

MINOLTA ELECTROFLASH 20



OWNER'S MANUAL



This efficient electronic flash unit, specially designed for use on the Minolta Hi-matic E and Hi-matic F cameras, features:

- Extreme compactness
- Cordless, hot-shoe convenience

The Electroflash 20 can also be used with any camera having a direct-contact hot shoe.

IMPORTANT SAFEGUARDS

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When using your flash unit, the specific cautionary notices in the owner's manual should always be observed and complied with, as well as basic precautions, including the following:

1. Read and understand all instructions.
2. Do not operate this flash unit if it has

been dropped or damaged — until it has been examined by an authorized Minolta service facility.

3. To protect against electrical shock hazards, do not immerse flash unit in water or other liquids.
4. To avoid electric shock hazards, do not disassemble this unit, but take it to an authorized Minolta service facility when some service or repair work is required.

Incorrect reassembly can cause electric shock hazard when the unit is used subsequently.

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**SAVE THESE
INSTRUCTIONS**

NAMES OF PARTS

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Flash tube and reflector with
guard window

Attaching bracket

Cordless contact



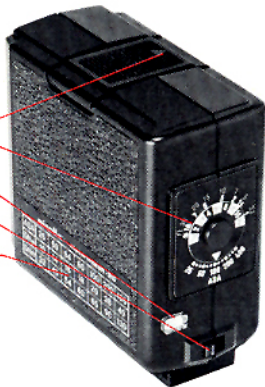
Battery-compartment cover

Computer dial

Combined monitor lamp and
open-flash/test button

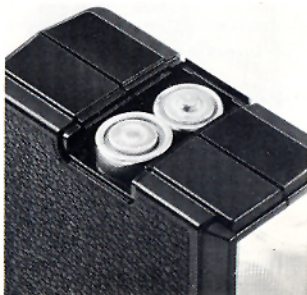
Power switch

Guide-number table



INSTALLING BATTERIES

- 6** 1. Remove battery-compartment cover by sliding it off in direction of the arrow toward the side of the unit.
2. Insert two batteries (see specs.), making sure that plus (+) and minus (−) ends of batteries are positioned as indicated inside battery compartment.



3. Close the compartment by aligning cover and sliding it opposite the arrow's direction until it is securely in place.



CAUTION

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- This flash unit is designed to use only non-rechargeable alkaline-manganese or sealed carbon-zinc batteries as specified. Do not use nickel-cadmium or other rechargeable batteries as this may seriously damage its electronic components.
- When monitor lamp fails to light within a reasonable time with power switch in its on position, replace both batteries with fresh ones at the same time.
- Battery contacts should not be touched with the fingers and should be cleaned with a clean dry cloth before insertion.

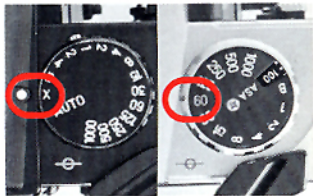
MOUNTING ON CAMERA

- 8 Simply slide attaching bracket of flash unit all the way into the "hot-shoe" of any camera wired for cordless flash.



SETTING SYNC. DELAY AND SHUTTER SPEED

1. With cameras having a sync. delay selector, set it at the "X" position.
2. Make sure that the camera is not set for a shutter speed faster than the manufacture's recommendation for electronic flash (usually 1/60 or slower for full-frame 35mm cameras having horizontal-run focal-plane shutters).



SETTING FILM SPEED

Turn the computer dial to align the triangular silver index with the exposure-rating number of the film you are using. (Dots between numbers on the film-speed scale represent ASA ratings of 32, 40, 64, 80, 125, 160, 250, and 320 respectively from left to right.)



POWER SWITCH

To turn the unit on and charge the capacitor, move the power switch to "ON" as shown. The power switch should be kept in "OFF" position to conserve batteries when you are not taking pictures.

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10 CAUTION

Do not leave power switch "ON" when the unit is not in use, and batteries should be removed from it when the unit is not to be used for two weeks or more; to avoid the possibility of corrosion.

OPERATION

1. For proper exposure under usual conditions, set the lens aperture of the camera to the f-number that appears opposite the flash-to-subject distance on the computer dial of the flash gun (e.g. at $f/2$ for 10m or 33 ft., between $f/5.6$ and $f/8$ for 3m or 10 ft., or between $f/11$ and $f/16$ for 1.5m or 5 ft., etc., at ASA 100 or DIN 21).

2. With cameras featuring an "easy-flash" or "flashmatic" system, simply set the applicable guide number (GN) at the appropriate place on the camera, and the lens aperture is automatically adjusted by focusing your subject.



NOTE

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- For film speeds intermediate to those listed, use the nearest one that experience shows will yield desired exposure.
- For dark subjects or in poor light-reflecting conditions (such as outdoors at night or in dark surrounding indoors), it is recommended that the lens be opened a half stop or full stop more than indicated by computer dial.

RECYCLING

- 12 Do not attempt to take flash pictures when the monitor lamp is not glowing. If the flash is to be fired immediately after the monitor lamp comes on with fresh batteries and when recycling time is long with older batteries, the lens should be opened one half to one stop more than the aperture indicated (e.g., set at $f/4$ or between $f/4$ and $f/5.6$ rather than $f/5.6$). When the monitor lamp fails to light within a reasonable period or time, say 30 seconds, with the power switch on, replace both batteries with fresh ones.

OPEN FLASH

Actuating a flash unit one or more times while the camera shutter remains open on "B" (bulb) or "T" (time) is called "open flash." Firing the flash a number of times with this technique may be useful to illuminate large, dark, stationary subjects (such as a house exterior at night) or to produce "stroboscopic"-type effects with a moving subject. It can of course be used with a short bulb exposure under dark or dim conditions to make single exposures with non-synchronized cameras. For open flash, disconnect the flash from the camera and use

the two independently: With the camera stationary on a tripod or other firm support, open the shutter and fire the flash as many times as desired by means of the open-flash/test button.

FILL-IN OR SYNCHRO- DAYLIGHT FLASH

Though primarily intended for use as the sole of main light source in flash pictures, the Electroflash 20 can be used to balance other bright light sources such as daylight under appropriate conditions. Suitable ones to start with are those in which ambient and flash indications call for the same exposure settings. Then the indicated shutter speed is used, but the lens is closed down one half to

- 14 one stop from that indicated (e.g, for 1/60 sec. at between f/4 and f/5.6, shutter is left at 1/60 but the lens is set at f/5.6 or between f/5.6 and f/8). From this starting point, settings can be further adjusted toward obtaining effects desired under various conditions.

SPECIFICATIONS

Power source:	Direct current only from two AA-(penlight) size 1.5v non-rechargeable alkaline-manganese or sealed carbon-zinc batteries	15
Number of flashes per set of batteries:	Up to 170 with alkaline batteries; up to 40 with sealed carbon-zinc batteries	
Guide number:	20 in meters at ASA 100, 32 in feet at ASA 25	
Minimum recycling time:	Approx. 10 seconds; monitor lamp comes on to indicate recycled condition	
Sync. contact:	Direct contact for "hot-shoe" only; no cord	
Flash duration:	1/2000 sec.	
Color temperature:	Balanced for daylight color film	
Coverage:	50° horizontally, 60° vertically	
Size and weight:	32 x 65 x 65mm (1-1/4 x 2-1/2 x 2-1/2 in.) 90g (3-1/8 oz.) without batteries	
Others:	Power switch; guide number table on the side of unit	

Specifications subject to change without notice

CARE AND STORAGE

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- Your Electroflash may be wiped with a siliconetreated cloth to clean it. Do not allow alcohol or chemicals of any other kind to touch its surface.
 - Avoid keeping the unit in places subject to high temperature, high humidity, dust or dirt. Store it in a cool, well ventilated place.
 - Remove batteries whenever the flash unit is not to be used for more than two weeks.
 - Never attempt to disassemble the flash unit. Any repairs necessary should be undertaken only by an authorized Minolta service facility.

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Minolta

MINOLTA MEANS BETTER PICTURES

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