

# WILSONWERKS ARCHIVES

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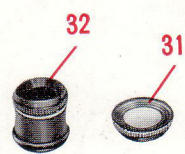
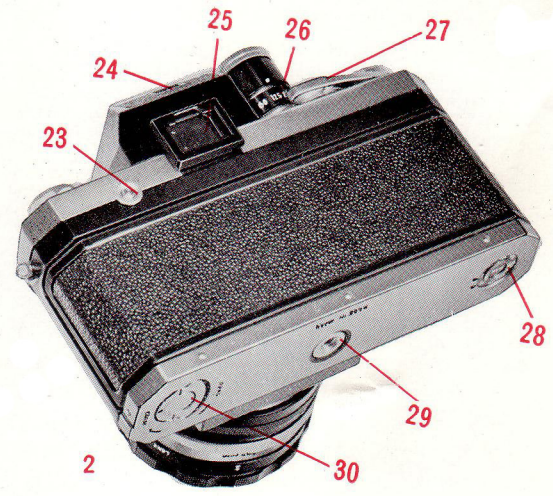
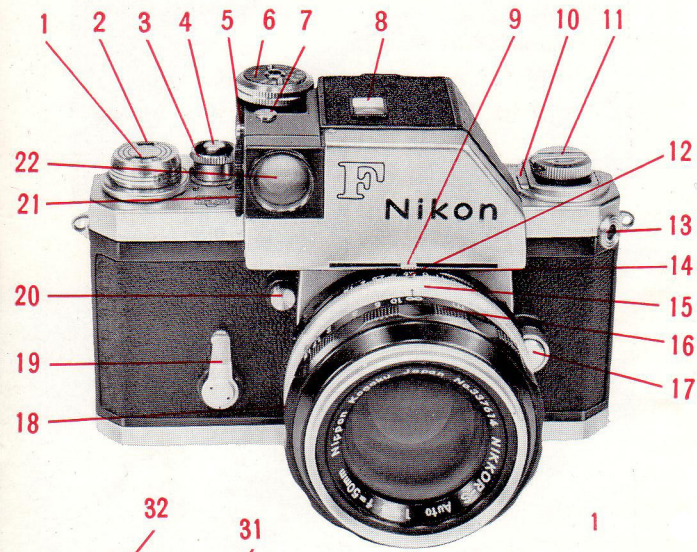
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A large, stylized, white letter 'F' is centered on a brown background. The 'F' has a thick, blocky appearance with rounded corners and a wide base. It is partially overlaid by the text 'Nikon' and 'Photomic'.

***Nikon***

*Photomic*

**INSTRUCTIONS**



## FRONT VIEW

1. Automatic exposure counter
2. Film load reminder
3. A-R ring for setting film advance (A) and film rewind (R)
4. Shutter release button (with screw thread for attaching cable release)
5. Meter switch-on button
6. Film speed (ASA) dial
7. Meter switch-off button
8. Meter's pointer needle
9. Coupling slider of Meter, and slotted coupling prong (behind here)
10. Accessory shoe
11. Film rewind crank
12. Aperture indicator dot
13. Terminal for flash and electronic flash
14. Lens aperture (F-number) preselect ring
15. Distance indicator with depth of field scale
16. Focusing ring with distance scale
17. Release button for removing lens
18. Mirror lock knob
19. Calibrated, dual purpose selftimer
20. Depth-of-field previewing button
21. Battery chamber lid
22. Light acceptance window

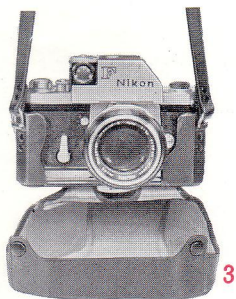
## REAR VIEW

23. Release button for detaching the Photomic Finder
24. Aperture marking window
25. Finder eyepiece window
26. Shutter speed selector
27. Single stroke film advance lever
28. Film speed (ASA) reminder dial
29. Tripod socket
30. Lock for removing and replacing camera back
31. Incident light opal plate
32. Acceptance angle converter

# CONTENTS

Front View .....	2	Making the Picture .....	21
Rear View .....	2	Holding the Camera .....	21
Eveready Case .....	5	Depth of Field .....	22
Caution .....	5	Depth of Field Preview Control .....	23
Loading the Camera .....	7	Infra-red Pictures .....	23
Automatic Exposure Counter .....	8	Self-timer .....	24
Film Load Reminder .....	8	Unloading the Camera .....	25
Film Type Reminder Dial .....	8	Double Exposure .....	25
Measuring Exposure .....	9	Locking the Mirror Up .....	26
Light Acceptance Angle .....	11	Removing the Meter .....	27
Light Acceptance Angle Converter .....	12	Flash Synchronization .....	28
Converter and Interchangeable Lenses .....	14	Changing Lenses .....	30
When Using Filter .....	16	Lens without Aperture Coupling .....	31
Mercury Battery .....	16	Interchangeable Lenses .....	32
Incident Light .....	17	Nikon Filters .....	34
Focusing .....	18	Lens Hoods .....	35
Interchangeable Viewfinder Screens .....	19	Film Cassette .....	36
Pre-selecting Automatic Lens Aperture .....	20	List of Accessories .....	38
Shutter Speed Setting .....	20	Care of Camera and Lens .....	39

## EVEREADY CASE



After putting the camera in the case (Fig. 3), fasten the locking screw nut found on the bottom.

This nut is threaded so that the camera can be attached to a tripod without removing the case.

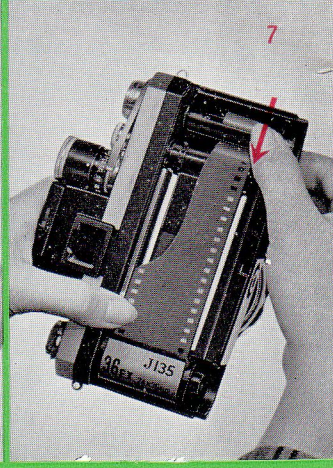
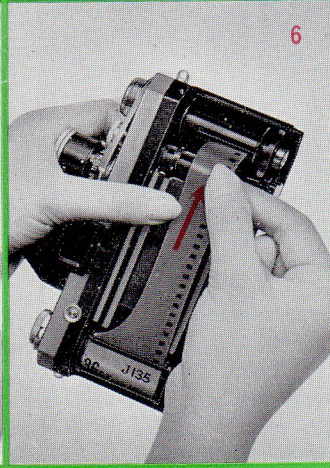
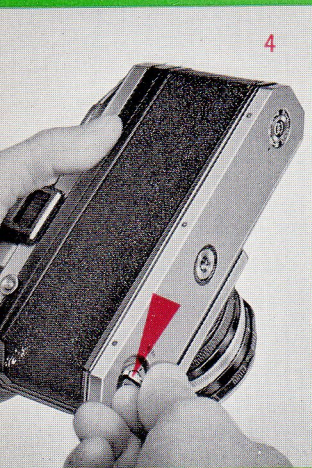
The eveready case permits the use of camera by simply detaching its snap-on front only.

A soft leather case is also available.

### CAUTION!

- When the camera is carried in the eveready case, be sure to fasten locking nut screw, fitted on the bottom of the case, so that the camera will not drop out.
- Don't exert any force against the shutter curtain of the camera, which is made of extremely thin titanium foils, as it may damage the curtain.
- When the camera is not in use, the shutter and self-timer should not be kept in a wound position for a long period.

## LOADING THE CAMERA



Turn the lock on the camera bottom to the "Open" position (Fig. 4). The camera back is then unlocked and may be completely removed by sliding off with thumb (Fig. 5).

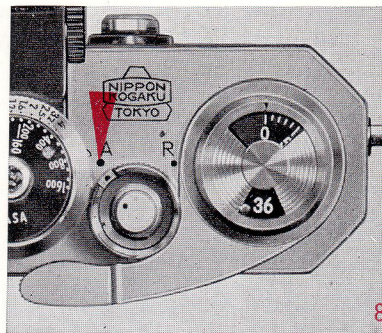
The take-up spool is fixed and cannot be taken out, assuring more uniform film take-up and easier film loading.

Place a film cartridge or loaded cassette (See p. 36) in the camera so that the projection of the cassette fits into the guide notch.

Insert the end of the leader of the film into the slot on the take-up spool (Fig. 6), so that the projection in the take-up slot catches the perforation of the film.

Rotate the spool in the direction of the film cartridge (Fig. 7) so that the film passes under the spool with the emulsion side faced out. Replace the camera back and lock it. Turn the A-R ring (Fig. 8) on the shutter release button to "A" (Advance) position\*, and shoot one or two "blank" exposures which will dispose of the portion of the film exposed during loading. While doing this, note that the rewinding knob rotates in the direction opposite to the arrow on the knob, indicating that the film is correctly loaded and is being advanced. If it does not move as indicated after the first "blank" exposure, gently wind in the direction of the arrow to take up the film slack in the cartridge.

\* It is important that the A-R ring on the shutter release button be turned to "A" before the "blank" shots are made.

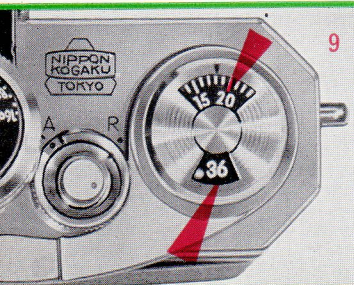




## AUTOMATIC EXPOSURE COUNTER

The Exposure Counter (Fig. 9) on the camera automatically returns to one or two spaces before zero when the camera back is removed.

After loading the camera, shoot two or three "blank" shots, until the counter registers 1. The camera is now ready for the first shot. Thereafter, the counter will automatically advance consecutively up to 36.



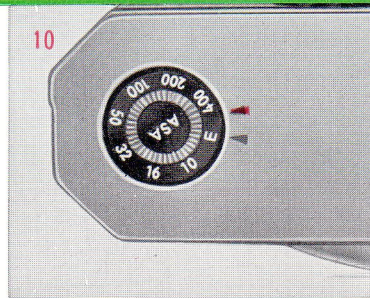
## FILM LOAD REMINDER

This feature indicates whether you have loaded a 20 or 36 exposure film. Move the indicator pin located to the left of "36" (Fig. 9) to change the indicator to "20"

## FILM-TYPE REMINDER DIAL

The Film-Type Reminder Dial (Fig. 10) on the bottom of the camera serves as a reminder of type of film (expressed speed in ASA), with which the camera is loaded. It can be set for either color or black-and-white film, using the red or black triangular index respectively.

"E" represents "Empty" and may be used to indicate that the camera is not loaded.



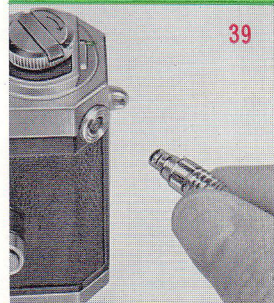
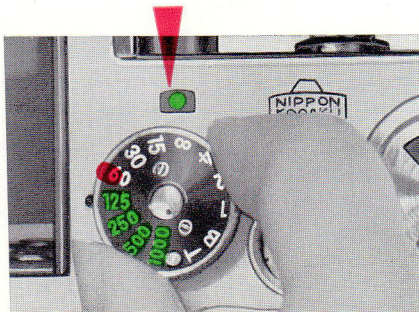
## FLASH SYNCHRONIZATION

The Nikon BC-5 Flash Unit is mounted on the accessory shoe of the Nikon by means of the coupler. Instantaneous connection is made with the flash terminal located on the coupler (Fig. 38), eliminating the need for a connecting cord.

On the front left side of the camera there is a synchronization terminal (Fig. 39) which accepts a regular flash unit (Nikon BC-6 with the coupler is recommended) or an electronic flash, provided with the European standard flash cord or the snap-in Nikon flash cords.

For positive synchronization, set the sync-selector according to the flash bulb and shutter speed used. See the table on the opposite page. To do this, remove the Meter from the top of the camera and lifting up the milled selector ring on the outer edge of the shutter speed dial (Fig. 40), turn it until the desired colored dot and/or figure appears in the selector window (Fig. 40) adjacent to the dial; then drop the ring into place.

By clockwise rotation of the selector ring the above markings come into view in the following sequence:



## Important!

- The shutter speed selector clicks at each marked setting. The shutter does not give an intermediate exposure time. Therefore, if the needle does not come exactly to the center at the moment the shutter speed selector click-stops, correct the deviation of the needle by slightly revolving the aperture ring of the lens. When the needle comes to the center at B-2 setting of the shutter speed selector, the correct exposure time will be 2 seconds. Therefore, depress the shutter button for 2 seconds at the B-2 position.

## Caution!

If the Meter is exposed at a low temperature (below 0°C) to bright light for a long time, the Meter will show a great error or even stop its function. This abnormal condition will naturally be rectified when the temperature rises again. Therefore, in the cold weather, take care not to leave the side button depressed longer than for 3 minutes at a time. Otherwise use of the acceptance converter is recommended.

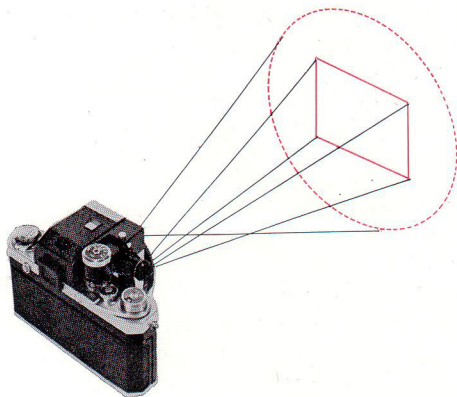
- If the Meter does not move or makes discontinuous jump it indicates that the lighting is not within the coupling range of the Meter. For example, when using the film of ASA 100, a brighter scene than 1/250 sec. F: 22 or a darker scene than 1/2 sec. F: 2 comes out of the coupling range. The coupling ranges of the Meter for different film speeds (ASA) are given below :

F-number	Shutter Speed (sec.)			With acceptance converter	
	ASA 50	ASA 100	ASA 200	ASA 50	ASA 100
1.4	1/2 ~ 1/1000	1/4 ~ 1/1000	1/8 ~ 1/1000	1/15 ~ 1/1000	1/30 ~ 1/1000
2	1 ~ 1/1000	1/2 ~ 1/1000	1/4 ~ 1/1000	1/8 ~ 1/1000	1/15 ~ 1/1000
2.8	2(B) ~ 1/1000	1 ~ 1/1000	1/2 ~ 1/1000	1/4 ~ 1/1000	1/8 ~ 1/1000
4	2(B) ~ 1/1000	2(B) ~ 1/1000	1 ~ 1/1000	1/2 ~ 1/1000	1/4 ~ 1/1000
5.6	2(B) ~ 1/1000	2(B) ~ 1/1000	2(B) ~ 1/1000	1 ~ 1/1000	1/2 ~ 1/1000
8	2(B) ~ 1/1000	2(B) ~ 1/1000	2(B) ~ 1/1000	2(B) ~ 1/1000	1 ~ 1/1000
11	2(B) ~ 1/500	2(B) ~ 1/1000	2(B) ~ 1/1000	2(B) ~ 1/1000	2(B) ~ 1/1000
16	2(B) ~ 1/250	2(B) ~ 1/500	2(B) ~ 1/1000	2(B) ~ 1/1000	2(B) ~ 1/1000
22	2(B) ~ 1/125	2(B) ~ 1/250	2(B) ~ 1/500	2(B) ~ 1/1000	2(B) ~ 1/1000

## LIGHT ACCEPTANCE ANGLE

The exposure meter measures the average brightness of the scene extending over the whole coverage of the Meter's light acceptance angle (shown by the circle of broken red line).

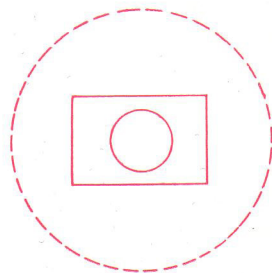
This angle is generally wider than the picture angle of the normal camera lens (shown by the rectangle of solid red line), so that there is a possibility of receiving the influence of the brightness or darkness surrounding the subject to be photographed, so far as such surroundings are included within the coverage of the Meter's angle, and as a result, an incorrect indication of the exposure meter may take place, which possibly causes an under- or over-exposed picture of the aimed subject on the film.



## LIGHT ACCEPTANCE ANGLE CONVERTER

The circle of broken red line in the figure (right) shows the coverage of the light acceptance angle of the Photomic Finder in relation to the picture angle, for example, of the 50 mm normal lens.

When using this lens, if the main subject to be photographed occupies a small area in the picture field and there is a fear of influences of the surrounding lighting, it will be desirable to reduce the Meter's effective angle to a spot just covering the subject.



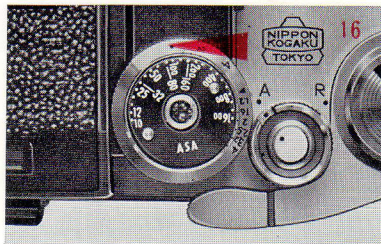
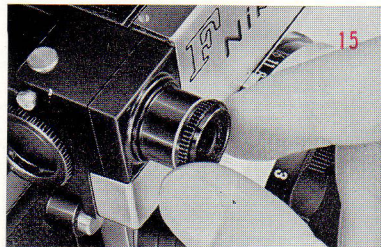
$f = 50 \text{ mm}$

The light acceptance angle converter, which is supplied attached on the lid of the mercury battery chamber of the Photomic Finder, is intended for such "spot reading" of the Meter. Only by screwing this converter tube on the front of the Meter's window, the Meter's angle will be reduced to such an extent as shown by a circle of red solid line in the figure when using the 50 mm normal lens.

**Note :**

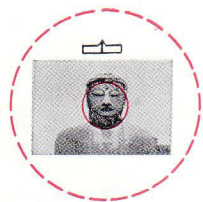
When using the light acceptance converter, it is necessary to rectify the film speed (ASA) setting by turning the film speed dial until the yellow circular dot instead of the black triangular indication comes opposite the ASA speed of the film being loaded.

When a filter is used in addition to the converter, the film speed is to be moved to the yellow film factor figure from the yellow circular dot mentioned above.

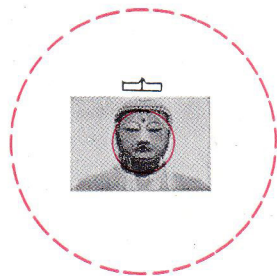


## CONVERTER AND INTERCHANGEABLE LENSES

The size of the image which is seen in the viewfinder and to be registered on the film varies with the focal length of the lens being used. As a result, depending upon whether a lens of longer or shorter focal length is used, the area covered by the light acceptance angle will be enlarged or reduced as against the whole viewfield area of the camera.



$f=35\text{ mm}$



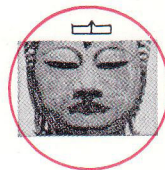
$f=50\text{ mm}$

The illustration below shows such a change of the converter's angle which is represented by a circle of solid red line for each picture angle of different lenses, for example, from 35 mm to 135 mm.

It is found that with the use of the lens of 135 mm focal length, the coverage of the converter nearly coincides with the picture angle of the lens.



$f=105$  mm



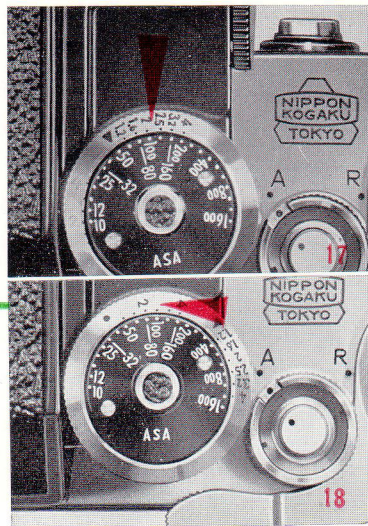
$f=135$  mm



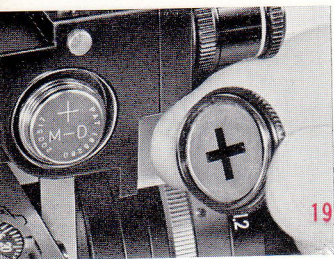
## WHEN USING FILTER

When a filter is used on the lens, the film speed (ASA) is to be set by the filter factor figure (Fig. 17) instead of the black triangular mark. For example, when a film with ASA 100 and a filter whose factor is 2 are used, turn the ASA dial until the figure 100 comes opposite the filter factor figure 2.

When using the converter in addition, bring the film speed to the filter factor figure in yellow (Fig. 18).



## MERCURY BATTERY



The mercury battery in the Meter will be usable over one year so far as proper caution is taken in using the Meter. To exchange the battery open the battery chamber by unscrewing the lid. Inserting a new battery into the chamber with the plus (+) side

turned outward, screw in the lid back with the inside plus (+) mark brought into contact with the battery (Fig. 19). The mercury battery to be used in the Meter is chosen from the following makes:

Mallory PX-13  
RM-625

Eveready E625  
G. E. No. 625

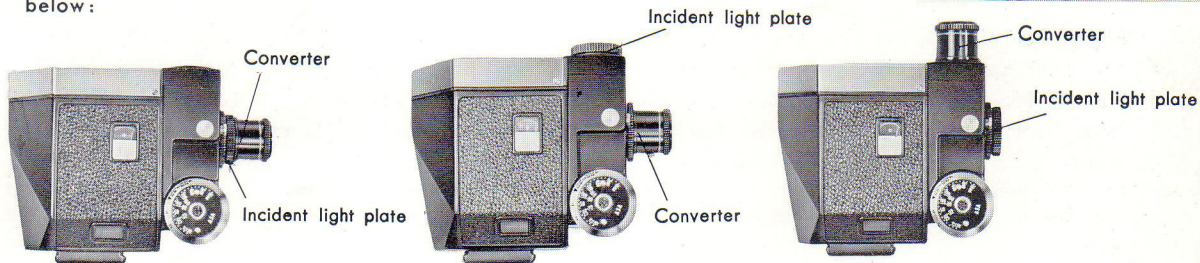
### Caution

- Avoid heating or throwing the battery into the fire.
- Never form a short circuit between the plus (+) and minus (-) sides of the battery.
- Don't dismantle the battery.
- Never try to recharge the battery.
- If your camera will not be used for a long time, it is advisable to remove the battery from the camera.

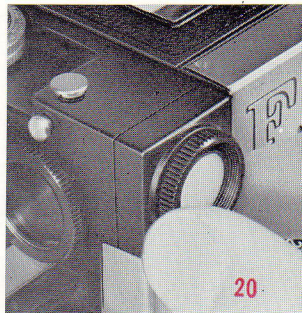
## INCIDENT LIGHT

Even though the Meter has primarily been designed to measure the reflecting light, it can also be used for measuring the incident light falling upon the subject to be photographed. For this purpose, attach the opal plate attachment (Fig. 20) on the front window of the Meter. Then take measurement from the subject towards the position at which the camera is to be placed. In other respects, the use of the Meter proceeds the same as for the reflecting light.

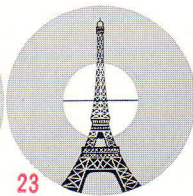
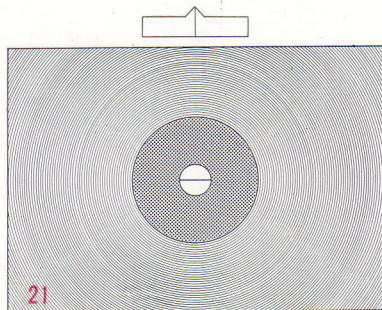
The converter and the incident light plate, when not used, can be attached by screwing one on the other to the outside of the mercury battery lid, as shown below:



Note: Simultaneous use of the converter and the incident light plate on the camera is meaningless.








## FOCUSING



If you look through the eyepiece of the viewfinder, you will see a Fresnel-lined finder field, enclosing a circular split-image rangefinder section in the center and an intermediate matte circle without the Fresnel lines (Fig. 21). When out of focus, the subjects are seen as a split-image (Fig. 22) in the center and at the same time are blurred in the remaining area of the finder screen. If a subject is in sharp focus, the split-image in the center becomes complete and continuous (Fig. 23) and the image appears sharp in the remaining area. To bring your subject into sharp focus, turn the focusing ring (Fig. 24) on the lens to the right or the left. To determine the exact distance from the camera to the subject on which you have focused, look at the figure on the distance scale, opposite the black indicator line.

The split-image coincidence serves advantageously so far as the lenses faster than  $F:4.5$  are used up to their closest focus distance. In the lens  $F:4.5$  or slower, or with the additional use of any close-up attachment, darkness of the split-image or inaccuracy of focusing may likely arise. Therefore, not the split-image but the surrounding matte portion of the screen is to be applied, or the replacement of the finder with another type without split-image (opposite page) is recommended.

## INTERCHANGEABLE VIEWFINDER SCREENS

Type	Designation	Features
A	Split-image 	Fresnel lines with matte surface. Split-image rangefinder in the clear center spot permits rapid and accurate focusing. Good for general use.
B	Matte-Fresnel 	Same as Type A, but does not have split-image circle. For general use including close-ups. Especially recommendable for works with Medical-Nikkor, Reflex-Nikkor 1000 mm F:6.3 etc.
C	Cross-hair 	Plain matte; clear center spot with cross hair etc. Focusing is performed by checking parallax between cross hair and subject images. For use in photomicrography and astrophotography.
D	Plain-matte 	Plain matte. Fine for situation in which Fresnel lines are also inappropriate. Uninterrupted, uniform finder image. Not recommended for normal and wideangle lenses, because of image shading off at the corners.
E	Checker board 	Same as Type B, but with etched fine "checker board" vertical and horizontal lines. Particularly good with PC-Nikkor for architectural and interior photography, as well as for reproduction work.

Five types (A-E) of view finder are available which are exchanged with each other to suit your convenience, i. e. depending on what type of lens is used and what subject is to be photographed.

To change the screen, first remove the viewfinder by depressing the finder lock button on the camera back (see p. 27). Then, depressing the lock button again, gently turn the camera upside down. The screen will drop into your hand.

To replace the other screen, depressing the lock button, insert the screen into the camera, facing the flat matte surface of the screen downward and the two notches found on the upper edge of the screen frame toward the rewind knob end of the camera.

### Caution

- Keep the screen surfaces free from dirt, finger marks, etc.
- Except the glass-made types C and D, the screens are made of acryl resin. Handle them with special care so as not to give scratches or warps.

## PRE-SELECTING AUTOMATIC LENS APERTURE

Turning the aperture ring (Fig. 25) on the lens barrel until the desired F-number is opposite the black indicator dot on the milled ring presets the aperture diaphragm. The diaphragm can be pre-set for intermediate openings—between markings—and it will still function automatically without disturbing the setting.

Interchangeable Nikkor-Auto lenses from 28 mm through 135 mm and other ones denoted as "Auto" are designed in such a way that the diaphragm automatically closes down to the pre-selected aperture when the shutter button is depressed. The diaphragm automatically reopens to full aperture immediately after the shutter has been released.



## SHUTTER SPEED SETTING

All click-stop shutter speed settings from 1 to 1/1000 sec. are on a selector (Fig. 26), which can be set before or after the shutter is wound. The setting is made by aligning the speed wanted with the white dot.

**Bulb exposure:** When set at B-2, the shutter will remain open for as long as the shutter release button is held depressed.

**Time exposure:** For this purpose the Meter is to be removed, and the shutter speed dial on the camera top is to be set at T. Depress the shutter release button, then the shutter will remain open even after your finger is removed from the button. To close the shutter, turn the dial to the right or the left.



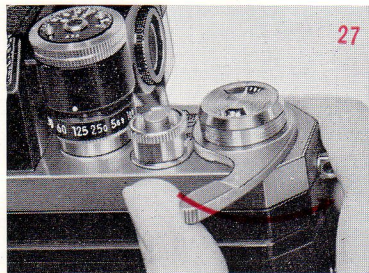
## MAKING THE PICTURE

With a single stroke of the advance lever (Fig. 27), the film is advanced, the shutter is wound, and the film counter operates. If the winding lever has not been wound completely, the shutter cannot be depressed. Wind it once more, this time, fully; then the shutter will operate correctly.

Now, focus by rotating the focusing ring, compose your picture in the view finder, and then shoot by gently depressing the shutter release button.

When the advance lever is released it will not swing back completely into position but will leave

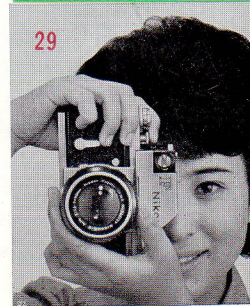
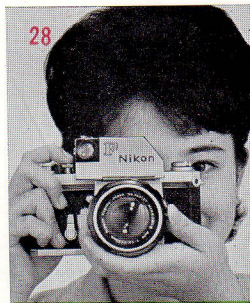
a small clearance for greater convenience in advancing the film for the next exposure.



## HOLDING THE CAMERA

Place your left hand under the camera with your thumb and forefinger on the focusing ring of the lens. Grasp the camera with your right hand, cradling the lower right-hand corner of the camera in the palm of your hand. Use your thumb to advance the film and your forefinger for the shutter release button.

For speeds slower than 1/30 second a tripod or some other support and a cable release should be used to avoid any possibility of jarring the camera.

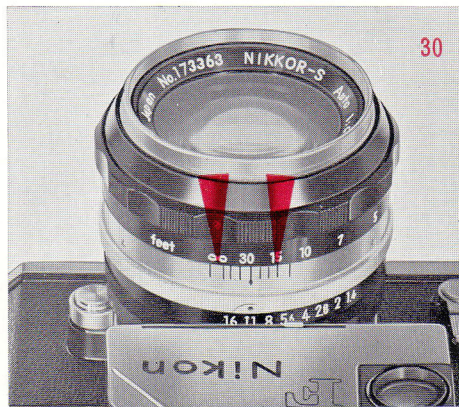


## DEPTH OF FIELD

Depth of Field is the range of distance between the nearest and the farthest limits of a subject, within which acceptable image sharpness is attained. The sharpest image is at the point at which the lens is focused. Depth of Field varies with the lens opening (F-number) and with the focused distance. The larger the F-number used, the greater the Depth of Field, in reverse, the smaller the F-number, the smaller the Depth of Field. Depth of Field also increases as the distance from the camera to subject increases.

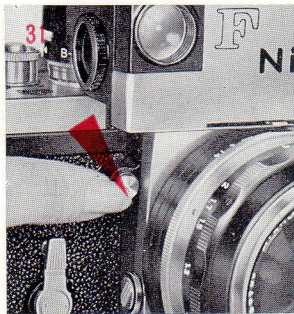
Almost all Nikkor lenses for the Nikon F have a color-coded depth of field scale engraved on the lens barrel opposite to the distance scale, permitting easy reading of Depth of Field for the selected aperture. Each set of differently colored lines, one to the right and one to the left of the middle black indicator line, represents a different F-number the color of which matches the colored F-number figure on the aperture scale.

For example, when you are taking a picture using the 50 mm F:1.4 lens, with the distance scale setting at 30 ft and with an F:11 opening (F:11 is shown in yellow), the depth of field indicated by the yellow colored lines on either side of the black indicator line will be between 15 ft and  $\infty$  (Fig. 30). This means that a picture taken at F:11, with a lens focused at 30 ft will show a range of acceptable sharpness between 15 ft and  $\infty$ . The sharpest point will be at the 30 ft.



## DEPTH OF FIELD PREVIEW CONTROL

The button located on the camera front (Fig. 31) is the instant-action preview control. Press the button and the diaphragm closes down to the aperture you selected. This permits you to see the depth of field (See Page 22) at "taking" aperture, or it permits you to select the "taking" aperture you want on the basis of depth of field.



Release the button and the diaphragm instantly reopens. The preview control is independent of the shutter release and cannot cause accidental exposure. When using the preview control note that the split-image portion of the finder will slightly darken when the preselected aperture is smaller than F: 4.5.

### Caution!

Do not release the shutter, while the Depth-of-Field Previewing Button is being depressed. This will cause the inside reflex mirror to remain in the "up" position. If this should happen make a blank exposure, and the mirror will return to normal viewing position.

## INFRA-RED PICTURES

When taking infra-red pictures the distance setting obtained by focusing on the screen has to be adjusted before shooting. This is done by rotating the lens slightly, until the focused point on the distance scale is changed to align with the red dot on the lens barrel.

For example (Fig. 32), the lens—in this case focused at infinity—has been rotated slightly so that the infinity marking  $\infty$  is now aligned with the red dot.





## SELF-TIMER

The calibrated, dual-purpose Self-Timer allows you to trip the shutter in approximately 3, 6, or 10 seconds, or any intermediate time delay. It can be set before or after winding the shutter.

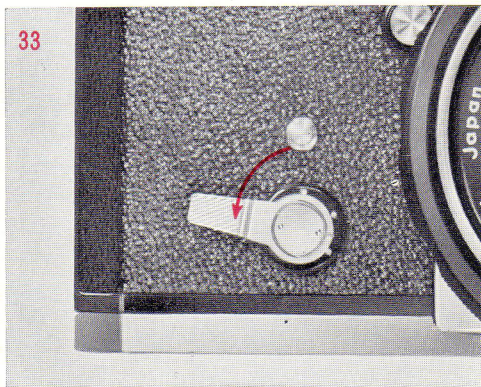
To set the Self-Timer, push the lever down (Fig. 33)\*. To start the timer, depress the release button beneath the lever. When the pre-determined time delay has elapsed, the shutter is automatically released. Setting the indicator line to the nearest white dot will give approximately 3 second delay; the next dot, approximately 6 second delay; and setting the lever to the third dot gives approximately 10 second delay. Note that the timer does not operate unless the lever is set to the first dot (or any position beyond this dot).

The Self-Timer is also an ingenious aid for hand-held exposure at slow shutter speed. Wind the shutter. Set the Self-Timer for 3 seconds. Press the release button, and then use the delay to steady the camera with both hands.

The Self-Timer should not be used for B-2 setting.

If you decide not to use the Self-Timer after it has been wound, take the picture at the speed you want, using the shutter button. Now depress the release button of the Self-Timer and let it "turn off"

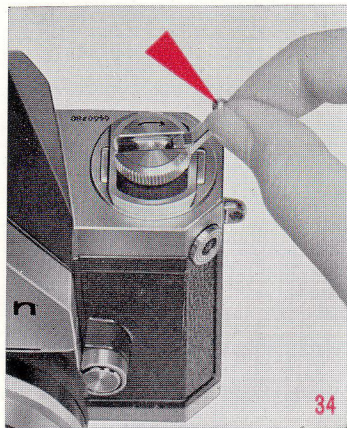
\*Once the lever has been set, it can be moved backward with no restraint.



## UNLOADING THE CAMERA

The exposed film must be rewound back into its original cartridge or film cassette. To rewind the film, turn the A-R ring on the shutter release button to the "R" (rewind) position, lift up the rapid rewind crank (Fig. 34) from its position on the rewind knob and turn it in the direction of the arrow.

As the film is being rewound, a slight resistance will be felt, and the black dot on the shutter release button will revolve. Keep on winding until the resistance stops and the dot stops its motion. The film is now completely in the cassette and the camera back may be opened to remove the film from the camera.



## DOUBLE EXPOSURE

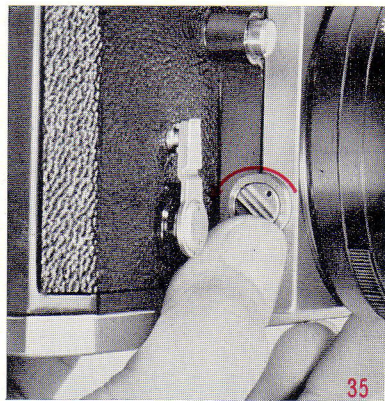
Here is the procedure to be followed in making an intentional double exposure. Make the first exposure. Then set the A-R ring around the shutter releasing button to "R". Turn the rewind knob in the direction of the arrow, until the shutter release button makes one complete rotation (or slightly more). This can be assured by the rotation of the black dot on the shutter button. Set the ring back to "A" and wind the shutter for the second exposure. It is not necessary to use the same shutter speed as before.

**Note:** The double exposure procedure also operates the automatic exposure counter, with the result that the counter number will read one or two more than the actual number of frames exposed.

## LOCKING THE MIRROR UP

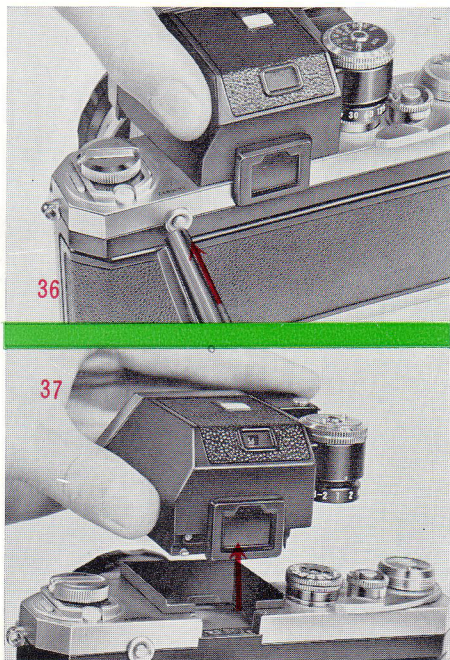
Locking up of the mirror inside the camera is necessary when using the 21 mm or Fish-Eye Nikkor (super wideangle) lens, because of its deep seated mount. It is also important for continuous shooting with the Nikon Electric Motor Drive, for a sequence of copying work or in photomicrography.

To lock the mirror in the "up" position, turn the button (Fig. 35) upward until the black dot on the button meets the red dot on the camera body. Wind the shutter and then shoot (a blank exposure is made). The reflex mirror will move up, out of the way, and will not return to position after the shutter has operated.



To return the mirror to its original focusing and viewing position, turn the button downward until the black dot on the button meets the black dot on the camera body. This should be done after the shutter is released. Otherwise, the mirror will not return to position until the next exposure is made. Note that if the knob is turned after the film advance lever is wound up, the mirror does not return until the shutter is released (a blank shot is made).

## REMOVING THE METER



To remove the Meter from the camera, pushing the viewfinder lock button located on the back of the camera by use of a pointed piece (Fig. 36), lift up the Meter (Fig. 37). To replace the Meter, put it back into position on the camera and press it down gently until a click is heard. Couple the Meter to the shutter speed dial of the camera and to the aperture ring of the lens in the following way: Set the camera's shutter speed dial to any speed except T, and set the aperture ring of the lens to 5.6. Bring the coupling slider on the bottom front of the Meter to the center so that the figure 5.6 is visible in the aperture window on the back of the Meter.

After fitting the Meter onto the camera, rotate the shutter speed selector of the Meter to right and left, until the selector settles in position on the camera's dial and can be rotated together with the dial.

Turn the aperture ring of the lens so that the slider on the bottom of the Meter fits to the slotted prong on the lens aperture ring.

The Meter can be interchanged with the waist-level or eye-level finder.

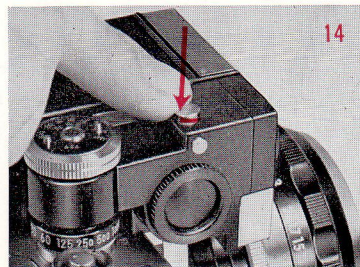
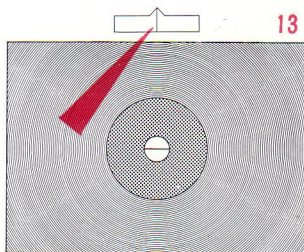
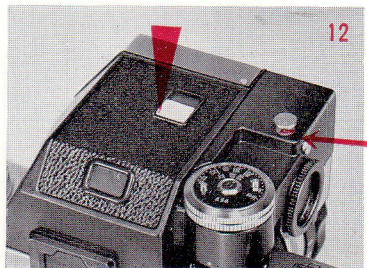
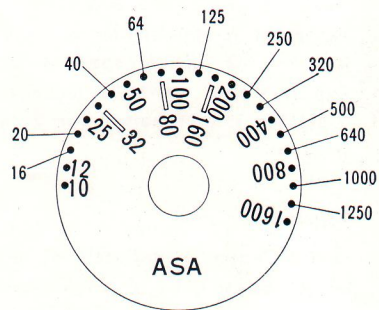
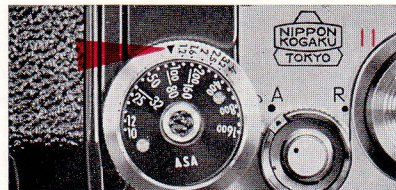
## MEASURING EXPOSURE

1. Set the film speed (ASA) of the film loaded by turning the two prongs on the top of the ASA dial of the Meter until ASA number comes opposite the black triangular index (Fig. 11) on the circumference.
2. Aim the lens at the subject to be photographed.
3. Depress the side button (Fig. 12) so that the top button pops up until a red line around this button comes in sight. The red line will serve to arouse your attention.

Rotate the shutter speed selector and/or the aperture ring of the lens, until the Meter's pointer needle in the outside top window (Fig. 12) or inside the viewfinder comes to the center (Fig. 13). Note that the needle moves in the same direction as the aperture ring and shutter speed rotates.

The camera is now ready for photographing the subject.

When the Meter is not used, depress the top button (Fig. 14) so that the side button pops up, to avoid unnecessary drain of the mercury battery.



Small FP, M or F class bulbs are recommended for use with the Nikon. When the small FP or M bulb is used, select the color dot that matches the colored numbers on the shutter speed dial. For example, a shutter speed shown in green will match with the green dot.

When using F class bulbs, the color of the "F" figure must coincide with the color of the shutter speed being used.

For setting the correct lens aperture, determine the "Guide Number" by use of the exposure calculator on the flash unit.

		Flash bulb				Shutter Speed										
Class	Make				1000	500	250	125	60	30	15	8	4	2	1	B
	G. E. Westing-house	Sylvania	Toshiba (Mazuda)	National (West)												
FP	No. 6	Type FP/26	No. 6 No. 6Z	No. 6 No. 6Z		●			●							
F	No. SM	Type SF	F 1 F 2 F 3	SM SF SS					●							F X
			Super Press	M 5		●			●							● F
M	No. 5 No. 8 M 5	Press-25	Super 3	No. 3												
		M 25	Super 5	Z-Press			●		●							● F
	M 2	Type M2	Super 0 Super 2M	No. 0 MX-0												● F
	AG 1	AG 1	US1													● F
X	Electronic, instantaneous firing															F X
	Electronic, with firing delay															

The table is applicable to the bulbs with additional mark B, which are used for color film of daylight type, for example, AG 1 B.

## Electronic Flash

Most electronic flashes are instantaneous, and have no firing delay. With electronic flash unit of this type, set the speed dial at 60 (or slower) and the sync-selector at FX, as shown in the above table. For units which have a firing delay, the shutter should be set at 30 or slower.

## CHANGING LENSES



### Caution!

When a lens is removed, the opening in the camera body should not be exposed to the sun, especially if the camera is loaded. Protect the inside of the camera by using a body cap, whenever the camera is carried or kept with the lens removed.

When the lens is carried separately from the camera, protect it from damage and dust by using a case and the front and rear caps.

To remove the lens, depress the lock button (Fig. 41) and turn the chrome-plated milled ring of the lens clockwise until the black dot on the milled ring lines up with the black dot on the camera body. To mount the lens, set the lens aperture to 16 and bring the coupling slider at the bottom of the Meter to the right end. Then, line up the black dot on the lens with the black dot on the camera body, press in gently and turn the lens counter-clockwise until the lens clicks into position. Be sure that the slider couples to the slotted prong on the lens aperture ring.

## LENS WITHOUT APERTURE COUPLING



Among the interchangeable lenses for the Nikon F camera, there are some not provided with a slotted coupling prong on their aperture ring. Such lenses are not denoted as "Auto"

When using such lenses on the camera with the Meter, move beforehand the slider on the bottom of the Meter so that the F-number to be used is visible in the aperture marking window on the back of the Meter.

Then, rotate the shutter selector until the needle of the Meter comes to the center.

In case a particular shutter speed is to be used, first set the shutter speed selector and while centering the Meter needle take reading of the F-number in the window, and then set the aperture ring of the lens to the value obtained.



## INTERCHANGEABLE LENSES

The following interchangeable lenses are available for Nikon F Photomic camera.

Telephoto lenses are furnished with their own hoods.

180, 250, 350 or 1000 mm lens requires use of the intermediate adapter collar (N-F).

\* Exclusively designed for each lens.

† Individual finder included.

‡ Speed is adjusted with an attachable (for 500 mm) or 3 built-in (for 1000 mm) neutral density filters.

◇ With close-up supplementary lens.

Type	Focal length	Aperture range	Picture angle	Closest focus distance	Aperture diaphragm	Exposure meter	Filter		Hood type
							Screw-in	Series	
Wide angle	21mm †	F/4-F/16	92°	90 cm or 3 ft			52mm		Screw-in*
	28mm	F/3.5~F/16	74°	60 cm or 2 ft	Auto	Couples	52mm		Screw-in*
	35mm	F/2.8~F/16	62°	30 cm or 1 ft	Auto	Couples	52mm		Screw-in*
Normal	50mm	F/2-F/16	46°	60 cm or 2 ft	Auto	Couples	52mm		Snap-on
	50mm	F/1.4~F/16	46°	60 cm or 2 ft	Auto	Couples	52mm		Snap-on
Telephoto	105mm	F/2.5~F/22	23° 20'	1.2m or 4 ft	Auto	Couples	52mm		Snap-on
	105mm	F/4-F/22	23° 20'	80 cm or 2.75 ft	Preset		34.5mm		Snap-on
	135mm	F/3.5~F/22	18°	1.5m or 5 ft	Auto	Couples	52mm		Snap-on
	180mm	F/2.5~F/32	13° 30'	2.1m or 7 ft	Preset			IX	Screw-in
	200mm	F/4-F/22	12° 20'	3m or 10 ft	Auto	Couples	52mm		Built-in
	250mm	F/4-F/32	10°	3m and 10 ft	Preset			IX	Screw-in
Reflex	500mm	F/5 †	5°	15m and 50 ft			39mm		Screw-in
	1000mm	F/6.3 †	2° 30'	30m and 100 ft			52mm		Slip-on
Zoom	43~86mm	F/3.5~F/22	53°~28° 30'	1.2m and 4 ft	Auto	Couples	52mm		Screw-in
Telephoto Zoom	85~250mm	F/4~F/16	28° 30'~10°	4m or 13ft (2.2m ◦ or 7.5 ft)	Auto	Couples		IX	Screw-in
	200~600mm	F/9.5~F/32	12° 20'~4° 10'	4m or 13ft (2.3m ◦ or 7.5 ft)	Auto			IX	Screw-in

Type	Focal length	Aperture range	Picture angle	Aperture dia-phragm	Focusing or repro. ratio range	Screw-in filter	Use
Nikkor	135mm	F/4 - F/22	18°	Preset	$\infty \sim 1\times$ (life size)	43mm	Used on the Bellows Focusing Attachment with BR-1 ring for continuous focusing from infinity up to 1x magnification.
PC-Nikkor	35mm	F/3.5 - F/32	62° (76°)	Preset	$\infty \sim 30\text{cm}$ or 1 ft.	52mm	With a device for shifting the lens axis around the picture center, enables avoiding the image convergence produced by unparallelism of lens to subject. Specifically designed for architectural photography, etc.
Fish-eye Nikkor	8mm	F/8 - F/22	180°		Fixed focus	Built-in	Covering extraordinarily wide picture angle, suitable for meteorological study and other special effects. Circular picture of 24 mm in dia.
Micro-Nikkor Auto	55mm	F/3.5 - F/32	43°	Auto	$\infty \sim 1\times$ (life size)	52mm	Permits continuous focusing from infinity up to 1/2 reproduction ratio. M-ring inserted, focusing up to 1x magnification is possible.
Medical Nikkor Auto	200mm	F/5.6 - F/45	12° 20'	Auto	1/15 ~ 3x		Speed light and focusing illumination are built in. 11 different magnifications obtained by selecting 6 auxiliary lenses.

## NIKON FILTERS

Nikon filters are precisely ground, polished optical flats, hard coated on both sides.

### Filter mount

They are supplied either in screw-in or Series type mount. Screw-in filters are used with the lenses from 21 mm through 135 mm. Series filters are used with lenses from 180 through 350 mm, which are furnished with screw-in type lens hoods. When the hood is not used, the filter can be attached to these lenses by means of the adapter ring and adapter ring insert.

### Filter size

Choose the correct size Nikon filter for your lens consulting the interchangeable lens table on p. 33 and 34. The use of Nikon filters is recommended as satisfactory results may not always be obtained with other makes of filters (possible vignetting, scratching of lens surface, etc).

### Filter factor

Filters reduce the amount of light transmitted, therefore an increase in exposure is necessary when using them. This increase is expressed as a factor. Thus, a filter with a factor 2 means that double the normal exposure is required; e. g. use 1/30 instead of 1/60 second, or alternatively change the aperture from, say, F: 8 to F: 5.6. Correct filter factors also depend upon color of lighting and color sensitivity of the film used.

Color and Shade		Denomination engraved on the filter	Filter Factors	
			Daylight	Artificial Light (Tungsten)
Yellow	Light	Y43, Y44, Y45	1.5	1
	Medium	Y47, Y48, Y49	1.7	1.2
	Dark	Y51, Y52, Y53	2	1.5
Orange		O55, O56, O57	3	2.5
Red		R59, R60, R61	6	
Green	Light	X0	2	1.7
	Dark	X1		2
Ultra-Violet		L38, L39, L40	1	1
Sky light		L1A	1	1
Neutral Density		ND8 ×	8	8
Polarizing		Polar	2~4	2~4

## LENS HOODS

The use of lens hood is recommendable at all times even when the lens is not turned toward the light, or where there is no stray light present. Two types—snap and screw-in—of lens hoods are available for Nikkor lenses (See page 33).

### Snap-on lens hood

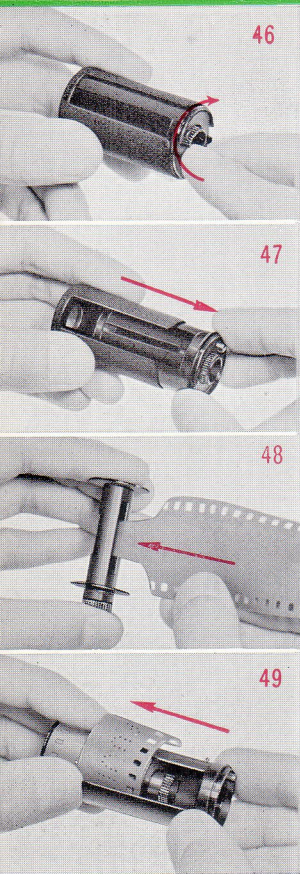
Snap on lens hoods combine "Slip-on" speed and "Screw-in" security. By depressing the button (one located on either side of the hood—Fig. 43), the hood is attached or detached. The hood will also fit directly over a screw-in filter, permitting use of both units with the lens at one time. The hood can also be "stored" in reverse position on the lens (Fig. 44).

### Screw-in lens hood

Screw-in hoods can be used with screw-in filters or Series filters. However, the screw-in filter is recommended since the hood, in combination with the Series filter, may not always give satisfactory results with wide angle lenses because of possible vignetting.



## FILM CASSETTE



The Nikon camera will accept any standard daylight loading cartridge containing a ready-cut length of 35 mm film. The Nikon cassette (or magazine) can be loaded with a ready-cut film length or fed from a stock of 35 mm. The cassette (Fig. 45) consists of outer and inner shells and a spool.

The figures on the bottom of the outer shell show ASA speeds and are used to indicate the speed of the film in the cassette. The white dot on the edge is the index. The black figures are for black and white film, and the red for color film. When the film has been exposed, the red dot index should replace the white.



OUTER SHELL



SPOOL



INNER SHELL

### To Open the Cassette

Hold the cassette in your left hand, with the bottom showing the ASA speeds away from you. Depress the small button with the right hand finger, and turn the inner shell of the cassette clockwise (Fig. 46) until the side openings of both shells meet and the inner shell simultaneously pops out slightly, ready to be pulled out (Fig. 47).

## To Load the Cassette (In the dark room)

Trim the end of the film so as to form a tongue to be fed into the spool. This must not be made too wide for it has to be pulled out at the other side of the spool slit when the film has been exposed and cut away. To load the spool, first hold it in your left hand with the projecting end toward you. Thread the film tongue with the right hand (Fig. 48), emulsion surface downward, through the large opening of the slot in the spool. When the teeth inside grip the film, wind the film on the spool (emulsion surface in).

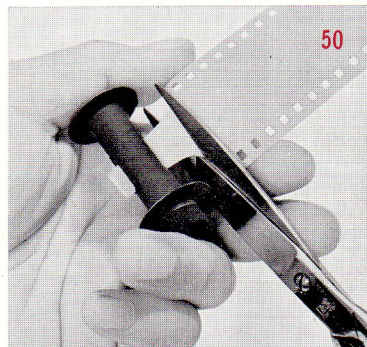
Insert the loaded spool into inner shell, so that the projecting end fits the opening at the opposite end. Then hold the outer shell in your left hand and slide it over the inner shell. Be sure that the film end extends out of the outer shell (Fig. 49).

Push the top of the inner shell until it seats. Then, turn it counterclockwise within the outer shell until you hear two clicks. The cassette has now been loaded, and is perfectly light tight, and is ready to be placed in the film chamber of the camera.

## To Unload the Cassette (In the dark room)

The loaded cassette should be opened as described above, the spool taken out, the film unrolled and cut off at the spool (Fig. 50).

The film remaining in the slot should be pulled out in the opposite direction from which it was inserted.



## LIST OF ACCESSORIES FOR NIKON F PHOTOMIC

- Electric Motor Drive Model F-36
- Electric Motor Drive Model F-250
- Battery case for Nikon Motor Drive
- Relay box for use with Nikon Motor Drive
- Wireless control for Nikon Motor Drive
- Flash unit BC-5
- Flash unit BC-6
- Flash gun coupler
- Electronic flash unit for Nikon Motor Drive
- Nikon bellows focusing attachment
- Slide copying adapter for the above
- Nikon extension tubes
- Close-up attachment lenses
- Microscope adapter
- Microflex for taking photomicrograph
- Telescope adapter
- Repro kit model PF
- Panorama head
- Bubble level
- Focusing adapter for 135 mm lens in Nikon S or screw mount
- Viewfinder correction lenses
- Lens front cap
- Camera body cap
- Battery checker Bulk film loader
- Pistol grip
- Electrical switch unit
- Eveready cases
- Nikon compartment cases
- Eye-level viewfinder
- Waist-level viewfinder
- Interchangeable viewfinder screens
  - A. Split-image Fresnel
  - B. Matte Fresnel
  - C. Cross hair matte
  - D. Plain matte
  - E. Fresnel matte with checker-board lines
- N-F adapter tube for using Nikkor long focus lenses on the Nikon F camera
- BR-1 tube for use Nikkor 135 mm F:4 in short mount on the Bellows
- BR-2 ring for using the lens in the reversed position on the Bellows
- Filters
- Lens hoods
- Film cassette
- Cable release
- Finder eyepiece correction lenses

## CARE OF CAMERA AND LENS

The exterior of the camera body should be cleaned with a piece of soft linen.

To clean the inside use a soft hair brush or a handblower with care. Do not use frayed cloth. Keep the film pressure plate clean.

To clean lens and reflex mirror surfaces, first remove dust with a feather or handblower, and then use soft washed-out linen or lens tissue.

When cleaning the mirror surface, be careful not to apply too much pressure.

Alcohol should be used sparingly for cleaning the lens surfaces; otherwise it may reach the balsam layer and impair the quality of the lens.

Don't oil the camera mechanism. The Factory used special oil which can not be mixed with ordinary oil.

Do not try to dismantle the lens. If there is any question concerning your equipment, refer to your Dealer or to the Manufacturer.

Do not lose the guarantee card which bears serial numbers of the camera and lens. It is also advisable to keep a record of these serial numbers in the event that you lose the camera or lens.

6549675	CAMERA BODY
390390	NIKKOR S 50 mm. LENS f:1.4





**NIPPON KOGAKU K. K.**

**Tokyo, Japan**

Printed in Japan

(64. I. AO) B