On-line camera manual library
This is the full text and images from the manual. This may take 3 full minutes for
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If you use Pay Pal or wish to use your credit card,
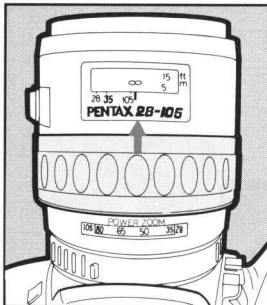click on the secure site on my main page.

(7) EXTENDED POWER ZOOM FUNCTIONS

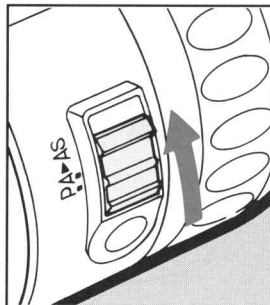Using a Pentax-FA lens on this camera allows the following auto zoom functions to be used:

① Zoom-clip mode
② Image size tracking mode
③ Auto zoom effect mode
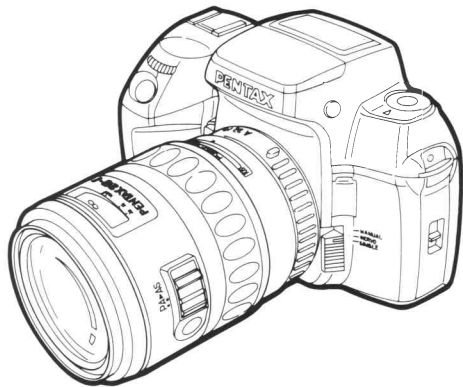
1

2

Preparing to Use the Auto Zoom Function

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

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

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

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

1

2
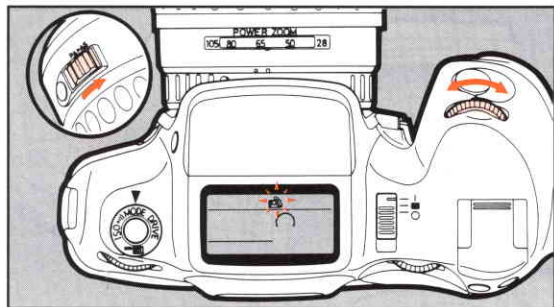
① **Using the zoom-clip mode**

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

* Using a Pentax function, the camera can remember two focal lengths. Alternate between them by pressing the zoom set button. (See page 91.)
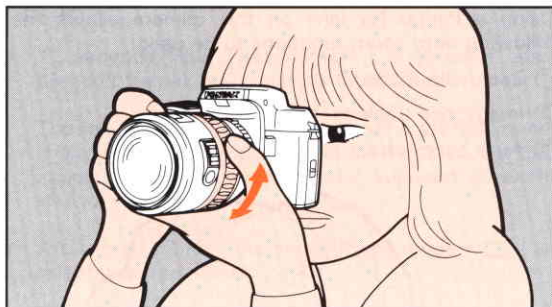
1. While holding the auto zoom switch toward [**AS**], turn the **Tv** direct dial until [🔍] blinks on the LCD display.

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

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

3

4
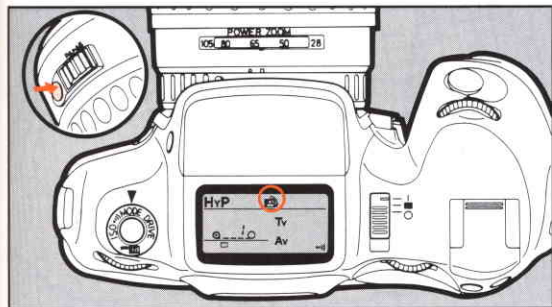
3. Now press the zoom set button on the lens, making [📷] light up. This indicates that the camera has stored the focal length.

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

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

* The focal lengths in memory are not cleared even if the main switch is set to [○]. They are cleared when the battery is replaced.
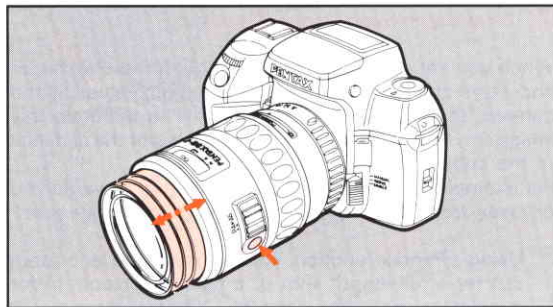
* If the lens is removed or replaced while the power switch is set to [❘] or [■], the focal lengths are cleared from memory. To avoid this, set the main switch to [○] in advance.

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

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

② **Using the image size tracking mode**

When you set up a composition through the viewfinder and store the image size (magnification value) in the camera, the lens automatically zooms to maintain this image size (magnification value) regardless of the distance to the subject.

For example, you can shoot a child moving towards you or away from you without a change in the image size.

* Using a Pentax function, you can make the lens zoom out for a full-length shot of a person or zoom in for a waist-up shot. (See page 91.) You can store a new image size in the camera regardless of the Pentax function setting. (This image size is cleared when the main switch is set at [○].) When the main switch is set to [▮] or [▬] again, the selected image size (full-length or waist-up shot) previously set using a Pentax function is restored.
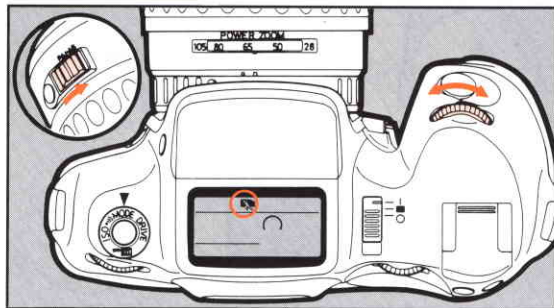
1. While holding the auto zoom switch toward [**AS**], turn the **Tv** direct dial until [🐾] is displayed on the LCD display.

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

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

ADVANCED OPERATIONS

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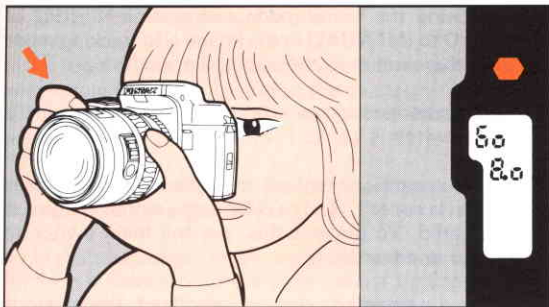
2. Press the shutter release button halfway down to focus on the subject and keep the in-focus indicator [○] in the viewfinder on.

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

3. While holding the shutter release button halfway down, turn the power zoom ring to obtain the desired image size. The camera stores this new image size.
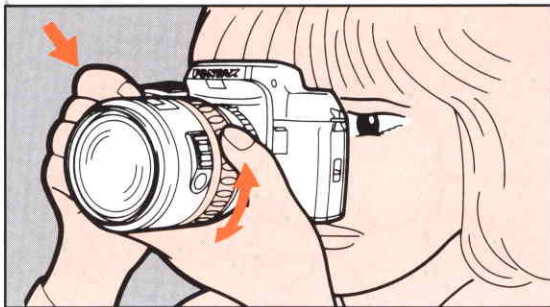
* Zooming the lens after it has focused on a subject may alter the focus slightly. Should this happen, raise your finger off the shutter release button and press it halfway down again to re-focus.

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

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

ADVANCED OPERATIONS

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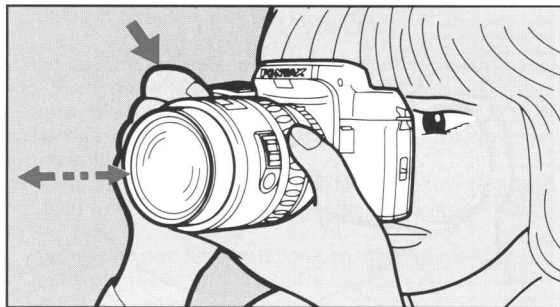
4. While the shutter release button is held halfway down, the lens automatically zooms to maintain the same image size. When the camera stops zooming, press the shutter release button fully down.

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

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

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

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

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

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

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

* Removing the battery will clear the stored image size.

* The zoom lens may not keep the subject at the preregistered image size when continuously tracking the moving subject with the camera's focus mode switch set to SERVO.

③ **Using the Zoom Effect Mode**

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

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

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

Zoom effect from telephoto to wide-angle
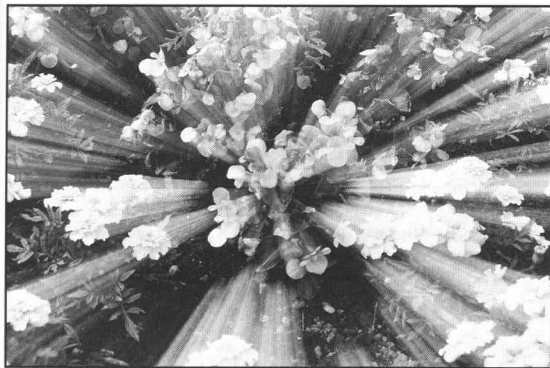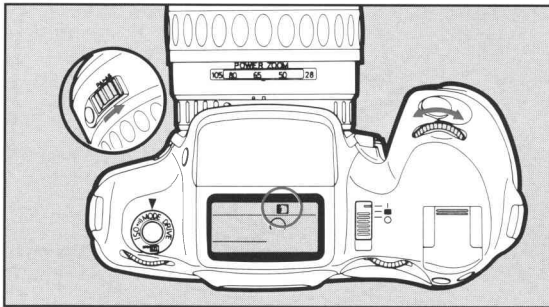
1. While holding the auto zoom switch toward [**AS**], turn the **Tv** direct dial until [🔟] is displayed on the LCD panel.

* To cancel the zoom effect mode, set the auto zoom switch to [**P**].
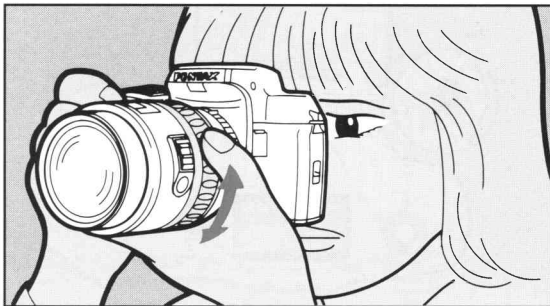
2. Turn the power zoom ring to a wide-angle setting.

*   If zooming from telephoto to wide-angle has been specified using a Pentax function, turn the power zoom ring to a telephoto setting.
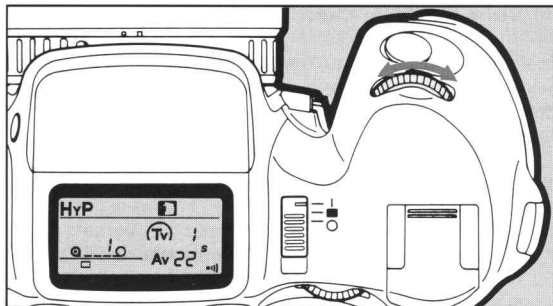
3. To emphasize the effect, choose an exposure setting with the slowest possible shutter speed.

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

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

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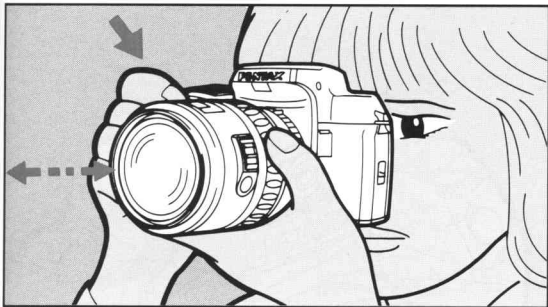
4. Press the shutter release button fully down. The lens zooms according to the set shutter speed, creating a dynamic zoom effect.

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

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

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

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

**About Manual Zoom Effects**

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

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

ADVANCED OPERATIONS

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

1

2
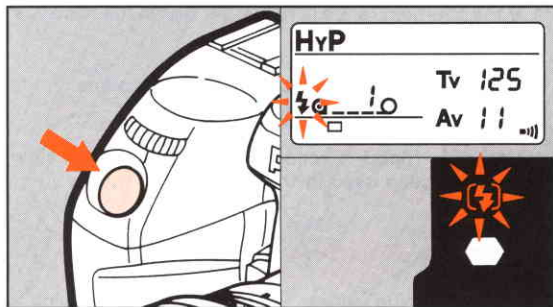
When you pop up the built-in flash of this camera in a dark or backlit situation, the camera chooses the optimum combination of shutter speed and aperture. This allows you to do complicated flash photography with ease.

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

    *   In a dark or backlit situation, [⚡] on the LCD panel and [[⚡]] in the viewfinder will blink to recommend the use of flash.
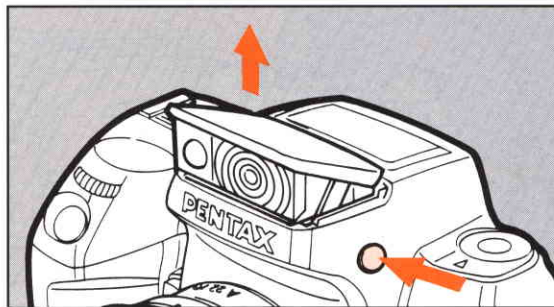
2. Press the flash pop-up button.

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

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

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

ADVANCED OPERATIONS

80 www.orphancameras.com

3
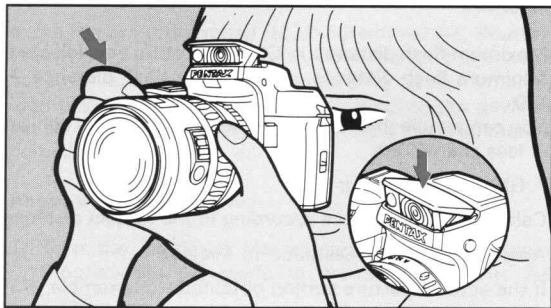
3. Press the shutter release button fully down.

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

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

When in Shutter-Priority AE Mode

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

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

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

ADVANCED OPERATIONS

When in Aperture-Priority AE or Hyper Manual Mode

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

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

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

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

Calculating Flash Distance According to the Selected Aperture

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

* GN: Guide Number

Calculating the aperture according to the subject distance

Aperture = GN ÷ Distance to subject

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

The guide numbers for different film speeds are as follows:

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

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

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

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

ADVANCED OPERATIONS

Daylight Synchronization Function

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

About Slow-Speed-Synch

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

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

2. Select the desired shutter speed.

3. Press the flash pop-up button.

4. Take the photo.

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

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

About the AF Spot Beam

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

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

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

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

* The AF spotbeam will not project in a bright place.
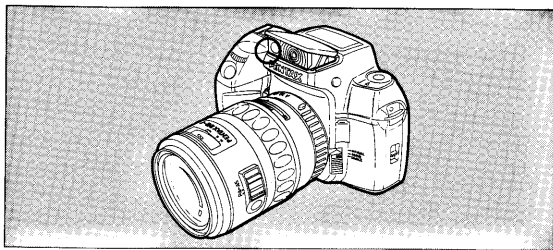
1
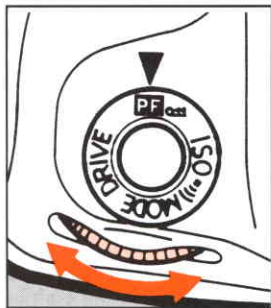
2
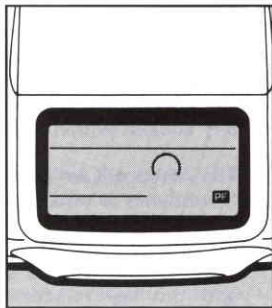
3

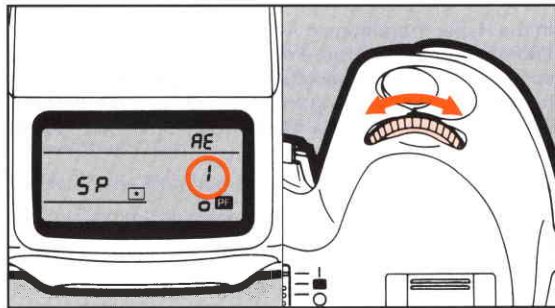This camera incorporates 18 Pentax functions which can be used to customize camera functions to your taste and convenience.

Setting Pentax Functions

1. Set the mode dial to [PF⇌].

2. While holding down the mode set button, turn the **Tv** direct dial to clear [**O _ _ O**]. Then release the mode set button.

3. Turn the **Tv** direct dial to select the desired Pentax function number.

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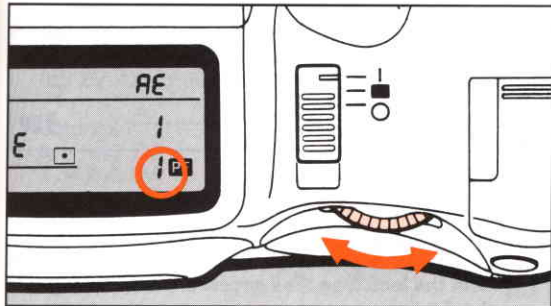
4. Turn the **Av** direct dial to set the status of the chosen Pentax function.

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

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

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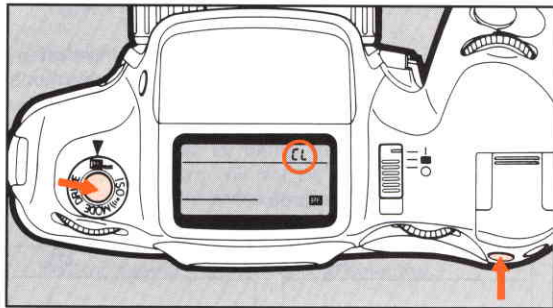
* **Initializing Pentax functions**

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

ADVANCED OPERATIONS

① **Selecting the spot or center-weighted metering system**

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

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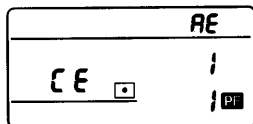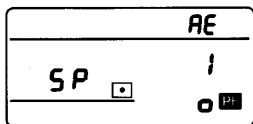**0** = Spot metering mode
1 = Center-weighted metering mode

	AE
S P ⊡	1
	0 PF

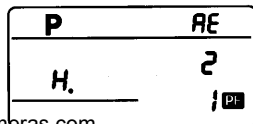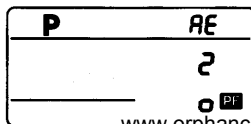|	AE
C E ⊡	1
	1 PF

② **Selecting a program line**

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

Settings:
0 = Normal program line
1 = Program Action line (High-speed-shutter-priority)

P	AE
	2
	0 PF

P	AE
H.	2
	1 PF

2 = Program Depth line (Depth-of-field-priority)
3 = MTF Program line

P	AE
	2
d.	2 PF

P M	AE
	2
	3 PF
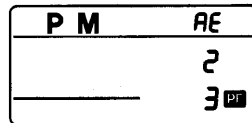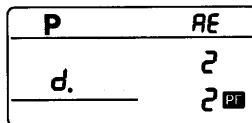
Remarks:
* Select the normal program line for general photography. See the programmed AE diagram on pages 114 and 115. (The MTF Program line varies with the lens type. The necessary data is stored in the FA lens in use.)

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

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

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

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

ADVANCED OPERATIONS

③ **Selecting the exposure compensation increment**

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

Settings:
0 = 0.3 EV
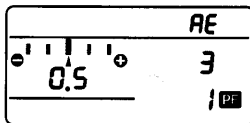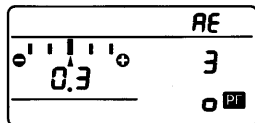**1** = 0.5 EV

	AE
⊖ ' I ' I ' ⊕ 0.3	3
	o PF

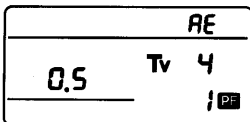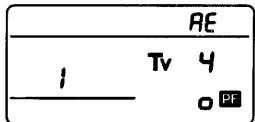|	AE
⊖ ' I ' I ' ⊕ 0.5	3
	I PF

④ **Selecting the shutter speed increment**

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

Settings:
0 = 1 EV
1 = 0.5 EV

	AE
1	Tv 4
	o PF

	AE
0.5	Tv 4
	I PF

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

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

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

HyP	AE
AS	Tv S
	Av o PF

HyP	AE
	Tv S
	Av I PF

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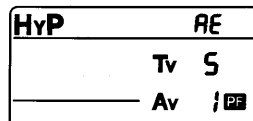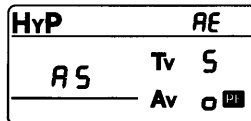
⑥ **Selecting the type of Tv/Av shift made when the [IF] button is pressed in the Hyper Manual mode**

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

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

Hy M		ᴀE
P		6
		o ▣

Hy M		ᴀE
E S		6
		₁ ▣

Hy M		ᴀE
E E		6
		₂ ▣

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

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

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

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		o ▣

Hy M		ᴀE
		⁊
P.		
		₁ ▣

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

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

Settings:

0 = Automatic setting of film speed (ISO) according to the DX code has priority.

1 = Manual setting of film speed (ISO) by the user has priority.

```
          8 ISO
  ₒA S
          ₒ PF
```
```
          8 ISO
  ₒU S
          ₁ PF
```
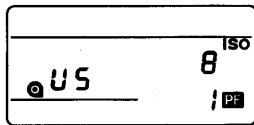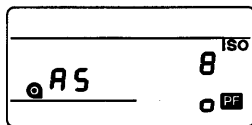
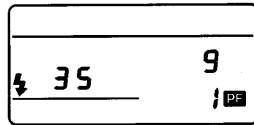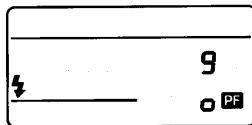⑨ **Selecting the built-in flash discharge mode**

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

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

```
          9
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```
```
          9
  ₄ 3 S
          ₁ PF
```

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

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

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

```
          ₁o
  ₄
          ₀ PF
```
```
          ₁o
  ₄ L
          ₁ PF
```
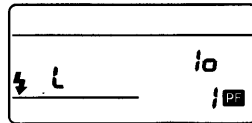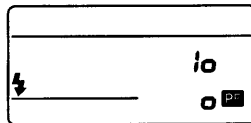
*   With the inappropriate lenses for the built-in flash mounted on this camera, when the built-in flash is popped-up, the shutter cannot be released due to the locked shutter if [1] has been selected for both the Pentax functions 9 and 10.

ADVANCED OPERATIONS

www.orphancameras.com
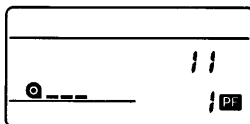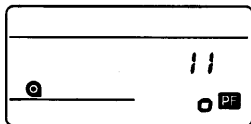
(89)

⑪ Adjusting the film rewind

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

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

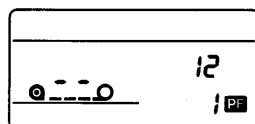## ⑫ Selecting the film rewinding mode

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

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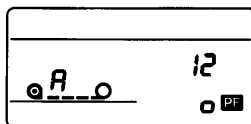
Remarks:
If manual rewinding [1] is selected, the exposure count and film transport mark blink when the end of the film is reached. The only operation possible then is to rewind the film. Manually rewind the film with reference to "Rewinding the Film in Mid-Roll" (on page 21).

⑬ Selecting the initial magnification in the Image Size Tracking mode

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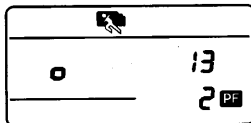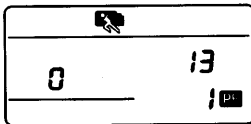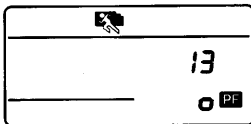Choose the image magnification to be used until a new image size (magnification) is set when in the Image Size Tracking mode. Upon delivery, the previously stored image size is used.

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

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

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

⑭ Selecting the number of focal length settings memorized in the zoom clip mode
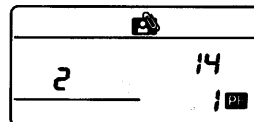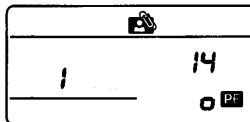
Details:
Select whether the zoom-clip mode is to store 1 or 2 focal length settings. Upon delivery, one focal length is selected.

Settings:
0 = One focal length setting.
1 = Two focal length settings.
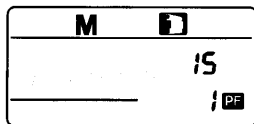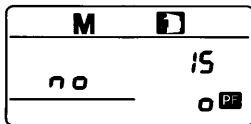
⑮ Selecting power zoom operation

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

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

```
┌─────────────────────┐  ┌─────────────────────┐
│    M    🎞          │  │    M    🎞          │
│              15     │  │              15     │
│   n o               │  │                     │
│            o 🅿     │  │            1 🅿     │
└─────────────────────┘  └─────────────────────┘
```

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

⑯ Selecting the zoom direction in the zoom effect mode

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

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

```
┌─────────────────────┐  ┌─────────────────────┐
│         🎞          │  │         🎞          │
│              16     │  │              16     │
│   o 0               │  │   0 o               │
│            o 🅿     │  │            1 🅿     │
└─────────────────────┘  └─────────────────────┘
```
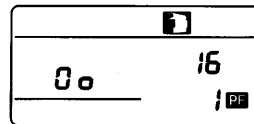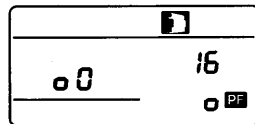
⑰ **Selecting function of the [ML] button**

Details:
When the focus mode switch is set to [SINGLE] and the [ML] button is pressed, determine whether the subject is focused automatically (and the focus is locked) before the exposure is fixed or only the exposure is fixed. Upon delivery, only the exposure is fixed.
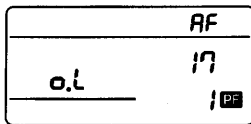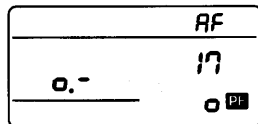
Settings:
- **0** = When the [ML] button is pressed, only the exposure is fixed without autofocusing.
- **1** = When the [ML] button is pressed, the exposure level is fixed after autofocusing (and locking the focus).

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⑱ **Selecting the shutter release timing in image size tracking mode**

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

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

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📷	AF
	18
1 5	1 🄿🄵

ADVANCED OPERATIONS
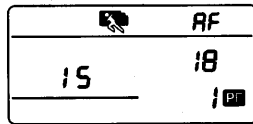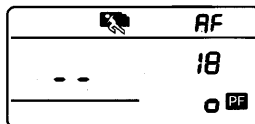
(10) SETTING THE FILM SPEED (ISO) MANUALLY

1

2

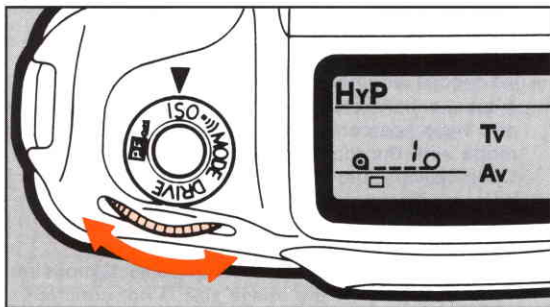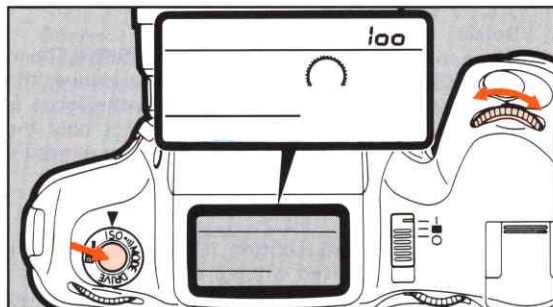This camera reads the speed from a loaded film's DX code. However, the film speed setting can be changed. If you use a non-DX-coded film, set the film speed manually.

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

Manually Changing Film Speed

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

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

* To display the current film speed (ISO), press the mode set button after setting the mode dial to [**ISO**].

* If the film speed according to the DX code is different from the manually set film speed, [**ISO**] appears on the LCD panel.

* If a non-DX-coded film is used, the previously-set film speed is used.

(11) STOPPING THE ELECTRONIC BEEP

1

2
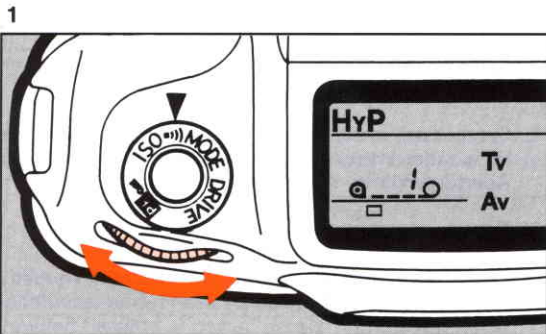
This camera issues an electronic beep sound when a subject comes into focus and during self-timer operation.
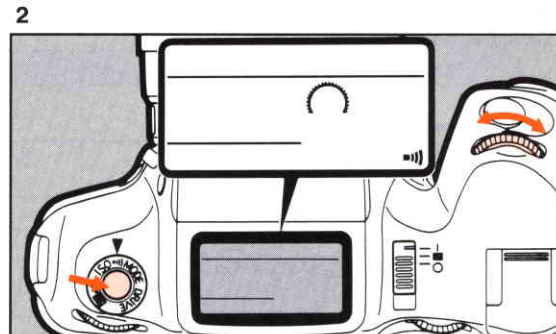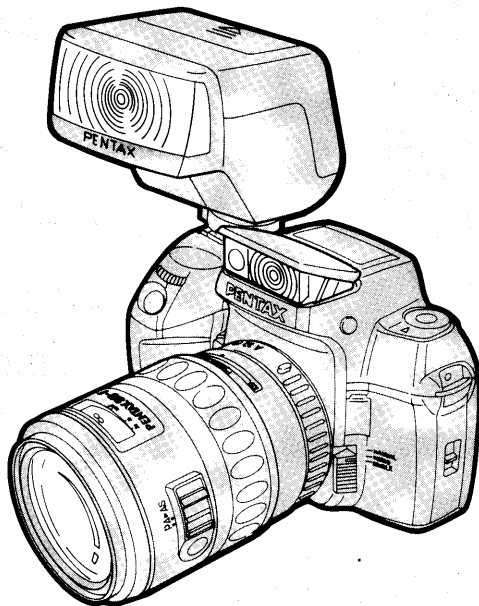
Stopping the Electronic Beep

1. Set the mode dial to [◼)))].

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

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

(12) USING A PENTAX DEDICATED EXTERNAL FLASH

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

ADVANCED OPERATIONS

Using the Flash in TTL Auto Mode

1. Remove the hot shoe cover and attach the Pentax dedicated flash.

2. Set the flash to the TTL Auto mode. Ensure the camera is in the Hyper Programmed, Programmed, or Aperture-Priority AE mode.

3. Turn on the flash.

4. Check that the flash charges. When the flash ready lamp lights up, [🗲] can be seen in the viewfinder when the shutter release button is pressed halfway down.

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

5. Focus on the subject and shoot.

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

Overview of Flash Functions

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

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

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

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

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

AF330FTZ

- This flash unit can be used for daylight-sync photography because the shutter speed and aperture are adjusted according to the ambient brightness.

- If focusing on a subject is difficult in low light, the camera automatically projects an AF spotbeam to accurately measure the distance to the subject.

- This flash unit has an auto zoom feature. The angle of its discharge automatically changes according to the focal length of the lens in use.

- This flash unit has a contrast-control flash mode. (See page 99.)

- If the camera is in the Hyper Programmed, Programmed, Shutter-Priority, or Aperture-Priority AE mode, the TTL auto flash control system operates even if the flash unit is in the manual mode.

- If the flash is not used within about 3 minutes after charging, it is turned off automatically. Pressing the shutter release button halfway down will recharge the flash unit again.

AF240FT and AF400FTZ

- These flash units can be used for daylight-sync photography because the shutter speed and aperture are adjusted according to the ambient brightness.

- If focusing on a subject is difficult in low light, the camera automatically projects an AF spotbeam to accurately measure the distance to the subject.

- If the camera is in the Hyper Programmed, Programmed, Shutter-Priority, or Aperture-Priority AE mode, the TTL auto flash control system operates even if the flash unit is in the manual mode.

- If the flash is not used within about 5 minutes after charging, it is turned off automatically. Pressing the shutter release button halfway down will charge the flash unit again.

AF200T, AF280T, and AF400T

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

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

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

(ISO 100)

Notes on the Use of Pentax Dedicated Flash Units

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

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

Contrast-Control Flash Photography

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

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

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

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

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

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

ADVANCED OPERATIONS

(13) ACCESSORIES

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

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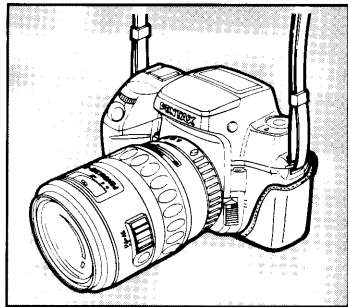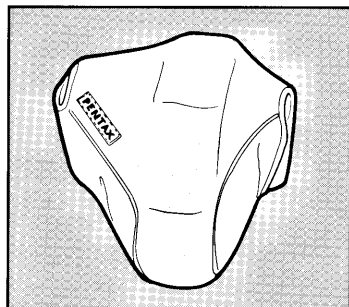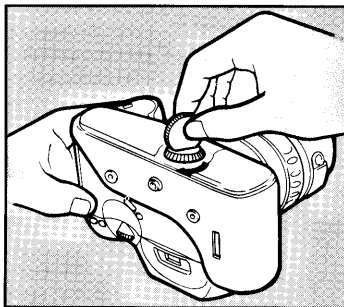
2) Soft Case

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

1. Open the front cover and locate the camera body in the back cover.

2. Fasten the back cover to the camera by tightening the fitting screw.

Three types of soft case are available.

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

IV. SOME BASIC PRINCIPLES OF PHOTOGRAPHY

1) EFFECTS OF APERTURE AND SHUTTER SPEED

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

Effect of Shutter Speed

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

Effect of Aperture

The aperture increases or reduces the amount of the reflected light from an object through the lens, controlling how much light strikes the film. If the aperture is opened up to increase the amount of light, any objects in front of and behind an in-focus subject will not be focused. That is, the range of focus (depth of field) becomes small. If the aperture is closed down to reduce the amount of light, the depth of field increases.

For example, if you shoot a person in a landscape with the aperture open, the landscape in front of and behind the person will be blurred, making the person appear to rise out of the landscape.

Aperture set at f/4

Aperture set at f/22

2) DEPTH OF FIELD

With Zoom 35-70mm (at 35mm)

← Camera-to-subject distance (m)

∞ 15 10 9 8 7 6 5 4 3 2 1 0

f/3.5
f/5.6
f/11
f/16
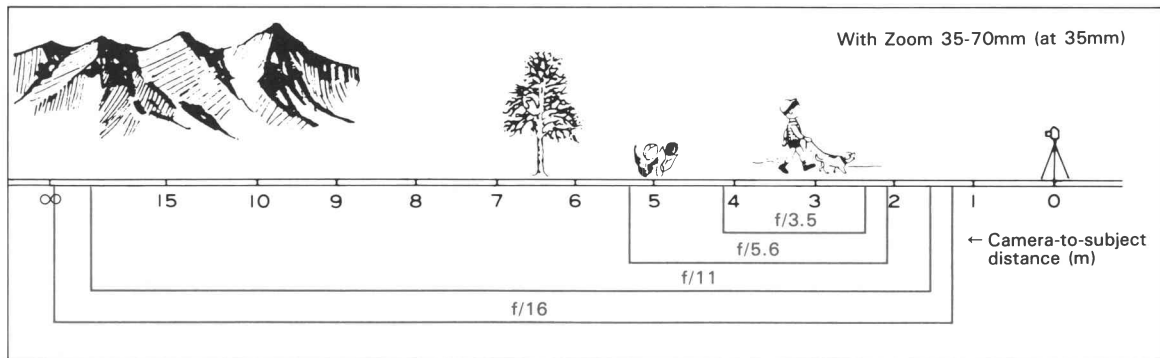
When one point on a subject is brought into focus, the in-focus range extends in front of and behind it. This range is called the depth of field.

The range allowed for focusing

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

3) ABOUT THE INFRARED INDEX
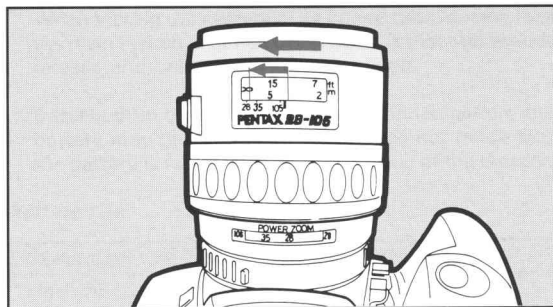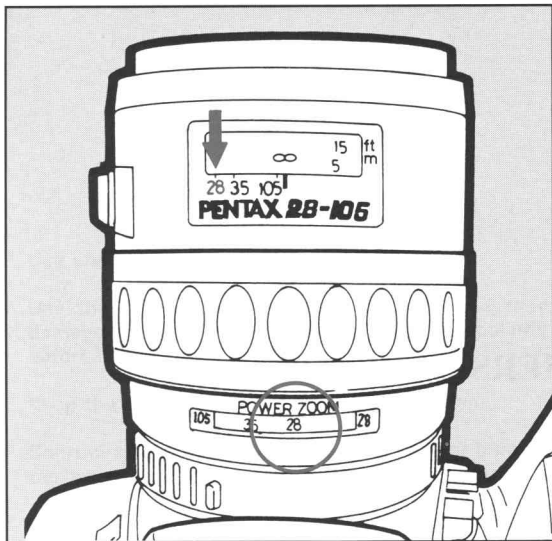
When an infrared film and an "R2" or "O2" filter are used, the focal point is different from that when ordinary film (exposed in visible light) is used. The autofocus system cannot compensate for this difference automatically. After focusing on the subject as usual, set the focus mode switch to [**MANUAL**] and turn the focusing ring to the left by the distance indicated on the infrared index.

As shown in the illustration, if 28 is read from the zoom scale, adjust the distance scale to 28 on the infrared index (red line).

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

SOME BASIC PRINCIPLES
OF PHOTOGRAPHY

V. OTHERS

1) PRECAUTIONS ON BATTERY
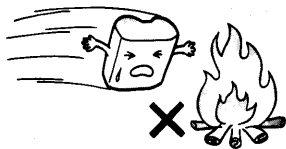
* Use one lithium battery (2CR5).

* Use the battery as instructed. Incorrect use may damage the camera. Be sure to check the polarity before installing the battery.

* Keep the battery out of the reach of children.

* Short-circuiting, disassembling, charging, or burning the battery may cause the battery to rupture or explode.

* When traveling, shooting in a cold environment, or taking high number of photographs, carry a spare battery.

* Battery performance may be hindered at low temperatures. When the temperature rises, the battery performance returns to normal.

* When storing the camera in its bag or case, ensure that the main switch is turned off to avoid accidental shutter release and unnecessary battery drain.

* If the built-in flash is used for an extended period, the battery may become warm. This does not mean that the battery is faulty; it is a characteristic of the battery.

Battery Life

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

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

OTHERS

2) TAKING CARE OF YOUR CAMERA

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

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

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

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

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

* The camera's operating temperature range is 50° to −10°C.
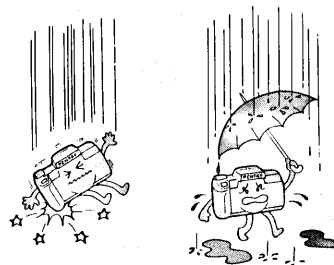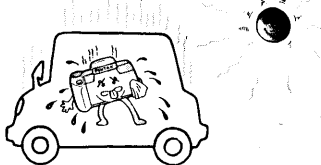
* Taking the camera into a warm room from the cold outside may cause condensation both inside and outside the camera. Put the camera in a case or bag to minimize the effect of sudden temperature changes and only remove it after it has warmed up.

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

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

* Never touch the shutter curtains or mirror.

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

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

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

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

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

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

About the LCD Backup Circuit

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

About the LCD Display

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

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

OTHERS

3) TROUBLESHOOTING

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

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

OTHERS

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

SPECIFICATIONS

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

OTHERS

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

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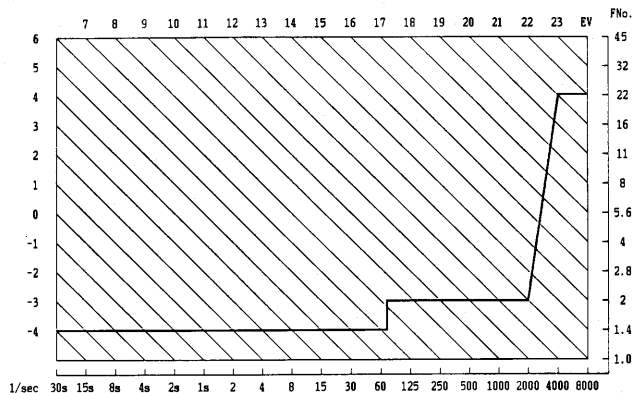
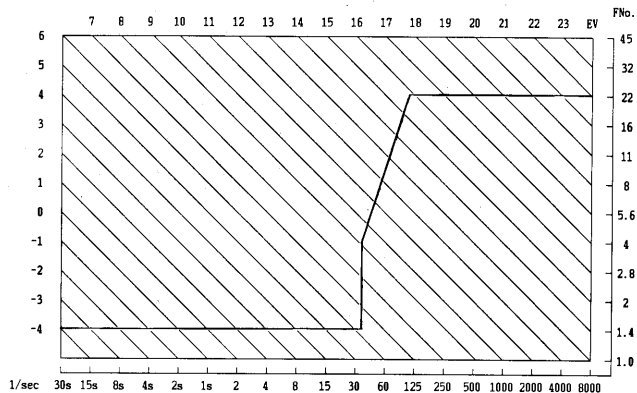**OTHERS**

Program Line (Normal Program)

At ISO100 with 50mm f/1.4 lens ———
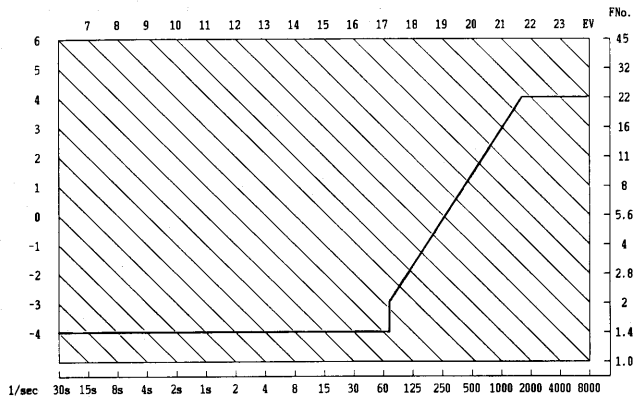
Program Line (High-shutter-speed-priority Program)

At ISO100 with 50mm f/1.4 lens ———

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

At ISO100 with 50mm f/1.4 lens ——

Program Line (MTF Program)

At ISO100 with 50mm f/1.4 lens ——

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