



PROMATIC®

FTD 4500AF

OPERATING INSTRUCTIONS

**FULLY DEDICATED THYRISTOR
ELECTRONIC FLASH UNIT
WITH AF ILLUMINATOR**

• TWIN FLASH • BOUNCE • SWIVEL • ZOOM

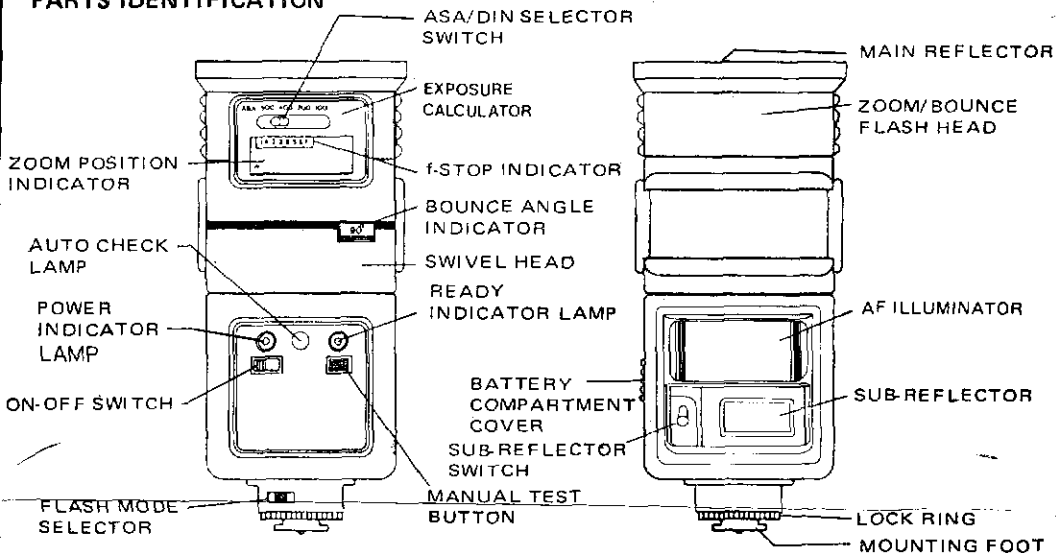
FLASH DEDICATION

- **ML** unit is for MINOLTA MAXXUM 7000, 9000, 5000.
- **NK** unit is for NIKON N2020/F501, N4004/F401
- **CN** unit is for CANON EOS 650, EOS 620
- **YS** unit is for YASHICA 230AF

NOTES:

- (1) This flash unit is to fit autofocus cameras, but it can also be used on other non-autofocus models of dedicated cameras for TTL autoflash and manual flash operation.
- (2) As different models of cameras operate differently for flash photography, you should read the instructions manual of your camera for details of flash operation or flash photography.

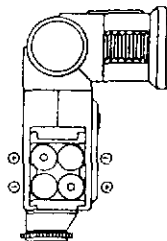
PARTS IDENTIFICATION



BATTERY OPERATION

- i. Open the battery Compartment cover.
- ii. Insert four 1.5V penlight batteries following the (+) (-) signs as indicated inside and replace the cover.

- FOR BEST RESULTS USE ALKALINE BATTERIES
- USE FRESH BATTERIES REGULARLY
- THE BATTERIES SHOULD BE INSERTED IN CORRECT POSITION



AF ILLUMINATOR FOR AUTOFOCUSING

When the camera's operating button is pressed halfway, the AF illuminator is automatically activated when required, with low-contrast subjects in low light. This illumination enables the camera's autofocus system to determine focus status and adjust the lens.

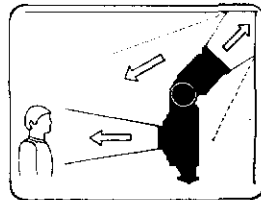
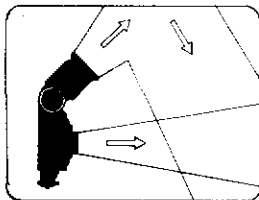
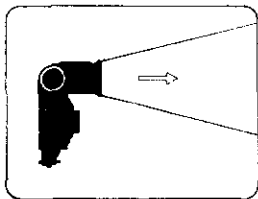
The AF Illuminator enables autofocusing with subjects up to about 16 feet away. This distance is for autofocusing only, when focusing manually, flash photograph is possible up to about 80 feet, when using ASA 100 and F1.4 aperture (please refer TTL Auto Flash range table).

NOTE: The working range for the AF Illuminator is based on standard test method with a 50 MM lens. If longer focal lengths are used, the camera may not focus lens accurately. In this case or whenever focus signals blink, set focus mode of the camera switch to M and focus lens manually.

DUAL FLASH LIGHTS

you can enjoy dual flash lights with the sub-reflector. Slide the sub-reflector switch to "1" position. Dual flash lights — from the main and sub-reflectors will give you a variety of flash techniques as illustrated, if you do not want to use the sub-reflector, slide the sub-reflector switch to "0" position.

It is recommended to operate double flashes with sub-reflector switch ON for bounce flash operation. Single flash with sub-reflector switch OFF is desirable for direct straight flash.



TTL AUTO FLASH OPERATION

This flash unit provides automatic Through-The-Lens (TTL) control of the flash exposure when used with dedicated cameras which have TTL Auto Flash Metering feature.

This auto mode permits you to use any lens aperture within the flash unit's operating range to enable you to have greater control over depth of field. The larger the aperture (the smaller the f-number) you select, the greater the maximum shooting distance (the less the depth of field but the shorter the recycling time between shots). On the other hand, the smaller the aperture (the greater the f-number) you select, the less the maximum shooting distance (the greater the depth of field but the longer the recycling time).

Therefore, in selecting an aperture, all three factors — maximum shooting distance, depth of field and flash recycling time should be taken into consideration.

(* *Please note that when demonstrating TTL Auto Flash function there must be film inside the camera)

TTL AUTO FLASH RANGE:

ASA FILM IN USE				ZOOM FLASH HEAD POSITION			
100	200	400	1000	W+DIFFUSER	WIDE	NORMAL	TELE
1.4	2	2.8	4	7 - 38 Ft	7 - 62 Ft	10 - 71 Ft	12 - 81 Ft
2	2.8	4	5.6	6 - 27 Ft	6 - 43 Ft	8 - 50 Ft	10 - 56 Ft
2.8	4	5.6	8	5 - 19 Ft	5 - 31 Ft	7 - 35 Ft	9 - 40 Ft
4	5.6	8	11	4 - 13 Ft	4 - 22 Ft	5 - 25 Ft	6 - 28 Ft
5.6	8	11	16	2.5 - 10 Ft	2.5 - 16 Ft	3 - 18 Ft	5 - 20 Ft
8	11	16	22	2.5 - 7 Ft	2.5 - 11 Ft	3 - 12 Ft	5 - 14 Ft
11	16	22		2 - 5 Ft	2 - 8 Ft	2.5 - 9 Ft	4 - 10 Ft
16	22			2 - 3 Ft	2 - 5 Ft	2.5 - 6 Ft	4 - 7 Ft
22				2 - 2.5 Ft	2 - 4 Ft	2.5 - 4 Ft	4 - 5 Ft

The TTL Automatic mode of this flash unit balances the exposure between the main subject illuminated by the flash and the background in ambient light, whenever possible. Thus, this TTL mode can be used under conditons ranging from total darkness to fill-in flash.

AUTO POWER-OFF

A battery saving automatic ON-OFF circuit is incorporated in this unit. The power indicator red LED lamp extinguishes to show the battery power is switched off. The flash unit will remain ready to fire as long as the 'ready' indicator 'ON'. If you fire the flash at any time, battery power is automatically re-connected and the power indicator lights up again. If the period between flash operations is over 10 minutes, it is recommended to re-connect the battery power by switching OFF and then ON again to ensure the flash unit is fully charged. If the battery power is too weak, the power indicator extinguishes before the 'ready' indicator lights up, this means that the flash unit needs fresh batteries.

AUTO CHECK LAMP

In TTL auto flash mode, if exposure was sufficient, the auto check lamp on the flash glows

USING THE EXPOSURE CALCULATOR

(a) At TTL Auto Operation for Dedicated TTL Cameras

- (1) Set INDEX line of the ASA/DIN film Selector Switch to the ASA/DIN speed of the film in use.
- (2) Focus on your subject and note the flash to subject distance.
- (3) Locate the lens aperture you wish to use for TTL Auto Operation and read the distance opposite this selected aperture to check whether the flash to subject distance is within auto range. If it is, set the aperture on your camera.

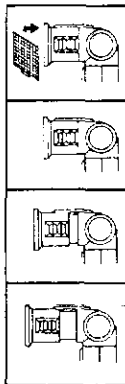
(b) At Manual Flash Operation

- (1) Set INDEX line of the ASA/DIN Selector Switch to the ASA/DIN speed of the film in use.
- (2) Focus on your subject and note the flash to subject distance. Locate this distance on the distance scale.
- (3) Read the aperture opposite this distance and set the f-number on your camera.

ZOOM OPERATION

The lighting angle mechanism built into this flash unit allows selection of 3 preset lighting angles by just pulling or pushing the zoom flash head. The guide number changes in relation to the angle. Determine the best angle for flashing in relation to the focal length of the lens used.

Zoom position indicator	Lighting angle (with 35mm lens camera)	Guide number	
		ASA100/Ft	ASA400/Ft
W+Diffuser (28)	38mm lens cover (vertical 53°) (horizontal 70°)	53	106
W (35)	35mm lens cover (vertical 45°) (horizontal 60°)	86	172
N (50)	50mm lens cover (vertical 34°) (horizontal 46°)	99	198
T (85)	85mm lens cover (vertical 23°) (horizontal 31°)	113	226



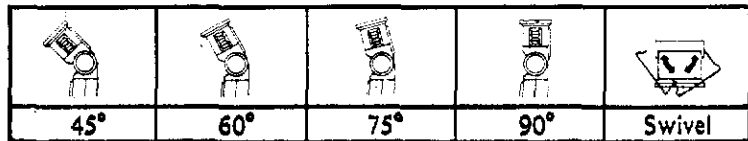
BOUNCE PHOTOGRAPHY

The convenience of automatic operation can be applied to bounce lighting which involves "Bouncing" the light off a ceiling or other reflective surfaces to obtain soft illumination.

The auto mode can be used for bounce lighting (it is recommended to operate your flash in auto mode for bounce flash.)

After determining the position of your subject, adjust the bounce angle. (The flash head is variable from 0°, 45°, 60°, 75° and 90° as desired) If necessary you can tilt the swivel flash head in horizontal direction by 180° to the right and 150° to the left.

When using bounce lighting, it is advisable to use a high speed film (ASA400)



SPECIFICATIONS

Power Source:	Four 1.5V size AA Alkaline Batteries
Recycling Time:	Automatic: 0.3 – 10 sec Manual : 6 – 10 sec
Battery Life:	Approx. 100-700 flashes (Depends on the type of batteries and flash distance)
Flash Duration:	Automatic 1/30,000 to 1/1000 sec Manual 1/1000 sec
Sensor Measuring Angle:	20°

Angle of Illumination:

Zoom Flash Head Position	Focal Length		
	Coverage	Horizontal	Vertical
Wide + Diffuser	28 mm	70°	53°
Wide	35 mm	60°	45°
Normal	50 mm	46°	34°
Tele	85 mm	31°	23°

OUTPUT: 2400 BCPS

Guide Number table (in Feet) for Main Flash Only.

Zoom head position	ASA 25	ASA 50/64	ASA 100	ASA 200	ASA 400	ASA 1000
Wide + Diffuser	27	37	53	74	106	169
Wide	43	60	86	120	172	271
Normal	50	70	99	140	198	311
Tele	56	80	113	160	226	350

Guide Number table (in Feet) for dual flashes

Zoom head position	ASA 25	ASA 50/64	ASA 100	ASA 200	ASA 400	ASA 1000
Wide + Diffuser	23	32	46	64	92	144
Wide	36	51	72	102	144	230
Normal	43	60	86	120	172	265
Tele	48	68	96	136	192	298

The Guide Number when at 1/16 power is 1/4 of the above

AF ILLUMINATOR :

The illuminator is automatically activated for autofocus when required, with low-contrast subjects in low light. The range is up to about 16 feet, based on standard test method with 50 mm lens.

- Colour Temperature: Same as sunlight during day
- Bounce Angle: $0^{\circ} - 90^{\circ}$
(Click Stop : $0^{\circ}, 45^{\circ}, 60^{\circ}, 75^{\circ}$ and 90°)
- Swivel Angle: $0^{\circ} - 180^{\circ}$
(Click Stop : Right $0^{\circ}, 30^{\circ}, 60^{\circ}, 90^{\circ}, 120^{\circ}, 150^{\circ}$
Left $0^{\circ}, 30^{\circ}, 60^{\circ}, 90^{\circ}, 120^{\circ}, 150^{\circ}, 180^{\circ}$)
- Weight: 310 Gm (approx.)
(without batteries)
- Size: 76 (W) x 54 (D) x 170 (H) mm

The above specifications are subject to change without notice.

PROGRAMMED MODE TTL AUTO FLASH OPERATION

1. Set the camera's Mode to a 'PROGRAM' exposure mode and set the flash unit's Mode to 'TTL' position.
2. When the flash unit is ready to fire, the ready signal LED 'X-sync.' speed will appear in the viewfinder and the shutter speed of the camera is set to this 'X' speed automatically. The camera will also automatically select the optimum aperture.
3. Press camera's operating button halfway to autofocus. To hold focus, keep the operating button pressed halfway. When focus signals in the viewfinder blink, set focus mode of the camera switch to M and focus lens manually.

- NOTES:
- (a) Make sure that the subject is within the autoflash range of the programmed aperture (please refer to the TTL Auto Flash Range Table)
 - (b) With NIKON N2020/N4004 (with NIKKOR lenses), set and lock lens aperture at minimum aperture (largest f-number)
 - (c) When used with MINOLTA MAXXUM 7000 set to shutter-priority (S) mode, operation will be the same as in program P-mode
 - (d) When used with CANON EOS set to the depth-of-field mode with the flash ON, the mode is automatically switched to the Program mode.

TTL APERTURE-PRIORITY MODE AUTO FLASH OPERATION

1. Set the camera's Mode to 'A' auto exposure mode and set the flash unit's mode to 'TTL' position.
2. Set the lens aperture you wish to use.
3. Focus on your main subject and refer to the Exposure Calculator to check that the subject is within the autoflash range of the aperture selected. If not, move closer or use a larger aperture. (Please refer to the TTL auto flash range table).
4. When the flash unit is ready to fire, the ready signal LED 'X-sync.' speed will appear in the viewfinder and the shutter speed of the camera is set to this 'X' speed automatically.

NOTE: When used with CANON EOS, if a smaller aperture is set in the dark or low light conditions, the automatically-set shutter speed will be comparatively slow. Please be careful of camera-shake and use a tripod. The camera-shake warning does not sound when the flash is turned on.

MANUAL MODE TTL AUTO FLASH OPERATION

For back-lit subjects or in low light, slower X-sync. speeds can be set to increase background exposure while maintaining normal exposure of the main subject i.e. to fill in shadows and balance lighting.

1. Set the camera's mode to 'M' manual mode and set the flash unit's mode to 'TTL' position.
2. Set the camera shutter speed manually to a flash X-sync. speed or slower speed and the lens aperture you wish to use.
3. Focus on your main subject and refer to the exposure calculator to check the subject is within the autoflash range of the aperture selected. (Please refer to the TTL autoflash range table)

SHUTTER-PRIORITY TTL AUTO MODE

With the MINOLTA MAXXUM 9000 in shutter-priority S-Mode and the flash unit in 'TTL' mode, any shutter speed from 1/250 to 30 sec. can be set and aperture is set automatically to F5.6. TTL autoflash metering controls exposure based on this aperture setting.

With the CANON EOS 650/620 in Shutter-Priority AE TTL mode and the flash unit in 'TTL' mode, the X-sync. shutter speed can be set between 1/250 sec. to 30 sec. with the EOS 620 and between 1/125 sec. to 30 sec. with the EOS 650. The aperture is set automatically.

MANUAL FLASH OPERATION

1. Set the camera's mode to 'M' manual mode and set the flash unit's mode to 'M' position.
2. Manually set the camera shutter speed to a flash X-sync speed.
3. Focus on your subject and note the flash-to-subject distance. Using the exposure calculator to find the proper lens aperture (Please refer to "USING THE EXPOSURE CALCULATOR")
4. Set this aperture on your camera.

CALCULATION OF F-Number without use of the exposure calculator:

$$\text{F-Number} = \frac{\text{Guide Number}}{\text{Distance}}$$

LOWER POWER MANUAL FLASH

At Manual Flash Operation, you can set the flash unit's Mode Selector Switch to '1/16' power position, which will give you faster recycling time and more number of flashes. It is useful for close-up works and the shooting with motor-drive film winder (up to 2 frames per second). Guide number at this lower power setting is 1/4 of the full power guide number (please see Guide Number Table).