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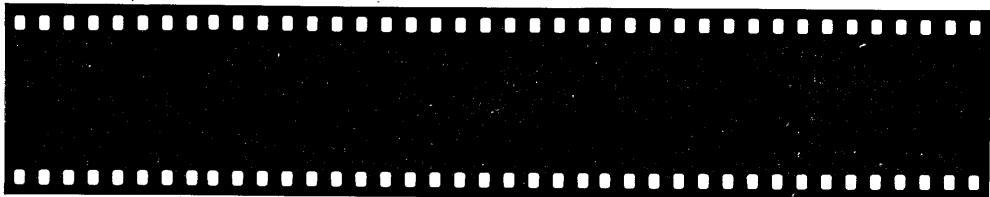
**[back to my "Orphancameras" manuals /flash and light meter site](#)**

**Only one "donation" needed per manual, not per multiple section of a manual !**

**The large manuals are split only for easy download size.**

Characteristics of films vary and it is therefore advisable to run tests on a number of different types, select the film that best suits your particular needs, and stay with it. Of prime importance is of course the application. As a general rule, the slower the emulsion is, the less graininess, resulting in maximum size enlargement possibilities. However, this film requires a longer exposure than film with a fast emulsion.

Where poor lighting conditions prevail, a high speed film is advisable, while in very bright light, the slower film will give better results.



The CdS exposure meter of Miranda Sensomat is of the reflected-light type, which calculates the exposure by measuring the brightness of the subject.

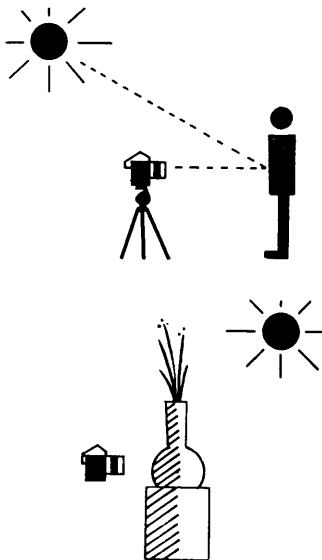
The acceptance area covers the lower section of the subject to be photographed and measures the light by a partial-average system. Depending on the subject, the following methods can also be used.

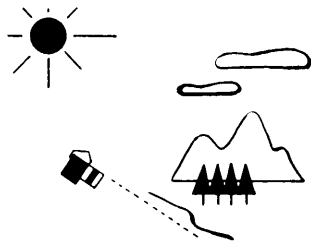
### 1. Measuring the Brightness of Human Subjects

If the subject and background have the same brightness, measuring from the shooting position gives satisfactory results. But if the background is much brighter, such as a snow scene, open sea or open sky, come as close to the subject as possible and measure the brightness of the face. Be careful not to let the camera create a shadow on the measuring area.

### 2. Measuring Backlit Subjects

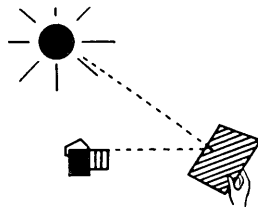
In against-the-light shooting, if direct light enters the camera lens the meter will read too high and cause under-exposure of the subject especially with wide angle lenses. In such a case, come close to the subject and also take care that no direct light enters the camera. If impossible to avoid this light entry, measure the exposure in normal light and give 2 to 4 times longer exposure. This method of measuring under against-the-light conditions can be used for both human subjects and landscapes.





### 3. Measuring the Brightness of Landscapes

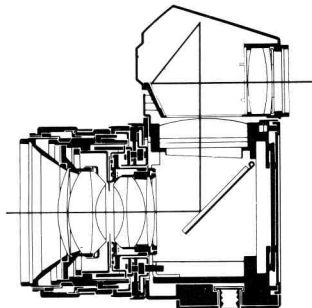
For this, the camera lens should be aimed at a point midway between the horizon and one's own feet. If the horizon is not clear, the lens should be aimed at the ground about 150 feet (50 meters) in front. Because if the bright light from the sky directly enters the camera the measurement could cause under-exposure to the landscape. However, there are exceptions, such as when the sky forms an important part of the picture, in which case the camera must be held level for measuring, and if it is a wide landscape, the exposure will have to be reduced to one-half, or if the contrast is too strong, it may be necessary to increase by two times.



### 4. Special Method of Measuring

If it is inconvenient to bring the meter close to the subject's face or in snapshots and animal shots, it is possible to get fairly accurate measurements by setting up a standard reflector of 18% reflection (Gray card) ratio in the same condition as the subject and measuring the reflected light. In this case, the exposure measurement would be the same as that of incident light.

When the subject is very dark and the meter needle fails to move, measure the brightness of the light source directly and give a 10 to 20 times increased exposure to get well-exposed pictures.



To avoid blackouts in the finder, it is of great importance that the mirror returns instantly to its viewing position after a picture has been taken. The Miranda Sensomat is equipped with such a mirror, which at the same time houses the CdS-sensing device of the exposure meter. At any time, before or after the exposure, the mirror is in its viewing position.

- 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.



#### Waist-level finder VF1

This is an ordinary type of reflex viewfinder for use in low and high angle shooting.

It is also convenient when using the camera sideways for candid shots.

- It has a focusing hood, which opens up at one touch of a button, and a collapsible magnifier which increases the size of the screen image and helps obtaining accurate focus.
- This viewfinder shows the image reversed left to right, but it gives bright viewing.

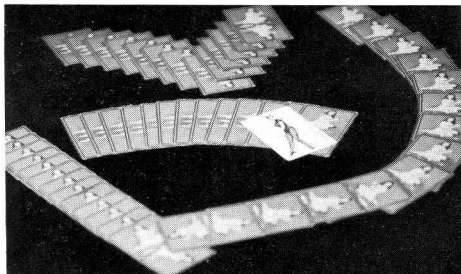
#### Critical focuser VF3

This is a highly efficient reflex viewfinder which is unique with Miranda and is suitable for precision copying, close-ups, and microscopic shots.

- 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 even in bright places.

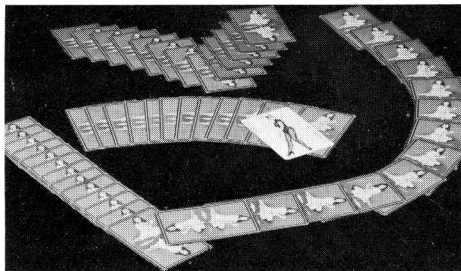
#### Critical focuser VF4

This precision viewfinder which is now introduced for the first time for general camera use was specifically designed as a critical magnifier for micrography. The view finder features an enclosed 5 time magnifier with a diopter adjustment of +3 to -4 diopters. The finder will be found very convenient for critical focusing as the entire image may be inspected.



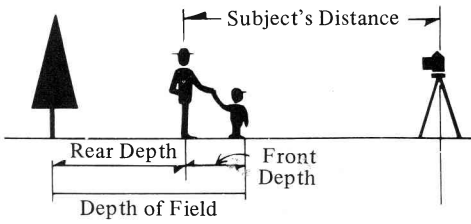
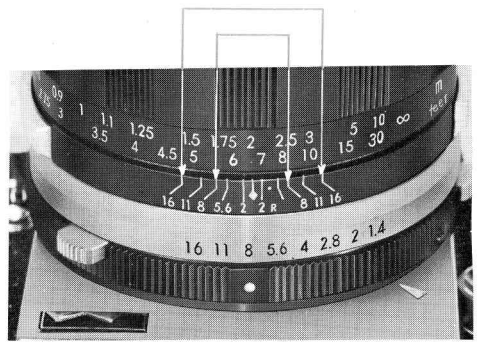
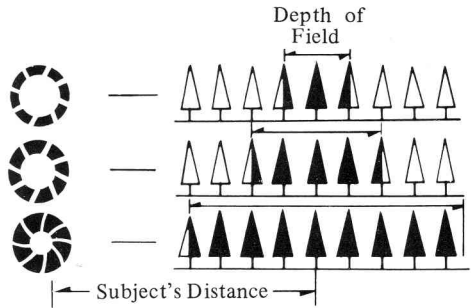
no depth of field

This is the range that is 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 up reduces the depth of field. The depth of field also varies with the lens used. Wide angle lenses have lots of depth of field while with telephoto lenses the depth of field is much



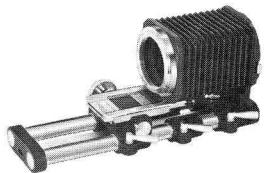
depth of field

reduced. 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 other objects in the scene are soft and out of focus. This will de-emphasize distracting background objects, and concentrate the viewer's attention on the principal subject.



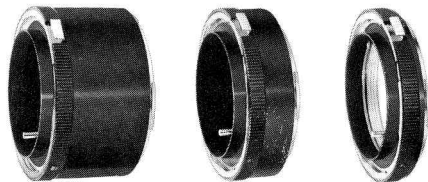
At the center of the lens barrel, facing up, is the depth-of-field scale which indicates the depth of field at a glance. The picture shows the focus adjusted to 2 meters, indicating that the range in which sharp images can be obtained extends from 1.75 to 2.5 meters at f/8 aperture and about 1.5 to 3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





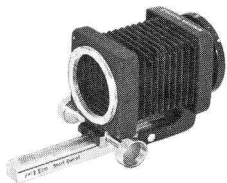
**Focabell AU**

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



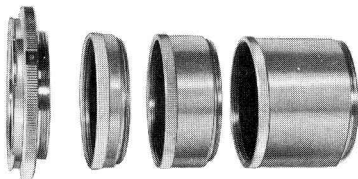
**Auto Extension Tubes**

A set of three tubes measuring 8mm, 16mm and 32mm in thickness. Any two tubes may be used together with automatic diaphragm operation.



**Focabell S**

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



**Extension Tubes**

For close-up photography. Set consists of AU. adapter, 8mm, 16mm and 32mm tubes.

### **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.

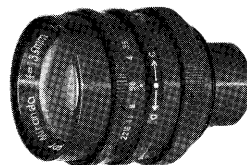
When using the Miranda Automatic Extension tubes with an Auto Miranda lens, follow the instructions for exposure determination with Auto Miranda lenses on page 25.

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

Extension length mm	Magnification		Picture coverage mm.		Exposure increase ratio	
	50mm	135mm short barrel	50mm	135mm short barrel	50mm	135mm short barrel
5	—	0.04	—	600 x 900	—	1.1X
10	—	0.07	—	343 x 514	—	1.2
15	—	0.11	—	218 x 327	—	1.2
20	—	0.15	—	160 x 240	—	1.3
25	—	0.19	—	126 x 189	—	1.4
30	—	0.22	—	109 x 164	—	1.5
35	—	0.26	—	92 x 138	—	1.6
40	0.8	0.30	30 x 45	80 x 120	3.2	1.7
45	0.9	0.33	27 x 40	73 x 109	3.6	1.8
50	1.0	0.37	24 x 36	65 x 97	4.0	1.9
60	1.2	0.44	20 x 30	55 x 82	4.8	2.1
70	1.4	0.52	17 x 26	46 x 69	5.8	2.3
80	1.6	0.59	15 x 23	41 x 61	6.8	2.5
90	1.8	0.67	13 x 20	36 x 54	7.8	2.8
100	2.0	0.74	12 x 18	32 x 49	9.0	3.0
110	2.2	0.82	11 x 16	29 x 44	10.2	3.3
120	2.4	0.89	10 x 15	27 x 40	11.6	3.6
130	2.6	0.96	9 x 14	25 x 38	13.0	3.9
140	2.8	1.03	9 x 13	23 x 35	14.4	4.2
150	3.0	1.12	8 x 12	21 x 32	16.0	4.5

### Which lens to use with the bellows extension unit

While many lenses of different focal lengths can be used, it has been found that the most versatile use of the bellows unit is achieved in conjunction with the standard 50mm camera lens, or 135mm telephoto lens in a special short barrel for use with bellows extension units.



### Extension Tubes Magnification ratio and exposure factors

For 50mm f/1.8 Lens

ADAPTER AND RING USED	TOTAL LENGTH (mm)	PICTURE COVERAGE (mm)	MAGNIFICATION RATIO	EXPOSURE INCREASE RATIO
Adapter only	8	156 x 238	0.15	1.3
Adapter and 8	16	78 x 117	0.31	1.7
" " 16	24	52 x 78	0.46	2.1
" 8+16	32	40 x 60	0.62	2.6
" 32	40	32 x 48	0.77	3.1
" 8+32	48	26 x 39	0.92	3.7
" 16+32	56	24 x 36	1.08	4.3
" 8+16+32	64	20 x 30	1.23	5.0

For long duration exposure in copying, correct the exposure as follows:

EXPOSURE	1 sec.	5 sec.	15 sec.	45 sec.	2 min.
CORRECTED EXP.	1¼ sec.	7.5 sec.	30 sec.	1 min. 35 sec.	6 min.

These devices double (2X) or triple (3X) the focal length of the lens, used on the camera.

The standard 50mm lens thus becomes a 100 or 150mm telephoto lens. Exposure-increase ratio is automatically compensated for by the built-in exposure meter of the Miranda Sensomat. Follow the instructions given on page 25 or page 26 for the automatic-or preset type converters.

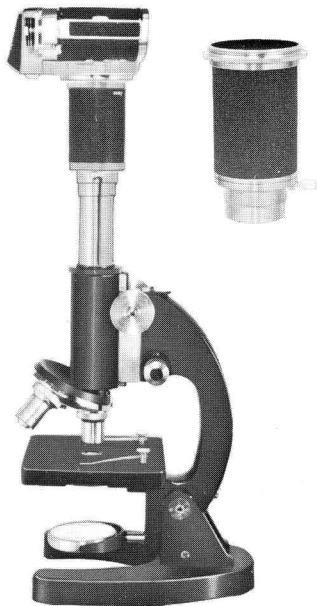


### Conversion Lenses

In the past few years, the 180° Fish-eye conversion lenses such as the Soligor converter are becoming increasingly popular. To use these lenses set the master lens (50mm f/1.8) on infinity and set the diaphragm at its maximum opening of 1.8 or 1.4. On the conversion lens itself, make sure that the focal length of the master lens is properly set opposite the reference mark. Select a suitable diaphragm opening on the fish-eye conversion lens only and adjust the exposure on the shutter speed dial.

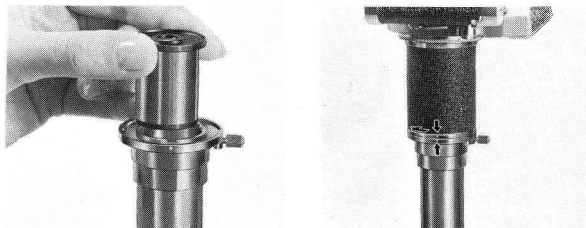


### Microscope Adapter



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

- The camera lens is taken off.
- The viewfinder can be interchanged with critical focuser VF3 or VF4 for easier focusing.

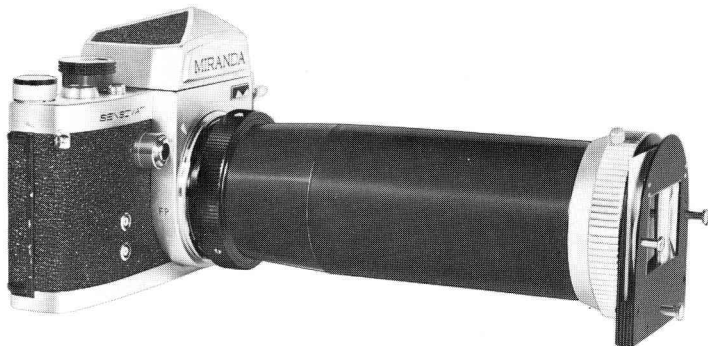


#### (HOW TO ATTACH)

- (1) Attach this 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 by means of its bayonet mount. (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 the position to be used and tighten the connection piece's screw. (Picture at right) adjust the exposure by turning the shutter speeds dial.

This device, when mounted to the camera body is capable of making duplicates or negatives of slides and slides out of negatives of similar size as the original.

It has a built in f/8 lens. When looking through the viewfinder, by turning the shutter speed dial, correct exposure can be obtained.



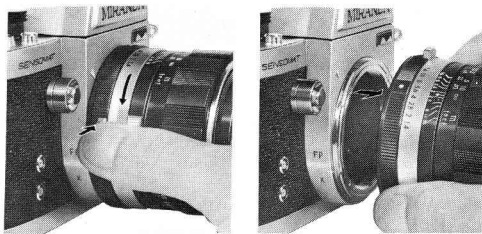


MIRANDA Sensomat has a bayonet type lens mount which permits quick lens interchange and accurate coupling of the automatic diaphragm mechanism.

Lenses can be interchanged regardless to 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.



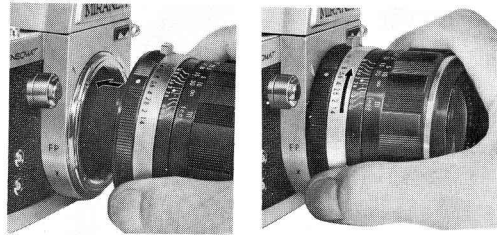


### Detaching the Lens

While pressing the lens-lock lever on the side of lens barrel, twist the lens counter-clockwise 1/8 of a 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 safety, and correct handling.

When changing the lens, take care not to let direct light enter the camera body.



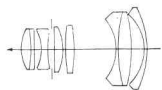
### Attaching the Lens

Match the red dot of the lens barrel to the red line on the body, fit the lens tightly and turn it clockwise 1/8 of a turn. Then it clicks into position with the red dot exactly in the center.

This can be easily done by having the camera facing up, for then the lens can be placed naturally on the lens mount and then turned in clockwise direction.

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

28mm f/2.8

Angle  
of  
View

75°

Smallest  
Aperture  
(f)

16

Closest  
Focus  
(m)

0.25

Construction  
(Groups-  
Elements)

6-8

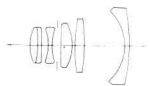
Magni-  
fication

0.56X

Filter  
Size  
(mm)

46

35mm f/2.8



63°

16

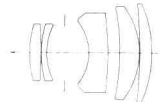
0.3

5-6

0.7X

46

105mm f/2.8



23°

22

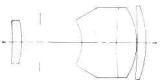
1.2

5-5

2.1X

46

135mm f/3.5



18°

22

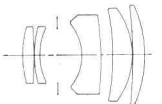
1.5

3-4

2.7X

46

135mm f/2.8



18°

22

1.7

5-5

2.7X

55

MIRANDA Sensomat 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. With the exception of the AXM adapter, lenses used with these adapters no longer retain their automatic diaphragm feature, but must be set manually.



**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



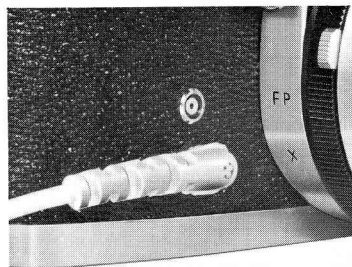
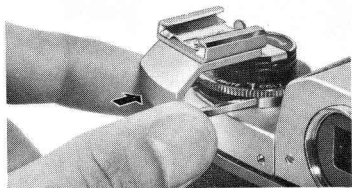
**CTF Adapter:**  
For wide angle and telephoto lenses of Contax and Nikon.



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



**NM Adapter:**  
For Nikon lenses.



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 flash shooting, an exclusive accessory shoe is mounted to the bottom of the rewind knob of the camera.
- The flash unit is inserted from the rear of the accessory shoe and secured by tightening its mount.
- Insert the plug of the flash unit into the camera's synchro terminal, the FP terminal (above) for flashbulb and the X terminal (below) for electronic flash.
- The FP Class flashbulb synchronizes with the shutter at all speeds from 1 second to 1/1000 second. For electronic flash, set the speed to the red "X" mark midway between 1/30 sec and 1/60 sec, but slower speed settings can also be used. 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 aperture 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 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.

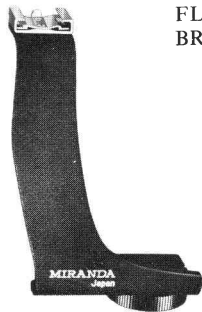
**Combination Table for Flash Shooting**

(indicates usable factors)

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

Other Available Accessories

FLASH BRACKET

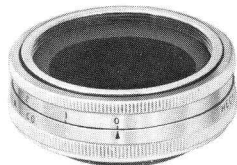


**EYECUP**  
Rubber Eyecup to be attached to eyepiece of pentaprism or VF-3 viewfinders.  
Has built-in Type A eyesight adjustment lens mount.



**EYESIGHT ADJUSTMENT MOUNTS**

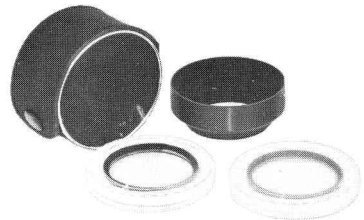
Can be attached to eyepiece of pentaprism or VF3 viewfinders.  
Type A: for near or farsightedness.  
Type B: for astigmatism.



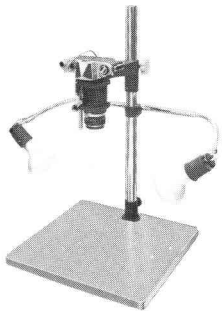
**UNIVERSAL HELICOID**  
(Helical focusing mount)  
For precision focusing and close-ups.



**PISTOL GRIP**

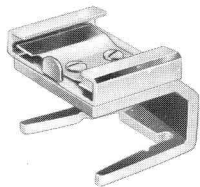
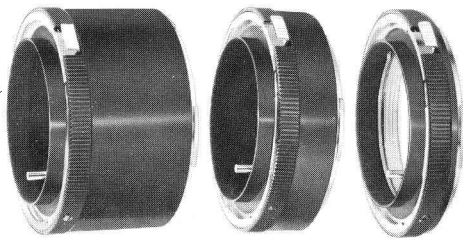


**STANDARD LENS HOOD**  
Can be reversed on 50mm lens and fits into the camera case.  
(except on 50mm f1.4)



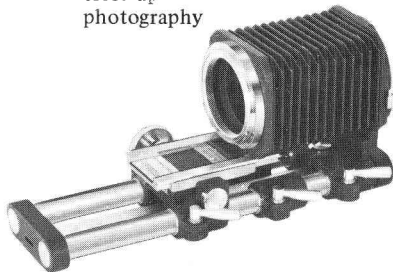
**Miranda Copy Stand**  
For copying documents,  
complete with lamp  
sockets.

**AUTO**  
Extension  
tubes for  
use with Auto-Miranda  
Lenses.



**Miranda Accessory  
Shoe for mounting  
flash gun.**

**Focabell AII**  
for ultra  
close up  
photography





### Miranda Sensomat Technical Data

- Lens:** Auto-Miranda 50mm f/1.8, 4 group 6 elements or 50mm f/1.4, 6 group 8 elements. Gauss type, spectra hard coated, fully automatic diaphragm coupled to through-the-lens exposure system. Smallest aperture f/16, closest focus at 43cm (17"), uses screw-in 46mm filter, or lenshood.
- Shutter:** Focal plane type, speeds 1-1/1000th sec. and B. Release from top or front of the camera.
- Exposure meter:** Through the lens CdS measuring at closed aperture, meter needle visible in finder, measuring range EV 1.6 to 18 (ASA 100 F/1.8) film speed range ASA 25 to 1600. CdS Sensing area behind the mirror, blocking system to prevent over-or under exposure. Meter activating switch also serves as depth of field preview button.
- Viewfinder:** Interchangeable pentaprism, magnification 0.92X (with 50mm at infinity) condenser and fresnel lens combined, focusing through multi-microprism grid.
- Lens mount:** Miranda dual lens mount, outside bayonet and inside screw mount, 44mm $\phi$ .
- Flash sync:** Outlets FP for bulbs and X for electronic flash (X at 1/45th sec.)
- Film advance:** By single stroke of 180°
- Film rewinding:** Rewind knob with collapsible crank, self resetting release button.
- Film counter:** Advance counting type, self resetting.
- Size:** 147x94x88mm (w/50mm f/1.8 lens)
- Weight:** 858 gr.

When used on the beach, in strong wind or other unfavorable conditions, damage may be caused if the camera is 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 should never be touched with fingers.

#### PRECAUTIONS IN STORING

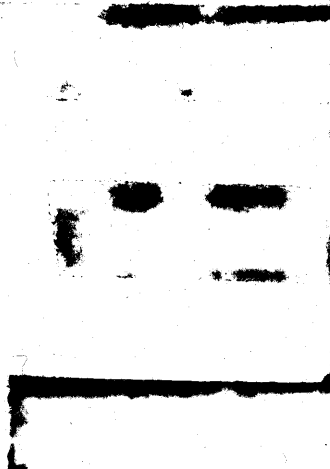
- Avoid places of high temperature or high humidity.
- Be careful to avoid shocks as they may cause damage.
- Keep the shutter uncocked.
- Set the lens to infinity before closing the camera case.
- Be very careful not to drop the camera into salt water as repair may become impossible.
- In case the camera 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.

MEMO

Camera No.: 820075  
Standard Lens No.: 1887599  
Numbers other Lenses:

Date(s) purchased:

12/4/69



Exclusive United States Importer:

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