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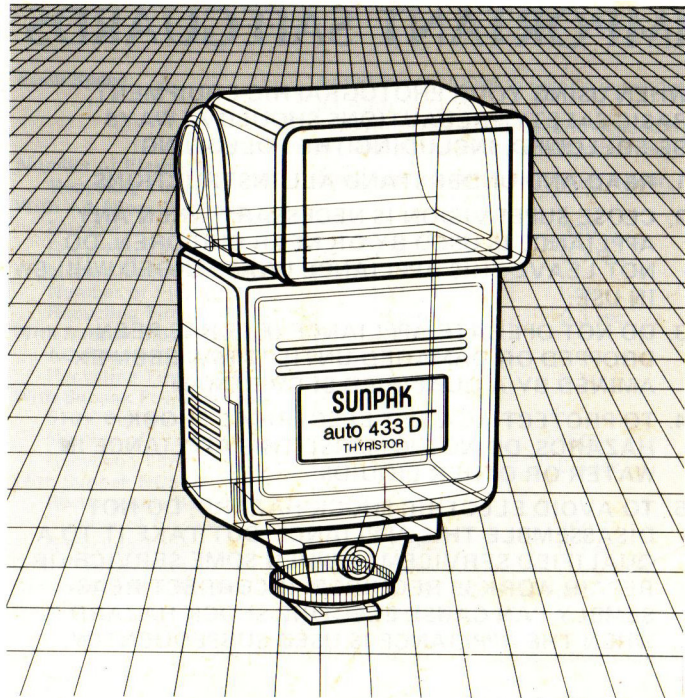
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SUNPAK[®]

auto433 D THYRISTOR

ELECTRONIC FLASH UNIT

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 THIS APPLIANCE UNATTENDED WHILE IN USE.
3. DO NOT OPERATE APPLIANCE IF IT 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

WELCOME to the world-wide family of Sunpak owners. Your Sunpak auto 433 D is one of the most advanced electronic flash units in the world. It is the product of extensive research and development and has been designed to give you many enjoyable years of service. Because many of the fine features of your new auto 433 D are so unique, please take a few minutes to read this owner's manual carefully with your auto 433 D in front of you. The more you know about your new electronic flash, the better you can use it for maximum creativity in your pictures.

Condensed Operating Instructions for Automatic Operation

1. Set the ASA number of the film in use.
2. Set the Auto/Manual Selector Switch so that the red, green or yellow "A" appears.
3. Move the On/Off Switch to the "Batt." position.
4. Wait for the Ready/Test amber light to glow.
5. Set the aperture on your camera to the corresponding aperture which appears on the computer f/stop window. You are now ready to take your pictures.

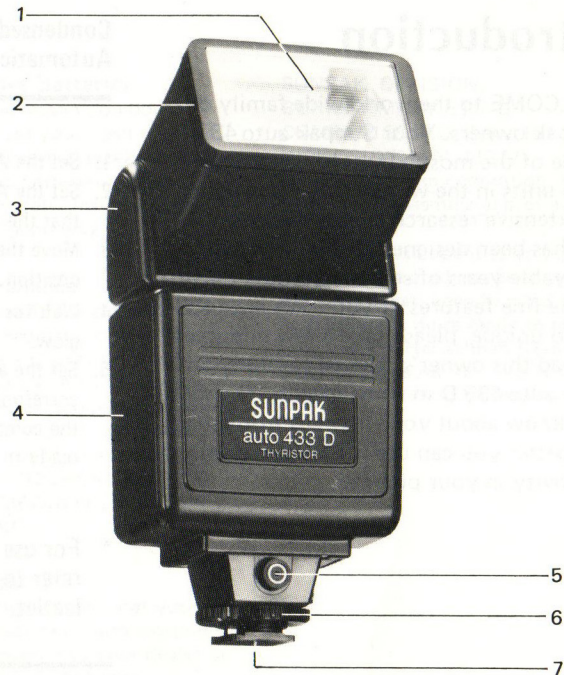
* For use with dedicated cameras, refer to the dedication instruction leaflet.

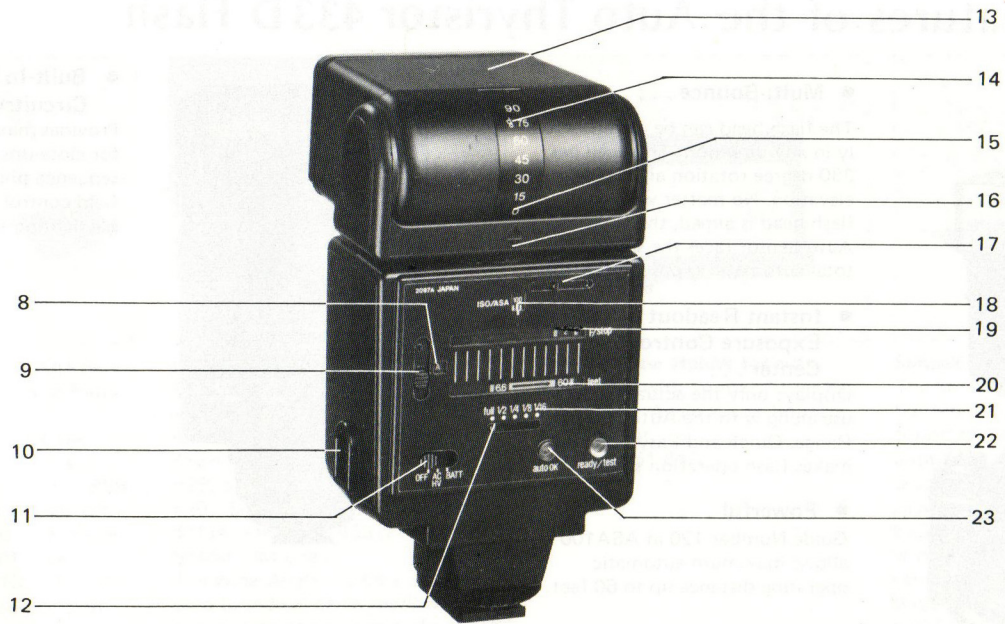
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Description of Parts

- | | |
|--------------------------------------------|----------------------------------------------------------------|
| 1. Flashtube, Reflector and Lens | 14. Bounce Flap (built-in the Tele-Fil Kit) Position Indicator |
| 2. Accessory (optional) Mounting Guide | 15. Vertical Bounce Control Scale |
| 3. Bounce Flash Control Base | 16. Bounce Angle Indicator |
| 4. Battery Compartment Cover | 17. Film Speed Selector |
| 5. Auto Sensor | 18. Film Speed Indicator Window (ISO/ASA) |
| 6. Knurled Lock Ring | 19. F/Stop Scale |
| 7. Hot Shoe Contact | 20. Distance Scale |
| 8. Auto/Manual Mode Window | 21. Power Ratio Control Scale |
| 9. Auto/Manual Selector Switch | 22. Ready Light/Test (Open Flash) Button |
| 10. AC/510V Socket | 23. Auto OK Indicator |
| 11. Battery/AC.HV Selector (On/Off) Switch | |
| 12. Power Ratio Control Selector | |
| 13. Bounce Flash Head | |





Unique Features of the Auto Thyristor 433 D Flash



- **Multi-Bounce . . .**

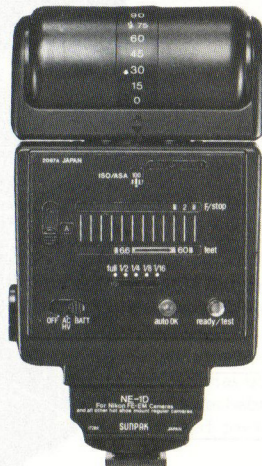
The flash head can be aimed virtually in any direction. The head has 330 degree rotation and 90 degree elevation. No matter where the flash head is aimed, the Built-In Auto Sensor faces the subject for total automatic exposure control.

- **Instant Readout Exposure Control Center . . .**

Displays only the actual f/stop in use along with the Auto Distance Range. Quick and Easy operation makes flash operation simple.

- **Powerful . . .**

Guide Number 120 at ASA100 allows maximum automatic operating distance up to 60 feet.








- **Built-In Power Ratio Circuitry . . .**

Provides maximum creative control, for close-ups, action freezing, rapid sequence photography, depth-of-field control, fill-in flash, and multiple lighting setups.

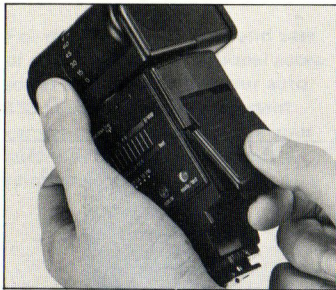
Operation

POWER SOURCES:

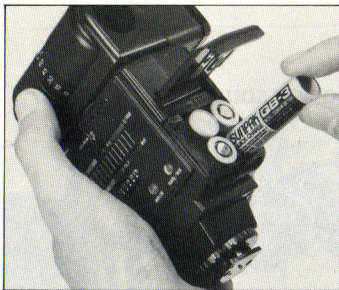
Your Sunpak auto 433 D may be used with five different power sources:

| | | | | |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|  |  |  |  |  |
| <p>Four AA alkaline batteries (not included)</p> | <p>Four AA rechargeable nickel-cadmium batteries (optional)</p> | <p>The Sunpak Multi-Voltage AC Adapter (AD-27) (optional)</p> | <p>The Sunpak Powerpak for 510-Volt (High Voltage) Batteries (optional)</p> | <p>The Sunpak 510V rechargeable battery NC510 (for use with Sunpak Powerpak) (optional)</p> |

To Install Batteries:



1. Slide the battery compartment cover toward the bottom of the unit. Now gently fold up the cover in the direction shown.



2. Insert four AA size batteries (alkaline or nickel-cadmium) as shown. The battery compartment has a guide showing the correct positioning of the batteries for proper polarity. (+, - contacts).



3. Press the cover until it snaps into place.

Using the Multi-Voltage AC Adapter or the Sunpak Powerpak for 510-Volt Batteries (Both Optional):

For AC operation, make sure to check that the voltage selector on your Multi-Voltage AC Adapter is set to the appropriate voltage. If the Multi-Voltage AC Adapter is incorrectly set, the adapter will not function properly and may damage your auto 433 D. To change the voltage setting for use in the other countries, follow the instructions of the Multi-Voltage AC Adapter.

Alkaline or Nickel-Cadmium Batteries?

The major advantage of alkaline batteries is that they provide more flashes per set. While nickel-cadmium batteries will provide fewer flashes per set, they will recycle your auto 433 D slightly faster and can be recharged hundreds of times for more economical operation over the long run.

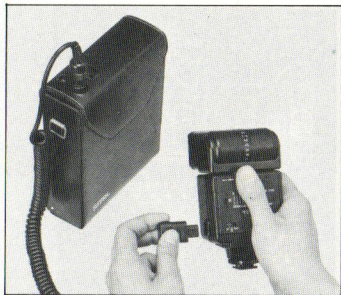
*For information on using Nickel-Cadmium batteries, see page 24.

CAUTION: When using your auto 433 D with external power sources, always keep batteries inside the unit to maintain the dedicated function. Your auto 433 D will not interface with the camera without the batteries.



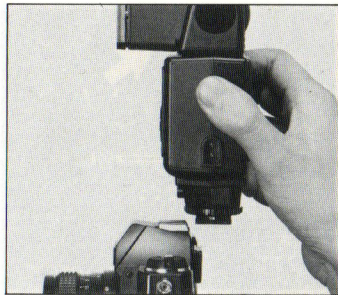
1. Insert plug into the AC/High Voltage socket on the flash and into a standard wall outlet as illustrated. The AC Adapter will supply virtually unlimited flashes and is ideal for indoor use.

Note: When using the Multi-Voltage AC Adapter or the Sunpak Powerpak for 510-Volt Batteries, always set the Battery/AC HV Selector Switch to the AC/HV position.



2. When you use the optional accessory Sunpak Powerpak for 510-Volt Battery, first attach the plug adapter to the end of Powerpak cord and plug it into the auto 433 D in the same manner as you would with the Multi-Voltage AC Adapter. The Sunpak Powerpak for 510-Volt Battery allows extremely rapid recycle times and the greatest number of flashes.

MOUNTING THE FLASH TO THE CAMERA:



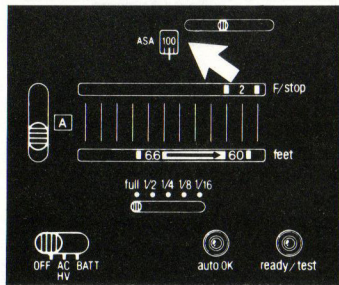
1. Slip the unit onto the camera's hot shoe. Turn the knurled lock ring clockwise to insure secure mounting to your camera's shoe.
2. Set the Camera shutter to the fastest shutter speed synchronized for electronic flash. For SLR cameras, the highest usable speed is generally 1/60th second; however, some permit flash synchronization of up to 1/125th second. To be sure, refer to your camera's instruction manual.

Automatic Operation

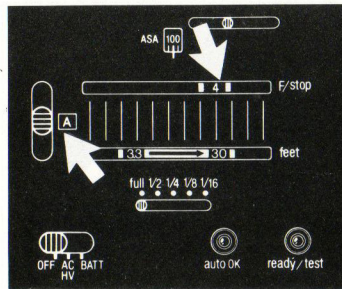
Operation of the Power/Exposure Control Center

The sensitive silicon photo transistor of your auto 433 D measures the light reflected from the subject and automatically regulates the flash duration providing correct exposure within a wide range of distances. It's easy to use:

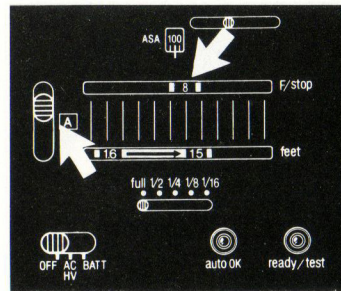
- Slide the ASA Film Speed Scale until the ASA of the film in use is visible in the ASA speed window. (Example: ASA 100).
- For the maximum distance range in automatic operation, move the Auto/Manual Selector Switch to



the green "A" position so that the green "A" is visible in the Auto/Manual Mode Window. A Green line and f/2 will appear. Then set your camera lens open-



- ing (for ASA 100 film, the lens opening is f/2). Your flash and lens are now set for correct exposure at any distance between 6.6 feet and 60 feet.
- For an intermediate distance range in automatic operation, move the Selector Switch to the yellow "A" position so that the yellow line and f/4 appear. Then set the same aperture on your camera (for ASA 100 film, the lens opening is f/4). Your flash and lens are now set for correct

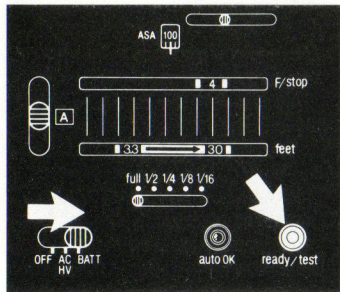


- exposure at any distance between 3.3 feet and 30 feet.
- For maximum depth-of-field (greatest sharpness in front of, and in back of the subject), move the Selector Switch to the red "A" position so that the red "A", the red line and f/8 appear. Then set your camera lens opening (for ASA 100 film, the lens opening is f/8). Your flash and lens are now adjusted for correct exposure at any distance between 1.6 feet and 15 feet.

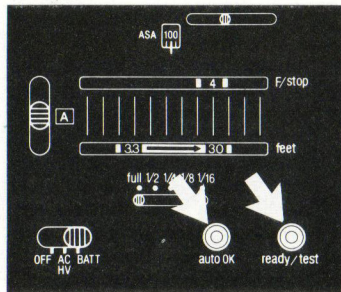
Note: If the ASA number for your film is not indicated on the ASA film speed scale, use an intermediate markings as shown.

| | | | | | | | | | | | | | | | | |
|--------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|
| Marked ASA Speeds: | 1000 | | | 400 | | | 200 | | | 100 | | | 50 | | | 25 |
| Intermediate Nos: | 800 | 640 | 500 | | 320 | 250 | | 160 | 125 | | 80 | 64 | | 40 | 32 | |

Taking the Picture

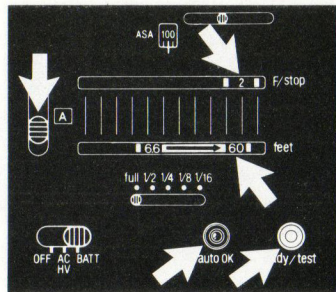


1. Move the Batt/AC HV Switch to the appropriate position for your power source.
2. In a few seconds, the Ready/Test Button on the back of the flash unit will start to glow. This confirms that your flash is ready to fire.



3. **Take the picture!**
Your flash will automatically provide the correct amount of light for proper exposure within the distance range indicated. **For succeeding exposures . . .** Just wait until the Ready/Test light comes on. Make sure you are within the usable auto distance range for the lens opening in use and . . . Shoot!

To Verify Correct Auto Exposure:

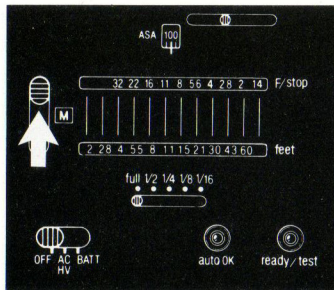


To verify the correct automatic exposure, just aim your flash directly towards your subject and press the Ready/Test Button. This will cause the flash to fire without actually exposing any film. If the automatic exposure is correct for your subject, the green "Auto OK" lamp will glow immediately after the "test" exposure.

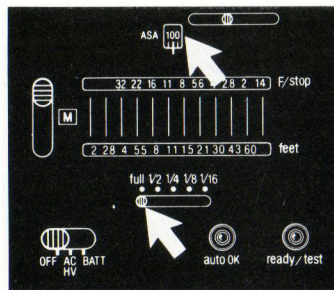
If the lamp does not glow, move closer to your subject (or, if you are shooting in yellow or red auto mode switch to green and adjust the aperture accordingly.). The 'Auto OK' provides positive verification in automatic operation that your picture will be correctly exposed.

Power Ratio (Manual) Operation

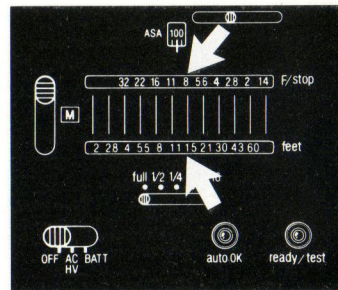
With Sunpak's unique Power Ratio Control you can adjust the light output over a five stop range (from full to 1/16 power). This feature gives you greater depth-of-field control, the ability to control battery life and recycle times, precise fill-in flash capability, macro/close-up capability and the ability to control flash duration.



1. Set the Auto/Manual Selector Switch (on the back of the flash body) to the top so that the white "M" appears.

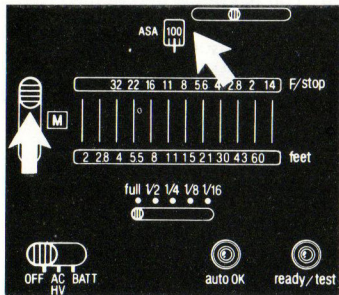


2. Set the Film Speed Scale to the desired ASA setting. (Example: ASA 100).
3. Adjust the Power Ratio Control to full power by sliding the Selector Switch.



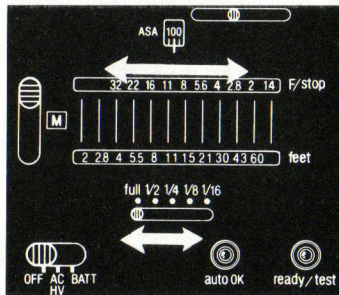
4. The scales for distance and f/stop now show the correct combination of exposure. Find the flash-to-subject (not camera-to-subject) distance. (Example: 15')
5. Set your lens to the lens opening shown for this distance. (Example: with ASA 100 film, the correct lens opening at 15' is f/8).

Using the Power Ratio Control at Full Power:

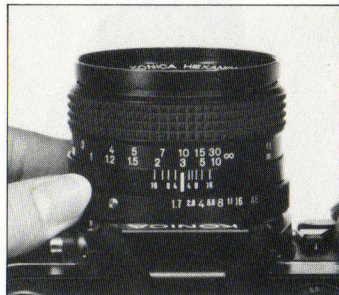


Using Power Ratio:

1. As when using the Power Ratio at full power, set the Film Speed Scale to the appropriate ASA rating and be sure the Auto/Manual Selector is at "M".
2. Determine the distance of your subject from your flash. When the auto 433 D is mounted onto the camera, focus your camera's lens and read the distance indicated by the distance scale on the lens barrel.



3. Slide the Power Ratio Control Switch until you have the desired f/stop opposite to this distance. ALWAYS SLIDE THE POWER RATIO CONTROL SWITCH TO A MARKED (CLICK STOP) POSITION. DO NOT SET THE POWER RATIO BETWEEN MARKED RATIOS OR THE UNIT WILL NOT OPERATE AS DESIRED. (Example: 11' feet with ASA 100 film, you may choose f/11, 8, 5.6, 4 and 2.8.).



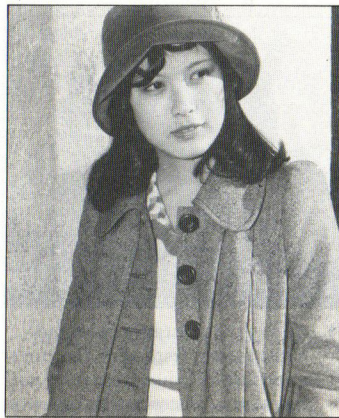
4. Be sure the distance scale indicates proper f/stop for the correct exposure of your subject. If not, increase or decrease the power as needed.
5. You are now ready to take your picture. Remember to adjust the aperture on your lens to match the aperture indicated on the calculator scale.

USING POWER RATIO FOR BETTER PICTURES

Fill-in Flash Photography

Your Sunpak auto433 D electronic flash is of significant benefit even in outdoor photography. Example: a bright day at the beach . . . much too bright for your subjects to face the sun. So you turn them around, and shoot against the sunlight: a backlit shot. You can take a close-up meter reading of their faces, to insure that the exposure is based upon the subjects' faces (relatively dim) and not upon 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 value in the scene is beyond the ability of any film to record.

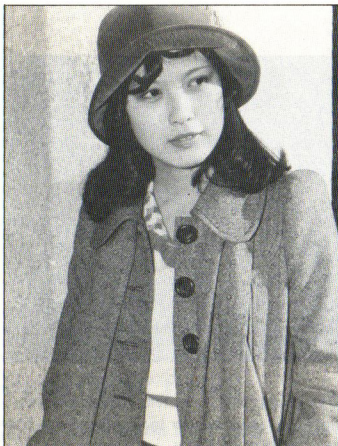
Solution: Sunpak auto433 D . . . and its unique Power Ratio Control.



EXAMPLE:

Full fill-in (1/2 power)
Shutter speed: 'X' speed
Distance to subject: 11 feet
Film speed: ASA 100
Aperture: f/8

- 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 shutter-priority cameras, such as Konica may be used in "Automatic" mode.)
Example: Set your camera's shutter to 'X' speed (or to the fastest speed synchronized for electronic flash without exceeding 1/700th second). Your meter indicates correct exposure for the brightest area of the scene — usually the background. Example: Set your lens to f/8.
- 2) Focus, and read the camera-to-subject distance (feet) from your lens' distance scale.
(Example: 11 feet.)
- 3) You have now determined the two required parameters for correct exposure — aperture and distance. Move the Power Ratio Control Selector until the required distance (11') 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 11 feet, a "power ratio" of 1/2 is set for ASA 100 film.
- 4) Shoot! Your picture will be perfectly exposed, because the light of the flash on your subject is now balanced perfectly with the exposure required for the brightest part of the scene!



Full fill-in (1/2 power)

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



1/2 fill-in (1/4th power)

- 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, 1/4th when 1/2 is indicated. Use this technique when your subject is surrounded by a faint shadow or has an unusually



1/4 fill-in (1/8th power)

- light complexion or appearance.
- Alternatively, you may wish to employ a more pronounced fill-in flash effect when your subject has darker complexion or is in an extremely dark shadow and not well lit as other bright areas of the scene. This "extra" fill-in effect

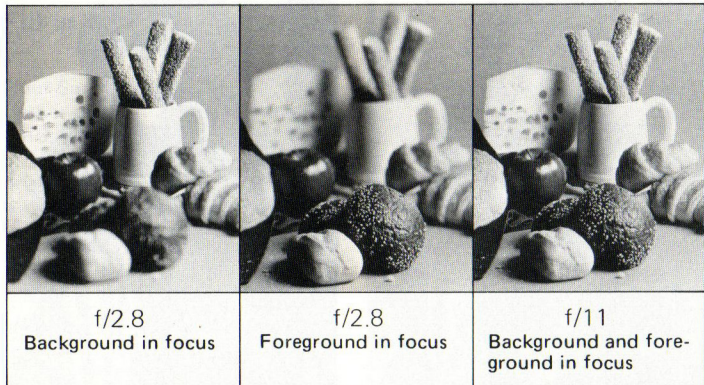


1/8 fill-in (1/16th power)

is achieved simply by dialing a Power Ratio one step over the power indicated — Example: full power instead of 1/2.

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

Depth-Of-Field Control



In addition to controlling the exposure, the lens opening or the lens aperture, the Power Ratio Control also regulates the depth-of-field of your image. When a lens has a small aperture, such as $f/16$ or $f/11$, the area in front of and behind your subject will be in focus. However, when the lens aperture becomes wider, such as at $f/2.8$ or $f/2$, the area in focus will be significantly reduced. Thus, when you use a wider aperture, your portraits will be more pleasing because distracting backgrounds will be all but eliminated. For other subjects, such as still life, you will want the entire area to be in focus. With the Sunpak Power Ratio Control, you can adjust the power ratio setting to the aperture you desire for extra creative control.



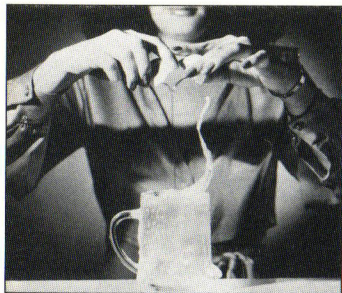
Examples:

When photographing still life, more depth-of-field is often required. Use the higher power settings and smaller lens openings for best results.



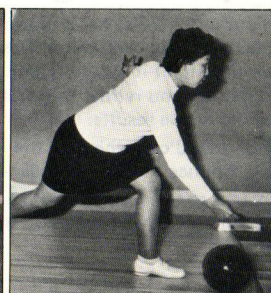
For portraits, use the lower power settings and larger lens openings for less depth-of-field.

Freezing Action



Your auto 433 D can freeze almost any action at full power with a flash speed of just $1/700\text{th}$ second. For even briefer flash duration, which will allow freezing of the fastest action, you can use the Power Ratio's lower settings to obtain speeds as fast as $1/10000\text{th}$ second.

Working With Motor Drive/Auto-Wind Cameras



By using the $1/16\text{th}$ Power Ratio setting, far less energy is expended with each flash and the auto 433 D will recycle almost instantly.

With fresh batteries, you can shoot up to three pictures per second, thus making the auto 433 D ideal for use with motor-drive and auto-wind cameras.

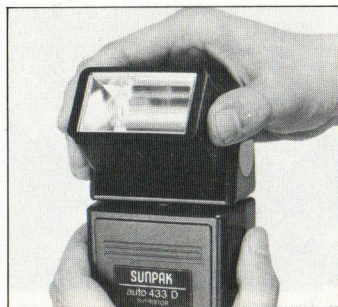
- * For motor drive operation, the Sunpak Powerpak for 510-Volt Battery (Cat. No. 651-723) will provide the best results. (You can shoot up to four pictures per second.)
- * Note: When taking up to 40 frames continuously, rest the flash unit for 10 minutes or more.

| Power Ratio | Flash Duration |
|-------------|-------------------------|
| Full | $1/700\text{th}$ sec. |
| $1/2$ | $1/1200\text{th}$ sec. |
| $1/4$ | $1/3000\text{th}$ sec. |
| $1/8$ | $1/6000\text{th}$ sec. |
| $1/16$ | $1/10000\text{th}$ sec. |

Operating Adjustable Bounce Flash Head

Your auto 433 D has a unique flash head assembly which enables you to aim the light in virtually any direction and render more pleasing and creative results.

For added convenience, the Adjustable Bounce Flash Head has reference marks so you can determine the exact angle of bounce you desire.



1. To rotate the Adjustable Bounce Flash Head, grip with thumb and forefinger and gently turn to the desired setting. **DO NOT FORCE THE HEAD.**



2. To adjust the Flash Base, simply twist as illustrated with thumb and forefinger.

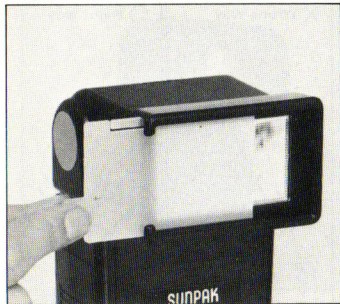
Wide Angle Lenses:

| auto 433 D | Without Diffusion Filter | With Diffusion Filter 28 | With Diffusion Filter 20 |
|----------------------------------------|--------------------------|--------------------------|--------------------------|
| Angle of Illumination (on 35mm camera) | 35mm lens | 28mm lens | 20mm lens |
| Guide Numbers (ASA 25) | 60 | 42 | 30 |

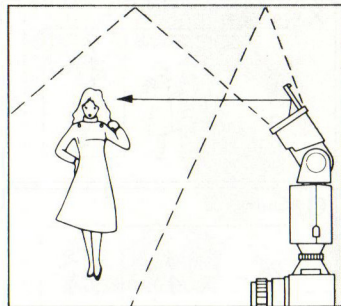
For best results when using moderate wide-angle lenses with direct flash, such as a 35mm focal length lens with a 35mm camera, be sure to adjust the bounce flash head to match the format of the film. For other wide-angle lenses, use the diffusion filters (included in the Sunpak Filter Kit Cat. No. 651-738) or bounce lighting may also be used for maximum flash coverage.

Total Bounce Control System:

In addition to its bounce flash head, your auto 433 D's unique accessories are ideal for better bounce lighting.

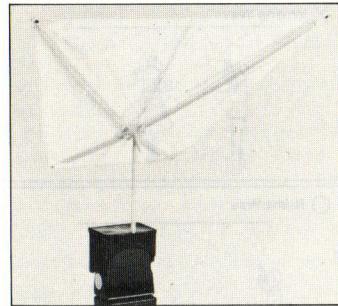


Note: Diffusion filters in Filter Kit FK-1 to be used with optional Filter Holder (Cat. No. 651-847)



Bounce Flap:

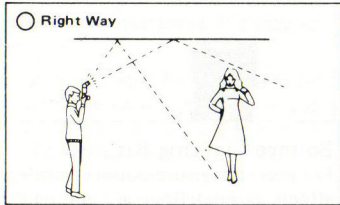
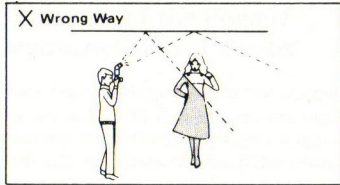
The bounce flap gives multiple lighting effects. A predetermined portion of light illuminates your subject directly and the rest of the light bounces to the ceiling. Ideal for vivid and lively effects. (Built-in the optional accessory, Sunpak Tele-Fil Kit TL-8 Cat. No. 651-842).



Bounce Lighting Kit:

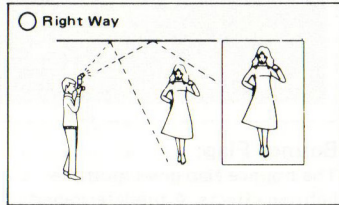
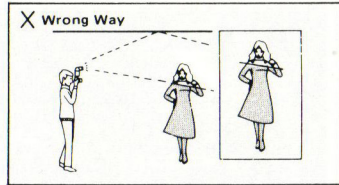
For more extensive bounce lighting effects, Sunpak Bounce Lighting Kit Cat. No. 651-795 (to be attached to the Sunpak Tele-Fil Kit TL-8 or Filter Holder) is available as an optional accessory. For details, refer to the Bounce Lighting Kit instruction manual.

For Better Bounce Flash Pictures

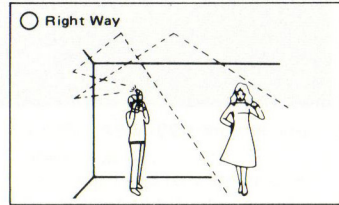
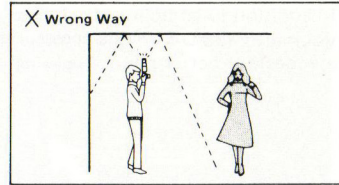


Don't Stand Too Close to Your Subject.

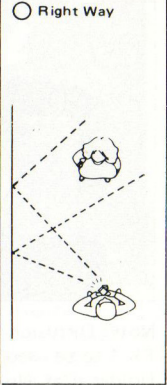
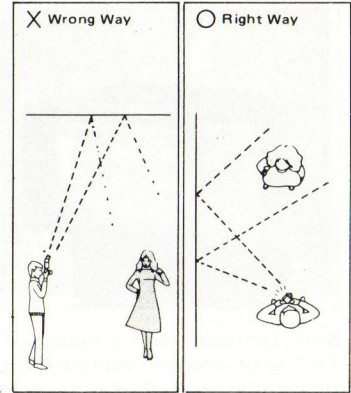
Reason: The light will be reflected downward at an angle so acute that no light (or very little light) can reach your subject's face. This will cause unpleasant looking dark (shadow) areas under the subject's nose and eyes.



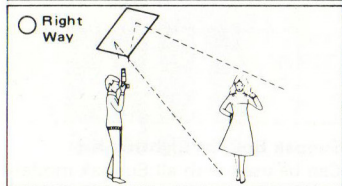
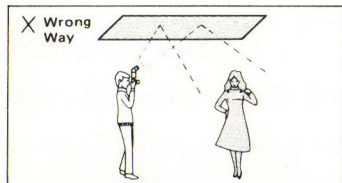
Rotate the flash sufficiently to prevent the subject or the background immediately behind the subject from receiving any portion of direct light from the flash.



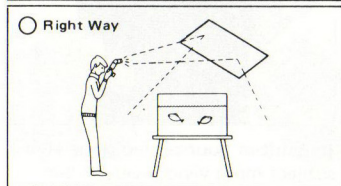
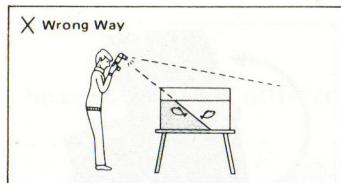
In small rooms, try bouncing the light off the wall onto the ceiling. Provided it is a white wall and ceiling, this technique gives much more even lighting than direct off-ceiling bounce where space is limited.



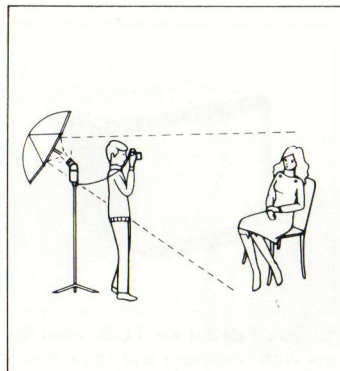
Remember that you can bounce light off the wall if the ceiling is too high. In many homes, a white wall makes an excellent reflective surface for bounce flash ... and, quite often, more light can reach the subject since the light does not have to travel as far.



If you can't find a suitable bounce surface, you can make one ... If the wall or ceiling is any color other than white, your subject will show that color in the finished photograph. Therefore, create your own bounce surface ... possibly you can use an ordinary piece of white cardboard held or taped in front of the flashtube housing so that it reflects the 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.

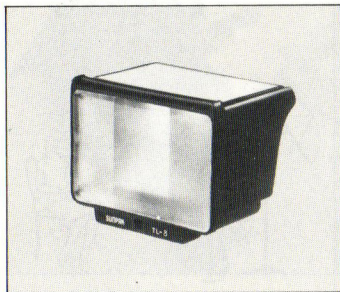


For extensive use in portrait and child photography, many photographers prefer "umbrella" lighting, created by bouncing the flash off a white or silvered umbrella. Check with your dealer for recommendations on umbrellas and lightstands if this approach interests you.

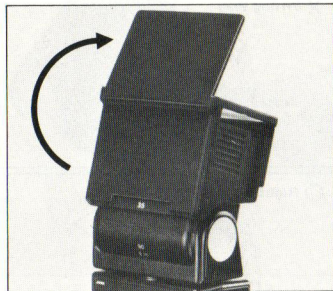
NOTE: To determine the bounce lighting technique which satisfies you, try experimenting using all of the flash head positions.

Accessories Available for the Sunpak auto 433 D

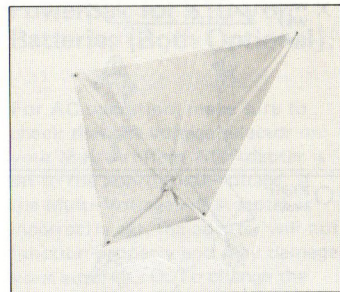
For maximum creativity and ease of operation, many optional accessories are available for your auto 433 D. Just like today's system cameras, you can customize your auto 433 D to suit your exact photographic requirements.



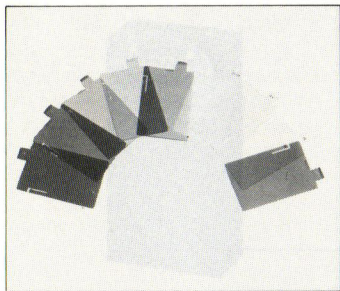
Sunpak Tele-Fil Kit TL-8: Ideal for use with telephoto and zoom lenses of the most popular focal lengths. The Sunpak Tele-Fil Kit actually increases light intensity while decreasing the angle of illumination. This multi position fresnel lens outfit may be used for focal length lenses from 40 to 135mm with 35mm format cameras.



Its built-in bounce flap gives your subject more vivid, lively, fill-in light. The Sunpak Tele-Fil Kit is also designed to accept the filters available in Sunpak Filter Kit FK-1. Tele-Fil Kit TL-8: Cat. No. 651-842



Sunpak Bounce Lighting Kit: Can be used with all Sunpak models accepting Filter Holder or Tele-Fil Kit TL-8 on the flash head. Designed to give very pleasant, soft, indirect lighting effects to the subject. Weighs only 1.4 Oz. Bounce Lighting Kit: Cat. No. 651-795

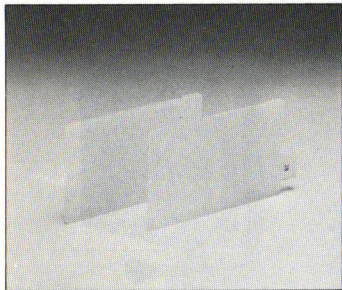


Sunpak Filter Kit FK-1: (Use with Sunpak Tele-Fil Kit TL-8 or Filter Holder).

Filter Kit consists of red, blue, green any yellow color filters as well as a neutral density filter, 85B color correction filter for use with tungsten film, and two wide-angle diffusers. Supplied with case.

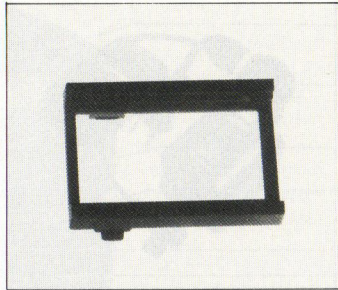
Filter Kit FK-1: Cat. No. 651-738

Note: Filters and Wide-angle diffusers to be used with optional Filter Holder.



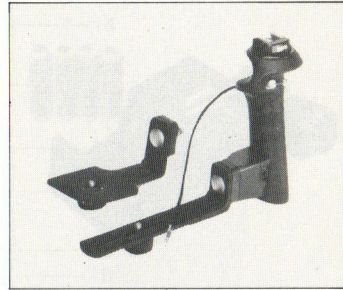
Sunpak Wide-Angle Kit: The Sunpak Wide-Angle Kit increase the angle of illumination of your flash for even coverage with lenses down to 28mm (diffusion filter #28) or 20mm (diffusion filter #20). Simply slide the Wide-angle diffusers into the 433 D Filter Holder (optional).

The Wide-Angle Kit may also be used to reduce harsh shadows such as in portraiture and still life photography. Cat. No. 651-736



Sunpak Filter Holder for auto 433 D: Use with Sunpak Filter Kit FK-1, Wide-Angle Kit or Bounce Lighting Kit.

Cat. No. 651-847



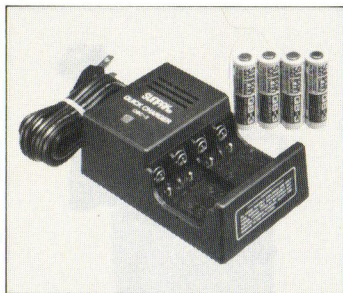
Sunpak Basic Grip/6x6 Bracket: The Sunpak Basic Grip features a built-in hot shoe, contoured grip, tripod socket.

Supplied with standard 12-position bracket (for use with 35mm style cameras), and synch cord. The Sunpak 6x6 Bracket can be used with Basic grip when using 2 1/4 film format cameras.

Basic Grip: Cat. No. 651-772

6x6 Bracket: Cat. No. 651-752

Cable Release: Cat. No. 651-758



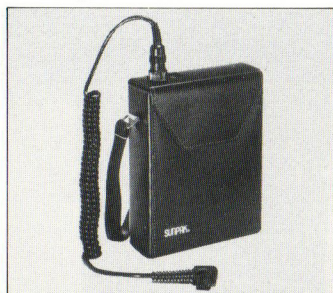
Sunpak QBC-3 Nicad 3-Hour Charger: This charger is used with **Sunpak QB-3 Nicad Batteries**. It charges one to four batteries at a time. It will fully recharge batteries in approximately 3 hours.

Sunpak QBC-3 Nicad 3-hour Charger:
 Cat. No. 651-731
 Sunpak QB-3 Nicad Batteries (4 pcs.)
 Cat. No. 651-732



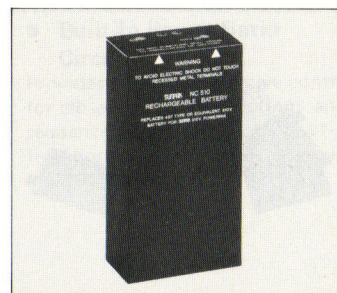
Sunpak Multi-Voltage AC Adapter: The Sunpak Multi-Voltage AC Adapter (AD-27) allows you unlimited flashes. Moreover, the world-wide voltage selector on the adapter gives you maximum convenience for your picture taking.

Cat. No. 651-740



Sunpak Powerpak for 510V Battery: Allows professional 510-Volt batteries to be used for most rapid recycle times and situations where extended number of flashes is a must. Has built-in voltage regulation and detachable cord. An accessory 10' coiled cord is also available.

Sunpak Powerpak for 510V Battery:
 Cat. No. 651-723
 Sunpak 10' Coiled Cord:
 Cat. No. 651-754



Sunpak NC510 Rechargeable Battery for Sunpak Powerpak: This battery provides the fastest recycle times of any available power source. The NC510 can be recharged for hundreds of cycles and provides approximately 80 to 350 flashes per charge.

Sunpak NC510 Rechargeable Battery
 Cat. No. 651-727



Sunpak QBC-5 Charger:

The Sunpak QBC-5 Charger is for use with the Sunpak NC510 Rechargeable Battery.

It will fully recharge battery in approximately 10 hours.

Sunpak QBC-5 Charger:

Cat. No. 651-809

Care of Your auto 433 D

Your Sunpak electronic flash has been engineered to require almost no "maintenance". Still to insure best performance year-in and year-out follow these basic pointers:

1. Storage:

When not in use, your auto 433 D should be stored in a cool dry place. Do not expose the unit to extreme heat or leave it in direct sunlight for extended periods of time. For example, do not leave the unit in the glove compartment, trunk or seat of a car.

Also, be sure to remove the batteries before storage to prevent damage due to battery leakage.

2. Inspect Batteries Frequently:

Check for reasonable recycling time (the length of time it takes the ready light to come on

between flashes): if it's more than 20 or 30 seconds, a fresh set of alkaline batteries should be obtained (or if nickel cadmium batteries are used, they must be recharged).

It's also wise to check your batteries for appearance: Sometimes even the best of batteries discharge or leak some chemical material through the jacket . . . and leave a whitish-powder on the battery which passes onto your Sunpak flash unit's electrical contacts. (If this has happened, replace the batteries after cleaning the Sunpak's internal battery contacts with an eraser.)

Finally, it's a good idea to remove the batteries once in a while and wipe them with a handkerchief. The cleaner the battery surface, the easier it is for the energy to pass through your flashgun's electrical system.

3. Remove Batteries:

If for some reason you do not intend to use your flash unit for a period of several weeks or more, remove the batteries and store them separately. Inside a plastic bag is one good way.

4. Maintenance:

If your auto 433 D reflector window becomes dirty, use one drop of lens cleaner on a lens cleaning tissue. A small amount of lens cleaner and lens tissue or a slightly moist cloth can be used to clean the rest of the unit. **BE SURE TO THOROUGHLY DRY THE UNIT IMMEDIATELY AFTER CLEANING.**

5. Service:

In the unlikely event that your Sunpak electronic flash requires service, return it to your dealer or the sole U.S. Distributor

SUNPAK DIVISION,
BERKEY MARKETING
COMPANIES, P.O. Box 1102
WOODSIDE, N.Y. 11377

Do not, under any condition, attempt to disassemble and/or adjust it yourself.

Electronic flash operates on high voltage and should not be taken apart. **However, keep in mind that flash failure is more likely to result from weak batteries than from any other single cause.** If it doesn't fire, check batteries and contacts carefully.

Specifications:

| | |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Guide Numbers: | 240 (ASA 400 film), 120 (ASA 100 film) 60 (ASA 25 film) |
| BCPS: | 2550 (at Full Power) |
| Angle of Illumination: | 60° Horizontal by 45° Vertical; permits use of 35mm lenses on 35mm cameras, 80mm lenses on 6x6 cameras, 80mm lenses on 6x7 cameras. |
| Automatic Aperture Setting: | f/2, f/4, f/8 (ASA 100 film) |
| Automatic Distance Range: | 6.6' – 60' (at maximum aperture) 3.3' – 30' (at medium aperture) 1.6' – 15' (at minimum aperture) |
| Variable Power Ratio Range: | 16:1, 5-stop range |
| Sensor Acceptance Angle: | 15° |
| Bounce Flash: | Adjustable Bounce Flash Head at 330 degree rotation and 90 degree elevation |
| Interchangeable Power Sources: | 4 x AA Nicad Batteries (optional) 4 x AA Alkaline Batteries (not included) AC: Multi-Voltage AC Adapter (AD-27) with 117/127/220/ 240 V Selector (optional) Sunpak Powerpak for 510V Battery (optional) Sunpak NC510 Rechargeable Battery (optional) |

Flash Speed:

1/700th – 1/20000th second depending
on Auto distance.
1/700th – 1/10000th second depending
on Manual Power Ratio setting in use.

Number of Flashes & Recycling Time:

With AA Nicad Batteries:

Number of Flashes:
Recycling Time:

With AA Alkaline Batteries:

Number of Flashes:
Recycling Time:

With Sunpak Multi-Voltage AC Adapter (AD-27):

Recycling Time (at 117V):

With Sunpak Powerpak for 510V Battery:

Number of Flashes:
Recycling Time:

With Sunpak NC510 Rechargeable Battery:

Number of Flashes:
Recycling Time:

Color Temperature:

Dimensions (H x W x D):

Weight:

| Maximum Power | Minimum Power |
|---------------|---------------|
| 45 | 370 |
| 7 sec. | 0.3 sec. |
| 100 | 1300 |
| 12 sec. | 0.3 sec. |
| 17 sec. | 0.3 sec. |
| 500 | 4500 |
| 1 sec. | 0.3 sec. |
| 80 | 350 |
| 1.5 sec. | 0.3 sec. |

Most suitable for daylight color films.
4.4"x3"x2.8" (Without shoe)
11 oz (less batteries)

All specifications subject to change without notice.

SUNPAK®



SUNPAK DIVISION
BERKEY MARKETING COMPANIES
WOODSIDE N.Y. 11377

Made and Printed in Japan

ELECTRONIC FLASH auto433 D

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