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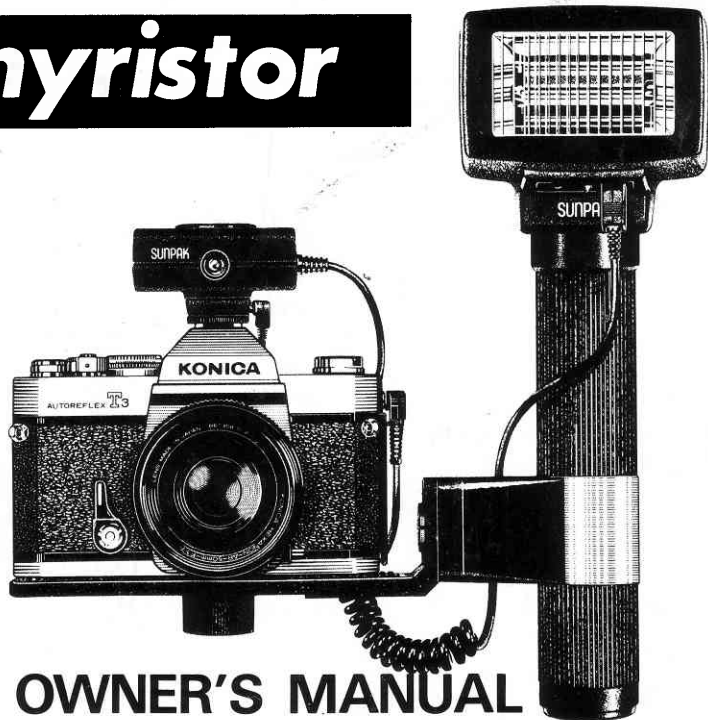
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650-611

SUNPAK[®] AUTO 611

Thyristor



OWNER'S MANUAL

IMPORTANT SAFEGUARDS

When using your photographic equipment, basic safety precautions should always be followed, including the following:

1. Read and understand all instructions.
2. Close supervision is necessary when any appliance is used by or near children. Do not leave appliance unattended while in use.
3. Do not operate appliance if the appliance has been dropped or damaged—until it has been examined by a qualified serviceman.
4. To protect against electrical shock hazards, do not immerse this appliance in water or other liquids.
5. To avoid electric shock hazard, do not disassemble this appliance, but take it to a qualified serviceman when some service or repair work is required. Incorrect reassembly can cause electric shock hazard when the appliance is used subsequently.
6. Do not operate appliance with a damaged cord.
7. Do not let cord hang over edge of table or counter or touch hot surfaces.
8. If an extension cord is necessary, care should be taken to arrange the cord so that it will not be tripped over or pulled.
9. Always unplug appliances from electrical outlet when not in use. Never yank cord to pull plug from outlet. Grasp plug and pull to disconnect.

SAVE THESE INSTRUCTIONS

Introduction

The Sunpak Auto 611 Thyristor Flash is a remarkably versatile and sophisticated flash unit. It gives you ...

- **More Power.** Film-tested Guide Number of 160 for ASA 100 film, 80 for ASA 25 film.
- **More Control.** The Remote Silicon Photo Transistor Sensor measures the light reflected by your subject and automatically delivers the right amount of light for correct exposure — from nineteen inches to forty feet!
- **More Creativity.** Choose from any of four lens apertures in automatic operation — or any fractional or intermediate aperture, too. Or, choose up to eight apertures in manual mode!

- **More Versatility.** Bounce flash is automatic, because the sensitive Silicon sensor is always facing your subject. Or, choose instant, automatic off-camera flash.
- **More Flashes.** The energy-saving Thyristor circuitry gives you hundreds of extra flashes in automatic or manual operation — and provides ultra-fast recycling times as well. And the unique Nicad "Cluster" recharges completely in three hours.
- **More Pictoretaking Possibilities.** Dial the unique Power Ratio control to shoot at 1/2 power, 1/4 power ... all the way to an incredible 1/128th power. And you've opened up a whole new world of fill-in flash, macro flash, rapid-sequence flash, and more.

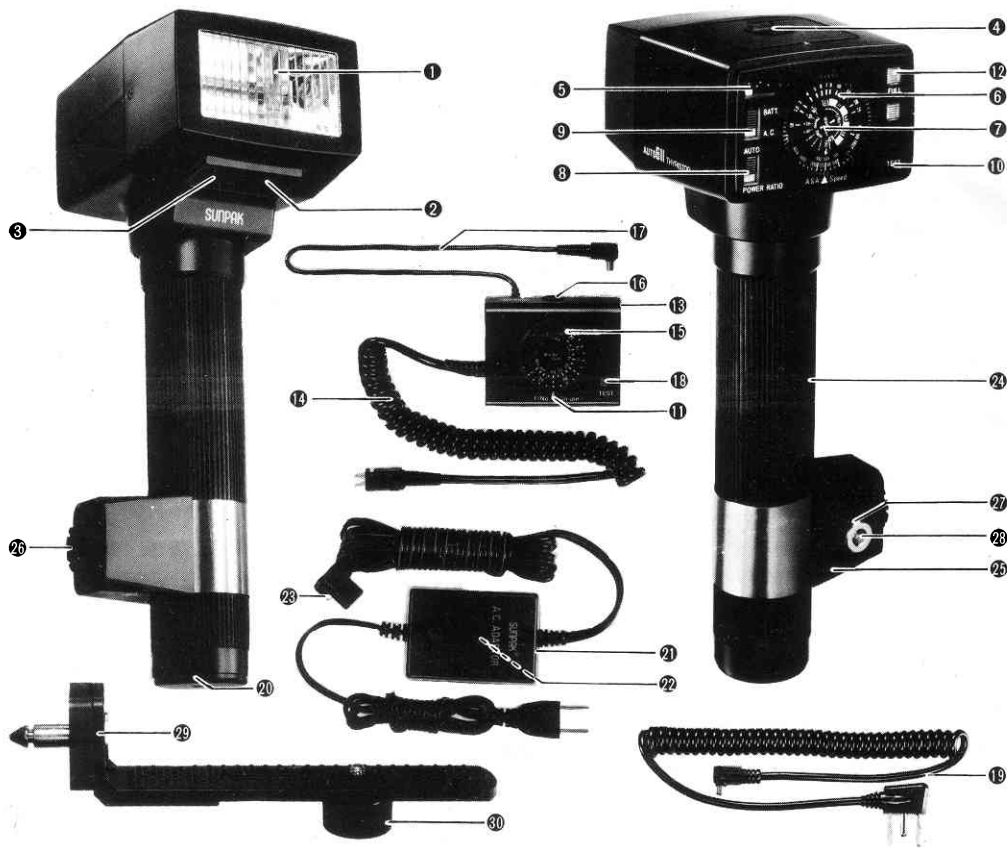
Because of its many unique features, operation of this flash is probably somewhat different from other electronic flash units you may have previously owned. For this reason, we recommend that, before actually taking pictures, you read through this Owner's Manual with your camera and flash unit before you. Then, as with any important new equipment, if possible expose a 'Test' roll of film to confirm that you are using your new equipment to best advantage. You'll be rewarded by superior flash pictures beginning with your first roll of film ... and for many, many years to come. Welcome ... to the Sunpak world of light!

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I) PRINCIPAL PARTS OF SUNPAK AUTO 611 FLASH SYSTEM

- 1) Flashtube Housing
- 2) Remote Sensor Outlet
- 3) Auxiliary Shutter Cord Outlet
- 4) Battery Chamber Lock
- 5) AC/510V Outlet
- 6) Manual Exposure Calculator Dial
- 7) Manual Power Ratio Dial
- 8) Auto/Manual Mode Selector
- 9) Battery/AC Selector (On/Off Switch)
- 10) Test (Open Flash) Button
- 11) Auto Signal Lamp
- 12) 100%-Power Ready Lamp
- 13) Remote Sensor Housing
- 14) Remote Sensor Flash Cord
- 15) Auto Exposure Control Dial
- 16) Silicon Photo Transistor Cell
- 17) Remote Sensor Shutter Cord
- 18) Remote Sensor Test Button
- 19) Auxiliary Shutter Cord
- 20) Tripod Mounting Socket
- 21) Dual-Voltage AC Adapter
- 22) Voltage Selector Switch
- 23) AC Flash Plug
- 24) Flash Grip
- 25) Flash Bracket Clamp
- 26) Encircling Ring of Clamp
- 27) Quick-Release Button
- 28) Lock Ring
- 29) Camera Mounting Bracket
- 30) Camera Retaining Ring

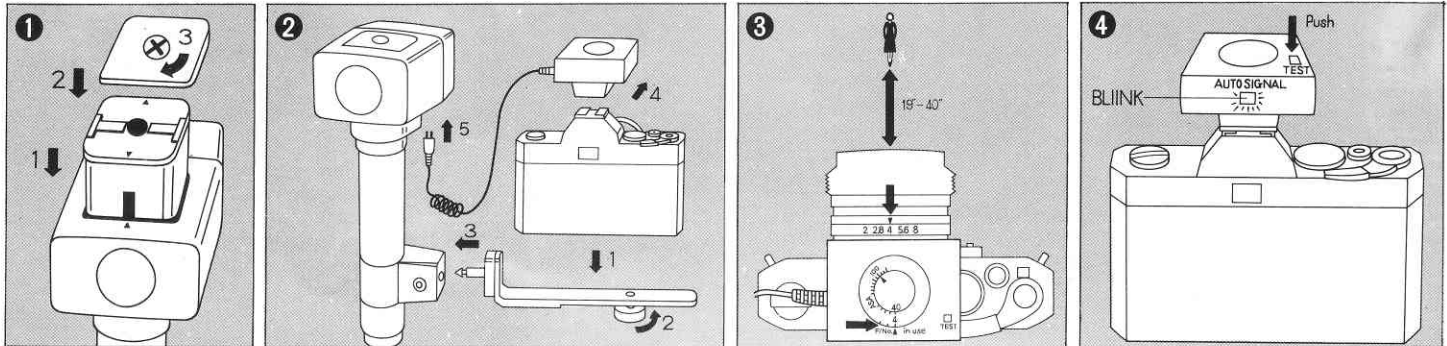


II) CONDENSED OPERATING INSTRUCTIONS

To use your Sunpak Auto 611 Thyristor Flash, here's all you have to do:

- 1) **Install Batteries** (p. 6). Lift off Battery Chamber cover and insert freshly-charged Sunpak Nicad Battery Cluster (or selected power source).
- 2) **Mount On Camera** (p. 8). Attach camera to bracket and bracket to flash clamp. Connect Remote Sensor to flash and camera. Set shutter to the fastest speed synchronized with electronic flash (p. 8).
*** Note:** Move Auto/Power Ratio Switch (on back) to Auto Position (red is visible).
- 3) **Select Lens Opening For Auto Operation** (p. 9). Move Auto Exposure Control Dial to desired f/stop and distance for film in use; set lens to this opening.
- 4) **Take The Picture!** (p. 10). Move switch on flash to 'Batt' (On) position; when the Auto Signal Lamp and 100% Green Ready Lamp glow, you're ready to take the picture!

To confirm that the subject is within the maximum distance range for correct exposure, aim flash towards subject and press the 'Test' button. The Auto Signal Lamp on Remote Sensor will "blink" immediately after this test flash when the subject is within computer range (p. 10).
Picture after picture — different subjects, different distances, different surroundings. All perfectly-exposed, automatically, with your Sunpak Auto 611 ...



III) SELECTING AND INSTALLING POWER SOURCE

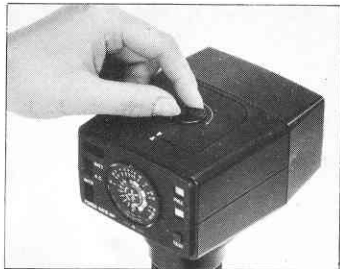
Your Sunpak Auto 611 flash accepts no less than five alternative power sources! Here are the major differences and advantages of each type.

Power Source Type	No. of Flashes*		Recycling Time Between Flashes*		Notes
	Full	1/128th power	1/128th power	Full	
Sunpak Nickel – Cadmium Battery Cluster (Type CL-1)		40~800		0.25~9.5 sec . . .	Gives maximum portability and convenience. Recharges fully in three hours externally.
4 'C' – Size Nickel – Cadmium Batteries (optional)		60~1200		0.25~9.5 sec . . .	Recharge externally in separate charger. Charge time varies according to battery and charger type.
Sunpak 510V Powerpak (optional) (Requires Eveready #497 battery or equivalent)		70~5000		0.25~3 sec . . .	Fastest recycling speed and greatest number of flashes of all battery types (see p. 21)
100–240V AC (adaptor supplied)		Unlimited		0.25~30 sec . . .	Adjustable by owner for 100–120V or 200–240V current.
4 'C'–Size Alkaline Batteries (optional)					Recommended exclusively for emergency use due to longer recycling time with this battery style.

*All specifications are approximate.

Each Power Source installs quickly and easily. Here's how:

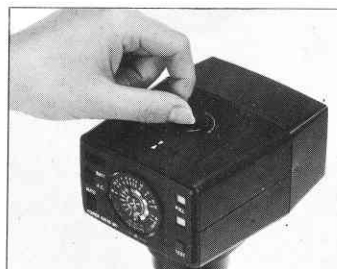
A) With Sunpak Nicad Battery Cluster*



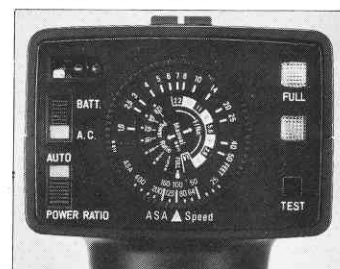
1) Twist Battery Chamber Lock counter-clockwise and lift off cover.



2) Insert Battery Cluster facing triangle marks of Battery Cluster and compartment.

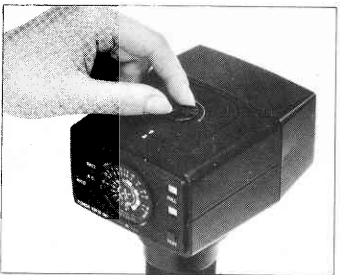


3) Replace Battery Chamber Cover and lock in place.

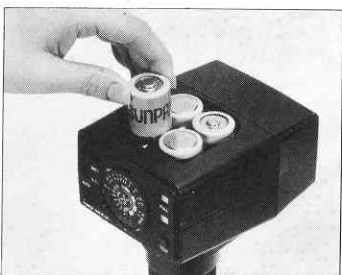


4) Move 'Battery/AC' Selector on rear of flash to 'Batt' position.

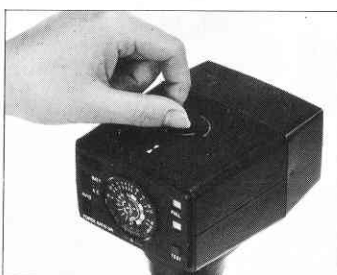
B) With 4 Nickel-Cadmium* or Alkaline C-Size Batteries



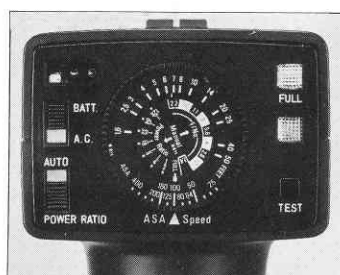
1) Twist Battery Chamber Lock counter-clockwise and lift off cover.



2) Insert four batteries as shown inside flash.



3) Replace Battery Chamber Cover and lock in place.



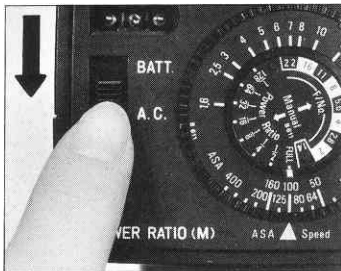
4) Move 'Battery/AC' Selector on rear of flash to 'Batt' position.

***Note:** Newly-purchased nickel cadmium batteries and Clusters are usually shipped with a partial "charge". For best results, charge fully prior to extensive use (see page 32).

C) With Sunpak 510V Powerpak



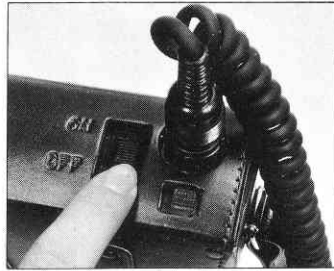
- 1) Insert 510V battery into Powerpak as shown on Powerpak.



- 2) Move 'Battery/AC' Selector on rear of flash to 'AC' position.



- 3) Connect Power Cord to Powerpak (Screw-on) and flash (to socket above Battery/AC selector).

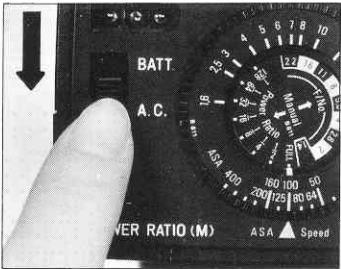


- 4) Move 'On/Off' switch of Powerpak to 'On' position.

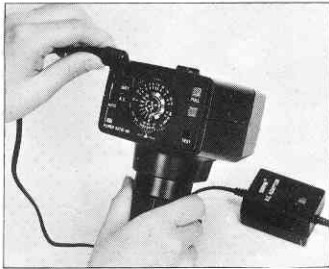
D) With AC Current



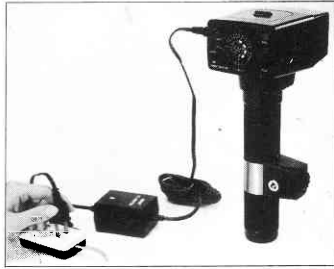
- 1) Before plugging in, determine that AC Adapter is set for 100–120V operation when used in the United States, Canada, or other countries with this standard. If Adapter is not set for correct voltage, loosen the Phillips-head screw on back of adapter, re-set selector to correct voltage, and tighten screw securely. **Important:** if voltage selector is set incorrectly, **damage** to your flash and adapter may result.



- 2) Move 'Battery/AC' selector on rear of flash to 'AC' position.



- 3) Plug female end of AC cord into flash outlet (above Battery/AC selector).



- 4) Plug other end of AC adapter into electrical outlet.

IV) MOUNTING FLASH ON CAMERA

Your flash unit has a quick-release mounting clamp attached to the flash grip (handle). This clamp accepts a snap-in bracket; your camera is secured to the bracket. As the bracket may be removed from the clamp with a one-touch action, set-up and disassembly of your equipment is quick and positive.

- 1) Turn Locking Button (silver) on clamp counter-clockwise fully.
- 2) Press Locking Button inwards firmly, and hold in place.
- 3) Slide silver end of bracket into center of clamp.
- 4) Release Locking Button. The bracket is now attached to the clamp. For ultimate security, you may additionally tighten the locking screw by turning it clockwise fully, this makes inadvertent separation of bracket and clamp impossible.

5) Press Camera Retaining Screw through opening at end of slot on bracket, and turn screw clockwise firmly until threaded portion of screw passes above bracket slot. Center the camera retaining screw under your camera's tripod socket, and tighten securely.

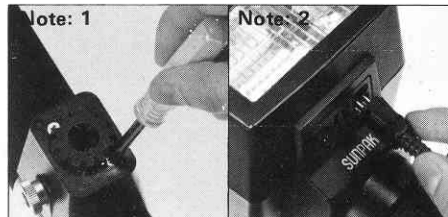
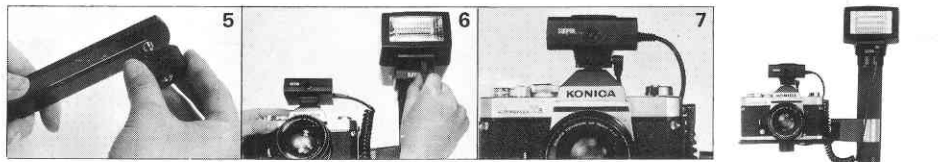
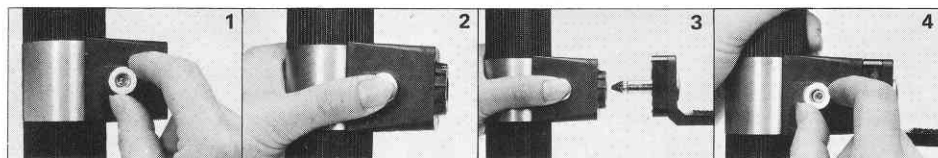
6) Set shutter speed to the fastest speed usable for electronic flash with your camera, provided that speed does not exceed 1/400th second. On single-lens reflex cameras with focal-plane shutters, this speed is usually 1/60th or 1/125th; cameras with in-the-lens shutters usually allow synchronization at speeds up to the maximum of 1/400th. Do not set shutter to a speed faster than 1/400th second, as this may cause under-exposure when the flash is used at maximum power. (If shutter has a switch marked 'M' and 'X', place at 'X' position.)

7) Slide Remote Sensor Housing on camera's

accessory shoe, and lock in place by turning knurled screw clockwise. Attach Remote Sensor Flash Cord to Remote Sensor Outlet of flash (under Flashtube Housing). For cameras with 'Hot' flash shoes, no further preparation is required. However, if your camera does not have a 'Hot' shoe, plug synchrocord to synchrocord receptacle (beside mounting foot) and plug the other end of synchrocord to camera's 'X' flash outlet.

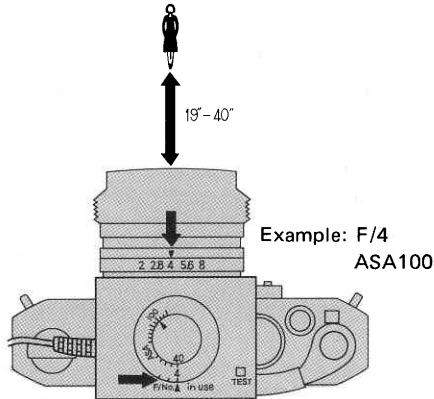
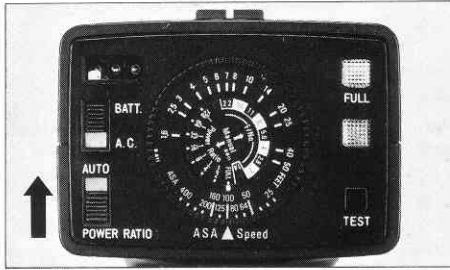
***Note 1:** Should you desire to mount the flash on the right side of your camera, or raise or lower the flash handle within the clamp, this may be done by loosening the two Phillips-head screws inside the encircling ring of the clamp, then repositioning the encircling ring as desired. Be sure to tighten the screws again fully for maximum stability and correct lighting angle.

***Note 2:** If you desire to remove Sensor plug from receptacle for storage, push lock button toward reverse side of the plug while pulling to remove the Sensor plug. The construction is designed precisely to prevent loosening connection.



V) AUTOMATIC OPERATION

The sensitive Silicon Photo Transistor of your Auto 611 Remote Sensor measures the light reflected by your subject, and automatically controls the flash duration to assure correct exposure within a wide range of distances. It's easy to use:



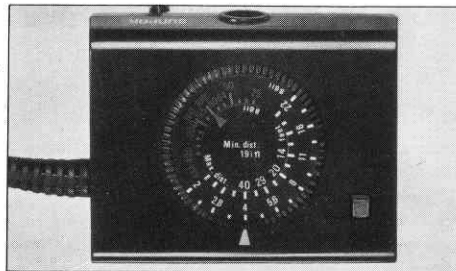
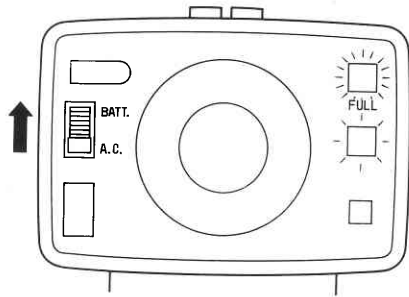
- 1) Move Auto/Power Ratio Mode Selector on back of flash to 'Auto' position.
 - 2) Rotate outer ring of Auto Exposure Sensor Dial until ASA film speed in use is shown by the red triangle (Example: ASA 100)
 - 3) Rotate entire calculator dial assembly until desired lens opening is indicated by white triangle. Set camera lens to this opening (f/number).
- * You will note that you may select **any** lens opening within a 4-stop range. For example, with ASA 100 film openings from f/4 to f/11 may be chosen. By using a **wider** lens opening you gain the ability of taking pictures at the greatest distance — up to 40 feet at maximum aperture. Choosing a **smaller** lens opening reduces the maximum distance range, and increases depth-of-field or the 'zone' of overall sharpness. You may even set this control to an **intermediate** or **fractional** lens opening (such as f/4.5 or f/6.3) to match the maximum aperture of a particular lens, or for any desired reason.
 - * The **minimum** distance for correct **automatic** exposure is **19 inches**, regardless of the lens opening in use.

- * An interesting benefit of your flash's energy-saving (Thyristor) circuitry: by shooting at the **widest** possible lens opening (f/4 with ASA 100 film) you not only obtain the greatest distance range but also the greatest **number of flashes**, and fastest recycling times, in normal operation. Reason: at a given distance, less energy is required to light a subject at f/4 than at smaller apertures (f/5.6–f/22).
- * **Smaller** lens openings (f/8–f/22) provide greater 'depth-of-field' within their usable distance range (to 14 feet at minimum aperture). One good time to choose them is when you're taking pictures of children or sporting events, where it's hard to stay in focus because the subjects are usually moving. By shooting at smaller lens openings (f/8–f/11 with ASA 100 film) you'll generally get sharper pictures of moving subjects. This is also handy in dim light or with wide angle lenses, when precise focusing is somewhat harder than normal.

Take The Picture!

- 1) Move Battery/AC Selector (On/Off switch) on flash to appropriate position for power source in use. Within seconds, you'll notice the
- 2) 'Auto Signal' Lamp on Sensor will glow. This confirms that your flash is set for automatic operation. Then, the

- 3) Green 'Ready' Lamp will also glow, signaling that your flash is ready to fire at full (100%) power. Now, focus and ... **Take the Picture!** Your flash will **automatically** deliver the correct amount of light for correct exposure within the distance range indicated.



For Succeeding Exposures ...

Just wait until the green Ready Lamp comes on; make sure you're within the usable distance range for the lens opening in use ... and shoot!

To Verify Correct Exposure

Aim the flash towards the subject and press the 'Test' button. The flash will fire and, immediately afterwards, the Auto Signal Lamp will turn off, then quickly light again; when this occurs, the automatic exposure will be correct. If the Auto Signal Lamp does **not** go off, choose a wider lens opening, or move closer to your subject and repeat the verification test. It's a simple, highly accurate way of confirming that your picture will be perfectly exposed before you expose it!

More About Your 'Auto Signal' Lamp ...

The Auto Signal Lamp of your flash performs three valuable functions:

- 1) **Confirms Automatic Operation.** When the lamp lights, the flash is set for automatic operation. In manual operation, the lamp shuts off.
- 2) **Confirms That Subject Is Within Correct Maximum Distance Range.** By blinking after a test flash, the Auto Signal Lamp on Sensor shows that the flash has used less than its full power in automatic operation, and that unused energy is being stored. Thus, you

can be sure that the subject is within the maximum distance for correct exposure.

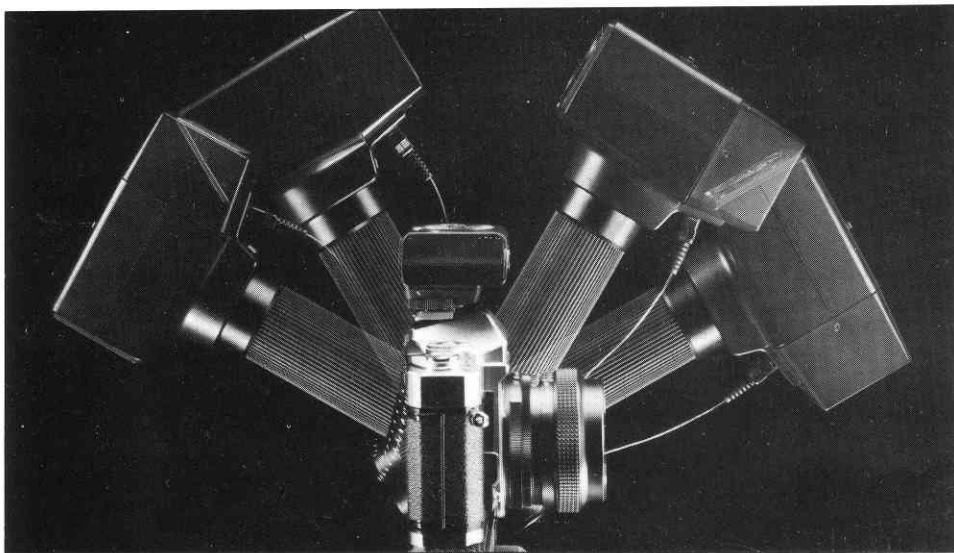
When a test flash is fired at the **maximum** subject distance, the flash must use all its energy to correctly light the subject. Accordingly, at the **limit** of the distance range selected, the flash will operate at full power and the Auto Signal Lamp may not 'blink'. Should this occur, your picture **will still be correctly exposed** so long as your subject is not at an appreciably greater distance than shown on the Auto Exposure Calculator Dial (example: 40 feet at maximum auto aperture).

- 3) **Signals Battery Depletion.** If the Auto Signal Lamp remains off for **one second or more** following a test flash, the batteries are weak and should be recharged (if Nickel-Cadmium type) or replaced (if Alkaline or 510V type).
- * When you're done taking flash pictures, move the Battery/AC switch to 'Off' position; no energy is now being consumed. (Note: the Auto Signal and Ready Lamps may continue to glow for several minutes; this is O.K.)

VI) AUTOMATIC OPERATION

Bounce Lighting

Your Sunpak Auto 611 electronic flash allows soft, shadowless 'bounce' lighting to be used whenever desired. This advanced lighting technique beams the light off ceiling or wall, to spread a soft, diffused light evenly throughout the entire area. Bounce lighting is almost totally free of the shadows which often accompany direct lighting, making it particularly valuable for photography of people as well as finely-detailed close-up and macro subjects.



- 1) Loosen Locking Screw on Sunpak flash clamp by turning it counter-clockwise. Press Retaining Button inwards and hold it.
- 2) Pull out bracket from flash clamp, and rotate flash clockwise until desired angle is reached.
- 3) Press bracket in until it 'clicks' in place; tighten Locking Screw.

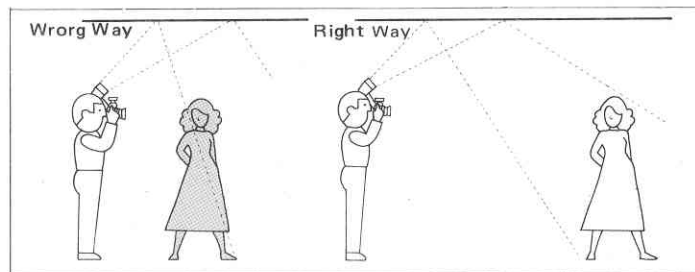
* Since the Remote Sensor of your Sunpak Auto 611 is always facing the subject, bounce flash exposures are controlled automatically as indirect lighting. Generally, it is wise to pre-set your flash and lens for use at the widest available lens opening, as the extra distance traveled by the light — and the light absorbed by the ceiling — often diminish the light on the subject sharply.

* Always take care that the 'bounce' surface (usually the ceiling) is of a white or neutral color. Surfaces with a different color will cause that color to mix with the light of the flash on the subject.

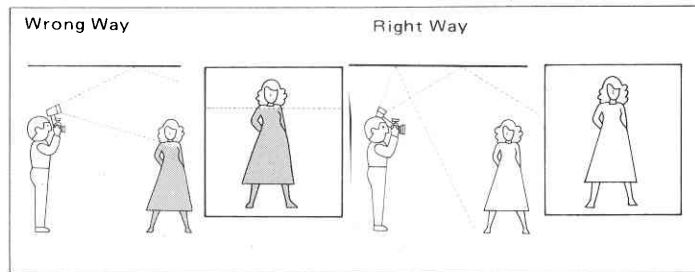


Note: For bounce flash with your camera held in vertical position, remove flash from bracket and loosen the Phillips-head screw inside Quick-Release Clamp. Rotate flash 'handle' so flash will aim upwards at desired angle, tighten screws firmly, and re-attach flash to bracket.

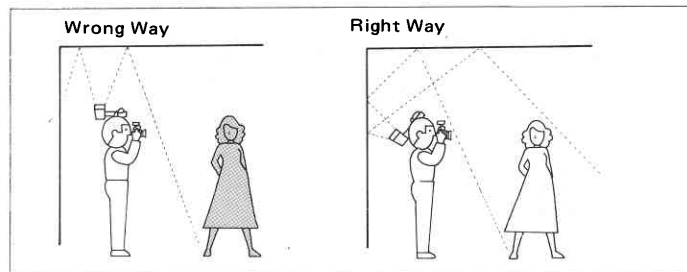
Tips For Better Bounce Pictures



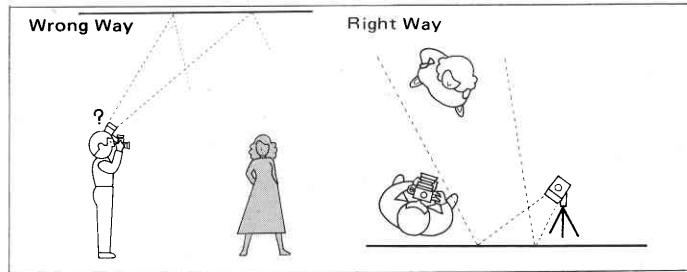
- * **Don't Stand Too Close to Your Subject.** Reason: the light will be reflected downwards at an angle so acute that no light (or very little light) can reach your subject's face. This can cause unpleasant-looking 'dark spots' under the subject's nose and eyes.



- * **Rotate flash sufficiently to prevent the subject or the background immediately behind the subject from receiving any portion of direct light from flash.**

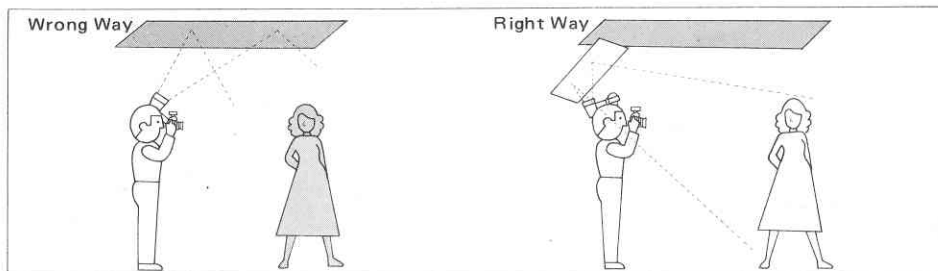


- * **In Small Rooms, Try Bouncing The Light Off The Wall Onto The Ceiling.** Provided it's a white-colored wall and ceiling, this technique gives much more even lighting than direct off-ceiling bounce where space is limited. Try it!

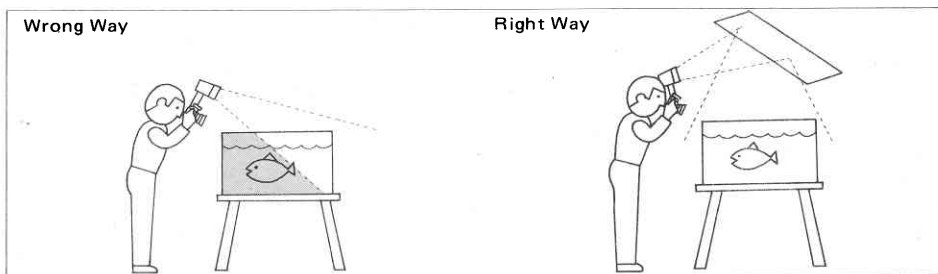


- * **Remember That You Can Bounce Off The Wall If The Ceiling's Too High.** There isn't any law that says bounce flash must be beamed off the ceiling! In many homes, a white-color wall makes an excellent reflective surface for bounce flash ... and, quite often, more light can reach the subject since the light does not have to travel as far. Try it! (Just press the Quick-Release Button and hand-hold the flash for the desired lighting angle.)

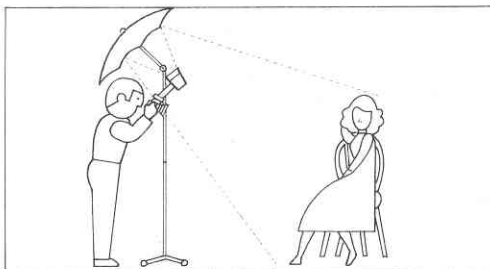
- * **Can't Find A Suitable Bounce Surface? Make One ...** If the wall or ceiling is any color other than white, your subject will show that color in the finished photograph. Solution: create your own bounce 'surface' ... possibly an ordinary piece of white cardboard held or taped in front of the flashtube housing, so that it reflects the flash light onto the subject.



- * **In Close-Up Photography,** many excellent lighting effects can be achieved by using one or more pieces of white cardboard as reflective surfaces in bounce flash. The soft, diffused effect of 'bounce' light often reveals fascinating details of small objects.



- * **For Extensive Use In Portrait And Child Photography,** many photographers prefer 'umbrella' lighting, created by bouncing the flash off a white or silvered umbrella. Check with your photo dealer for recommendations on umbrellas and lightstands if this approach interests you.



Off-Camera Flash

Off-Camera flash offers many of the benefits of bounce flash. In addition, it allows the full power of the flash to be used, thus permitting professional lighting effects (and smaller lens openings) irrespective of distance or ceiling reflection. It's easy to use:

- 1) Set flash to 'Auto' position, and adjust camera lens to f/number indicated by Auto Exposure Control Dial.
- 2) Focus on your subject. Turn Bracket Lock Ring counter-clockwise fully. Hold camera securely in right hand.
- 3) Press Quick-Release Button inwards, and lift flash away from bracket. Hold flash in left hand, as far away from your camera as possible; aim flash directly at subject.
- 4) Take the picture! Your flash will measure and deliver exactly the light required for your subject... and the highly directional lighting will provide excellent illumination. Since the flash is beamed towards your subject off the optical axis, shadows will be directed away from the subject – out of the picture area.

It's a basic professional lighting technique... made easy by your Sunpak's unique Quick-Release Flash Bracket!



VII) MANUAL OPERATION

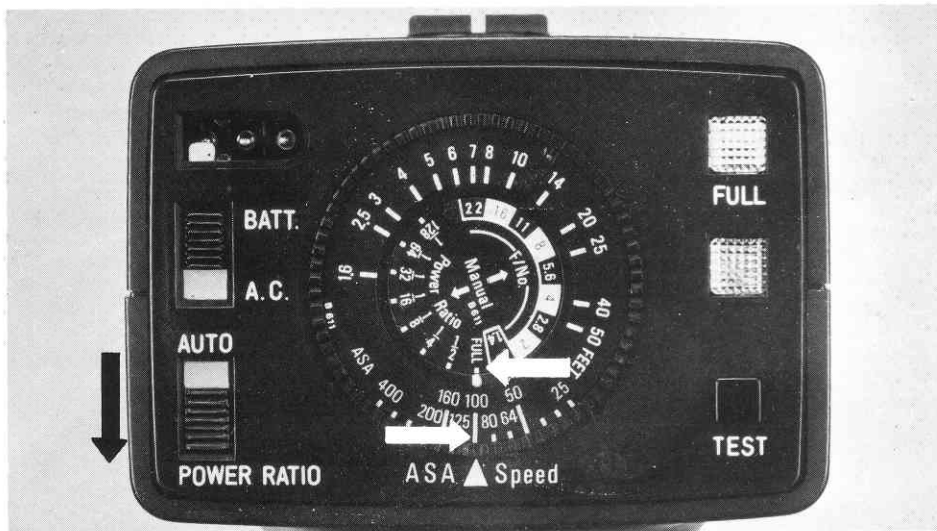
At Full Power

In general, the sole advantage of manual operation at full power is the ability to take pictures at distances greater than 40 feet (beyond maximum 'Auto' range). Here's how:

- 1) Move Auto/Power Ratio Switch on back of flash to 'Power Ratio' position.
- 2) Move Power Ratio Dial on back of flash to 'Full' position.
- 3) Set ASA film speed in use opposite triangle. Focus, and read the camera-to-subject distance from your lens.

Find this distance on the Calculator Dial. Directly below this distance you'll see the lens opening for correct exposure. Set your lens to this opening ... and shoot.

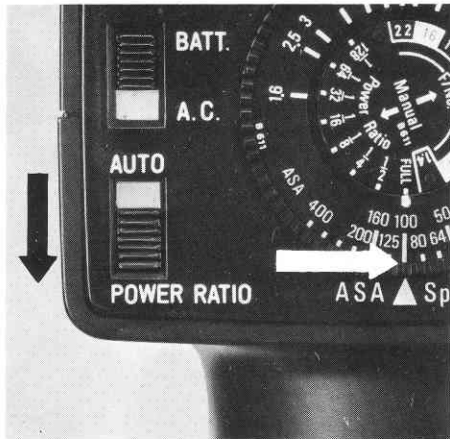
* If desired, the Remote Sensor may be removed when using manual exposure at full to 1/128th power. After unplugging sensor, attach Auxiliary Shutter Cord (supplied) between Auxiliary Shutter Cord Outlet of flash and 'X' outlet of camera. While there is no practical benefit in removing the Remote Sensor, this procedure may be desired in situations where it is known in advance that the flash will be used exclusively in manual mode.



VIII) MANUAL OPERATION

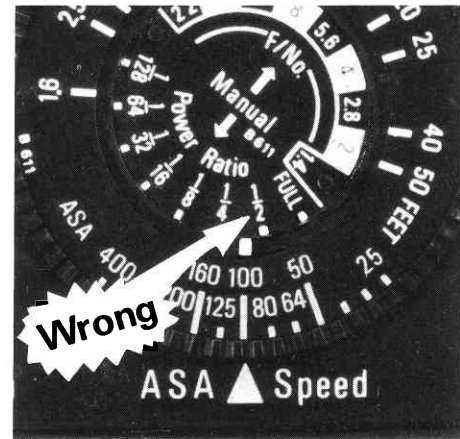
Using The Power Ratio Control To Select Different Lens Openings

Your Sunpak Auto 611 electronic flash has the unique capability of variable light output, even when used in manual mode. This enables you to shoot at wider or smaller lens openings in manual mode for selective depth-of-field control and, as the nergy-saving thyristor circuitry continues to function, simultaneously shortens recycling times and provides greater numbers of flashes. Yet, this remarkable feature is extremely easy to use:



- 1) Move Auto/Power Ratio Mode Selector Switch on back of flash to 'Power Ratio' position. This disengages the auto computer circuit of your flash.
- 2) Move (outer) Calculator Dial to show correct ASA film speed. (example: ASA 100).
- 3) Focus as you normally do. Note the distance shown by the distance indicator on your lens. (example: 7 feet).
- 4) Now, simply move the Power Ratio Dial (in center of Calculator Dial) until the desired lens opening appears under the correct flash-to-subject distance (7 feet). With ASA 100 film at 7 feet from your subject, you can select any of **eight** different lens openings from $f/2$ ($1/128$ th power) to $f/22$ (at full power). Set your lens to this opening. If an intermediate lens opening is indicated, simply set your Lens Aperture Ring. However, always move the Power Ratio Control Dial to marked position (such as Full, $\frac{1}{2}$, $\frac{1}{4}$, etc.) Do not set Power Ratio Dial to positions in between marked numbers. (Should this be done, the flash will operate at Full power and over-exposure may result.)
- 5) Shoot! Your Sunpak Auto 611 flash will deliver the correct volume of light for a perfectly exposed picture at the distance and lens opening selected.

- * **Wider** lens openings ($f/1.4$, $f/2$, $f/2.8$) give the least depth-of-field. This effect makes the background appear blurred, while the subject is recorded sharply.
- * **Smaller** lens openings ($f/11$, $f/16$, $f/22$) record more background and foreground objects sharply. Use smaller lens openings when you wish to show the surroundings clearly, or when your subject is hard to focus on precisely (example: children at play).



IX) MANUAL OPERATION

Synchro/Sun Photography (Fill-in Flash)

Your Sunpak Auto 611 electronic flash is of significant benefit even in outdoor photography. Example: bright day at the beach ... much too bright for your subject to face into the sun. So you turn her around, and shoot against the sunlight: a backlit shot. You even carefully take a close-up meter reading of her face, to insure that the exposure is based on the light on her face (relatively dim) and not the background light (extremely bright). While this technique will produce a well-exposed image of the subject, the background will be rendered far too light; the brightness values in the scene are beyond the ability of any film to record. Solution: Sunpak Auto 611 ... and its unique Power Ratio control.

- 1) With your camera's built-in exposure meter (or a separate meter), determine and set the correct lens opening for the **brightest part of the scene** when exposed at the fastest speed at which your camera synchronizes with electronic flash. (Automatic cameras of the shutter-priority type, such as Konica may be used in "Automatic" mode.)

Example: Set your camera's shutter to 1/125th second (or to whatever is the fastest speed synchronized for electronic flash so long as that speed does not exceed 1/400th second). Your meter indicates correct exposure for the brightest part of the scene — usually the background. Example: f/8: Set your lens to this opening.

- 2) Focus, and read the camera-to-subject distance in feet from your lens' distance scale. Example: 5 feet.
- 3) You have now determined the two required parameters for correct exposure — aperture and distance. Move Power Ratio Dial so that the required distance (5') appears above the required aperture (f/8). Your flash will now operate at the correct power ratio setting for perfectly-balanced fill-in flash. Example: Where an aperture of f/8 is required at a distance of five feet, a "power ratio" of 1/16th is set for ASA 100 film.

- 4) Shoot! Your picture will be perfectly exposed, as the light of the flash on your subject is now balanced perfectly with the exposure required for the brightest part of the scene!

EXAMPLE Shutter speed: 1/125th second
Distance to subject: 5 feet
Film speed: ASA 100
Aperture: f/8



Full fill-in (1/16th power)

The technique described above provides equal brilliance on the subject and the brightest part of the overall scene. This effect is called "full" fill-in and gives excellent results with a majority of subjects.

- * Should you prefer a **less pronounced** fill-in effect (less light on subject), move the Power Ratio Control to the next **smallest**



position: for example, 1/32nd when 1/16th is indicated. Use this technique when your subject is in only slight shadow or is unusually light in complexion or appearance.

- * Alternatively, you may wish to employ a **more pronounced** fill-in flash effect when your subject is either dark in complexion or is in extremely heavy shadows and thus



much less well lit than the brightest part of the scene. This "extra" fill-in effect is achieved simply by dialing a Power Ratio one step **greater** than indicated — for example, 1/8th instead of 1/16th.

- * Experiment when possible, to determine the ratio most pleasing to you with subjects representative of your normal picture-taking.

