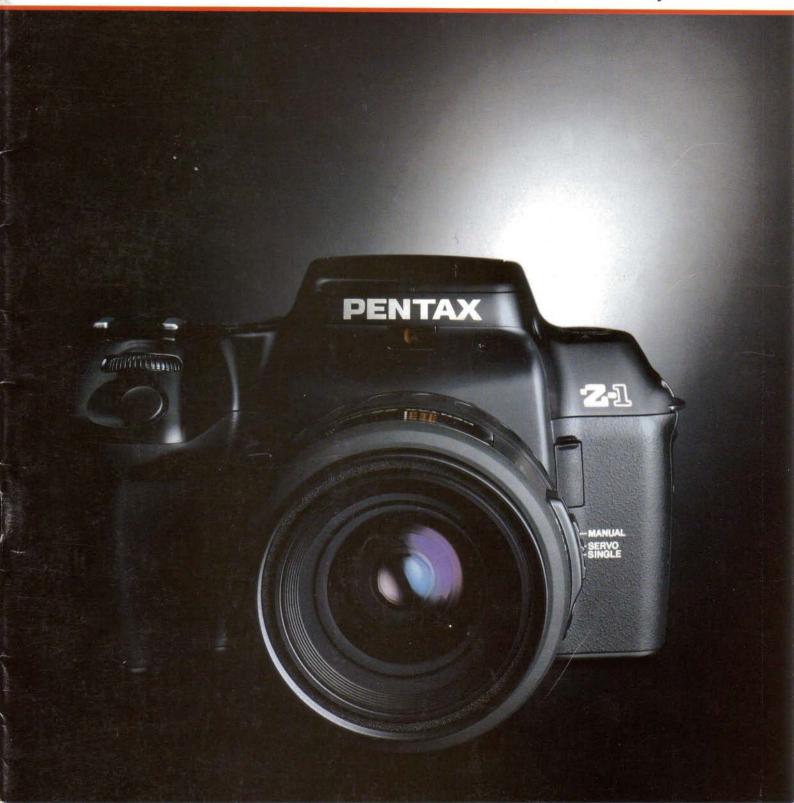
PENTAX Z-1 New

A Photographer-Oriented Auto-Focus SLR with Maximum Flexibility







Automation Beyond Mere Automation

To take a photograph exactly as you see it in your mind's eye; to do it quickly and flexibly. SLR cameras have continued to advance in many technical areas. But the one requirement that remains unchanged is that the camera be able to precisely reflect your visual goals, your creativity, and to be operated along with the process of your creative image making. However, the automated cameras now on the market often sacrifice much of the flexibility to respond

to the photographer's goals.

It's true that a variety of auto-control functions have been created, from auto-exposure to auto-focus. But even these advanced-featured cameras have not been able to fully reflect the photographer's ideas. For example, there are many sophisticated program auto exposure systems. But these have always been preset programs; if you wanted to adapt the pre-fixed settings to match the often subtle changes needed to reach your idea, you had to go through several steps to switch to the appropriate mode—missing that precious moment. Here is a reason why the serious photographer has always relied on his own manual control.

On the other hand, manual-control cameras require much experience and practice before that instantaneous reaction with the camera is achieved. Framing, focusing and exposure should be decided in a moment—but that can take years of practice.

So Pentax has reconsidered the connection between photographer and automation. To Pentax, "automatic" means linking the power of computer control to an instant, complete matching of the photographer's intentions. The photographer creates the image; the camera flexibly and instantaneously responds to the human creative process. The perfect collaboration of ideas and automatic functions.

Pentax's system is a human-priority system, making the camera adjust to the photographer, not the other way around. Creative control is the possession of the photographer, not the camera. It's a concept Pentax calls the "Interactive Function"; the Pentax Z-1, with the remarkable *Intelligent Power Zoom* lens system, was created to fully realize this idea.

Now you have the first automated SLR camera that truly lets you control it almost as if it were a part of your body, freeing your photographic creativity—without sacrificing any of the convenience of automation.



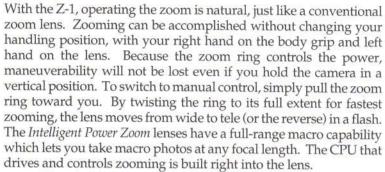
Intelligent Power ZoomThe Power to be Creative

Framing is the basis of photography. From all the things around us, the act of framing selects the theme, the thing to be shown; what you want to get out of it, where you want to put the emphasis in order to clarify your idea. The invention of the zoom lens enabled the photographer to realize subtle framing, but when you want to take a photo of a moving subject or to capture the momentary photographic chance, it's not enough. You consider if you should move close or far, then move the zoom ring. It takes time, and you may miss the very moment when the photo would best be taken. Or if you move the zoom too roughly, it causes camera-shake.

Now try the Pentax *Intelligent Power Zoom*. It's not just a powered zoom lens, but one designed to respond immediately to your ideas, your way of taking photographs—without sacrificing any of the power of automation. With the zooming ring as a natural connection point with your hand, the lens moves smoothly, synchronizing with your ideas and feelings for the framing that best captures your image. Whenever you want to take a photo, you always have the subject just as you imagine it.





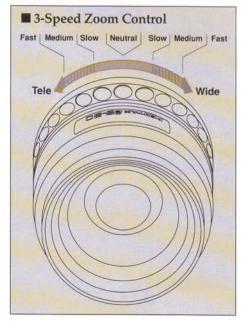


How did this natural-operation Intelligent Power Zoom change photographic expression? It frees you from having to be excessively concerned about its operations. Even the most experienced photographer doesn't want to be tied down by the technical requirements of the camera; while looking at the subject, watching it move, considering the possibilities for the shot, he wants to react automatically, instinctively. That instinct is the basis of visual expression and of creativity. So it would be ideal if the operation of the camera were

not even a conscious thought.



Because the best framing is made subconsciously, you can concentrate on the theme of the expression, directly reflecting your fresh impression. Powering the zoom has freed your creativity. We believe that the Intelligent Power Zoom is the new creative power which will be the standard of auto-focus SLR.



A Physical Link to Computer Technology

The Intelligent Power Zoom's zoom ring has a light-tension spring; this both turns the zoom on and controls the zooming speed. Hold the camera; twist the zoom ring clockwise and it moves from wideangle to telephoto. When twisted counterclockwise, it adjusts from telephoto to wide-angle. Twisting the zoom ring faster or slower, the lens zooms in and out at one of three speeds. Without taking your eyes from the subject or changing your holding position, you can choose the zoom speed with your fingertip.

Twist further for faster zooming; less for precise, slow zooming. So when your subject is active, a quick twist rapidly zooms the lens from the shortest to the longest focal length—faster and smoother, in fact, than is possible by hand. For landscapes, snapshots, or other fixed or slow-moving subjects, a gentle twist slowly moves the lens to the ideal position.

Hyper Program — Totally New *Interactive* Auto Exposure System



Programmed Automation that Lets You Step into the Action

Setting the exposure is the key to creating expression in the photography. By selectively altering the combination of aperture and shutter speed, the photographer can create subtle differences in nuance to find his own expression. Of course a photographer has only a short time to do so, especially when he has to shoot a moving subject. Whether or not he can set the desired exposure in that fleeting moment will make a decisive difference in the power of his expression.

Existing auto-exposure systems solved the problem of time, but only by sacrificing the flexible response to the photographer's intentions. This has meant that expression has been limited by the programmed auto-exposure. The Z-1's new Hyper Program auto-exposure system, however, frees creativity by an innovative mechanism that can catch the photographer's intention instantaneously. While shooting in Programmed AE mode, you can step in and change the aperture setting or the shutter speed any way you want without removing your eye from the finder. In the moment you decide how you want to shoot that photo, Hyper Program, Pentax's innovative auto-exposure system, lets you flexibly adjust the aperture setting and the shutter speed while maintaining proper exposure.



The Z-1 has a total of six exposure modes. Among them, Hyper Program matches response to chance and the reflection of expression. While following the subject and thinking about the desired image, the SLR photographer has to decide the best combination of aperture and shutter speed. If you want to make a slight change in aperture or shutter speed while you are in Programmed AE, most SLRs currently available force you to take your eye from the finder, discontinue your shooting and go through several operations to change to aperture-priority mode or shutter-priority mode. If the subject is moving this means you miss your photo chance.

Hyper Program brings together the response to the chance and reflection of your intentions. By clicking the Av and Tv dials, you can instantly visualize what you imagine. When you hold the camera, the Av Direct Dial is at your thumb on the back cover; the Tv Direct Dial is at your index finger in the front. While you are shooting Programmed AE, simply change the aperture value with the Av Direct Dial. The shutter speed automatically changes to provide the proper exposure for the aperture you set. Or change the shutter speed with the Tv Direct Dial. The aperture value automatically changes for the proper exposure according to the shutter speed you set.

The Z-1 always memorizes which dial was clicked last. When the EV value changes and the Av Direct Dial was the last adjusted, the Z-1 shifts the shutter speed with aperture fixed; if the Tv Direct Dial, it adjusts the aperture

with the shutter speed fixed.

To return to the regular Programmed AE mode, simply press the IF (Interactive Function) button; the combination of aperture and shutter speed

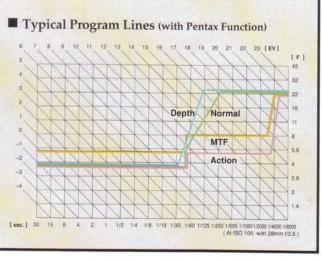
will be set along the system's original program line.

Previously, program shift enabled a photographer to change the aperture and shutter speed, but moved only parallel to the camera's program line. If the EV value changed, both aperture and shutter speed changed. Imagine shooting with a telephoto lens and a shutter speed of 1/250 second under this system. If an increasing cloud level changes the EV value, both aperture and shutter speed will change along the program line, and shutter speed may fall to 1/125 or 1/60 second. Then you have to break away from shooting to return the shutter speed back to 1/250 second, very likely missing the shot. Hyper Program keeps the shutter speed the same, responding quickly and faithfully to your intention. Pentax created this system for those who look for and value their own expression.

• While you are in Hyper Program, you can confirm whether Av-priority or Tv-priority has been selected by display in the finder. If you move the Av Direct Dial, a bar appears underneath the f-number indication; if you move Tv Direct Dial, a bar appears underneath the shutter speed indication.

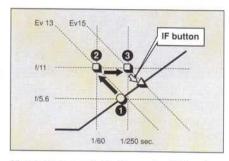
•In addition to the normal program line, the Z-1 allows the photographer to select special program lines using the Pentax Function, which can create distinctive visual effects. The selectable programs are normal program/Program Depth/Program Action/MTF Program.

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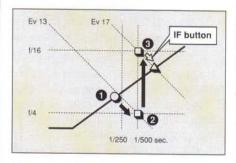


Hyper Program Exposure Shift Mechanism

Hyper Program remains faithful to your intentions even if the lighting conditions change. If you bring a SLR camera into the field, you know that lighting continuously changes. If the subject is moving, the EV value also will certainly change as the subject changes its position.



Here's an example during portrait shooting. Programmed AE sets the exposure at a combination of f/5.6 and 1/250 second (1). To incorporate background elements, you select a narrower aperture. One click of the Av Direct Dial sets the aperture to f/8; to f/ 11 with two clicks. The shutter speed is automatically adjusted for the proper exposure (2) —and if subject's brightness changes, the selected f-number remains unchanged while the shutter speed is automatically adjusted to obtain proper exposure (3). With Hyper Program, even when the EV value changes because the subject's position changes or clouds obscure the sun, you can keep shooting with the depth of field deeper than automatic alone would select.



Now suppose you wanted to shoot a moving subject with a shutter speed fast enough to freeze the image; set a faster shutter speed — from 1/250 to 1/500 sec. — by clicking the Tv Direct Dial. In this case, the aperture is automatically adjusted to obtain proper exposure, holding the same EV value (1)~(2). Even when the subject's brightness changes, the selected shutter speed remains unchanged, while the aperture is automatically adjusted to obtain proper exposure (3).

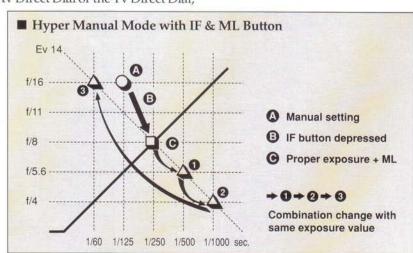
Hyper Manual—One Push of a Button for an Automatic Assist to Your Creative Manual Control



There are still many photographers who believe that real photographic expression can only be realized by manual exposure. Along with its automatic power, with the Z-1 Pentax greatly improved the maneuverability of the manual mode. Generally speaking, when you are in manual exposure mode, it is easier to find the proper exposure that acts as a standard. With Pentax's Z-1, we eliminated this step by putting the IF (Interactive Function) button on the back cover of the body—combining the strengths of automatic and manual operations.

By pressing the IF button while the lens aperture ring is set at "A" a combination of shutter speed and aperture is automatically set for a correct exposure value on the program line. After this by clicking the Av Direct Dial or the Tv Direct Dial,

you can instantly set the exposure either under or over the fixed exposure. Provided the ML (Memory Lock) button is pressed after the IF button operation, the subject's brightness is memorized. Then the photographer can select a desired shutter speed or aperture using the Av Direct Dial or the Tv Direct Dial while the camera automatically adjusts the other setting. If the manual mode is selected by using the lens aperture ring only the shutter speed is automatically set at the correct EV value. In this mode, it is possible to use the depth-of-field preview function.



More Exposure Modes for Greater Freedom of Expression

Rounding out the exposure options in the Z-1 are several more modes. Easy-operating Programmed AE mode automatically selects the optimum combination of shutter speed and aperture. Aperture-Priority AE mode and Shutter-Priority AE mode let you control either shutter or aperture, with the Z-1 automatically selecting the best combination. Unlike the modes in Hyper Program, you start from your desired setting, rather than from an initial automatic setting. And TTL Program Flash mode automatically selects the optimum combination of shutter speed and aperture when using the built-in TTL auto flash and/or an accessory flash (such as the AF330FTZ).







Programmed AE Mode

In the Z-1, Pentax of course has not forgotten the normal Programmed AE mode. Depending on the lens currently mounted, the Z-1 automatically selects the optimum combination of aperture and shutter speed. The result is control that is both maneuverable and easy to use. And using the special Pentax Functions, the photographer may select the Program Action, Program Depth or the MTF (Modulation Transfer Function) Programmed Mode, which is designed to use only the most effective apertures of the lens to maximize the lens's optical performance.

Shutter-Priority AE Mode

Using the electric shutter dial on the camera's top panel, the photographer can select a desired shutter speed while the aperture is automatically set by the camera for the proper exposure. The mode selection is indicated by a bar underneath a selected shutter speed in the viewfinder. This mode is especially convenient for active photography.

Aperture-Priority AE Mode

Using either the AV Direct Dial on the camera's back or the aperture ring on the lens, the photographer can select the desired aperture, with the shutter speed automatically set by the camera for the correct exposure. The mode selection is indicated with a bar underneath a selected f-number in the

viewfinder. This mode is suitable for landscapes, portrait and macro photography. In this mode, it is possible to use the depth-of-field preview function simply by moving the aperture ring from the "A" position.



TTL Program Flash Mode

The camera automatically selects the pre-programmed optimum combination of shutter speed and aperture when the built-in RTF (Retractable TTL Auto Flash) and/or an accessory flash unit (such as AF330FTZ) is fully charged; the camera's TTL auto flash system assures correct exposure on the subject. Exposure duration is indicated on the LCD panel.

• When you use the lens aperture ring, you can set the Z-1 in Hyper Manual mode, Bulb mode and Aperture-Priority AE Mode.

Auto-Focus —Sophisticated, Accurate, High-Speed Focusing



Crisp focusing is a basic of creative photography; to catch a moment which will never appear again, fast and accurate focusing is a necessity. In the Z-1, a high-performance phase-matching AF detection system with a newly-developed CCD means faster, more accurate focusing, even for poorly illuminated subjects. In addition, the Predictive Auto Focus system measures the speed of fast-moving subjects, automatically predicting their position at the moment of shutter release; you never miss that critical photo chance.



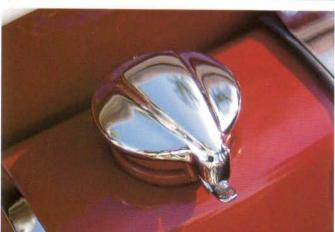


The Z-1 incorporates Pentax's new SAFOX (Sensor Ability Fortifying Optical Compensation System) II with newly designed optical elements, CCD (Charged Coupled Device) and coreless motor to perfect faster and more accurate autofocusing. Compared with previous Pentax cameras, the Z-1's AF frame is approximately 30% larger and auto-focusing speed is approximately 50% faster. The camera also has a built-in AF spot beam with reaching capability of 6 meters, which makes accurate focusing on poorly illuminated or low contrast subjects possible.

The Z-1 offers two auto-focus modes—focus-priority AF-Single and shutter-release-priority AF-Servo-plus a manual-focus mode. When the Z-1 is set to the AF Servo mode, it catches a moving subject; when the subject moves very quickly, the Z-1 automatically changes to the focusprediction mode and continues to focus accurately on the subject. SAFOX II satisfies professional demands with its

faster and more accurate focusing.



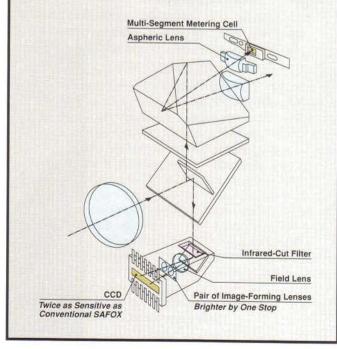


SAFOX II

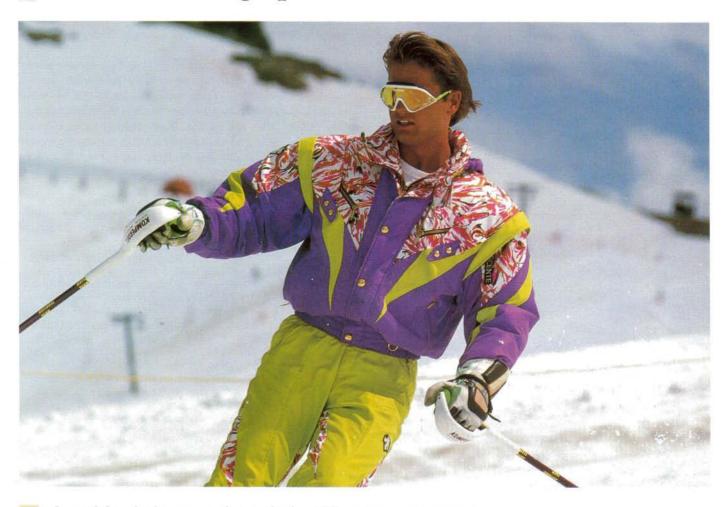
In the Z-1, when the shutter release button is lightly pressed in the AF-Servo mode, the SAFOX II successively measures the movement of the subject. If the movement is faster than 1.5mm/sec. across the film plane, the camera's operation is automatically switched to focus-prediction mode, which calculates the amount of focusing error and generates signals to control the amount of lens extension to compensate for the error created by the subject's movement between the shutter release and the start of exposure.

SAFOX II is the upgraded version of Pentax's original SAFOX. Light enters through the lens, bounces off the main mirror (with 50% more transmission ability than existing mirrors) then at the sub-mirror, is turned 90° and is led to the bottom of AF-detection point. Then it goes through the Infrared-Cut Filter, Field Lens and Image Forming Lenses to the CCD. SAFOX II's Image Forming Lenses are brighter by one step, and its CCD is twice as sensitive as conventional SAFOX's. As a result, it offers the following advantages:

- Larger AF frame (from 3.2mm to 4.2mm in width) for easier
- Minimum operational brightness reduced to 1EV.
- Employment of coreless motor in the AF driving mechanism for faster, more stable AF driving.



Advanced Metering Systems — 3-Way Options Perfectly Meet the Photographer's Intention

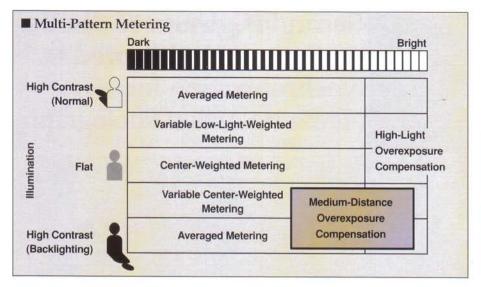


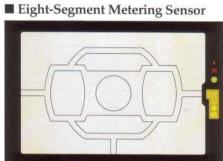
Several decades have passed since the first TTL metering system was developed, and many sophisticated systems have been created. But the photographer may still find unsatisfactory results caused by unnatural metering.

In the Z-1, Pentax has worked to create a metering system that can analyze any lighting condition—as close as possible to the way the

photographer sees. Multi-pattern, spot and center-weighted metering systems assure accurate, natural light metering.











8-Segment Multi-Pattern Metering

The Z-1 boasts a new eight-segment multi-pattern metering system for superlative results under even difficult lighting situations. From flat-lit to high-contrast subjects, the Z-1's sophisticated, smart system reads light values from the eight zones of the image field, then accurately selects the best metering pattern.

Basically, the camera's metering pattern is shifted from center-weighted metering to spot-metering to measure only a small central area, to averaged-area metering to measure the entire image field evenly, then to the low-light-weighted metering according to the pre-programmed metering pattens.

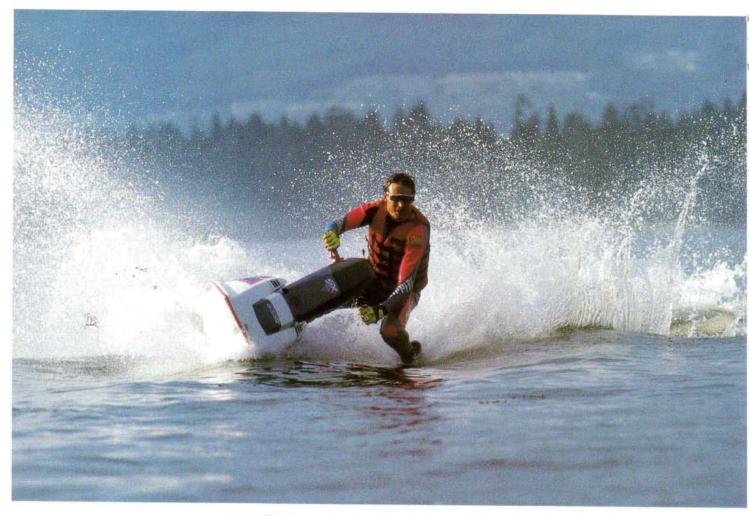
The algorithm that provides the best possible metering weighting for various lighting situations gives priority to the shadow areas. Under normal lighting, even low-light areas away from the center are taken into consideration. In backlit situations, however, the meter measures the light off only the central part of the image field by assuming the main subject is in shadow. The amount of exposure compensation also depends greatly on the subject's distance as detected by the AF system. The camera's exposure system then further compensates the metering value to provide even more exposure for the poorly illuminated subject at the center by measuring the bright background.

Another principle of the metering/exposure system of the Z-1 is to keep dark subjects dark and bright subjects bright. Based on this principle, bright subjects over 16 EV (extremely bright scenes) are programmed to receive more exposure due to their excessive brightness. As a matter of course, very delicate metering and exposure compensation is provided to reproduce the subject's details most sharply within the film's latitude.

Spot Metering/Center-Weighted Metering

But there are times when you want more control of metering, and the Z-1 gives you all the flexibility you need. The Z-1 is equipped to pinpoint light metering at a very small portion of the image field with great accuracy. Press the metering button, and the metering mode switches instantly from multi-pattern to spot metering, covering less than 2.5 percent of the total image area. Or you can choose center-weighted metering as one of the Pentax Functions. This metering is particularly valuable for subjects under flat illumination.

1/8000-Second High-Speed Shutter and 1/250-Second High-Speed Flash Synchronization for Motion-Freezing Action Photography



The Z-1's 1/8000-second high-speed shutter allows the photographer to capture a split second of motion with an outstanding image-freezing capability. A shutter mechanism that makes high-speed photography even more reliable than ever before. Also, its 1/250-second high-speed flash synchronization enables daylight synchronization photography with a larger lens aperture than normally possible; the subject and background are superbly balanced for beautiful

results.

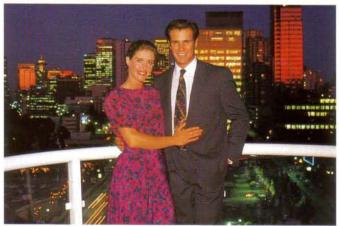
Flash Photography at a Touch

The Z-1's built-in Retractable TTL (Through-the-Lens) Auto Flash (RTF) provides flash illumination whenever you need it-because it is right there on the camera all the time. Just a touch of the flash pop-up button and the RTF pops out of the top of the camera. The RTF has a guide number of 14 (ISO100/m); program flash is available when set to program mode—the flash automatically controls discharge according to light conditions. Thanks to its sophisticated control system, difficult techniques such as daylight sync, slow-shutter-speed sync, and, with a dedicated accessory flash unit, contrast-control flash, are made much simpler. The RTF also has an AF spot beam. If the subject is too dark or has low contrast, it projects an infrared focusing beam on the subject.









The AF330FTZ dedicated Auto Zoom flash unit for the Z-1 features a large 33 guide number (ISO 100/m at 85mm setting), a built-in spot-beam projector, two levels of manual output control, an LCD guide panel and an auto zoom function that adjusts the angle of discharge between 28mm and 85mm, depending on the focal length of the lens being used. It offers such advanced capabilities as trailing-shutter-curtain sync flash and, when combined with the RTF, contrast control flash for natural, three-dimensional images of the subject.

Auto-Zoom—The Convenient, Powerful Way to Image Fixing

The power of auto-zoom photography made possible by the *Intelligent Power Zoom* lens is remarkable. The Z-1's Auto Zoom modes let you catch the fleeting moment of action, while effortlessly creating exciting visual effects. The remarkable image-fixing powers of Image Size Tracking and Zoom Clip, and a world's first: easy-to-accomplish Auto Zoom Effect.







Image Size Tracking

Image Size Tracking allows you to keep the desired framing of moving subjects. Power zooming with a half-press of the shutter button fixes the framing size of the subject in advance; another press of the button and the lens automatically zooms back to that preset position, even if the focal length changes—so you can always catch the subject in the original desired size. It's perfect for active photography where you know the size of the image you want, but where you, your subject, or both are in motion. To set this mode, the auto zoom switch on the lens is set to the "AS" position. When you see the Image Size Tracking indication in the LCD display on the top of the camera, zoom and fix the framing while holding the shutter button halfway down. Image Size Tracking is set when you release your finger.

Here's an example. Two friends are jogging toward you. You know the image size you want; perhaps a full-length shot of both of them. Once programmed, one push on the shutter release button causes the Z-1 to automatically adjust the focal length of the camera to hold that desired image size, even if their position relative to you changes. And because the Z-1 has focus-prediction AF Servo, Image Size Tracking

mode allows you to track the subject coming toward you or going away from you at high speed—you can continue to shoot it with the same image size.

•When setting the Image Size Tracking mode, image magnification is calculated by dividing the focusing distance to the subject detected in the AF system by lens focal length. The magnification value is memorized by the lens CPU as a pulse count. To maintain the same magnification of the image after the focal length changes, the AF system detects the distance to the subject first, the lens CPU obtains a corresponding focal length based on the memorized magnification, and the CPU generates the length as a pulse count.

Automatic Lens Storage Function

No matter how long the lens's focal length is set, once you switch the camera off, the *Intelligent Power Zoom* automatically retracts the lens to its shortest length for storage.









Zoom Clip

With the Z-1's Zoom Clip mode, you'll never miss the ideal moment. Imagine you're at a tennis game. You want to take wide angle shots of the serve, but you also want to be ready to catch the perfect moment in close-up as a friend takes a shot at the net.

Zoom Clip lets you preset a focal length for a desired image shot—that close-in shot by the net, for example. You preset the focal length with a single press of the zoom set button. Another press of the zoom set button will instantly return you to that setting, regardless of where you were taking pictures moments before. You can select either one or two preset focal lengths with the Pentax Function. If you select two preset focal lengths, every time you press the zoom set button, it zooms to both focal lengths respectively. So take all the photos you want around the court, then use Zoom Clip to capture that winning shot.

•The lens CPU memorizes preset focal length as a pulse count when the Zoom Clip button of the lens barrel is pressed. Then it starts counting the zooming pulse until the count matches that of the preset focal length. When the camera's main switch is turned off, the data obtained on the auto zoom modes is transferred to and memorized by the camera CPU. It can then be transferred back to the lens CPU when the same mode is again selected.



Zoom Effects

Zoom Effect is one of the most visually recognizable effect of a zoom lens, in which an image is obtained by zooming the lens during exposure. The result is a picture with a sharp central image and a streaking effect out from the center. But contrary to this simple description of the process, this effect is very difficult even for the professional to master without time-consuming trial and error—and the shooting of lots of film. Finally with the Z-1's fully automatic Zoom Effect operation, anyone can create exciting photos with ease. Simply set the mode on the lens's auto zoom slide switch and the camera's electronic shutter dial, then press the shutter release button. When the exposure reaches half the total designated exposure time after the shutter release, zooming starts automatically, normally from the wide-angle position toward the telephoto side (you can reverse the direction using one of the Pentax Functions). The result: dramatic, artistic Zoom Effect photos every time.

More Exciting Features—Maximize Your Creative Ideas







Auto-Bracketing

This feature allows the photographer to automatically take photographs of a subject under difficult lighting conditions at different exposure levels. In combination with the exposure compensation, the photographer can shift the exposure setting to either overexposure or underexposure.

Exposure Compensation

Pressing the Z-1's exposure compensation button allows the photographer to select the desired compensation value in either 1/2-stop or 1/3-stop increments using Pentax Function within ±4EVs. This function can be cancelled by pressing the exposure compensation button again.

Multiple Exposure and Interval Shooting

The Z-1 is equipped with a multiple exposure function that allows up to nine exposures to be taken on one frame of film, and an interval function that enables the photographer to set a starting time, the time interval between exposures and the number of frames to be exposed.

Multi-Mode Self-Timer







In addition to normal self-timer mode, the Z-1's self-timer offers a two-second mode that can be used to prevent camera shake, and a triple-frame mode that takes three photographs in succession to capture unexpected expressions of the subject.

Green Position



The green position on the Z-1's main switch sets the camera to fully automatic operation—helping photographers to use its advanced features and top specifications with ease.

Exposure Memory Lock



Once the ML (memory lock) button is pressed, the photographer can keep taking pictures at the memorized exposure level until the timer expires. This function can be cancelled by pressing the ML button again.

Depth-of-Field Preview

When the Z-1 is set in the Hyper Manual or Aperture-Priority AE mode using the lens aperture ring, the photographer can check the depth of field for a selected aperture by pressing the preview button.

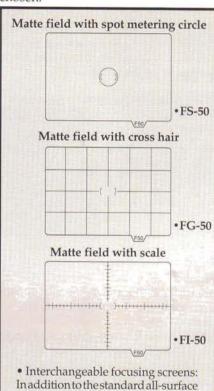
Viewfinder Diopter Adjustment



The photographer can adjust the diopter in the viewfinder to -2.5 and +1.5 diopters according to their own eyesight. The adjustment switch is accessed by removing the protective rubber eye cup.

Interchangeable Focusing Screens

For the Z-1, Pentax offers several interchangeable Aspheric-Micro-Matte focusing screens featuring exceptional brightness and easy viewing of the outof-focus area in the image, from which the one that best meets the photographer's requirements can be chosen.



• Interchangeable focusing screens: Inaddition to the standard all-surface matte screen, three types of interchangeable focusing screens are available as options: (1) Matte field with spot metering circle; (2) Matte field with cross hair; and (3) Matte field with scale.

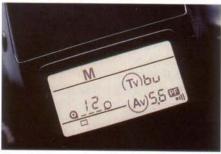
Motor Drive with 3-Frames-Per-Second Fast Winding

Thanks to a motor drive unit built into the camera body, the Z-1 enables the photographer to consecutively advance the film at the speed of approximately three frames per second. In addition, since winding noise has been greatly reduced and the PCV sound may be cancelled manually, it can be used for situations such as theatrical performances where noise is a problem.

PCV Signal

The camera provides an audible PCV (piezo ceramic vibration) signal to inform of the in-focus position and self-timer operation. Signal can be cancelled by selecting the silence mode.

Multi-Data LCD Panel with Illumination



The Z-1 is equipped with a large LCD panel with electro-luminescence (EL) illumination that provides a full range of information to the photographer even in the dark.



Pentax Functions—Customize Your Camera's Features

The Z-1 is designed to give you maximum creativity and convenience just the way it is straight from our factory. But some photographers may find that their own tastes or their own way of taking photographs require some alteration of this fixed settings. To let you truly make the Z-1 your own personal photographic partner, the built-in Pentax Functions let you revise some of the basic operational features from their original settings.

[PF1] Metering System Selection0: Spot Metering

1: Center-Weighted Metering



The Z-1 has a three-way metering system with Eight-Seg-

ment Metering/Spot Metering/Center-Weighted Metering. You can set two combinations as regular metering system, using Eight-Segment Metering as the base and one of the other metering systems as the second priority. After you set this combination, you can change to Spot Metering or Center-Weighted Metering with your fingertip without taking your eye from the viewfinder.

[PF2] Program Line Selection

0: Normal Program

- 1: Program Action Line (High-Speed Shutter Priority)
- 2: Program Depth Line (Depth of Field Priority)
- 3: MTF Priority Program

The program line changes automatically according to the mounted lens's focal length, but you can also select special program lines:

Normal Program for general photography

 Program Action Line for the fastest possible shutter speed, for uses such as sports photography

 Program Depth Line for the greatest possible depth of field, for uses such as landscapes and macro photography

 MTF Priority Program, which maximizes the lens's optical performance for those who put priority on image quality. MTF (Modulation Transfer Function) Program is designed to select only the most effective f-number of the lens.

[PF3] Exposure Compensation Increment Selection

0: 0.3 EV stop **1**: 0.5 EV stop

You can pre-set the exposure compensation with just the turn of a dial. Select

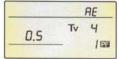


0.3 EV stop or 0.5 EV stop by one click of the TV Direct Dial. Com-

pensation can be set at ±4 EV.

[PF4] Shutter-Speed Step Selection 0: 1 EV step

1: 0.5 EV step



Shutter speed normally changes at the rate of 1EV, but there are some cases where you want to set the correct shutter speed while fixing the aperture's fnumber. If you select 0.5 step, you can obtain non-standard shutter speeds

[PF5] Av & Tv auto-shift selection in Hyper Program mode

0: Shifts Av and Tv automatically

such as 1/750, 1/1500, 1/3000 etc.

1: Setting does not shift automatically, and a warning indication is given

When you are in Hyper Program, the combination of aperture and shutter speed moves within proper exposure while fixing the value set by either Av or Tv. If the proper exposure moves beyond the coupled area, the camera keeps the proper exposure by changing the value of the dial you click. For example, when you set a slower shutter speed than the provided by the program setting by clicking the Tv dial, then the lighting becomes brighter and the camera can not obtain smaller aperture, it sets a faster shutter speed to give priority to maintaining proper exposure. By using this Pentax Function, you set the camera so that even if the combination goes over proper exposure, you can keep shooting with the aperture or shutter speed you preset. A warning signal will blink in the viewfinder when this condition occurs.



[PF6] Av & Tv Shift Selection with [IF] Button Depressed in Hyper Manual (HyM) Mode

0: Av/Tv shift along program line 1: Shifts Tv with fixed Av 2: Shifts Av with fixed Tv

When you are in Hyper Manual mode, pressing the IF button sets the Z-1 to select the combination of aperture and shutter speed for the proper exposure value. You can select a shift of both aperture and shutter speed along the program line; aperture priority exposure, which changes the shutter speed to obtain proper exposure with aperture fixed; or shutter priority exposure, which changes the aperture with the shutter speed fixed. Manual exposure is now more convenient for those who prefer to use aperture priority exposure or shutter priority exposure.

[PF7] Av & Tv Setting Function Selection in Hyper Manual (HyM) Mode

0: Shifts Av and Tv in steps1: Av and Tv are shifted continuously

The Z-1 is set at the factory for stepped aperture (Av) and (Tv) shutter speed. By using this Pentax Function, you can set this movement stepless so aperture and shutter speed will move continuously to the proper exposure.

[PF8] Film Speed Setting Selection

- 0: Automatic film-speed setting with DX-coded film
- 1: Allows user-defined film speed setting



20 Z-1

This is a selection to set the camera for automatic ISO priority or manual ISO priority when you load film. The camera is set in a way so that even if it is set at manual ISO, loading a new film causes the camera to read the DX-code and automatically reset ISO. By using this Pentax Function, you can fix the manual ISO setting so it will not change even when you load new film into the camera.

[PF9] RTF Discharge Mode Set When Warned of Inappropriate Lens

0: RTF discharges

1: RTF overrides (RTF-OFF)



The camera is set to make the built-in flash work even if the lens you are using will not be completely covered by the flash. But using this Pentax Function sets the Z-1 so that when the flash cannot handle the entire angle covered by the lens or there is excessive reflection of flash light on the lens, it will not flash.

[PF10] Shutter Release Selection During RTF Charge

0: Enables shutter release before flash is recharged

1: Locks the shutter until flash recharges

The camera is set to enable you to release the shutter even during RTF charge placing priority on the shutter chance. But you can use this Pentax Function to lock the shutter until the RTF charge is completed.

[PF11] Film Leader Remain Selection upon Rewind Completion

0: Film rewinds fully into cartridge

1: Leaves the film leader outside film cartridge



The camera normally rewinds the film leader into the cartridge upon completion of film rewind. This Pentax Function allows you to set it so that film leader will remain outside the cartridge.

[PF12] Film Rewinding Selection at End of Roll

0: Rewinds film automatically

1: Cancels automatic film rewind: rewind manually

The camera is set to rewind the film automatically at the end of the roll. You can choose to rewind the film manually by setting this Pentax Function. This is convenient when silence is important.

[PF13] Initial Data Selection in Image Size Tracking

 Uses pre-registered image size as magnification

1: Sets magnification for full size shots of the subject

2: Sets magnification for the upper part of a subject



After you set the size of the image you want by Image Size Tracking mode, you can choose from three magnifications when you switch the camera off once and switch it on again. It normally reset the image size you preselected before you switch the camera off. However, you have two more options; either magnification for full size or waist-up shots. These two magnification sizes are input in the camera.

[PF14] Number of Zoom Clip Memory Points

0: Memorizes 1 focal length

1: Memorizes 2 focal lengths

You can make the camera memorize either one or two focal lengths when you use Zoom Clip. When you set two points, the camera changes between the two points each time you press the zoom set button.

[PF15] Power Zoom Enable/Disable Selection During an Exposure

0: Disables zooming operation during an exposure

1: Enables zooming during an exposure

Power zoom does not normally operate during exposure. Using this Pentax Function, zooming during exposure is made possible.

[PF16] Zooming Direction of Zoom Effect

- **0:** Automatically zooms from WIDE to TELE
- 1: Automatically zooms from TELE to WIDE



When you are on Zoom Effect mode, the lens normally zooms from WIDE to TELE. You can reverse the zooming direction by using this Pentax Function.

[PF17] [ML] Button Function Selection

0: Does not lock focus upon ML button depression

1: Lock focus and EV by ML button depression

Pressing the [ML] button normally causes the camera to memorize only exposure value, but this Pentax Function allows you to lock both EV and focus. It is convenient when you want to continuously shoot photos while locking the focus and setting the subject away from the center, yet want to shoot them in same frame.

[PF18] Shutter-Release-Priority Selection in Image Size Tracking at AF Single mode

0: Shutter release when focused, even if the image size is not constant

1: Shutter does not release until image size is constant

The camera's basic setting is for shutterchance priority, so that you can release the shutter when focused, even without adjusting for the preset image size. This Pentax Function moves the setting to image size priority, locking the shutter until the image is adjusted to the preset size.

• In addition, the Pentax Functions have an All Clear mechanism which sets all the custom functions back to the initial settings from the factory.

LCD Indicators—Information at a Glance

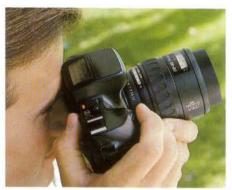
With all the powerful interactive features of the Z-1, the photographer needs to get information quickly and clearly. The Z-1's LCD panel is located on top of the pentaprism for ease of visibility and natural use. It uses simple numbers and symbols to provide a wide range of important data. At night or in dark settings, the LCD panel is equipped with electro-luminescence (EL) illumination, which can be turned on with a touch of the metering and exposure compensation buttons.

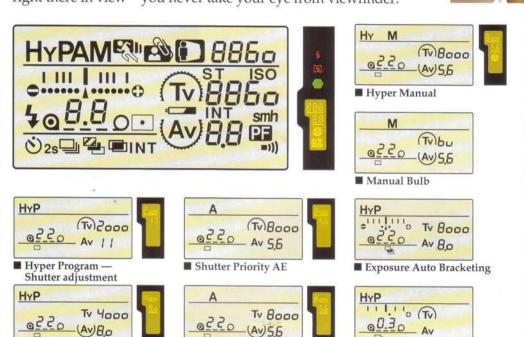
And along the right-hand edge of the viewfinder, the Z-1 features multi-information LCD/LED indicators. Almost all the important information you need, such as focus, exposure value, are all right there in view—you never take your eye from viewfinder.

(AV) 8,0

Hyper Program –

Aperture adjustment

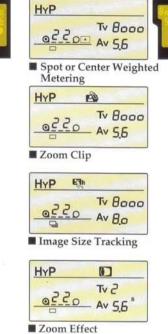




-(AV) 5.6

■ Exposure Compensation

■ Aperture Priority AE





Ergonomically Contoured Design for Maximum Holding Comfort and Smoother Operation

The Z-1 was designed with Pentax's advanced three-dimensional computer design system for appealing looks, maximum comfort and optimum functionality.

The basic concept of the camera body design is to make all the frequently used controls single-action, and to position them around the shutter release button so that the photographer can operate the camera using only the right-hand thumb and index finger without changing the handling position. And less frequently used controls, such as the mode switch, have been given a double-action mechanism to prevent accidental switching; these are positioned away from the right hand. Thus the Z-1's ergonomically contoured design is aimed at providing optimum holding comfort to make necessary operations smoother.

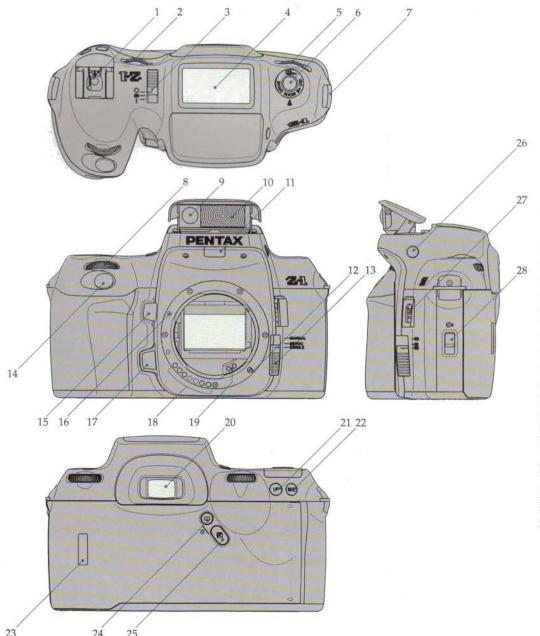
Only when Pentax's renowned craftsmanship and expertise was combined with such advanced technology was it possible to design these beautifully contoured cameras.

Data Back (option)

You can place data on the lower right side of the photograph with button operation. One data can be chosen from four kinds of data such as year/

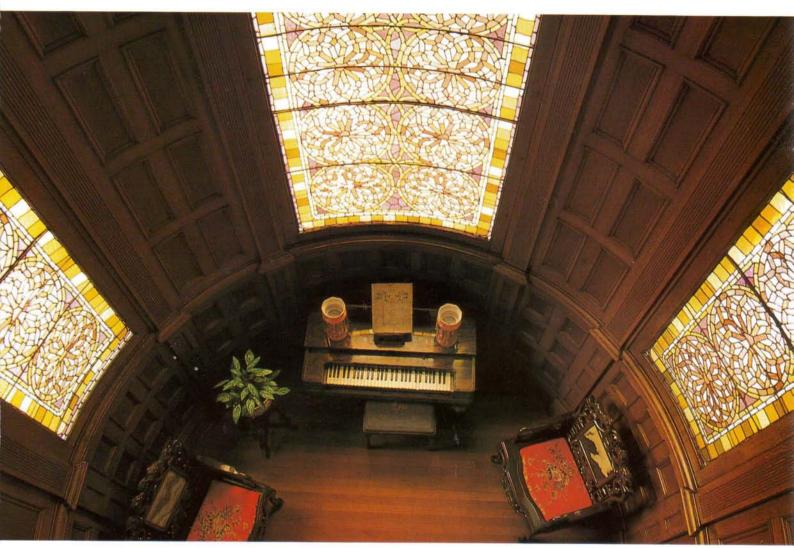


month/date, date/hour/minute, blank, month/date/year, date/month/year.

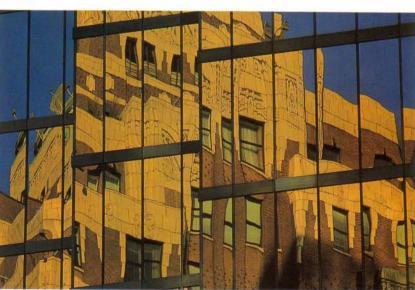


- 1. Hot shoe
- 2. Av direct dial
- 3. Main switch
- 4. LCD panel
- 5. Mode select dial
- 6. Mode set button
- 7. Strap lug
- 8. Tv direct dial
- 9. AF spot beam
- 10 RTF
- (Retractable TTL Auto flash) built-in flash
- 11. Self-timer lamp
- 12. AF coupler
- 13. Focus-mode switch
- 14. Shutter release button
- 15. Preview button
- 16. Lens mount index
- 17. Lens-lock release button
- 18. Lens information contacts
- 19. Power supply contacts
- 20. Viewfinder eyepiece
- 21. IF button
- 22. Memory lock button
- 23. Film information window
- 24. Metering mode switch button
- 25. Exposure compensation button
- 26. Flash pop-up button
- 27. Cable release socket
- 28. Back-cover release lever

* Pressing 24 and 25 simultaneously turns on illumination. Z-1 23







FA Lens Series—Intelligent Lenses with Optimal Image Quality

Specially designed for the Z family of cameras, the new SMC Pentax-FA lenses bring out all the superior capabilities of the Z-1. They feature a completely new design and easy-to-use controls. And all of the optical elements in the lenses are treated with Pentax's acclaimed super-multicoating, to assure optimal image quality by minimizing flare and ghost. And these lenses still have Pentax's distinctive sense of "taste"—such as sharpness in smoother gradation; in wide aperture shots, it offers crisp image even in the out-of-focus area.

Intelligent Power Zoom lenses feature a natural feeling of operation, and the convenience of automation. Their optical quality is beyond that of normal zoom lenses, and are specially designed to offer clear and crisp images during back-lit photograph by a special coating to minimize flare, as well as an inner lens hood in FAZ28-80. The built-in CPU swiftly exchanges information with the camera body, making it possible to realize sophisticated auto zoom functions. All the Intelligent Power Zoom lenses feature full-range macro capabilities, meaning you can approach and close-up a subject any time, at any focal length.

The star lenses come with a one-touch AF/MF switching mechanism. This enables the photographer to make delicate adjustments for accurate focusing on subjects that are otherwise difficult to focus on by an AF system.

The AL lenses have the hybrid aspheric lens which is an optical device developed from a combination of glass lens manufacturing and plastic polymerization technologies. An aspheric surface, which serves to form high-resolution, high-contrast images on the film, is polymerically molded on a regular spherical glass lens surface using an ultra-high-precision molding die.

In addition to these new FA lenses (KAF2 mount), you can also use any existing Pentax auto-focus F lenses (KAF mount) and non-AF (KA/K mount) lenses with the Z-1. That means you have access to the extensive range of Pentax lenses, with the right lens to cover almost all photographic situations and to let you get the photograph you want.

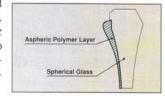
*Available functions may differ depending on the lens used.

SMC Pentax-FA Zoom 28mm~80mm f/3.5~f/4.7

This compact Intelligent Power Zoom lens is recommended as a standard zoom lens with the Z-1. It features an almost three-times magnification ratio, a one-touch power-zoom/manual-zoom switching ring, and a full-range macro capability with a minimum focusing distance of 40 centimeters (1.3 feet) for 1/4 X macro images. It also has an inner hood in its optical lens element.

SMC Pentax-FA* 24mm f/2 AL[IF]

This extremely fast ultra-wide-angle lens offers high contrast over the entire image field and sharp imaging thanks to its hybrid aspheric lens. It features an inner focus mechanism to improve the focusing speed, a floating mechanism to reproduce high-quality images from the minimum focusing distance to infinity, and one-touch AF/MF switching to improve handling.



SMC Pentax-FA* 300mm f/4.5 ED[IF]

This compact telephoto lens is ideal for action and nature photography. It features extra-low dispersion (ED) lens elements for true-to-life color reproduction and an inner focusing (IF) mechanism for reduced size and improved weight balance. It also offers a one-touch AF/MF switching mechanism and a minimum focusing distance of 2.0 meters (6.6 feet).







Interaction through an Array of New Lenses



SMC PENTAX-FA* 24mm f/2.0 AL[IF]



SMC PENTAX-*FA** 300mm f/4.5 ED[IF]



SMC PENTAX-FA 28mm f/2.8 AL



SMC PENTAX-FA
Zoom 28mm-80mm f/3.5-f/4.7



SMC PENTAX-FA Zoom 70mm-200mm f/4.0-f/5.6



SMC PENTAX-FA 50mm f/1.4



SMC PENTAX-FA
Zoom 28mm-105mm f/4.0-f/5.6

FA Fully automatic



SMC PENTAX-FA Zoom 100mm-300mm f/4.5-f/5.6



SMC PENTAX-FA 50mm f/1.7



SMC PENTAX-FA 135mm f/2.8 [IF]

SMC Pentax-FA Lens Specifications	· Lens Constructio
SMC Pentax-FA* 24mm f/2.0 AL[IF]	• Let Gro
SMC Pentax-FA 28mm f/2.8 AL	5-5
SMC Pentax-FA 50mm f/1.4	6-7
SMC Pentax-FA 50mm f/1.7	5-6
SMC Pentax-FA 135mm f/2.8 [IF]#	7-8
SMC Pentax-FA* 300mm f/4.5 ED[IF]	7-9
SMC Pentax-FA* 600mm f/4.0 ED[IF]#	7-9
SMC Pentax-FA Zoom 28mm – 80mm f/3.5 – f/4.7##	8-8
SMC Pentax-FA Zoom 28mm – 105mm f/4.0 – f/5.6	11 – 13
SMC Pentax-FA Zoom 70mm – 200mm f/4.0 – f/5.6	8-10
SMC Pentax-FA Zoom 100mm – 300mm f/4.5 – f/5.6	8-12
SMC Pentax-FA* Zoom 250mm - 600mm f/5.6 ED[IF]#	16 – 18
SMC Pentax-FA Macro 50mm f/2.8	7-8
SMC Pentax-FA Macro 100mm f/2.8	8-9

.... Inner lens hood.



SMC PENTAX-FA Macro 50mm f/2.8



SMC PENTAX-FA Macro 100mm f/2.8



SMC PENTAX-FA* 600mm f/4.0 ED[IF]



SMC PENTAX-FA* Zoom 250mm-600mm f/5.6 ED[IF]

· Angle of View	· Diaphra	gin . Minimur	n Aperture	· Minimu	nd ing	ication Maximum Dian Jacro Maximum Dian	neter Trum	. Weight	_ Sive	ith
· Anglicegi	· Diap	· Mini	. III.	· St.	· Maximum	lacte Maxis Left mi	. &	. 01.	· Filter Size	· Use With
84.0	FA	22	0.3	1.0	0.12	72.5×65.5	405	14.3	67	1411
75.0	FA	22	0.3	1.0	0.13	65.0×40.5	185	6.5	49	_
47.0	FA	22	0.45	1.5	0.15	65.0 × 37.0	220	7.8	49	0
47.0	FA	22	0.45	1.5	0.15	65.0×37.0	170	6.0	49	0
18.0	FA	32	0.7	2.3	0.25	65.0 × 80.0	375	13.2	52	0
8.2	FA	32	2.0	6.6	0.17	72.5×160.0	935	33.0	67	-
4.1	FA	32	5.0	16.4	0.13	176.0 × 456.5	6,450	227.5	43 (150)	
75.0 - 30.5	FA	22 - 32	0.4	1.3	0.25	71.0×83.5	380	13.4	58	A
75.0 - 23.5	FA	22 – 32	0.43	1.4	0.35	72.5 × 95.5	445	15.7	58	¥
34.5 – 12.5	FA	32 – 45	1.1	3.6	0.25	73.0 × 116.5	465	16.4	49	0
24.5 - 8.2	FA	32 – 38	1.5	5.0	0.25	73.0 × 154.5	605	21.4	58	0
9.9 – 4.1	FA	32	3.5	11.5	0.2	134.0 × 442.0	5,050	178.1	43 (112)	_
47.0	FA	32	0.195	0.6	1.0	68.0 × 70.0	385	13.6	52	
24.5	FA	32	0.306	1.0	1.0	74.0 × 103.5	600	21.2	58	-

^{*} Applicable for use with one filter / without hood.

Note: Lens length does not include mount portion. Weights indicated are for lens body only.

^{▲} Wider angle than 35mm cannot be fully covered.

^{▼} Wider angle than 40mm cannot be fully covered.

Z-1 Specifications

Type: TTL auto-focus, auto-exposure multi-mode 35mm SLR with built-in Retractable TTL Auto Flash (RTF).

Film: 35mm perforated cartridge film.

Image Size: 24 X 36mm.

Lens Mount: Pentax KAF2 bayonet mount. Compatible with KAF-, KA- and K-mounts.

Usable Lens: Pentax KAF2-mount lenses/KAF-mount lenses/ KA- and K-mount lense (Auto-Focus Possible using AF

Power Zoom System (with Pentax FA zoom lens):

Type: Motor-driven soom by motor built in lens. Zooming: 3 speeds, adjustable by zoom ring (maximum speed approx. 0,8 sec. from wide to tele end of FA Zoom 28mm~80mm).

 Mode: (1) Power zoom. (2) Manual zoom. (3) Auto zoom: Image-Size Tracking, Zoom Clip, Zoom Effect. (4)

Auto lens retraction.

Focusing System:

• Type: TTL phase-matching system. (SAFOX II used in AF sensor unit).

Usable illumination range: EV-1~EV18 (at 100 ISO with

 Mode: (1) AF-Single (Focus lock available.) (2) AF-Servo. (Coupled with focus prediction AF mode.) (3) Manual focus. (Set by switch on camera body.

• AF-assisting spot beam: Automatic projection on low-illumination/low-contrast subject. (1~6m.)

Exposure Control:

 Metering system: TTL open-aperture multi (8) segment metering (coupled with lens and AF information), spotmetering and center-weighted metering
• Metering range: EV0~EV20 (at ISO 100 with 50mm

f/1.4 lens)

• Mode: (1) Hyper Program, (2) Programmed AE. (3) Aperture-Priority AE. (4) Shutter-Priority AE. (5) Hyper Manual. (6) Manual Bulb. (7) TTL Program Auto Flash. Automatic exposure compensation by Multi-segment metering

Exposure compensation: ±4 EV. (1/3 EV or 1/2 EV

steps selectable.

 Memory lock: 5 second memory with ML button (Memory extendable.)

• Auto Bracketing: Proper/Under/Over 3frames. ±4 EV (1/3 EV or 1.2 EV steps selectable.) Combination use with

exposure compensation possible.

• Multiple exposure: 2~9 exposures adjustable.

Shutter:

 Type: Electronically controlled vertical-run focal-plane shutter.

• Speed: (1) Auto: 1/8000~30 sec. (stepless).(2) Manual: 1/8000~30 sec. and bulb. (3) Flash sync: 1/250 sec. (Slow-shutter-speed sync: 30~1/250 sec. and bulb.)

• Shutter lock: Main switch off.

Diaphragm Control: Aperture-coupled mechanism (with FA, F and A lenses).

Viewfinder:

· Type: Pentaprism.

• Focusing Screen: Interchangeable all-surface-matte Aspheric-Micro-Matte focusing screen.

Field of Vieuw: 92% vertically/horizontally.

Magnification: 0.8X (with 50mm f/1.4 lens at infinity).
Diopter: Adjustable.-2.5~+1.5

Viewfinder Indication:

• LED: (1) In focus. (2) RTF-discharge. (flash-use indicator, recharge completion and non-applicable lens

warning.) (3) External flash discharge.

• LCV: (1) Shutter speed, aperture, exposure compensation, and out-of-exposure-coupling-range warning. (2) Underline for selectable factor. (3) Manual exposure. (Correct, over or under.) (4) Metering mode. (5) Memory lock.

External LCD Indication: with electro-luminescence backlight illumination. (1) Film loading, frame number, film advance/rewind, and loading error. (2) Image-size tracking, zoom clip and zoom effect. (3) Hyper Program, Programmed AE, Aperture-Priority AE, Shutter-Priority AE, Hyper Manual and Bulb. (4) Exposure compensation, metering and Pentax Functions. (5) Consecutive shooting, auto bracketing, multiple exposure, and interval shooting.
(6) Self-timer modes. (7) Shutter speed, aperture, exposure compensation factor, film speed, multiple exposure number, interval starting time, exposure interval. (8) Tv/Av direct dial and PCV sound set. (9) Flash use recommendation, recharge incomplete/complete, nonapplicable lens warning, and low-battery warning. Film Handling:

· Loading: Quick auto loading. (Automatic film advance to

first frame.)

 Advance/rewind: Automatic. Mid-roll rewind possible. Advance mode: Single and consecutive. (3 frames/sec. Film Speed Setting: Automatic with DX-coded film from ISO 25 to ISO 5000. Manual setting from ISO 6 to ISO 6400. 1/3EV steps.)

Built-in Flash:

• Type: Retractable TTL auto flash (RTF)

Guide number: 14 (ISO 100).

Cover angle of view: 35mm wide angle lens.

• Daylight sync/ Slow shutter speed sync: Light amount adjustable.

Flash Synchronization: With RTF and via hotshoe Sync speed: 1/250 sec. set automatically with RTF or

dedicated Pentax flash unit at recharge completion. Self-Timer: Electronically controled multi-mode self-timer. (1) Normal (12-second delay). (2) 2-second delay. (3) Triple self-timer (First shot: 12-second delay. Second and third shots: 2-second delay). Cancellation possible.

Interval Shooting: Starting time (1 sec.~24 hours), exposure interval (1 sec.~24 hours) and exposure number selectable

(1~36 pictures).

Pentax Functions: 18 different options.

Main Switch: (1) Off (2) Green position. (Fully automatic

mode). (3) Full spec position.

Power Source: one 6V lithium battery (2CR5 type). Dimensions: 152mm (W) x 95.5mm (H) x 74.0mm (D). (6.0" × 3.8" × 2.9")

Weight: 650g (22.9oz) without lithium battery.

Design and specifications are subject to change without notice.

Asahi Optical Co., Ltd. C.P.O. 895, Tokyo 100-91, JAPAN Asahi Optical Co., Ltd. C.P.O. 895. Tokyo 100-91, JAPAN
Pentax Europe n.w. Weiveldlaan 3-5, 1930 Zaventem, BELGIUM
Pentax Handelsgesellschaft mbH, Julius-Vosseler-Strasse, 104, 2000 Hamburg 54, GERMANY
Pentax U.K. Limited. Pentax House, South Hill Avenue, South Harrow, Middlesex HA2 OLT, U.K.
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