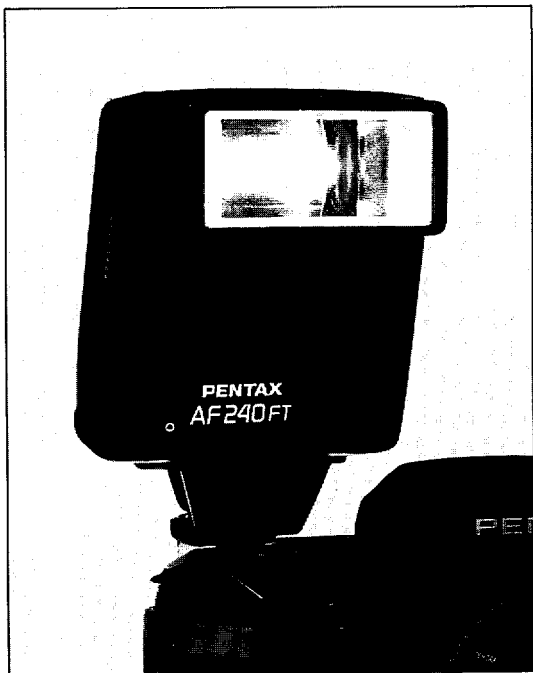


PENTAX®

AF 240FT

AUTOMATIC ELECTRONIC FLASH UNIT



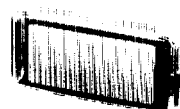
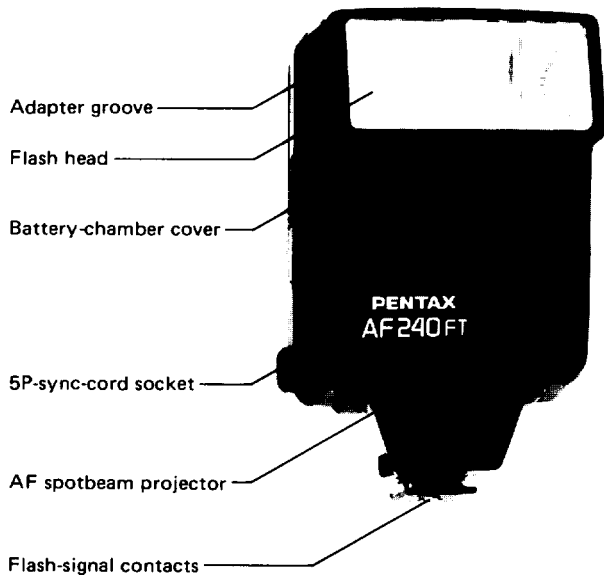
Specifically designed for use with the Pentax SFX/SF1 camera, the AF240FT is an excellent clip-on type flash unit with a Guide Number of 24 with ISO 100 film in meters, enabling you to perform daylight sync flash photography so easily in the TTL Auto Flash mode. Its unique, built-in AF Spotbeam Projector also enables you to focus even in the dark. Please read this manual carefully so that you can always operate the unit properly, making the most of the features and functions this flash unit has to offer.



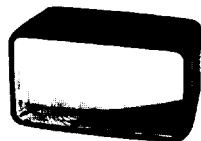
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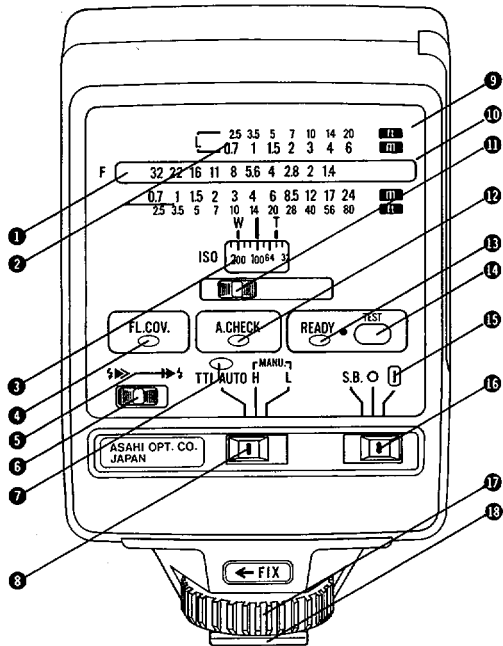
DESCRIPTION OF OPERATING PARTS



Wide-angle adapter FWB (optional)

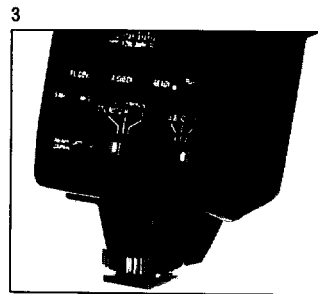
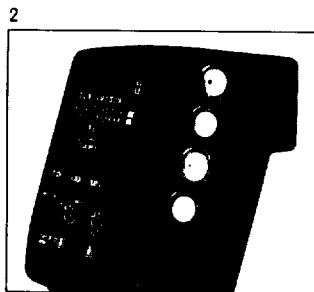
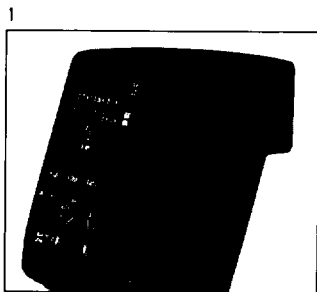


Telephoto adapter FT (optional)



- ① Aperture scale
- ② Distance scale
- ③ Film-speed scale
- ④ Flash-coverage-warning lamp
- ⑤ Trailing-curtain-sync lamp
- ⑥ Leading/trailing-curtain-sync switch
- ⑦ TTL lamp
- ⑧ Control switch
- ⑨ Control panel
- ⑩ Calculator board
- ⑪ Film-speed-set lever
- ⑫ TTL auto check lamp
- ⑬ READY lamp
- ⑭ TEST button
- ⑮ Power-OK lamp
- ⑯ Power switch/AF spotbeam switch
- ⑰ Fastening knob
- ⑱ Hot-shoe bracket

BATTERY LOADING



1. To open the battery-chamber cover, slide it in the direction of the arrow, as illustrated.
2. Insert four AA-size batteries into the battery chamber, with their (+) (-) sides placed correctly as shown inside the chamber, and replace 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.

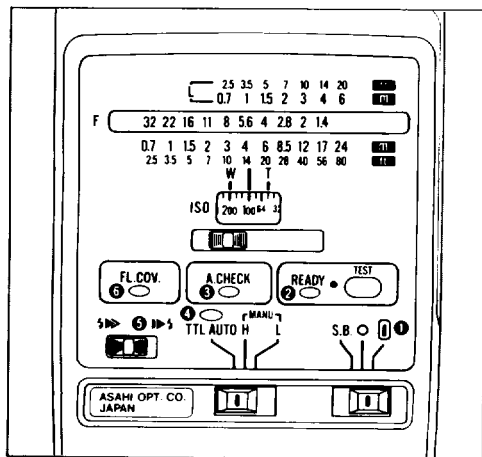
When the flash is mounted on the SFX/SF1, press the TEST button with the camera's main switch turned off. If the main switch is on, the flash will not fire.

BATTERIES

This flash unit is powered by four AA-size ALKALINE, MANGANESE or NI-CD batteries. (NiCd batteries need a charger available locally.) The flash recycle time is about eight seconds with fresh manganese batteries, about four seconds with alkaline batteries, and about three seconds with NiCd batteries. If it takes more than 30 seconds, the batteries should be replaced with the 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.

CONTROL PANEL DISPLAY



❶ POWER-OK LAMP

This will be ON when the power or the spot-beam (SB) is ON, indicating that the batteries are OK.

❷ READY LAMP

The READY lamp will be ON when the battery charge is complete a few seconds after the power switch-on, making the flash ready for firing. Try to start using the flash a few seconds after this light is turned on, instead of immediately thereafter.

❸ TTL AUTO CHECK LAMP (A. CHECK)

Same as the auto check lamp inside the viewfinder, this green lamp will be turned on for about 2 seconds when the flash light has properly reached the subject in TTL flash mode. (Page 11)

As you mount this flash unit onto the SFX/SF1 and lightly press the shutter button, various activating signals are sent out through the camera/flash contacts.

4 TTL AUTO LAMP

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

5 TRAILING CURTAIN SYNC LAMP [I ▶ S]

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)

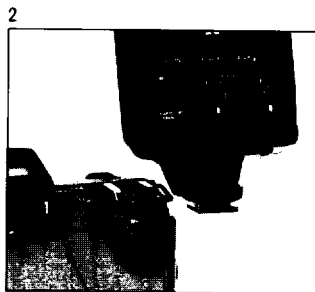
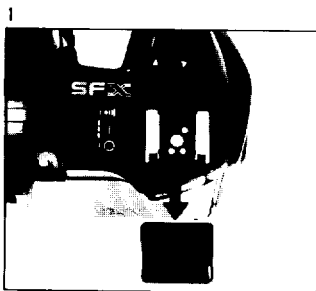
6 FLASH-COVERAGE WARNING LAMP (FL. COV.)

When a Pentax-F lens whose angle of view is wider than the flash-coverage angle of this unit, is used, this lamp flickers as a warning.

QUICK POWER-ON/AUTO POWER-OFF

When this flash 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



Mounting to camera body

1. Remove the hot-shoe cover on the SFX/SF1.
 2. Insert the hot-shoe bracket into the hot shoe, and tighten the fastening knob by turning it toward [←FIX]. To remove, take the reverse procedure.
- Be sure to hold the lower portion of the flash body when mounting or dismounting it.



Setting the calculator board

Film speed calibration (ISO)

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

W index = When the wide-angle adapter is used

T index = When the telephoto adapter is used

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

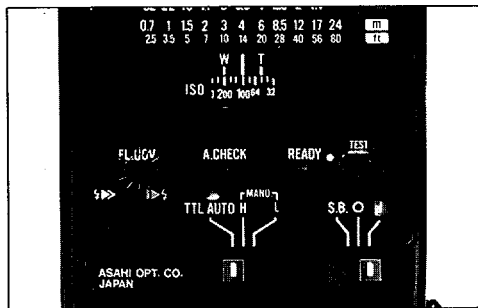
APPLICABLE LENSES AND FLASH-COVERAGE WARNING

Applicable lenses

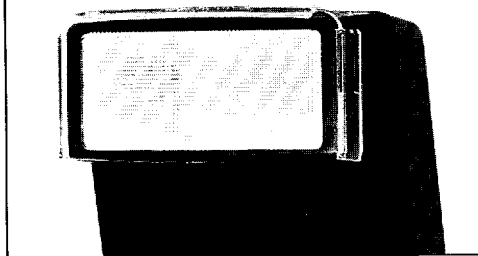
The flash-coverage angle of the AF240FT is wide enough to cover the angle of view of wide-angle lenses up to 35mm. When using a wider-angle lens of 28mm or a telephoto of 85mm or longer, combine the wide-angle adapter (FWB) or telephoto adapter (FT) available as optional accessories. (See Page 24)

Flash-coverage warning

When the angle of view of the Pentax-F lens used is wider than the flash-coverage angle, the flash-coverage warning lamp flickers as you depress the SFX/SF1's shutter button halfway down. If, regardless of the warning, the shutter is released, a picture with darkened corners or edge will be taken because the flash does not fully illuminate the entire picture area. In such a case, attach the wide-angle adapter or detach the telephoto adapter, or change the focal length of the lens in use (when, for example, using the 28mm focal length of the Pentax-F zoom lens without using the wide-angle adapter).



Wide-angle adapter (FWB) in use



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.

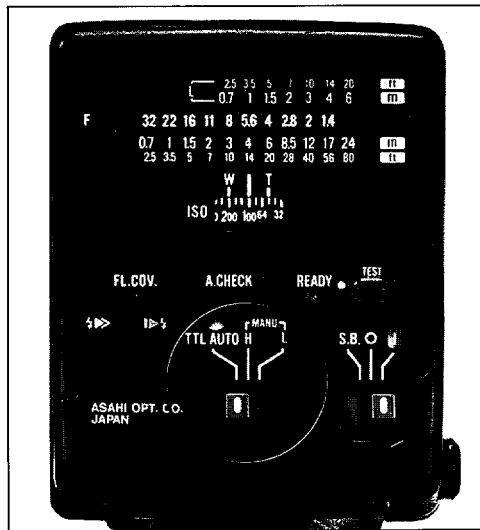
The TTL Auto Flash system measures the existing light coming in through the lens and falling on the film plane of the camera right up to the instant of exposure and automatically controls the light output of the flash unit. Since it measures only the light reflected from the subject, correct flash exposure is always assured.

Dedicated Functions with SFX/SF1

	TTL AUTO 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	○	X
AF spotbeam	○	○

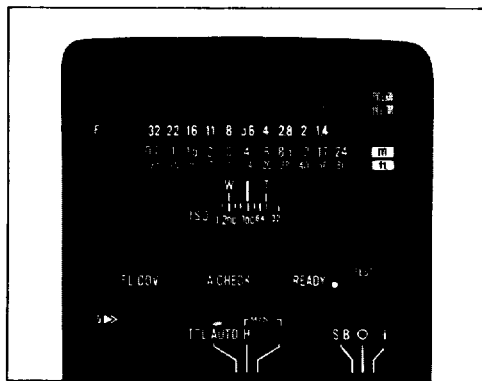
* Aperture and shutter speeds vary according to the brightness of subjects.

TTL AUTO FLASH



In combination with SFX/SF1, TTL auto flash is available within the film speed range of ISO 25~1600.

1. Turn on the camera's main switch.
2. Turn on the flash power.
3. Turn the switch lever to TTL AUTO. The TTL lamp will be lighted.
4. Set the leading/trailing curtain sync switch to the leading curtain sync [$\leftarrow \rightleftarrows$] or the trailing curtain sync [$\rightarrow \leftarrow$]. (Refer to page 17.)
5. Make sure that the READY lamp is on before taking pictures.
6. When a proper exposure has been made, the [$\leftarrow \rightleftarrows$] mark inside the finder will flicker several times and the A. CHECK lamp on the back of the flash unit will be on for about 2 seconds.
7. If these lamps are not lighted, the flash illumination was not sufficient. Get closer to the subject and/or change the aperture setting.
 - If, on the other hand, you are too close to the subject, you will not get proper exposure even though these lights will be on. Check the calculator board for proper exposure settings. (Page 12)



Determining Photographable Distance from Calculator Board

As shown above, when ISO 100 film is used and the aperture is set at f/4, the maximum photographable distance is 6 meters (20 ft.). Furthermore, the minimum photographable distance can be obtained by dividing the maximum photographable distance by 6, viz., $6\text{m} \div 6 = 1\text{ meter}$.

● Also refer to PHOTOGRAPHABLE DISTANCE RANGE TABLE on page 27.

When the Lens Aperture Is Set at "A"
 With the AF240FT 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 (1/60~1/100 sec.) and the aperture settings (f/2.8~f/11/ISO 100) will change automatically, making this highly suitable for daylight fill-in flash. (See page 16)

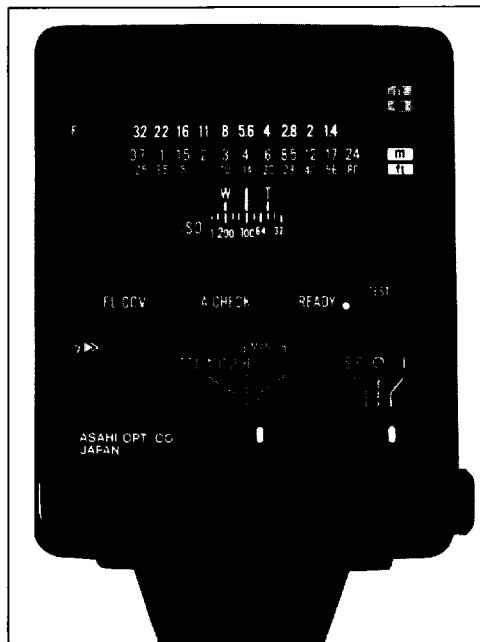
When the Lens Aperture Is Set Other Than at "A"
 When you set the camera in the Aperture-Priority AE or Metered Manual mode, you have the command of TTL auto flash photography with the depth of field as the priority. Furthermore, in the Metered Manual mode, slow speed flash is also possible. (See page 18)

COMBINATION OF SFX/SF1 EXPOSURE MODES AND AF240FT

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

- ※ Even when the flash is set in the Manual mode, it will automatically switch to TTL-Auto flash mode.
 ● In the case of Trailing Curtain Sync, even when the flash is set in the Manual mode, it will automatically switch to TTL-Auto flash mode.

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.

Guide Number Table (m)

ISO	50	100	200	400
H	17	24	34	48
L	4.2	6	8.5	12

Switching "H" and "L"

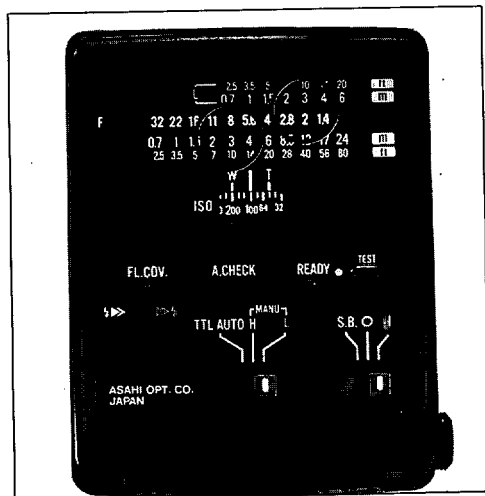
1. Turn the switch to either MANU H or L.
2. From the calculator board, get the combination of the exposure distance and the aperture. For the H range, use the meters of the lower white scale, and the meters of the upper yellow scale for the L scale. For example, with ISO 100 and at a distance of 4m, set the lens aperture to f/8 at the H range and f/2 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 24 \div 3m = 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 AF240FT.

Trailing curtain sync flash used



Leading curtain sync flash used



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

Twin Flash

Twin flash photography will be under your control with the AF240FT 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.

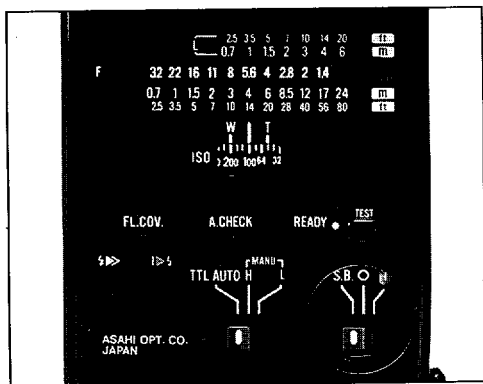


AF SPOTBEAM



SFX/SF1 has a built-in spotbeam projector reaching up to 4 meters for focusing in the dark. AF240FT, 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 AF240FT 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 + AF240FT as a Spotbeam Model

1. Turn the AF240FT 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 [\square] 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 AF240FT 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 electronic flash

Guide number: Two switchable steps of H and L
H24 L6 (ISO 100, m)
H48 L12 (ISO 400, m)

Flash duration (at 1/2 peak): About 1/2000 sec. at Manual H discharge; about 1/20000 sec. at Manual L discharge; about 1/30000 sec. at Auto shortest discharge

Flash frequency & Recycle time (at H discharge):

Power source	Recycle time	Flash frequency
Alkaline batteries	About 4 sec.	About 300
Manganese batteries	About 8 sec.	About 80
Ni-Cd batteries	About 3 sec.	About 120

(according to our own test conditions)

Continuous discharge: No less than 40 flashes in L mode at 1.8 fps., with full-charged Ni-Cd batteries

Flash-coverage angles: About 45° (vertical) and about 60° (horizontal); equivalent to the angle of view of 35mm-format 35mm wide-angle lens

Color standard: Daylight color

Auto coupling range: 0.7 – 4.3 meters (GN 24, ISO 100, f/5.6)

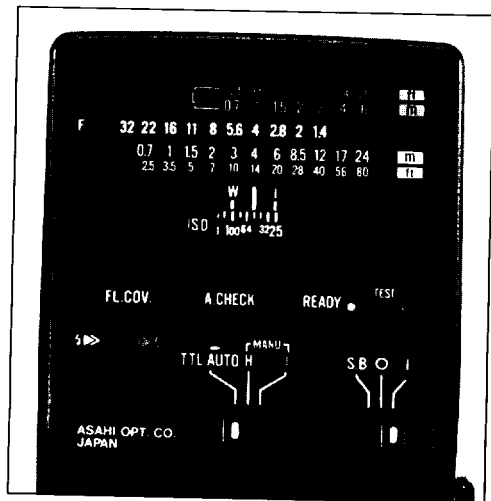
SFX/SF1-dedicated functions: Flash-ready indication, finder auto check, auto shutter-speed change, slow shutter speed sync flash/trailing curtain sync flash signals, AF spotbeam signal

Auto power-off: Automatic turn-off after 5 minutes of switch-on

Power quick-on: Slight pressure on shutter button after auto turn-off (with SFX/SF1)

Power source: Four AA-size batteries (alkaline, manganese or Ni-Cd)
Dimensions & weight: 72(W) x 114(H) x 74(D) mm; 210 grams less batteries
Standard accessory: Case
Optional accessories: Wide-angle adapter (FWB), telephoto adapter (FT)

HOW TO USE WIDE-ANGLE & TELEPHOTO ADAPTERS



Wide-angle adapter (FWB)

(Guide number H17 L4.2 ISO 100, m)

Telephoto adapter (FT)

(Guide number H34 L8.5 ISO 100, m)

To mount these adapters on the flash unit, just slide them into the adapter grooves on both sides of the flash head. The wide-angle adapter makes the flash illumination wider, and enables you to use a wide-angle lens up to 28mm with this flash. The telephoto adapter makes the illumination concentrate and intensify effectively enough to cover the photographable distance of telephoto lenses from 85mm to 200mm.

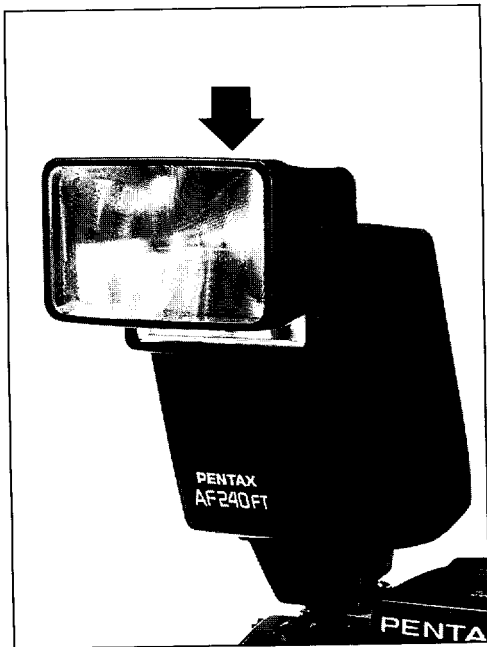
Using in TTL Auto Flash mode

To determine the photographable distance according to the aperture chosen, align the ISO number of the film in use with the white index (W = Wide-angle, T = Telephoto) of the adapter in use, as shown at left.

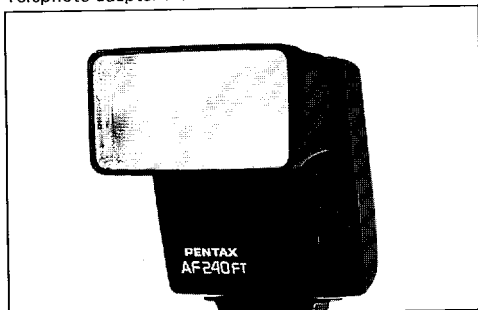
For example, when the FWB is used, you can shoot up to 3 meters with ISO 100 film and the aperture set at f/5.6. (The minimum photographable distance can approximately be obtained by dividing the maximum photographable distance by 6.)

Using in Manual mode

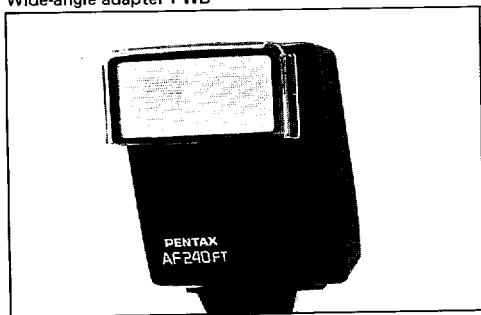
Just as you use the TTL Auto mode, align the ISO number of the film in use with the index of the adapter (W or T) in use.



Telephoto adapter FT



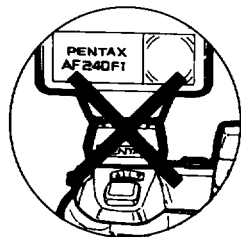
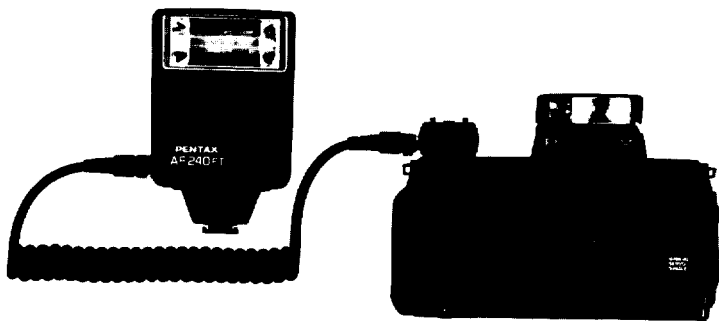
Wide-angle adapter FWB



HOT-SHOE ADAPTER F AND SYNC CORD F

When using the AF240FT away from the SFX/SF1, you should use both of these accessories in combination. Furthermore, when using the AF080C Ring-Lite flash, mount the hot-shoe adapter onto the camera's hot shoe, and then mount the control pack.

- Do not mount the flash onto the hot shoe fixed atop the SFX/SF1; for it will not be steady. Use the flash away from the camera.



PHOTOGRAPHABLE DISTANCE RANGE TABLE (TTL-coupled range)

(ISO100)

Aperture	0.7	1	1.5	2	3	4	6	8.5	12	17	24(m)
F1.2											
F1.4											
F2											
F2.8											
F4											
F5.6											
F8											
F11											
F16											
F22											

● When the minimum photographable distance is less than 0.7 m, the flash will not properly illuminate the subject. So use the flash away from the camera, using the hot-shoe adapter F and the sync cord F.

● When ISO 400 film is used, each distance in the table above is doubled. For example, when the aperture is f/4, the distance becomes about 2 – 12 m. When ISO 25 film is used, the distances are halved.

OPERATIONAL PRECAUTIONS

- When using AF240FT 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 flash unit. **IT'S DANGEROUS. NEVER TRY TO DISASSEMBLE THE UNIT.**
- 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 PHENOMENON

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 phenomenon, 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 close down.
4. This phenomenon rarely happens with AF240FT, since its flash lamp has some distance away from the camera's taking lens.



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