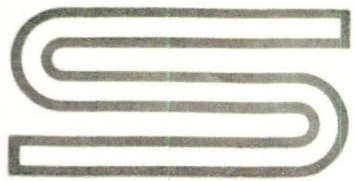


ARCO
ZOOM
S



Instruction Book



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ARCO PHOTO IND. CO., LTD.

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INTRODUCING ARCO-8 ZOOM S

The Arco Zoom S is a high quality camera equipped with a newly designed zoom lens. The fast $f/1.8$ zoom lens glides smoothly back and forth, creating not only sensational zooming effect but also various movie effects heretofore reserved for only users of a wide range of interchangeable lenses.

As the built-in exposure meter is coupled to the lens aperture and variable shutter, a novice can easily determine proper exposures in whatever lighting conditions.

Furthermore, by means of the variable shutter and film back-wind device, any cine enthusiasts can enjoy advanced professional 35 mm motion picture techniques.

SPECIFICATIONS

Type : Drop-in film loading, zoom lens camera

Measurement : 145×169×55 mm

Weight : 1250 g

FEATURES

Motor : 6 feet (1.8 meters) film run ; ratchet wind.

Filming Speeds : 8, 12, 16, 24, 32, 48, and single-frame.

Variable Shutter : Adjustable from 0° to 165° with equally spaced click stops ; coupled to exposure meter.

Film Footage Counter : Registers automatically unused portion of film.

Operating Lever : Three-stage shutter release (intermittent run, continuous run, and single frame) with release safety lock & cable release holder socket.

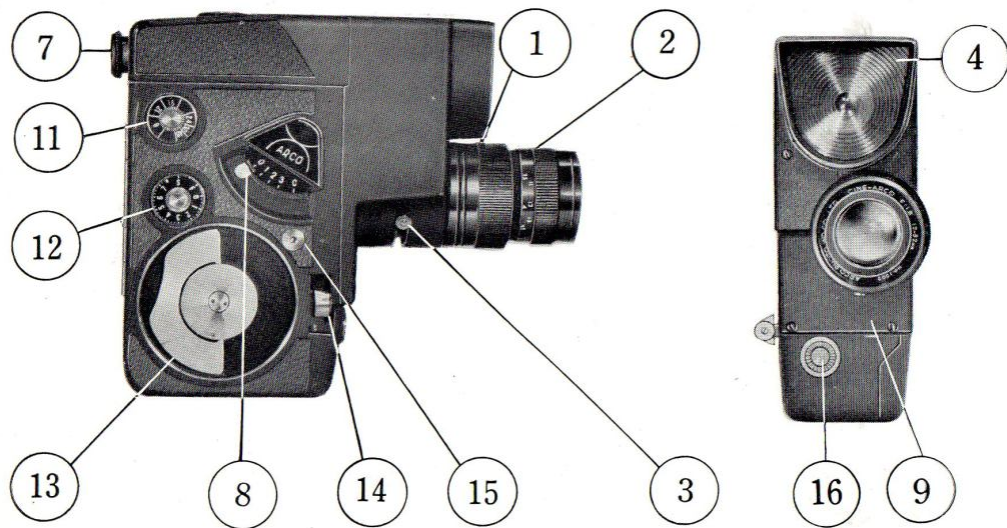
Lens : Zoom f/1.8 with variable focal lengths from 11.5 mm to 33 mm ; filter mount : 34 mm

Finder : Shows an unreversed image ; single-lens reflex system with dioptic adjustment.

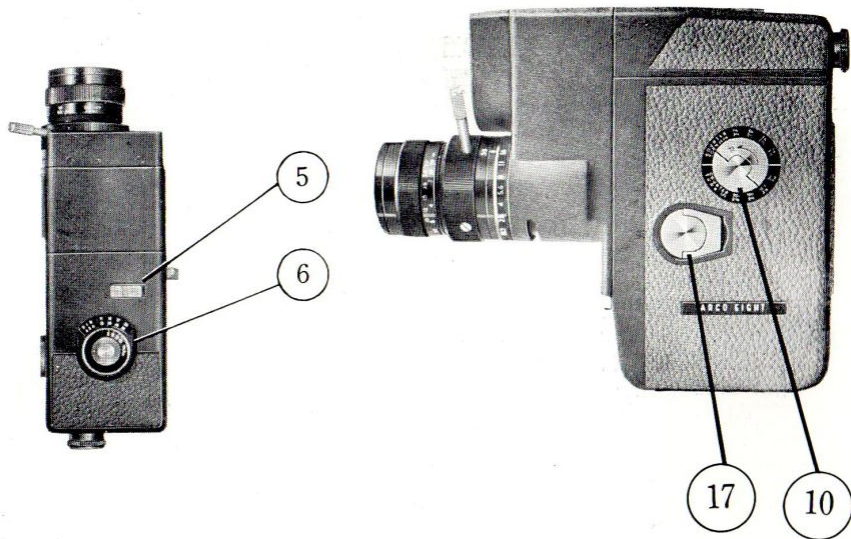
Exposure Meter : Coupled to lens aperture and variable shutter.

Film Rewind : Manual film rewinding device.

OUTLINE OF PARTS



- | | |
|------------------------|----------------------------|
| 1. Zoom Ring | 6. Exposure Index Dial |
| 2. Focusing Ring | 7. Finder Eyepiece |
| 3. Iris Diaphragm Ring | 8. Variable Shutter Lever |
| 4. Photo Cell Window | 9. Film Claw Release Lever |
| 5. Exposure Meter | 10. Rewinding Key |



- 11. Filming Speed Dial
- 12. Film Footage Counter
- 13. Winding Key
- 14. Operating Lever
- 15. Cable Release Holder Socket

- 16. Release Safety Lock
- 17. Cover Lock

FROM LOADING TO FILMING

A 8 mm Movie Film

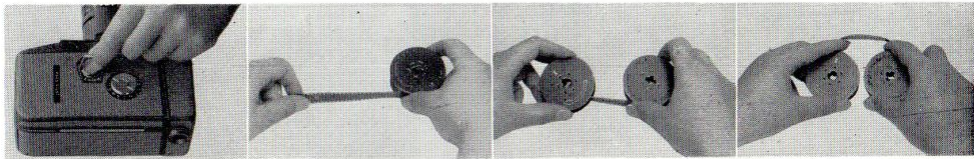
8 mm movie cameras utilize film measuring 16 mm in width. However, this film is not identical with that used in 16 mm movie cameras.

The film loading into 8 mm movie cameras is called double-eight film.

At first only half of the width of the film is exposed. When the first half of the film has been exposed, it is reloaded into the camera to expose the remaining half.

After the film has been developed, it is cut down the center and the two halves joined end to end. It is then ready for projection. An extra length of film is provided at each end of 25 feet as leader for loading and reloading.

B Film Loading



1.

Pull out the cover lock and a $O \leftrightarrow C$ is seen. Turn the lock in the direction of O and the camera will open.

2.

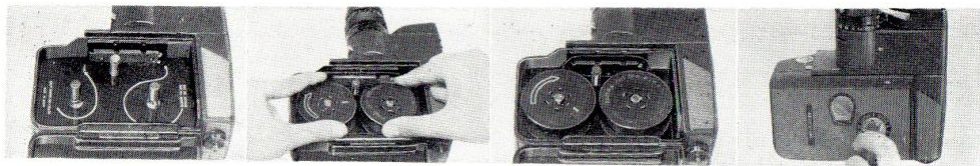
Hold the 4 notch side of the feed-spool upward and pull out about 1 foot (30 cm) of the film.

3.

Hold the 3 notch side upward of the empty take-up spool which was contained in the camera, fold the tip of the film slightly, slip it into the slit of the spool, and wind onto the spindle in the direction of the arrow.

4.

After the film is wound two or three times, push the film forward with your forefingers as shown in the photo.



5.

Inside the camera is shown the curved guiding arrows for proper loading.

6.

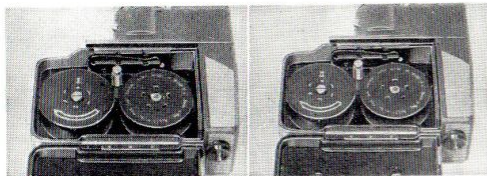
Holding the spools as shown in the photo insert the film between the pressure plate and aperture plate.

7.

After loading the film, check to ascertain if the spools are securely held by the spool studs, the film is wound properly onto the empty take-up spool spindle, and inserted properly between the the pressure plate and aperture plate.

8.

When everything is in order, close the cover securely and twist the lock into place.

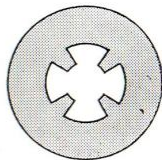
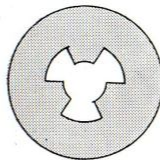


9.

When 25 feet (7.62 m) of film has been used, stop filming but keep running the film as far as F. Open the cover and take out the spools keeping the roll of film from becoming loose. Change the spools each other and reload the film exactly same as steps 2 to 7.

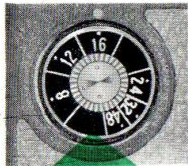
10.

As the spools are placed in the camera turned inside out, the figure 11 imprinted in yellow faces upward. The remaining half of 25 feet (7.62 m) is to be exposed.



Feed spool is placed with 3 notch side down and take-up spool, with 4 notch side down. If reversed, the spool will not fit on the spool stud.

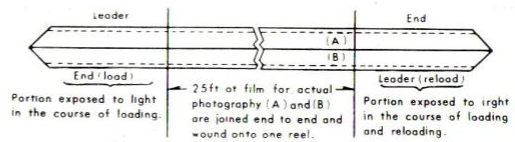
C Filming Speeds



The filming speed dial shows the rate of speed at which the film is transported in terms of frames per second.

The Arco Zoom S has six operating speeds : 8, 12, 16, 24, 32 and 48 frames per second. 16 f. p. s. would appear normal when projected on screen.

At 8 or 12 f. p. s. the action is speeded up on screen, while at 24, 32 or 48 the action is in slow motion. These speeds will come in handy when filming sports scenes as well as fast moving subjects.



D Film Footage counter



Set the indicator to S after the film is loaded.



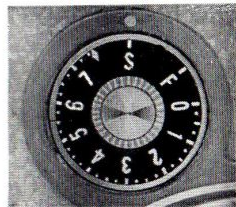
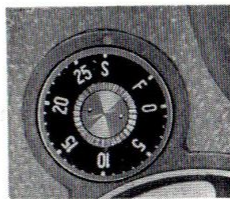
Press the operating lever and run the film until the counter indicates ♦.



When counter reaches 0, stop shooting.



Keep running the film as far as F and open the cover.



The footage counter automatically indicates the unused portion of film. A roll contains 25 feet (7.62m) of film plus few feet of leader and trailer to allow for loading and unloading loss. After loading the film, set the S mark to a red indicator on the body, lightly press the operating lever and run the film until the counter indicates ♦ (25 in feet scale). The leader, the first few feet of protective layer of film, has now been transported and unexposed film is behind the lens. When counter reaches 0, stop shooting scenes but keep running the film as far as F (finish). This is done to wind up the few feet of trailer which protects the exposed film during unloading.

Each 8 mm roll contains 50 feet of shooting length (25 feet, double width).

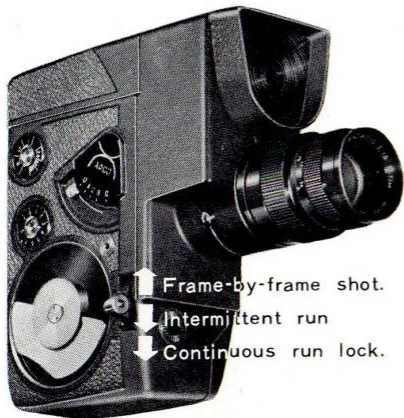
After the right half of the 25 feet has been used, the film is reloaded into the camera to expose the unused left half.

E Winding Key

The ratchet key enables you to wind the spring motor rapidly without changing your grip. Fully wound, the motor runs about 6 feet (1.8) of film which is approximately 30 seconds at 16 f. p. s. It would be advisable to get into the habit of keeping your camera fully wound after each scene for emergencies and long scenes.



F Operating Lever and Release Safety Lock

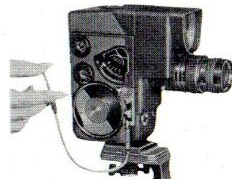
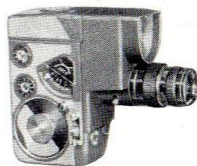
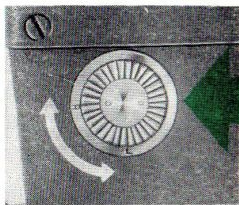


As shown in the photo, the spring motor operates when the operating lever is pressed down lightly. Pressing the lever all the way down causes it to lock until released by an upward pressure. Single frame exposures can be made by lifting the lever.

When using a self-timer or a cable release, the cable release holder can be attached to the camera by screwing it into its socket (see photo).

The Arco Zoom S has a release safety lock (see photo). Set L to a red dot, to lock the shutter. When not filming, lock the shutter to prevent motor from running accidentally.

Switch back to R to unlock.



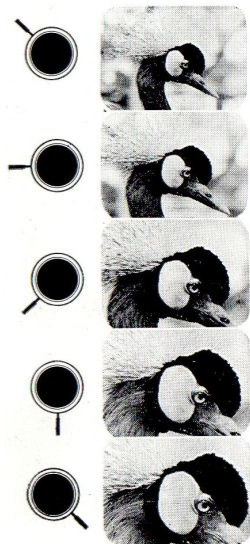
G Viewing Through Finder



Since the zoom lens has variable focal length from 11.5 mm to 33 mm, choice of any view within this zooming range is possible although the scales of focal length are inscribed on the zooming ring.

The view finder is a single-lens reflex type so that the parallax-free correct view can be obtained.

In addition to feasibility of an easy choice of the view, zooming as one of the movie techniques can be done (see Page 16, Zooming).



H Focusing

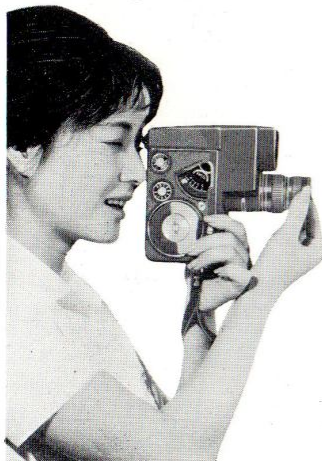
The finder of the Arco Zoom S is a single-lens reflex type as stated on the previous page, so focus is secured through the finder.

Since the focusing finder is provided with dioptic adjustment, correct dioptic adjustment should be secured prior to focusing. Look through the eyepiece pointing the camera toward the bright sky, and see the granules on the focusing glass. Then, turn the eyepiece till the granules are seen perfectly clear. When they are perfectly clear, the eyepiece is correctly adjusted to the individual sight.

After the dioptic adjustment is over, adjust the focus by turning the focusing ring on the foremost part of the lens barrel.

As the lenses mounted on 8 mm cine cameras have short focal length, depth of focus is very great and acceptably sharp focus can be made between focal lengths of 11.5 mm and 15 mm regardless of where the distance scale is set.

However, when the focal length extends over 20 mm, depth of focus becomes shallow and the subject appears blurred so that adjustment of the focus can be made with ease. Therefore, when focusing through the finder, the best way is to set the lens at the longest focal length (33 mm) first, adjust the focus, then move the lens back to the original position.



Out of Focus



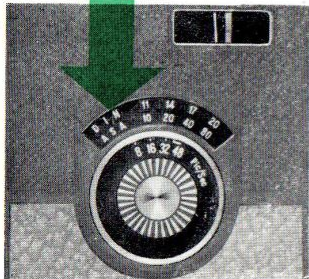
In Focus

Electric Exposure Meter

The Arco Zoom S has a built-in photo electric exposure meter which is coupled to the lens aperture and variable shutter. With this unique mechanism correct exposures can be secured with ease. The mechanism comprises the exposure index dial, variable shutter lever and iris diaphragm.

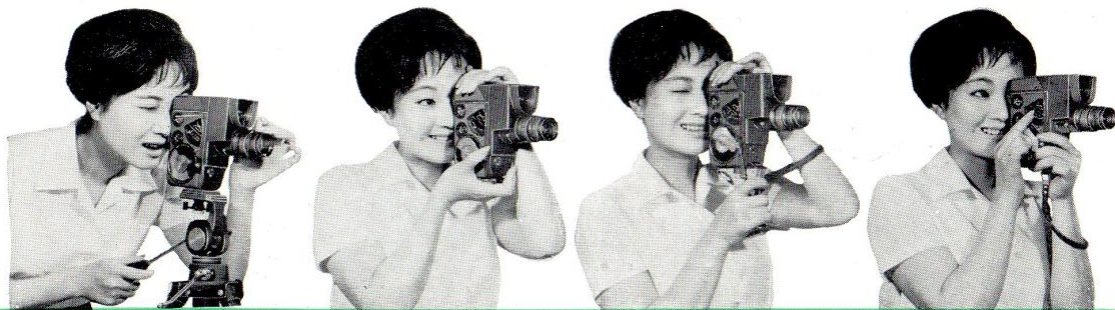
As a general procedure, first, turn the exposure index dial and set the filming speed (16 f. p. s. is used as standard) to the ASA (DIN) rating of the film, set the variable shutter lever at O then, point the camera toward the subject, move the iris diaphragm ring while looking at the exposure meter located on the top cover. When the red pointer of the meter aligns the index (green belt), the correct exposure is secured.

Thus, on normal occasions simple operation of turning the iris diaphragm ring suffices to determine the proper exposure, but the exposure can also be controlled by manipulating the variable shutter lever. The relation between the exposure and variable shutter and effect of the variable shutter are explained in Page, 17, Advantages of Variable Shutter and Zoom Lens.



J Hold Camera Firmly

As show in the photos, the camera should be held firmly with the left hand, while the right hand is used for pressing the release button, winding the spring motor, sliding the variable shutter lever, etc. Further, Arco gun-grip helps secure and steady the camera. But, in order to obtain good, stabilized shots the camera must be operated by mounting it on a tripod.



ADVANTAGES OF VARIABLE SHUTTER AND ZOOM LENS

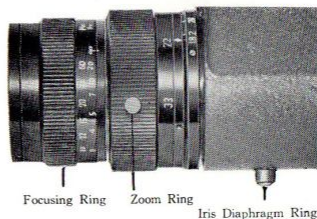
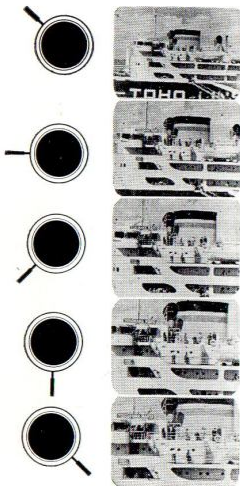
Zooming

The Zoom lens has characteristics in that choice of the view is at disposal also zooming adds a thrilling new dimension to 8 mm movies.

Zooming is used for giving dramatic effects to movies by continual change of focal lengths. For instance, whole view of a building can easily be zoomed in for close-up of a window.

For zooming hold a zoom lever and turn the zoom ring. This zoom lever can be removed and threaded into the other socket in the zoom ring, too. Regardless of the location of the lever, in a shooting position its counter-clockwise turn narrows the view and its clockwise turn widens the view.

As a dust-proof cap is provided for a socket, make sure of covering the socket with the cap whenever the zoom lever is removed.

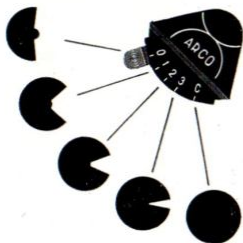


2 Variable Shutter

The Arco Eight camera is widely known as a unique 8 mm cine equipment featuring the variable shutter that only a few advanced 16 mm cine cameras are equipped with. **The variable shutter consists of two semi-circular plates.** Each shutter turns in the opposite direction and changes the slot angle as the variable shutter lever is slid, which serves in a similar way as that of focal plane shutter of a still camera, Ordinary 8 mm cameras have only one shutter and the shutter slot angle is fixed at around 165° which means the exposure is also fixed to approximately $1/35$ sec. at 16 f. p. s. However, the Arco Zoom S' variable shutter can provide four slot angles, giving $1/35$, $1/70$, $1/150$ and $1/300$ second just at 16 f. p. s. **So by changing the f. p. s. shutter speed can be adjusted to 24 different ways!** (See Variable Shutter Table). For fade-in and fade-out effect (see Page 21), depress the variable shutter lever to disengage the click stop and then slide it smoothly and lightly to O for fade-in and C for fade-out.

Further, since the variable shutter is coupled to the built-in photo electric exposure meter, the proper exposure can be obtained automatically by manipulating the variable shutter lever.

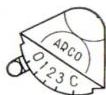
Advantages of the variable shutter are explained on the following pages.



“ Variable Shutter Table ”

Frames Per sec.	8	12	16	24	32	48
Shutter Angle						
0	1/17.5	1/25	1/35	1/50	1/70	1/100
1	1/35	1/50	1/70	1/100	1/150	1/200
2	1/70	1/100	1/150	1/200	1/300	1/400
3	1/150	1/200	1/300	1/400	1/600	1/800
C	Shutter is closed - No exposure					

3 Variable Shutter Eliminates Blurring of Images



As mentioned in the preceding section, 8 mm cameras featuring shutters with slot set at about 165° provide only a slow shutter speed of approximately $1/35$ second at a filming speed of 16 f. p. s. When shooting a fast-moving subject or a moving subject at close range, it is practically impossible to obtain good results at such a slow shutter speed. This deficiency can be eliminated by narrowing down the shutter slot angle and clear shots of fast-moving subjects can be made. The shutter slot angle should be adjusted in accordance with the movement of the subject.

In ordinary shots, it is advisable to set the lever to 1 ($1/70$ sec. at 16 f. p. s.). This shutter speed will effectively prevent blurring due to movement of the hand holding the camera.

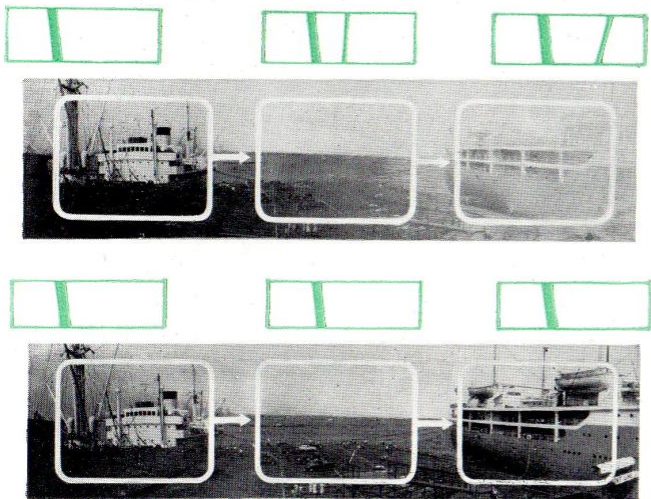
4 Variable Shutter Controls Exposure While Filming

When the camera is panned from a dark to a bright spot or vice versa, either one of the scenes has to be sacrificed. If the camera is adjusted to take a subject in a comparatively dark place, the sudden shift-over to a bright spot would spoil the picture.

However, the Arco Zoom S, by adjusting the variable shutter or iris diaphragm, completely solves this problem.

If the camera is panned from a dark to bright spot, set the variable shutter lever at 0 first, then determine the proper exposure by adjusting the iris diaphragm. (Presuming

the proper exposure is $f/5.6$) Next, point the camera to the bright spot and measure the difference of the exposure. If the proper exposure is produced by setting the variable shutter lever at 3, it is also obtained by setting the iris diaphragm at $f/16$. Therefore, the range to be adjusted during the panning covers three stops in terms of f/number or the variable shutter. Thus, the exposures can be controlled by adjusting either the variable shutter lever or iris diaphragm ring, however, general light conditions are favourable to using the variable shutter lever for controlling the bright subject and, the iris diaphragm ring, for the dark subject.



5 Variable Shutter Controls Exposure in Wide Range



Over-exposed even when lens opening is closed down to a minimum.



Use of dark filter produces excessive contrast.



Proper exposure is obtained through adjustment of shutter slot.

The variable shutter can be used for controlling exposures. In shooting pictures at the sea-side or skiground where the light is extremely strong, the film is liable to be over exposed even when the lens opening is closed to a minimum. In such cases, ND filters are generally used to control the exposure. With the Arco Zoom S, use of ND filters is unnecessary, thanks to the variable shutter. Close down iris diaphragm to $f/22$, slide the variable shutter lever from O toward 3 then the exposure pointer will meet the indicator on the way. Thus, the Arco Zoom S that is equipped with the exposure meter coupled to the variable shutter enables to control exposures in such a wide range that ordinary electric eye cameras cannot afford to.

6 Variable Shutter Provides Perfect Fades



A fade-in which gradually brightens the scene and a fade-out which gradually dims the scene are important motion picture techniques used frequently in all types of film.

The sliding of the variable shutter lever from O to C (Fade-out) and from C to O (Fade-in) will bring out this highly effective result. The lens aperture is so set that the proper exposure can be obtained at the slot angle of O or 1. Usually, fades should occupy a period of four seconds. The figures on the shutter slot scale being equally spaced, move the lever at an equal rate of speed.

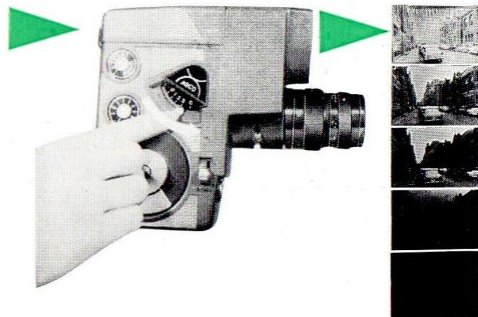
7 Film Rewinding and Overlapping

Overlapping (or dissolving) is a highly effective technique employed frequently in movies and this effect can be obtained by employing the fade-in and fade-out techniques.

Film rewinding is accomplished by means of the claw release lever and the rewinding key (see photo in the next page).

Prior to rewinding make sure to tighten the loose portion of the film, if any, by winding the rewinding key slowly. When it has been wound thoroughly onto the spool, one feels the kick in one's finger tips and the key becomes heavy. Under any circumstances do not over-wind the film or operate the key forcefully; otherwise, the perforations of the film will be torn.

Then, pull the claw release lever down to disengage the film claw. Next, raise up the rewinding key (letters 'RETRACT FILM CLAW' inscribed on the base of the key are used as reminder), the key inside the body bites the spool stud. Wind the key in the direction of arrow for necessary length of film. Since the length of film rewind by a single round of the key depends upon the length of film left onto the feed spool, its relation is indicated by the rewind guide table placed around the key. It shows how many rounds the key should be wound for reversing 30 cm (1ft.) of the film based upon remaining footage of the film. For instance, in case the film footage counter indicates around 5 m (15 ft.), 30 cm (1 ft.) of the film will be reversed when the key is wound 2-1/2 rounds.



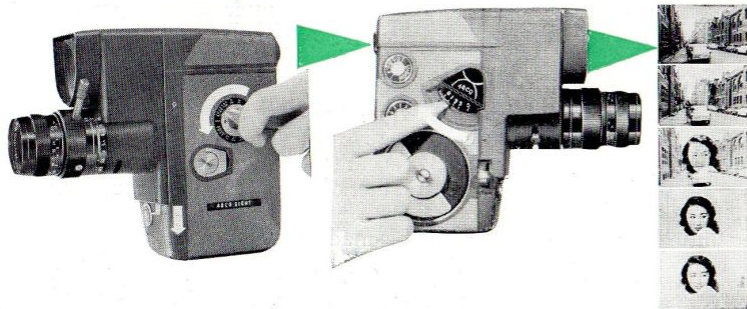
When the necessary length of the film has been rewound, **put the claw release lever and the rewinding key back to the original position without fail.**

Note:— In case the spring motor is completely unwound, the shutter plate often stays open and film gets exposed, so film should be rewound upon ascertaining that the spring motor has been wound.

Overlapping

Following is a general procedure for overlapping :

1. Fade out the end of one scene, the length of film transported during the fade-out (sliding the variable shutter lever from O to C) is 30 cm (1 ft.), that is, about 5 seconds.
2. Rewind film in accordance with the procedure described already.
3. Start with the next scene with a fade-in (sliding the variable shutter lever from C to O).



Although length (time) necessary to be overlapped is different depending upon the situation or the user's intention, generally, coverage of 0.6 foot (20 cm) is often used, so the speed of operating a fade-out or fade-in should be adjusted in accordance with the coverage of film to be overlapped.

Z

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ZOOM-S

FRAME-BY-FRAME SHOT

An effective trick shot to bloom a flower in a wink of 10 or 15 seconds can be made by means of frame-by-frame shot. Frame-by-frame shots are made by pushing the operating lever upward.

Since film is projected on the screen at 16 f. p. s., repetition of single frame shots 160 times makes a cut for 10 seconds, or 2 feet (0.6 meter) in terms of film length. **The shutter speed of single frame shots is around 1/27 sec. (shutter slot scale is O),** so determine the proper exposure accordingly.

However, the shutter speed varies when the opening of the shutter slot changes as follows:

<u>shutter slot scale</u>	<u>shutter speed</u>
1	approx. 1/55 sec.
2	" 1/110 sec.
3	" 1/220 sec.

In order to make a trick-shot to bloom a flower in 10 seconds, which it would take 3 hours from a bud to full bloom in natural course, continue to repeat 180 times frame-by-frame shots at an interval of one minute, then a cut for around 11 seconds will be made.

Titling or cartoon shots can be made by the same step.

For any frame-by-frame shots it is very important to figure out the number of frame to be filmed in a certain length of time based upon the pre-determined length of cut.

TABLE OF DEPTH OF FOCUS Meter

ARCO ZOOM 11.5m/m. P=0.0125m/m.

F. No.	1.8	2.8	4	5.6	8	11	16	22
R. Meter.	6.51~∞	4.20~∞	2.94~∞	2.11~∞	1.49~∞	1.09~∞	0.756~∞	0.557~∞
∞	3.99~∞	2.94~∞	2.27~∞	1.74~∞	1.30~∞	0.983~∞	0.705~∞	0.529~∞
10	2.86~22.5	2.31~∞	1.87~∞	1.50~∞	1.16~∞	0.903~∞	0.663~∞	0.50~∞
5	2.07~5.53	1.76~10.4	1.50~∞	1.25~∞	1.01~∞	0.809~∞	0.612~∞	0.477~∞
3	1.54~2.86	1.37~3.77	1.20~6.08	1.04~36.5	0.885~∞	0.716~∞	0.559~∞	0.444~∞
2	1.23~1.93	1.12~2.31	1.01~3.00	0.890~5.06	0.790~∞	0.643~∞	0.514~∞	0.416~∞
1.5	1.02~1.46	0.944~1.67	0.865~2.00	0.779~2.73	0.677~6.11	0.594~∞	0.477~∞	0.392~∞
1.2	0.872~1.17	0.815~1.30	0.756~1.49	0.690~1.85	0.610~2.94	0.534~11.7	0.443~∞	0.370~∞
1.0								

ARCO ZOOM 22m/m. P=0.0125m/m.

F. No.	1.8	2.8	4	5.6	8	11	16	22
R. Meter.	21.5~∞	13.9~∞	9.70~∞	6.94~∞	4.96~∞	3.54~∞	2.44~∞	1.77~∞
∞	6.79~18.3	5.78~24.6	4.91~∞	4.08~∞	3.26~∞	2.61~∞	1.96~∞	1.51~∞
10	4.07~6.52	3.68~7.83	3.31~10.3	2.91~18.0	2.47~∞	2.08~∞	1.64~∞	1.32~∞
5	2.64~3.49	2.47~3.83	2.30~4.94	2.10~5.28	1.96~7.83	1.63~10.8	1.35~∞	1.12~∞
3	1.83~2.20	1.75~2.33	1.56~2.51	1.56~2.90	1.42~3.38	1.28~4.56	1.10~11.0	0.947~∞
2	1.40~1.61	1.39~1.68	1.30~1.77	1.24~1.91	1.15~2.16	1.06~2.58	0.934~3.86	0.819~9.51
1.5	1.04~1.27	1.11~1.31	1.07~1.37	1.03~1.45	0.967~1.59	0.902~1.80	0.810~2.34	0.723~3.66
1.2								
1.0	0.957~1.05	0.935~1.08	0.909~1.11	0.877~1.16	0.833~1.25	0.784~1.38	0.715~1.68	0.646~2.29

ARCO ZOOM 33m/m. P=0.0125m/m.

F. No.	1.8	2.8	4	5.6	8	11	16	22
R. Meter.	44.1~∞	28.3~∞	19.8~∞	14.2~∞	9.91~∞	7.21~∞	4.95~∞	3.60~∞
∞	8.16~13.0	7.39~15.5	6.65~20.2	5.86~34.2	4.98~∞	4.19~∞	3.31~∞	2.64~∞
10	4.49~5.64	4.25~6.08	3.99~6.79	3.69~7.74	3.32~10.1	2.95~∞	2.48~∞	2.09~∞
5	2.81~3.22	2.71~3.35	2.60~3.53	2.42~3.81	2.30~4.30	2.11~5.14	1.85~7.62	1.63~18.0
3	1.91~2.10	1.87~2.15	1.81~2.23	1.75~2.33	1.66~2.51	1.56~2.77	1.42~3.37	1.28~4.52
2	1.45~1.55	1.42~1.58	1.39~1.62	1.35~1.68	1.30~1.77	1.24~1.90	1.15~2.16	1.05~2.58
1.5	1.17~1.23	1.15~1.25	1.13~1.28	1.10~1.31	1.07~1.37	1.03~1.44	0.963~1.90	0.897~1.81
1.2								
1.0	0.97~1.02	0.95~1.04	0.951~1.05	0.933~1.08	0.907~1.11	0.876~1.10	0.829~1.26	0.780~1.39

TABLE OF DEPTH OF FOCUS

Feet

ARCO ZOOM 11.5 m/m. P=0.0125 m/m.

F-No.	1.8	2.8	4	5.6	8	11	16	22
R. Feet								
∞	21.4 ~ ∞	13.3 ~ ∞	9.61 ~ ∞	6.93 ~ ∞	4.87 ~ ∞	3.57 ~ ∞	2.48 ~ ∞	1.83 ~ ∞
30	12.5 ~ ∞	9.47 ~ ∞	7.34 ~ ∞	5.65 ~ ∞	4.21 ~ ∞	3.21 ~ ∞	2.30 ~ ∞	1.73 ~ ∞
15	4.87 ~ 50.5	7.23 ~ ∞	5.92 ~ ∞	4.78 ~ ∞	3.71 ~ ∞	2.91 ~ ∞	2.15 ~ ∞	1.65 ~ ∞
10	6.88 ~ 18.9	5.85 ~ 26.9	4.97 ~ ∞	4.14 ~ ∞	3.32 ~ ∞	2.67 ~ ∞	2.02 ~ ∞	1.57 ~ ∞
7	5.22 ~ 10.4	4.69 ~ 14.2	4.11 ~ 25.3	3.53 ~ ∞	2.92 ~ ∞	2.40 ~ ∞	1.87 ~ ∞	1.48 ~ ∞
5	4.09 ~ 6.51	3.71 ~ 7.81	3.34 ~ 10.3	2.96 ~ 17.8	2.52 ~ ∞	2.13 ~ ∞	1.70 ~ ∞	1.37 ~ ∞
3.5	3.03 ~ 4.16	2.82 ~ 4.65	2.61 ~ 5.41	2.37 ~ 6.93	2.08 ~ 12.1	1.81 ~ 192.0	1.49 ~ ∞	1.24 ~ ∞

ARCO ZOOM 22 m/m. P=0.0125 m/m.

F-No.	1.8	2.8	4	5.6	8	11	16	22
R. Feet								
∞	70.7 ~ ∞	45.5 ~ ∞	31.8 ~ ∞	22.8 ~ ∞	15.9 ~ ∞	11.6 ~ ∞	7.99 ~ ∞	5.82 ~ ∞
30	21.1 ~ 52.2	18.1 ~ 88.4	15.5 ~ 530.0	13.0 ~ ∞	10.4 ~ ∞	8.39 ~ ∞	6.33 ~ ∞	4.89 ~ ∞
15	12.4 ~ 19.1	11.3 ~ 22.4	10.2 ~ 28.4	9.08 ~ 44.2	7.76 ~ 265.0	6.57 ~ ∞	5.24 ~ ∞	4.22 ~ ∞
10	8.75 ~ 11.6	8.20 ~ 12.8	7.61 ~ 14.5	6.95 ~ 17.4	6.16 ~ 26.5	5.39 ~ 70.7	4.46 ~ ∞	3.70 ~ ∞
7	6.36 ~ 7.74	6.05 ~ 8.24	5.74 ~ 8.92	5.36 ~ 10.0	4.87 ~ 12.4	4.38 ~ 17.4	3.75 ~ 64.9	3.29 ~ ∞
5	4.67 ~ 5.37	4.51 ~ 5.69	4.34 ~ 5.91	4.11 ~ 6.38	3.82 ~ 7.24	3.51 ~ 8.71	3.09 ~ 13.2	2.71 ~ 24.6
3.5	3.34 ~ 3.68	3.26 ~ 3.78	3.16 ~ 3.92	3.04 ~ 4.12	2.88 ~ 4.46	2.70 ~ 4.97	2.45 ~ 6.16	2.21 ~ 8.64

ARCO ZOOM 33 m/m. P=0.0125 m/m.

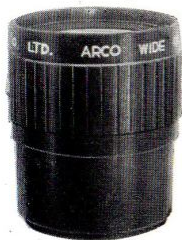
F-No.	1.8	2.8	4	5.6	8	11	16	22
R. Feet								
∞	145.0 ~ ∞	93.0 ~ ∞	65.1 ~ ∞	46.5 ~ ∞	32.5 ~ ∞	23.6 ~ ∞	16.2 ~ ∞	11.8 ~ ∞
30	24.9 ~ 38.0	22.7 ~ 44.6	20.6 ~ 56.1	18.3 ~ 85.6	15.6 ~ 407.0	13.2 ~ ∞	10.5 ~ ∞	8.47 ~ ∞
15	13.6 ~ 16.7	12.9 ~ 17.9	12.2 ~ 19.5	11.3 ~ 22.1	10.2 ~ 27.8	9.19 ~ 40.9	7.78 ~ 191.0	6.59 ~ ∞
10	9.34 ~ 10.7	9.07 ~ 11.2	8.65 ~ 11.8	8.21 ~ 12.7	7.63 ~ 14.4	7.01 ~ 17.3	5.94 ~ 28.0	5.40 ~ 65.1
7	6.69 ~ 7.36	6.51 ~ 7.58	6.32 ~ 7.85	6.08 ~ 8.25	5.75 ~ 8.94	5.39 ~ 9.97	4.88 ~ 12.3	4.38 ~ 17.3
5	4.80 ~ 5.18	4.74 ~ 5.29	4.64 ~ 5.42	4.51 ~ 5.61	4.33 ~ 5.92	4.12 ~ 6.36	3.81 ~ 7.25	3.50 ~ 8.72
3.5	3.41 ~ 3.59	3.37 ~ 3.64	3.22 ~ 3.79	3.23 ~ 3.79	3.15 ~ 3.93	3.04 ~ 4.12	2.87 ~ 4.47	2.69 ~ 5.00

ACCESSORIES

Filter

For colour film following kinds of filter are available at any time.

Skylight (L-1A) Amber (O-85A) Blue (B-80A)



Arco Wide Converter

The focal range of the Arco Zoom S is widened to cover 6.5 mm when the wide converter is attached to the lens. Since the magnification ratio of the focal length remains unchanged, it is very effective to zoom in and away in a wide view angle.

Movie Self-Timer

With the aid of a cable release holder, the self-timer can readily be mounted on the camera.

There are 13 seconds from start to operation.

Operating time is adjustable to four stages: 5, 10, 15, & 20 seconds.



Gun-Grip

The gun-grip aids greatly in holding the camera steady. The spring motor is operated by a unique device without the aid of a cable release.

CAUTIONS

The utmost care must be taken when handling any device, which incorporates a number of high-precision mechanisms.

The following precautions are to be taken when handling the Arco Zoom S.

1. Do not operate the camera at high speed of 32 and 48 f. p. s. when unloaded.
2. If the shutter release is tripped by mistake, let the motor run until it stops.
3. Do not subject the camera to any sudden change in temperature.
4. Should the lens surface become dirty, wipe the lens with gauze slightly dampened with alcohol of good quality.
5. Unwind the spring motor when the camera is to be left unused for any length of time.
6. If the camera is left unused, it is a good policy to examine it and test the mechanism from time to time.
7. Always keep the camera in a dry place.
8. Pay special heed to the preservation of the camera in the monsoon season.

May we congratulate you on having selected Arco-8 Zoom S as your favourite cine camera.

Your fine camera is the result of years of research and precision engineering. Arco technicians forever take pride in creating products with unequalled features—variable shutter coupled with electric exposure meter incorporated in the Arco-8 Zoom S is one such example.

Study the following pages carefully and master correct usage before actually filming. Then you will have all the satisfaction and thrill of capturing well composed scenes in natural colour or monochrome while applying the professional features of the Arco-8 Zoom S from your first attempt.



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