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ZENZA **BRONICA**

SQ-Ai

6x6 MAIN CAMERA BODY

Congratulations on your choice of the Zenza Bronica SQ-Ai single lens reflex camera which is based on the technology and experience gained with the Zenza Bronica SQ-A. Developed for the professional photographer, the Zenza Bronica SQ-Ai also retains the full System of Photography of the earlier SQ-A, as well as having extensive interchangeability with the full range of accessories available for the SQ-A.

Among the many professional features of the Zenza Bronica SQ-Ai is flash synchronization at all shutter speeds, up to the fastest 1/500 second, which is one of the chief features of the lens shutter single lens reflex camera. But, at the same time, the SQ-Ai, also, has full auto-flash control, based on TTL-direct light measurements at the film plane, with an exclusive SCA 386 System Adapter (optional) plus a compatible SCA 300 System electronic flash unit.

Although instructions **following** are based on a standard combination consisting of the SQ-Ai main camera body with standard Zenzanon-PS 80mm F2.8 lens, Film Back SQ-i 120 and Waist-Level Finder S, the actual choice of lens, film back and finder is left to the discretion of the photographer, who should choose what is suitable for the type of assignment contemplated. To obtain best results from your Zenza Bronica SQ-Ai, may we suggest that you read this instruction manual carefully, before you even touch the camera. Thoroughly familiarize yourself with its working parts, before loading your first roll of film, and your pleasure in using the camera will be even greater.

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Specifications of the ZENZA BRONICA SQ-Ai

Type	6cm × 6cm format lens shutter single lens reflex camera, with interchangeable lens, film back, finder and focusing screen systems.
Frame size	55.6mm × 55.6mm
Film	120/220/135 roll film and Polaroid Land pack film, with exclusive film backs.
Lens	Interchangeable type. Standard lens Zenzanon-PS 80mm F2.8; 6 elements in 5 groups; multi-layer anti-reflection coated; 50.7° angle of view; F22 minimum aperture; intermediate aperture settings; helical focusing from infinity to 80cm.
Filter sizes	67mm diameter on Zenzanon-S/PS 65 to 250mm lenses; 95mm diameter on Zenzanon-S/PS 40mm and Zenzanon-S 500mm lenses; 77mm diameter on Zenzanon-PS 50mm lens; and 122mm diameter on Zenzanon-PS 500mm lens.
Lens mount	Exclusive four-claw Bronica SQ bayonet mount.
Focusing	Helical focusing system built into each lens; angle of focusing 171° for standard lens.
Shutter	Electronic control SEIKO #0 between-lens leaf shutter; shutter speeds 16 sec. to 1/500 sec.; T(time exposure); B(bulb exposure); with shutter release lock. One step settings with Waist-Level Finder S and Prism Finder S. One-half stop settings with MF Finder S and ME Prism Finder S. Stepless variations with AE Prism Finder S.
Lens diaphragm	Fully automatic instant reopening lens diaphragm action; equal-distant aperture scale graduations; half-stops possible; depth of field previewing.
Film winding	Film winding crank; one complete forward revolution or ratcheted winding action.

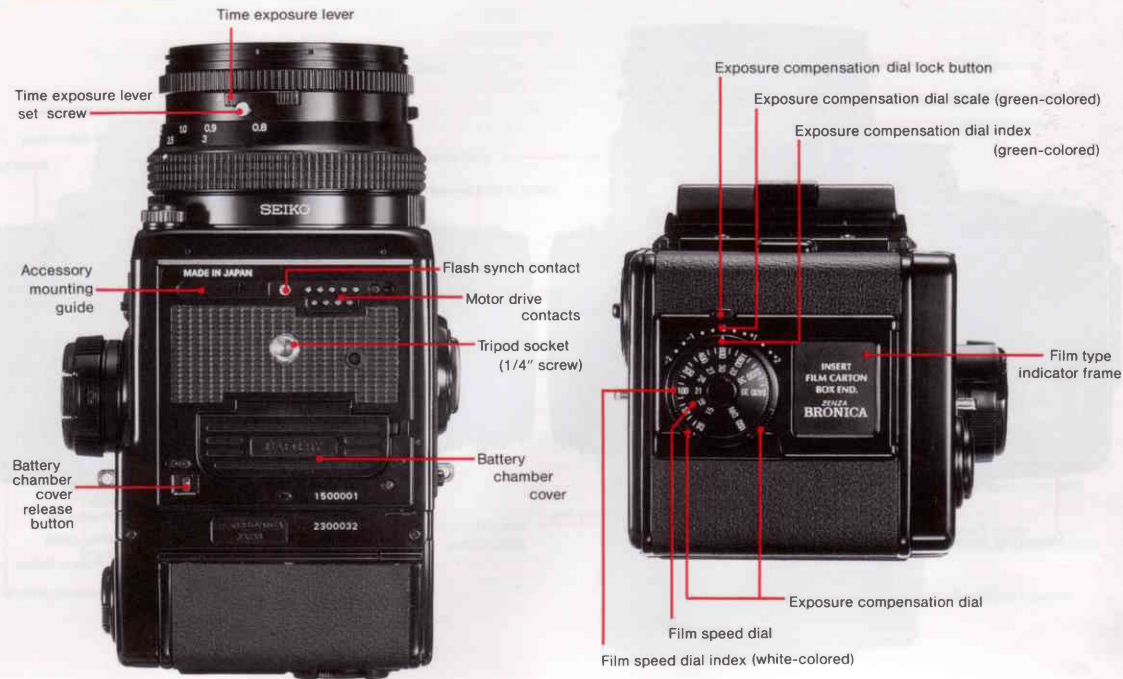
Multiple exposure	Multiple exposure possible with lever on camera main body; multiple exposure warning indication in finder.
Mirror lock-up	Mirror lock-up possible with switch lever on the camera main body; single or continuous mirror lock-up shooting possible.
Film back	Daylight loading interchangeable type; exclusive film backs for 120, 220 and 135 roll films and Polaroid Land pack films; with film speed dial and exposure compensation dial; couples to finders with built-in exposure meter, when attached.
Finder	Interchangeable finder system; 94% of actual field of view (remains unchanged when finder is exchanged).
Focusing screen	Interchangeable type; standard microprism/split-image screen; optional screens are split-image, microprism, matte, grid-lines, microprism/split-image (for 135 film) and matte (for 135 film).
Flash synchronization	X-setting (up to 1/500 sec.); auto-flash control based on direct light measurements at the film plane with optional SCA System Adapter and SCA 300 System compatible electronic flash units.
Battery checking	Red-colored LED lights up in front center area, outside screen area, when battery check button is depressed; LED also doubles as shutter closing signal.
Battery	Four 1.5 volt alkaline-manganese batteries (LR44).
Dimensions	92mm wide × 109mm high × 179mm long (with standard lens, Film Back SQ-i 120 and Waist-Level Finder S).
Weight	1,515 grams (with standard lens, Film Back SQ-i 120 and Waist-Level Finder S)

Specifications are subject to change without prior notice.

Parts of the ZENZA BRONICA SQ-Ai







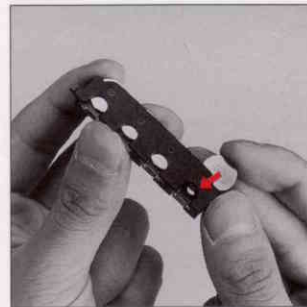
1 Loading the Battery

The electronically-controlled leaf shutter and the electro-magnetic shutter release system will not work without loading batteries. Four 1.5 volt alkaline-manganese (LR44) batteries must be used.

* The batteries may be obtained at any photographic equipment or electrical appliance dealer.



A. Push the battery chamber cover release button, on the base of the camera main body, in the arrow-indicated direction and the battery chamber cover will spring open.



B. A battery holder inside the battery chamber will spring up when the battery chamber cover is opened fully. Insert the four batteries into the battery holder, with polarities coincided to the plus (+) indications on the battery holder. Load all four batteries in the same direction.

2 Battery Checking



C. Upon loading the batteries into the battery holder, insert the battery holder into the battery chamber of the camera main body and close the battery chamber cover with your finger.

* The battery holder can only be inserted one way because of its shape.



If a red-colored battery check LED lights up outside the focusing screen area (in the central front part of the finder), when the battery check button is pressed, the batteries are loaded properly and there is sufficient power for operations.

* If the LED does not light up, (1) the batteries are not loaded properly or (2) the batteries are exhausted and should be exchanged for fresh ones.

* When the Motor Drive SQ-i is attached to the SQ-Ai main camera body, battery power for the main camera body is supplied from the Motor Drive SQ-i. (In other words, the electrical circuit is switched so that the main camera body is operated by the batteries of the motor drive.)

Thus, it will not be possible to check the battery status (four LR44) loaded in the main camera body with the motor drive attached. In this case, the motor drive must be detached, to check the batteries in the main camera body.

* When using the AE Prism Finder S, always check battery condition before attaching the finder, as the LED-illuminated shutter speed may be displayed, even when the battery check LED does not light up. Since correct AE operations will not be possible, in this case, exchange for fresh batteries.

3 Attachment and Removal of Film Backs

The film back is a film chamber that can be attached or detached at any time, permitting rapid change of film types even during shooting sessions.

The main camera body and film back are fully coupled, upon connection. Therefore, always turn the film winding crank completely one time, upon attaching the film back. If winding is not possible, all preparations for taking the picture have been completed. But, if winding is possible, rotating the film winding crank until it stops will automatically take care of the incompleting action, whether uncocked shutter or film not advanced. Thus, it is always possible to choose the film type most suited for the shot, even midway in the roll.

A film speed dial is available on the film backs and can be used for setting the film speed of the film loaded in the film back, which will, furthermore, automatically couple when any finder with a built-in exposure meter is attached to the main camera body.

This should be very convenient when using films of different sensitivities in various film back.

The film speed dial is calibrated for ISO/DIN film speeds and an exposure compensation dial is also available around the film speed dial.

Additional film backs are available optionally in 6×6, 6×4.5 and 35mm formats.

* See the instructions supplied with Film Back SQ 135 for proper use.



A. To attach the film back to the main camera body, simply insert the latches at the upper end of the film back into the attachment openings at the upper end of the main camera body. Then, press the lower end of the film back against the main body until it locks securely.



B. To remove the film back from the main camera body, insert the dark slide into the dark slide slit, as illustrated, with the © mark on the dark slide at the top end. Push it all the way in.

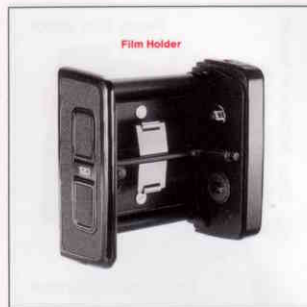


C. Depress the film back release button and the lower end of the film back can be removed, as illustrated. Simply shift the film back up slightly and pull it away.

* The dark slide cannot be withdrawn from the film back when the film back is detached from the main camera body.

* The dark slide must be withdrawn from its slit, upon attachment of the film back to the main body, as otherwise the shutter cannot be released. Furthermore, there is danger of the film back accidentally becoming detached from the main body, should the dark slide be left in its slit while the camera is being carried. Therefore, make it a rule to withdraw the dark slide promptly upon attaching the film back to the main body.

4 Construction of Film Back



A. The film back consists of a film holder and a film back frame, with exclusive film backs available for 120 and 220 roll films in 6×6 & 6×4.5 formats.

The film holder has an insert on frame for loading film, and has a built-in film winding mechanism.



B. The film back frame has a base with a dark slide slit and a back cover with an ISO/DIN film speed dial, an exposure compensation dial and a film type indicator frame. The film back frame completely encloses the film insert and shields it from outside light, as well as connecting it to the camera main body and also coupling with any finder having a built-in exposure meter.

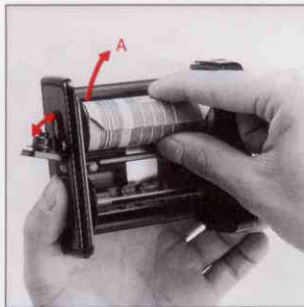
5 Film Loading



A. To open the back cover, squeeze the left and right back cover release buttons, in the arrow-indicated directions, at the same time and the back cover will open.

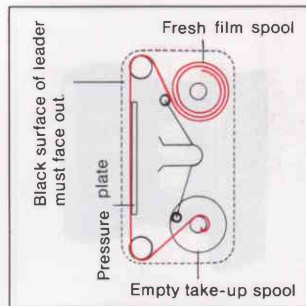


B. Then film holder can be taken out for film loading, upon opening the back cover.



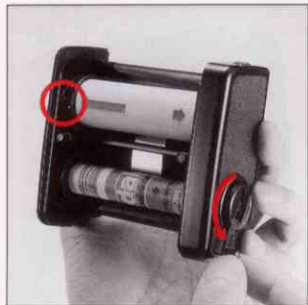
C. There are two spool holders on the film holder. The top one is for the fresh film spool while the bottom one is for the empty take-up spool. The left-side shaft of spool holder can be opened by pushing the fresh film spool outward in the arrow-indicated A direction. Therefore, insert the right end of the spool on to the right-side shaft, which is fixed, and then close the left-side holder (shaft) which will engage the spool.

* The spool holders on the left side will be locked securely, when the back cover is closed.



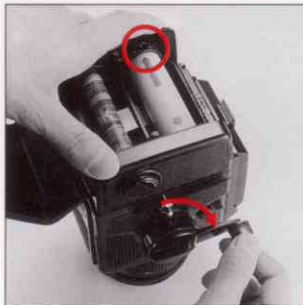
D. After loading the fresh film spool properly, draw out the leading end of the film and turn it across the film pressure plate (as illustrated). Run it down and turn it over to the take-up spool. Insert the leading end into the slit of the take-up spool and wind slightly until securely engaged.

* The inside black surface of the leader must face out when running across the pressure plate.



E. Rotate the film back winding crank on the right side of the film insert in the direction indicated by the arrow, while checking the advancing film.

When the starting point, or arrow mark, is aligned with the triangular ▼ start-mark on the top left side of the film insert, stop rotation.



F. The starting point, or arrow mark of the unexposed film, can also be aligned with the start-mark, with the film insert loaded in the film back. Simply rotate the film winding crank on the main camera body. This method is preferred since there will be coupling with the main camera body mechanism, from the beginning.



* If the film is not advanced when the film winding crank is rotated, the film holder is not inserted properly and/or the main camera body may be set for multiple exposures. In the latter case, return the multiple exposure lever to an upright or vertical position. (See "23, Multiple Exposures" on Page 30.)



G. Close the back cover, by pressing it firmly against the base of the film back, as illustrated. The back cover will automatically close and lock.

The same operation will close the back cover when the film back is detached from the main body.

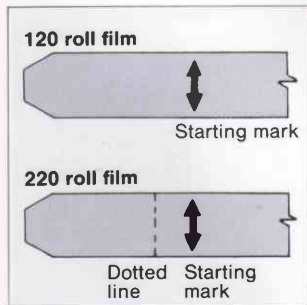


H. Upon loading the film, rotate the film winding crank until it stops to place the first frame into place for taking the picture. The exposure counter will also change from "S" to "1", while the shutter will also be cocked.



I. The manual film winder is used for advancing the film, when the film back is detached from the main body for film loading. The manual film winder can continue to rotate, even when the film is set for the first exposure. It should be rotated 2 or 3 times more, in order to take up any slack in the loaded film.

6 Film Speed Dial



* When loading 220 roll film in the Film Back SQ-i 220, do not mistake the dotted line before the arrow mark for the starting mark.



To set film sensitivity of the film loaded in the film back, rotate the film speed dial with a slight lifting action, as illustrated, and set the film speed scale to the index. There are click-stops at 1/3rd increments, in this case.

* The film speed dial is automatically coupled to any finder with a built-in exposure meter, when attached.

7 Exposure Compensation Dial



Exposure compensation up to ± 2 stops is possible at 1/3rd increments. To set the required compensation, slide the exposure compensation dial lock button, in the arrow-indicated direction, then rotate the exposure compensation dial, as required. When compensation is not needed, simply set to "0", where it is locked.

* There will be no effect on the exposure, no matter where the film speed dial and exposure compensation dial are set, when a non-metered finder is used.

8

Film Type Indicator
Frame

Upon loading the film, tear off the end flap from the empty film package and insert it in the film type indicator frame. This will help you keep track of the film loaded in the film back, even when two or more film backs are used with different films. At the same time, set the film speed with the film speed dial, when using finders with a built-in exposure meter.

9

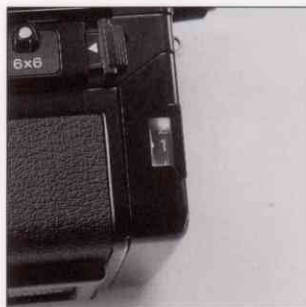
Film Advance and Shutter Cocking



Rotating the film winding crank completely one time, in the forward direction, will advance the film one frame and, at the same time, cock the shutter, with the winding action stopping automatically. On the other hand, short, rapid strokes, up to an accumulated full rotation, will also do the job.

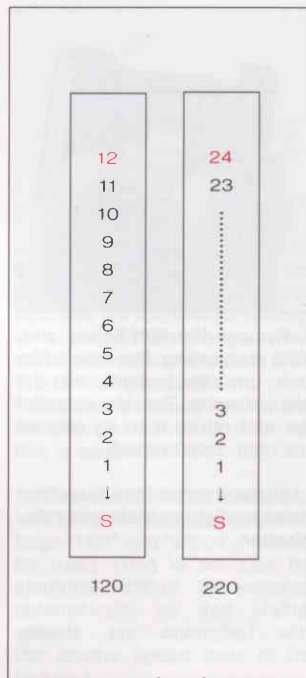
* Please make sure that "N" on the mirror lock-up switch lever is set opposite the index when taking pictures which do not require mirror lock-up.

10 Exposure Counter



The exposure counter shows the number of frames exposed or, in other words, is an additive type. Starting from "S", the counter on Film Back SQ-i 120 shows numbers from 1 to 12, while Film Back SQ-i 220 shows numbers from 1 to 24.

The letters "S", "12" and "24" are orange-colored while all other numbers are white.



11 Film Unloading

A. After the 12th exposure of the 120 roll film (24th exposure of the 220 roll film), the film winding crank will turn freely with further rotations. Therefore, continue rotating the film winding crank until the remaining film and all the leader paper is wound up on the take-up spool. Open the back cover when winding action becomes very light.



B. Remove the film holder and, while preventing the loose film from unwinding, take out the take-up spool. Seal the exposed film and return it to its original box until development.

* Load and unload film away from direct sunlight and/or strong illumination.

12 Setting the Shutter Speed Dial



A. The numbers on the shutter speed scale show the shutter speed which is set. For example, "8S" is 8 sec., "2" is 1/2 sec. and "500" is 1/500 sec. The shutter stays open as long as the shutter button or cable release is pressed on "B(bulb)". However, since battery power is drained during "bulb", time exposures should be made when the exposure time is longer than one minute.

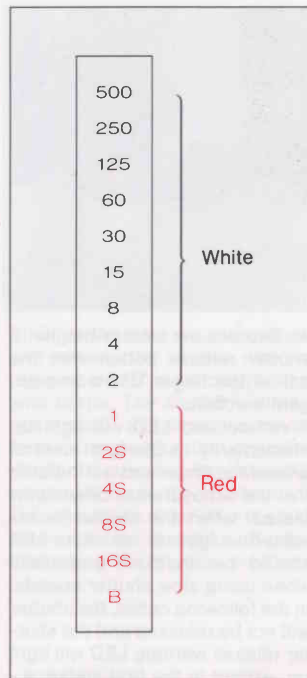
* See "14. Time (T) Exposure" on page 21.

B. The numbers on the shutter speed scale are divided into red and white colors. Red-colored numbers are full number settings of 1 second and longer while white-colored numbers are from 1/2 to 1/500 second.

* The shutter speed setting can be changed before or after the film is advanced.

* When the ME Prism Finder S or MF Finder S is attached, the settings "16S" and "B(bulb)" cannot be used. (This is because the electrical circuit is switched automatically so that shutter speeds are controlled with the shutter speed dials of the finders.)

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13 Shutter Release Button



A. Depress the electro-magnetic shutter release button with the ball of the finger. Use a smooth, gentle action.

A red-colored LED will light up momentarily in the front central area of the finder and will indicate that the exposure has been completed, when the shutter is released. Light-up of the LED should be checked, especially when using slow shutter speeds. In the following cases, the shutter will not be released and the shutter release warning LED will light up, except in the first instance:-



1. Shutter release button is locked.
2. Dark slide is inserted.
3. Film is not advanced. (Same when exposure counter is between "S" and "1".)
4. Shutter is not cocked.
5. Lens is not attached properly. (Same with automatic extension tubes, too.)
6. Lens release button is depressed.
7. All frames (i.e., 12 frames for 120 roll film and 24 for 220 roll film) have been exposed.

* The shutter blades will close and there will be under-exposure if the film winding crank is accidentally rotated before the exposure is completed, as in the case of a slow shutter speed setting. In this case, the next frame may also be exposed and result in an improper exposure as well.

* The shutter release button of the main camera body should be locked, when the camera is not being used. The shutter release button may be depressed accidentally while the main camera body is being carried in a bag, which could lead to discharge of the battery power.

To lock the shutter release button, rotate the locking ring and coincide the orange dot to "L".

14 Time (T) Exposure

Time exposures are made with the time exposure lever on the lens, regardless of the setting on the shutter speed scale.



A. First, cock the shutter with the film winding crank and then pull up the time exposure lever release.

* Except for time exposures, always shift the time exposure lever so that the letter "A" is visible on the lens barrel and keep the time exposure lever release pushed in all the way.



B. Slide the time exposure lever and release the shutter, when a red-colored "T" is exposed on the lens barrel. The shutter will stay open until the time exposure lever is moved in the opposite direction, exposing the letter "A", which will close the shutter. This should be done after the last time exposure is made and prior to cocking the shutter.

15 Exchanging Lenses

The lens cannot be attached or detached unless the shutter is cocked.

Therefore, first, rotate the film winding crank and cock the lens shutter.



A. To attach the lens to the main body, align the orange dot on the main camera body and the red dot on the lens, and then insert the lens fully into its mount. Rotate in the counter-clockwise direction until it stops, with an audible click, which will indicate that it is securely locked.



B. To detach the lens, the film winding crank must also be rotated to cock the lens shutter first. Then, press the lens release button down and, at the same time, rotate the lens in the clockwise direction until it makes a full stop, at which point it will be possible to detach the lens.

16 Interchanging Finders



A. The waist-level finder can be interchanged, with other optional finders, to match shooting conditions to photographic conditions. To attach the finder, align the front end of the finder with the front end of the finder frame on top of the camera main body, as shown. Then, gently lower the finder and, when well-seated, slide forward until it locks.

B. To detach, simply depress the finder release button, while, at the same time, sliding the finder backwards where it can then be taken off by lifting.

* When using the AE Prism Finder S, always check battery condition before attaching the finder, as the LED-illuminated shutter speed may be displayed, even when the battery check LED does not light up. Since correct AE operations will not be possible, in this case, exchange for fresh batteries.

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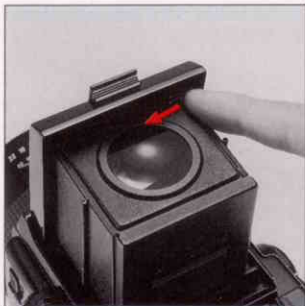
17 Waist-Level Finder and Interchanging Magnifiers



A. The focusing hood of the waist-level finder is opened by pushing up on the focusing hood catch at the rear end of the folded waist-level finder.

* There is no standard finder for the Bronica SQ-Ai, with the user having a choice of several finders. Instructions are based on the waist-level finder because of its popularity.

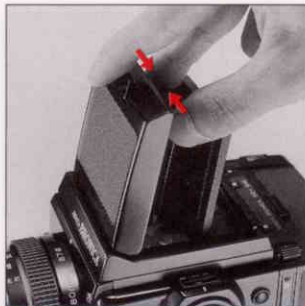
Waist-Level Finder and Interchanging Magnifiers



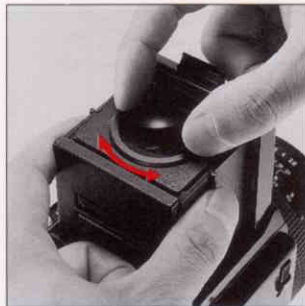
B. The magnifier is flipped into viewing position, by simply sliding the release lever in the arrow-indicated direction.

To store the magnifier, simply push it down until it catches.

* The magnifier can be exchanged for one matching the eyesight of the user.



C. To close the focusing hood, first, push down the magnifier (if it is in viewing position). Next, press in both side frames, as illustrated, and, at the same time, press the front frame back towards the rear. The focusing hood will automatically be folded down.



D. The standard magnifier supplied with the waist-level finder has a power of -1.5 diopters, which can be exchanged for others with powers of -4.5 , -3.5 , -2.5 , -0.5 , $+0.5$ and $+1.5$ diopters. These optional accessories should be purchased to suit the user's eyesight, if necessary. Simply rotate the magnifier frame in the counter-clockwise direction to unscrew. Attach in the reverse manner.

18 Setting the Aperture



A. The aperture ring is rotated, in either direction, to set the required f/number opposite the white index dot. The aperture ring click-stops at the numbered settings. Intermediate settings are also possible.

* Intermediate settings can be used with PS series lenses when the finder with built-in exposure meter is used.



B. All interchangeable lenses for the Zenza Bronica SQ-Ai have fully automatic lens diaphragms which means that the focusing screen is always viewed at the full aperture, providing the brightest possible image. However, depressing the depth of field preview lever will stop the lens diaphragm down to the pre-selected lens opening and permit the photographer to check the depth of field effect on the focusing screen.

* The aperture ring must not be adjusted while the depth of field preview lever is being depressed.

* If exposure measurements are taken with the depth of field preview lever depressed, when using a finder with built-in exposure meter, the shutter speed setting indicated will cause overexposure. This is because proper exposures are obtained with exposure measurements made at the full aperture.