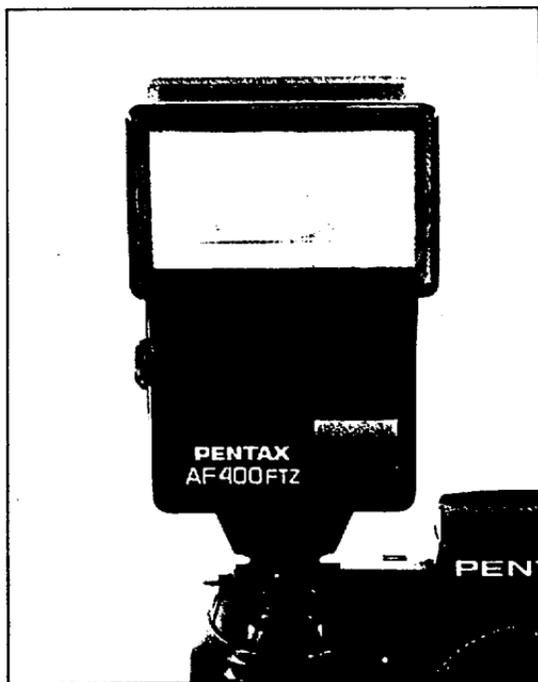


PENTAX®

AF 400FTZ

AUTOMATIC ELECTRONIC FLASH UNIT



Thank you very much for purchasing the Pentax AF400FTZ auto flash unit. Specifically developed for use with the SFX/SF1 camera, this unit offers so many features such as the TTL Auto Flash mode, the manually adjustable flash head that can be moved back and forth, the unique AF spotbeam projector that assists the camera's auto-focus system in the dark, etc.

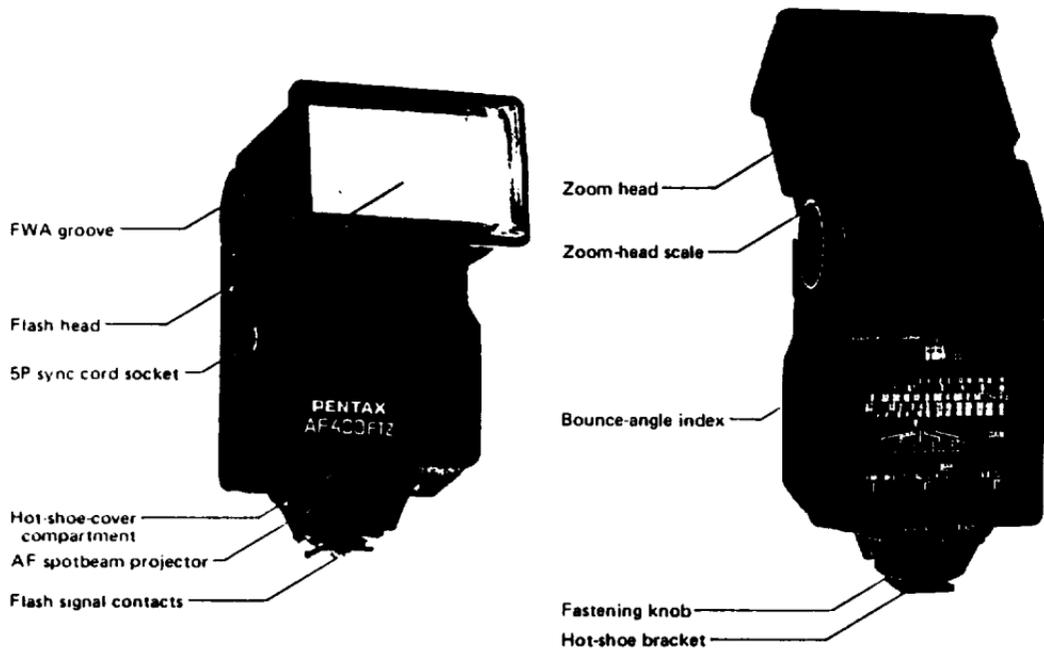
Please read this manual carefully so that you can always operate the unit properly in order to make the most out of all the features and functions it has to offer.



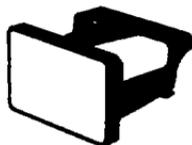
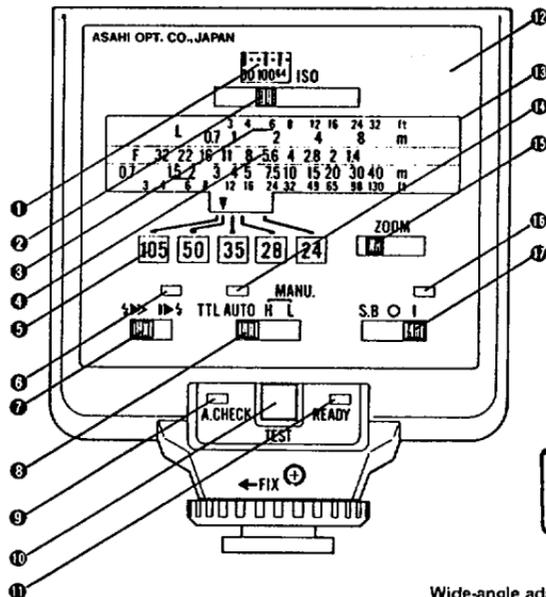
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DESCRIPTION OF OPERATING PARTS



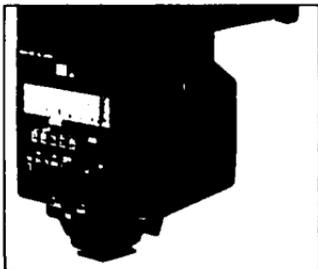
- ① Film-speed scale
- ② Film-speed-set lever
- ③ Distance scale
- ④ Aperture scale
- ⑤ Zoom scale
- ⑥ Trailing-curtain-sync lamp
- ⑦ Leading/trailing-curtain-sync switch
- ⑧ Control switch
- ⑨ TTL auto check lamp
- ⑩ Test button
- ⑪ READY lamp
- ⑫ Control panel
- ⑬ Calculator board
- ⑭ TTL lamp
- ⑮ Zoom-scale-set lever
- ⑯ Power-OK lamp
- ⑰ Power switch/
AF spotbeam switch



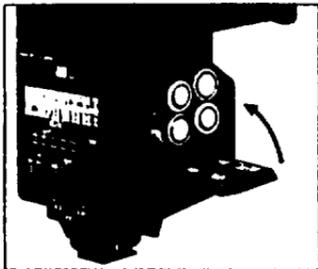
Wide-angle adapter FWA (optional)

BATTERY LOADING

1



2



3



1. Slide the lever to the direction of the arrow, as illustrated, and open the battery cover.
2. Insert 4 "AA"-size batteries into the battery housing in the right +/- directions as indicated, and close the cover.
3. As you turn on the power, the power-OK lamp will be on, and a few seconds later, the READY lamp will be on indicating that the battery charge is complete. As you press the TEST button at this point, the flash will fire. *When the flash is mounted onto the camera, be sure to keep the camera's main switch turned off.*

BATTERIES Use 4 "AA"-size alkaline or NiCd batteries. NiCd batteries need a charger available from dealers. Manganese batteries are not recommended due to their shorter life.

The flash charge time is about 9 seconds with brand new alkaline batteries and about 6 seconds with NiCd batteries. If it takes more than 30 seconds, the batteries must have been exhausted, and they should be replaced with new ones.

- If the power-OK lamp does not light as you turn on the power, try to change the +/- position of the batteries or use fresh batteries.
- When loading batteries, the +/- position must be correct as indicated inside the battery housing. Otherwise, such might cause leakage of chemical, battery heating or explosion.
- When changing batteries, all 4 should be changed with batteries of the same kind. Never try to mix used batteries with fresh ones.
- Do not leave batteries in the flash unit too long if you are not using the flash. Old batteries may corrode or leak chemical, which might damage the flash.
- The battery performance will go down in extremely cold climate: try to keep them warm.

① TTL AUTO LAMP

This will be ON when the switch is turned to TTL AUTO. (Page 11)

② TRAILING CURTAIN SYNC LAMP

This lamp will be turned ON when you turn the leading/trailing curtain sync switch to the trailing curtain sync and lightly press the shutter button. (Page 17)

③ ZOOM PANEL

The zoom panel has 5 settings (105/50/35/28/24), which will be lighted, and the one matching the setting of the zoom head will be turned on as you turn on the power, when the zoom head is correctly set for the focal length of the Pentax-F lens mounted. If not, the setting will flicker as a warning and asking for correct zoom head setting. (Page 9)

QUICK POWER-ON/AUTO POWER-OFF

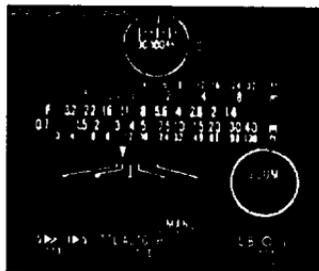
When the AF400FTZ is kept powered on for about 5 minutes, its power saver function starts working, and automatically turns off the power. Turn on the power switch again to turn it on. (When it is mounted on the SFX/SF1, lightly press the shutter button to turn on the power.)

MOUNTING TO CAMERA/SETTING CALCULATOR BOARD

1



2



Mounting to Camera Body

1. Remove the hot shoe cover F on the SFX/SF1, and store it in the storage compartment of AF400FTZ by inserting it with the thinner part first. To get it out, push the arrow-marked lever and it will slide out.
 2. Insert the hot shoe bracket into the hot shoe and tighten the fastening knob by turning it in the arrow direction.
- As mentioned elsewhere in this manual, always hold the lower portion of the flash body when mounting and dismounting it.

Setting Calculator Board

Film Speed Calibration (ISO)

Move the film speed setting lever and set the film speed against the white index mark.

Zoom Scale (Zoom)

Move the zoom panel setting lever, and match the ∇ mark to the focal length number of the lens used.

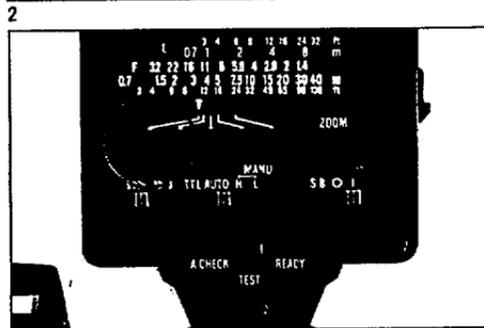
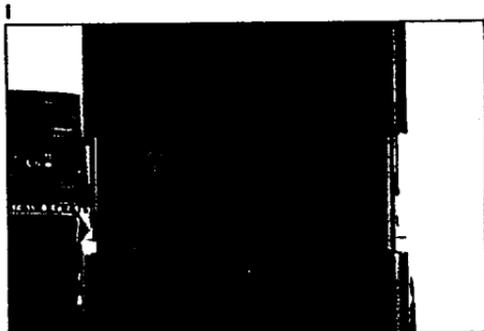
The calculator board merely serves for checking the flash distance range, and has no electrical connections.

USING THE ZOOM HEAD

By setting the zoom head to the focal length number of the lens mounted, the flash light will be properly distributed for optimum flash performance for lenses from 28mm to 105mm.

Setting the Zoom Head

1. Pull out the zoom head and set it against the click of the focal length number of the lens used.
 - The click position of the 28mm lens is when the zoom head is pushed in.
2. Turn on the power, and make sure that the zoom scale is lit where the zoom head is set, and then take a picture.
 - When using a Pentax-F lens, lightly press the shutter release and make sure that the zoom scale is lit where the zoom head is set. If it is flickering, it is a warning that the angle of flash is narrower than the angle of the lens used.
 - The zoom head must be re-set. When using a lens with a focal length not included in the zoom panel, set the zoom head to the scale setting slightly smaller than the actual focal length.



FLASH/CAMERA COMBINATION

With the AF400FTZ mounted on the SFX/SF1, the following "dedicated" functions will be in operation. When it is mounted on other PENTAX cameras, these "dedicated" functions will not work.

CAUTION

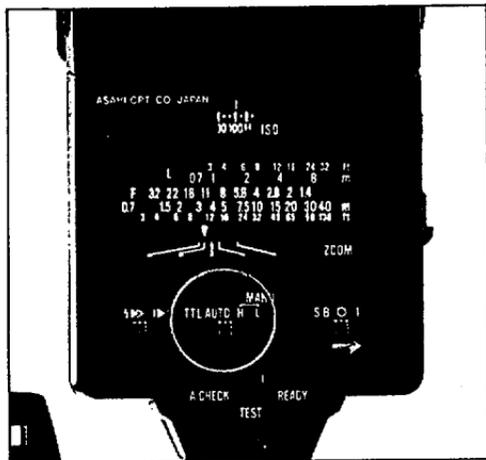
Avoid using this flash on other manufacturer's cameras with an electronic flash contact outside of the hot shoe contact, as it may damage the camera's electronics or it may result in an erroneous operation.

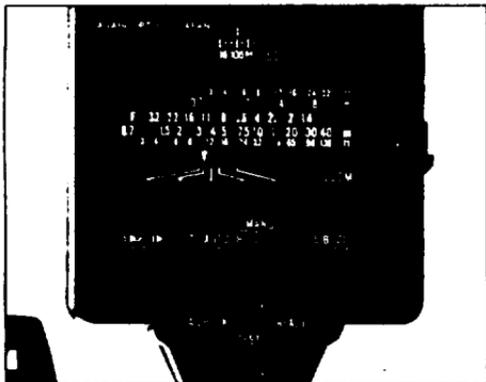
Dedicated Functions with SFX/SF1

	TTL FLASH	MANUAL FLASH
Programmed flash *	○	x
Trailing curtain flash sync	○	x
Slow speed flash sync	○	○
Auto switch to X shutter speed	○	○
Flash ready display in finder	○	○
TTL auto check in finder	○	○
AF spotbeam	○	x
		○

*Aperture and shutter speeds vary according to the brightness of subjects.

TTL AUTO FLASH





Determining Exposure Distance from the Calculator Board

This illustration shows that with an ISO 100 film and a 50mm lens set at $f/4$, the maximum distance is 10 meters. Further, the extreme minimum distance will be the above maximum distance divided by about 8 ($10 \div 8 = 1.2\text{m}$). Also refer to the PHOTOGRAPHABLE DISTANCE RANGE TABLE on page 21.

When the Lens Aperture Is Set at "A"

With the AF400FTZ mounted on SFX/SF1, you can command a programmed flash photography in combination with Pentax-F or -A lenses. Depending upon the light intensity of the subject, the flash sync speeds ($1/60 \sim 1/100$ sec.) and the aperture settings ($f/2.8 \sim f/11$ /ISO 100) will change automatically, making this highly suitable for daylight fill-in flash. (See page 16)

When the Lens Aperture Is Set Other Than at "A"

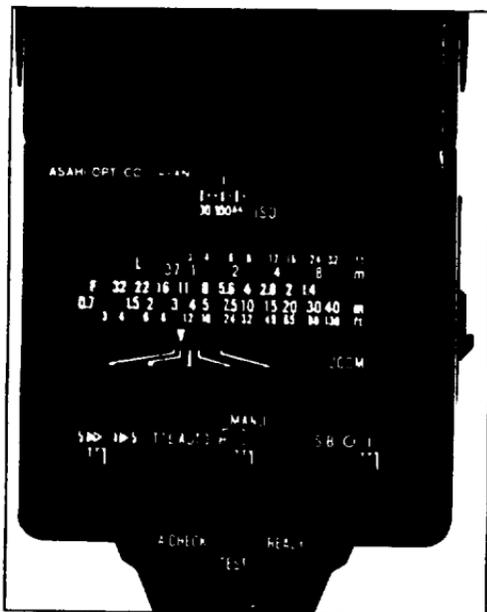
When you set the camera in the Aperture-Priority AE or Metered Manual mode, you have the command of TTL auto flash photography with the depth of field as the priority. Furthermore, in the Metered Manual mode, slow speed flash is also possible. (See page 20)

COMBINATION OF SFX/SF1 EXPOSURE MODES AND AF400FTZ

Camera's exposure mode	Flash's mode	Shutter speeds		Slow speed sync
		Trailing curtain sync	Leading curtain sync	
Programmed AE	TTL	1/60	1/60~1/100	X
Shutter-Priority AE	TTL	1/60	1/60~1/100	X
Aperture-Priority AE	TTL	1/60	1/60~1/100	X
Metered Manual	TTL/Manual	1/60 or slower	1/100 or slower	○
Bulb setting	TTL/Manual	B	B	X
X sync	TTL/Manual	1/60	1/100	X

The trailing curtain sync mode allows TTL Auto Flash photography.

MANUAL FLASH



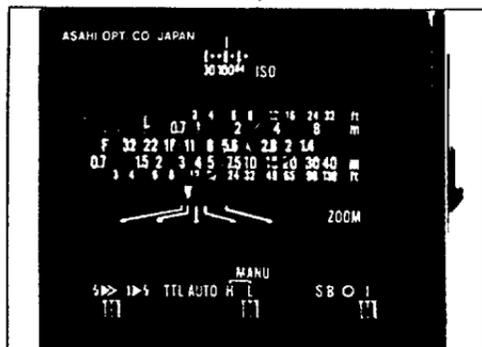
When the SFX/SF1 is set in the Metered Manual mode, you can control manual flash photography by adjusting the combination of the distance and the aperture. Slow speed flash is also possible in manual flash. There are two switchable flash light ranges (High and Low) with the L guide number corresponding to 1/4 of H.

With ISO 100

ZOOM SCALE	24	28	35	50	105
H	20	29	34	40	44
L	5	7.2	8.5	10	11

Switching "H" and "L"

1. Turn the switch to either MANU H or L.
2. From the calculator board, get the combination of the exposure distance and the aperture. For the H range, use the meters of the lower white scale, and the meters of the upper yellow scale for the L scale. For example, with a 50mm lens, ISO 100 and at a distance of 4m, set the lens aperture between $f/8$ and $f/11$ at the H range and between $f/2$ and $f/2.8$ at the L range.
3. Turn on the power, and as soon as the READY lamp is ON, you are ready to start shooting.



Guide Number (GN)

This indicates the flash light intensity. The larger this number, the farther you can reach with your flash. From this guide number, you can easily obtain the proper aperture number for the optimum exposure:

$$f \text{ No.} = \text{GN} \div \text{shooting distance (m)}$$

(GN 40 \div 5m = $f/8$)

DAYLIGHT SYNC FLASH

If you are photographing against light or a bright window behind your subject, your subject will be under-exposed and appear dark in pictures if you expose according to the camera's exposure system.

To compensate for this lack of exposure on your subject, your subject should be additionally illuminated to be balanced against the backlight. The daylight flash is used for this purpose, and the programmed flash is what you need.

- In a very bright spot, the flash may not fire. To make sure that the flash will fire, use manual flash mode.

Daylight sync flash used



Not used



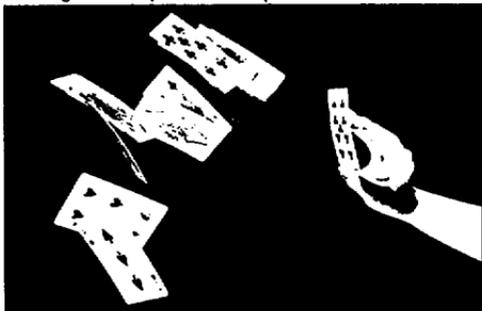
TRAILING CURTAIN SYNC FLASH

In normal electronic flash, the flash is fired at the instant of the completion of the travel of the first shutter curtain, and this is the leading curtain sync flash. In the trailing curtain sync flash, the flash is fired at the instant of the beginning of the travel of the second curtain, and this flash mode is very helpful in freezing moving subjects.

As you lightly press the shutter release, after turning the leading/trailing curtain sync switch to the trailing curtain sync, the trailing curtain sync lamp will be lighted. When pre-set in manual mode, it will be automatically changed to TTL auto flash.

- The built-in flash of SFX/SF1 does not have the trailing curtain sync mode, and does not co-work with the AF400FTZ.

Trailing curtain sync flash used

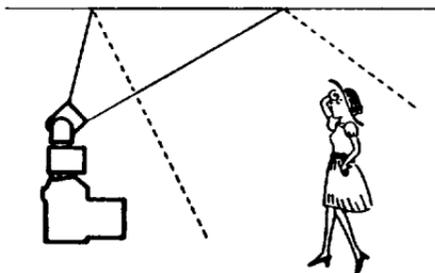


Leading curtain sync flash used



BOUNCE FLASH

Bounce flash, once reflected from a ceiling, wall or a piece of white paper, avoids harsh shadows and softens pictures. The bounce angle is click-adjustable for 45° 60° 75° 90° upwards, 30° 60° 90° to left and 30° 60° 90° 120° 150° 180° to right. Try to match the incident angle with the reflecting angle as illustrated.



TTL Auto Flash

Since the flash light reflected back from the subject varies depending upon the reflection of the subject, always try to check the TTL auto flash check lamp inside the viewfinder or on the flash unit.

Manual Flash Photography

Depending upon the reflection of the subject, open up the aperture a few stops from the calculated exposure setting.

- In color photography, use a white reflector. If the reflecting surface is colored, the photograph may be influenced with the same reflecting color. Bounce flash is a sophisticated photographic technique. Learn more about it from a photo guide book.

Bounce flash photo



Normal flash photo



TWIN-FLASH/SLOW-SPEED-SYNC PHOTOGRAPHY, ETC.

Twin Flash

Twin flash photography will be under your control with AF400FTZ in combination with the built-in flash of SFX/SF1.

A twin TTL auto flash will be very simple.

Slow Speed Sync Flash

A normal flash picture of a subject against a dark background will show the background as very dark. Slow shutter speed sync flash will somewhat brighten the background for a balanced photograph.

Continuous Flash Photography

In the manual L mode, fresh NiCd batteries will last for 40 continuous flash photographs at 1.8 frames per second.

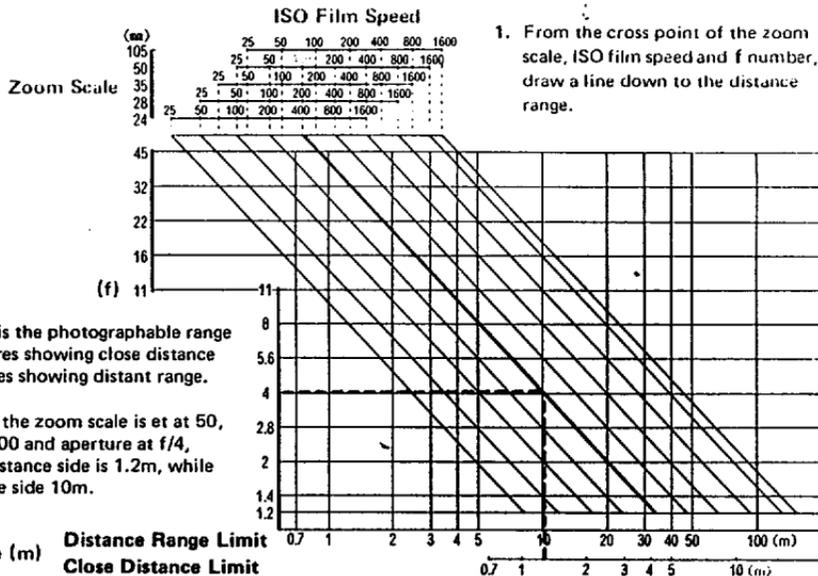
Open Flash Photography

When using an "open flash," with the shutter left open at the B setting, fire the flash with the TEST button. Remember to disconnect the flash from the camera body.

Diffused Flash Photography

In addition to bounce flash, diffused flash also softens pictures. Cover the flash head with a white handkerchief or piece of paper to diffuse the flash light. This is a valuable technique for close distance TTL flash.

PHOTOGRAPHABLE DISTANCE RANGE TABLE



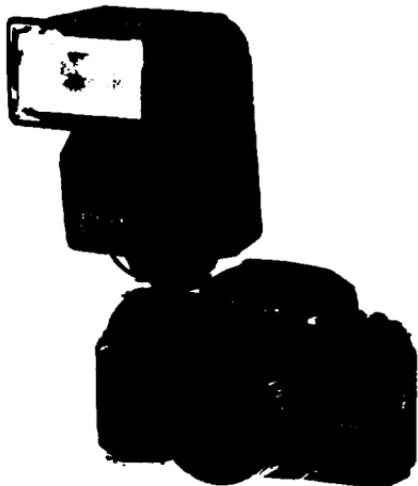
- From the cross point of the zoom scale, ISO film speed and f number, draw a line down to the distance range.

- The distance range is the photographable range with the lower figures showing close distance and the upper figures showing distant range.

For example, when the zoom scale is set at 50, film speed at ISO 100 and aperture at $f/4$, the limit of close distance side is 1.2m, while that of distant range side is 10m.

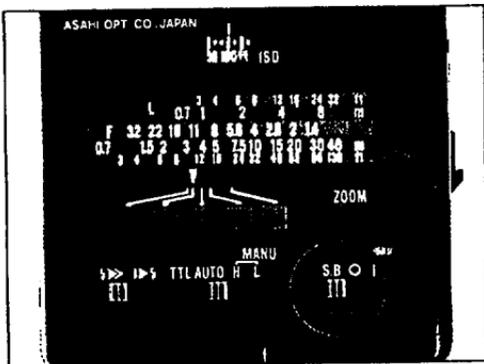
When the limit of close-distance side is nearer than 0.7m, the flash light does not properly hit the subject, so use the flash detached from the camera, using the Hot-Shoe Adapter F, etc.

AF SPOTBEAM



SFX/SF1 has a built-in spotbeam projector reaching up to 4 meters for focusing in the dark. AF400FTZ, on the other hand, has a more powerful near-infrared spotbeam projector reaching up to 6 meters. This spotbeam projector operates in the AF SINGLE mode.

With the AF400FTZ power switch turned on SB, you can use the camera exclusively as a spotbeam model for dim light environment. When using the flash in dark spots, the spotbeam will automatically fire depending upon the lighting, when the pilot light is on.



Using SFX/SF1 + AF400FTZ as a Spotbeam Model

1. Turn the AF400FTZ switch to SB. The power-OK lamp will be on.
2. Set the SFX/SF1's focus mode lever to AF SINGLE.
3. Lightly press the shutter release. As soon as the in-focus signal [] inside the viewfinder is on, you are ready to start shooting.
 - If the $\blacktriangleright \blacktriangleleft$ mark stays on for several seconds, it indicates that the subject cannot be correctly focused. In this case, you have to manually focus the lens.
 - When changing your scene to be photographed, naturally you have to re-press the shutter release for auto-focusing.
 - When using the AF400FTZ Spotbeam, the AF Spotbeam on the camera will not work.
 - The Spotbeam will work accurately only when the flash is mounted onto the camera's hot shoe.

SPECIFICATIONS

Type:	Clip-on type, serial-controlled, TTL auto zoom electronic flash.		
Guide Numbers:	H (Full) and L (1/16) ranges switchable		
	Focal Length	H (Full)	L (1/4)
	105mm	44	11
	50mm	40	10
	35mm	34	8.5
	28mm	29	7.2
	*24mm	20	5
	* (With wide angle adapter FWA)		
Flash Duration:	1/1000 sec. in manual H		
	1/2000 sec. in manual L		
(1/2 Peak)	1/3000 sec. at auto shortest discharge		
Flash Frequency & Recycling Time:	Power	Recycling Time	Frequency
	Alkaline battery	About 9 sec.	About 100
	NiCd battery	About 6 sec.	About 70
Continuous Discharge:	Approximately 40 flashes in L mode at 1.8 frames per second, with full-charged NiCd batteries.		
Flash Illumination Angles:	Focal Length	Vertical	Horizontal
	105mm	20°	28°
	50mm	34°	46°
	35mm	45°	60°
	28mm	53°	70°
	*24mm	60°	78°
	(* With FWA wide-angle adapter)		
Color Standard:	Daylight color (same as daylight color film)		
Auto Coupling Range:	0.7~6m (GN 34 / ISO 100 / 1/5.6)		
Spotbeam:	Measurable distance range: 1~6m when used with SFX/SF1 (per manufacturer's test environment).		

Bounce Flash Angle: Up: 0° 45° 60° 75° 90°
To Right: 0° 30° 60° 90° 120° 150° 180°
To Left: 0° 30° 60° 90°
(All click-adjustable)

Film Speeds: ISO25~1600

Dedicated Functions with SFX/SF1: Charge complete light / finder auto check / auto shutter speed change / slow shutter speed sync flash / 2nd curtain sync signal / AF spot-beam signal

Auto Power Off: Automatic power off after 5 minutes of switch-on.

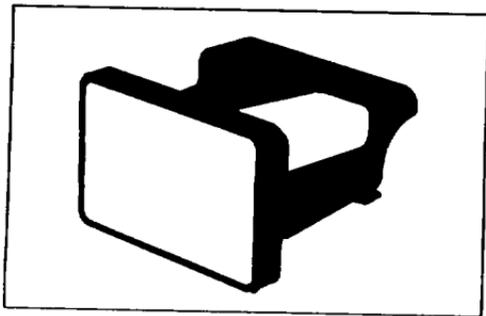
Power Source: Four "AA"-size alkaline or NiCd batteries

Size/Weight: 76mm (W) x 137mm (H) x 103mm (D) 385 grams (without batteries)

Accessories: Carrying case

Optional Accessory: Wide-angle adapter FWA

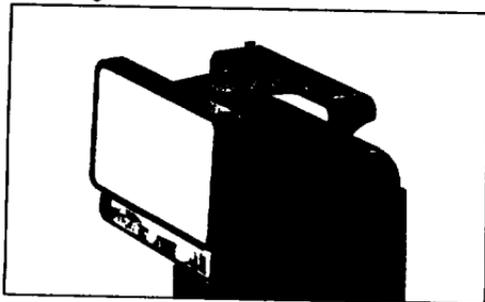
WIDE-ANGLE ADAPTER FWA



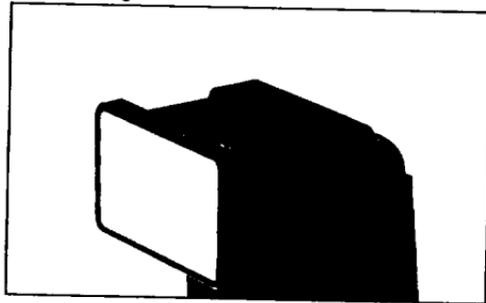
This adapter, available as an optional item, enables you to use the 24mm wide angle lens. With the zoom head moved to the 28mm setting, mount this on as illustrated. Push up the arrow part to remove it.

- When this adapter is mounted, the scale will not flicker as for other lenses.

Mounting



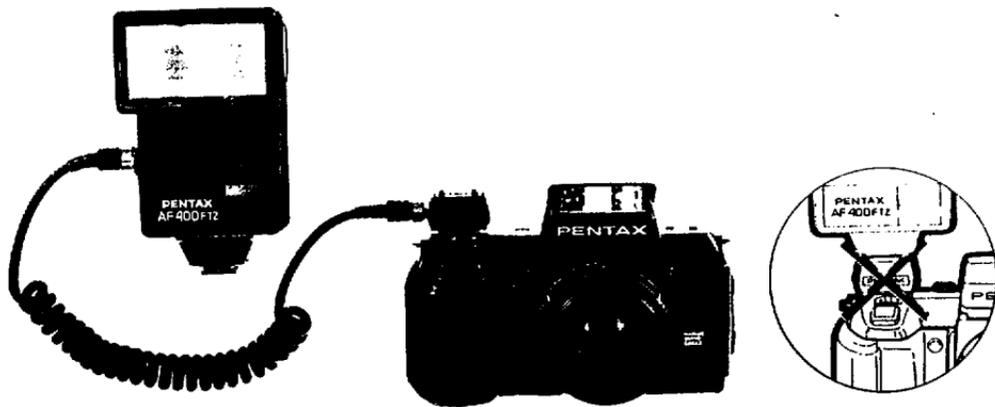
Dismounting



HOT-SHOE ADAPTER F AND SYNC CORD F

These two items are to be used in combination when using AF400FTZ detached from SFX/SF1. When using AF080C Ring-Light, mount this hot-shoe adapter onto the camera's hot shoe and then mount the control pack.

- Do not mount the AF400FTZ onto the hot shoe fixed atop SFX/SF1: it will not be steady. Use it detached from the camera body.



OPERATING CARE

- When using AF400FTZ detached from the camera body, do not try to attach any metallic object to the electric contacts or to mount any incompatible accessories. You may damage the TTL auto mechanism. **USE ONLY COMPATIBLE PENTAX ACCESSORIES.**
- There are high-voltage circuits inside the camera body. **IT'S DANGEROUS. NEVER TRY TO DISASSEMBLE THE CAMERA.**
- For smooth mounting/unmounting of the flash, hold the lower portion of the flash body, not the top part, and do not use force.
- When the flash unit or other accessories are dirty, clean it with a silicone cloth or a soft cloth. Do not use thinner oil, alcohol and ether.
- Keep the equipment away from vibration, high temperature and humidity.
- When close to the flash unit, do not look at the flash directly.

RED-EYE SYNDROME

In flash color photographs, people's eyes sometimes look red, and white in black-and-white pictures. This tends to happen when a person in a dark spot is looking directly at the flash. This depends upon the shooting distance, color of the eyes and the person's age. It is also believed that when the eye's iris is open, the blood vessels of the retina tend to reflect. To avoid this red-eye syndrome, try the following:

1. Lighten the place, or change the place, so that there will be enough light for reading a newspaper. In such an ambient light, the iris will close down.
2. Ask the person (to be photographed) to look not directly at the flash unit but outside of the flash.
3. Before shooting, ask the subject to look at a bright spot to keep his iris closed down.
4. This syndrome rarely happens with AF400FTZ, since its flash lamp has some distance away from the camera's taking lens.



Asahi Optical Co., Ltd. C.P.O. 895, Tokyo 100-91, JAPAN
Pentax Europe n.v. Weveldaan 3-5, 1930 Zaventem Zuid-7, 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 Spolveld 25, 4815 HR Breda, THE NETHERLANDS
Pentax Norge A.S. Cecilie Thoresens VE1 11, Lambertseter, NORWAY
Pentax Corporation 35 Inverness Drive East, Englewood, Colorado 80112, U.S.A.
Pentax Canada Inc. 3131 Universal 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