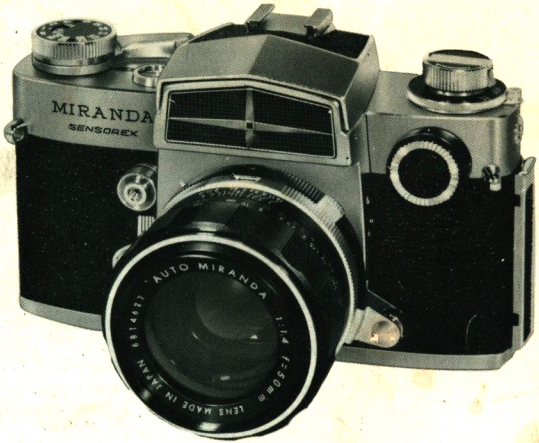

MIRANDA

SENSOREX-C

We thank you for selecting our MIRANDA Sensorex-C as your companion and hope that it gives you much pleasure and satisfaction for a long time to come.

As the pioneer of single-lens reflex in Japan and as a specialized manufacturer of this type of camera, the Miranda Camera Company has been continually developing its products with new ideas and great originality.

MIRANDA Sensorex-C which has become your companion from today offers a new standard for quality cameras. It provides the advantage of through-the-lens light measuring at open aperture, closed aperture or through average reading, and is equipped with a lens of an extremely high resolution, a bright and easy-to-use viewfinder. With a wide interchangeability of both viewfinders and lenses, and distinctive features found only on high grade cameras, it rightly deserves being called the perfect SYSTEM CAMERA.

It has, moreover, a built-in self-timer, an almost noiseless shutter and vibration-free mirror mechanism, a compact easy-to-hold body, and a complete line of convenient accessories to suit all occasions.

We firmly believe that it is able to meet any requirements of the amateurs or professionals.

Before taking your first picture, however, we earnestly advise you to read this Manual carefully as it would enable you to make best use of the remarkable capabilities of this MIRANDA Sensorex-C Camera.

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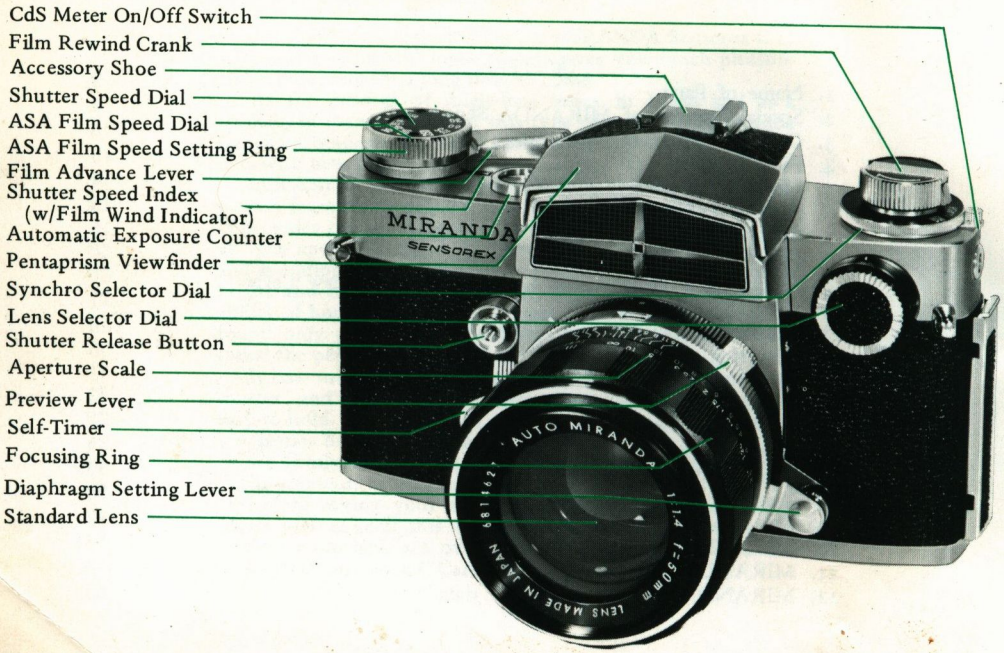
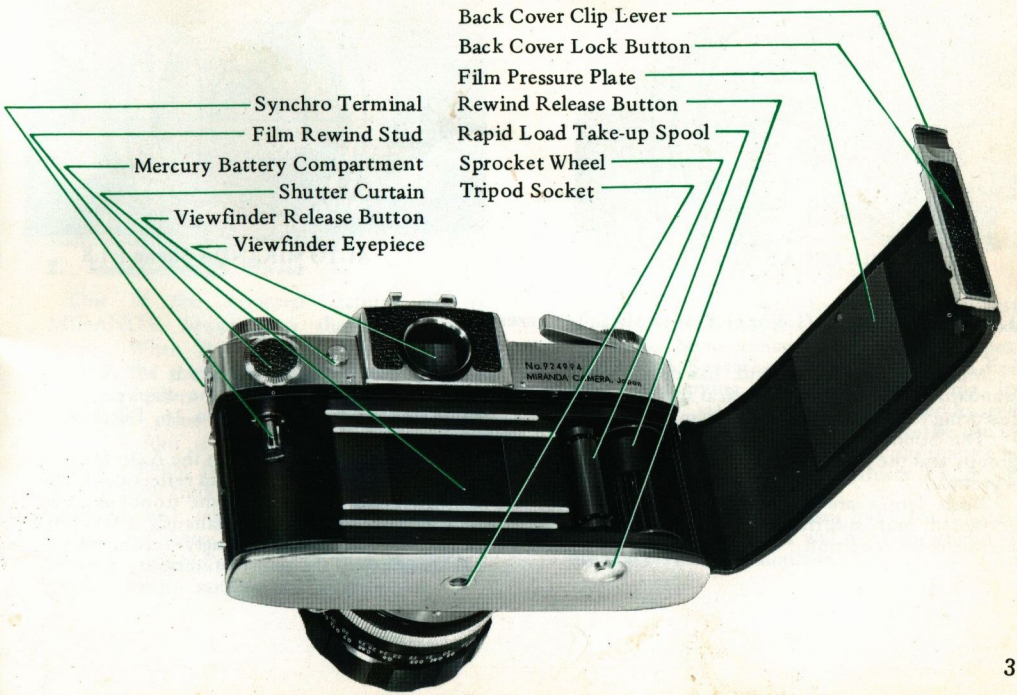
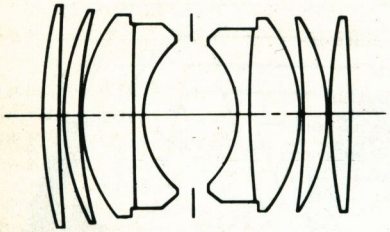
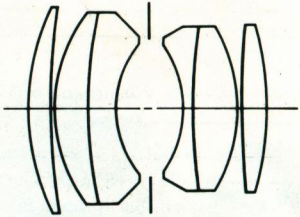
NAME OF PARTS




Back Cover Clip Lever
Back Cover Lock Button
Film Pressure Plate
Rewind Release Button
Rapid Load Take-up Spool
Sprocket Wheel
Tripod Socket
Synchro Terminal
Film Rewind Stud
Mercury Battery Compartment
Shutter Curtain
Viewfinder Release Button
Viewfinder Eyepiece
No.924994
MIRANDA CAMERA



AUTO MIRANDA 50mm f:1.4



AUTO MIRANDA 50mm f:1.8

1. Choice of 50mm f1.4 or f1.8 Auto Miranda Lenses

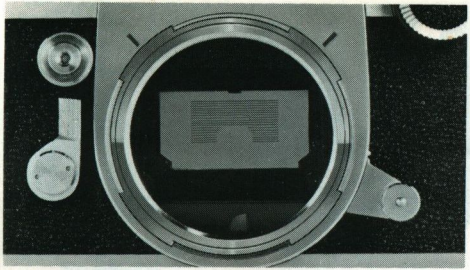
Miranda Camera Co., Ltd. has developed 2 standard lenses of superb optical quality, both featuring fully automatic diaphragm.

The 50mm f1.4 consists of 8 elements in 6 groups and the 50mm f1.8 houses 6 elements in 4 groups.

Both lenses are Gauss types, fully color corrected and spectrahard coated to assure perfect color rendition.

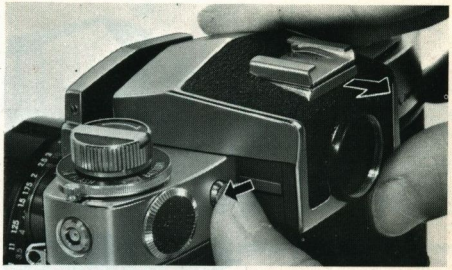
Minimum focusing distance is 17" or 43cm. Angle of View is 45° and the diaphragms are calibrated from 1.4 or 1.8 to 16. Filtersize is 46mmϕ.

The use of a lenshood on the Auto Miranda lenses is recomended to avoid reflections in the frontelement, and to keep the frontlens clean, it is advisable to keep permanently a UV filter in the frontring. We strongly recomend the exclusive use of the Soligor filters.



2. Instant-Return Mirror

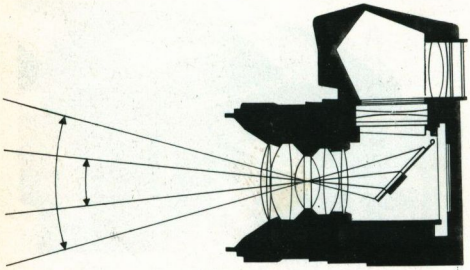
One of the advanced features of the MIRANDA Sensorex is the instant-return mirror. When the shutter release button is pressed, the mirror swings up, permitting the light rays from the lens to reach the film as the focal plane shutter opens. Immediately after the film is exposed, the mirror returns to the viewing position. When the mirror is up, the view through the viewfinder is momentarily blacked out, but, at speeds of 1/15 second and faster, the mirror returns to the viewing position so quickly that the photographer hardly notices the interruption.



3. Convenient Interchangeable Viewfinder

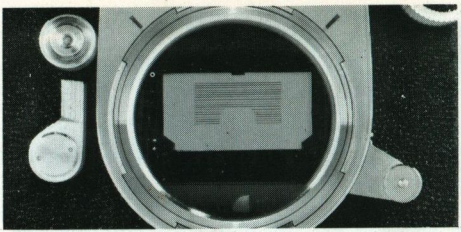
For an SLR system to manifest its fullest capacity, it is absolutely necessary that its viewfinder be interchangeable with other types. MIRANDA Sensorex has this capability. For close-up, copying and low-angle shooting, its penta-prism viewfinder can be interchanged with three types of viewfinders. Selective use of these viewfinders assures utmost convenience in taking pictures of special effects under all conditions.

The standard pentaprism has a fixed accessory shoe on top which will hold a flashgun or other accessories of similar mount.



4. CdS-through the Lens Exposure Meter

The Miranda Sensorex has a unique system of exposure determination, known as the partial-average method. A part of the image, as seen in the viewfinder, is measured for light intensity and the average light is computed which forms the basis for the exposure setting. Moreover, as both the shutterspeeds—and diaphragm are cross-coupled to the meter, exposure computation can be performed from either shutterspeeds or diaphragm.



5. Unique Type of Lens Mount

The lens mount of MIRANDA Sensorex has on its outside a 4-claw bayonet mount and on its inside a screw mount of 44mm inner diameter (All MIRANDA cameras and lenses have the same standard lens mount).

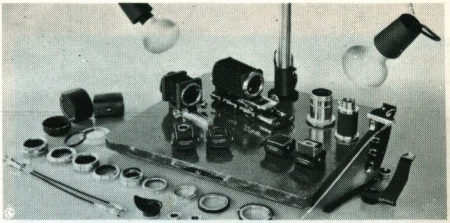
The bayonet mount is for attaching the auto lenses (having automatic diaphragms), extension bellows, etc., quickly and easily by merely giving 1/8 of a full turn after mounting. The inner screw mount is for preset lenses and most of other accessories.

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

6. Bright, Easy-to-View and Accurate Viewfinder

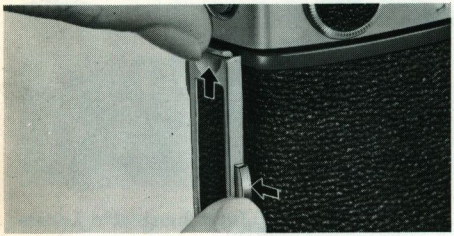
MIRANDA Sensorex is equipped with a penta-prism viewfinder which shows the subject's image right side up and right way round. It was Miranda Camera Company which first developed and adopted this system in Japan. It was Miranda also which first perfected a method of improving the penta-prism's eyepiece to permit easier viewing.

Miranda's viewfinder accurately shows the actual image and background blurs exactly as transferred to the film, and is therefore most useful in portraits, close-ups, copying and color shots, and particularly when shooting with telephoto lenses or through the microscope.



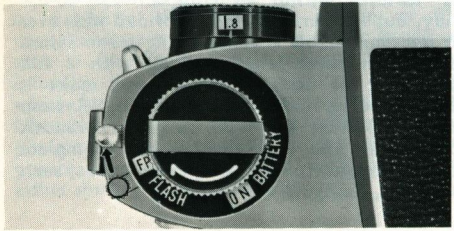
7. Complete Line of Interchangeable Lenses and Accessories

MIRANDA Sensorex is one of the highest grade SLR cameras embodying many outstanding features within its compact easy-to-use body, but furthermore, it is provided with over 20 interchangeable lenses ranging from 21mm to 800mm focal lengths, along with a full assortment of useful accessories to make it deserve being called the full-scale System Camera. Besides the wide range of Miranda accessories, also available is the complete Soligor program of useful optional items, such as tripods, flashguns etc.

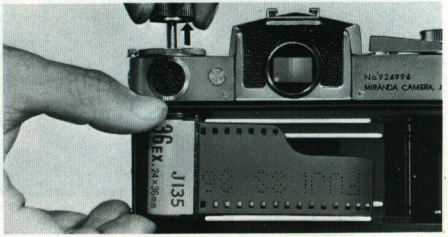


1. Open the back cover

While pressing lock button pull up clip lever at top to open back cover.



5. Set the lens selector dial and turn on the meter switch

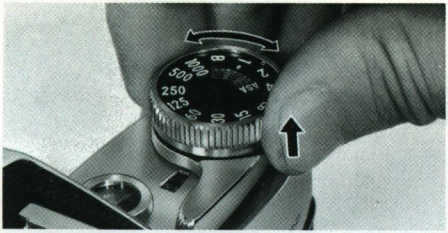


2. Load the film

Insert film cartridge, with the spool projection facing down.

6. Obtain exposure by looking through viewfinder

While looking through the viewfinder turn shutter speed dial or diaphragm setting lever until the needles coincide.



3. Set the ASA speed indicator

4. Wind film advance lever

Continue winding until film counter shows figure "1".

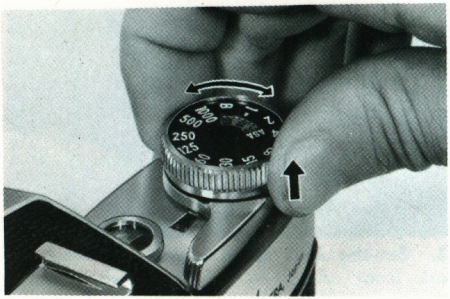
7. Adjust the focus

Turn focusing ring until the jagged glitter disappears from the center focusing spot.

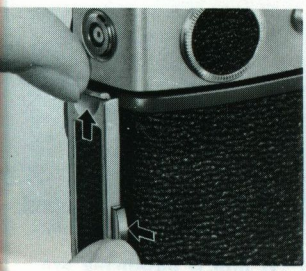
8. Decide the composition by looking through viewfinder and gently press shutter button.

- 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 is blowing.
- 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.

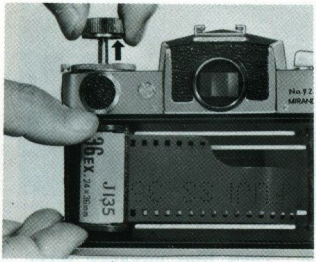


As soon as you have loaded the camera, be sure to adjust the ASA speed indicator (ASA 25—1600) on the shutter speed dial to the ASA speed of the film you have loaded. Lift the shutter speed dial and rotate it until the required ASA speed is opposite the indicator mark. Setting the ASA speed is essential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



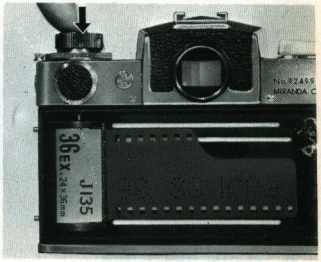
1. Open the back cover

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.



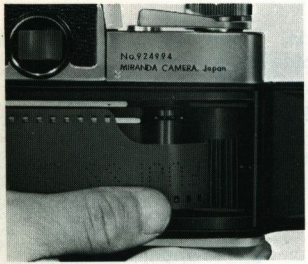
2. Insert cartridge into film chamber

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. Rapid load spool

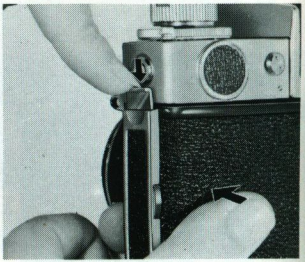
The Miranda Sensorex-C is equipped with a Film-take up spool which has a number of slits, to inscrt the film. Any slit can be used, and the sharp edges will hold the filmtip tightly in place.

Insert tip of film into a film slit

Insert end of film, and see that the sprocket engages the film perforation.

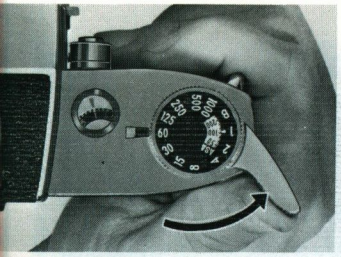
5. Turn film advance lever until perforations on both sides of film are engaged by the sprocket

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



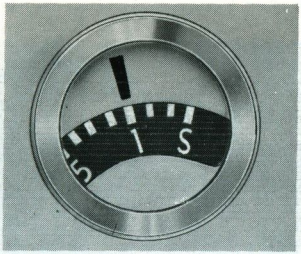
6. If film is advancing properly, close back cover

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



7. 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.



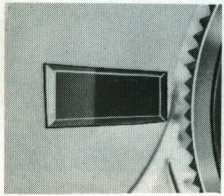
8. When film counter indicates "1" it means film loading is completed

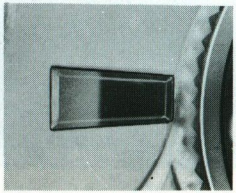
From here, film counter will move frame by frame for each shot to indicate the number of pictures which have been taken.

9. Set filmspeed

Lift shutterdial and rotate till required ASA number is opposite the indicator mark.

HOW TO USE FILM ADVANCE LEVER





Before winding (WHITE)

After winding (RED)

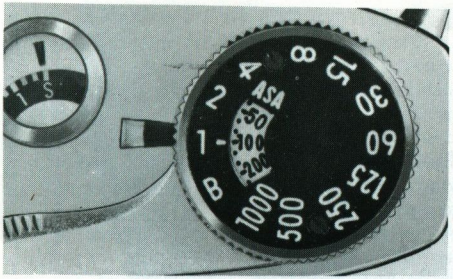
Turn film advance lever until it goes no further. One full turn of 180° is necessary to advance one frame. Insufficient winding may make the shutter button unworkable, or even if it does work it may not permit proper opening of the shutter curtain. This point requires careful attention.

One full winding also cocks the shutter and changes the color in the signal window from white to red. It returns to white again when the shutter is released.

One full winding of film advance lever:

1. Advances one frame of film.
2. Makes film counter advance one number.
3. Changes color in signal window from white to red.
4. Cocks the shutter.
5. Sets the automatic diaphragm of lens and mirror mechanism.

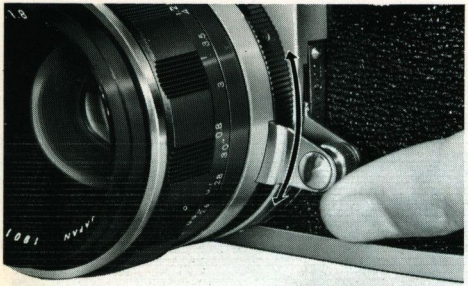
SETTING THE SHUTTER SPEED



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.

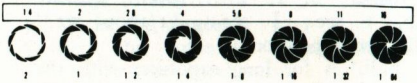
- The marks "B, 1, 2.....1000" indicate "Bulb, 1 sec., ½ sec.....1/1000 sec." shutter speed positions.
- "B" (bulb) is for long exposures with the shutter remaining open as long as the button is depressed.

- The red "60" 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 clickstop position. If set to intermediate positions, the shutter will not operate at an accurate speed.

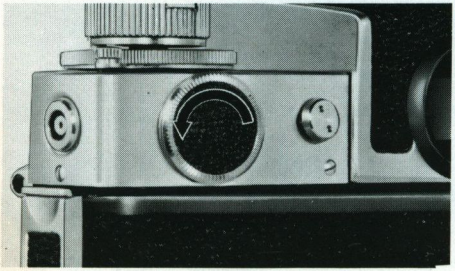


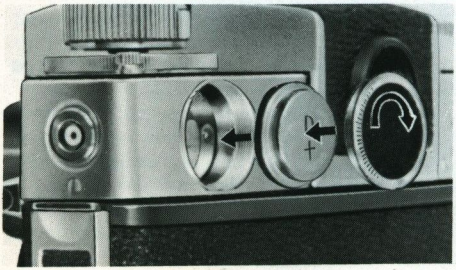
The aperture scale of the standard lens has calibrations from f/1.8 (1.4) to f/16. To adjust the aperture according to the light intensity, shift the aperture setting lever in either direction.

- The red indicator on the lens mount or the diaphragm setting lever is used for reading the aperture setting.
- The larger the aperture value the less light is transmitted to the film plane. The calibration on the scale is arranged so that setting to the next larger value reduces the volume of incoming light by half. If, therefore, the scale is adjusted in succession to the next larger value, the volume of light transmitted through the lens would be decreased in progression of 1/2, 1/4, 1/8, 1/16 and so on.
- Adjustment of the aperture scale to a point midway between the settings would give an intermediate f-value.
- The aperture may be set either before or after film advance.
- Because the diaphragm mechanism of the MIRANDA Sensorex is coupled to the metering system, refer to sections on the CdS exposure meter and method of light measurement for further details on aperture setting.



1. Mercury Battery



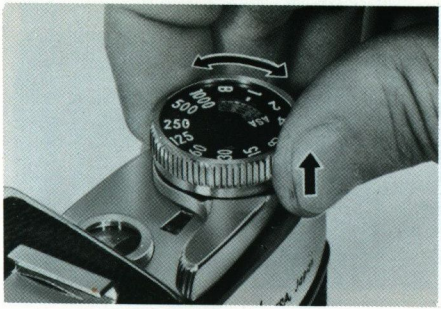


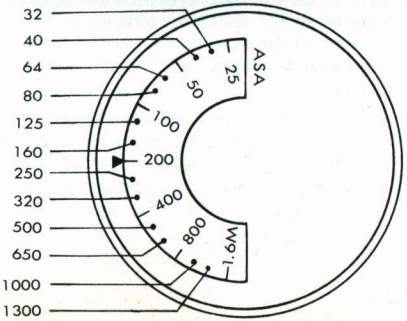
The CdS meter of the MIRANDA Sensorex is powered by a mercury battery. Before using your Sensorex, load the mercury battery in the battery compartment.

1. Take off the battery compartment lid by turning it counterclockwise.
2. Place the mercury battery in the compartment, seeing to it that the (+) side faces the camera back, and close the lid.
3. The meter will be activated by turning on 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 #625 or equivalent.
- Remove the mercury battery from its compartment when the camera is to be left unused over any great length of time.

2. Setting the Film Speed

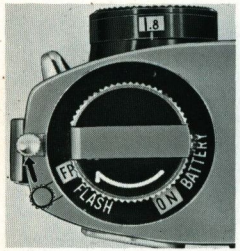


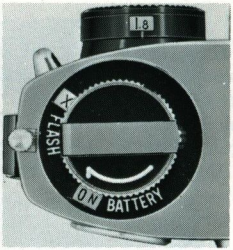


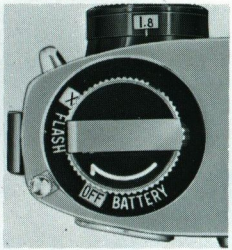
The CdS meter of the MIRANDA Sensorex is coupled to the film speed dial. After loading the film, therefore, see that the film speed dial is set properly. Failure to adjust this dial according to the speed rating of the film loaded in the camera will prevent the meter from giving correct exposure reading.

- 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.

3. Switching on the Meter







The CdS exposure meter is activated by pushing toward the camera front the meter switch located on the base of the film rewind knob.

- The meter switch has clickstops to prevent it from accidentally slipping out of position.
- The On/Off indicator is on the flash synchronizer selector. Regardless of whether the flash synchronizer selector is set to FP or X, the indicator will show at a glance whether the switch is turned on or off.

- **Be sure to set the flash synchronizer selector accurately to the clickstop settings at FP or X. Failure to do so will prevent the On/Off indicator from giving the On or Off setting accurately.**
- It is unnecessary to turn off the meter switch after each exposure; however, to prevent battery drain, it is advisable to shift the lever to Off position when the camera is to be left unused.

4. Open Aperture Light Measuring

The MIRANDA Sensorex is the only camera in the world permitting open aperture light reading with either exclusive Miranda lenses or other brands of preset diaphragm lenses. The method employed in light measurement is basically the same with any of these lenses.

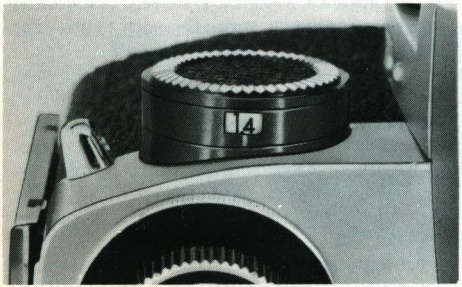
- The exposure computer system of the MIRANDA Sensorex is adjusted perfectly to the Auto-Miranda lens or other preset diaphragm lens in use, simply by setting the lens selector dial on the camera front according to the maximum aperture of the lens. If, for instance, a 50mm f/1.8 lens is mounted on the Sensorex, turn the dial until the figure 1.8 appears in the window.
- The lens selector dial has the following settings:

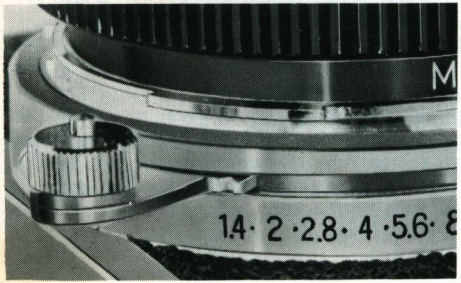
  1.4 1.8 2.8 3.5 4 5.6 8

The CdS meter of the MIRANDA Sensorex is cross-coupled to the shutter speed and diaphragm mechanisms. Therefore, exposure is determined according to one of the following methods:

1. An appropriate shutter speed is pre-selected and the diaphragm setting lever is turned until the two needles in the finder are matched perfectly.
2. By pre-selecting the lens aperture, the meter needles are matched by turning the shutter speed dial.
3. In case of preset diaphragm lenses, the diaphragm setting lever is manipulated and the aperture reading where the two needles coincide is then transferred to the aperture scale of the lens.

5. Closed Aperture Light Measuring



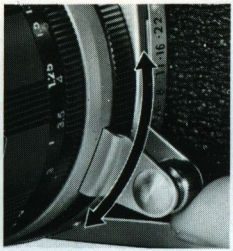


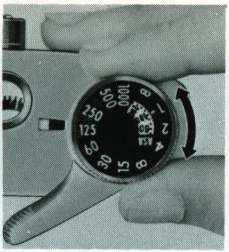
In ordinary situations, the open aperture light reading is more convenient as it enables bright viewing of the subject area and also effectively provides against inaccuracy of light measurement resulting from strong backlight entering through the viewfinder eyepiece. Nevertheless, closed aperture light reading is necessary in photomicrography or when using lenses of undeterminable f-number.

The method of closed aperture light reading is identical with any type of lens used.

1. Adjust both the lens selector dial and diaphragm setting lever of the camera to f/1.4.
2. Stop down the lens to the required aperture and match the needles by turning the shutter speed dial.
3. Take every precaution against backlight entering from the viewfinder eyepiece. Because the light transmitted through the lens in case of closed aperture light reading is often weaker than the backlight, error in exposure reading is liable to occur. To prevent errors in light reading, therefore, the use of the eyecup is recommended.

6. Convenient, Efficient Cross-Coupled Match-Needle System



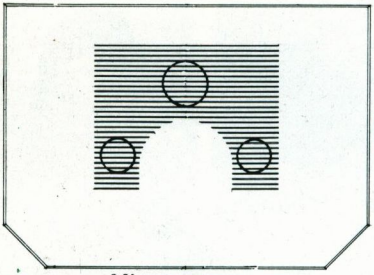


The CdS meter incorporated in the MIRANDA Sensorex is of the match-needle type permitting speedy, accurate light measurement. It is moreover cross-coupled to the shutter and diaphragm mechanisms.

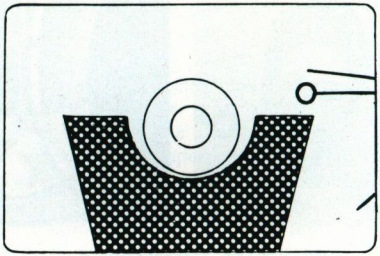
By looking through the viewfinder, you can see at a glance whether the prevailing light is sufficient to guarantee correct exposure without extra adjustments. Moreover, since the meter is cross-coupled, light reading can be done through pre-selection of either the shutter speed or lens aperture, depending on the method preferred by the user.

- Aim the camera toward the subject and while looking through the viewfinder turn the shutter speed dial or diaphragm setting lever until the follower needle (with ○ on the tip) coincides with the meter needle. This simple procedure enables accurate light measurement.
- To obtain special effect by doubling the exposure, match the upper curve of the ○ to the meter needle. To decrease the exposure by one setting, match the lower curve of the ○ to the needle.
- When in case of aperture pre-selection method the needles fail to coincide even when the shutter speed dial is turned, set the shutter speed to the closest setting and then turn the diaphragm setting lever until the needles are perfectly matched. Do not under any circumstances adjust the shutter speed dial to an intermediate setting.

7. Variable Sensing Zone



Mirror area



View finder area

6. Partial Average System

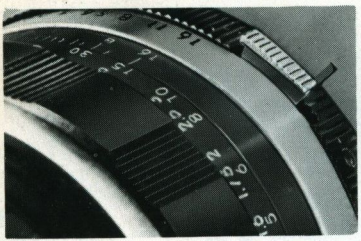
The Sensing area of the CdS meter of the Miranda Sensorex is placed behind the mirror, always in position for exposure reading, except for the split second action of the mirror when taking a picture.

The exposure meter measures an average of a part of the image, eliminating the light-influence of the sky, which could cause over exposure of the picture, especially when colour film is used. This light-measuring is performed in a unique way. The single CdS-cell, behind the mirror, in actual fact is composed of 3 separate super sensitive light measuring elements, positioned in the upper portion and left and right side of the mirror.

As the mirror is placed in the camera at a 45° angle, the reflected image in the viewfinder covers the area as shown in the pictures.

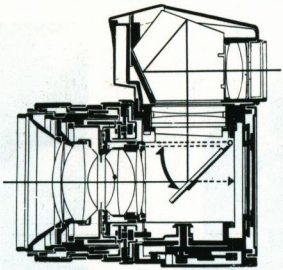
When photographing it is therefore a prerequisite to have the main subject in the area, covered by the exposure meter.

AUTOMATIC DIAPHRAGM AND DEPTH-OF-FIELD PREVIEW LEVER



The fully automatic diaphragm of Miranda lenses is of special construction which keeps the lens wide open all the time to provide a very bright viewfinder image for easy picture composition and speedy adjustment of focus.

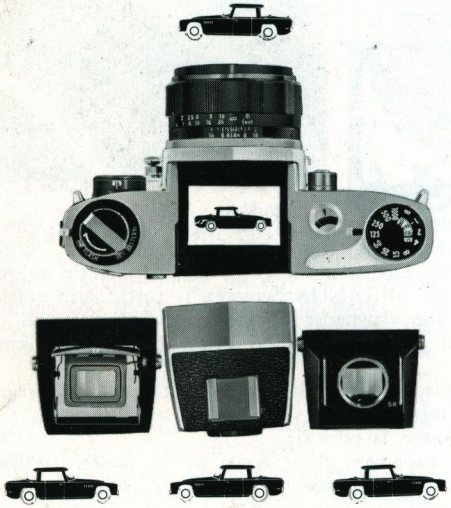
- When the shutter button is pressed, the diaphragm automatically closes down to the aperture to which the lens has been set beforehand and makes it work only at that aperture. But when the shutter closes, the diaphragm automatically reopens.
- The viewing can therefore be done at fully open aperture at all times. But if one desires to actually check the effects of a given aperture on the image, the special lever on the lens barrel can be used. This preview lever when depressed stops down the diaphragm temporarily to the aperture which has been pre-selected so that the depth of field and background blurs can be directly checked.
- Miranda's fully automatic diaphragm system is used not only in the standard 50mm lens but also in all other Auto-Miranda lenses. As with the standard lens, they permit viewing at full aperture, no matter what f-stop has been pre-set for the actual shooting. In snapshots particularly, it saves the trouble of having to open the aperture for focusing and to close it down for the shot.
- When changing the lens, it makes no difference whether the aperture is stopped down or not, for once it is mounted on the camera the aperture automatically opens fully.



The mirror is of course of the quick-return type which causes an extremely short viewfinder black-out during shutter action. Due to its original construction, the mirror mechanism on MIRANDA Sensorex is particularly quick-acting and the viewfinder black-out at shutter speeds of 1/15 second or faster lasts no longer than the blinking of an eye.

- The coupled action between the automatic diaphragm and the mirror too is very smooth, so that when the shutter button is pressed:
  (1) The diaphragm closes down to the preset aperture,
  (2) Almost simultaneously the mirror swings up,
  (3) Followed by opening of the shutter curtains and film exposure,
  (4) Then, the shutter closes, mirror returns to normal position and the lens diaphragm re-opens fully.

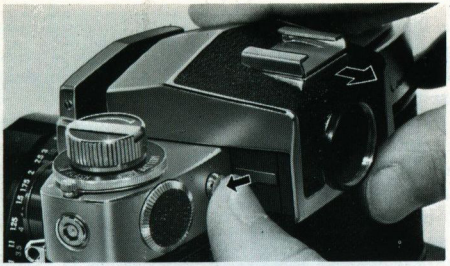
  All the above actions are instantaneous.

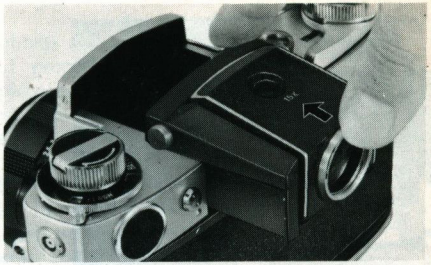


As the viewfinder of the SLR camera shows the very image which is formed by the taking lens, it is easy to check the relation between the subject's perspective and its background, as well as the color tone effects when using color film, exactly as will be exposed on the actual film.

MIRANDA Sensorex has a viewfinder of 0.92 magnification (with 50mm f/1.8 lens) and 95% coverage. The size of the picture is intended to match the size of the color slide mount.

It also causes absolutely no parallax (difference between the area covered by the viewfinder and by the taking lens) not only in ordinary shooting but also in all types of close-ups.





The viewfinder on MIRANDA Sensorex 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 and waist-level finders VF-1 and VF-3.

For 50 mm Lens

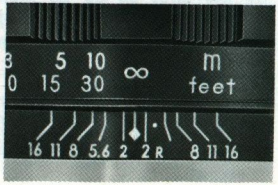
- For ordinary shooting it is convenient to use the pentaprism viewfinder which shows the image right side up and right way round.
- For low-angle or high position shooting and for candid shots, the waist-level finder VF1 becomes useful; however, special care should be taken to avoid light entering the camera through the focusing screen which may cause incorrect exposure.
- For close-up, copying and photomicrographic work, use critical focuser VF3. This 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.

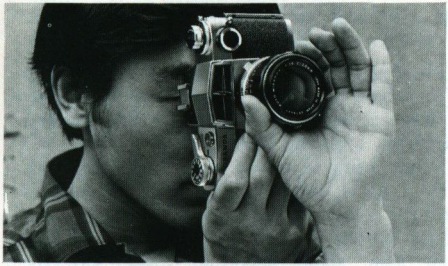
While looking through the viewfinder, if the focusing ring is turned either to the right or left it will, make the blurred image of the subject become clear and sharply focused.

- 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.





To obtain a sharp picture, the camera must be held properly. If there is camera shake, good pictures cannot be obtained even with the best camera in the world.

Whether shooting in the vertical or horizontal position, aim the camera at the subject w.th the elbows pressed against the body if possible, but not too tightly, as this would stiffen the posture.

- Depress the shutter gently, while holding the breath for an instant.
- Do not press the shutter button with only the fingertip, but hold the camera between thumb and forefinger and press it as if trying to squeeze the camera.
- Use the right eye to look into the viewfinder.
- When using telephoto lenses avoid camera shake by holding the lens barrel with the left hand.
- Use a tripod when shooting at slow speeds.

Hand-held shooting at speeds slower than 1/30 second is liable to cause camera shake. In such a case, use a tripod when possible, preferably a sturdy kind.

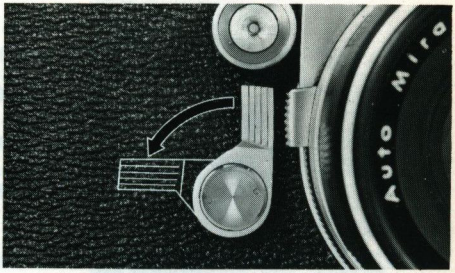
When using a tripod it is better to work with a cable release, which can be screwed into the cable release socket on the shutter release button.

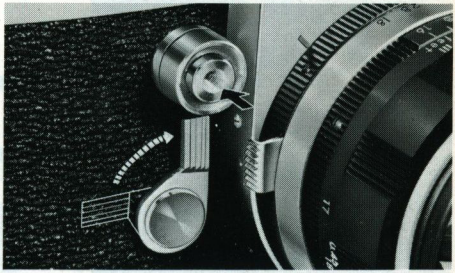
In slow speed shooting, make sure the shutter is completely closed before winding the film advance lever again.

SELF-TIMER OPERATION

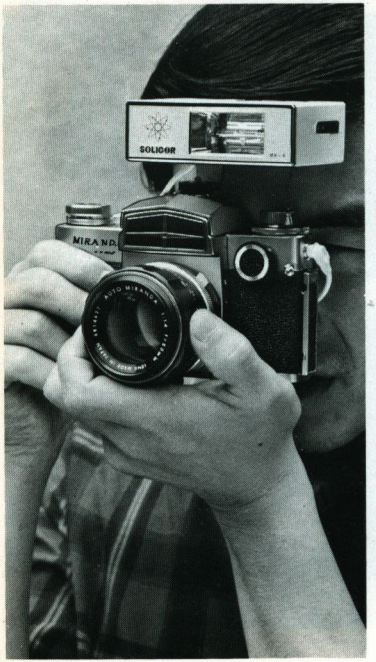
To use the self-timer, move the self-timer lever located on the front of the camera body 90° to the left. It allows you a time delay of approximately 10 seconds after pressing the shutter release button. You may also get any intermediate time delay under 10 seconds depending on the angle to which you set the lever. You may set the self-timer either before or after the shutter is cocked.

After setting the self-timer, if you decide not to use it, you simply have to return the lever to its original position, and the self-timer will be disconnected. The self-timer may be used very conveniently in place of a cable release. It will release the shutter without any vibration.





FLASH PHOTOGRAPHY



For snapshots at night, in dark places, and in indoor shooting, flashbulbs or electronic flash can be used to good advantage. Flash units also provide auxiliary light for taking pictures of against-the-light subjects.

- For flach shooting, an exclusive flash Bracket is mounted to the bottom of the camera.
- The flash units is inserted from the rear of the flash bracket and secured by tightening its mount.
- Insert the plug of the flash unit into the camera's synchro terminal. For taking pictures with ordinary flash bulbs, turn the selector dial to FP (focal plane).
- For taking pictures with electronic flash, turn the selector dial to X. When electronic flash is used the shutter speed *must* be set at 1/60 mrked in red on the speed dial. For details, refer to the table on the next page.
- The F Class and M Class bulbs can also be used with slow shutter speeds (slower than 1/30 sec) but whenever possible use the FP Class bulbs.
- Each type of flashbulb or electronic flash has a Guide Number to indicate its light output. Exposure should be calculated from these guide numbers, The Guide Number is the product of "distance to subject" multiplied by the lens apperture value. From this relationship, the correct lens aperture can be obtained by dividing the Guide Number with the "distance to the subject".

As main light source

The flash unit is pointed towards to subject and exposure is determined by the exposure index attached to the flash unit.

Bounce light

This way of lighting diffuses the light evenly over the subject and surroundings is and obtained by flashing upwards, reflecting the light from ceiling and walls. In this case the lens opening should be increased by 2–3 more stops, due to a certain amount of loss of light.

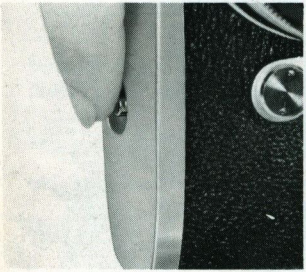
Fill-in light

To be used for out door photography against the light, to avoid shadows in nearby subjects. No special precautions have to be taken as the fill-in flash will not affect the exposure.

Combination Table for Flash Shooting

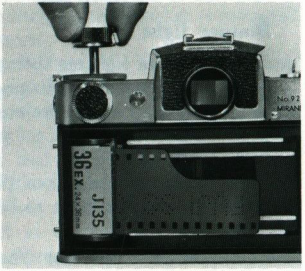
(indicates usable factors)

Terminals	Shutter(sec.) / Type of Flash	B	1 ~ 1/15	1/30	X	1/60	1/125	1/250	1/500	1/1000
FP	FP Class Bulb	■	■	■	■	■	■	■	■	■
X	Electronic F Class Bulb M Class Bulb	■	■							

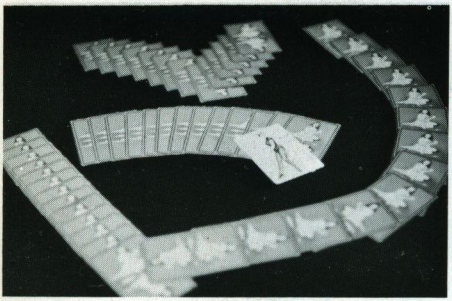


1. First, the film rewind release button on the base of the camera body is pushed in until a small click is heard. This button need not be held during rewinding. The film is now free from the sprocket which has been advancing it, and is ready for rewinding.

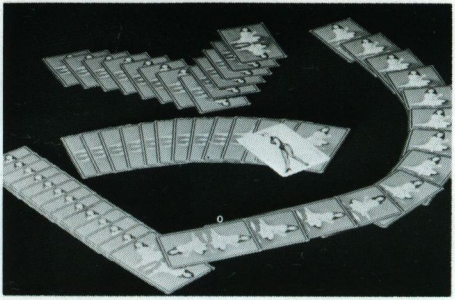
2. Flip the rewind crank on the rewind knob and wind in the direction of the arrow. At the end of the roll you will feel the resistance increase and then suddenly cease. Turn the rewind crank several more times to make certain the film has been entirely rewound.



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.



no depth of field

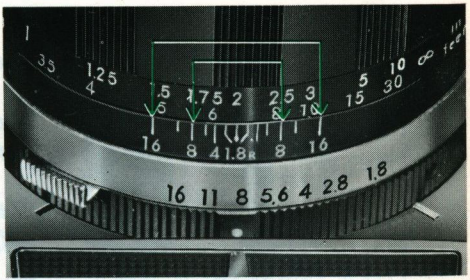


depth of field

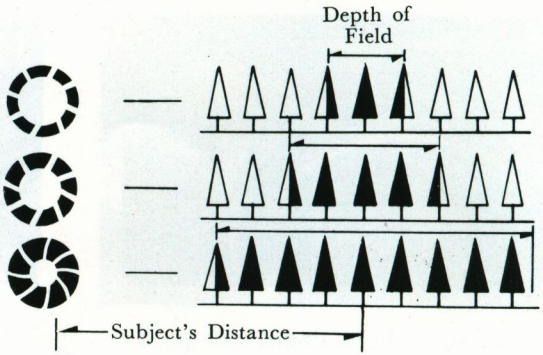
This is the range that appears in sharp focus for any particular distance and diaphragm setting. There is relatively very little depth of field where close-up subjects are focused on, and a great deal of depth of field in the case of more distant subjects. Closing the diaphragm down increases the depth of field and opening the diaphragm reduces it. The depth of field also varies with the lens used. Wide angle lenses have great depth of field while telephoto lenses provide lesser depth of field. If your picture is such that you want both nearby and distant objects to be in sharp focus, then the smallest possible diaphragm should be used. However, very frequently the composition of a picture can be improved by having the principal subject in sharp focus while giving a soft, out-of-focus effect on other objects in the scene. This will de-emphasize distracting background objects and concentrate the viewer's attention on the principal subject.

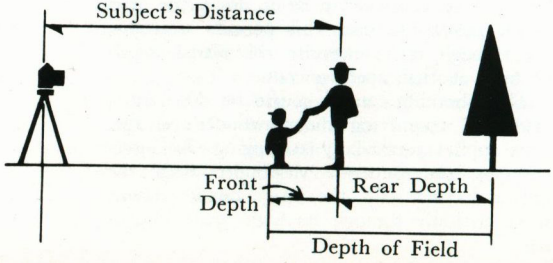
On the side of the lens barrel is the preview button. Pressing down this lever which is unrelated to the automatic diaphragm mechanism of the lens, temporarily stops down the lens to the preset aperture. This permits ascertaining through the viewfinder the actual depth of field at that aperture value.

This checking can of course be done more easily by magnifying the viewfinder's image. This applies particularly to copying. By interchanging the camera's viewfinder with the critical focuser VF3, the image can be viewed more critically through its high-power magnifier.



At the center of the lens barrel, facing up, is the depth-of-field scale which indicates the depth of field at a glance. The picture shows the focus adjusted to 2 meters, indicating that the range in which sharp images can be obtained extend from 1.75 to 2.5 meters at f/8 aperture and about 1.5 to 3 meters at f/16.


Depth of
Field
Subject's Distance


Subject's Distance
Front
Depth
Rear Depth
Depth of Field

AUTO MIRANDA 1:1.4 50 mm

Depth of Field Table (In meters)

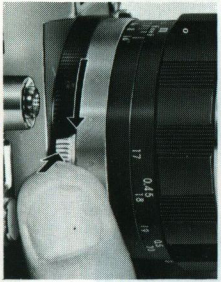
Distance / F-stop	∞	10	5	2.5	1.5	1	0.8	0.6	0.45
1.4	53.015 ~ ∞	8.420 ~12.311	4.573 ~ 5.515	2.390 ~2.621	1.460 ~1.542	0.982 ~1.018	0.789 ~0.811	0.594 ~0.606	0.447 ~0.453
2	37.111 ~ ∞	7.866 ~13.664	4.412 ~ 5.770	2.345 ~2.677	1.444 ~1.561	0.975 ~1.026	0.784 ~0.817	0.591 ~0.609	0.445 ~0.455
2.8	26.252 ~ ∞	7.251 ~16.104	4.230 ~ 6.163	2.287 ~2.757	1.421 ~1.588	0.965 ~1.038	0.778 ~0.824	0.588 ~0.613	0.443 ~0.457
4	18.555 ~ ∞	6.509 ~21.564	3.947 ~ 6.819	2.208 ~2.880	1.391 ~1.627	0.951 ~1.054	0.769 ~0.834	0.583 ~0.618	0.440 ~0.460
5.6	13.119 ~ ∞	5.687 ~41.405	3.630 ~ 8.030	2.107 ~3.074	1.351 ~1.686	0.932 ~1.078	0.757 ~0.849	0.576 ~0.626	0.437 ~0.464
8	9.278 ~ ∞	4.825 ~ ∞	3.260 ~10.720	1.978 ~3.397	1.297 ~1.778	0.907 ~1.114	0.740 ~0.870	0.566 ~0.638	0.431 ~0.470
11	6.563 ~ ∞	3.974 ~ ∞	2.850 ~20.350	1.820 ~3.990	1.228 ~1.926	0.873 ~1.169	0.718 ~0.903	0.554 ~0.655	0.424 ~0.479
16	4.639 ~ ∞	3.180 ~ ∞	2.419 ~ ∞	1.636 ~5.300	1.143 ~2.182	0.830 ~1.258	0.689 ~0.954	0.536 ~0.681	0.414 ~0.493

LENS INTERCHANGING

MIRANDA Sensorex has a bayonet type lens mount which permits quick lens interchanging and accurate coupling of the automatic diaphragm mechanism of the lens.

- Lenses can be interchanged regardless of whether the film is advanced or not. Moreover, it makes no difference what aperture value the lenses may have been set at the time of changing.

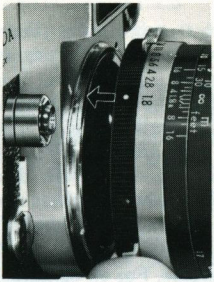
- For Miranda interchangeable lenses not belonging to the exclusive Auto-Miranda Series, such as Soligor or other preset lenses, the inside screw mount can be used. Also various adapters and accessories can be attached by using either the bayonet or the screw mounts.

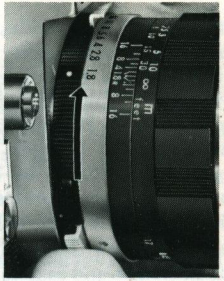


Detaching the Lens

While pressing the lens lock lever on the side of the lens barrel, turn the lens counter-clockwise 1/8 of a full turn. When the red dot on the barrel stops at the red line on the camera body, the lens comes off easily.

- When attaching or detaching the lens, it is advisable to have the camera facing up on one's lap or other manageable place to assure safe and correct handling.
- When changing the lens, take care not to let direct light enter the camera body.





Attaching the Lens

Match the red dot of the lens barrel with the red line on the body, fit the lens tightly and turn it clockwise 1/8 of a full turn. It will then click into position with the red dot exactly in the center.

- Be careful not to hold the helical portion of the lens (focusing ring section in front) when mounting the lens as the focusing mechanism may be damaged.

MIRANDA-SENSOREX series comprises a range of interchangeable lenses of superb quality, electronically designed and meeting the requirements of the modern optical theories. The AUTO MIRANDA group, all of fully automatic diaphragm, comprises 7 lenses ranging from 25mm to 200mm focal length. Besides, T-4 Soligor lenses vary from 21mm to 300mm. There are also 20 preset-diaphragm lenses ranging from 25mm to 800mm. These are designed to cover any situation with which professional photographers may encounter.
MIRANDA interchangeable lenses have wonderful resolving power, produce delicate "blurring" effects, offer excellent colour balance, are light in weight and easy to handle. For all of this, they are receiving the focused attention of the world photographers.

AUTO MIRANDA 25mm f:2.8
Ultra-wide angle, peculiarly great depth of field, exaggerated perspective representation are the attraction of this lens.

Angle of view 82°; Composition 7 groups, 8 elements; Minimum aperture f:16; Shortest Shooting Distance 25cm; Filter screw-in 52mm; Full Length 59.7mm; Miximum Diameter 59mm; Weight 300 grams

AUTO MIRANDA 28mm f:2.8

Void of bad distortion, this is an ideal lens for photography of a narrow interior and exterior of architectural structures

Angle of view 75°; Composition 6 groups, 8 elements; Minimum diaphragm f:16; Shortest Shooting Distance 25cm; Filter screw-in, 46mm; Full Length 59.8mm; Maximum Diameter 57.5mm; Weight 232 grams

AUTO MIRANDA 35mm f:2.8

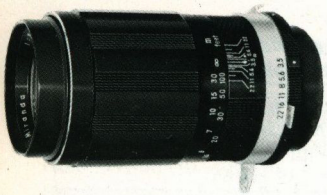
Versatile, wide-angle lens ideal for photography of any subject; very easy to handle

Angle of view 63°; Composition 5 groups, 6 elements; Minimum diaphragm f:16; Shortest Shooting Distance 30cm; Filter screw-in 46mm; Full Length 47.7mm; Maximum Diameter 57.5mm; Weight 198 grams

AUTO MIRANDA 105mm f:2.8

Permitting very natural reproduction, ideal for portraits. Short and handy.

Angle of view 23°; Composition 5 groups, 5 elements; Minimum diaphragm f:22; Shortest Shooting Distance 1.2 meters; Filter Screw-in 46mm; Full Length 69.5mm; Maximum Diameter 59mm; Weight 335 grams



AUTO MIRANDA 135mm f:3.5

Light-in-weight and handy telephoto lens; ideal for photography of portraits and sports

Angle of view 18°; Composition 3 groups, 4 elements; Minimum Diaphragm f:22; Shortest Shooting Distance 1.5 meters; Filter Screw-in 46mm; Full Length 94.5mm; Maximum Diameter 57.5mm; Weight 411 grams

AUTO MIRANDA 135mm f:2.8

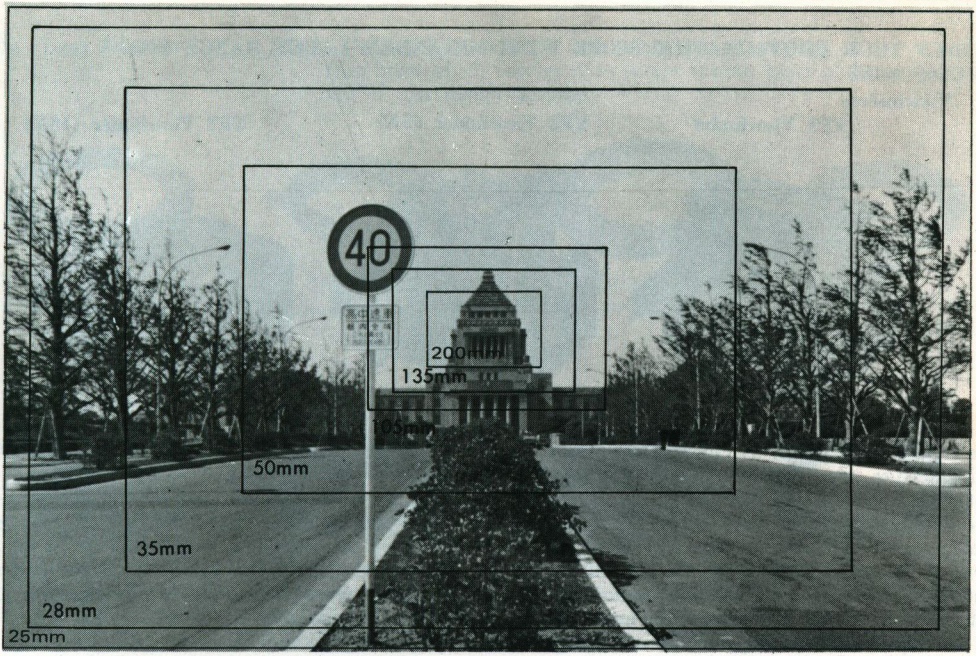
Most popular, representative telephoto lens; assures attractive reproduction of subjects

Angle of view 18°; Composition 5 groups, 5 elements; Minimum Diaphragm f:22; Shortest Shooting Distance 17 meters; Filter Screw-in 55mm; Full Length 94.3mm; Maximum Diameter 63mm; Weight 492 grams

AUTO MIRANDA 200mm f:3.5

Designed for light-in-weight, handy format, permitting handheld shooting; boasts of exquisitely bright reproduction

Angle of view 12°; Composition 4 groups, 4 elements; Minimum Diaphragm f:22; Shortest Shooting Distance 3 meters; Filter screw-in 67mm; Full Length 158mm; Maximum Diameter 75mm; Weight 770 grams


40
200mm
135mm
105mm
50mm
35mm
28mm
25mm

WIDEN YOUR PHOTOGRAPHIC SCOPE WITH MIRANDA'S LARGE RANGE OF ACCESSORIES

A. Viewfinders

VF1 Viewfinder

VF3 Viewfinder (5X)

VF3 Viewfinder (15X)

As already explained briefly in connection with picture composition and viewfinder, the reflex finder differs from the pentaprism viewfinder, which is used at eye-level, in being useful in taking pictures at waist-level. One of the special features of the MIRANDA camera is the interchangeability of viewfinders. The interchangeable Miranda viewfinder system is far superior to the angle finder attachment used by other SLR cameras, as it permits viewing of a bright and life-size image.

The viewfinder can be removed for interchanging by sliding it toward the rear, while pushing the viewfinder lock button to the left. To attach, match the viewfinder's base to the camera's groove and slide it forward until it clicks into position.

B. Lens Adapters

MIRANDA Sensorex has a lens mount of large diameter and a thin body which enables it to accept various types of lenses with the aid of lens mount adapters.

PM Adapter:
For lenses of Asahi Pentax, Edixa, Yashica Penta, Petri Penta and others having the Praktica mount.

XM Adapter:
For mounting Exakta and Topcon mount lenses.

AXM Adapter:
For automatic Exakta lenses.

LF Adapter:
For Leica and Canon screw-mount lenses.

CSF Adapter:
For standard lenses of Contax and Nikon S.

CTF Adapter:
For wide angle and telephoto lenses of Contax and Nikon.

ML Adapter:
For mounting Miranda lenses on Leica and enlargers.

NM Adapter:
For Nikon lenses.

C. Focabell

This is an extension bellows unit which is used between the lens and camera body for taking ultra close-up shots and magnified pictures of small objects. It is available in two types.

- It is attached to the camera in the same way as the lens by using the outside bayonet mount and matching to the red line.
- The tripod socket of Focabell can be suitably shifted to obtain proper balance.
- When combined with the short-barrel Soligor 135mm f/3.5 lens, it becomes usable over a wide range of conditions from infinity to ultra close-ups.
- As the field of coverage can be easily varied it is extremely convenient in taking pictures of animal life and scientific works.

Focabell AIII

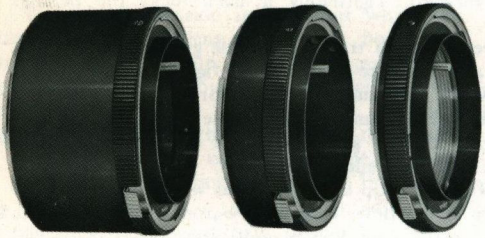
A deluxe type of extension bellows unit, double track and rack-and-pinion for speedy movements and a precision focusing device.

- Releasing a knob on its right side permits the bellows to slide forward. Tightening it back locks the bellows firmly.
- Between the two tracks is a scale giving magnification ratios and exposure factors, black figures on one side for the 50mm lens and red figures on its reverse for the short-barrel 135mm lens. This scale can be detached by removing a screw and re-attached to indicate the side which matches the lens being used.
- Magnification ratio is 1~2.6 times with 50mm lens and infinity to 0.6 times with short-barrel 135mm lens. The figures on the scale show magnification ratios at top and exposure at bottom.
- The magnification ratios are read off from the position indicated by the tip of the precision focusing device.

Focabell S

Foldable compact type with single track which is light and easy to carry.

- Erect the track and lock it in position by moving the small button on the focusing knob side.
- The focusing knob is on the right side and the locking knob which is turned clockwise for locking the track is on the left side.
- The magnification scale on the left side is for 0.9~2.5 times with the 50mm lens, that on the right is for infinity to 0.5 times with the short-barrel 135mm lens.
- The magnification ratios can be read off from the position of the tip of the track guide, which slides through the side groove of the track.

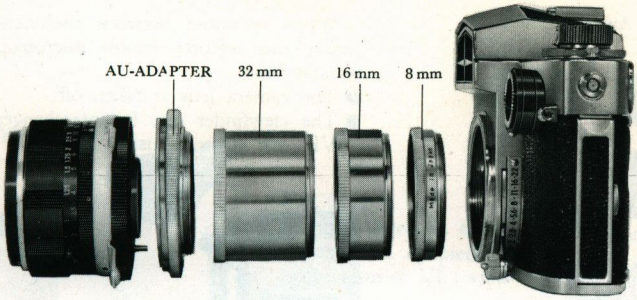


How to use bellows and Extension tubes

These attachments are used for macro-photography (close-ups). The closer the lens comes to the subject, the less light passes through the lens, as the distance between the lens and film increases. This has to be compensated for by the camera.

The attachment is mounted between the camera body and the lens to be used. After focusing is performed with the lens at full aperture, the diaphragm is closed down to the preselected diaphragm opening, and the meter switched on. As there is very little depth of field in close-ups it is advisable to select the smallest possible opening. Adjust the meter needle by turning the shutter speed dial and use a cable release to activate the shutter.

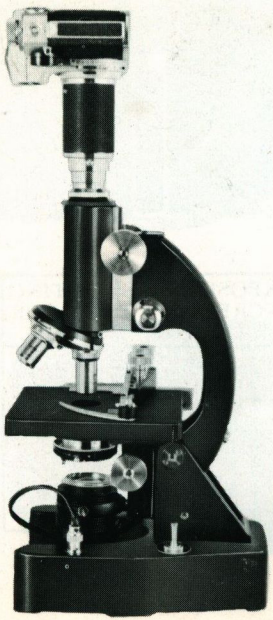
Magnification ratio and exposure factors for the extension tubes are shown on the next page.



For 50 mm 1.8 Lens

ADAPTER AND RING USED	TOTAL LENGTH (mm)	PICTURE COVERAGE (mm)	MAGNIFICATION RATIO	EXPOSURE INCREASE RATIO	SHOOTING DISTANCE (mm)
Adapter only	8	156×238	0.15	1.3	185.4~358.5
Adapter and 8	16	78×117	0.31	1.7	131.3~189.5
〃 16	24	52× 78	0.46	2.1	104.0~133.1
〃 8+16	32	40× 60	0.62	2.6	87.4~105.1
〃 32	40	32× 48	0.77	3.1	76.4~ 88.1
〃 8+32	48	26× 39	0.92	3.7	68.4~ 76.8
〃 16+32	56	24× 36	1.08	4.3	62.5~ 68.8
〃 8+16+32	64	20× 30	1.23	5.0	57.8~ 62.8

E. Microscope Adapter



When mounted between the camera body and microscope, this adapter makes microscopic picture-taking extremely easy.

- The camera lens is taken off.
- The viewfinder may be interchanged with critical focuser VF3 for easier focusing.

How to Attach

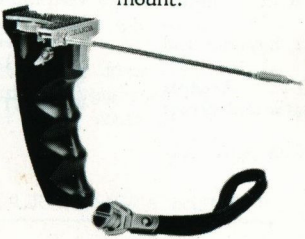
(1) Attach adapter to camera body. (2) The connection piece at the end is turned counter-clockwise and detached. (3) Take off microscope's eyepiece and attach it to the inside of the connection piece (Picture at left). (4) Insert into microscope's eyepiece as before, match the red spots on tube and bayonet mount of connection piece, set to position to be used and tighten the connection piece's screw (Picture at right).

F. Other Available Accessories

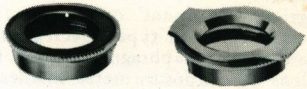
COPY STAND

UNIVERSAL HELICOID
(Helical focusing mount)
For precision focusing and close-ups.

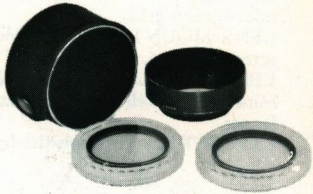
EYECUP
Rubber Eyecup to be attached to eyepiece of pentaprism or VF3 viewfinders.
Has built-in Type A eyesight adjustment lens mount.



PISTOL GRIP



EYESIGHT ADJUSTMENT MOUNTS
To be attached to eyepiece of pentaprism or VF3 viewfinders.
Type A: for near or farsightedness.
Type B: for astigmatism.



STANDARD LENS HOOD
Can be reversed on 50mm lens and fits into the camera case.

LENS: AUTO-MIRANDA 50mm f/1.8, 4-group 6-element or 50mm f1.4 6-group 8 element Gauss type, spectra-hard coated, fully automatic diaphragm coupled to through-the-lens CdS exposure meter, smallest aperture f/16, preview lever, closest focus at 45cm (17"), uses screw-in 46mm filter.

SHUTTER: Focal plane type, speeds of 1–1/1000 sec., and B.

FLASH SYNCHRO: FP & X
(X at 1/60th)

VIEWFINDER: Pentaprism, interchangeable with waist-level types, magnification 0.92X (with 50mm lens at infinity), condenser and Fresnel lens combined.

FOCUSING: Pentaprism with multi-microprism grid.

LENS MOUNT: Miranda Mount, bayonet and screw mounts.

LENS INTERCHANGEABILITY: Accepts Miranda as well as other automatic and preset lenses.

EXPOSURE: Through-the-lens CdS light measuring (1) at full aperture, (2) at closed aperture, or (3) through selective partial average reading, match-needle visible in the finder, measuring range EV1-18 with 50mm f1.4 lens film speed range ASA 25–1600, CdS sensing area in the upper part of the mirror, area of CdS sensor 5% of total mirror area, uses Mallory #625 mercury battery or equivalent.

FILM ADVANCE: Single or several short strokes of lever 180°.

FILM REWIND: Rewind knob with collapsible crank, self-resetting release button.

FILM COUNTER: Advance counting type with film wind (shutter cocking) indicator.

OTHER FEATURES: Double exposure prevention, ASA speed indicator, lens speed selector with settings from f/1.4 to f/8, hinged back cover with double safety self-locking device.

SIZE: 146 X 94 X 86mm (thickness of body 52mm).

WEIGHT: w/50mm f1.8 1000 grams
w/50mm f1.4 1100 grams
Body only 650 grams

CARE AND STORAGE OF CAMERA

When used on the beach, in strong wind or other unfavorable conditions, damage may be caused if left unattended, so please observe the following precautions:

CARE AFTER USE

- Clean the lens of dust and dirt by using a soft brush lightly, but do not clean too often.
- Use chamois or other soft material to clean the chrome-plated parts.
- Always use a blower to clean the mirror, which must never be touched with fingers.

PRECAUTIONS IN STORING

- Avoid places of high temperature or high humidity.
- Be careful to avoid shocks as they may cause damage.
- Keep the shutter uncocked.
- Set the lens to infinity before closing the camera case.
- Be very careful not to drop the camera into salt water as repair may become impossible.
- In case the camera is to be left unused for some time, pack it in a plastic bag together with a drying chemical and enclose it within a can or other strong container to prevent damage.

YOUR CAMERA NUMBER: 947644

YOUR LENS NUMBER: 1924462

Printed in Japan

MIRANDA CAMERA CO., LTD. *Tokyo Japan*