# MIRANDA AUTO SENSOREX EE

# Camera Manual

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## <u>Mercury Battery replacement -</u> <u>this camera required a mercury battery no longer made.</u> <u>Click here to find replacements.</u>

## IMPORTANT WARNING

Please note that The lens positioning line is marked in RED on the camera body. The RED DOT, on all Auto Miranda lenses should be aligned exactly opposite this red line before turning the lens to mount it.

On the earlier series of Auto Sensorex EE cameras a green line was also marked on the camera body. However, this green line was only indicated for mounting a bellows unit and the camera and must NEVER be improperly mounted with the red dot opposite this green line.

Unless the above instruction is strictly adhered to damage to the equipment may result.



We feel very privileged that you have chosen our Miranda Auto Sensorex-EE camera. As a specialist manufacturer of single-lens reflex cameras in Japan, Miranda Camera Co. have long been producing novel products of unique and original design. Auto Sensorex-EE, your constant companion, is a 35mm, EE (electric-eye) single-lens reflex camera, a new concept which combines a through-the-lens light measuring system with a fully automatic exposure control. It employs two ways of light measurement, one being the Average Light Measuring system and the other, the Spot Light Measuring, each useful for its own specific application. The camera permits, besides EE photography, also manual photography.

The interchangeability of the pentaprism, lenses of superb resolving power, accurate and smoothly-working shutter mechanism, and other features--are the monopoly of only the highest-grade camera. In order to make the best use of these qualities in your camera, you are advised to read this manual through carefully before you take the first shot and you will be justifiably proud of the results.

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# FEATURES OF THE AUTO SENSOREX-EE

**1.** Automatic Exposure through TTL + EE System

A high-class camera which combines a TTL (through the lens) system of light measuring, under which critical measurement is made of the light transmitted to the film. Also a completely automatic exposure control mechanism which permits accurate exposures simply by depressing the shutter button.

2. Accurate Exposures through Average Light Measurement and Spot Light Measurement

Average and Spot Light Measurement are controlled by a switch and are used individually, depending upon the prevailing picture taking condition. The Average Light Measurement is used for general picture-taking under favourable light conditions. The Spot Light Measurement is used for special occasions which normally requires different techniques such as shooting accurately against-the light subjects, under stage lighting and subjects with sharp contrast.

3. Easy-to-Compose and Efficient Viewfinder

All the functions necessary for photo-taking are visible in the viewfinder, and the composing of a picture takes only a moment. The newly invented micro-split image rangefinder permits quick and sharp focusing and can be used with any type of lens.

4. Interchangeable Viewfinders for Increased Versatility

The Pentaprism Viewfinder is very convenient for general picture taking. In instances requiring special techniques, such as low and high angle shots,- closeups, reproduction and photo micrography, we recommend the use of the interchangeable reflex viewfinders.

5. Newly Designed Standard Lenses for Excellent Color Rendition

The newly~developed Auto Miranda-E f:1.4/50mm and f:1.8/50mm lenses are superb for color-photography. These lenses not only offer an extreme resolving power but depict scenic views with abundant peripheral light.

## 6. Unique Type of Lens Mount

The lens mount of MIRANDA Sensorex EE has on its outside a 4-claw bayonet mount and on its inside a thread mount of 44mm inner diameter (All MIRANDA cameras and lenses have the same standard lens mount). The bayonet mount is for attaching the auto E lenses, extension bellows, etc., quickly and easily by merely giving 1/8 of a full turn after mounting. The inner thread mount is for preset lenses and most other accessories.

# 7. Automatic Synchro-Switch and Hot Shoe

The synchro-contacts for electronic flash (X) and bulb flash IFP) are switched automatically by rotating the shutter-dial. The Hot Shoe flash gun accessory shoe is employed for the first time with an interchangeable pentaprism type SLR.

## 8. Complete Line of Interchangeable Lenses and Accessories

This is a system camera meeting every requirement of photography. With a wide range of interchangeable lenses and accessories, Miranda's Auto Sensorex-EE displays its superiority not only in general photography but also in the fields of scientific, medical, industrial and educational photography.

## STANDARD LENSES

AUTO MIRANDA-E: 50mm/f1.4, 5-group 7 element (Gauss, modified type) AUTO MIRANDA-E: 50mm/fl.8, 4-group, 6-element (Gauss, modified type) TTL (through-the-lens) exposure meter, full EE coupling, fully auto matic diaphragm, angle of view 46°, smallest aperture f:16, preview lever, filter size 52mm¢1, closest focusing distance with 50mm/f1.4 43cm (17 Irish; 50mm/f 1.8 45cm (18 ins.)

# SHUTTER

Shutter focal plane, B. 1-1/1 000 sec., built in self-timer with maximum delay of 10 seconds.

# FLASH SYNCHRO

Flash Synchro FP and X, automatic synch to X at 1/60 sec., cordless hotshoe.

# **EXPOSURE METER**

Exposure Meter light measuring at open aperture, built-in TTL CdS meter with Full EE-coupling, closed-down light measuring possible, light sensor behind the mirror, partial light measuring, switch to spot light measuring. EE coupling range EV3-18 at ASA 100 with 50mm f 1.4 lens, shutter speeds 1/4 sec.-1/1000 sec. The EE coupling can be disconnected when shooting at speeds outside its range by depressing the override button located in the centre of the shutter speed dial. Film speeds ASA 25-1600, battery-Mallory PX675 or Eveready EPX675, built-in battery checker.

See this link on a Wein Air replacement battery.

# VIEWFINDER

Viewfinder magnification 0.92X with 50mm lens at infinity, field of view 96%, condenser and Fresnel lens combined, interchangeable viewfinder, focusing screen wimicro-split image rangefinder.

# LENS MOUNT

Miranda mount (4-claw bayonet and 44mm~thread mount)

# FILM ADVANCE

winding angle 180°, marginal angle  $25^{\circ}$ , ratchet advance possible .

## **FILM REWIND**

Film Rewind rewind crank, self-resetting button for rewind.

# FILM COUNTER

Film Counter advance counting type, self-zeroing, with film winding indicator.

# FILM LOADING

Film Loading rapid loading type spool, hinged back cover.

## SIZE

Size 144 x 93 x 87mm (f:1.8), 144 x 93 x 95mm (f:1.4)

## WEIGHT

Weight w/f:1.8 950 grams, w/f:1.4 1,100 grams

NAME OF PARTS	
	11. Focusing Ring
1. Shutter Release Button	
	12. Distance Scale
2. ASA Film Speed Setting Ring	
2 Maalastusu Essalat	13. Depth of field Scale
3. Neckstrap Eyelet	14 FF Lock button
4. Lens positioning Mark	14. EE Eoek outon
п Г б	15. Pentaprism Viewfinder
5. Self-Timer	_
	16. Film Rewind Crank
6. Standard Lens	17 A
7 Film Rewind Knob (back cover	17. Accessory Shoe (w/not shoe)
release)	51100)
	18. Film Memory Dial
8. CdS Meter Switch	
	19. Film plane Index
9. Flash Terminal	20 EE Mort
10 Preview Lever	20. EE Mark





21. Aperture Scale	31. Mercury Battery Compartment
22. Lens locking Button	32. Film Rewind Shaft
23. Shutter Speed Index (w/Film Wind Indicator)	33. Viewfinder Release Button
24. Shutter Speed Dial	34. Shutter Curtain
25. EE overriding button	35. Viewfinder Eyepiece
26. ASA Film Speed Dial	36. Film Guide Rail
27. Automatic Film Counter	37. Sprocket Wheel
28. Film Advance Lever	38. Rapid Load Take-up
29. Tripod Socket	Spool
20 Dervind Deleges Dutter	39. Film Pressure Plate
50. Kewind Kelease Button	40. Back Cover





# **GUIDE TO PICTURE TAKING PROCEDURE**



Open the camera back cover and total the min. Open the camera back by pulling up the rewind knob and insert the film properly in the film chamber. Wind the film until the film counter points to "1" to wind up the exposed part of the film.





5. Set to EE

Turn the aperture ring of the lens and set it to the EE mark.

In general shooting, set the meter switch to A laverage light measuring); and in special shots, for instance against the light shooting, to S (spot).



A mercury battery is provided for the Auto Sensorex as the source of power for its EE CdS meter. If the mercury battery is not inserted in the battery chamber, the meter will not function. Before using the camera, make sure that the mercury battery is properly inserted in the battery chamber.

# How to load Mercury Battery

1. Clean the faces of the mercury battery with dry silicon cloth.

2. Open the battery chamber of the camera by turning the cover counterclockwise.

3. Insert the mercury battery into the chamber with the plus l+) side facing outwards, towards the cover, and replace the cover securely.

4. If the plus (+) and minus I--) poles are reversed, the meter will not function, although the misplacement will not affect the mechanism of the camera.

# **Checking of Battery Power**

After the mercury battery has been inserted properly into the battery chamber, check the battery in the following manner:

1. Lift and turn the knurled ASA setting ring surrounding the shutter speed dial in either direction and set the figure 100 to the indicator of the film speed (ASA) indication window.

2. Turn the shutter speed dial and set the 125 (1/125 sec.) to the shutter speed indicator.

3. When using lenses, other than below mentioned, check the mercury battery power after removing the lens. Auto-Miranda-E Lens 50mm f: 1.4

Regular Auto Miranda lens f:1.4 with open-aperture indicator pin.

Regular Auto Miranda lenses without open-aperture indicator pin.

T-4 Soligor lenses without open-aperture indicator pin Preset T-2 Soligor lenses.



Lenses of other makes.

4. The diaphragm setting is unimportant in this connection.

5. When the power switch, located at the base of the film rewind crank, has been turned to the checker position (C), the meter needle, visible in the viewfinder moves to the check mark of the battery, indicating that the voltage of the mercury battery is normal (See page 14 for how to read the exposure meter in the viewfinder).

6. The moment the battery checker is released, it returns automatically to the Off position thus preventing a drain of power of the mercury battery.

> The mercury battery will provide sufficient power to work the meter for a duration of about one year. Its power, however, drops sharply towards the end of its life. When the meter needle fails to reach the check mark, due to the reduced power, replacement of the mercury battery is necessary.

Mercury batteries are no longer sold. <u>A Wein Air battery is a replacement.</u>

> The mercury battery may be chosen from any of the following:

Voltage 1.3V	JIS	H-C type
" "	National	M-lc
" "	Mallory	PX675
	Eveready	EPX675

When the camera is not in use, keep the power switch off to prevent waste of battery power. If the camera is not used for a long time, it is advisable to remove the mercury battery from the camera.

Caution: Do not try to disassemble or burn the exhausted battery.

# FILM LOADING

For the Auto Sensorex EE camera, 35mm film (20 or 36 exposures) is used.

> Always load or unload the film in the shade. If no shade is available, utilize the shadow of your own body.

> Whenever possible, avoid loading or unloading the camera in a dusty place or near the seashore, where salty winds may blow.

> While loading or unloading, take care not to touch the shutter curtain.



## 1. Open the camera back

Open the camera back by pulling up the film rewind knob. When the back is opened, the exposure counter automatically returns to the start (S) mark.

2. Insert the cartridge into the film chamber.

Pull up the rewind knob and insert the cartridge into the film chamber taking care that the projecting end of the cartridge faces down. After inserting the cartridge, push back the rewind knob to its original position.

3. Insert the trimmed end of the film into a slit of the film take up spool

Insert the trimmed end of the film into any slit of the spool, at the same time making sure that the film wind sprocket engages the perforation on the side of the film.

4. Turn the film advance lever and make sure that the sprocket engages both perforated edges of the film After ascertaining this, close the camera back. The back closes at finger pressure.



5. Take-up the slack in the film

Lift the rewind crank and turn it gently in the direction of the arrow and any slack will disappear. Care must be taken not to turn the crank in a reverse direction, as this may spoil the film.

6. Turn the film advance lever to take up the exposed film

Operate the shutter for some blank shots till the exposure counter registers "1". This will take up the film which has been exposed during loading. When the film advance lever is being operated, the film rewind lever must turn in a direction against the engraved arrow, indicating that the film is properly moving.

After the film loading has been completed, make sure to set the proper ASA film speed.

#### SHUTTER AND DIAPHRAGM

The shutter speed controls the amount of light reaching the film and "freezes" the image of a moving subject.



> The indications "B. 1, 2 .... 1000" indicate "Bulb, 1 sec., 1/2 sec.... 1/1000 sec." shutter speeds. To set the shutter speed, the shutter dial is turned to the left or right until the desired speed number lines up with the shutter speed indicator. The indicator turns red when the film is advanced and white when the shutter is released.

> "Bulb (B)" is used for long exposures with the shutter remaining open as long as the shutter button is depressed.

> When the dial is set to the red "60" mark, the "X" contact is automatically set for synchronization with electronic flash (See pages 26, 27 for flash shooting).

> Shutter speed can be freely changed before or after the film advance.

> The shutter dial does not turn beyond the EE coupling range. To turn it, press the override button in the center of **the shutter** speed dial.

# The diaphragm controls the amount of light reaching the film and determines the depth of field (focal range).

> The aperture ring of the lens is calibrated (F values) from the full-open to the smallest apertures and click stops at the red indicator position, on top of the lens barrel.

> The higher the aperture value the less amount of light is transmitted to the film plane. The calibration on the scale is so arranged that the setting to the next higher value reduces the volume of incoming light by half. If, therefore, the scale is adjusted in succession to the next higher value, the amount of light transmitted through the lens will be decreased in progression of 1/4, 1/8, 1/16 and so on.

> The lens, when set to the "EE" position, is set for EE (automatic exposure) shooting.

> By setting the diaphragm to the intermediate positions of the scale, intermediate apertures are obtained.

> The shutter and diaphragm are cross coupled to the exposure metering system. See page 14 for how to use the exposure meter.



> It is unnecessary to readjust the ASA speed scale unless film of a different speed rating is loaded in the camera.
> Film speeds (ASA) are shown on the outer packaging or in the film instructions.
> Intermediate settings on the film speed dial denote film speeds in the illustration.

# Film Speed Equivalents

The exposure meter is calculated for films quoted with the ASA speed rating. However, films indicated in other speeds can quite easily be converted to the ASA rating by uitilising the following conversion chart:

ASA & BSA	German DIN	European Scheiner	Gost	Weston
25	15/10	26	22	20
32	16/10	27	32	24
40	17/10	28	32	32
50	18/10	29	45	40
64	19/10	30	65	50
80	20/10	31	65	64
100	21/10	32	90	80
125	22/10	33	130	100
160	23/10	34	130	125
200	24/10	35	180	160
250	25/10	36	250	200
320	26/10	37	250	250
400	27/10	38	350	320
500	28/10	39	500	400
650	29/10	40	500	500
800	30/10	41	700	650
1000	31/10	42	1000	800
1250	32/10	43	1000	1000
1600	33/10	44	1500	1250

# HOW TO READ THE METER IN THE VIEWFINDER

Mark for Checking Battery Power This mark (located in the bottom of the viewfinder) is for checking of the mercury battery power to the meter. (See page 9 for how to use the battery checker). This mark also serves as the fixed point for the closed-down light measuring in manual, non EE photography when using a conventional type of Auto Miranda lens, or a preset lens (See page 19 for manual photographing).

Under-exposure warning Mark If the meter needle is within this mark, underexposure will result. Set the shutter speed dial to a slower speed to make sure that the meter needle comes within the indicated correct exposure range. Coupled with the pin of the fullopen F-value of the lens, this mark indicates the full-open F-value of the lens between f :1.4 and 4.

Correct Exposure Area

This area, between the warning marks for over-exposure and under-exposure, is for accurate exposure. Perfect EE shooting is only possible when the meter needle stays within this area, and indicates a proper diaphragm opening of the lens.

#### Marks "A" and "S"

"A" is the mark indicating "Average Light Measurement" and "S" for "Spot Light Measurement." The arrow mark is coupled with the engraved "A" and "S" lettering on the battery switch located beneath the film rewind knob. This indicates the type of light measurement selected. (See page 18 for how to use "A" and "S").



#### Overexposure Warning Mark

This is the warning mark for over-exposure. When the meter needle reaches this mark, an accurate exposure cannot be obtained. Reset the shutter speed dial to a higher speed until the meter needle comes within the indicated correct exposure range.

#### COUPLING RANGE OF METER

The coupling range is the range in which light can be measured by the EE meter. The range varies according to the film speed and to the maximum aperture of the lens used.

> In manual photography, to measure light with a closed-down diaphragm (for example, preset diaphragm lenses) other than the exclusive-Miranda EE lenses, light measurement is possible from wide-open to the smallest apertures.

> The meter's coupling range, according to film speed, is the field indicated within the boldlined frame in the diagram, outside of which coupling cannot be obtained. Outside of this coupling range, the shutter dial can not be turned and blocks. For instance, the shutter dial stops at "4" (1/4 sec.) when ASA-100 film is used, and at "8" (1/8 sec.) with ASA-200 film.



> When taking pictures at a shutter speed beyond the coupling range, turn the shutter dial while depressing the manual overriding button located in the centre of the shutter speed knob.

> With the manual overriding button depressed, the EE-function does not operate. The meter needle moves according to the amount of light, but is not coupled with the shutter speed, with the result that no accurate EE exposure is obtainable.

> When the shutter speed is switched back to a speed within the coupling range, the manual overriding button is automatically unlocked and the EE-function be comes operational again.

EED	TER SP	SHUT	TURE	APER	V	S L	LEN
00 sec.	5, 1/100	c F:16	, 1/4 sec	F:1.4	- 18	3	F:1.4
00 sec.	5, 1/100	c F:16	, 1/4 sec	F:1.8	7 - 18	3.	F:1.8
4 Lens	F:1.			eter	ge of M	ng Ran	Coupli
1600	800	400	200	100	50	25	ASA
В							1112
1	В						
2	1	В					
4	2	1	В				
8	4	2	1	В			
15	8	4	2	1	В		
30	15	8	4	2	1	В	Ŷ
60	30	15	8	4	2	1	ÚT
125	60	30	15	8	4	2	TE
250	125	60	30	15	8	4	R
500	250	125	60	30	15	8	SP
1000	500	250	125	60	30	15	EEI
	1000	500	250	125	60	30	SC
		1000	500	250	125	60	
			1000	500	250	125	
				1000	500	250	
			2		1000	500	
3		-				1000	

The Auto Miranda-E lens marked "EE", is a lens featuring completely automatic diaphragm. Photography by full-open light measurement, EE system (automatic exposure), is possible by merely checking the markings in the viewfinder.



# 1. Film Speed (ASA) Setting

Make sure that the correct speed setting of film loaded in the camera has been made. (See page 13 for Setting Film Speed).

#### **2.** Determining the Shutter Speed

Turn the shutter speed dial and set the selected shutter speed to the exposure speed window. In average general photography, select 1/125 sec. to 1/250 sec. for bright outdoor shooting, and 1/30 sec. in the shade or indoors.

## 3. Setting the Diaphragm Ring to EE

Turn the diaphragm ring and align the red EE-mark with the red index mark. This automatically locks the lens into the EE-position.



# 4. Setting Meter Switch to "A" or "S"

"A" indicates average light measurement and "S" spot light measurement. In general photography, "A" is selected (See page 18 for how to use "A" and "S").

## 5. Shutter Release

While looking through the viewfinder, adjust the focus. If the meter needle stays within the area of accurate exposure, depress the shutter button smoothly.

> In the event the needle of the meter stays within the warning mark for underexposure, reset to a slower shutter speed; and if the needle of the meter stays within the warning mark for over-exposure, reset to a faster shutter speed.

> In taking pictures when a specific lens opening is of prime importance, rotate the shutter speed dial until the meter needle indicates the desired aperture. Make sure that the shutter speed dial clicks into a proper position as otherwise no correct shutter speed can be obtained.

> Never depress the shutter button until the meter needle comes to a complete stop.

## NOTE:

For a deliberate under- or overexposure, the meter reading can be locked and maintained, as long as the shutter release button is half way held depressed. When looking through the viewfinder, the needle locking may be observed.

# HOW TO USE "A" (AVERAGE LIGHT MEASUREMENT) AND "S" (SPOT LIGHT MEASUREMENT)



# "A" (Average Light Measurement)

Average light measurement is a system to measure a fair average of the light coming in through the lens. "A" is used in general photographic situations under favourable light conditions, shooting of landscapes and group subjects. The partial average light measurement system, incorporated in the Auto Sensorex-EE, has a special function by which the usually prevailing brightness of the sky is excluded from the light measurement. Unlike other systems of average light measurement, it does not cause a degradation of contrast. Just hold the camera, determine the composition and release the shutter.

# "S" (Spot Light Measurement)

The spot light measurement is a system to measure a part of the light coming in through the lens. It produces wonderful effects on an open sea, a wide expanse of mountains and fields, subjects with a bright background, in against-the-light pictures, and in taking stage pictures with a high light contrast. In such extraordinary cases of photography, the determination of the exposure is normally rather difficult. With the Auto Sensorex-EE, however, by merely setting the meter switch to "S" you can obtain an accurate exposure without the need to adjust the film speed or the diaphragm opening. When the "S" (spot light measurement) is used, the multi-split rangefinder (focusing part) indicates the light acceptance area.



When measuring light with a closed-down lens aperture for a special purpose or when manually shooting without the EE function, disengage the EE by turning the diaphragm ring in a clockwise direction, simultaneously depressing the EE-lock button of the lens. When measuring light at open aperture, read the diaphragm value the meter needle indicates in the viewfinder, and transfer manually to the diaphragm scale on the lens barrel. Using the closed-down light measuring system, the under exposure mark (red triangle at the bottom of the viewfinder) moves to the full open value of the lens in use.

Correct exposure can be determined by varying shutter speeds or diaphragm, until the needle superimposes the full open value mark in the viewfinder. Both Average Light Measurement and the Spot Light Measurement can be used for manual photography.

Note: F/1.8 and F/3.5 are marked by a dot.

Lens Used	Light Measuring System	Procedures
Auto Miranda-E (EE lens)	Open-aperture light	Read the diaphragm value which the meter needle, in the view
Auto Miranda (with indi-	measurement	finder indicates, and transfer the value to the diaphragm ring.
cator pin for open-aperture	Closed-down light	Set the meter needle to the diaphragm index of the full open-
f-value)	measurement	aperture f-value of the lens used, visible in the viewfinder.
Auto Miranda and preset-	Closed-down light	Rotate the diaphragm ring and the shutter speed dial to have
diaphragm lens	measurement	the meter needle superimpose the battery check mark.

# FOCUSING



Focusing is done by means of the micro-split image that appears in the center of the viewfinder when the focusing ring is turned either to the left or right. When the image is out of focus, the image looks blurred around the borderline of the micro-split image in the center, and the viewfinder looks dim and blurred. When the subject is brought into focus, the left-or-right blurring of the image disappears, the image becomes crisp and the focusing screen of the viewfinder becomes clear.

> The micro-split image rangefinder of the Auto Sensorex EE is an improved type of the conventional split image. It is a highly efficient split-image of Miranda's invention which can be used even with a Long telephoto lens.

> When looking through the viewfinder, observe the center part of the viewfinder. If viewed from a position at an upwards or downwards, or left or right angle using an ultra-telephoto lens, the micro-split may be partially blacked-out (one side is darkened and invisible).

> When an ultra-telephoto lens exceeding 450mm is used, the micro-split may be difficult to focus. In this case, adjust focusing on the matt screen surrounding the micro split.

> A near-sighted or far-sighted photographer can use efficiently an eye sight-compensation lens mounted in the eyepiece of the viewfinder to accomplish accurate focusing. Also, a rubber eye cup is attachable to the eyepiece.

# Focusing in Infra-red Photography

When taking pictures with infra-red film, perform the focusing first and then shift the reading of the distance scale to the. "R" position, engraved on the lens barrel.



For crisp photographs, the camera must be held steadily since any jarring or vibration will result in unsharp pictures even with the best cameras. It is suggested, therefore, before starting to take pictures, to familiarize yourself, in front of a mirror, with the best way to hold the camera.

> With the camera firmly held in both hands, hold it closely against the face, but not too tightly, as this will stiffen the posture with the result that the camera may vibrate, or that a moving subject can not be followed. It is important that the body be relaxed and the camera remains stab le.

> Hold the breath for an instant and gently depress the shutter release button. Vibration of the camera by beginHers is mostly due to uneven depression of the shutter release.

> Vertical holding of the camera will be more apt to cause camera shake than horizontal. Practice is required. In the vertical position, one way is to hold the camera with the shutter button up and the other with the button down. Choose whichever hold is preferable.

> In shooting with a telephoto lens, it is advisable to support the lens barrel with the left hand as this will reduce camera shake.

> Use a tripod when a slow shutter speed is used (See page22 for shooting at slow shutter speeds).

# HOW TO OPERATE THE SELF-TIMER - - SHOOTING AT SLOW SHUTTER SPEEDS

The self-timer of the Auto Sensorex EE can be set at any position of its run and thus lengthen or shorten its operating time. Operation may be interrupted at any time by resetting the lever to its original vertical position.

> When the self-timer is operated for EE shooting, attach a cover plate to the eyepiece of the view finder or cover it with a hand, to avoid light coming in through the eyepiece.



> The self-timer is actuated by depressing the shutter button. The operating time is adjustable from half-asecond to ten seconds, depending upon how far the lever is turned. The lever may be set either before or after advancing the film.

> If the self-timer operation is no longer required after setting the lever, it can be returned to its original position. In this case, the shutter can be released as usual since the self-timer is not in operation. (However, operate the selftimer once after completing the roll of film in the camera to release the actuating spring of the self-timer mechanism).

At 1/15 sec. or at a slower shutter speed, hand-held shooting is apt to cause camera shake. Be sure to use a sturdy tripod when shooting at slow shutter speeds or B.

> The EE control can not be used at a 1/2 sec. or slower shutter speeds, with ASA 100 film, nor can the "B" exposure be used for EE operation. Therefore, release the lens from the EE position in readiness for manual photography. (Refer to Page 19 for details on manual operation).

> When shooting at a slow shutter speed or with the self-timer using the EE system, it is recommended that the accessory "cover plate" to the viewfinder's eyepiece be used, or cover it with a hand as otherwise backlight may enter through the eyepiece and affect the exposure.

> When the shutter has been operated at a slow speed, make sure that the shutter is completely released before advancing the film.

## FILM REWIND

When a roll of film has been completely exposed, it is rewound into the original cartridge. Once the roll has come to an end, do not try to advance the film any further, even if the winding lever stops during the course of its advancement. Forced advance might tear the film which might, in turn, make rewinding impossible. In extreme cases,~damage to the winding mechanism of the camera may result.



1. Press once the rewind button located at the bottom of the camera. The button will remain depressed.

2. Lift the rewind crank on the rewind knob and turn it in the direction as indicated by the engraved arrow on the knob, so that the film is rewound into the cartridge.

3. 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 that the film has been entirely rewound. Then lift the rewind knob to open the back cover, and remove the cartridge.

> Sometimes when the film advance lever stops during its advancement, the rewind button may not remain depressed after being pressed once. In such a case, rewind the film slightly, at the same time pressing the rewind button and once again advance the film to the end. Then, press the rewind button again.

> The depressed rewind button will return to its original position when a new film is advanced with the film advance lever.

# **CARE IN HANDLING**

**1.** Always fully depress the shutter button. Insufficient operation of the button can leave the shutter curtain open and prevent the mirror returning to its original position. if this should happen, turn the shutter dial a few times from B-to-1000 and vice-versa until the normal function is restored.

**2**. Never wind the film while the shutter is in action. Failure to observe this may keep the mirror elevated. If this occurs, remove the lens and gently push the bottom of the mirror with a finger, and, at the same time, depress the shutter button. This will restore the normal function.

**3.** 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.

**4.** It may happen that while the film is being rewound after the film has been completely exposed, the rewindbutton will not remain depressed. In this case, rewind the film slightly and, at the same time, keep the rewind button depressed, then advance the film and try rewinding anew.

**5.** If the self-timer stops while in action, move the self-timer lever back and forth a few times, till it works again.

**6.** A major cause of failure of electronic flash or bulb flash is improper contact of the plug and the flash socket. Examine contact and plug when mounting the flashgun to the camera.

7. If the lens is left detached, make sure that the front of the lens faces down. If the rear of the lens should face downwards the coupling pins could become damaged.

#### MIRANDA AUTO EE EXPOSURE METER SYSTEM



#### SHOOTING FLASH



Use strobe or flashbulb at night or in a dimly lit room where the automatic EE system does not operate, or during daytime as a fill-in light source.

> A cordless strobe or flashgun may be used for Auto Sensorex EE as it is provided with the hot-shoe type accessory shoe.

{Webmaster: any modern / brand flash with just a hotshoe will work with this camera}

> When a regular cord-equipped strobe or flashgun is used, attach it to the accessory shoe, and connect the PC cord to the synchro contact located on the side of the camera, underneath the rewind crank.

> The synchro contact is interlocked with the shutter dial for automatic switching. The X contact is only connected when the dial is set at 1/60 sec. (60 in red). At all other shutter speeds, the camera is synchronized for bulb flash.

# **Exposure in Flash Shooting**

When flash is used, the EE function can not be utilized. Operate the camera's lens aperture and shutter speed manually following the Guide Numbers provided in the instruction manual or on the case of the strobe or flash bulb.



# Guide Number (GN)

~ The GN is obtained by multiplying the distance (in meters) between the camera and the subject by the aperture (f value). The aperture value can be determined by dividing the GN with the distance to the objective. For instance, when a strobo flash with GN 24 is used, and the distance set at three meters, the aperture value is calculated as  $24 \cdot 3 = 8$ , therefore set the lens to f8. In the event the exact aperture value thus determined is not marked on the lens, use an aperture of lesser value. (For example, when the aperture value 6 is obtained by dividing GN 24 by 4m, the value f5.6 should be used in substitution for 6).

> The GN varies depending upon the ASA sensitivity value of the film used. The GN for a flashbulb varies not only with the film sensitivity but also with the shutter speed. Therefore, study the instruction manual carefully for use of the GN's.

## As main light source

> The flash unit is pointed towards the 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 and is 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 outdoor 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.

SHUTTER SPEED	CONTACT	FLASH USED
60 (one sixtieth of a second)	X	Strobe
Other shutter speeds	FP	FP-class bulb

Note: When the Automex or earlier Sensorex pentaprism or reflex-type viewfinders are used, cordless flash photography can not be performed without a minor adjustment.

## 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 when 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.



## How to Ascertain the Depth of Field

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 5 meters, indicating that the range in which sharp images are obtained extend from 3.4 to 10 meters at f/8 aperture and about 2.5 meters to infinity at f/16.



How to Use the Depth of Field Lever

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.

distance	100	30	15	5	5	3.	30'	20	17
pringen	189'8.8"	25'11.5"	13 11.1	7'8.2'	4'10.5'	2'11.5'	29.64	19.84	16.89
1.4		35'6.3'	16'3.1'	8'4.1'	51.6	3'3.5'	30.37	20.15	17.11
	134'2.9"	24 6.5	13'6.1	7.6.7	4'9.9'	2'11.3'	29.45	19.78	16.84
2	·	35.6.8	16'10.4'	8'5.9"	52.2	3'0.8'	30.53	20.22	17.16
	24'11.6'	22'9.9'	12 11.7	7.4.7	4.9.1	2'11.0	29.28	19.69	16.78
2.8	-	43'8.9"	17'9.3'	8.8.6	5'3.2'	3'1.1'	30.75	20.32	17.22
	67 1.5	20'9.2	12'3.4'	7'2.0"	4'8.0'	2'10.5'	28.99	19.56	16.691
4		53'11.9'	19'2.0'	9'0.7"	5'4.6'	3'1.6'	31.08	20.45	17.32
412	47 5.5	18.5.1	11'5.1	6 10.4	4'6.5'	2'10.0'	28.59	19.39	16,56
3.6	00	80'9.1"	21'11.2'	9'6.9'	5'6.8'	3'2.3'	31.55	20.65	17.65
	33.6.8	35'10.5"	10'4.5	6'5.8'	4'4.4'	29.2	25.05	19.15	16.39
19	æ	271'2.5"	26 10.7	10'5.8'	5'10.1'	3'3,3'	32.24	20.93	17.65
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1	16.9.4	10.9.6	7'11.6'	5'5.5	3'10.6	26.8	26.34	18.36	15.83
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16 UTO MIRANDA E aphragm distance 1.8 2.8 4 5.6 8 11	16 9.4' 1:1.8 5 1:1.8 5 145 0.9' 92 4.4' 65 3.4' 46 1.9' 32 7.7' 23 1.0' 16 3.9'	10 9.6 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	7 11.6 128 11.8 15 13 7.3 16 8.5 12 11.1 17 10.4 12 2.7 19 4.9 11 4.2 22 1.2 10 3.8 27 5.9 9 1.6 9 1.6 7 10.8	55.5 1412.0 8 77.1 85.5 74.5 88.9 71.7 91.1 610.1 97.6 65.4 106.3 511.7 107.3 54.9	$\begin{array}{c} 3\ 10,6\\ 7\ 0,2'\\ \\ \\ 5\\ \\ 4\ 10,1'\\ \\ 5\ 2,1'\\ \\ 4\ 9,0'\\ \\ 5\ 3,3'\\ \\ 4\ 7,9'\\ \\ 5\ 4,8'\\ \\ 4\ 6,3'\\ \\ 5\ 7,0'\\ \\ 4\ 4,2'\\ \\ 5\ 10,4'\\ \\ 4\ 1,6'\\ \\ 6\ 3,7'\\ \\ 3\ 10,3'\\ \end{array}$	2 6.8 3 7.3 5 2 11.3 3 0.7 2 10.5 5 1.1 2 10.5 5 1.6 5 1.6 5 1.6 5 2 9.9 3 2.3 2 9.1 3 3.4 2 8.0 3 5.0 2 5.0 2 5.0	26,34 34,84 29,52 30,49 29,52 30,49 29,25 30,79 28,98 31,10 28,98 31,10 28,54 31,61 27,99 38,32 27,24 33,39 26,26	18.36 21.96 29,96 19,80 20.21 19,60 20,33 19,57 20,33 19,57 20,47 19,37 20,67 19,13 20,96 18,78 20,96 18,78 20,96	15,83 18,36 17 16,85 17,15 16,85 17,15 16,59 17,32 16,59 17,32 16,59 17,32 16,59 17,32 16,38 17,68 16,85 17,56 17,56 16,85 17,56 16,56 17,56 17,56 17,56 17,56 17,56 16,56 16,56 17,56 16,56 17,56 16,56 16,56 17,568 16,567 17,568 16,576 16,5

#### CLICK HERE TO SEE THE DEPTH OF FIELD GUIDES FOR THE F/1.4 AND F/1.8 LENS

#### **VIEWFINDER INTERCHANGING**

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 tones when using color film, exactly as will be exposed on the actual film.



> 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.

> When a reflex-type viewfinder is used, its eyepiece is apt to permit adverse light to enter, which may cause exposure error, Be sure to shield the light, particularly in EE shooting.



pensable and increases the camera's performance range.

> The pentaprism and reflex-type finders VF-1 and VF-3, designed for the regular Sensorex, can be attached. But they can not be used for flash synchro photography.

# LENS MOUNT AND INTERCHANGEABILITY

The lens mount of MIRANDA Auto Sensorex has on its outside a 4-claw bayonet mount and on its inside a thread mount of 44mm 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 thread mount is for preset lenses and most other accessories.

> Lenses may be interchanged before or after the film advance and regardless of the diaphragm settings.



> To remove the auto MIRANDA E lens, give it one eighth of a turn counterclockwise, with the lens lock lever depressed. Match the red index on the lens barrel with the red mark on the camera body, and remove the lens. For attaching the lens, match the lens' red index with the red mark on the camera body and give it one-eighth of a turn clockwise, till the lens clicks into position. The lens lock button does not need to be depressed at this time.

> When the lens is removed, make sure that no direct sunlight or dust penetrates the interior of the camera. The mirror and lens surfaces should not be touched with the f angers.

> The green mark, located on the right side of the front plate, has no connection with the change of lenses as it is used to match the Focabell A-III or S bellows units when mounting them at a right angle to the camera.

MOUNT	LENSES AND ACCESSORIES
Bayonet	Auto Miranda E, Auto Miranda, T-4 Soligor, Focabel A-III and S. PM Adaptor, NM Adaptor and Auto Extentsion Tubes.
Screw	Preset T-2 Soligor and other accessories.

## **INTERCHANGEABLE LENSES**

The Auto Miranda E, exclusive interchangeable accessory lens, bears the "EE" mark similar to the standard lens, and is suitable for EE photography. Auto Miranda lenses other than this exclusive type, or the T-4 Soligor, and T-2 Soligor can only be used for manual photography.

## (Caution)

When the Auto Miranda E lens is attached to Miranda camera models, other than the Auto Sensorex-EE, the f:1,6 aperture value cannot be used because it uses a diaphragm activating mechanism with a different operational angle.





# LIST OF MIRANDA E LENSES

	Angle of view	Construction groups- elements	Smallest aperture	Closest focus (m)	Filter size (mm)	Length (mm)	Max. diameter (mm)	Weight (g)
25mm F2.8	820	7 - 8	F 16	0.25	52ø	60	59¢	300
28mm F2.8	74°	6 - 8	F16	0.25	52¢	54	59¢	273
35mm F2.8	640	5 - 6	F 16	0.30	52ψ	48	59¢	222
50mm F1.8	46°	4 - 6	F 16	0.43	52¢	47	59¢	235
50mm F1.4	46°	5 - 7	F16	0.43	52φ	55	63¢	345
105mm F2.8	230	5 – 5	F 16	1.2	52¢	69	59¢	340
136mm F3.6	18°	3 – 4	F16	1.5	52¢	95	60¢	435
135mm F2.8	18 <sup>u</sup>	5 - 5	F 16	1,5	55¢	96	65¢	500
180mm F3.5	140	4 - 4	F 16	2.3	58¢	143	69¢	728
200mm F3.5	120	5 - 6	F16	3.0	62¢	150	70¢	760
Macron 52mm F2.8	45°	4 - 6	F32	0.2	58¢	61	64¢	260

# ACCESSORIES FOR INCREASED VERSATILITY

# Pentaprism Viewfinder

In general photography, a pentaprism viewfinder is used. It shows the image right side up and right way round. The pentaprism viewfinder, has a hotshoe attached, for cordless flash photography.



#### **Reflex Viewfinder VF-1**

This is a viewfinder of an ordinary type and is used for low-angle or high-angle shooting. Facing sideways, it may be conveniently used for candid shots. The Viewfinder Hood flips-open. With the magnifier raised, the image is magnified for easy focusing. Through a reflex viewfinder, the image is shown right-and left inversed.



#### **Reflex Viewfinder VF-3**

Being one of Miranda's highly efficient viewfinders, this viewfinder shows its excellence in critical reproduction applications, close-ups, and photomicrography.

By erecting the center part of the viewfinder, the entire picture area can be viewed through its 5X magnifier.



When folded down, the center of the focusing screen can be viewed at 15X magnification for accurate focusing. This viewfinder is tightly enclosed and permits easy viewing in bright places.

#### FOCABELL



> 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.



> 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  $0.9 \sim 2.5$  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 precision focussing device.

# EXTENSION TUBES



A Miranda standard lens without an extension attachment permits a close-up shot up to 43cm (a 21 x 14 size is approximately the maximum size filling the viewfinder). For greater extension, extension tubes or Auto Extension Rings A1, A2 and AS are used.

> The Auto Extension rings are 8mm, 16mm and 32mm in thickness respectively. When an automatic diaphragm lens is used. the Auto~diaphragm mechanism still operates even with Extension Tubes attached. Extension Tubes



> The Extension Tubes are composed of the AU Adapter and 3 tubes. The AU Adapter is used to fix the bayonetmount lens onto the Extension Tube. It is 8mm in thickness, the same thickness as the No. 1 ring.

The 3 rings are No. 1 (8mm), No. 2 (16mm) and No. 3 (32mm). By alternately changing the AU Adapter tubes, a 0.15 - 1.23 extension can be obtained.

# **COPYSTAND AND MICROCOPY STAND**

MIRANDA COPY STAND is fitted with arms for illumination lamps. A camera is held not only by the tripod socket

but also the metal brackets to insure a secure, horizontal hold of the camera. Easy reproduction of literature, brochures, etc.



Microcopy Stand This multiple-use copystand is designed for reproduction photography and photomicrography. Its extra-solid die-cast construction permits vibration free reproduction, with either the regular Miranda cameras or the Laborec photomicrographic camera.





CSF Adapter: For standard lenses of Con-CTF Adapter: For wide angle and telephoto lenses of Contax and Nikon.

For mounting Miranda lenses on Leica and enlarg-

ML Adapter:

ers.



AU Adapter: For making close-ups up to 10 inches with Miranda lenses.

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