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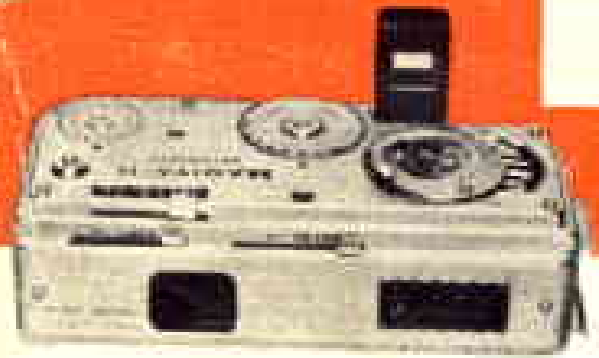
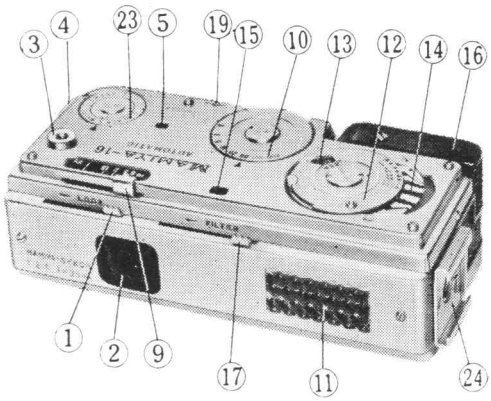
MAMIYA 16 automatic



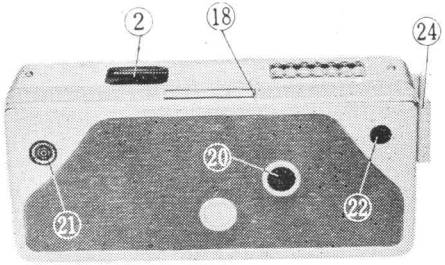
USER'S MANUAL

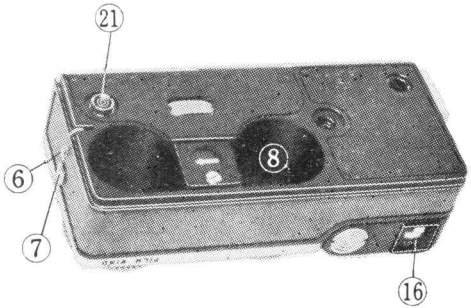
NOMENCLATURE



1. Safety Lock and Lens Cover
2. Lens Window
3. Shutter Button
4. Filmwind Wheel
5. Exposure Counter
6. Backlid Catch
7. Backlid Catch Lock
8. Film Magazine Chamber
9. Focusing Lever
10. Shutterspeed Dial
11. Photocell Window

12. Exposure Meter Dial
13. ASA Window
14. Guide Lines
15. Aperture Indication
16. Viewfinder (swivel mount)
17. Filter Lever
18. Filter Slot Cover
19. Focal Plane Mark
20. Tripod Socket
21. Synchroflash Terminal
22. Gripholder Peg Socket
23. Film Type Reminder
24. Accessory Clip





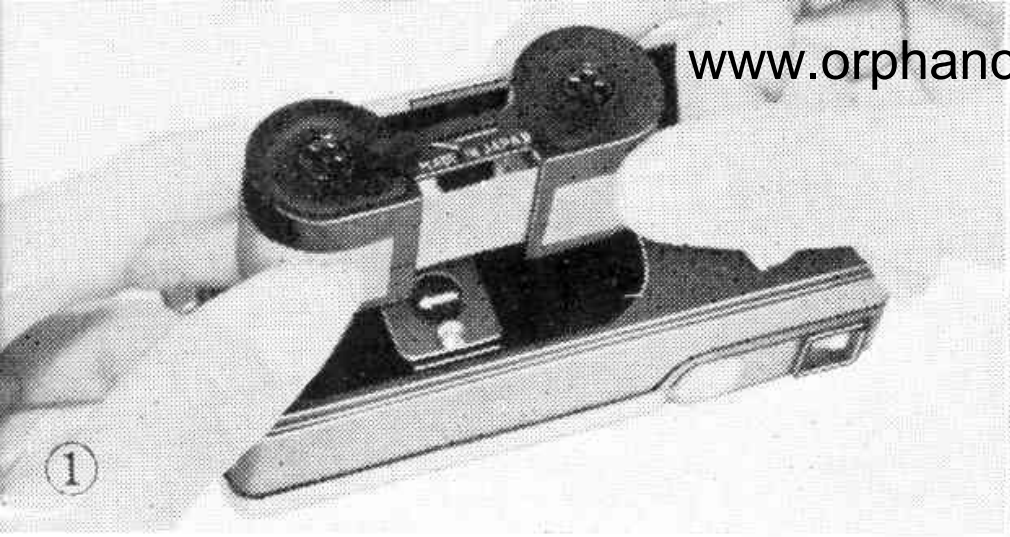
FILM LOADING

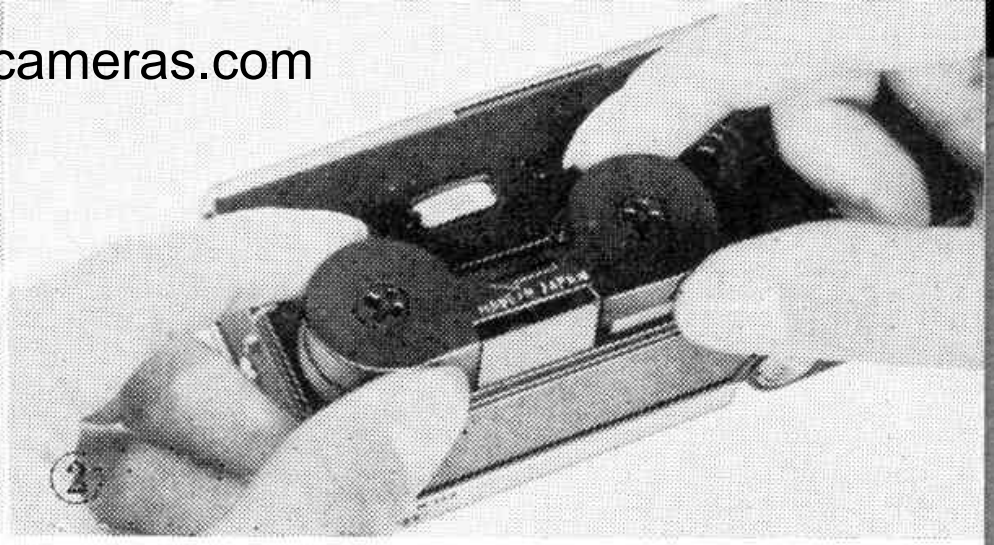
The MAMIYA 16 Automatic is capable of using any type of 16 millimeter film—perforated, non-perforated, monochrome, color—provided it is cut in 1½-foot lengths and loaded in MAMIYA 16 cassettes or magazines.

When loading or removing cassettes or magazines, always avoid direct sunlight; work in the shade or under subdued light.

Before loading, unlock safety lock (1), and repeat filmwind and shutter release action until numeral 18 (red) appears in the exposure counter (5). Filmwind is done by turning filmwind wheel (4) until it stops; and shutter release is effected by pressing shutter button (3).

Shift safety lock (1) to "lock" position, then remove backlid by pushing backlid catch lock (7) toward the top and depress-



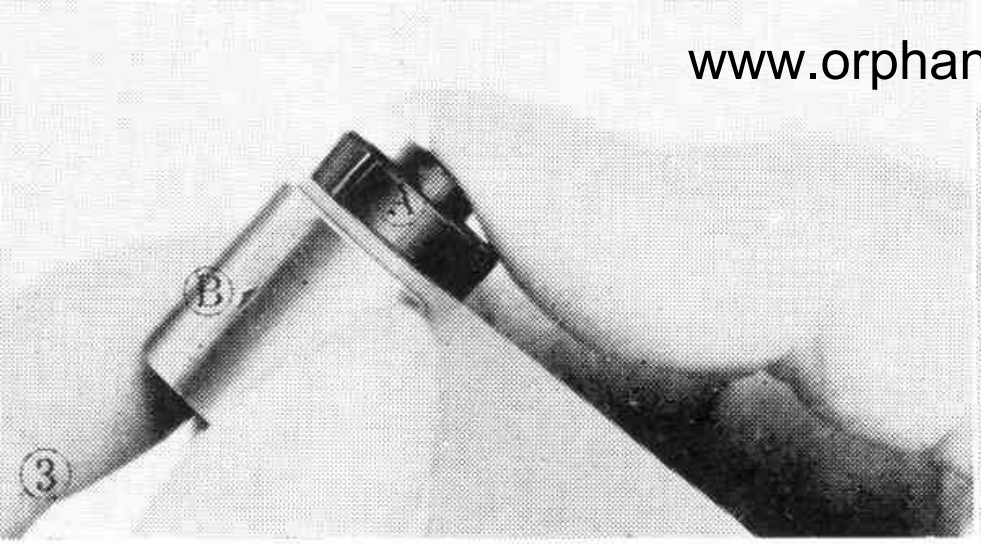


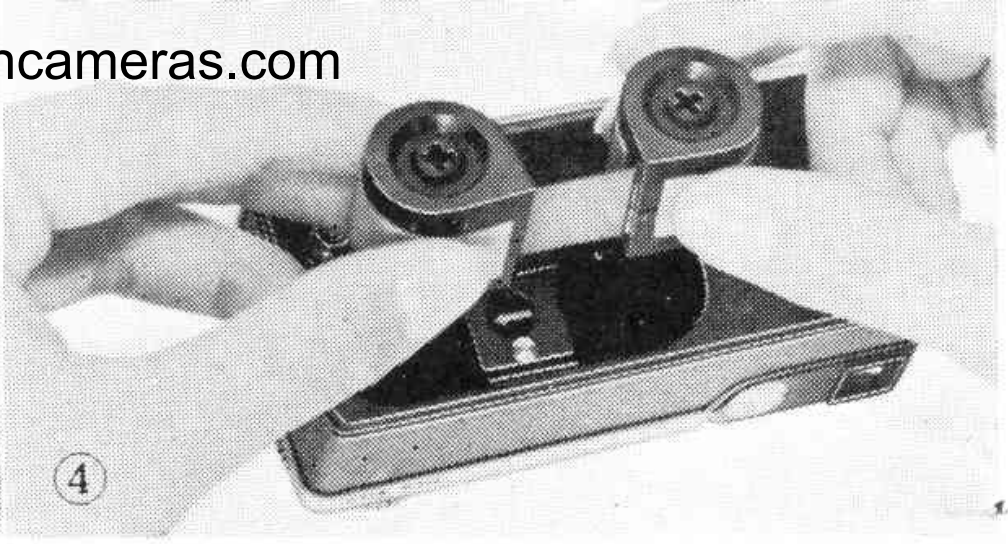
ing backlid catch (6) with thumbnail.

A. When using film loaded in MAMIYA 16 double magazine

1. Into empty film magazine chamber (8) insert magazine with arrowmarks on magazine tie piece and camera pointing in same direction. If the take-up side does not sink flush snugly, turn spool slightly by hooking fingernail in + shaped recess at end of core. Secure fit will result as soon as film-wind spindle engages other end. (Figs. 1 & 2) Replace backlid.

2. Release safety lock (1), then while covering lens window,





release shutter and wind three times. Numeral 1 will appear in exposure counter (5) window, and the camera is ready for picture-taking.

3. When not taking picture, keep safety lock (1) in safety position to lock shutter button (3), with lens protected by cover.

B. When using individual MAMIYA 16 cassettes

1. Have on hand an empty cassette for use on the take-up side. Open empty cassette and remove spool. Draw out about two inches of film from loaded cassette and secure end

to empty spool (A) by means of spring clip (B), utilizing pip on clip and groove on spool to prevent slippage. Wind a turn or so on spool, then fit in empty cassette. (Fig. 3)

2. Replace cover half of cassette and secure with small pieces of Scotch tape.

3. Open camera, and insert cassettes in film magazine chamber (8), the take-up cassette in chamber with filmwind spindle. (Fig. 4) Procedures after this point are the same as with the double magazine.

FOCUSING

When picture-taking, gauge distance to subject with a rangefinder or by eye, then set focusing lever (9) accordingly on the focusing scale. Focus becomes increasingly critical as the range narrows down below 10 feet, but judging by eye also becomes easier. In case of doubt, use a pocket

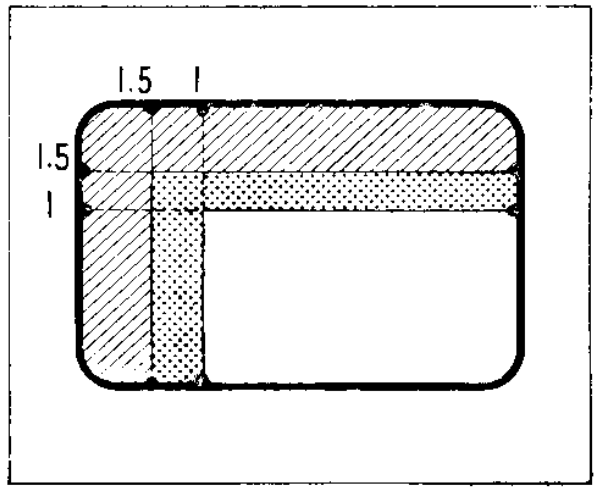
rangefinder or a tape measure, particularly when large apertures must be used. Next, with the aid of the built-in exposure meter, determine the aperture and shutterspeed settings. This is extremely simple because the meter dial (12) is mechanically coupled to the aperture control and to the shutterspeed dial (10).

Erect the viewfinder (16) on its swivel mount, and sight subject through the eyepiece.

The lens of the MAMIYA 16 Automatic is a newly designed MAMIYA-SEKOR super-anastigmat with a speed of F 2.8, and focal length of 25 millimeters. Since this super-lens combines extremely high resolving power with great depth of field, sharp pictures can be obtained with considerable leeway in focusing when the subject is more than six feet from the camera.

In addition to careful measurement of distances at close

ranges, particularly under two feet, proper caution must be exercised to compensate for parallax by using the guide marks on the sides of the bright optical frame of the viewfinder. Otherwise portions at the top and right side of the subject may be lopped off in the picture. At 1.5 feet, the hatched portion of the viewfinder frame, as shown in the diagram, will be out of the picture. At 1 foot, still less of the viewfinder image will be in the picture. Bear this in mind when sighting subjects at extremely close range.



When measuring distances at ranges closer than 1.5 feet, use the focal plane mark (19) as the starting point, and whenever possible use a tape measure.

DEPTH OF FIELD TABLE (circle of confusion 1/1,000 inch)

DISTANCE	∞	12′	6′	3′	2′	1.5′	1′
LENS OPENING 2.8	32′ 3/4″ ∞	8′ 9 1/4″ 19′ 1 1/4″	5′ 1″ 7′ 4″	2′ 9″ 3′ 3 1/2″	1′ 10 3/4″ 2′ 1 1/2″	1′ 5 1/4″ 1′ 6 3/4″	11 1/4″ 1′ 1/2″
4	22′ 5 1/2″ ∞	7′ 10 1/2″ 25′ 5 1/4″	4′ 9 1/4″ 8′ 1 1/4″	2′ 8″ 3′ 5 1/4″	1′ 10 1/4″ 2′ 2″	1′ 5″ 1′ 7″	11 1/4″ 1′ 1/2″
5.6	16′ 3/4″ ∞	6′ 11″ 46′ 3″	4′ 5″ 9′ 5″	2′ 6 3/4″ 3′ 7 1/4″	1′ 9 1/2″ 2′ 3″	1′ 4 1/4″ 1′ 7 1/2″	11 1/2″ 1′ 3/4″
8	11′ 3 1/4″ ∞	5′ 10 1/2″ ∞	3′ 11 1/2″ 12′ 6″	2′ 4 3/4″ 4′	1′ 8 3/4″ 2′ 4 1/2″	1′ 4 1/4″ 1′ 8 1/4″	11 1/4″ 1′ 1″
11	8′ 2 1/2″ ∞	4′ 11 1/4″ ∞	3′ 6 1/4″ 21′ 2 1/2″	2′ 3″ 4′ 7″	1′ 7 1/4″ 2′ 6 3/4″	1′ 3 1/2″ 1′ 9 1/2″	11″ 1′ 1 1/4″
16	5′ 8″ ∞	3′ 10 3/4″ ∞	2′ 11 1/4″ ∞	2′ 1/4″ 6′ 3/4″	1′ 6 1/4″ 2′ 11 1/4″	1′ 2 3/4″ 1′ 11 1/2″	10 1/2″ 1′ 2″

The o mark on the focusing scale, between 6 and ∞, is the standard focus point (12 feet), at which, with aperture set at f/8 everything from 6 feet to infinity will be in sharp register in the finished picture.

DETERMINATION OF EXPOSURE SETTINGS

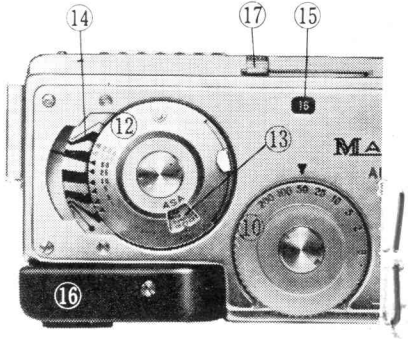
First set the ASA (filmspeed or sensivity) rating of the film in use in the ASA window (13) of the exposure meter dial (12). This is accomplished by holding the dial lever still and shifting the dial itself by means of the protruding pip.

1. pre-setting the shutterspeed dial (10) for determination of proper aperture setting by means of the exposure meter

1) Depending on the type of subject (still subject can be photographed at low shutterspeeds, moving objects call for high shutterspeed if action is to be frozen) and on depth of field requirements, choose an appropriate shutterspeed and turn shutterspeed dial (10) to that setting.

2) Train camera on subject, so that light reflected by the subject strikes photocell window (11) and excites photocell. The meter needle will move and stop at a certain point.

Adjust exposure meter dial (12) so that black or white guide line in alignment with meter needle meets preselected shutterspeed index mark on the meter dial (12). Then the aperture will be automatically adjusted to give correct exposure in conjunction with the pre-set shutterspeed.



2. Pre-setting the aperture size for determination of proper shutterspeed by means of the exposure meter

1) Turn meter dial (12) to obtain desired aperture setting, visible in aperture indication (15).

2) Point camera at subject, and follow guide line in alignment with meter needle to meter dial (12) shutterspeed scale.

3) Transfer shutterspeed thus obtained to shutterspeed

dial (10).

If guide line indicates shutterspeed higher than 1/200, the aperture must be reduced. If shutterspeed indicated is too slow for good results, increase aperture size.

Using the Built-In Filter

The MAMIYA 16 Automatic has a built-in filter which can be used whenever needed. Assuming that a Y2 filter (yellow, exposure factor×2) is in the filter slot, and it has been shifted into working position in front of the lens, compensation must be made for its absorption. This is done in either of three ways:

1. Obtain exposure settings; then, a) open up aperture by one step, or b) reduce shutterspeed by one step.

2. If filter is in constant use, reduce ASA setting on exposure meter dial (12) by one step (e. g. from 100 to 50, or from 50 to 25), and dispense with aperture or shutterspeed

correction.

Note,— $\frac{\text{Filmspeed (Shutterspeed)}}{\text{Exposure Factor of Filter}} = \text{Corrected Filmspeed (Shutterspeed)}$

Example: $\frac{\text{ASA } 100}{1.5} = 66$

The built-in filter can be changed simply by allowing the glass to fall out of its slot. Push filter slot cover (18) aside when filter is in retracted position.

SHUTTER OPERATION

1. Intermediate settings of the shutterspeed dial (10) will not give intermediate shutterspeeds. Always use click-stop positions to avoid error.

2. Aperture settings, though indicated in steps (each step doubling or halving the intensity of light), need not be at the graduations.

3. Shutterspeed changes may be effected at any time, either before or after cocking (filmwind).

4. The screw socket at center of shutter button (3) is for cable release or self-timer.

5. When using flash, shutterspeed and aperture settings are obtained, without the use of the exposure meter, on the basis of flash intensity and distance to the subject (see instruction accompanying flashbulb).

CAMERA GRIP

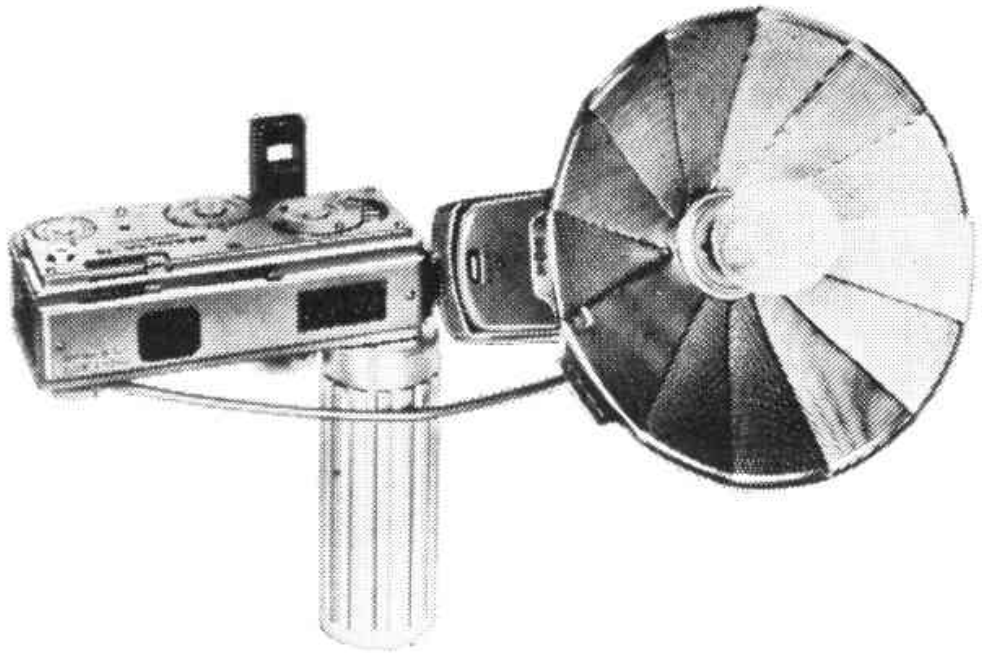
After focus and exposure adjustments have been completed, sight subject through the viewfinder, then gently squeeze down on the shutter button (3). The MAMIYA 16 Automatic may be held in any way, so long as the lens window (2) is kept free of obstructions.

Since, with subminiature cameras, even slight unsteadiness

of grip or stance can spoil a picture, take every precaution to prevent jerky movement when pressing the shutter button. The illustrations show methods of holding the camera for horizontal and vertical positions.

SYNCHROFLASH PHOTOGRAPHY

When the base of the flashgun is slipped into the accessory clip (24) of the camera, and secured, and after connecting the flashgun to the camera (21) by means of the connecting cord, you are ready for synchroflash photography.



Use of the grip handle will greatly facilitate steady holding of the camera (see illustration).

When using the grip

handle, the flashgun can be mounted in an alternative position by interposing the flashgun bracket between the grip handle and the camera.

When using the special flash attachment for the MAMIYA 16, first remove from the socket (21) the synchroflash terminal adapter for the JIS type B connector plug. Otherwise, the screw terminal of the special flash attachment cannot be inserted.

Complete synchronization of shutter action and flash will be available at shutterspeed not in excess of 1/25 second. Set aperture on the basis of distance to the subject and the guide number of the flashbulb in use.

SPECIAL ACCESSORIES

MAMIYA 16 FILM MAGAZINE. . . Available in two types—single or double. For full enjoyment of the versatile performance

afforded by the MAMIYA 16, have on hand several sets of magazines containing film. These magazines are reloadable, and should last for quite some time. Use any cine film (16 mm negative type) for reloading (in complete darkness). Film should be cut in lengths of 1½ feet.

MAMIYA 16 DAYLIGHT LOADING FILM. . . MAMIYA 16 film is available preloaded in MAMIYA 16 magazines for immediate use.

MAMIYA 16 FILM FOR RELOADING. . . Three rolls per package, cut to length, ready for darkroom loading into special MAMIYA 16 magazines. This special fine-grain, panchromatic film of high sensivity (ASA 80) is of extra quality for good results with subminiature cameras.

MAMIYA 16 FILTERS. . . For color correction, contrast intensification, and filmspeed reduction.

Yellow filters are used for absorbing ultraviolet and blue

light to which photographic film is extra-sensitive. In reproduction, the sky is slightly darkened, and clouds appear distinctly.

Skylight filters are used in color photography for obtaining better color balance, and further instead of UV filters (absorb only ultraviolet light, are used for distant shots, and for protecting the lens against dust and scratches).

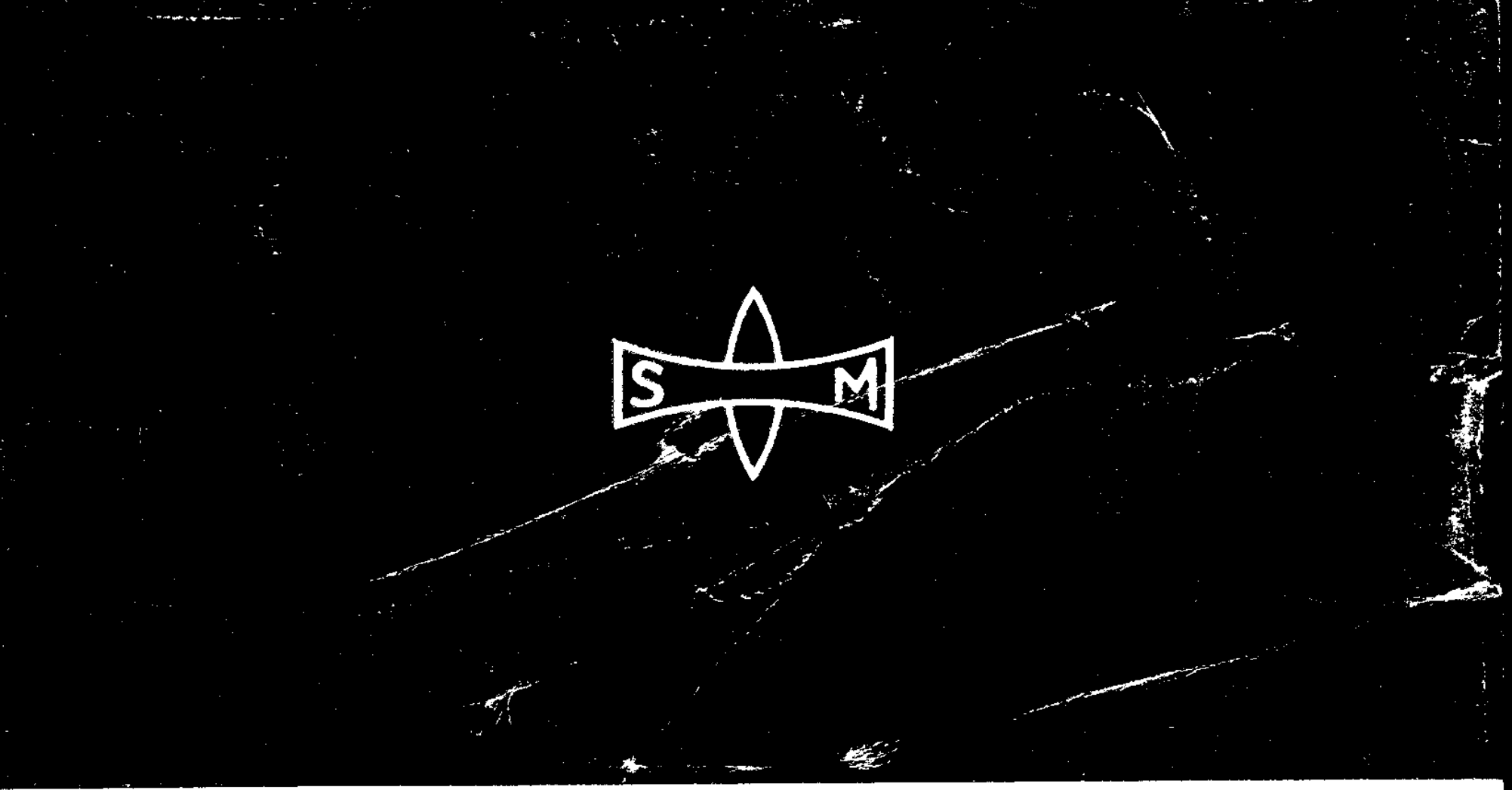
ND (neutral density) filters are used when photographing extremely bright subjects without stopping down the aperture, or when extremely fast film is used.

ENLAHEAD ENLARGER ATTACHMENT. . . The ENLAHEAD is an attachment designed for making enlargements of all sizes, up to 10″×12″, from MAMIYA 16 and other 10 mm.×14 mm. miniature negatives. The ENLAHEAD replaces the regular lens fitted to "Fuji", "Balloy", "Focamat" and other enlargers available on the market. Without the high magnifying

on to spool. Place spool-wound film in cassette, with about an inch of the film protruding through the slit. When loading the double magazine, next secure free end of film, emulsion side downward, to take-up spool, again using Scotch tape, and insert spool in take-up side of magazine. See that there is no slack. Replace magazine covers, and secure with bits of Scotch tape.

When loading cassette, using spool provided with spring clip, do not secure end of film by means of pip on clip and groove cut on spool. Merely slip end of film, emulsion side downward, under clip, then wind. Place in cassette, replace cover, and secure with Scotch tape.

Magazine loading should be practised beforehand out in the light, with a piece of discarded film. When loading unexposed film, keep emulsion side (dull, coated, non-glossy side) free of fingermarks.



MAMIYA CAMERA CO., LTD.

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