

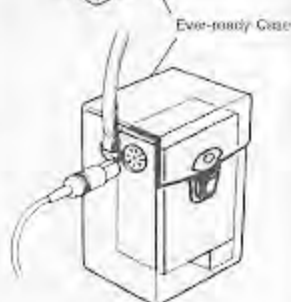
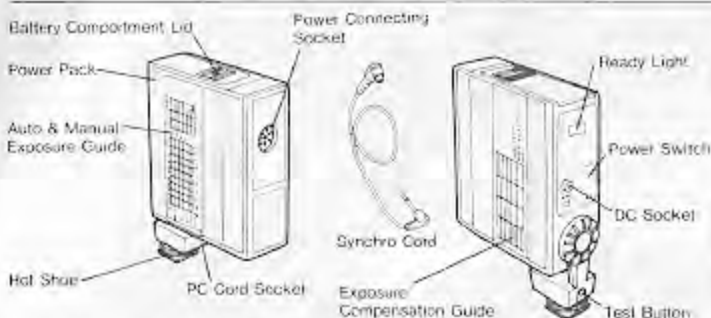
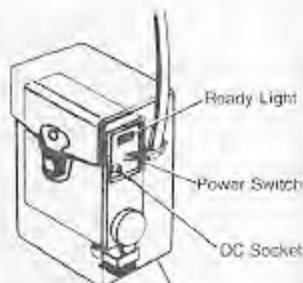
# AUTO RING FLASH



## Operating Instructions for AUTO RING FLASH

(For use with lenses up to 58mm filter size)

Your Auto Ring Flash is a computerized light source which can meet the requirements of many exacting assignments. With its extraordinary capabilities it vastly expands versatility in scientific, medical and close-up macro photography. Please read the following instructions carefully so that you can obtain the maximum enjoyment from your new flash unit.



## BATTERY INSTALLATION

Slide the battery compartment lid in the direction of the arrow until the lid stops. Insert four penlight (AA size) batteries taking care that the positive and negative terminals are correctly aligned as indicated in the compartment.

While depressing the batteries into the compartment, slide the lid back into place. Alkaline batteries are recommended. Clean batteries and compartment contacts at regular intervals. Remove batteries if unit is likely to be out of use for a long period.

## ATTACHING FLASH UNIT TO CAMERA

### 1. Ring Flash Head

The rotating ring of the flash head mounts directly to series VII size adapters. Select the appropriate step up or step down adapter to fit the filter size of your lens. (Designed for use with lenses up to 58mm filter size).

### 2. Power Pack

(a) For cameras with a hot shoe contact and X synchronization, slide the shoe of the power pack into the camera accessory shoe and tighten the lock. Electrical contact is established directly for complete flash synchronization. No synchro cord is necessary.

(b) For cameras without a hot shoe contact, slide the shoe of the power pack into the camera accessory shoe, or into the accessory flash bracket and tighten the lock. Connect the synchro cord supplied to the PC Cord Socket on the front of the shoe of the power pack and to the "X" contact socket of the camera. This will establish electrical contact and synchronization.

(c) When using the power pack kept inside of the Ever-ready Case, connect the synchro cord to the PC Cord Socket on the rear of the flash head and to the "X" contact socket of the camera.

## SHUTTER SPEED SETTING

For cameras with a focal plane shutter, it is usual to have an X mark on the camera shutter speed dial and this flash unit is designed to synchronize at that setting. Usually this speed is 1/60th second, but ALWAYS CONSULT YOUR CAMERA'S INSTRUCTIONS FOR DETAILS ON THE FLASH SYNCHRONIZATION. The camera may additionally have two settings for flash, X and FP. If this is the case, then the X setting must always be used.

## INDICATOR LAMPS

There are two indicator lamps on the unit. A green one on the ring flash head that indicates the flash head is connected properly and is taking a charge from the power pack. The power pack ready light indicates that the unit is fully charged and ready for picture taking.

Note: Although the Ring Flash is designed for use with lenses of about 55mm focal length, it can be used with other focal lengths. However, with shorter focal length lenses there may be some vignetting, because of its built-in hood, but this should cause little loss in overall effectiveness.

## FOCUSING LAMP

The auto ring flash is equipped with a focusing lamp operated by the switch on the back of the flash head. This can be used to provide extra light for focusing. Always turn this off when not in use to save battery life.

## AUTOMATIC OPERATION

Once the ring flash is mounted and the camera is loaded with film, find the ASA of the film you are using on the guide table (CHART A) on the side of the power pack. There are two automatic ranges, color coded red and blue, next to the ASA column. Select the f/stop you wish to use depending on the flash-to-subject distance you expect to use. On the side of the flash head, set the Auto/Manual Switch to the corresponding color, Red or Blue and set the selected f/stop on your lens. Make sure all cables are connected and the camera is set for the proper flash synch speed. Turn on the power pack. You should get, in about 10 seconds, a ready light indication on the power pack. The ring flash can now be used within the listed range in the same manner as standard auto flashes as the auto system will adjust the light output depending on the distance.

## MANUAL OPERATION

Set the Auto/Manual Switch to "M" position. A guide for use of the ring flash in manual mode is next to the colored auto scale on the side of the power pack. Find the angled line that corresponds to your film ASA and follow it until it crosses the vertical black line that matches the flash-to-subject distance. Then look across the scale to find the f/stop on the left edge that is in line with the intersection of ASA and distance lines.

For distances shorter than shown on the scale, the approximate f/stop needed can be calculated by closing down one f/stop for each 1/3 reduction in flash-to-subject distance. For example, ASA 100 = f22 at 14" (0.35m), f32 at 10" (0.25m) and would be f45 at 7" (0.18m). If photography is done frequently at extremely short distances, neutral density filters for the taking lens of 4X and 8X strength (2 and 3 stops reduction) are a valuable accessory.

## MANUAL OPERATION WITH LENS OR BELLOWS EXTENSION

The calculations given for aperture setting on the guide table (CHART B) on the power pack are based on use of a normal (45–55mm) lens set at minimum focusing distance. This usually involves only 3–7mm of extension of the lens barrel. However, if a macro lens with extra barrel extension, extension tubes, or a bellows is used, a significant amount of light is lost as the front of the lens is extended away from the film plane.

To compensate for this reduction in light, the following formula can be used to give a corrected f/stop:

Exposure factor =  $(1 + RR)^2$  where the RR is reproduction ratio, figured by taking original focal length of lens and dividing this into amount of additional extension provided by lens, tubes or bellows as: 50mm lens with bellows extension of 100mm = RR of 2. Also, 50mm lens with 25mm extension tube, RR = 1/2.

Using RR of 1/2,  $EF = (1 + 1/2)^2$  or  
 $EF = (1.5)^2$   
 $EF = 2.25$

Exposure factors equal increases in f/stop as follows:

EF	2	3	4	6	8	12	16	24	32
STOPS	1	1½	2	2½	3	3½	4	4½	5

So lens should be opened about 1 stop.

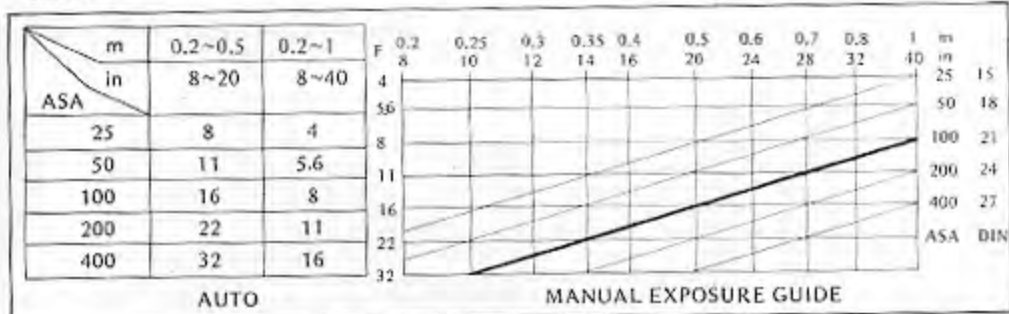
If you know the ratio of subject size to image size, the scale on the opposite side of the power pack can also serve as a guide for approximate exposure compensation.

Please note that this system of calculation is a guide only. There are many factors which can also affect exposure at very short distances or high magnifications such as using a lens in reverse, or using a non-symmetrical lens design, etc. It is always best to shoot at least one test roll of film with your usual close-up equipment or bracket exposures 1–2 stops either way when shooting.

## CAUTIONS

1. Never attempt to disassemble this flash unit when it requires repair service.
2. Do not expose the unit to high humidity or rainfall.

CHART A



(Distances from flash to subject)

CHART B

RATIO	AUTO		MANUAL
	RED F16	BLUE F8	
1 x 2	5.6	2.8	3F stops
1 : 1	8	4	2F stops
1 : 2	11	5.6	1F stops
1 : 3			
1 : 4	11 ~ 16	5.6 ~ 8	1 to 0F stops
1 : 5			

MACRO EXPOSURE APERTURE ADJUSTMENT TABLE

**SPECIFICATIONS**

- Guide Number : 26 (ASA100/ft), 8 (ASA100/DIN21/m)
  - Auto F/Stop : F8, 16 (ASA100)
  - Auto Range : Red: 0.2-0.5 meter/8-20 inches  
Blue: 0.2-1.0 meter/8-40 inches
  - Angle of Illumination : In excess of 60 degrees vertically and horizontally
  - Flash Duration : 1/1000 sec.
  - Recycling Time : 10 sec.
  - Color Temperature : 5,600° K (Daylight)
  - Number of Flashes : Approx. 100 per set of Alkaline batteries
  - Power Source : 4 Penlight Type (AA) batteries  
DC 6V Adapter (Optional)
  - Mounting on Lens : Series VII Adapters 49-58mm (Optional)
  - Synchro Connections : Hot shoe and PC cord
  - Dimensions:
    - Power Pack : 81 x 33 x 95 mm/3.2 x 1.3 x 3.7 in.
    - Ring Flash Head : 99 x 19 x 125 mm/3.5 x 0.7 x 4.9 in.
  - Weight:
    - Power Pack : 205 grams/7.2 ounces (without batteries)
    - Ring Flash Head : 120 grams/4.2 ounces
- Supplied with PC cord