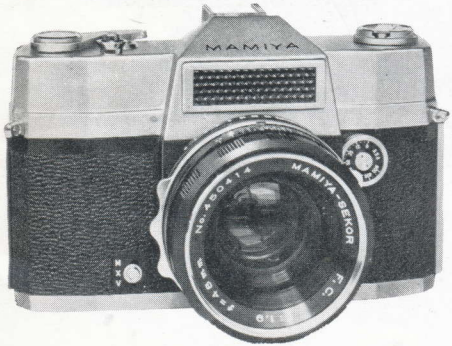
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M04/031E

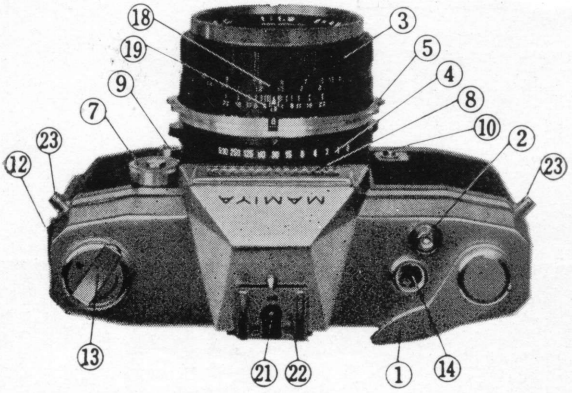
MAMIYA PRISMAT

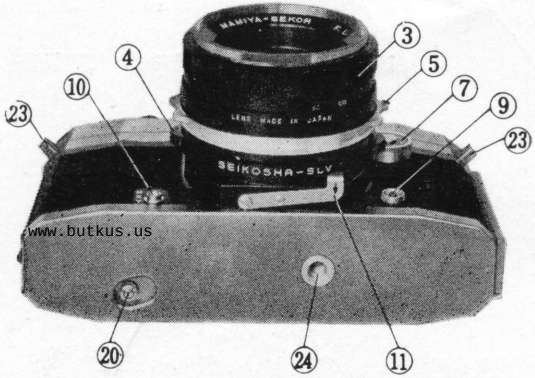


model PH

USER'S MANUAL

NOMENCLATURE



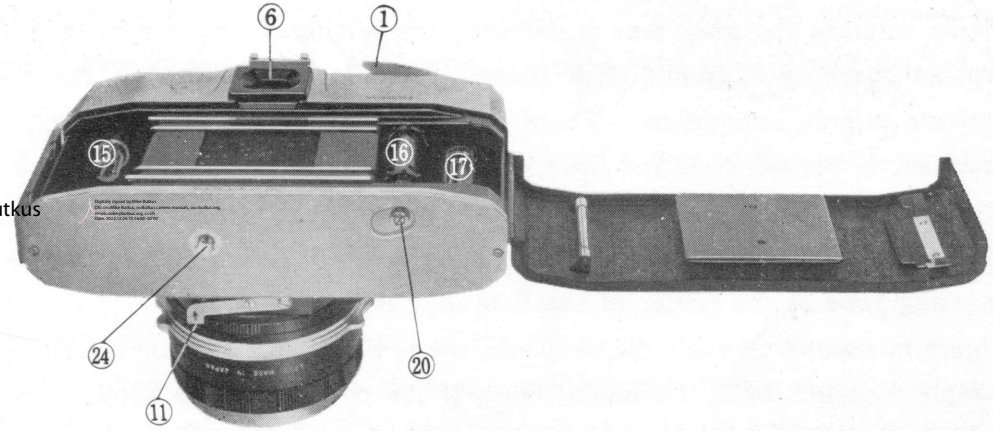


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1. Cocking Lever
2. Shutter Button
3. Focusing Ring
4. Shutterspeed Dial
5. Aperture Dial
6. Eyepiece
7. Filmspeed (ASA) Dial
8. Photocell Window
9. Synchroflash Terminal
10. MXV Selector
11. Lens Catch
12. Backlid Catch
13. Rewind Crank
14. Exposure Counter

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15. Cartridge Chamber
16. Sprocket
17. Take-Up Spool
18. Distance Scale
19. Depth of Field Scale
20. Sprocket Release
21. Synchroflash Terminal
22. Accessory Clip
23. Strap Eyelets
24. Tripod Socket



Mike Butkus

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BEFORE LOADING FOR PICTURE-TAKING

Film-loading is done in very much the same manner as with other 35-millimeter miniature cameras. However, because the MAMIYA PRISMAT is a single-lens reflex camera of special design and construction, its principal features and its workings will first be explained.

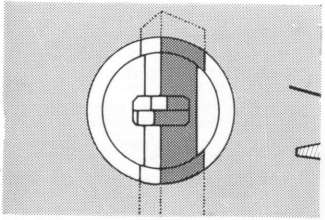
VIEWFINDER AND FOCUSING

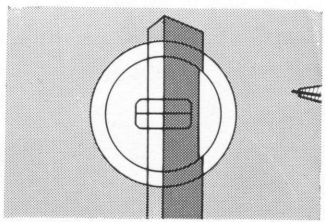
Because the MAMIYA PRISMAT is a single-lens reflex camera, it has no separate viewfinder. The light entering the main lens is deflected upward by a hinged mirror inside the camera to form an image on a ground-glass screen which is visible through the eyepiece (6) and pentaprism in true orientation. There is interposed between the hinged mirror and the pentaprism a Fresnel lens and condenser to give uniform brightness to the entire viewfinder field. There is also interposed a prismatic coupled rangefinder so that focusing of the MAMIYA PRISMAT can be accomplished speedily and accurately by means of a split-image focusing zone at the center of the field of vision.

When a subject is sighted through the eyepiece, there will be seen within the clear center circle a rectangle bisected by a horizontal line. If the portions of the subject, on which focus is to be adjusted, falling within the bisected rectangle are not in true vertical align-

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ment, the camera is out of focus. Turn focusing ring (3) and bring the parts enclosed by the upper and lower halves of the rectangle (focusing zone) into correct alignment. The distance between the camera and subject then can be read off the distance scale (18).





When focusing, be sure that your eye is at dead center of the eyepiece (6), and that the portion of the subject, which must be brought to correct focus, falls squarely over or in the center of the focusing zone. This caution is particularly necessary when shooting at close ranges.

Do not attempt to focus by means of the sharpness of the image visible in the viewfinder field. True focus is obtained by the split-image focusing zone.

Because sighting and focusing is done through the picture-taking lens, there is absolutely

no parallax due to disparity of the optical axis; while interchangeable lenses of varying focal length always give full coverage of the viewfinder field. The magnification of the viewfinder image when using the standard lens (f=48 mm) is × .76.

When the shutter button is pressed, and the shutter mechanism is released, the viewfinder image is blacked out by the movement of the hinged mirror. Recocking, by operating cocking lever (1), will return hinged mirror and aperture to viewing position.

The markers visible along the right edge of the viewfinder frame are for exposure adjustment by means of the built-in exposure meter. Explanation of this function is given below.

AUTOMATIC APERTURE

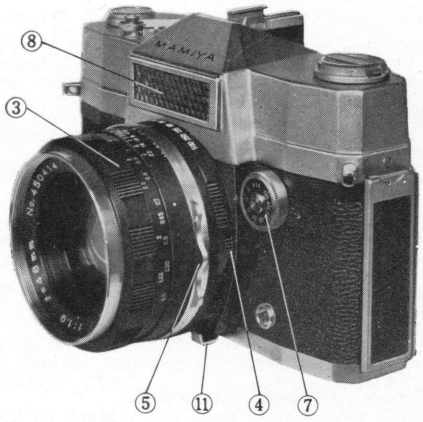
In order to provide the viewfinder the maximum brightness when sighting and focusing, the aperture opens up fully (f/1.9 in the case of the standard lens) when the cocking lever is operated. When the shutter button is pressed, the aperture automatically closes down to the previously adjusted f/ setting, and exposure of the film is effected at this value.

COUPLED EXPOSURE METER

The built-in exposure meter of the MAMIYA PRISMAT is coupled to the shutterspeed

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dial (4) and the aperture dial (5) by means of a cursor (blue pointer) visible at the right edge of the viewfinder field, which is brought into alignment with the exposure meter needle (slim opaque marker). Moving either the shutterspeed dial (4) or the aperture dial (5) will cause the cursor (transparent blue pointer) to move. Deflection of the exposure meter needle is caused by the intensity of the light reflected by the subject, impinging on the photocell through the photocell window (8). When the cursor is in true alignment with the exposure meter needle, the exposure controls (aperture and shutterspeed) are properly set for correct exposure of the film.



However, when actually taking pictures, the filmspeed dial (7) must first be set at the ASA number (speed rating) of the film in use. Failure to make this adjustment will result

in incorrect coupling of the built-in exposure meter to the exposure controls.

Shutterspeed and aperture settings are changed by turning the respective dials (4 and 5). Shutterspeeds may be changed either before or after cocking. With aperture settings, however, it is more convenient to adjust after the cocking lever (1) has been operated to permit viewing and focusing.

COCKING, AND SHUTTER OPERATION

When the cocking lever (1) is swung through its stroke by means of the thumb, the film is advanced one frame, and the shutter mechanism is cocked. The lever will spring back if it is released. It is preferable, however, to ease it back into original position gently.

The cocking lever (1) remains locked, after cocking, until the shutter is released by pressing the shutter button (2).

When the MXV selector (10) is set at "V", the built-in self-timer (shutter action delay) is brought into action. The shutter will operate approximately 10 seconds after the shutter button is pressed. Moving MXV selector (10) to "V" can be done either before or after cocking.

Caution 1. Operate cocking lever (1) or shutterspeed dial (4) only after shutter action

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has been completed. This caution applies particularly to B setting (bulb—shutter remains open for as long as shutter button is kept depressed) and to slow shutterspeeds (1 and 1/2 second).

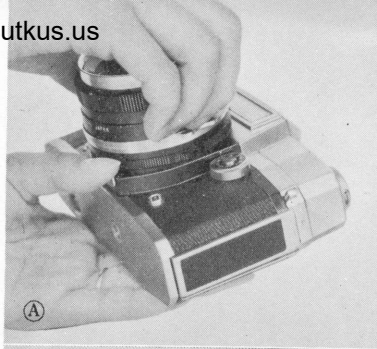
Caution 2. Do not operate cocking lever while built-in self-timer (shutter operation with MXV selector at "V") is in action.

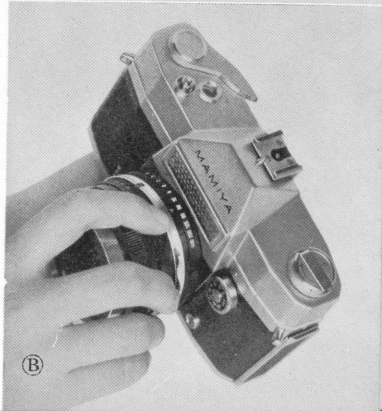
Caution 3. When using neither self-timer nor synchro-flash, keep MXV selector (10) at "X".

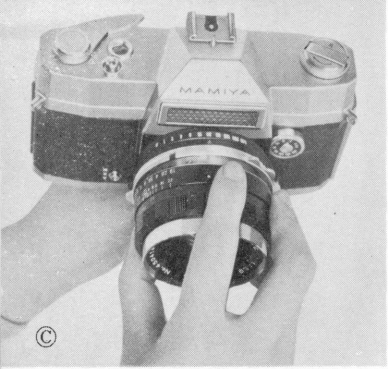
LENS CHANGE

The MAMIYA PRISMAT is designed for use at will of three types of lenses; the standard F 1.9, f=48 mm; the F 3.5, f=38 mm wide angle; and the F 3.5, f=100 mm telephoto.

When removing the standard lens from its mount, keep depressed in direction of arrow the lens catch (11) with the left thumb, grip with the right hand the lens barrel







where the depth of field scale (19) is engraved, and turn lens barrel counterclockwise until red dot comes into alignment with red triangle (shutterspeed index mark). Then the lens barrel can be lifted clear of the mount. (Fig. A, B and C)

To mount standard lens on body, match red dot on lens barrel with red triangle on mount. Push lens catch (11) with left thumb, then turn lens barrel clockwise until it locks in position when the lens catch is released.

Caution 1. When removing and replacing lens, always grip lens barrel at depth of field scale (19) position and never by the focusing ring (3).

Caution 2. When the lens is removed, either the hinged mirror or the shutter vanes will be exposed. On no account touch these delicate parts. If there is any speck of dust on these parts, remove by squirts of air from a bulb syringe.

Caution 3. After refitting lens on mount, always move aperture dial from f/1.9 to f/22 or vice versa to ensure proper coupling of iris diaphragm mechanism.

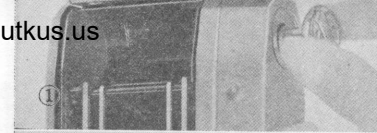
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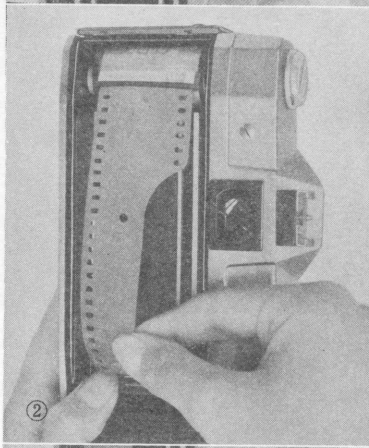
FILM LOADING

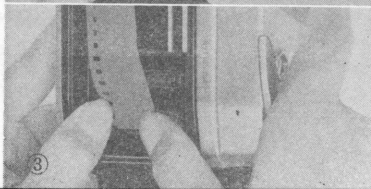
Standard 35-millimeter miniature film is accepted by the MAMIYA PRISMAT, monochrome or color, 20 or 36 exposures per roll. Standard safety cartridges or the special MAMIYA cassette for users of bulk or dark-room loading film can be used. When loading camera, however, avoid direct sunlight, work in the shade under subdued light.

1. When backlid catch (12) is pulled out, the backlid is released.

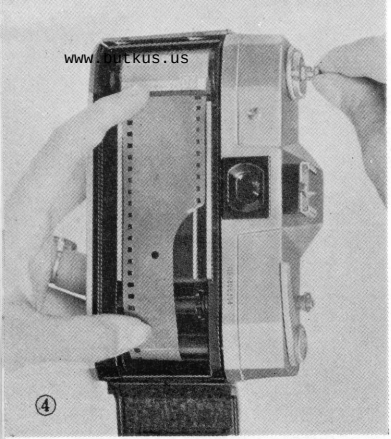
2. Swing backlid fully open, then pull out rewind crank (13). Place loaded safety cartridge or special cassette, knob end down, in cartridge chamber (15). Pull out a few inches of the film, and fit end in slit of take-up spool (17). Wind at least a turn on take-up spool, seeing to it that the perforations engage sprocket







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teeth. Take up slack by turning rewind crank (13) in direction of arrow; then snap shut the backlid. (See Figs. 1, 2, 3, and 4).

3. Operate cocking lever (1) and release shutter by pressing shutter button (2). Repeat two or three such blank shots until exposure counter (14) moves from triangle mark to numeral 1. You are now ready for your first picture.

4. Turn filmspeed dial (7) and set at ASA rating of the film in use. The rod dots indicate ASA 32 and 160.

COUPLED EXPOSURE METER

1. First, make sure that filmspeed (ASA) dial (7) is set at the ASA rating of the film in use.

2. Next, set shutterspeed dial (4) at desired shutterspeed.

3. Sight subject through eyepiece. The slim dark marker (exposure meter needle) will indicate the brightness of the subject-matter.

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4. Turn aperture dial (5) so that the cursor (transparent blue marker) comes into exact alignment with the exposure meter needle. The exposure controls (shutterspeed and aperture) are now set to give correct exposure of the film.

5. When alignment of the cursor and the meter needle cannot be obtained, that is to say the cursor cannot be brought into overlap position even at either maximum or minimum aperture size, re-set shutterspeed at slower or faster position then adjust aperture dial (5).

6. Shutterspeed dial (4) must be set in click-stop position (at any one of the scale graduations). Aperture may be at any point within the scale range since adjustment is continuous, not in steps.

7. The shutterspeed dial (4) may be used for adjustment of the cursor if desired. In this case, however, the cursor will jump in steps, and fine adjustment by the aperture dial (5) will be necessary. Also, excessively slow shutterspeed in combination with extremely small aperture may be obtained.

Caution 1. When using the coupled exposure meter to obtain the correct exposure settings, make sure that the photocell window (8) is not obstructed in any way. Otherwise the meter needle indication will not be correct.

Caution 2. If, with shutterspeed at 1 and with aperture fully open (f/1.9 with the standard lens), the exposure meter needle remains at the low end of its range, beyond the reach of the cursor, the subject is not bright enough to register properly on the film.

Caution 3. If, with shutterspeed at 500 (1/500 second) and with aperture at 22 (f/22), the exposure meter needle is deflected upward beyond the range of the cursor, the brightness is such that overexposure of the film will be caused. In this case, a filter must be used to reduce the intensity of the light transmitted by the lens. However, tne main subject itself may not be excessively bright, and the overexcitation of the exposure meter may be due to extraneous light (such as direct sunlight on the photocell window). Make sure that conditions are normal.

Caution 4. It is therefore advisable to measure the brightness of the subject at as close a distance as is practicable, catching only the light reflected by the subject. With the exposure determined in this way, the cursor and the meter needle not necessarily be in alignment when actually shooting the subject from a greater distance.

Caution 5. When taking pictures of subjects that cannot be approached, measure brightness by training camera on foreground to eliminate much of the sky.

Caution 6. Under reverse lighting conditions, or when subject is photographed against

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the sky, be sure to measure brightness of the subject only; otherwise underexposure of the subject will result, and a silhouette effect will be obtained.

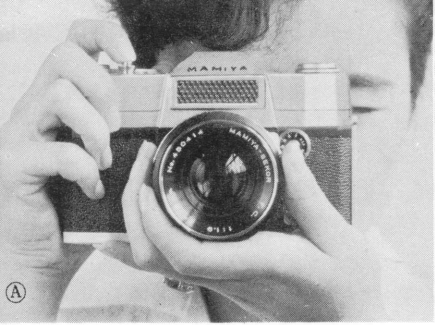
Caution 7. When a filter is in use, compensation is necessary. This can be readily effected by means of the filmspeed dial (7). If, for instance, with the filmspeed dial set at 200 for film of ASA 200 rating, a filter with absorption factor of ×2 is in use, simply shift the filmspeed dial setting to 100 before matching cursor and exposure meter needle. If the absorption factor of the filter is ×4, shift filmspeed dial to 50.

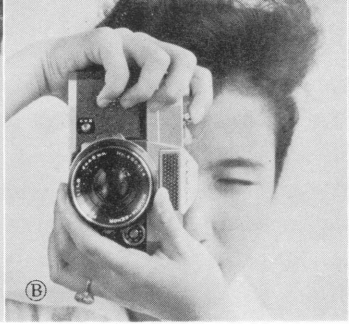
CAMERA GRIP

Supporting the weight of the camera on the palm of the left hand, the left thumb and index finger are made to grip lightly the focusing ring (3). The right hand grips the right side of the camera, with the ball of the right index fingertip resting lightly on the shutter button (2), and the thumb on the cocking lever (1).

Bring camera up to eye level, and a steady grip is achieved. (Fig. A)

When adjusting exposure controls by means of the coupled exposure meter, merely shift grip of left thumb and index finger to the aperture dial (5) or the shutterspeed dial (4).







When using camera in vertical position, first set exposure controls and focus in normal position, then swing cocking lever side up, supporting weight of camera with the left hand at the left side, now facing downward. Keep left elbow tight up against your body. (Fig. B)

If the cocking lever side is facing downward, support weight by right hand, and use right thumb to operate shutter button (2). Steady camera by means of the left thumb and index finger gripping the focusing ring (3). Keep right elbow tight up against your body. (Fig. C)

These basic grips are used with any of the interchangeable lenses.

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FOCUSING

When the cocking lever is operated, and swung fully through its stroke, the film is advanced, the shutter mechanism is cocked, and the viewfinder is activated with the aperture fully open.

While sighting the subject, turn focusing ring (3) so that the split-image of the subject seen in the focusing zone at center of the viewfinder field becomes correctly aligned.

1. For ease of judging correct alignment of the subject, choose clearcut vertical lines such as poles, tree trunks, window frames, and nose and cheek lines.
2. When taking vertical position pictures, first focus in normal horizontal position, then turn camera on side for composing and shooting.
3. Once the subject is in focus, the distance between camera and subject will be indicated on the distance scale (18). The available depth of field (focusing tolerance) will be shown on the adjacent depth of field scale (19). When it is necessary to check available depth of field with higher precision, consult the depth of field tables.
4. When using infra-red film in conjunction with red filters, adjust focus in usual way, then, noting the distance indicated on the distance scale, shift this reading to the index

mark "R". This is necessary in order to compensate for the shift in focus due to the shorter wavelength of infra-red rays.

DEPTH OF FIELD

Depth of field is the term applied to focusing tolerance at a given distance. If the camera is focused on a certain subject at a distance of say 15 feet, there is available, depending on the aperture setting, a certain leeway in front of and behind the subject in which objects will register with adequate sharpness. This leeway is known as "depth of field."

The following are the attributes of depth of field:

1. Depth of field varies with aperture size: smaller the aperture the greater the depth.
2. Depth of field varies with focused range: greater the distance the greater the depth.
3. The shorter the focal length of the lens, the greater the depth of field.
4. Depth of field is greater behind the object in exact focus than in front.

The depth of field of a given lens is determined by its focal length and its inherent resolving power (expressed by size of circle of confusion). Depth of field tables are furnished to provide a more accurate guide than the depth of field scale on the camera.

With proper awareness of depth of field, it is possible to obtain photographs with sharp

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DEPTH OF FIELD TABLE

MAMIYA-SEKOR F1.9, 48 mm (Circle of Confusion, 1.7/1,000 inch)

Aperture	Focused Distances (in feet)										
	∞	30	15	10	7	5	4	3	2.5	2	1.75
1.9	91′ 1½″ ∞	22′ 7¾″ 44′ 5¾″	12′11¼″ 17′10½″	9′ ½″ 11′ 2″	6′ 6¼″ 7′ 6½″	4′ 9¼″ 5′ 3¼″	3′10¼″ 4′ 2″	2′11″ 3′ 1″	2′ 5¼″ 2′ 6¾″	1′11½″ 2′ ½″	1′ 8¾″ 1′ 9¼″
2.8	61′10½″ ∞	20′ 3½″ 57′ 8¼″	12′ 1¾″ 19′ 7¾″	8′ 8″ 11′10″	6′ 4″ 7′10″	4′ 8″ 5′ 4¾″	3′ 9½″ 4′ 3″	2′10½″ 3′ 1¾″	2′ 5″ 2′ 7″	1′11½″ 2′ ½″	1′ 8½″ 1′ 9½″
4	43′ 4¼″ ∞	17′10″ 95′ ¼″	11′ 2¾″ 22′ 8″	8′ 2¼″ 12′10¼″	6′ 1″ 8′ 3″	4′ 6¼″ 5′ 7″	3′ 8¼″ 4′ 4¼″	2′10″ 3′ 2¼″	2′ 4¾″ 2′ 7½″	1′11¼″ 2′ 1″	1′ 8½″ 1′ 9¾″
5.6	31′ ∞	15′ 4¼″ 795′11¼″	10′ 2½″ 28′ 6¼″	7′ 7¾″ 14′ 6¼″	5′ 9¼″ 8′10¾″	4′ 4¾″ 5′10½″	3′ 7″ 4′ 6¼″	2′ 9¼″ 3′ 3¼″	2′ 4¼″ 2′ 8¼″	1′10¾″ 2′ 1¼″	1′ 8¼″ 1′10″
8	21′ 9″ ∞	12′ 8½″ ∞	8′11¾″ 46′ 8″	6′11¼″ 18′ ½″	5′ 4½″ 10′ 1″	4′ 1¾″ 6′ 4¾″	3′ 5¼″ 4′ 9½″	2′ 8¼″ 3′ 5″	2′ 3½″ 2′ 9¼″	1′10½″ 2′ 2″	1′ 7¾″ 1′10¼″
11	15′10¼″ ∞	10′ 5¾″ ∞	7′ 9¾″ 232′ ½″	6′ 2¾″ 25′11″	4′11½″ 12′ 1¼″	3′10½″ 7′ ¾″	3′ 3¼″ 5′ 2¾″	2′ 7″ 3′ 7″	2′ 2½″ 2′10½″	1′ 9¾″ 2′ 2¾″	1′ 7½″ 1′11″
16	10′11¾″ ∞	8′ 1¼″ ∞	6′ 5¼″ ∞	5′ 4″ 97′ 2¼″	4′ 4½″ 18′ 2½″	3′ 6¼″ 8′ 9″	3′ ¼″ 6′	2′ 5¼″ 3′11½″	2′ 1¾″ 3′ 1¼″	1′ 9″ 2′ 4″	1′ 6¾″ 2′
22	8′ ∞	6′ 4¾″ ∞	5′ 3¾″ ∞	4′ 6¾″ ∞	3′10¼″ 46′10¾″	3′ 2¼″ 12′ 2¾″	2′ 9¼″ 7′ 5¼″	2′ 3¼″ 4′ 6″	1′ 1¾″ 3′ 5″	1′ 8″ 2′ 6″	1′ 6″ 2′ 1¼″

register of subjects at varying distances from the camera.

For example, to obtain a picture of a subject 20 feet from the camera in front of a building 40 feet distant, both in sharp register, the aperture setting should be at f/8, and the focus (distance setting) should be at 15 feet. If, at the same aperture setting, the camera is accurately focused on the subjects at 10 feet, background objects up to only 18.5 feet distant will register sharply.

Using this principle, it is possible to dispense with focusing for subjects more than 13 feet distant from the camera by pre-setting the focus at 30 feet on the distance scale (18) and using aperture settings of f/8 or less (11, 16 and 22).

UNLOADING FILM

When the specified number of exposures available on the film has been used up, stop taking pictures, and return film into safety cartridge or special cassette.

1. Press sprocket release button (20), it will remain depressed. Erect rewind crank (13) and turn in direction of arrow to return film into safety cartridge (MAMIYA cassette).

2. When end of film is reached, and the end becomes detached from the take-up sprocket, this can be sensed by feel. Stop rewinding so that end of film is not wound

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into the safety cartridge. Open backlid, avoiding direct illumination, and remove cartridge (or cassette) by pulling out rewind crank (13). Depressed sprocket release button (20) will return to original position when the cocking lever is operated.

Caution 1. If after the specified number of exposures (sometimes before) the cocking lever jams part way through its stroke, do not force. Press sprocket release button (20), and complete cocking lever stroke to permit it to return to original position.

Caution 2. If, when the cocking lever jams, force is applied, the end of the film may become detached from the cartridge spool, making it impossible to rewind the exposed film. If this happens, unload camera in complete darkness. Otherwise film will be spoiled.

SHUTTER OPERATION

1. Shutter dial (4) and MXV selector (10) may be adjusted whether or not the cocking lever has been operated.

2. When using synchroflash, the MXV selector (10) is set at position M for class M flashbulbs, and at position X for electronic flash (strobo) or class F flashbulbs. For normal use, always keep MXV selector at position X.

3. When MXV selector (10) is set at position V, the built-in self-timer is brought into action. A time lag of about ten seconds occurs between pressing of the shutter button and release of the shutter mechanism.

4. The screw socket at center of shutter button (2) is for fitting cable release or independent self-timer (necessary when using position M synchroflash for self-photography).

5. When camera is put away for any length of time, the shutter mechanism should be released (uncocked).

SYNCHROFLASH PHOTOGRAPHY

Position M This setting of the MXV selector (10) is for synchroflash photography with class M flashbulbs (time lag: 20 milliseconds). Accurate synchronization will be achieved at all shutterspeeds including 1/500 second.

Position X With no time lag introduced, this position is for electronic flash (strobo) at all shutterspeeds, and for class F flashbulbs at speeds of 1/30 second and less.

When using flash, the intensity of the flash and the distances involved are the factors determining correct exposure. The built-in exposure meter cannot be used. Read the instructions coming with flashbulb or electronic flash equipment.

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Synchroflash terminals are provided at front of camera (JIS B German type) and at center of the accessory clip (22). Use whichever is convenient, depending on the type of flashgun.

SPECIAL ACCESSORIES

INTERCHANGEABLE LENSES

In addition to the standard lens (F 1.9, f=48 mm, 6-element, 48°40′) and a wide angle lens (F 3.5, f=38 mm, 4-element, 59°) and a telephoto lens (F 3.5, f=100 mm, 5-element, 24°20′).

LENS HOODS

Two Types available, one for the standard and wide angle lenses, and the other for the telephoto.

FILTERS

Available in a wide range of varieties in two sizes, for standard and wide angle lenses, and for telephoto.

OTHER ACCESSORIES

Copying stand, angle finder (with adapter holder), diopter correcting adapter (lens ring, rubber protecter, and adapter holder), special MAMIYA cassette, Etc.