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# MIRANDA



**SENSOMAT**

THROUGH-THE-LENS EXPOSURE DETERMINATION

Congratulations. You have just become the owner of one of the finest pieces of photographic equipment, the Miranda Sensomat, a camera with very advanced features.

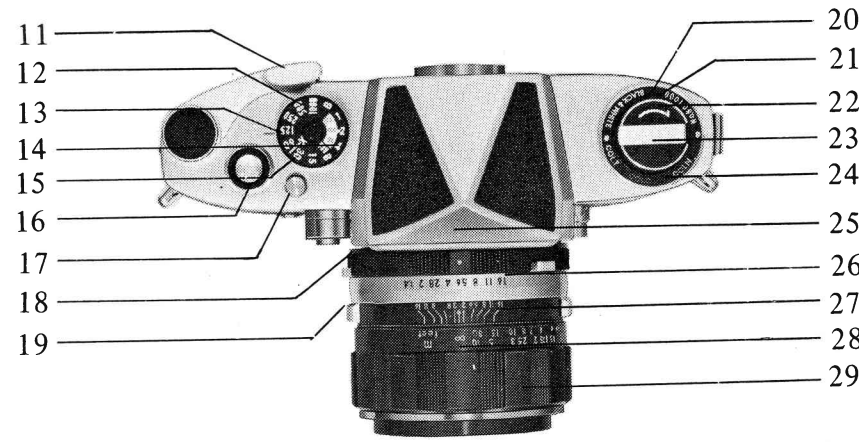
The Miranda Sensomat forms a basic part of an all-round camera system, which is unequaled in versatility. The Miranda Sensomat has been precision engineered and manufactured to give, with normal care, many years of enjoyment within the wide scope of photography, whether just for snapshots or for advanced technical photography. To take full advantage of all features of this camera, we earnestly suggest you study this manual carefully before loading your camera with the first film. Should any questions pertaining to the operation of your Miranda Sensomat arise, please write to Consumer Service c/o your local dealer or directly to Miranda Camera Co., Ltd., C.P.O. Box 2072 Tokyo

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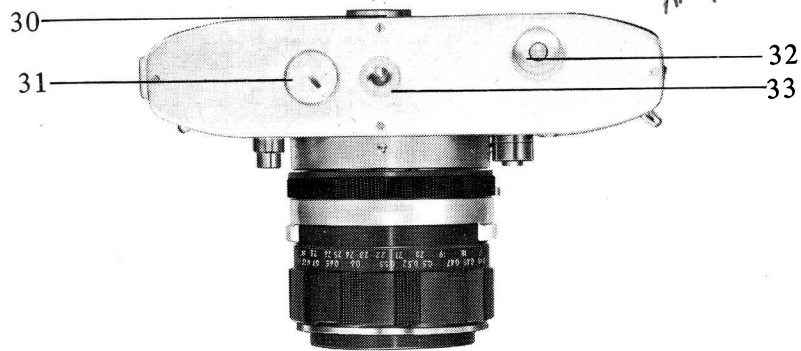


- 1 Lens positioning mark
- 2 Front Shutter release button
- 3 FP flash contact
- 4 X flash contact
- 5 Neckstrap eyelet
- 6 Back cover lock
- 7 Standard lens
- 8 Exposure meter release button
- 9 Exposure meter activating button
- 10 46mm $\phi$  screw-in filter ring

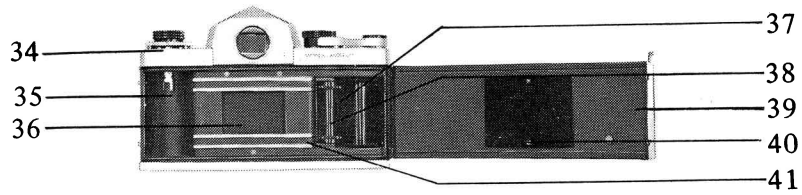


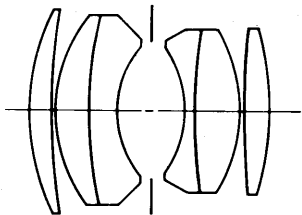
- 11 Film advance lever
- 12 Shutter speeds dial
- 13 Shutter speeds reference mark
- 14 ASA film speeds dial
- 15 ASA film speeds setting ring
- 16 Film counter
- 17 Top shutter release button
- 18 Lens locking button
- 19 Diaphragm finger grip
- 20 Finder release dial

*mech*

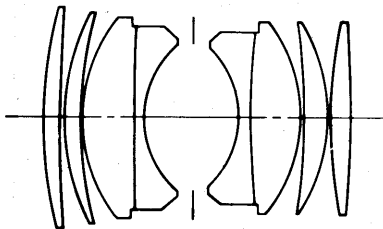


- 21 Film memory dial
- 22 Film rewind knob
- 23 Collapsible rewind crank
- 24 Camera serial number
- 25 Removable pentaprism
- 26 Diaphragm openings dial
- 27 Depth of field scale
- 28 Distance reading dial
- 29 Focusing ring
- 30 Eyepiece
- 31 Battery compartment
- 32 Rewind button
- 33 Tripod socket
- 34 Accessory-shoe slot
- 35 Film chamber
- 36 Film gate
- 37 Film take up spool
- 38 Sprocket wheel
- 39 Back cover lock
- 40 Film pressure plate
- 41 Film guide rail





AUTO miranda 50mm f1.8

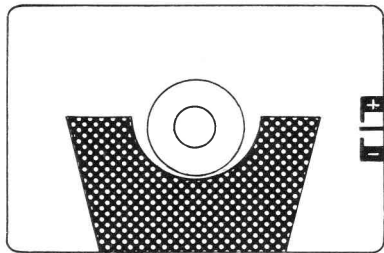


AUTO miranda 50mm f1.4

### The Superb Auto-Miranda Lens, 50mm f1.8

The Miranda Sensomat is equipped with a fully automatic lens, manufactured in accordance with the very rigid Miranda Standards. The lens is composed of 6 elements in 4 groups, diaphragm calibrations from 1.8 - 16. The minimum focusing distance is 43 cm or 17 inches. Angle of view is 45°.

A new high speed 50 mm f1.4 standard Auto Miranda lens has been developed for use on the Miranda Sensomat. It is a gauss type lens, consisting of 8 elements in 6 groups, diaphragm calibrations from 1.4- 16. minimum focusing distance is 43 cm or 17 inches. Angle of view is 45°. It is advisable to use a lens hood with this lens to avoid reflection on the front element.



### Partial Average Light Measuring

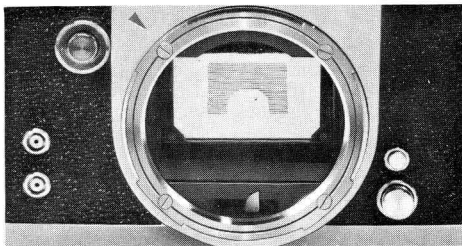
The CdS meter of the Miranda Sensomat measures a fair average of low lights while cutting out the influence of the sky brightness. As the measuring area does not cover the entire field of view, it gives an accurate average of the low lit subjects, an additional prevention against over-or under exposure. The above diagram indicates the light-measuring area of the exposure meter in the viewfinder.



### Interchangeable Finder System

For a Single Lens Reflex system to manifest its fullest capacity, it is absolutely a necessity that its viewfinder be interchangeable, with other more convenient types for specific purposes. If a viewfinder is not interchangeable, it puts immediately limitations to such camera. The Miranda Sensomat has viewfinders, which can be interchanged, eyelevel-waistlevel-and magnification types being among the types available.

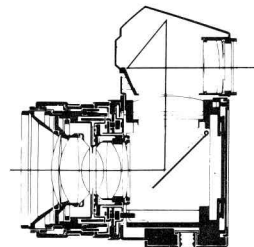




### Exclusive Dual-Purpose Lensmount

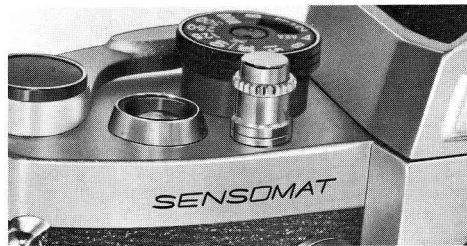
The Miranda Sensomat has, as a far advanced feature, a lensmount which accepts bayonet-and screw mount lenses and accessories.

As the Miranda mount has moreover, a wide diameter and an extremely short flange back, (distance between lens-attaching plane and film surface) it permits the use of most lenses, made for other SLR cameras, using the Miranda adapters.



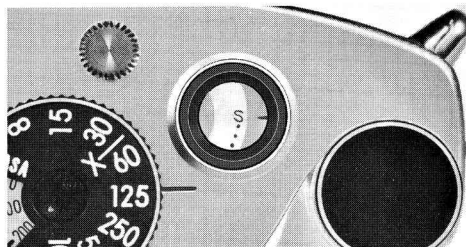
### Instant Return Mirror

The instant action of the swing-up mirror almost completely eliminates viewfinder blackout. Only during the split-second of shutter action, the mirror moves upwards to allow light rays to enter the camera for exposure of the film. Instantly, after the shutter closes, the mirror returns to its original position.



### Front-and Top Shutter Release

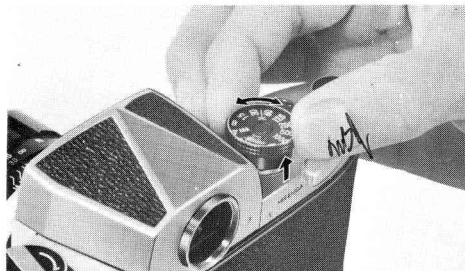
One of the exclusive features of the Miranda Sensomat is its dual release system which can be activated either from top or front of the camera. It is a matter of personal preference of the photographer which of the two to use. The top-release button can be removed and will provide a socket for use of cable release or self-timer.



### Auto-Resetting Film Counter

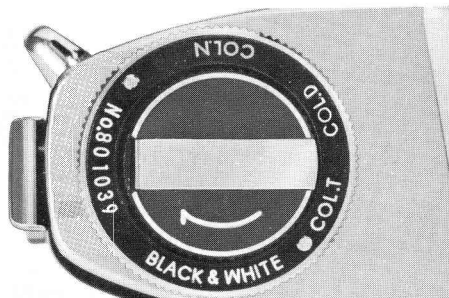
The film counter, which indicates the number of pictures taken, will automatically set itself to the "S" (start) mark, when the camera is opened for loading the film. From there onwards, the film counter will move frame by frame. An added feature of the Miranda Sensomat is the optically enlarged image in the film counter window, for a clear and brilliant view.

- Always load or unload the film in the shade. If no shade is available, do it in the shadow of your own body.
- Whenever possible, avoid loading and unloading in a dusty place or at the seaside where strong salty wind may damage the camera.
- When loading or unloading, take care not to touch the shutter curtains.



The 35mm. film is advanced through rotation of the sprocket and not by direct winding of the spool; therefore, the sprocket must engage the film's perforation perfectly. To check whether the film is advancing properly, the rewind knob is first turned slightly to take up any play in the film; then if the advance lever is wound the rewind knob should rotate. But if the rewind knob fails to turn, it indicates that the film is not properly loaded and requires reloading.

As soon as you have loaded the camera, be sure to adjust the ASA speed indicator (ASA 25–1600) on the shutter speed dial to the ASA speed of the film you have loaded. Lift the shutter speed dial and rotate it until the required ASA speed is opposite the indicator mark. Setting the ASA speed is essential to exposure determination since the ASA speed indicator is cross-coupled to the meter needle in the viewfinder, along with the speed dial. If the ASA speed is not correctly set, the built-in CdS exposure meter will not indicate correct exposure settings.



### Film Memory Dial

At the base of the rewind knob is a memory dial, as a reminder of the type of film loaded in the camera. Engravings are:

Col. N. for color-negative film

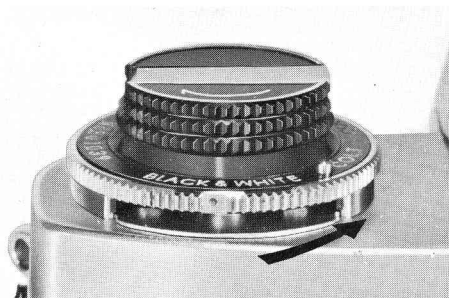
Col. D. for color daylight reversal film

Col. T. for Tungsten (artificial light) reversal film.

Black & White

On the knurled edge of this dial is a red mark, to which the appropriate film type is to be set.

This serves only as a utility and has no influence on the camera operation.

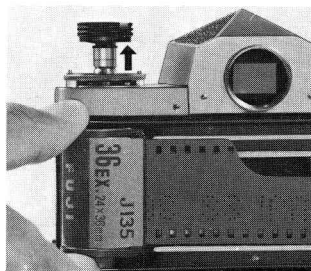


The film memory dial serves also as a release lock for the interchangeable viewfinder system. Turning the dial to the right will release the viewfinder lock.



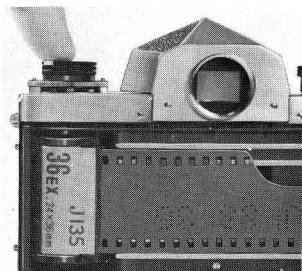
**1. Open the back cover**

Press lock button in the center of right edge of back cover and pull up clip lever at top at the same time, which immediately opens the back cover. When back cover is opened, counter automatically returns to "S" (start) mark.



**2. Insert cartridge into film chamber**

Pull up rewind knob and insert cartridge, taking care that the projecting end of cartridge faces down.



**3. Push back rewind knob to original position**

If the knob does not go all the way down turn it a little to the left or right.



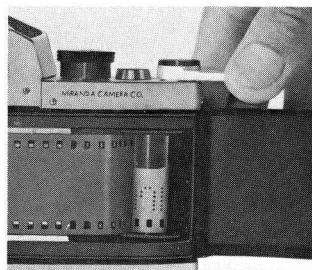
**4. Position take-up spool slit**

Turn the bottom knurled flange of take-up spool with a finger until slit appears.



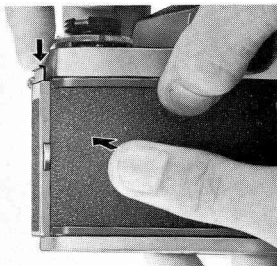
**5. Insert tip of film into spool's film slit**

Insert leader of film, making sure that one perforation is caught by the claw at the entrance of the film slit. Also see that the sprocket engages the film perforation.



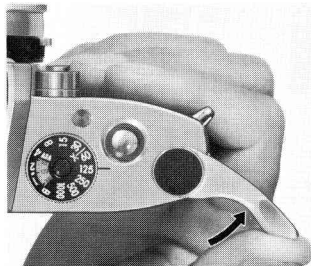
**6. Turn film advance lever until perforations on both sides of film are engaged by the sprocket**

If one winding fails to make sprocket catch the perforations on both sides of the film, press shutter button and wind again.



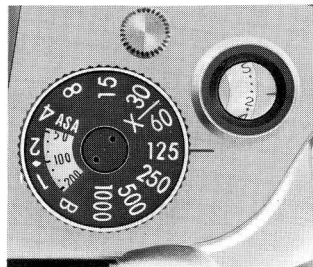
7. If film is advancing properly, close back cover

Upon closing, push down clip lever, which will automatically engage the lock button and the back cover becomes securely locked.



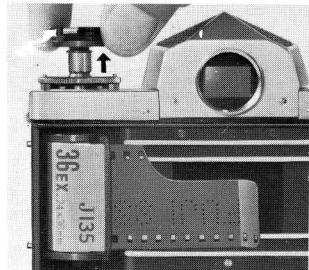
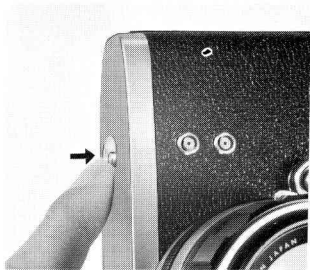
8. Turn film advance lever several times to wind up the fogged portion of film

Shoot several blanks and continue winding the film until film counter indicates "1". Then, slightly turn rewind knob in the direction of arrow to take up any slack.



9. When film counter indicates "1" it means film loading is completed

From here, film counter will move frame by frame for each shot to indicate the number of pictures which have been taken.



1. First, the film rewind release button on the base of the camera body is pushed in until a small click is heard. This button need not be held during re-winding. The film is now free from the sprocket which has been advancing it, and is ready for re-winding.
2. Flip the rewind crank on the rewind knob and wind in the direction of the arrow. At the end of the roll you will feel the resistance increase and then suddenly cease. Turn the rewind crank several more times to make certain the film has been entirely rewound.
3. Open the back cover by depressing the lock button and pulling up the cover clip at the same time. Pull up the rewind knob and take out the film cartridge. Make certain that no film chips or dust particles are left in the camera.





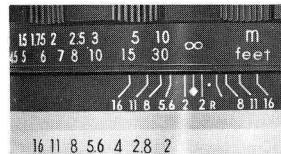
While looking through the viewfinder, if the focusing ring is turned either to the right or left it will, make the blurred image of the subject become clear and sharply focused.

- The focusing is very easy as the viewfinder shows in its center a multi-microprism (collection of minute prisms). This gives jagged edges to the image as soon as it is out of focus even in the slightest degree. Light is collected to the focusing screen by means of a special system of fine-grained Fresnel lens and condenser, which permits bright corner-to-corner viewing.



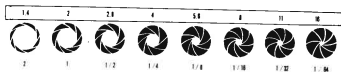
### Focusing for Infra-Red Shots

For infra-red shooting, first set to accurate focus in the normal way, then shift that distance reading to match the red "R" mark on the aperture ring of the lens.





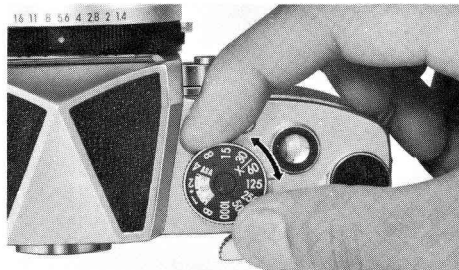
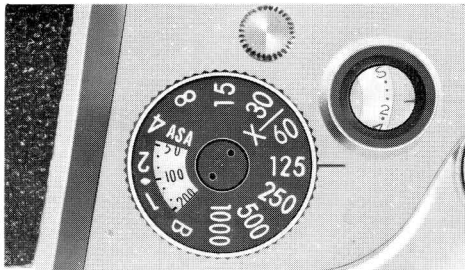
Aperture  
"f" stop



Light  
Volume  
Ratio

The lens aperture ring is engraved with f-stop numbers from 1.4 or 1.8 to 16, each equipped with a click-stop. To set to any aperture, hold the two finger grips projecting from the aperture ring and turn the ring until the desired f-stop comes against a red dot close to the lens mount.

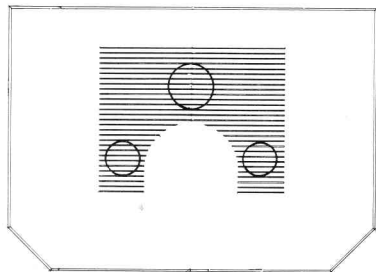
- Aperture adjustment can be used to adjust the incoming light volume or to adjust the depth of field (refer page 32).
- The larger the aperture number, the less light passes through the lens to reach the film. This relationship is such that whenever it is changed to the next bigger f-stop number, it reduces the volume of incoming light by one-half, so if the aperture is closed down in succession from one bigger f number to another, the volume of incoming light would decrease at the rate of  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$  and  $\frac{1}{16}$ .
- Setting at a point midway between aperture readings would give intermediate f-values.
- Aperture adjustment can be done at any time before or after film advance.



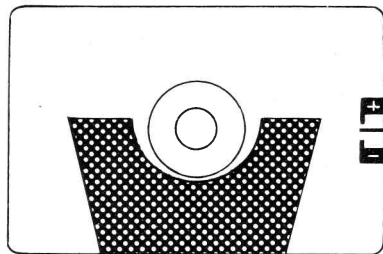
To set the shutter speed, the shutter speed dial is turned to the left or right until the desired speed number lines up with the shutter speed indicator. The dial rotates in either direction.

- The marks “B, 1, 2....1000” indicate “Bulb, 1 sec., ½ sec....1/1000 sec.” shutter speed positions.
- “B” (bulb) is for long exposures with the shutter remaining open as long as the button is depressed.

- The red “X” indicates the shutter speed for synchronization with electronic flash.
- Shutter speed can be freely changed before or after winding.
- When turning the shutter speed dial, see that it falls correctly into click-stop position. If set to intermediate positions, the shutter will not operate at an accurate speed.

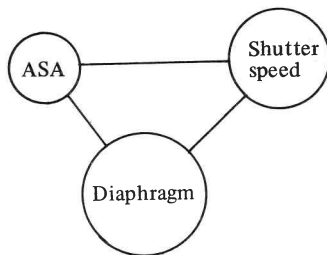
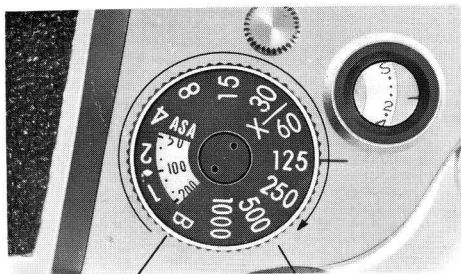


Mirror area



View finder area

The exposure meter measures the brightness of the subject in a unique way. The single CdS cell, behind the mirror, in actual fact is composed of three separate supersensitive light measuring elements, positioned in the upper portion and left and right side of the mirror. This completely eliminates overexposure, that could be caused by the bright light of the sky.

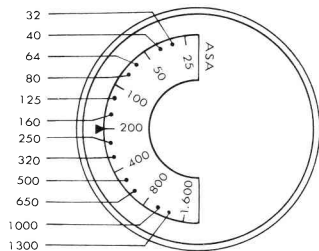


The exposure meter of the Miranda Sensomat is provided with a warning system for over- or underexposure, which could be caused by either too bright or too dim light conditions. This warning system is incorporated in the shutter speed/ASA-speed dial, which will block when attempting usage outside this safety-zone. Extension of this range can be obtained by changing the ASA-speed dial, but is not advisable when color film is loaded in the camera.

The table on the next page shows the exact range within which good results can be obtained.

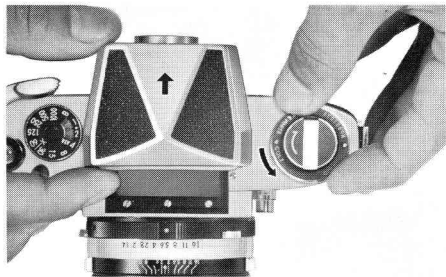
## EXPOSURE RANGE CHART

Shutter Speed ASA	B	1	1/2	1/4	1/8	1/15	1/30	1/60	1/125	1/250	1/500	1/1000
25												
32												
40												
50												
64												
80												
100												
125												
160												
200												
250												
320												
400												
500												
640												
800												
1000												
1250												
1600												



The CdS meter of the MIRANDA Sensomat is coupled to the film speed dial. After loading the film, therefore, see that the film speed dial is set properly. Failure to adjust this dial according to the speed rating of the film loaded in the camera will prevent the meter from giving correct exposure reading.

- Lift and turn the knurled outer ring of the shutter dial in either direction until the desired figure comes directly opposite the indicator.
- It is unnecessary to re-adjust the film speed dial unless film of a different speed rating is loaded in the camera.
- The same film speed setting is employed when using filters or in close-ups and photomicrography.
- Intermediate settings on the dial denote film speeds given in the illustration.



The viewfinder on the MIRANDA Sensomat is interchangeable and can be changed with the most convenient type according to the purpose of the shot so as to make best use of the camera's capacity. The viewfinders available are the pentaprism type and waist-level finders Types VF-1, VF-3 and VF-4.

- For ordinary shooting it is convenient to use the pentaprism viewfinder which shows the image right side up and right way round.
- For low-angle or high position shooting and for candid shots, the waist-level finder VF1 becomes useful; however, special care should be taken to avoid light entering the camera through the focusing screen which may cause incorrect exposure.
- For close-up, copying and photomicrographic work, use critical focusers VF-3 or 4. The VF-3 viewfinder when collapsed turns into a 15 times magnifier for critical focusing at the center of the focusing screen. When opened it becomes a 5 times magnifier for inspecting the entire picture area. The viewfinders can be removed for interchanging by sliding it toward the rear, while turning the viewfinder release dial to the right. To attach, match the viewfinder's base to the camera's groove and slide it forward until it clicks into position.



## Exposure system

A very ingenious system in the exposure meter, which accurately measures the light, that enters the camera through the lens, has been incorporated in the Miranda Sensomat.

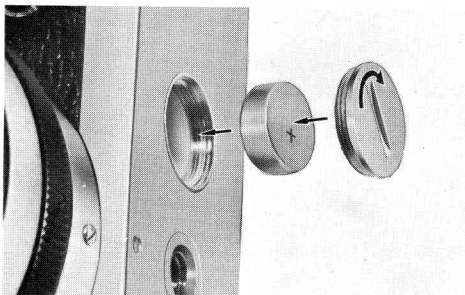
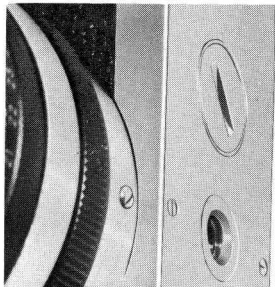
The sensing area of the exposure meter is invisibly placed behind the mirror in alignment with the optical axis, always in position for exposure reading, except for the split-second mirror action when taking a picture. The exposure meter system is cross-coupled and responds to either shutter speed or lens diaphragm adjustments. Either shutter speed or lens diaphragm may be preselected with the second adjustment used to set the exposure meter.

An important fact is the positioning of the CdS cell directly behind the lens, as this obviously gives the most accurate "direct" light value and is less sensitive to extraneous light falling in through the eyepiece (contrary to cameras with CdS cells placed inside the finder).

The exposure meter of the Miranda Sensomat has been so designed as to cover the widest possible range of exposures, from EV 1.6 to EV 18 (with 100 ASA film and 50mm. f1.8 lens,) filmspeeds from ASA 25 to ASA 1600. Correct exposure is easily obtained and visible in the viewfinder, an added feature for last minute adjustments.

The Miranda Sensomat through the lens exposure system is of the closed-down aperture and partial average type, very convenient for a wide range of applications, and especially convenient in macro-micro and close-up photography, and when using lenses and accessories of an unknown f-stop number.

## Mercury Battery



The CdS meter of the MIRANDA Sensomat is powered by a mercury battery. Therefore, before using your new Sensomat load the mercury battery in the battery compartment of the camera.

1. Remove the battery compartment lid of the camera by turning it in an anti-clockwise motion.
  2. Place the mercury battery in the compartment, seeing to it that the (+) side faces the camera bottom and replace the lid.
  3. The meter will be activated by pushing the meter switch.
- The meter will not function if the polarity of the mercury battery is reversed.
  - Under ordinary circumstances, the mercury battery will provide sufficient power to work the meter over a duration of about two years. The battery power declines sharply when it nears the end of its life-span, resulting in sluggish movement of the meter needle seen through the finder. In this case, replacement of the mercury battery is necessary.
  - When replacing the mercury battery, use Mallory PX 675 or equivalent.
  - Remove the mercury battery from its compartment when the camera is to be left unused over any great length of time.



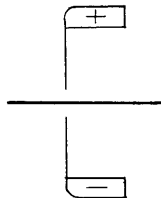
The Miranda Sensomat exposure meter system operates on the “closed down” principle of exposure determination. An exposure reading is made by closing the lens diaphragm down until the meter needle, visible in the viewfinder, indicates that the correct amount of light is entering the lens.

The film must be advanced before meter reading is made in order to lock the diaphragm in the closed-down position.



Failure to wind the film makes the meter activating button inoperative as the switch is directly connected to the winding mechanism.

These lenses are provided with the internal diaphragm coupling. After having set the correct ASA film speed and selected a diaphragm opening, press the exposure meter activating button. In the viewfinder the needle will move either in + (over) or - (under) direction. Adjustment can now be made by turning either shutter speed dial or diaphragm ring till the needle reaches the center position.



If for any reason, such as refocusing, the diaphragm has to be opened before picture is taken, the small release button, above the exposure meter activating button is to be depressed.

To determine whether to use the shutter speeds or diaphragm control greatly depends on the depth of field required. Closing the lens down increases the depth of field, while opening reduces it.

If speed is of prime importance such as sports or stage photography, then it is advisable to preselect the required shutter speed and adjust the exposure by the diaphragm control. (for tables see page 32)

The same applies to other automatic lenses which couple to the automatic diaphragm mechanism of the Miranda Sensomat, and do not belong to the Auto Miranda Series.

**CAUTION** When the camera is not to be used for some time make sure that the exposure meter is switched off by pressing the release button.

When using preset lenses such as the "Soligor," T-2 system the operation is very easy and will give equally well exposed pictures as with the Auto Miranda lenses. First a lens opening has to be selected and the lens closed down. Turn the shutter speed dial until the needle is in the center position. If proper exposure cannot be obtained, change the lens opening to a different setting and again turn the shutter speed dial.

