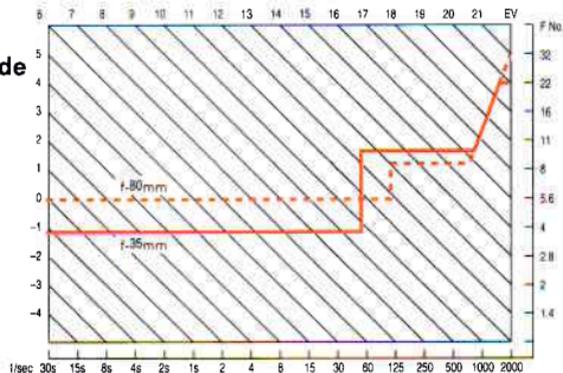
At ISO 100 with F35 - 80mm f／4 - 5.6 lens

OTHERS

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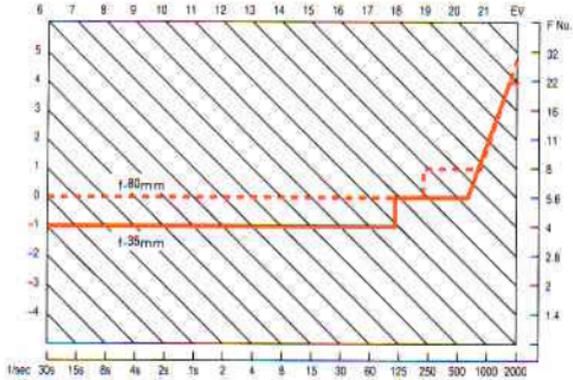
At ISO 100 with F35 - 80mm f/4 - 5.6 lens

Close-up Program Mode

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

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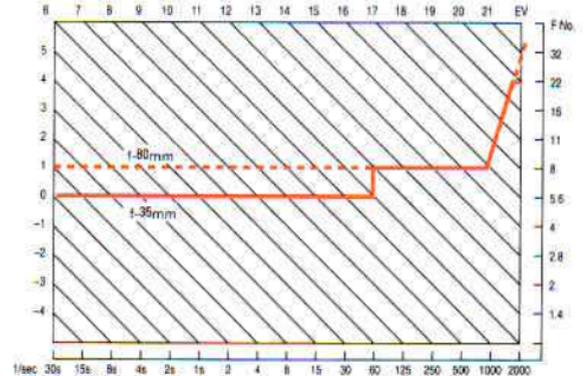
1. Shutter curtain
2. Viewfinder eyepiece
3. Eyecup F$_H$ (p.48)
4. Exposure compensation button (p.65,67,68)
5. Film information window
6. Pressure plate
7. Back cover
8. Film leader end mark （p.23）
9. Battery chamber cover screw (p.14)
10. Battery chamber cover （p.14）
11. Sprocket （p.23）
12. Tripod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

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