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Minolio AUTOCORD COS

OWNER'S MANUAL

The Minolta AUTOCORD CdS

CONCEIVED FROM ADVANCED IDEAS IN CAMERA DESIGN

Your world famous Minolta Autocord is now equipped with a built-in CdS light meter. The built-in meter gives your Autocord added accuracy with easy handling.

Its exclusive HELICOID focusing lever provides fast easy focusing with the index finger of your hand holding the camera, permitting you one hand operation. Your other hand is left free for holding an off-the-camera flash gun for better flash photography. The focusing lever is located underneath the lens mount and sweeps the focus from 3.3-ft. to infinity in one arc-like movement across the bottom of the camera.

The brilliant image on the viewing screen with "Fresnel Lens" provided by the fast, fully coated F 3.2 Rokkor 75 mm viewing lens provides quick, accurate focusing and composing for better pictures.

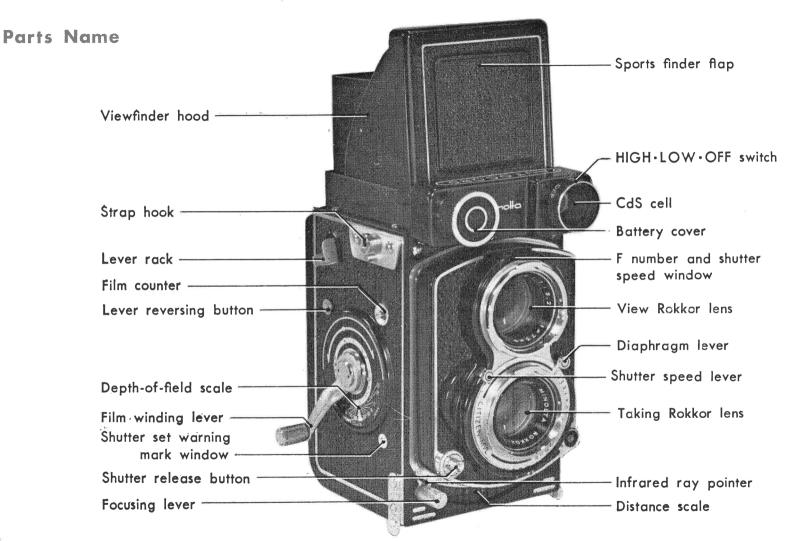
Its Rokkor F 3.5-75 mm 4-element coated taking lens is well recognized for its critical sharpness and high resolving power.

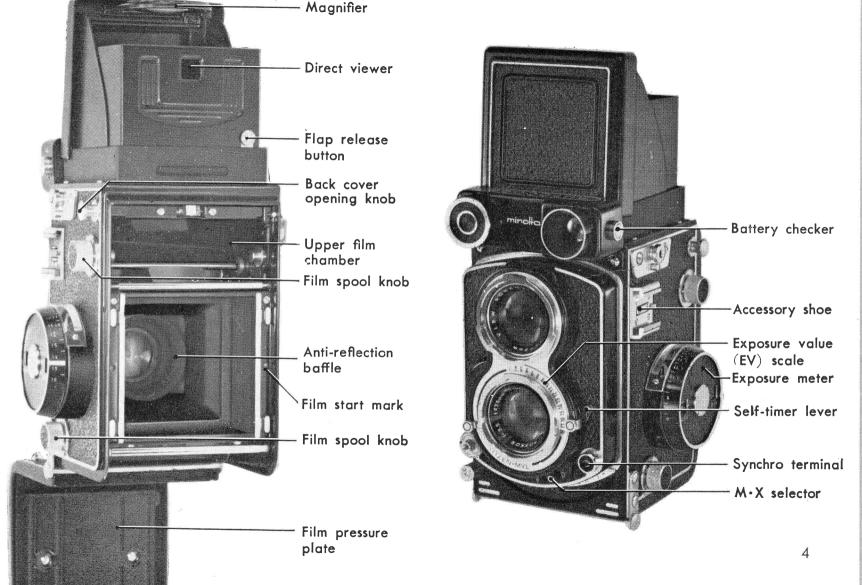
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SPECIFICATIONS

Type:

Twin lens reflex camera with built-in CdS exposure meter, takes No. 120 roll film.

Picture size 6×6 cm. $(2\frac{1}{4} \times 2\frac{1}{4})$ in.).

Lens: Shutter: Rokkor F/3.5-75 mm, 4 elements in 3 groups. CITIZEN MVL, B, 1 to 1/500 sec. and built-in self-timer.

Flash synchronization:

M and X contact point.

Viewfinder:

Clear ground glass with Fresnel lens.

Outer circle indicates the light acceptance angle of exposure meter.

Helicoid focusing lever on the bottom front of the camera. Minimum focus distance;

1 m. (3.3 ft.)

Focusing:

Built-in highly accurate CdS exposure meter with high, low, off switch.

Meter working range:

EV3-17, ASA 100 film. (On high range: EV10-17. On low range: EV3-10) ASA 6-25.000. DIN 9-45

Film speed range:

Exposure meter:

One stroke film advance lever. Film is wound from top to bottom.

Others features:

Automatic resetting film counter.

Double exposure prevention. (Intentional double exposure is permitted.)

Accessories: Double exposure preve

Bayonet type lens hood (28.5ϕ) Bayonet type filter (28.5ϕ)

Close-up lenses.

Paradjuster.
Panorama-head.

Autopole.

Size and Weight:

 $144 \times 105 \times 100 \text{ mm}$ (5.63 × 4.14 × 3.94 in.) 1.100 g (38.7 oz.)

Attaching the Neck Strap

This new, improved locking neck strap is guaranteed to hold your Autocord CdS in perfect safety. It cannot slip or release accidentally.

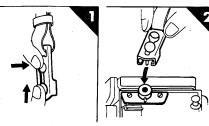
To attach the neck strap

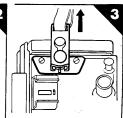
- Depress the upper button of the strap-catch. Keeping it depressed, push the lower button towards the upper button.
- Hold the strap catch vertically and insert the stud into the hole of the locking grip on the camera.
- 3. Pull the strap-catch until you hear it click into locked position.

To remove the neck strap

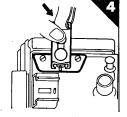
- 4. Depress the upper button.
- Keeping it depressed, push the strap-catch downward. When it stops, simply lift off the strapcatch.

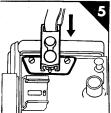
To attach the neck strap





To remove the neck strap





Simple Steps for Taking Pictures

Please install the Mercury Battery packed separately in the box. (For further instructions, read page 28.)



1. Finder



 Take off the lens cap, lifting it up by the lower section, then twisting to the right.

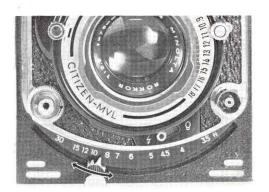


 Gently raise the viewfinder hood, as shown in the picture.
 It automatically snaps into position.



 To use the magnifier, push the sports finder flap by its upper edge. Then the magnifier will spring up.

2. Focusing



4. When the focussing lever is moved, the lenses move back and forth. When the image looks sharp on the ground glass, it is in focus. To focus more precisely, raise the magnifier up, and focus through the magnifier.



The composition lines on the ground glass are drawn in proportion to the dimension of printing paper. Keeping in mind the print, compose the picture with in the limit of horizontal lines for horizontal position, and within the limit of vertical lines for vertical position.

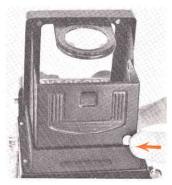
3. For Sports Finder



Push the sports finder flap all the way down. It will fall downward and stop with a click, providing the sports finder.



 The object as seen within the front of the frame when viewed through the direct viewer is the same as the lens "sees."

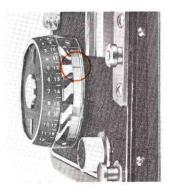


 Press the flap release button to return the flap in a normal position.

4. Measuring Exposure



 Set the exposure meter with the correct film speed (ASA or DIN).

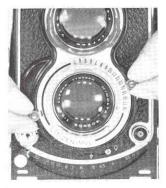


Point the camera at the subject. The needle of the exposure meter will indicate an exposure value (EV) number.



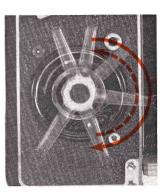
 In order to obtain the proper exposure value (EV) number, it is necessary to adjust both the shutter speed and diaphragm opening. (See page 22-27 for full details).

5. Shutter Speed and Diaphragm

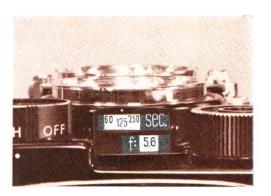


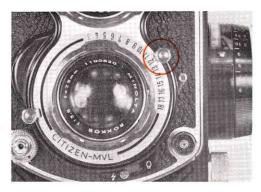


. When the shutter lever is moved up and down, shutter speeds B, 1, 2, 4, 8, 15, 30, 60, 125, 500 appear in the Sec.-window on the top of the viewing lens. B stands for Bulb exposure, and on this setting the shutter stay open as long as the shutter release button is depressed. The figures 1, 2, 4....500 indicate the shutter speeds of 1, 1/2 1/4....1/500 second.



2. To cock the shutter, move the film winding lever forward until it stops. (Note: If camera is not loaded with film, the lever will not stop.) Return the lever rack. Shutter can be changed before or after cocking the shutter.

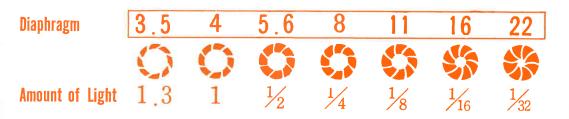




3. When the diaphragm lever is moved up and down, F stop numbers 3.5, 4, 5.6, 8, 11, 16, 22 appear in the f-window on the top of the viewing lens.

As the diaphragm lever is moved, the exposure value (EV) is automatically indicated and can be utilized when using the Exposure Value System.

6. Relation between Diaphragm and Amount of Light



The diaphragm indicator, 3.5, 4, 5.6, 8, 11, 16, 22, shows the size of the aperture opening. Its figures indicate the amount of light that reaches the film through the aperture in the proportion as drawing.

When the shutter is released at the speed of 1/250 second with f 4 diaphragm opening, or exposed with f 5.6 at 1/125 second, the amount of light reaching the film results the same.

Besides controlling the amount of light entering through the lens, the diaphragm also determines the depth-of-field. (See page 37 for the depth-of-field.)

7. Taking the Picture

Focus and frame your subject on the viewfinder. Determine exposure, then set both diaphragm and shutter speed.

Select appropriate F number depending on your subject. Remember diaphragm determines the depth-of-field. (For example, set diaphragm to f 8 or f 11 for a subject that need deeper depth-of-field.)



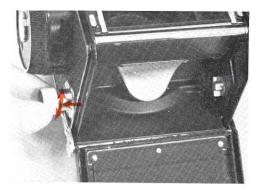


Loading Film

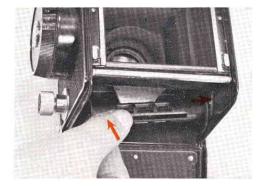


Use No. 120 film. (Note: No. 620 film spool will not fit on this comera.)

 Pull the back cover opening knob. Then the back cover will snap out.



Pull and turn the take-up spool knob. The knob will stay out.



 Remove the film winding spool (empty spool) from the upper film chamber. Fit it in the pivot on the right side of the lower film chamber and secure it with the left side knob. This knob stays out if pulled and turned.



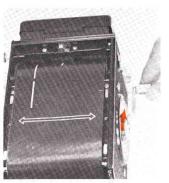
4. Insert a fresh roll of film in the upper film chamber, pushing it gently toward the knob side. Fit the pivot of the knob in the film spool. Like lower knob, this knob stays out too, when pulled and turned.

Then turn back both knobs.

They return to proper position.

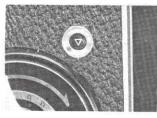


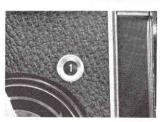
 Pull out the film leader and insert it in the longer groove of the empty spool.



6. Wind the film winding lever until the (\(\triangle \)) mark appears on the both sides of the paper leader. Match those marks with the film start mark (red dot) seen at the center of the both side film rails of the camera. Then close the back of the camera. Note: Land a fresh film in a shade.

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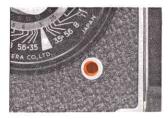




7. When the camera back is closed, mark (△) appears in the film counter window. Turn the winding lever clock-wise until the lever stops winding. At this point, the shutter is cocked, and the lever will not move forward any further. Turn back the winding lever into the lever rack. The number (1) appears in the film counter window.

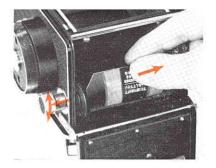
You are ready for the first exposure. For the second exposure, turn the winding lever forward until it stops, and then turn the lever back into the rack again.

After taking the 12 th exposure, continue to advance the film winding lever until all tension is released. This assures that the film is properly wound into the take-up spool. The mark (③) will apear in the film counter window.



Note: When the shutter is cocked by turning the lever, a red color mark will appear in the shutter set warning mark window to show that the shutter is cocked.

Unloading Film

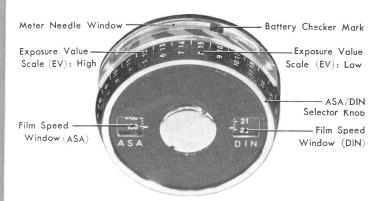


 Pull out the back cover opening knob. This will open the back cover. Pull out the film spool knob and remove the roll of film. Fold and seal the leader edge of the roll of film.



Shift the empty spool to the lower film chamber.See "Loading Film" as to the proper procedure.

Exposure Meter



Your Autocord CdS has a highly sensitive CdS exposure meter. The measuring range of the meter ranges from EV 3 (F/2.8-1 sec) to EV 17 (F/16-1/500) with ASA 100 film.

The exposure meter has a light acceptance of 15° which is reasonable and practical angle.

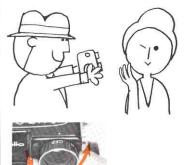
The ASA range of the meter is ASA 6-25,000 (DIN 9-45).

1. Set Film Speed



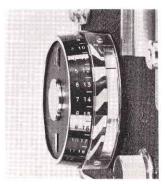
Set the exposure meter on the proper film speed by turning the selector knob until the correct ASA/DIN number appears in the film speed window.

2. Set the High-low Scale



The exposure meter should be adjusted properly to the lighting conditions. The high scale is used for bright light conditions and the low scale is used for dim or available light.

3. Aim the Camera



Aim the camera at the subject and take a reading with the light meter. When using the **High Scale**, read the white numbers on the exposure meter and for the **Low Scale** read the red numbers.

Note: Switch the meter off when not using over a week.

4. Setting Shutter Speed First

After taking the reading with the exposure meter, set the desired shutter speed. 1/125 is recommended for all general photography, using a faster shutter speed for action photography and a slower shutter speed for dim light or special effects photography. Then set the proper EV number on the EV scale, this is done by adjusting the diaphragm lever.





5. Setting Diaphragm First

After taking the reading with the exposure meter set the desired F number using a smaller number for portrait photography and a larger number when overall sharpness is desired. Then set the proper EV number on the EV scale. This is done by adjusting the shutter speed lever.

- If in order to obtain the proper EV number the shutter speed lever stops in between shutter speed numbers, re-adjust to either speed and then make the necessary adjustment with the diaphragm lever to obtain the proper EV number.
- Since no intermediate value can be given for a shutter speed, it is recommended to set the shutter speed before the diaphragm.

6. Caution on Measuring

- When looking into the viewfinder you can see two circles in the center of the ground glass. The outer circle represents the exact acceptance area of the built-in CdS exposure meter. Therefore, when taking a meter reading, place the subject in this circle so you can obtain a proper reading. When taking close-up readings, simply point the meter window at the subject.
- A word of caution, when using filters. Most filters cut down the amount of light that passes through the lens. This requires a larger lens opening or slower shutter speed in order to compensate.

To utilize the exposure meter you simply adjust the ASA/DIN number to allow for the adjustment.

For example, when a filter with an exposure factor of 2X is used with ASA 100 film, the film speed to be set on the exposure meter is ASA 50. This is obtained by dividing the factor of 2 into 100. After removing the filter re-set the proper ASA number.

When shutter speed "B" is used, the figure indicated by the exposure meter cannot be used.

7. Exposure Value EV

Exposure value (EV) is the combination of shutter speed and diaphragm into a single figure. The following table shows the relations between EV scale and both shutter speed and diaphragm.

F. No.	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
F2.8	1	1/2	1/4	1/8	1/15	1/30	1/60	1/ /125	1/ /250	1/ /500						
4		1	1/2	1/4	1/8	1/15	1/30	1/60	1/125	1/ /250	1/ /500					
5.6			1-	1/2	1/4	1/8	1/15	1/30	1/60	1/ /125	1/ /250	1/ /500				
8				1	1/2	$\frac{1}{4}$	1/8	1/15	1/30	1/60	1/125	1/ /250	1/ /500			
11					1	1/2	1/4	1/8	1/15	1/30	1/60	1/ /125	1/ /250	1/ /500		
16						1	1/2	1/4	1/8	1/15	1/30	1/60	1/125	1/250	1/ /500	
22							1	1/2	1/4	1/8	1/15	1/30	1/60	1/ /125	1/ /250	1/ /500

The above table shows that brightness becomes twice or half as an EV changes by one, and that a variety of combinations between shutter speed and diaphragm can be made for a single EV.

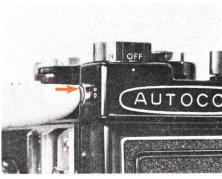
For example, when EV is 12 as against F.5.6, shutter speed can be changed from $\frac{1}{125}$ to $\frac{1}{60}$ by setting diaphragm at F.8. This means that when either shutter speed or diaphragm is changed by one graduation, the same EV can be obtained by shifting the other by one.

If, hovewer, the shutter speed window shows a figure below $\frac{1}{30}$, be sure to prevent camera movement by using a tripod.

8. Mercury Battery

The built-in CdS meter is activated by a mercury battery. The mercury battery has a special characteristic; the electricity voltage drop is not gradual but abrupt. Therefore, there is no false reading because of voltage decline of the mercury battery.

9. How to Use Battery Checker



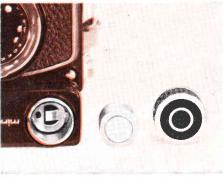
Turn the High-Low selector to the **off position**. Press the checker button (B.C.). If the exposure meter needle moves into the small silver area in the meter window, then the battery is still usable. If the needle does not move into the small silver area, then the battery should be replaced. The life of the battery under normal conditions is 15–18 months.

Replacement of Battery



The picture shows that the meter needle moves into the small silver area (battery check mark).





- 1. Turn the battery cover counter-clockwise until the cover is removed.
- Take out the old battery and replaplace with Eveready EIN or Mallory RM-1R or its equivalent. Make sure that the positive (+) side of the battery is facing up. If the battery is not put in properly, the meter will not register.

Holding the Camera

It is recommended to hold your camera with both hands and press it firmly high against your chest. Bring your subject into sharp focus, looking down through the viewfinder.





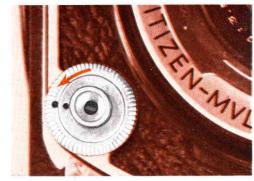
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Shutter Release Safety Lock and Time Exposure



If the dot on the outer ring of the shutter release button is matched with the dot mark (\cdot) on the inner ring, the shutter can not be released even when the button is pushed unintentionally.

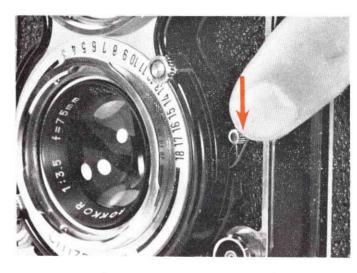
To make a time exposure, set the shutter speed at a B (bulb); press the shutter release button and while keep pressing it down, turn the outer ring 10 match



the two dots together. Now the shutter stays open. After the time exposure is completed turn the outer ring so that the dots are separated. Then the shutter will close down.

Never turn the film winding lever while the shutter release button is locked, as it will break the winding mechanism.

Self-timer



To use the self-timer, push down the self-timer lever. Press the shutter release button and the self-timer will be activated.

There is 10 seconds delay before the picture is taken. The self-timer can be operated for a shorter length of time if it is not push down completely.



Flash Photography





When available light is insufficient, you can still take pictures with flash. Mount the flash-gun on accessory shoe and connect the flash-gun cord to the syncro terminal.

X Contact: When the M-X selector is set to the mark 4, it becomes X contact point. It will synchronize with all shutter speeds when electronic flash unit is used.

M Contact: When the M-X selector is set to the Q mark, it becomes M contact point. It will synchronize with

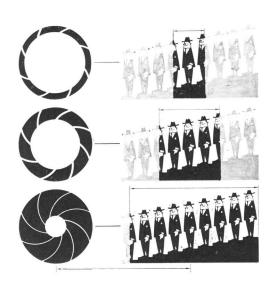
all speeds when M class bulb is used.

Depth-of-Field

When a lens is focussed on an object, all things the same distance from the lens as the object focused on will be brought into focus. At the same time, there exists a certain depth in focus both in front of and behind of the object. This depth is called the depth-of-field.

The depth-of-field is deeper on the far side of the object than on the near side. This depth is refered to as infinity (∞) . (See the Table of Depth-of-Field on page 39.) As shown in the following illustration, the smaller the aperture the deeper the range in focus.

1. Depth-of-Field Scale





When the distance to the object photographed is set on the mark the depth-of-field scale shows what depthof-field will be in focus in the photograph.

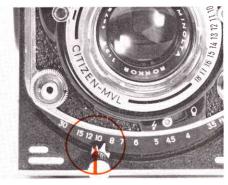
For instance, if the object is at a distance of 3 m. (10 ft.) turn the inner dial and match the figure 3 (10 ft.) with the arrow mark. The depth-of-field scale indicates that if the diaphragm is set at f 8 the zone within the distance indicators (pointed by f 8 symmetrically on both sides of the arrow mark) which is approximately 2.5 m. (8.3 ft.) to 4 m. (13 ft.) will be in focus.

2. Table of the Depth-of-Field (feet)

1 ft. = 0.3 m. 3.3 ft. = 1 m.

F No.	3.5		4		5.6		8		11		16		22		F No.	3.5		4		5.6		8		11		16		22	
.∞	110′ ∞		98′ 9″ ∞		69′ 11″ ∞		49′ 6″ ∞		35′ 1″ ∞		24′ 11″ ∞		17′ 8″ ∞		7	6' 7'	7" 5"	6' 7'	7" 6"	6' 7'	5" 8"	6'	3″ 0″	5' 8'	11"	5'	7" 5"	5'	2″
30	23' 40'		23' 42'		21' 51'	2" 10"	18' 74'		16′		13′ °		11'	 4″ o	6	5' 6'	9" 4"	5' 6'	8" 4"	5' 6'	7" 6"	5' 6'	5" 9"	5' 7'	3"	4' 7'			8" 8"
15	13' 17'	3″ 3″		1" 6"	12' 18'	-	11' 21'		10′ 25′	8″ 6″	9′ 36′	7″	8′ 87′	4" 9"	5	4' 5'	10" 2"	4' 5'	10" 3"	4' 5'	9" 4"	4' 5'	7" 6"	4' 5'	6" 8"	4' 6'	3"	4' 6'	8″
12	10′ 13′	11"			10'	4" 4"	9' 15'	9" 7"	9' 17'	1" 9"	8′ 22′	3″ 3″	7′ 34′	4" 8"	4.5	4' 4'	4" 8"	4' 4'	4" 8"	4' 4'	3" 9"	4' 4'	2" 10"	4' 5'	l"	3' 5'	11"	-	9" 9"
10	9' 10'	3″ 11″	9' 11'	2″	8' 11'	10″ 6″	8' 12'	_	7′ 13′	11″ 8″	7' 16'		6′ 21′	7" 8"	4	3' 4'	11"	3′ 4′	10″ 2″	3′ 4′	10"	3′ 4′	9″ 3″	3' 4'	8″ 5″.	3' 4'	_	1	5″ 11″
8	7' 8'	6" 7"		5" 8"	7' 8'	3″		5″	6' 10'	8″ 1″	6' 11'		5′ 13′	8″ 10″	l 3.5	3′ 3′	•	3′ 3′	5" 7"	3′ 3′	4″ 8″	3' 3'	4" 8"	3′ 3′	3″ 10″	3′ 3′	_	3′ 4′	2″

Infrared Ray Pointer

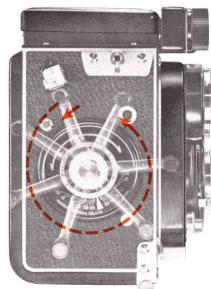


When taking pictures with the infrared films, the focusing distance should be adjusted. This adjustment can be easily be done by sliding the focusing knob slightly.

Focus first just as you take a normal picture. Then check the focusing distance at the scale (white pointer). Slide the focusing knob slightly and set the red pointer to the distance where the white pointer indicated first.

For example, if the distance is 10 feet (3 m), the white pointer indicate at 10 (3). Then slide the focusing lever and set the red pointer at 10 (3).

Intentional Double or Multi-Exposure



Attention

Press lever reverse button backward and turn the winding lever backward for one complete turn (counterclockwise, 360°). Then return the winding lever into the rack. The film stays in the same position and the shutter is rest. For triple exposure, repeat the same operation once more.

In case the camera is not used for long time after winding the film, put on the lens cap, and release the shutter. When you next take pictures, make a full turn of the crank in the reverse direction (as if you were making a double exposure) and the shutter is set without wasting any film.

Prevention of Double Exposure

When the shutter is released once, it cannot be released again unless the shutter is cocked by turning the winding lever either forward or backward (multi-exposure) and set back in to the rack. Also if the shutter is locked by the two dots safety locking device.

Accessories



Minolta Lens Hood



The lens hood prevents extraneous harmful light from entering the lens.

Minolta Filters



Filters are very useful throughout the year to capture color tones as they are seen with the naked eye. Filters are also useful for creating various effects.

A UV and a Yellow filters are available.

Minolta Close-up Lenses

For taking extreme close-up pictures supplementary lenses for close-up photography must be used. When a twin-lens reflex camera is used at short distances, parallax causes the image seen through the viewing lens to be slightly different from that seen by the taking lens. The parallax has to be corrected.

Minolta Close-up Lenses are sold in sets; parallax correcting prism, and two kinds of No. 1 and No. 2 are available.

When close-up lenses are used, focus is set by looking through the viewfinder as in ordinary photographing. No. 1 set enables to take close-up pictures at distances from 18.5 in. to 28.3 in. (47 cm. to 72 cm.); No. 2 set from 15 in. to 19.7 in. (38 cm. to 50 cm.).



Minolta Parajuster

The MinoIta Paradjuster is designed to eliminate parallax and is especially useful for taking close-up pictures.

The advantages of the Paradjuster

- The image reflected on the ground glass and that actually taken coincide perfectly.
- The depth of the object can be captured just as seen through the viewfinder.
- There is no worry about the occurence of light reflection in unexpected places.
- Pictures are free from the distortion that occurs in the case of prismatic adjustment.
- 5. A number of close-up lenses can be used by overlapping.



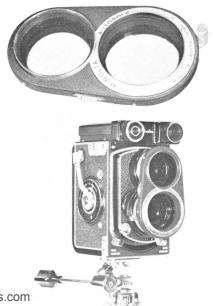


Minolta Autopole (Polarizing Filter)

There are some cases when it is extremely difficult to get good, clear pictures. For instance, objects in the show-windows and oil paintings present difficulties of reflection. In these cases, the Autopole enables the photographer to take sharp pictures of objects like this by subduing reflection from glass and other non-metalic surfaces. Also, if it is desired to darken a blue sky tone, the Autopole is used. As the Autopole has no effects on colors at all, it is usable for taking color pictures. The polarizing filters are applied to both the taking and viewing lenses and are geared with each other. Interesting pictures can be taken by adjusting their effects after they are put on the comera.

Applicable range:

- For eliminating or minimizing reflections from the surfaces of glass, water and non-metal.
- 2. For moderately darkening the blue sky tone.



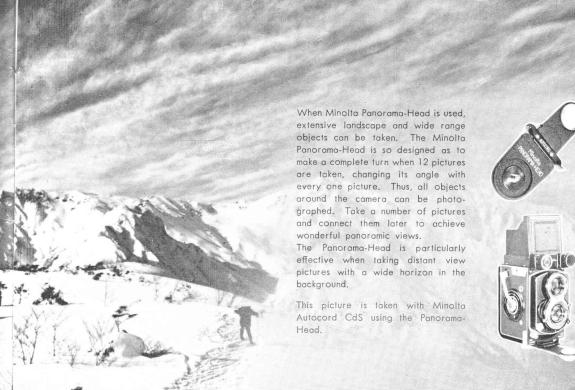


A picture taken without using the Autopole.

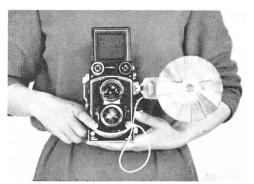


A picture taken using the Autopole.

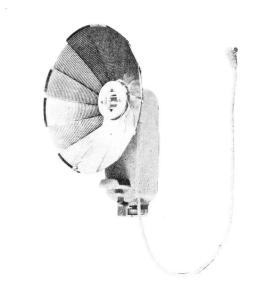




Minolta Flash Gun Deluxe-



Although small in size, it is highly efficient. Equipped with a checking system of flosh bulb, circuit, battery and exposure scale for proper picture taking. It enables even beginners to take flosh pictures without failure. Due to its adjustability to all angles, the illuminator can provide various shades of light. Also, because of its fan-shaped folding blades, the reflector shade is very handy and can even be carried in a pocket.







MINOLTA MEANS BETTER PICTURES



C-140000