

**PENTAX®**

**SMC PENTAX-F  
INTERCHANGEABLE LENSES**



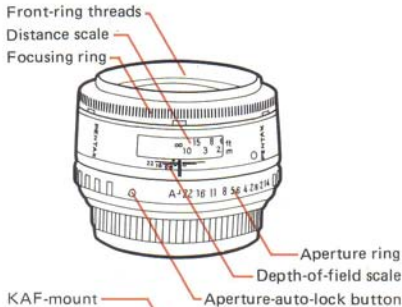
This booklet contains all the instructions you need to make the most out of your SMC Pentax-F lenses. So always keep it handy and whenever you have questions about the handling, care or whatsoever, read it very carefully, together with your camera's instruction manual.

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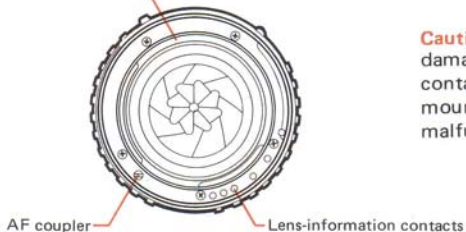
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## SMC PENTAX-F LENSES

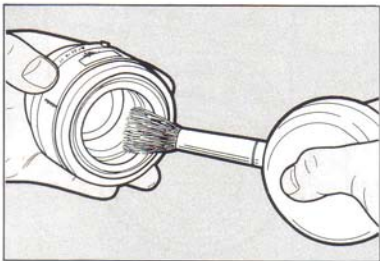


The SMC Pentax-F lenses are primarily designed to work with the Pentax auto-focus SLR (KAF-mount camera), making the auto-focus shooting possible. The aperture should be set to "A" (Auto) when the camera is used in the Programmed AE mode and also when the lens is used on the KA-mount camera. But when using the lens on the K-mount camera, set the aperture to a proper f-stop other than A. (If set to A, the exposure will be made at minimum aperture.)

**Caution:** Always be careful not to damage or stain the lens-information contacts and AF coupler on the rear lens mount, to protect the lens from malfunctioning or going defective.



## LENS MAINTENANCE

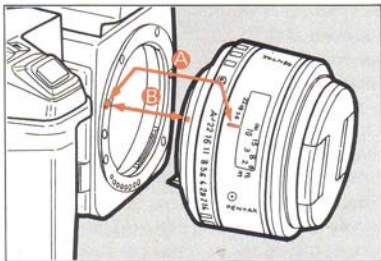


Moisture is not good for optical glass elements — the nucleus of your lens. Since storage in a damp place may cause mildew, keep your lens in as dry a place as possible. If you don't plan to use your lens for a long period, store it with a desiccant in the case. Also the lens should occasionally be taken out of the case and dried.

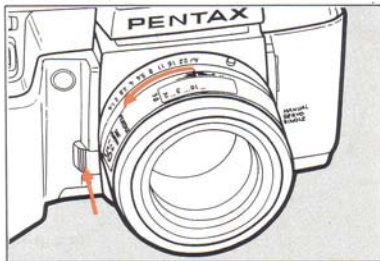
Dust and dirt should be removed with a blower or lens brush. If the lens becomes dirty, wipe it with a clean cotton cloth or tissue paper dampened with lens cleaning solution. Wipe in a spiral pattern from the center out, changing the cloth or paper a few times.

When you store your lens in a case, put on the lens front cap and lens mount cap, both provided as standard accessories, to protect against dust. When you remove a lens from your camera body, be careful not to let it roll over or fall down, as this may cause malfunctions. If you are standing the lens on a flat surface, put the lens front down.

## LENS INTERCHANGING

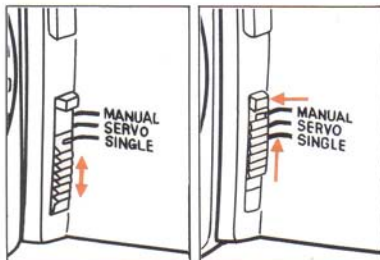


1. To mount the lens on the camera, align the red dot on the lens with the red dot on the camera body (see **A** and **B**), seat the lens in the body mount and turn the lens clockwise until it clicks into place.



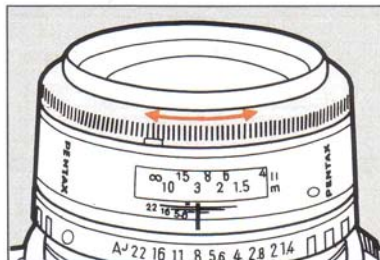
2. To remove the lens, turn the lens counter-clockwise while depressing the lens-release lever on the camera body.

## FOCUSING



Set your camera in the autofocus mode by adjusting the focus mode switch. To adjust focusing manually, set your camera in the manual mode. You can also use the in-focus signal in the viewfinder by turning the focusing ring.

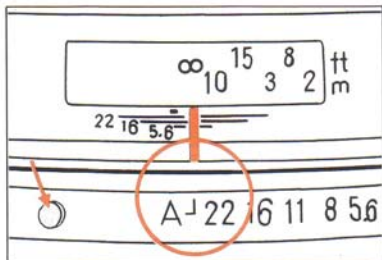
- When the auto-focus function is in action, do not stop the focusing ring from turning by touching or holding it.



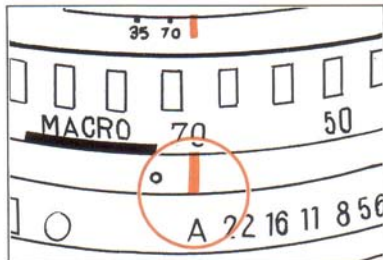
When the camera is set in the MANUAL focus mode, you can focus the lens by turning the focusing ring and seeing the FI signals [▶ ◯ ◀] through the viewfinder.

When using the lens on the non-KAF-mount camera body, focus it by turning the focusing ring.

## APERTURE CONTROL



To set the aperture to "A" (Auto), push the aperture-auto-lock button and turn the aperture ring until "A" aligns with the red-bar index. To switch the aperture to any other f-stop, move the aperture ring to the left while pushing the aperture-auto-lock button.



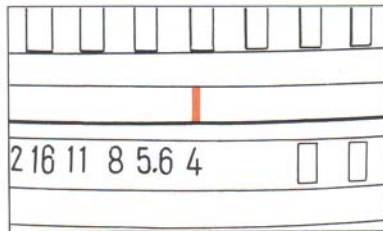
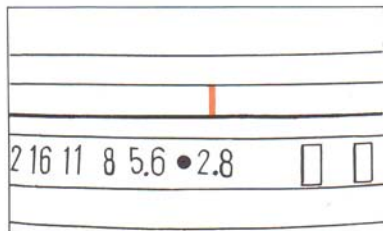
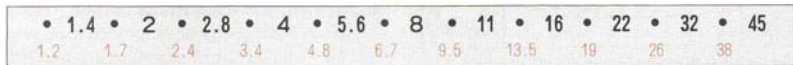
To set the aperture of the zoom lens as well, align the aperture-A index with the red-bar index. The dot on the left-hand side of the red-bar index is used to align an f-stop other than A with, when shooting at a longer focal length. For example, when you use the Zoom 35-70mm lens and wish to set the aperture to f/8 with the focal length at 70mm, align "8" on the aperture scale with this dot.



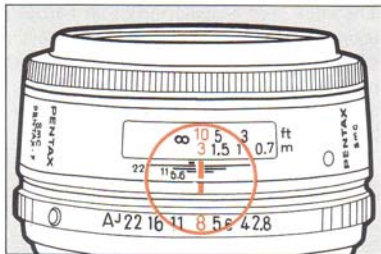
### f-stops or f-numbers and click stops

The white dot next to the maximum aperture of the lens indicates the aperture which is slower by one step (larger number). As shown below, the white dot next to  $f/2.8$  is  $f/4$ .

The click stop between the two f-stops is equivalent to an intermediate f-stop. Depending on the lens, no click stops are provided at the extreme ends of the aperture scale, since there is little space between the f-numbers.



## SNAPSHOT MARKS

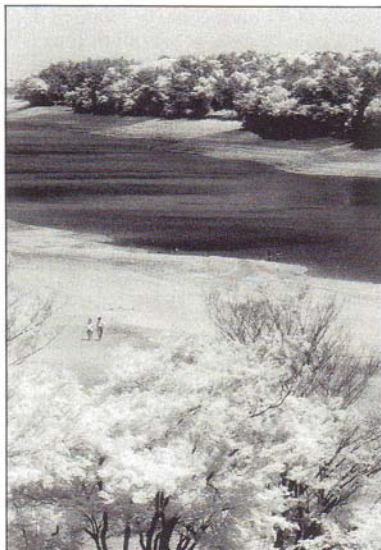
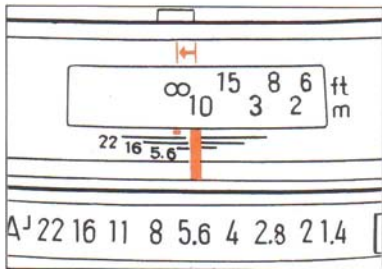
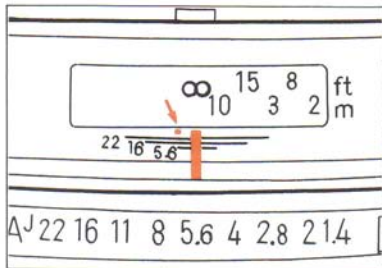


As shown above, the wide-angle lens's distance and aperture scales have one each of red figure, and they are called "snapshot marks" or "fixed-focus marks." When these marks are aligned with the distance/aperture index, any subject from about half the red-marked distance to infinity away from the camera is in focus. Set these marks when not shooting in the auto-focus model, or when using the lens with a non-KAF-mount camera.

## HOW TO USE INFRARED INDEX

If you intend to take infrared photographs using infrared film and R2 or O2 filters, it is necessary to compensate for the difference between visible light focus and infrared focus. As shown at right, note the subject-to-camera distance on the lens distance scale as you focus through the viewfinder and turn the focusing ring until that distance setting aligns with the red infrared index mark.

- When turning the focusing ring, be sure to set the camera in the **MANUAL** focus mode.
- For the infrared indexes of the zoom lenses, refer to page 21.
- For the exposure control required in this special photography, consult the instruction manual that accompanies the filter.



## LENS HOODS

Pentax lens hoods come in round and rectangular shapes, plus built-in type. Make sure that you get the proper size lens hood for each lens.

When the lens hood is in use, do not use the built-in flash on your camera, because the flash light is blocked by the hood.



### Rectangular hoods

49mm spring-type (PH)	for 28mm f/2.8
49mm spring-type (PH)	for 50mm f/1.4 & f/1.7

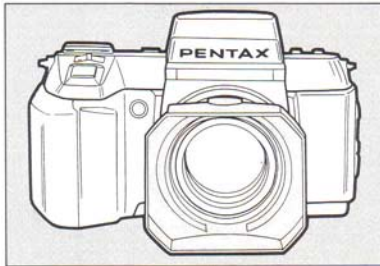
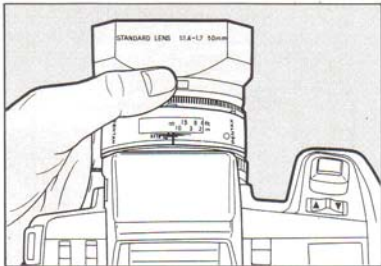
### Round hoods

49mm screw-in-type (RH)	for 50mm f/1.4 & f/1.7
49mm screw-in-type (PH)	for 50mm f/1.4 & f/1.7
RH-RA 49mm screw-in-type	for Zoom 35-70mm f/3.5-4.5
RH-RB 49mm screw-in-type	for Zoom 70-210mm f/4-5.6
RH-RA 52mm screw-in-type	for Macro 50mm f/2.8
RH-B 58mm screw-in-type	for Zoom 35-105mm f/4-5.6
RH-A 60mm clip-on-type	for Zoom 35-135mm f/3.5-4.5
RH-B 60mm clip-on-type	for Zoom 24-50mm f/4, 28-80mm f/3.5-4.5

RH=Rubber Hood ; PH=Plastic Hood

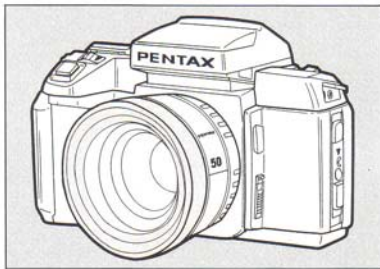
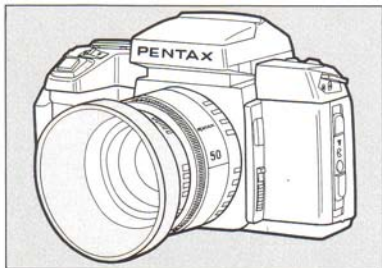
### How to use rectangular hoods

1. Like lens caps, attach these hoods to the front ring of the lens while depressing both knurled tabs on the hood.
2. Also be careful to keep the top and bottom of the hood parallel with the top and bottom of the camera. The improper fitting will result in the picture frame with darkened corners, known as vignetting.



### How to use round hoods

1. The round hood can be screwed into or fitted on the front ring of the lens. But the 49mm screw-in type cannot be fitted on the lens in reverse order.
2. The rubber type can be folded, as shown, when it is not in use, and in the case of 49mm type, you can put the lens cap on the lens with the hood folded. But other rubber hoods must be removed to put the lens cap on.



### How to use built-in hoods

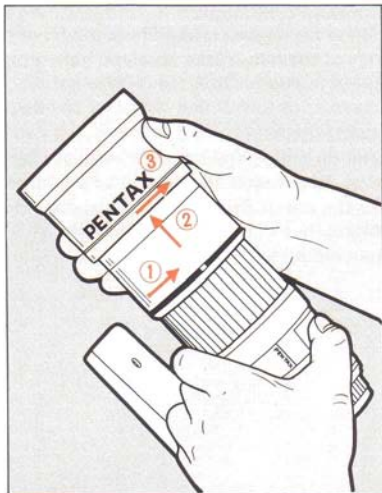
Use the lens with the built-in hood by fully extending the hood. Since the hoods for the 300mm, 600mm and 250–600mm zoom are screw-fixed-type, slide them in and out while turning them.

Holding the lens as shown, turn the hood to the right, slide it out, and turn it to the right to fix. To replace the hood, follow the reverse procedure.

#### Lenses with built-in hoods:

135mm f/2.8, F\* 300mm f/4.5,  
F\* 600mm f/4, F\* Zoom 250–600mm  
f/5.6

- With the F 135mm f/2.8, you can use the camera's built-in flash (RTF) even with the built-in hood set up for use.



## FILTERS

### Screw-in-type filters

These filters are screwed into the front rim of the lens. Make sure you get the proper size filter for each lens.

### SMC filters

The reflection from the filter causes flare that deteriorates the quality of a picture. So the use of Pentax SMC multi-coated filters that virtually eliminate flare is recommended.

Size	Applicable lenses
49mm	28mm f/2.8、 50mm f/1.4 & 1.7、 Zoom 35–70mm f/3.5–4.5、 Zoom 70–210mm f/4–5.6
52mm	135mm f/2.8、 Macro 50mm f/2.8
58mm	Zoom 24–50mm f/4、 28–80mm f/3.5–4.5、 35–105mm f/4–5.6、 35–135mm f/3.5–4.5、 Macro 100mm f/2.8
67mm	300mm f/4.5 ED(IF)



### Precautions on filters

- Do not apply a filter and the hood on the F Z 35–105mm lens at the same time, to avoid vignetting at picture corners.
- A filter, when attached to your lens, becomes part of the optical system. So handle it as carefully as you do the lens. Keep it free from any dirt or dust, and take care not to scratch the filter element. Using two filters, one over the other, should be avoided as it results in producing an unfavorable image. The polarizing filter can be used in combination with other filters.

### Polarizing filter and vignetting

When you use the Polarizing filter on your KAF-mount camera, use the circular type alone. The circular type is made of two glass elements and thicker than the ordinary filter. So when it is used on the following lenses, the picture taken may have darkened corners.

Size	SMC Pentax
49mm	Zoom 35–70mm f/3.5–4.5
58mm	Zoom 28–80mm f/3.5–4.5、 35–105mm f/4–5.6

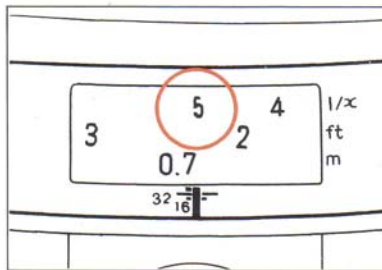


Focus-range limiter

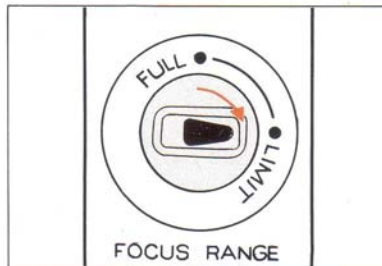
The F Macro 50mm f/2.8 and 100mm f/2.8 lenses focus from infinity down to life size (1X). The 100mm f/2.8 extends much more than the ordinary lens, so it is equipped with the focus-range limiter to heighten the efficiency of the auto-focus function. By setting the focus-range limiter, you can control the amount of extension so that the focus range on the close-distance side is limited to approx. 0.57 (1/4X) ~ 0.31 (1X) meters, and that on the long-distance side to approx. 0.63 meters ~ infinity. Use the limiter effectively, depending on the camera-to-subject distance.

**When these macro lenses are used on the KAF-mount camera, the built-in flash (RTF) does not fire.**

The magnification scale is indicated by denominators (in white) on the distance scale. "5" means "1/5X." When you have predetermined the magnification, set the magnification in the MANUAL focus mode, and focus by moving the whole camera back and forth. If you use the optional accessory Macro Focus Rail, focusing will be made easier.



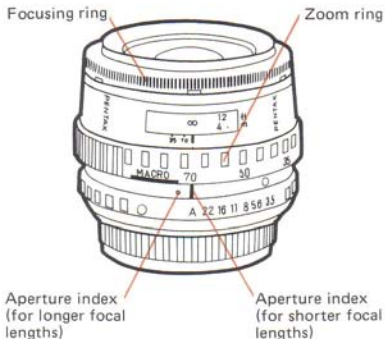
As shown above, as you set the knob on the focus-range limiter at "LIMIT" with the distance scale set at  $\infty$ , the focus range is set on the long-distance side (general-purpose shooting), and as you do the same thing with the distance scale at the minimum focus distance, the focus range is set at the close-distance side (macro shooting). To cancel the limiter, set the knob at "FULL."



- When the magnification scale is set near 4 (1/4X), the knob may not turn.



## ZOOM LENSES



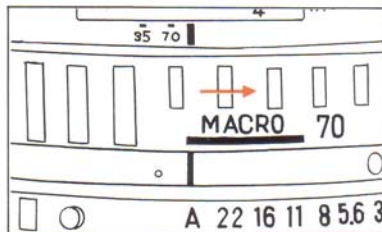
SMC Pentax-F Zoom lenses are the “two-action” type having two separate rings: the front one for focusing and the rear one for zooming. You can choose the focal length you desire by turning the zoom ring.

When the focal length is changed by turning the zoom ring, slight shift of focus may occur. So, after zooming and before releasing the shutter, make sure the image is in focus by using the auto-focus function or the focus-indication (FI) system.

- To set the aperture to A (Auto), align the aperture-A index with the red-bar index, irrespective of a focal length chosen. Refer to page 6.

## Macro shooting

The zoom lenses listed in the table have the macro mechanism that enables you to take close-up pictures. To set the lens at MACRO, first set the zoom ring at the longest focal length (green figures) and then use more force to turn it to the right until it stops. To cancel the macro setting, take the reverse procedure. Moreover, when using the zoom lens in the auto-focus mode, the in-focus range becomes narrow, so find out the position of focus by moving the camera itself back and forth, or by turning the zoom ring slightly.



- Macro shooting is apt to cause camera shake, so it is desirable to use a tripod.

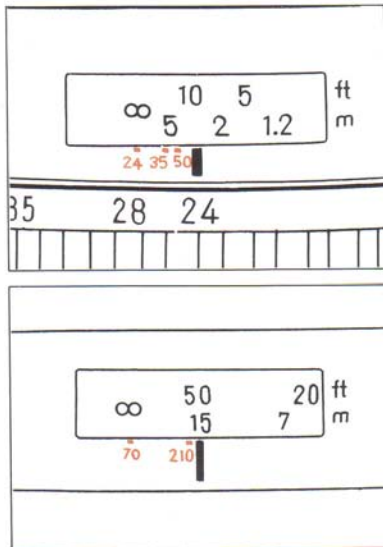
Lens	Magnification (×)	Distance (m)
28–80mm f/ 3.5–4.5	0.25	0.4
35–70mm f/ 3.5–4.5	0.25	0.32
35–105mm f/4–5.6	0.25	0.42
35–135mm f/ 3.5–4.5	0.25	0.75

(When lenses are set at MACRO's extreme end)

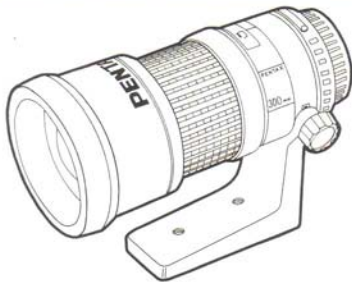
### Infrared index

In the case of the zoom lens, the degree of focus compensation in infrared photography varies according to the focal length. As shown, there are infrared indexes for each focal length in the distance-scale window.

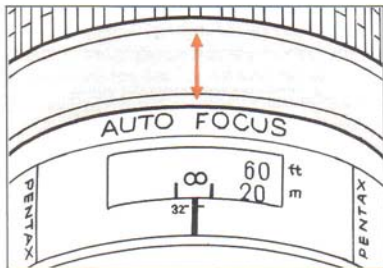
Compensate for the focus according to the focal length in use. With the lens having the indexes only for the longest and shortest focal lengths, such as 70–210mm, obtain the indexes for intermediate focal lengths and compensate for the focus by using the scale as a guide.



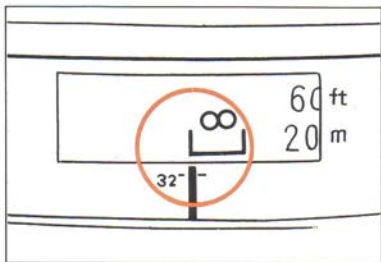
## TELEPHOTO LENS



The SMC Pentax-F\* 300mm f/4.5 ED (IF) lens is a high-performance optic whose extra-low dispersion optical elements reduce chromatic aberration to a level not possible with conventional optical glass, and assures improved contrast and better image quality. The inner-focus (IF) mechanism also used in this lens improves the imbalance of weight caused by the lens extension. When using this lens on the KAF-mount camera, set both in the auto-focus mode or in the MANUAL-focus mode. As you push the switch ring forward as shown, the lens will be set in the auto-focus mode. To set it in the MANUAL mode, pull the switch ring toward you. If the switch ring is not properly set, the camera's mode is preferred, and focusing ring may turn automatically.

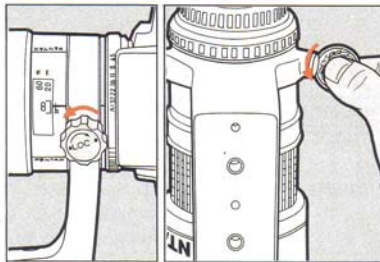






### Caution on ∞ (infinity) mark

This telephoto lens is constructed so that the focusing ring stops slightly past the ∞ mark. This is because temperature change, hot or cold, causes the position of focal point to shift, making the lens off focus on the point past the ∞ scale. Even when shooting at infinity, release the shutter after making sure the image is in focus through the focus-indication system.



### Tripod socket

The tripod socket on this lens can be rotated every 90 degrees to the direction you desire, by loosening the LOCK screw. When actually shooting, be sure to tighten the screw firmly to lock the lens into place. The tripod socket can be removed by pulling it after loosening the screw at right with a coin and then loosening the one at left.

# SPECIFICATIONS

● Type	● Lens	● Lens Construction (Groups/Elements)	● Angle of View (Degrees)	● Diaphragm
WIDE-ANGLE	SMC Pentax-F 28mm f/2.8	7-7	75	FA
STANDARD	SMC Pentax-F 50mm f/1.4	6-7	47	FA
	SMC Pentax-F 50mm f/1.7	5-6	47	FA
TELEPHOTO	SMC Pentax-F 135mm f/2.8 [IF]	7-8	18	FA
	SMC Pentax-F*300mm f/4.5 ED[IF]	7-9	8.2	FA
	SMC Pentax-F*600mm f/4 ED[IF]	7-9	4.1	FA
MACRO	SMC Pentax-F Macro 50mm f/2.8	7-8	47	FA
	SMC Pentax-F Macro 100mm f/2.8	8-9	24.5	FA
ZOOM	SMC Pentax-F Zoom 24-50mm f/1.4	10-11	84-47	FA
	SMC Pentax-F Zoom 28-80mm f/3.5-4.5	9-12	75-30.5	FA
	SMC Pentax-F Zoom 35-70mm f/3.5-4.5	8-8	63-34.5	FA
	SMC Pentax-F Zoom 35-105mm f/4-5.6	12-14	63-23.5	FA
	SMC Pentax-F Zoom 35-135mm f/3.5-4.5	12-16	63-18	FA
	SMC Pentax-F Zoom 70-210mm f/4-5.6	9-13	34.5-11.8	FA
	SMC Pentax-F*Zoom 250-600mm f/5.6 ED[IF]	15-17	9.9-4.1	FA
	SMC Pentax-AF Adapter 1.7×	4-6	—	FA

● F\* = High-performance, compact lens using special glass elements.

● ED = Achromatic lens using the Extra-low Dispersion glass

● IF = Inner Focus

● FA = Fully automatic

● Minimum Aperture	● Minimum Focusing Distance (Macro range)		● Maximum Magnification (Macro range)	● Maximum Diameter & Length (φ mm × mm)	● Weight		● Filter Size (mm)
● mm	● ft.				● gr.	● oz.	
22	0.3	0.98	0.13	64 × 37	180	6.4	49
22	0.45	1.5	0.15	65 × 37	230	8.1	49
22	0.45	1.5	0.15	65 × 37	200	7.1	49
32	0.7	2.3	0.25	68 × 80	395	13.9	52
32	2.0	6.6	0.17	84 × 160	880	30.8	67
32	5.0	16.4	0.13	181 × 413	5800	205	43(150)
32	0.195	0.6	1.0	68 × 70	385	13.6	52
32	0.306	1.0	1.0	74 × 103.5	590	20.7	58
22	0.4	1.3	0.15	69.5 × 67	380	13.3	58
22-32	0.8(0.40)	2.6(1.3)	0.11(0.25)	69.5 × 75	390	13.7	58
22-32	0.7(0.32)	2.3(1.0)	0.1(0.25)	67 × 50	235	8.3	49
22-32	1.4(0.42)	4.6(1.4)	0.1(0.25)	72 × 71	374	13.2	58
22-32	1.6(0.75)	5.2(2.5)	0.1(0.25)	71 × 91.5	485	17.0	58
32-45	1.1	3.6	0.25	71 × 98.5	555	19.4	49
32	3.5	11.5	0.2	149 × 434.5	4900	173	43(112)
—	—	—	—	64 × 26	135	4.7	—

● Figures in ( ) of Filter Size are the thread diameter of the front ring.  
**Note:** Lens length does not include mount portion.

## AF ADAPTER 1.7X



Mounted between the SFX/SF1 camera body and the SMC Pentax lens, this Adapter enables you to use the lens in the auto-focus mode. It also extends the focal length of the lens in use by 1.7X.

### Usable lenses

- SMC Pentax-A lenses (KA-mount lenses) listed in the table at right.
- SMC Pentax or Pentax-M lenses (K-mount lenses) having a maximum aperture of f/2.8 or faster, except Soft 85mm f/2.2.

### List of Usable SMC Pentax-A Lenses

Fish-Eye	16mm f/2.8
Ultra-Wide-Angle	20mm f/2.8
	24mm f/2.8
Wide-Angle	28mm f/2
	28mm f/2.8
	35mm f/2
	35mm f/2.8
Standard	50mm f/1.2
	50mm f/1.4
	50mm f/1.7
	50mm f/2
Medium Telephoto	A*85mm f/1.4
	100mm f/2.8
	A*135mm f/1.8
	135mm f/2.8
Telephoto	A*200mm f/2.8ED
	A*300mm f/2.8ED(IF)
Ultra Telephoto	400mm f/2.8ED(IF)
Zoom	35–105mm f/3.5 (Macro Setting not usable)

## LENS CASES

The soft cases for SMC Pentax-F lenses show their code numbers at the bottom. Make sure that you get the proper size case for each lens, referring to the table shown here.



Cases	SMC Pentax-F lenses
S70-70	28mm f/2.8、 50mm f/1.4、 50mm f/1.7、 Zoom 35-70mm f/3.5-4.5、 AF Adapter 1.7×
S80-120	135mm f/2.8、 Macro 50mm f/2.8、 Zoom 24-50mm f/4、 Zoom 28-80mm f/3.5-4.5 Zoom 35-105mm f/4-5.6
S80-160	Macro 100mm f/2.8、 Zoom 35-135mm f/3.5-4.5、 Zoom 70-210mm f/4-5.6
SS10-22	F★ 300mm f/4.5 ED(IF)
Trunk	F★ 600mm f/4 ED(IF)、 F★ Zoom 250-600mm f/5.6 ED(IF)

All Pentax lenses purchased through authorized bona fide photographic distribution channels are guaranteed against defects of material or workmanship for a period of twelve months from date of purchase. Service will be rendered and defective parts will be replaced without cost to you within that period, provided the equipment does not show evidence of impact, sand or liquid damage, mishandling, tampering, operation contrary to operating instructions, or modification by an unauthorized repair shop. The manufacturer or its authorized representatives shall not be liable for any repair or alterations except those made with its written consent and shall not be liable for damages from delay or loss of use or from other indirect or consequential damages of any kind, whether caused by defective material or workmanship or otherwise; and it is expressly agreed that the liability of the manufacturer or its representatives under all guarantees or warranties,

whether express or implied, is strictly limited to the replacement of parts as hereinbefore provided. No refunds will be made on repairs performed by non-authorized Pentax service facilities.

### PROCEDURE DURING 12-MONTH WARRANTY PERIOD

Any Pentax lens which proves defective during the 12-month warranty period should be returned to the dealer from whom you purchased the equipment or to the manufacturer. If there is no representative of the manufacturer in your country, send the equipment to the manufacturer, with postage prepaid. In this case, it will take a considerable length of time before the equipment can be returned to you owing to the complicated customs procedures required in Japan in importing and re-exporting photographic equipment. If the equipment is covered by warranty, repairs will be made and parts replaced free of charge,

and the equipment will be returned to you upon completion of servicing. If the equipment is not covered by warranty, regular charges of the manufacturer or of its representatives will apply. Shipping charges are to be borne by the owner. If your Pentax lens was purchased outside of the country where you wish to have serviced during the warranty period, regular handling and servicing fees may be charged by the manufacturer's representatives in that country. Notwithstanding this, your Pentax camera or lens returned to the manufacturer will be serviced free of charge according to this procedure and warranty policy. In any case, however, shipping charges and customs clearance fees are to be borne by the owner. To prove the date of your purchase when required, please keep the receipts or bills covering the purchase of your equipment for at least a year. Before sending your equipment for servicing, please make sure that you are sending it to

the manufacturer's authorized representatives or their accredited repair shops, unless you are sending it directly to the manufacturer. Always obtain a quotation of the service charge, and only after you accept the quoted service charge, instruct the service station to proceed with the servicing.

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



Asahi Optical Co., Ltd. C.P.O. 895, Tokyo 100-91, JAPAN  
Pentax Europe n.v. Welvelaan 3-5, 1930 Zaventem, BELGIUM  
Pentax Handelsgesellschaft mbH Postfach 54 0169, 2000 Hamburg 54, WEST GERMANY  
Pentax U.K. Limited Pentax House, South Hill Avenue, South Harrow, Middlesex HA2 0LT, U.K.  
Pentax France S.A. Z.I. Argenteuil, 12, Rue Ambroise-Croizat, 95100 Argenteuil, FRANCE  
Pentax (Schweiz) AG Industriestrasse 2, 8305 Dietlikon ZH, SWITZERLAND  
Pentax Scandinavia AB Box 650, S-751 27 Uppsala, SWEDEN  
Pentax Nederland Spineveld 25, 4815 HR Breda, THE NETHERLANDS  
Pentax Norge A.S. Cecilie Thoresens VEI, Lambertseter, 1101 Oslo 11, NORWAY  
Pentax Corporation 35 Inverness Drive East, Englewood, Colorado 80112, U.S.A.  
Pentax Canada Inc. 3131 Universa Drive, Mississauga, Ontario L4X 2E5, CANADA  
Asahi Optical Brasileira Ind. e Com. Ltda. Rua Capitão Antonio Rosa 376, Sala 121 Ed. PBK, São Paulo, BRASIL

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