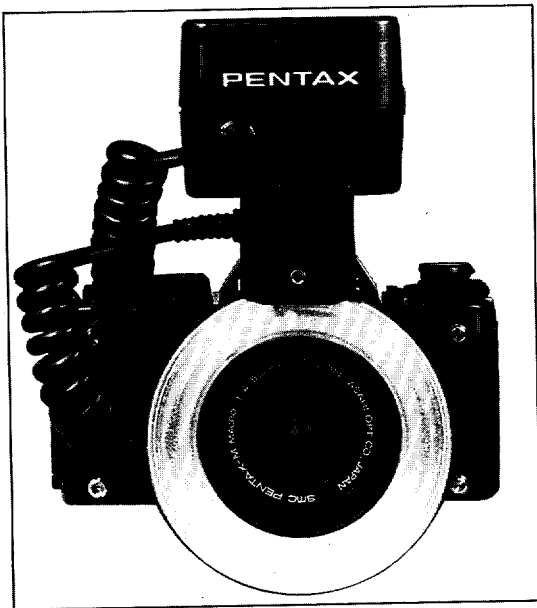


**PENTAX®**

**AFO80C**

**ELECTRONIC RING LIGHT SET**



## CONTENTS

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DESCRIPTION OF PARTS .....	4
INSERTING THE BATTERIES .....	6
MOUNTING THE RING FLASH .....	8
• Mounting with other close-up accessories .....	9
MOUNTING THE CONTROL PACK .....	10
SYNCHRONIZATION AND OPERATIONAL FEATURES .....	12
TTL AUTO OPERATION .....	14
THE TTL AUTO FLASH RANGE CHART .....	16
MANUAL FLASH .....	18
MANUAL EXPOSURE QUICK CALCULATION CHART .....	19
FLASH READY LAMP .....	20
• Auto Check Lamp/Viewfinder Auto Check .....	21
• Auto Check Switch .....	21
EXTERNAL POWER SOURCES .....	22
PRECAUTIONS .....	23
SPECIFICATIONS .....	24

The Pentax AF-080C Ring Light is a sophisticated electronic flash unit which is specifically designed to make lighting of close-ups and macrophotography easier to attain. The flash unit itself features a 360 degree rotating flash head which fits over the front of the camera lens. Its circular design provides a direct shadowless lighting source to maximize subject detail. In addition, when it's used with a more powerful light source, it serves as the ideal fill-in flash unit.

When used with the Pentax LX, Super A or Super Program, the Ring Light provides through-the-lens flash operation. Set for the TTL Auto mode, the Ring Light works in tandem with the above-mentioned camera's unique IDM (integrated direct meter-

ing) system to eliminate complex flash calculations and provide a free choice of f-numbers within the flash unit's operating range. Moreover, the metering cell inside the camera reads the flash output directly at the film plane and cuts off the flash precisely at the right moment for correct exposure.

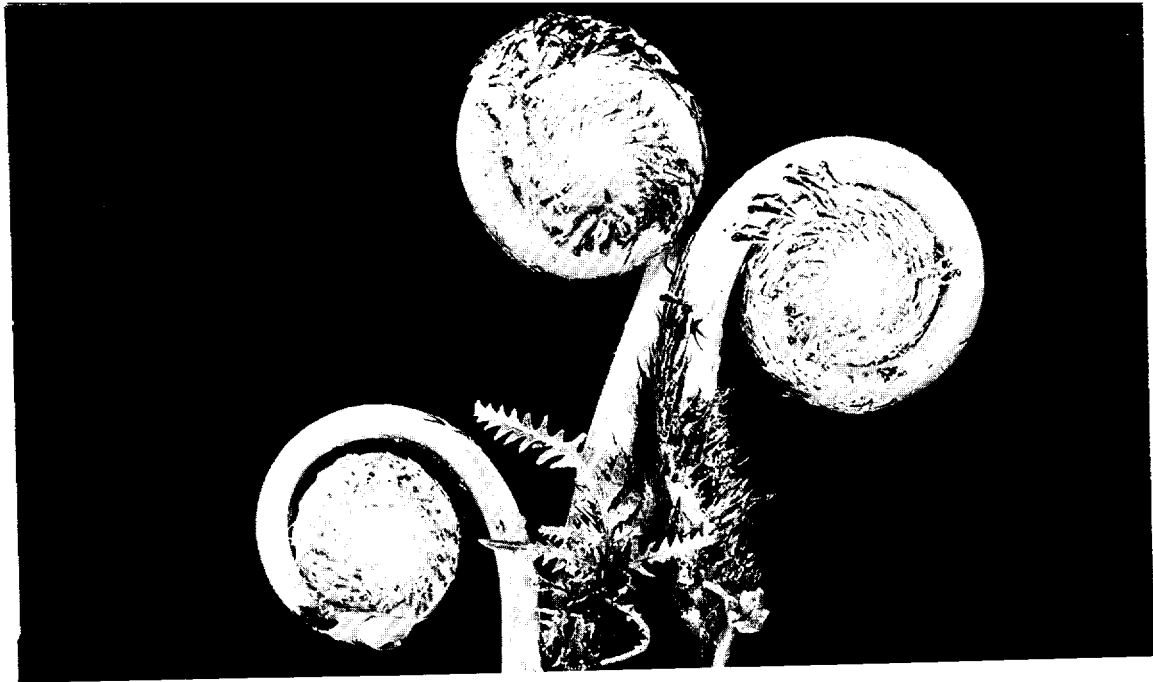
The AF-080C also offers manual operation at two light intensity levels with the Pentax cameras featuring direct hot shoe synchronization, and provides "dedicated" flash operation (automatic synch for flash on charging and viewfinder flash ready indication) with the late Pentax models.

The AF-080C operates jointly with the AF Ring Light Control Pack which clips conveniently onto the camera hot shoe, and houses six AA-size penlight batteries as a built-in power supply. Optional accessory power sources include the TR Power Pack with transistorized circuitry for extended power with six "C" cells, the Power Pack 510V with a high-voltage laminated battery and, AC Adaptor II for operation on household current.

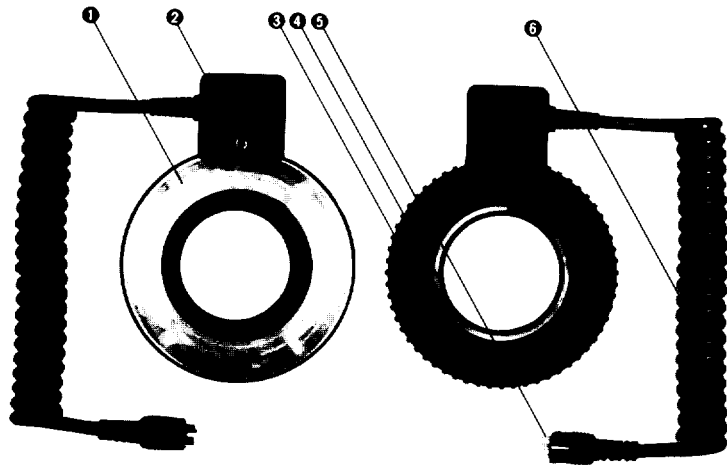
Be sure to read these instructions carefully in order to learn of the benefits the ring flash has to offer. When not in use keep it in a camera bag or case to ensure lasting use.

#### **Precautions on AF080C flash photography**

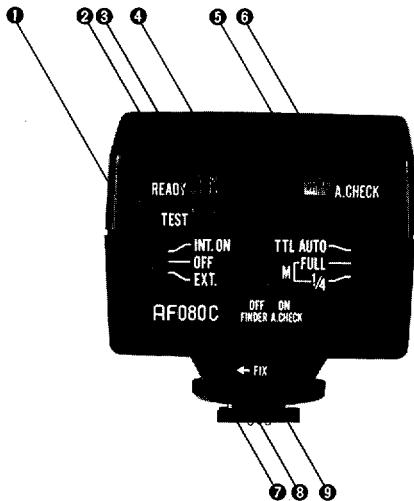
- It is recommended that the lens be stopped down as too wide an aperture can sometimes cause lens flare.
- Shooting portraits with the AF080C and color film may result in "red eye," that red dot in your subject's eye.
- The wide-angle lenses including 40mm f/2.8 should be used in the reversed position with the AF080C.
- The reflective subjects such as mirror, glass, etc. may cause a ring-shape reflection in the photograph.



## DESCRIPTION OF PARTS



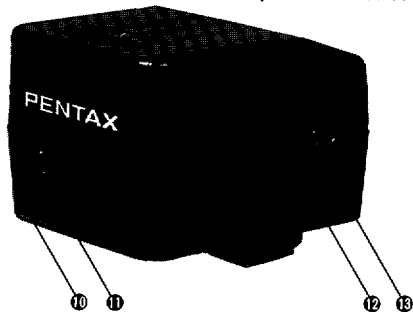
- AF-080C Ring Light**
- ① Ring Light unit
  - ② Adapter hole threads
  - ③ Mount ring
  - ④ Mount threads
  - ⑤ Ring light plug
  - ⑥ Cord



### AF-080C Control Pack

- 1 Power switch
- 2 Test button
- 3 Ready lamp
- 4 Auto check switch (finder check)
- 5 Auto check lamp
- 6 Mode selector

- 7 Hot shoe bracket
- 8 Contact pins
- 9 Compartment ring
- 10 Cord lock button
- 11 Ring light cord socket
- 12 Battery compartment
- 13 Auxiliary (external) power source socket



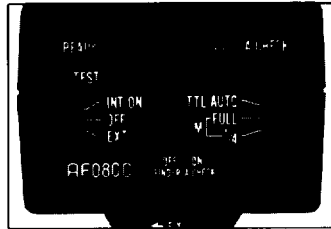
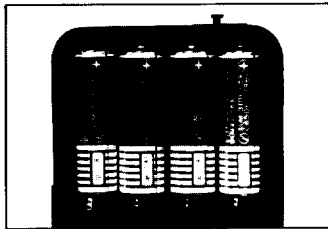
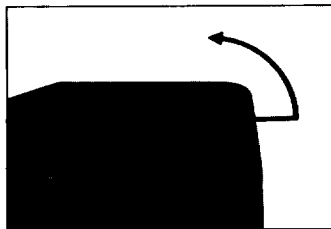
## INSERTING THE BATTERIES

Six 1.5-volt AA-size alkaline or manganese batteries housed inside the controller unit serve as the standard power source for the ring light unit. Rechargeable NiCad batteries may also be used in conjunction with a commercially available recharger unit.

### To insert the batteries:

- Open the compartment as illustrated.
- Insert four AA penlight batteries, making sure the polarity markings match the diagrams inside the compartment.

**Battery Test:** After the batteries are inserted, flick the power switch to the INT. ON setting (INT. for internal power supply; EXT. for external power supply). Should the light fail to respond within thirty seconds, the batteries are either inserted improperly, or they are too old to use.





## **BATTERY PRECAUTIONS**

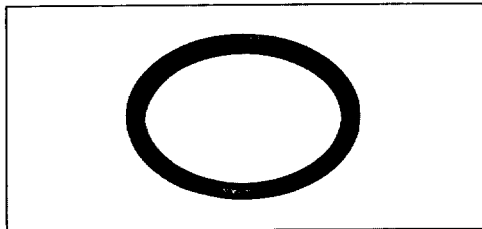
- When not using the power source for long periods of time, remove batteries to avoid corrosion.
- Use batteries with a short shelf life for best results and replace them when they are past the expiration date. Do not mix battery brands or types.
- For best results use high performance alkaline cells. Rechargeable NiCad batteries have a shorter recycling time but give less total flashes per charge. Manganese batteries can be used also but have fewer total flashes.
- Make sure batteries are inserted properly. Improper insertion is hazardous and can damage flash equipment.
- Battery performance falls off in cold climates and can temporarily fail in freezing weather. Carry spares in warm pocket when working in extreme cold.

**ALWAYS KEEP BATTERIES OUT OF THE REACH OF CHILDREN AND NEVER THROW USED BATTERIES INTO A FIRE OR EXPOSE TO EXCESSIVE HEAT TO PREVENT EXPLOSION.**

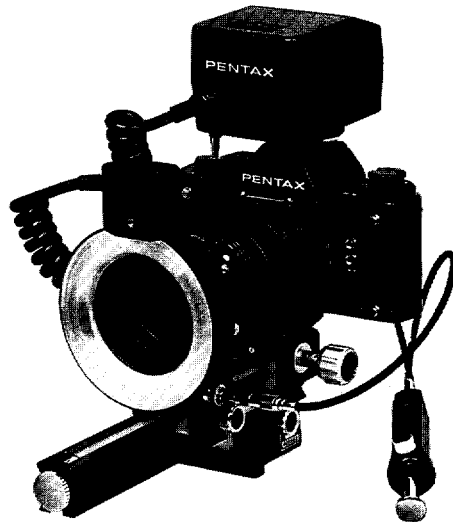
## MOUNTING THE RING FLASH

The ring flash mounts conveniently to the front of the camera lens and screws to the 49mm threads of the standard lens. It can also be used with 52mm threads, when the 52mm to 49mm adapter is used. "Reverse Ring Light Holder K" is also available as an optional accessory to mount a lens in reversed position in close-up photography.

**To mount the ring flash:** Place the camera on its back and match up the threads of the ring flash with those on the lens front. Screw securely in place.



**Mounting with other close-up accessories:** When using the ring light with the Auto Bellows M (shown on the right), use the lens mounted in reverse. Screw the flash to the threads on the reverse panels of the bellows unit. When using the ring light with filters, close-up accessories, etc., attach the accessories first to the lens before attaching the ring flash.



## MOUNTING THE CONTROL PACK

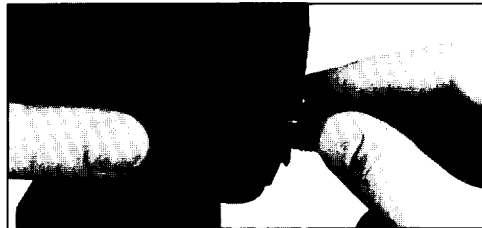
The Control Pack houses the circuitry for the ring flash unit and battery compartment. It attaches directly to the camera hot shoe, and the synch cord attaches to the front of the controller.

**To mount the control pack:** Slide the hot shoe bracket into the hot shoe, then secure it in place by tightening the compartment ring in the direction of the arrow.



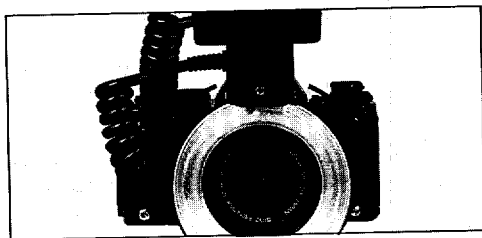
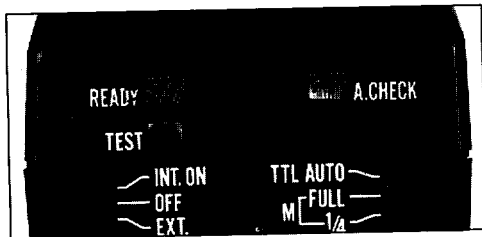
**To attach the cord:** Hold the four-pronged synch cord with the groove facing upwards and fit it into the socket on the front of the controller. Push the plug in until it locks into place with a click. Pull on the plug lightly to check that it's securely locked.

**To remove the plug:** Press the lock release beneath the plug and pull.



**Test flash:** Turn the power switch to the INTERNAL ON position. In a few seconds, when the ready light lights, press the test button. After the test flash, turn the power switch OFF. If the unit fails to flash, batteries may be inserted improperly or are too old. Also check that cord and hot shoe bracket are making proper contact.

**Cord precautions:** To prevent the cord from tangling in front of the lens, rotate the ring flash unit and swing the cord out of the way.



## SYNCHRONIZATION AND OPERATIONAL FEATURES

Flash synchronization and operational features of the ring light vary depending upon the camera you are using it with. **The Mode Selector:** While two-level manual operation is a standard feature with all cameras offering hot shoe synch, the TTL auto mode is used exclusively with the LX, Super A or Super Program. In addition, dedicated flash operations (auto flash synch and viewfinder ready indication) are also offered in the two level manual modes with late model Pentax cameras as described in the chart. Auto flash check is also offered in the TTL auto mode with the LX, Super A or Super Program.

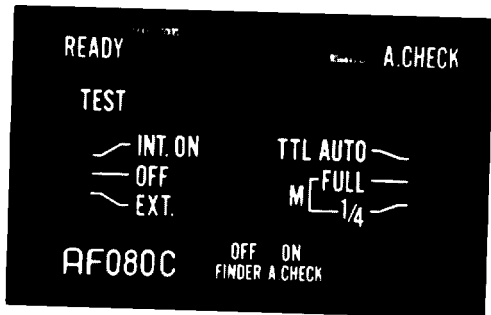
**Method of Synchronization:** With the Pentax cameras mentioned in the chart, the AF-080C is synchronized in the shutter modes and at the shutter speeds indicated in the column of the chart for the camera indicated. For cameras with dedicated flash features that are not specifically mentioned in the chart, refer to the camera instruction manual. With older model Pentax cameras, and cameras of other makes, synchronization is basically the same as indicated in the last column of the chart. As there are exceptions, however, be sure to refer to your camera instruction manual for details.

	LX
<b>Flash Modes</b>	TTL Auto, Two-level Manual (Full and 1/4th)
<b>Automatic Sync</b>	At 1/50 sec. with shutter speed dial set at "Automatic", on charging
<b>Manual Sync</b>	At "X" (1/75 sec.) setting of shutter speed dial
<b>Flash Ready Indication</b>	<ol style="list-style-type: none"> <li>1) LED lamp inside viewfinder</li> <li>2) Flash ready lamp on flash unit</li> </ol>
<b>Auto Flash Check</b>	<ol style="list-style-type: none"> <li>1) Flickering LED lamp inside viewfinder</li> <li>2) Auto check lamp on flash unit</li> </ol>

Super A, Super Program	Program A, Program Plus	ME-F, ME Super	MG, MV, MV-1
TTL Auto, Two-level Manual (Full and 1/4th)	Two-level Manual (Full and 1/4th)	Two-level Manual (Full and 1/4th)	Two-level Manual (Full and 1/4th)
At 1/125 sec. with shutter mode dial set at "Auto", on charging	At 1/100 sec. with shutter dial set at AUTO, on charging	At 1/125 sec. with shutter mode dial set at "Auto" and "M", on charging	At 1/100 sec. with shutter mode dial set at "Auto", on charging
At "125 X" setting of shutter mode dial	At "100 1/2" setting of shutter dial	At "125 X" setting of shutter mode dial	At "100 X" setting of shutter mode dial
1) LCD sign inside viewfinder 2) Flash ready lamp on flash unit	1) LCD sign inside viewfinder 2) Flash ready lamp on flash unit	1) LED lamp inside viewfinder 2) Flash ready lamp on flash unit	1) LED lamp inside viewfinder 2) Flash ready lamp on flash unit
1) Flickering LCD sign inside viewfinder 2) Auto check lamp on flash unit	1) Flickering LCD sign inside viewfinder 2) Auto check lamp on flash unit		

## TTL AUTO OPERATION

When the AF-808C is used in the TTL Auto mode jointly with the Pentax cameras featuring IDM (integrated direct metering) system, the problem of complex flash calculations for close-up work is eliminated. With the TTL system, the flash is measured directly at the film plane by the sensor inside the camera, permitting free use of any f-stop



within the flash units operating range. There's also no need for compensation for filters and close-up accessories with the direct TTL metering method. The film speed ranges usable in TTL auto flash mode are ASA/ISO 6 - 800 with LX and ASA/ISO 25 - 800 with Super A and Super Program.

### For Operation:

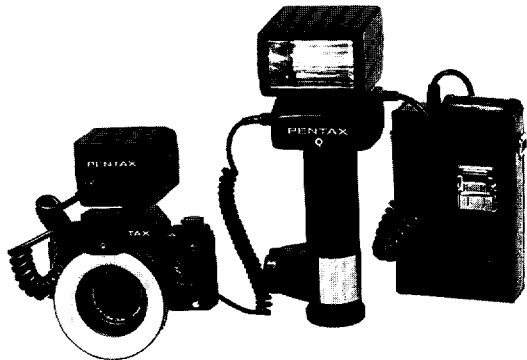
1. Set the flash mode selector to TTL Auto. Set the camera shutter dial to AUTOMATIC.
2. Any lens aperture within the TTL auto flash coupling range can be used. Effective apertures vary, depending on distances and magnifications. Refer to the chart on page 17 to check that the aperture is within flash range. (For example, at ASA 100 with a 50mm lens at magnification from 0.1X to 0.5X, use f11 as the chart indicates.)
3. Turn the power switch of the control unit to INTERNAL ON. The flash synchronizes automatically with the camera for flash on charging. Make your exposure after the X LED indicator inside the viewfinder lights, along with



- the flash ready lamp on the Control Pack.
4. After the exposure, the viewfinder auto check lamp and the auto check lamp behind the flash will confirm the correct flash range. This can be turned off when not needed—see page 21.
  5. After shooting, turn the power switch off.

**Multiple flash:** With the IDM system, multiple flashes can also be performed in the TTL auto mode when the Ring Light is used jointly with the AF400T.

When using the ring light with another main lighting source, make sure the ring light exposure is less than the main light. For color prints, the ring light should measure about one stop less (2:1 lighting ratio). Transparencies and black and white prints can tolerate a greater contrast ratio.



## THE TTL AUTO FLASH RANGE CHART

**Notes on the chart:** The chart on the right serves as a basic guide and will help you set the exposure within the TTL flash range. The chart indicates the flash to subject distance in relation to the usable apertures. For example, at ASA 100 with a 50mm lens at a distance of 25cm, the aperture range is from f5.6 to f22. You may choose any f-stop within the TTL flash range for correct exposure.

**Magnification:** When you choose the lens aperture on the basis of magnification, use only the flash range indicated on the chart within the effective aperture range.

**Aperture selection:** Select the lens aperture depending on the light power you need. For example, shooting at ASA 100 with a macro 100mm lens, and a magnification of 0.5X, use f/16 at full output; use f/8 at 1/4th output. For increased depth of field in the TTL Auto mode, stop the lens down as the chart shows. The dots on the chart indicate half stops.

**Reference for manual exposures:** The gray area indicates 1/4 manual output. The black areas indicate full manual output.

**Varying the aperture range:** Even when the flash distance and magnifications change, there's a five stop leeway in aperture selection.

**How to use the chart for other ASA film speeds:** When using films other than ASA 100, adjust the f-stop in relation to the desired film speed. For example, for ASA 200, move one stop to the right, two stops for ASA 400; for ASA 50 move one stop to the left, two stops for ASA 25. For bellows and other close-up equipment, it is recommended that the exposure be calculated and set. With the TTL system there will be leeway for correct lighting of the subject.

### 50MM STANDARD & MACRO LENS

\*

USABLE f-STOP RANGE (ASA 100)

(F No)		2.8	4	5.6	8	11	16	22	32
<b>Dist.</b>	<b>Magni.</b>	← APERTURE RANGE →							
50cm	0.1×								
25	0.2								
10	0.5								
5	1.0								
4	2.0								

### 100MM MACRO LENS, 100MM BELLOWS LENS

100cm	0.1×								
50	0.2								
25	0.5								
15	1.0								

### 40-80MM ZOOM (LENS (ON MACRO))

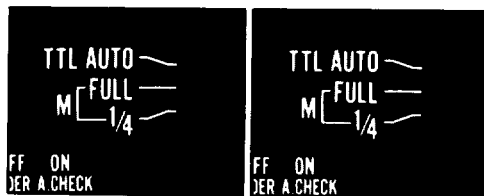
50cm	0.13×								
22	0.25								

\* With the Super A or the Super Program set in the Programmed AE or the Shutter-priority AE mode, the aperture is automatically set to f/8 (ASA/ISO 100).

## MANUAL FLASH

With manual flash photography the aperture is determined based on flash to subject distance, magnification and guide number. Once all three factors are determined, set the aperture and take the picture.

With the Pentax LX and also the late model Pentax cameras mentioned in the chart on Page 12, the added convenience of dedicated manual flash (automatic flash synchronization and viewfinder flash ready indication) is provided. Two light intensity settings are offered for the manual mode Full and 1/4 output. Full



offers a guide number of 8 and offers a more powerful flash for using a smaller aperture to permit greater depth of field. The 1/4th power setting has a guide number of 4 (at ASA 100), and offers fast recycle for multiple flash.

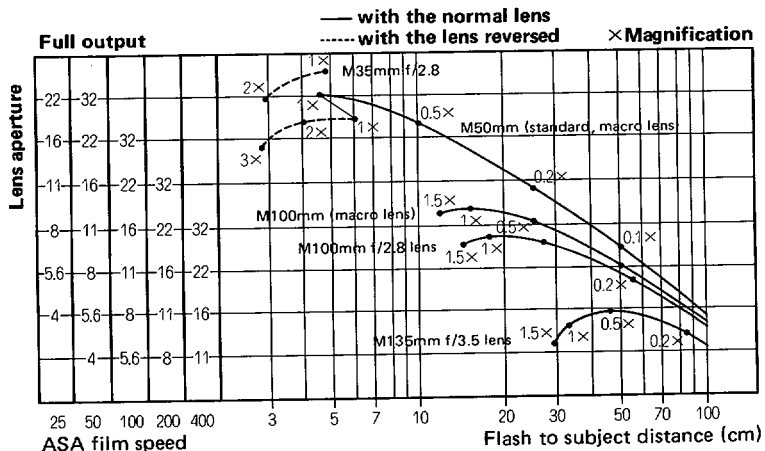
### Manual Operation

1. Set the mode selector to either manual settings as required, Full or 1/4.
2. Set the correct synchronization speed (or lower) as indicated in the column of the chart on page 12 for the type of synchronization desired.
3. Select the desired aperture in relation to flash distances indicated on the chart on the right. Make sure to compensate for bellows extension and filter factors. The aperture settings indicated in the gray and black on the TTL Auto Flash Range Chart also can be used as a guide for manual aperture setting.
4. Turn the power switch on and make the exposure after the flash ready indicator lights up. After taking the picture, turn the power switch off.

# MANUAL EXPOSURE QUICK CALCULATION CHART

Using the chart on the right, select the aperture value in relation to the flash to subject distance. Since the chart is only a basic guide, it is advisable to bracket your exposure for sure results.

The chart computations indicated are for Full manual output. For 1/4 manual output, increase the values in the chart two steps for the correct aperture. For example, f11 would be f5.6.



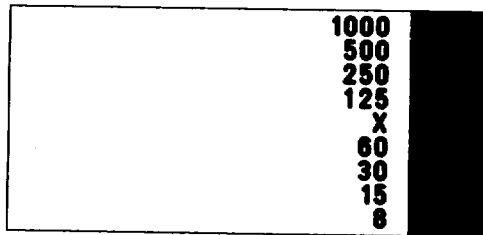
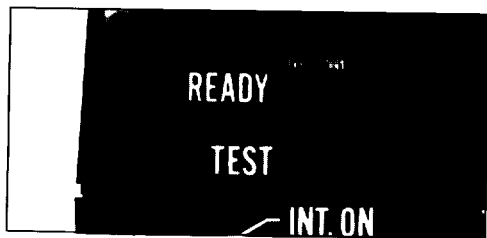
For example, at ASA 100, using the macro 100mm lens at a distance of 25cm at f/16, the magnification would be 0.5X.

## FLASH READY LAMP

The flash ready lamp lights when recharged 80 — 90%. Light intensity stabilizes a few seconds later. At low intensity flash, the ready lamp lights instantaneously, permitting successive flashes. At high intensity flash, longer recharging intervals are required (recycling times depend upon the power source being used).

## Viewfinder Flash Ready Indicators

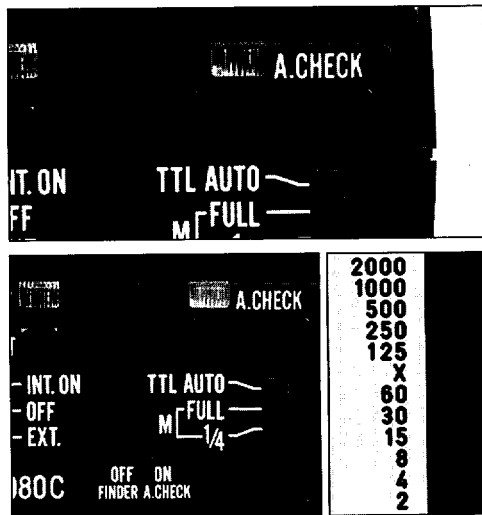
These are standard features on Pentax cameras with TTL or dedicated flash capacity and tell you when the flash is recharged from inside the viewfinder so you don't have to remove your eye from the finder. Method of indication also varies with each (see camera instruction manual for details).



### Auto Check Lamp/Viewfinder Auto Check

The auto check lamp on the back of the flash confirms that the subject was exposed properly following exposures for the TTL Auto mode setting. Immediately after the exposure, the lamp will flicker, indicating that your subject was exposed properly. The flash ready indicator inside the viewfinder of the LX, Super A or Super Program also flickers after the exposure to provide viewfinder auto check.

**Auto Check Switch:** For fast action photography with flash, the viewfinder exposure check ON/OFF switch (marked FINDER A. CHECK) on the back of the controller allows you to turn the viewfinder auto exposure check OFF. When viewfinder auto check indication is desired, set the switch to on.



## EXTERNAL POWER SOURCES

Three alternative power sources are available to add diversity and power to the ring flash unit.

### **TR Power Pack (A)**

The TR Power Pack is a transistorized portable power unit which utilizes six "C" cell batteries and transistor circuitry. This reserves unused power and allows fast recycling time.

### **Power Pack 510V (B)**

This high performance portable power unit uses a 510V high-voltage laminated battery. It offers the greatest number of flashes with a faster recycling time than other portable power sources.

### **AC Adapter II (C)**

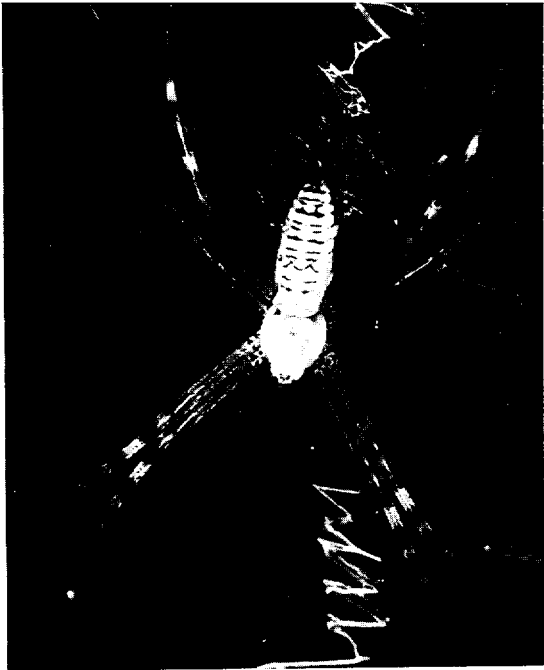
This adapter unit allows the AF-080C to be operated from regular household current. It offers an unlimited number of flashes along with a fast recycling time. It features switchable voltage for 100V, 120V, 220V and 240V AC current.





## PRECAUTIONS

- As both flash unit and auxiliary power packs utilize high voltage circuitry, never disassemble either. If repair is required, obtain proper service.
- Do not expose the unit to high temperatures and humidity for long periods of time. To ensure maximum performance, always store in a cool, dry, well-ventilated place. Also, test fire the unit every month or two when storing for long periods of time to maintain the capacitor at peak performance levels.
- Take care that power switches are set to OFF when storing flash equipment; batteries will soon drain if the switch is left ON.



## SPECIFICATIONS (Ring Light and Control Pack)

<b>Type:</b>	"Dedicated" Ring Flash Unit featuring TTL Auto flash operation with LX, Super A and Super Program, plus Two-level Manual flash operation, etc.
<b>Mounting:</b>	Ring light screws to standard 49mm lens threads (52mm threads with adaptor). Control Pack mounts to camera hot shoe.
<b>Guide numbers:</b>	<b>TTL Auto:</b> varies to GN8 depending on flash range. <b>Full Manual:</b> 8 <b>1/4th Manual:</b> 4
<b>Operating modes:</b>	<b>TTL Auto:</b> Measures light at film plane with IDM metering system of LX, Super A and Super Program; offers integrated flash/non flash exposures. <b>Manual:</b> Full and 1/4 light intensity settings (dedicated manual operation with late model Pentax; standard manual with other cameras).
<b>Usable lenses:</b>	SMC Macro 50mm f/4, Macro 100mm f/4, Bellows 100mm f/4 (also wide angle lenses shorter than 40mm focal length with lens reversed).
<b>Dedicated flash provisions:</b>	TTL flash operation and flickering Auto Check Lamp/Sign with LX, Super A and Super Program; Two-level Manual flash operation; Automatic Synch at "X" and Flash Ready indication in viewfinder with recent Pentax models.
<b>Shortest flash duration:</b>	1/1000 at full manual; 1/15,000 at TTL Auto.
<b>Color temperature:</b>	Balanced for daylight.
<b>Power sources:</b>	<b>Standard:</b> Six 1.5V AA size alkaline batteries (alkaline, manganese or rechargeable NiCads in controller unit). <b>Optional:</b> (1) TR Power Pack (transistorized with six "C" cells) (2) Power Pack 510V laminated battery; (3) AC Adaptor II with adjustable 100V, 120V, 220V, and 240V voltage settings.
<b>Film speed range for TTL Auto Flash mode:</b>	ASA/ISO 6 - 800 with LX; 25 - 800 with Super A and Super Program.

**Recycling times and number of flashes:**

Power Source	Alk.	Mang.	NiCd	TR Pack	510V Pack	AC Adaptor II
Number of Flashes	200	50	90	600	800	Indefinite
Recycling Times	8 sec.	12 sec.	5 sec.	3 sec.	1 sec.	3 sec.

**Flash data and switches (on controller):**

**Size and weight:**

**Accessories:**

Flash ready, Auto check lamps, Test button, Mode selector with TTL Auto and M (Full & 1/4) settings; power switch with EXT/INT. settings, External synch socket, finder auto check on/off switch.

**Control Pack:** 70mm x 70mm x 82mm; 235 grams without batteries.

**Ring Flash:** 93mm x 122mm x 22mm, 135 grams without batteries.  
Built-in connector cord; case.



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