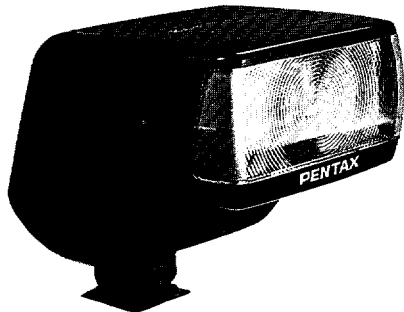


**PENTAX®**

# AF330FTZ

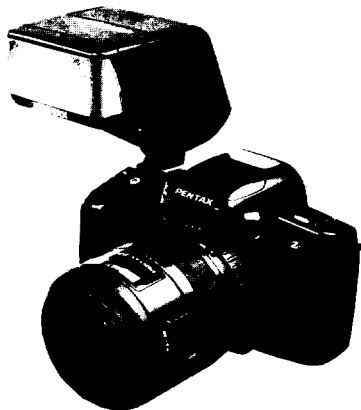
AUTO ZOOM ELECTRICAL FLASH UNIT

OPERATING MANUAL



Congratulations on your purchase of AF330FTZ Auto Zoom Flash Unit. Specifically designed for the KAF<sub>2</sub>- and KAF-mount cameras, this unit provides many features such as the TTL Auto Flash mode, the zoom flash head which can be adjusted automatically or manually, and the unique AF spotbeam projector that assists the camera's autofocus system in low light. Please read this manual carefully before using. This will help ensure that you operate this unit properly and are able to take advantage of the variety of features this flash has to offer.

\* For the purpose of this Operating Manual, the camera is referred to as the KAF<sub>2</sub>- or KAF-mount camera.

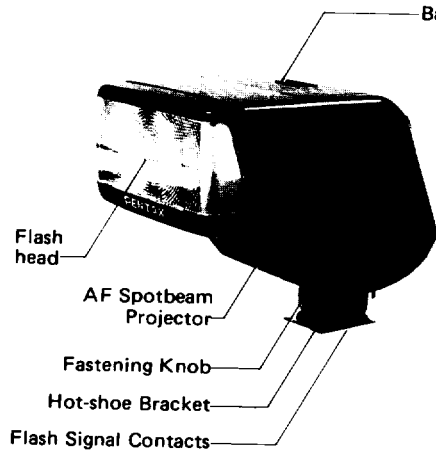


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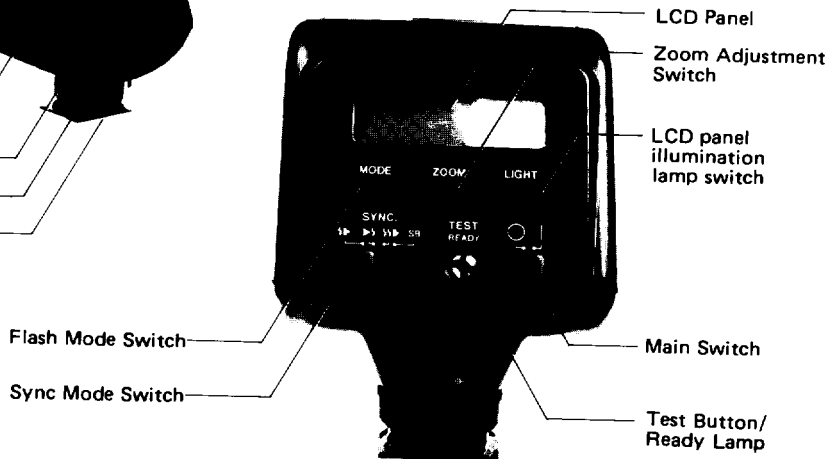
Description of Parts .....	2 ~ 3	Manual Flash .....	16 ~ 17
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# DESCRIPTION OF PARTS

## Mechanical Parts Name

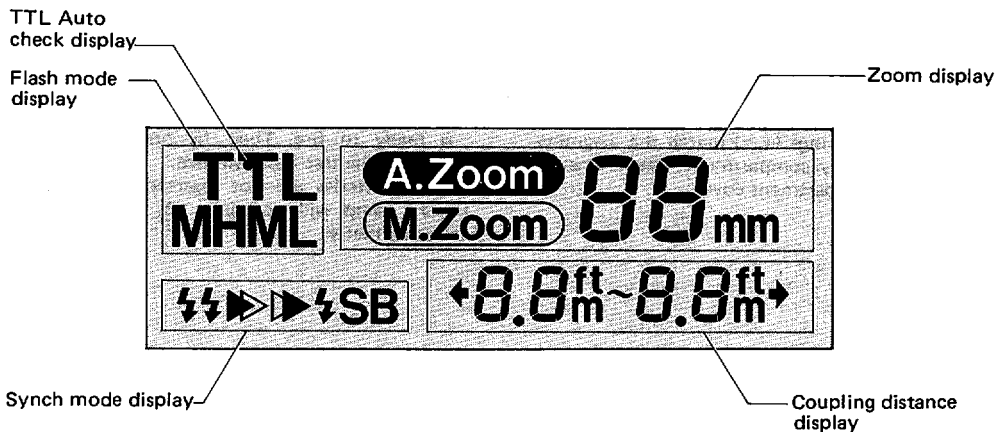


## Operating Section Parts Name

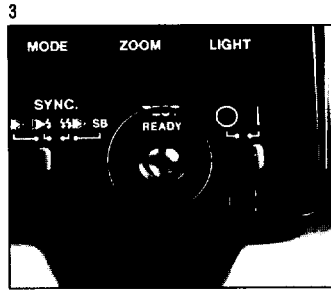
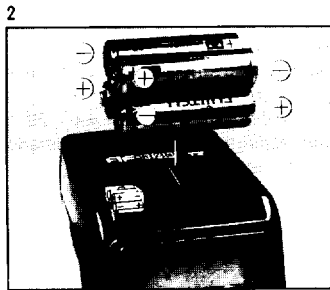


### LCD Display

- Flash Mode Display: [TTL] – [MH] – [ML]
- Sync Mode Display: [  $\llcorner$ ▶ ] = leading-shutter-curtain-sync – [ ▶▶ ] = trailing-shutter-curtain-sync – [  $\llcorner$ ▶▶ ] = Contrast control – [SB=spot beam]
- Zoom Display: [AZOOM xx mm] – [MZOOM xx mm] ~ xx = 28, 35, 50, 70, 85
- Coupling Distance Display: Minimum, Maximum, and Proper distance
- TTL Auto Check Lamp: Blinking [TTL] indication



## INSERTING THE BATTERIES



1. Slide the battery compartment cover as shown in the figure to remove it.
2. Insert four AA-size batteries, making sure the plus/minus markings (+, -) match the diagrams inside the battery compartment. Then, reinstall the battery compartment cover.
3. When the main switch is set to the [I] position, the Ready Lamp lights up in several seconds indicating that the flash has been charged and is ready to fire. Then, by pressing the Test Button, the test-flash will fire.
  - If the batteries are not inserted properly, the Ready Lamp will not light up. Insert the batteries correctly.

## BATTERIES

This flash unit operates on four AA-size alkaline or rechargeable Ni-Cd batteries as shown below. To charge the rechargeable Ni-Cd batteries, a Ni-Cd battery charger available on the market for AA-size batteries is required.

Alkaline battery:   LR6  
Ni-Cd battery:     KR-AA

The flash unit charges in approximately 6 seconds with brand new alkaline batteries, and 5 seconds with Ni-Cd batteries. If charging time takes more than 30 seconds, then the batteries are weak and should be replaced with new ones.

### Battery Precautions

- The shorter-life manganese batteries are not recommended for use as they provide a small number of flashes per set of batteries.
- Batteries must be properly loaded with the plus/minus (+, -) sides matching the indications in the battery compartment: failure to do so may cause the batteries to heat up, leak, and explode.
- If the Ready lamp does not light up as the power is turned on, check to see if the batteries are positioned correctly, or that new batteries are needed.
- Replace all batteries at the same time. Do not mix battery brands and types, or old batteries with new ones. Otherwise, overheating or fire might result.
- If you do not expect to use the unit for an extended period of time, remove the batteries from it. Old batteries are apt to leak and can cause damage to the unit.
- Battery performance may temporarily deteriorate in low temperatures. Batteries should be kept warm in extremely low temperatures to prevent deterioration in performance.

## OPERATING PANEL AND DISPLAY



As the AF330FTZ is mounted onto the camera and the shutter button is pressed halfway down, the contacts of camera and flash unit exchange information, allowing the dedicated functions to operate.

- 1 LCD Panel
- 2 Ready Lamp [READY]/Test Button [TEST]
- 3 LCD Panel Illumination Button (pressed to illuminate the LCD panel for about 10 seconds so that it may be seen in the dark. If pressed again, the illuminator will turn off.)

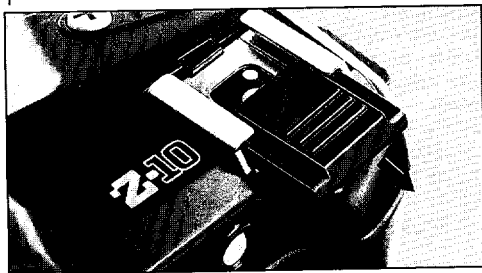
### Power Auto Off/Quick On Function

When the flash unit is left unused for about 3 minutes with the main switch set to the [I] position, its power automatically switches off to save on power. To restart charging of the flash unit, turn ON the power. If the flash unit is mounted on the camera, press the shutter release button lightly to turn ON the power.



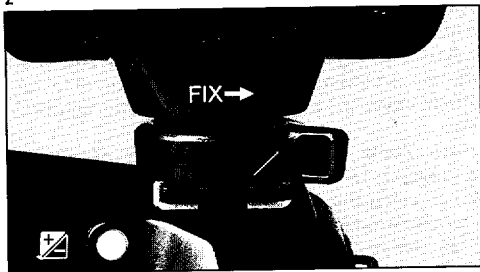
## MOUNTING TO CAMERA

1



1. Remove the hot shoe cover from the camera.
2. Slide the shoe bracket into the camera's hot shoe, then turn the fastening knob in the direction indicated by [FIX→] to secure it in place. To remove it, loosen the fastening knob and slide it off the camera.

2



- Turn the fastening knob in the opposite direction indicated by [FIX→] before sliding the shoe bracket into the camera's hot shoe.
- Mount or remove the flash unit to or from the camera's hot shoe while holding the portion near the shoe bracket to prevent damage to the hot shoe.

## ADJUSTING THE ZOOM HEAD (FLASH COVERAGE ANGLE)

### Adjusting the Zoom Head

The AF330FTZ features an auto mechanism to adjust the angle of discharge between 28mm and 85mm according to the focal length of a lens. Flash coverage angle can be manually controlled also.

### Auto Zoom (automatic adjustment of angle of discharge): [AZOOM]

When using the FA or F lens, flash coverage angle can be automatically controlled through the lens's focal length information being provided by the camera.

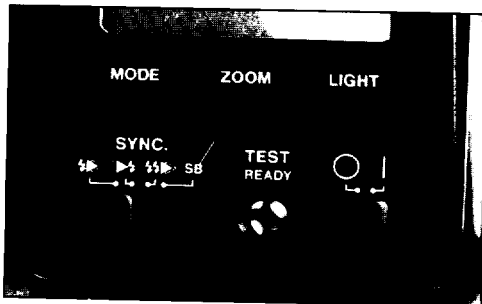
### Manual Zoom (setting the angle of discharge manually): [MZOOM]

When using the Pentax non-AF lenses, set the flash coverage angle manually.

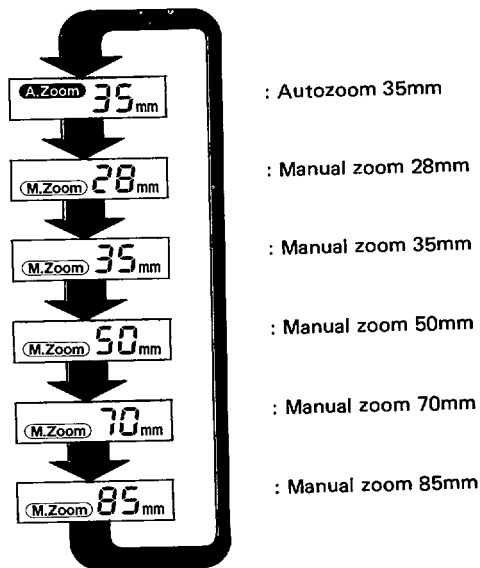
### Operation

Set the main switch to the [I] position. The indication on the LCD panel changes at each press of the zoom adjustment switch, as shown on next page.

- To set the auto zoom mode, press the zoom adjustment switch until the [AZOOM] appears on the LCD panel.
- To use the manual zoom mode, set the focal length to that of the lens in use or shorter.



## Order of LCD Indication



- When the main switch is set to the [I] position, the [AZOOM 35mm] is set.
- At the [AZOOM] setting, the flash head will automatically zoom when the shutter release button is pressed halfway down to turn ON the exposure meter.
- At the [AZOOM] setting, if FA or F lens with a focal length shorter than 28mm is used, the zoom head is positioned to the 28mm setting, causing the LCD indication to blink as an out-of-range warning.
- At the [AZOOM] setting, the flash head is set to the longest focal length setting of the lens in use that can be covered by the angle of discharge.
- At the [MZOOM] setting, if FA or F lens is used and the position manually set does not cover the lens focal length in use, the LCD indication will blink as an out-of-range warning.
- When you change the setting from the [MZOOM] to the [AZOOM] and the focal length information is not provided by the camera, the zoom head is positioned to the 35mm setting.

## DEDICATED FUNCTIONS WITH THE PENTAX CAMERAS

With the AF330FTZ mounted on Pentax cameras, the "dedicated" functions as shown in the table below work. When mounted onto non-KAF2- or KAF-mount cameras, the AF330FTZ works only in the manual mode. Dedicated functions are not possible.

### CAUTION

Mounting the AF330FTZ onto cameras made by other manufacturers may damage the circuitry of the camera or may result in malfunction because of incompatible flash contacts.

### TTL Auto Flash System

The TTL Auto Flash system measures existing light coming in through the lens and falling onto the film plane 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 ensured.

**Table of the Dedicated Functions**

	TTL Auto Flash	Manual Flash
Programmed TTL Flash*	○	×
Trailing-Curtain-Sync Flash	○	×
Slow-Speed-Sync Flash	○	○
Auto Switch to X shutter Speed	○	○
Flash Confirmation Signal through the Viewfinder	○	○
TTL Auto Check Confirmation Signal in the Viewfinder	○	×
AF Spotbeam	○	○

\* The aperture and shutter speed automatically vary according to the subject brightness.

## COMBINATION OF CAMERA'S EXPOSURE MODES AND AF330FTZ

Camera's exposure mode	Lens aperture	Flash mode	Shutter speed				Slow-speed-sync
			Leading-curtain sync		Trailing-curtain sync	Contrast-control	
			Z-10/PZ-10	SFX <sub>N</sub> /SF1 <sub>N</sub> (SFX/SF1 & SF7/SF10)			
Programmed AE* <sup>1</sup>	A	TTL	1/100	1/60·1/125 [100]	1/60	1/60	×
Shutter-Priority AE* <sup>1</sup>	A	TTL	/	1/60·1/125 [100]	1/60	1/60	×
Aperture-Priority AE* <sup>1</sup>	Manual f/stop	TTL	/	1/60·1/125 [100]	1/60	1/60	×
Metered Manual	Manual f-stop	TTL/Manual	1/100 or lower	1/125 [100] or lower	1/60 or lower	1/60 or lower* <sup>3</sup>	○
Bulb Exposure	Manual f-stop	TTL/Manual	B	B	B	B	×
X Sync* <sup>2</sup>	Manual f-stop	TTL/Manual	/	1/125 [100]	1/60	1/60	×

\*1 Even if the flash unit is set on Manual, TTL Auto Flash mode will be set automatically on the flash unit.

\*2 X Sync speed: SFX<sub>N</sub>/SF1<sub>N</sub>=M125, SFX/SF1=M100, SF7/SF10-Z-10/PZ-10: unusable

\*3 The shutter speed will be set to 1/60 with the Pentax cameras other than Pentax Z-series cameras regardless of the shutter speed indicated on the LCD panel.

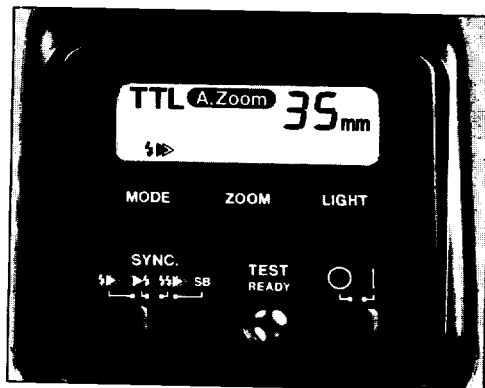
- In the Trailing-Shutter-Curtain Sync or Contrast-Control mode, even when the flash unit is set on Manual, TTL Auto Flash mode will be set automatically on the flash unit.
- If you move the switch to the Trailing-Shutter-Curtain Sync or Contrast-Control setting, these modes are not valid unless the shutter button is lightly pressed to turn ON the camera's exposure meter.

## TTL AUTO FLASH

With the AF330FTZ, TTL Auto Flash is possible with film speed ranging from ISO 25 to 1600.

### Procedure

1. Set the camera's main switch to the [I] position.
2. Set the flash's main switch to the [I] position.
3. Press the flash mode switch until the indication [TTL] displays on the LCD panel.
4. Set the sync mode select switch to the leading-shutter-curtain sync [↗].
5. When using an FA or F lens, set to the [AZOOM] mode. When using a non-FA or -F lens, set to the [MZOOM] mode by pressing the zoom adjustment switch.
6. Make sure that the Ready lamp lights up before taking pictures.
7. When a proper exposure has been made, the auto check confirmation signal appears. (the [↗] symbol blinks several times in the camera's viewfinder and the [TTL] in the LCD panel blinks for a few seconds.)

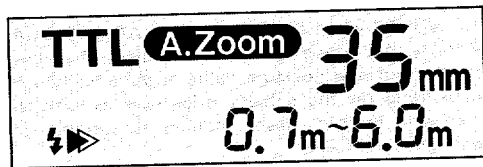


- When the main switch is turned ON, the [TTL] mode is automatically set on the flash unit.
- When the auto check confirmation signal does not appear, it indicates that the sufficient amount of light has not reflected from the subject. In this case, decrease the flash-to-subject distance.
- If the flash-to-subject distance is too close, proper exposure will not be obtained even if the auto check confirmation signal blinks. Check the LCD panel to see if you are within the flash effective range before shooting.

### Display of Flash Effective Range

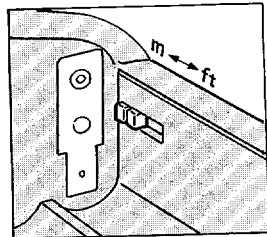
When the AF330FTZ is used in the TTL Auto mode, the minimum and maximum flash-to-subject distance parameters will be displayed on the LCD panel. Make sure that you are within the flash effective range before taking pictures.

- The flash effective range appears on the LCD panel only when used with the Z-series Pentax cameras.
- The flash effective range does not appear on the LCD panel of the Z-series cameras when used with the lenses, such as SMC PENTAX-M, which do not have the lens information contacts.
- The minimum distance displayed for the flash effective range on the LCD panel is 0.7m and the maximum one 30m.
- The flash effective range varies depending on the ISO film speed, lens aperture in use, and/or the zooming position (flash coverage angle). When using a zoom lens, keep in mind the maximum aperture of the zoom lens changes when the lens zooms in and out.



### Switching the Display between [m] (meter) and [ft] (feet)

You can change the display from [m] to [ft] or vice versa with the switch in the battery compartment. The factory installs the switch for a [m] display. Move the switch to the [ft] position for a [ft] display using the tweezers.



#### **When Using the "A" (AUTO) Lens Aperture**

Programmed TTL Auto Flash is possible with the AF330FTZ when the Programmed AE or Shutter-Priority AE mode is set on a camera. The flash sync speed and aperture value automatically vary depending on the subject brightness as with the camera's built-in flash, making it suitable for daylight sync flash.

#### **When Setting the Lens to a Manual f/stop**

When the Aperture-Priority AE or Metered Manual mode is set on the camera, TTL Auto Flash is possible with the desired aperture selected to control the depth-of-field. In Metered Manual exposure, slow-speed-sync flash is possible.

#### **Calculating the Flash Effective Range**

When setting the lens to a manual f/stop, calculate the guide number at FULL output strength with the use of flash's zooming position and film speed. Divide the resulting guide number by the aperture in use. Thus, the maximum distance is obtained. The minimum distance is obtained in dividing this max. distance by approx. 10.

Example: With ISO100 film and a 50mm lens at f/4

- 1) For the zoom position = 50mm, and film speed at ISO100, the guide number is 28.
  - 2) The aperture is f/4,  $28 \text{ (guide number)} / 4 \text{ (aperture)} = 7\text{m (max. distance)}$
  - 3)  $7\text{m (max. distance)} / 10 = 0.7\text{m (min. distance)}$
- Thus, flash effective range is approx. 0.7–7m.



## TTL Auto Flash Effective Range

ISO100

ISO400

Lens aperture	Zooming position					Zooming position				
	28mm	35mm	50mm	70mm	85mm	28mm	35mm	50mm	70mm	85mm
1.2	1.7~16.7	2.0~20.0	2.3~23.3	2.6~25.8	2.8~27.5	3.3~33.3	4.0~40.0	4.7~46.7	5.2~51.7	5.5~55.0
1.4	1.4~14.3	1.7~17.1	2.0~20.0	2.2~22.1	2.4~23.6	2.9~28.6	3.4~34.3	4.0~40.0	4.4~44.3	4.7~47.1
2	1.0~10.0	1.2~12.0	1.4~14.0	1.6~15.5	1.7~16.5	2.0~20.0	2.4~24.0	2.8~28.0	3.1~31.0	3.3~33.0
2.8	0.7~7.1	0.9~8.6	1.0~10.0	1.1~11.1	1.2~11.8	1.4~14.3	1.7~17.1	2.0~20.0	2.2~22.1	2.4~23.6
4	0.7~5.0	0.7~6.0	0.7~7.0	0.8~7.8	0.8~8.3	1.0~10.0	1.2~12.0	1.4~14.0	1.6~15.5	1.7~16.5
5.6	0.7~3.6	0.7~4.3	0.7~5.0	0.7~5.5	0.7~5.9	0.7~7.1	0.9~8.6	1.0~10.0	1.1~11.1	1.2~11.8
8	0.7~2.5	0.7~3.0	0.7~3.5	0.7~3.9	0.7~4.1	0.7~5.0	0.7~6.0	0.7~7.0	0.8~7.8	0.8~8.3
11	0.7~1.8	0.7~2.2	0.7~2.5	0.7~2.8	0.7~3.0	0.7~3.6	0.7~4.4	0.7~5.1	0.7~5.6	0.7~6.0
16	0.7~1.3	0.7~1.5	0.7~1.8	0.7~1.9	0.7~2.1	0.7~2.5	0.7~3.0	0.7~3.5	0.7~3.9	0.7~4.1
22	0.7~0.9	0.7~1.1	0.7~1.3	0.7~1.4	0.7~1.5	0.7~1.8	0.7~2.2	0.7~2.5	0.7~2.8	0.7~3.0
32		0.7~0.8	0.7~0.9	0.7~1.0	0.7~1.0	0.7~1.3	0.7~1.5	0.7~1.8	0.7~1.9	0.7~2.1

[Unit: m]

Table of guide number (at FULL output)

Film speed	Zooming position				
	28mm	35mm	50mm	70mm	85mm
ISO 50	14	17	20	22	23
ISO100	20	24	28	31	33
ISO200	28	34	40	44	46
ISO400	40	48	56	62	66

# MANUAL FLASH

When the Metered Manual mode is set on the camera, you can control manual flash by selecting the distance/aperture combination (if used on non-KAF2- or KAF-mount camera, the AF330FTZ flash unit only works in the Manual mode.)

In manual flash photography, slow-speed-sync flash is possible. There are two flash output ranges ([MH] and [ML]) with the [ML] guide number corresponding to 1/4 of [MH].

**Table of Guide Number With ISO100**

Flash Mode Switch \ Zoom position (mm)	28mm	35mm	50mm	70mm	85mm
MH[FULL]	20	24	28	31	33
ML[1/16]	5	6	7	7.8	8.3

**Table of Guide Number With ISO400**

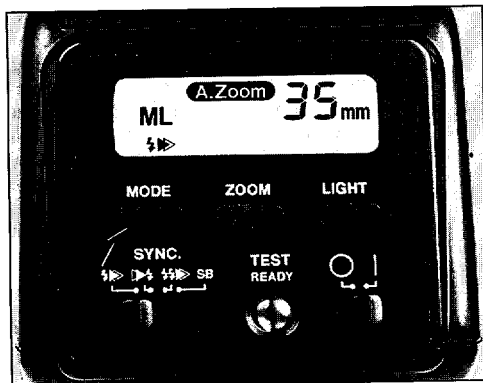
Flash Mode Switch \ Zoom position (mm)	28mm	35mm	50mm	70mm	85mm
MH[FULL]	40	48	56	62	66
ML[1/16]	10	12	14	16	17

## Shooting Procedure

1. Set the main switch to the [I] position.
2. Press the flash mode switch until the indication on the LCD panel displays the [MH] or [ML].
3. Adjust the zoom position according to the lens in use.
  - With the FA or F lens, setting to the [AZOOM] automatically adjusts the zoom position.
4. Find the right guide number listed in the table of guide numbers. Then, calculate the aperture based on the flash-to-subject distance.

Example: With the zoom position at 35mm, flash-to-subject distance 3m and the film speed ISO100

- 1) Find the guide number 24 from the table of guide numbers.
- 2) 24 (Guide Number) divided by 3 (flash-to-subject distance) gives 8 (aperture)
5. Set the lens to the calculated f-stop.
6. Make sure that the Ready Lamp lights up before firing the flash unit.



### Guide Number (GN)

Guide numbers indicate flash light intensity. The larger the number, the farther you can reach with your flash. From the guide number, you can easily obtain the proper aperture setting required for an optimum exposure.

Aperture [f-number] = GN/flash-to-subject distance [m]

Example: GN33/3m = f11

- The flash effective distance (approximate value) for the selected aperture will be displayed in the LCD panel of the Pentax Z-series cameras when using the lens with lens information contacts.

### Consecutive Flash Photography

When using the fully-charged Ni-Cd battery, the AF330FTZ with the flash mode switch set to [ML] allows the flash to be fired about 20 consecutive times at approx. 2 frames per second.

## DAYLIGHT SYNC FLASH

If you are photographing against light or the background is brighter than your subject, a backlit situation occurs. Under these conditions, your subject will be under-exposed and appear dark, due to the camera's exposure system. To compensate for this condition, your subject needs additional illumination to be balanced against the backlight. Using the Daylight Sync Flash in the Programmed TTL Auto Flash mode supplies the needed light for a beautifully balanced subject.

- The flash unit may not discharge if the subject is too bright to require a flash. If a flash is still desired, use the manual flash mode.

## TRAILING-SHUTTER-CURTAIN SYNC FLASH

In normal electronic flash photography, the flash fires at the instant the first shutter curtain completes its travel. This is referred to as the leading-shutter-curtain sync flash. In the trailing-shutter-curtain sync flash mode, the flash is fired at the instant the second curtain begins its travel. This mode will freeze the subject with a blur appearing before the subject under a slow shutter speed condition. Using a leading-shutter-curtain sync flash will freeze the subject with a blur appearing after the subject.

### Procedure

1. Set the main switch to the [I] position.
  2. Set the sync mode switch to the TRAILING CURTAIN [▶] position.
  3. Set the zoom position according to the lens in use.
  4. Confirm the Ready lamp lights up and then discharge the flash.
- With the trailing-shutter-curtain-sync flash, the [TTL] mode is automatically set.
  - With the trailing-shutter-curtain-sync flash, camera's built-in flash does not discharge.
  - When the camera's exposure meter is switched to ON, the trailing-shutter-curtain-sync mode will be automatically set on the flash unit.

## CONTRAST-CONTROL-SYNC FLASH

When the AF330FTZ is used in combination with the camera's built-in flash, twin flash photography is possible with the output ratio of the light intensity controlled. The ratio of flash light intensity between the built-in flash and the AF330FTZ flash unit is 1:2.

### Procedure

1. Set the main switch to the [I] position.
2. Set the sync mode switch to the Contrast-Control position [☐].
3. Adjust the zoom position according to the lens in use.
4. Make sure that the flash Ready lamp on the AF330FTZ lights up and camera's built-in flash is charged before releasing the shutter.



Contrast-control-sync flash



With a single flash

- Even if the TTL mode has not been set on the AF330FTZ flash unit, setting to the Contrast-Control mode automatically switches the flash to the TTL Auto Flash mode.
- When using the flash unit off-camera, use two optional Hot Shoe Adapter Fs and Extension Cord F 5P.

## AF SPOTBEAM

AF330FTZ features a built-in red spotbeam projector to assist the autofocus system in dim light and low-contrast conditions for subjects up to 6m. The AF spotbeam projector operates with camera set to the autofocus mode (AF SINGLE mode with SFX/SFX1 SFX<sub>N</sub>/SF1<sub>N</sub>). When using the flash in dark conditions, the spotbeam will be projected automatically depending on the ambient lighting conditions after the flash Ready lamp lights up. With the sync mode switch set to [S.B.], the AF330FTZ can be used exclusively as a focusing aid in dim light.

### Using the AF330FTZ Spotbeam Exclusively as a Focusing Aid

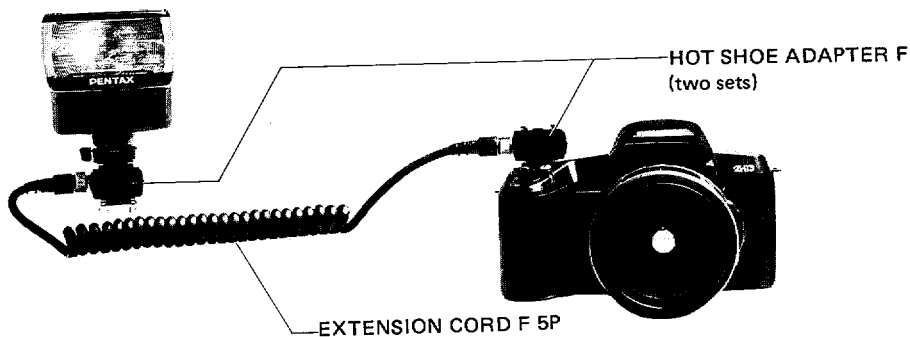
1. Set the main switch to the [I] position.
2. Set the sync mode switch to the [SB] position.
3. Set the camera to the autofocus mode (AF SINGLE mode on the SFX/SF1, SFX<sub>N</sub>/SF1<sub>N</sub>).
4. Press the shutter release button halfway down. The AF spotbeam will automatically be projected and the Focus Indicator in the viewfinder lights up indicating that you are ready to shoot.

- The AF spotbeam does not work in bright light conditions.
- If the FI [◇] does not light up in several seconds, it means that the subject is hard to autofocus. In this case, use the manual focus mode to focus on the subject.
- To change the composition, raise your finger off the shutter release button and press it halfway down again to recompose the picture.
- When using the AF330's built-in AF spotbeam, the AF spotbeam built into the SFX/SF1, SFX<sub>N</sub>/SF1<sub>N</sub>, or SF7/SF10 will not operate.
- The AF spotbeam on the flash unit works accurately only when mounted onto the camera's hot shoe.
- The flash does not fire when using the AF330 FTZ spotbeam exclusively as a focusing aid.

## HOT SHOE ADAPTER F/EXTENSION CORD F 5P

These accessories connect the AF330FTZ with your camera, enabling you to use the flash unit off the camera. The extension cord F 5P is a coiled cord 0.5m/20 in. long. When using the AF080C Ring Light unit, first mount the hot shoe adapter onto the camera's hot shoe and then the control pack to make it easier to operate your camera.

- Only use the mount on top of the Hot Shoe Adapter F for the AF080C Ring Light. Mounting the AF330FTZ or other flashes to this mount may result in damage due to it slipping off the Hot Shoe. Only use these flash units off the camera in conjunction with the Hot Shoe Adapter F.



# SPECIFICATIONS

**Type**

Clip-on type, serial-controlled TTL auto zoom electronic flash  
(MH) and (ML) ranges switchable

**Guide Numbers**

Focal length (zoom position)	85mm	70mm	50mm	35mm	28mm
(MH) (Manual High = FULL)	33	31	28	24	20
(ML) (Manual Low = 1:16)	8.3	7.8	7	6	5

With ISO100  
film

**Flash Duration (1/2 peak)** Approx. 1:2000 sec. in (MH) Approx. 1:20000 sec. in (ML)

Approx. 1:30000 sec. at minimum-distance discharge in (TTL)

**Flash Frequency  
& Recycling Time**

Power	Recycling Time	Frequency
Alkaline battery (LR6)	About 6 sec.	About 250
Ni-Cd battery (KR-AA)	About 5 sec.	About 80 in ((MH))

**Consecutive Discharge**

Approx. 20 flashes in (ML) mode at about 2 frames per second with fully-charged Ni-Cd batteries

**Flash Coverage Angle**  
(5-Step Zoom)

Zoom position	85mm	70mm	50mm	35mm	28mm
Vartical	23°	26°	34°	45°	53°
Horizontal	31°	36°	46°	60°	70°

**Color temperature**

Daylight color (ideally suited for daylight type color film)

**Auto Coupling Range**

Approx. 0.7-5m (GN28, ISO100, f 5.6)

**AF Spotbeam**

Red light will be projected onto the subject in low-contrast or in dim light.

**Film Speed**

Measurable distance range: Approx. 1-6m (according to Pentax testing conditions)  
ISO25-1600



**Dedicated functions with the camera:**

Flash ready lamp, Viewfinder auto check, Auto shutter speed change, Slow-speed-sync, Trailing-shutter-curtain sync, Contrast-control sync, AF spotbeam  
Auto Power Off: Automatic power-off after 3 min. without operation  
Auto Power Quick On: Automatic power-on by pressing the shutter release button halfway after auto power-off

**LCD Panel:**

Illuminated for about 10 sec. by pressing the illumination lamp switch. Turned off if depressed again.

**Power Source:**

Four "AA" size alkaline (LR6) or Ni-Cd battery (KR-AA)

**Size/Weight:**

70(W) x 87(H) x 102(D) (2.8") x (3.4") x (4.0") (without batteries)

Approx. 210 g (7.4 oz.)

**Accessories:**

Soft case

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

## OPERATING CARE

- When using the AF330FTZ off the camera, do not try to attach any metallic object to the electric contacts or to mount incompatible accessories. Otherwise, the TTL auto mechanism may be damaged or rendered inoperable. Use only compatible Pentax accessories.
- The circuitry inside the flash unit contains high voltage electronic parts. Never attempt to disassemble it.
- When mounting the flash unit to the camera's hot shoe, hold the portion near the hot shoe bracket to avoid damage to the hot shoe, and do not mount/dismount it by force.
- If the unit has not been used for an extended period of time, or is being readied for an important shoot, it is recommended that you take a test flash with the test button. Test flash is also important to maintain optimum performance.
- Shield the flash unit from salty air and water at the beach, splashing liquid of any kind, and rain. When the flash unit is subjected to rain or moisture, wipe it off with a clean cloth moistened with a mild detergent solution.
- Avoid storing the flash unit in places where temperature and humidity are high, such as in a car or near appliances which produce heat and/or mechanical vibration.
- When firing a flash in close proximity to the subject, try not to fire the flash directly into the subject's eyes.

## RED-EYE PHENOMENON IN FLASH SHOOTING

When shooting portraits with the AF330FTZ and color film, subject's eyes may appear red (white in the black and white films). This phenomenon often occurs in low light surroundings and is caused by the reflection of electronic flash in the retina, and is partly dependent on the flash-to-subject distance, and/or color of the subjects' eyes and age.

Use the following methods to minimize the red-eye phenomenon.

1. Brighten the surroundings to such an extent as required for reading a book.
2. Have your subject look at a brighter spot before shooting. This causes the irises of the eye to close down (contract).
3. Use a wide-angle lens to decrease the flash-to-subject distance.
4. Use the Hot Shoe Adapter F and Extension Cord F to increase the distance between the camera and flash unit.

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