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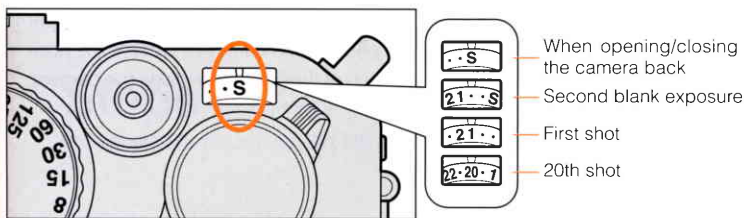


**[back to my "Orphancameras" manuals /flash and light meter site](#)**

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

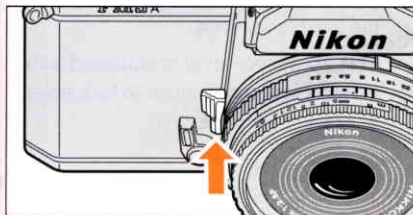
**The large manuals are split only for easy download size.**

# Frame Counter



- ... The frame counter has indications of S, 1, 2, 4, 6, etc., up to 36 in even numbers. Frames of odd numbers are indicated by dots between the even numbers.
- ... The counter stops at 36. However, film will be advanced up to the actual end of the film roll.
- ... Even if there is no film in the camera, the frame counter is operative and advances by a single frame every time you wind the advance lever.
- ... The frame counter is automatically reset to "S" when the camera back is opened.

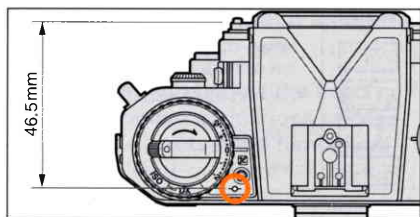
## Depth of Field Preview Lever




- When you press the depth of field preview lever toward the camera body, the lens is stopped down to the specified aperture setting, enabling you to check the depth of field through the viewfinder.

- ... When checking the depth of field with an Ai-type lens attached to the camera, press the depth of field preview lever fully. Release the lever before you shoot.
- ... When you press the lever, the image in the viewfinder is darkened according to the specified lens aperture.

# Film-Plane Indicator

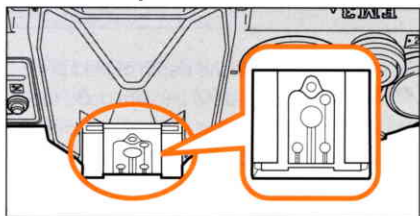


- The  mark shown on the upper panel of the camera indicates the position of the film plane inside the camera.

- ... This film-plane indicator can be used as the measurement standard when you must know the actual camera-to-subject distance (e.g., in close-up photography).
- ... The exact distance from the lens-mounting flange to the film plane is 46.5mm.

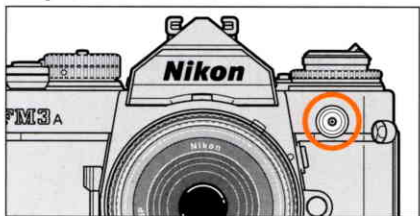
## Accessory Shoe and Sync-Cord Terminal

### ■ Accessory Shoe



- A Nikon cordless-type speedlight can only be connected by attaching it to the accessory shoe.
- This accessory shoe is equipped with a safety lock mechanism (a lock hole) to prevent slippage.

### ■ Sync-Cord Terminal



- This camera has a sync-cord terminal (with a screw to prevent slippage). To use a sync-cord, connect it to this sync-cord terminal ("X" contact only available as sync contact).

# Steps of Advanced Photography

With the convenient features of Auto Exposure mode, you can obtain great results with easy shooting. However, we hope you will also learn more advanced photographic techniques to take full advantage of the wonderful capabilities of your Nikon FM3A camera.

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# Flash Photography

Flash photography is not only useful when shooting in a dark place. Even in daylight shooting, it is sometimes useful to use the flash for supplementary lighting to increase the shooting range, such as when the subject is too dark because of rear lighting or a bright background.

## ■ Applicable speedlight and shooting situation

Speedlight model	Valid shooting modes			Connection method
	TTL flash	Non-TTL (external) auto flash	Manual flash	
SB-28/28DX, SB-27, SB-26, SB-25, SB-24	yes	yes	yes	Cordless
SB-50DX, SB-29, SB-23, SB-21B	yes	no	yes	Cordless
SB-22/22S, SB-20, SB-16B, SB-15	yes	yes	yes	Cordless
SB-11, SB-14, SB-140	yes	yes	yes	*1, *2

\*1 TTL Auto Flash is possible with TTL Remote Cord SC-23.

\*2 When you shoot in "A" or "M" mode on the speedlight:

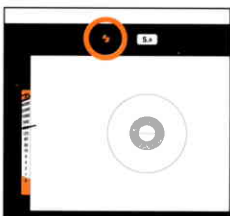
- use the SU-2 in combination with the SC-13 to connect the SB-11 or SB-14.
- use the SU-3 in combination with the SC-13 to connect the SB-140.
- use the AS-15 in combination with the SC-11 or SC-15 to connect the SB-140.



If the speedlight flash battery power is low or exhausted, the ready light on the speedlight flash turns on earlier than that in the viewfinder. In this case, replace the speedlight flash batteries with new ones.

## ■ Ready Light flash status

The ready light is built into the viewfinder and enables you to check the status of the speedlight while looking through the viewfinder.



**Lit:**



The ready light turns on when the speedlight is fully charged and ready to flash.

...The ready light does not light in Bulb mode or if the camera's battery power is fully exhausted.

**Blink:**



After taking a picture, the ready light blinks for approx. 3 seconds as a warning if underexposure is likely with the full-flash output of the speedlight. In this case, shoot again after checking the focus distance, aperture setting, range of flash shooting distance, etc.

...The ready light will also blink as a warning if the shutter speed is set between 1/500 and 1/4000 second. Select a shutter speed below 1/250 second.

## ■ TTL flash

With the TTL flash system, the camera measures the flash of a speedlight reflected from the subject to obtain the proper level of flash illumination.

## ■ TTL flash-exposure compensation

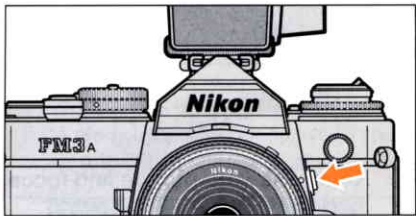
Example: Before compensation



Example: After compensation



In flash photography when the main subject is far away or near the edge of the viewfinder frame, overexposure may occur, as the reflected light may be insufficient. This may cause excessive flash illumination. Flash photography with a bright background may also give unnatural results.



In such a situation, shooting with the TTL flash-compensation button held pressed can automatically reduce the level of flash illumination for more natural and better exposure results.

When the TTL flash-compensation button is used, the illumination of the speedlight is automatically **compensated (reduced) by 1 EV to the – side.**



- There is no indication regarding the flash-exposure compensation when you press the TTL flash-compensation button.
- If exposure compensation is made by the camera, the level of flash illumination is controlled by adding this compensation level.
- The flash-exposure compensation function of the speedlight is disabled in TTL mode.

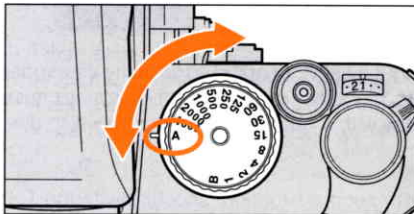
## ■ Procedure for TTL flash photography

## Tips

- Applicable film speeds for TTL auto flash are ISO 12 to ISO 1000.
- The flash-sync speed is 1/250 second or lower. In Aperture-Priority Auto Exposure mode, the speed is automatically set to 1/250 second.
- When you use a Medical lens, set it to 1/125 second or lower.

The following example shows the Nikon SB-27 Speedlight attached to the camera. For details, refer to the manual for your speedlight.

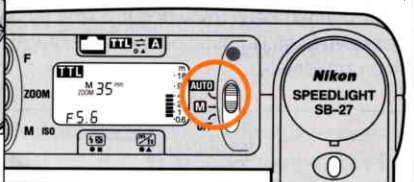
**1** Set the exposure mode.



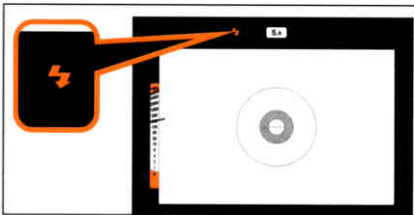
•• Set to A. Or, set to a shutter speed of 1 to 1/250 second.

**2** Set the mode switch of the speedlight to **AUTO**.

(Example: with SB-27)

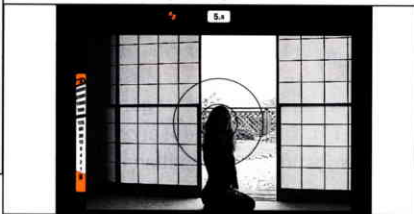


**3** Confirm that the  $\frac{1}{4}$  mark lights in the viewfinder.



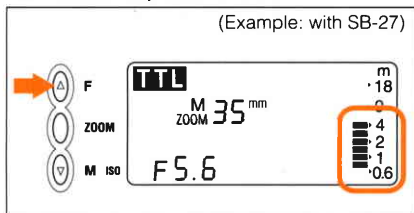
\*\*\* Lightly press the shutter-release button and check the ready light.

#### 4 Compose your picture and focus.



## 5 Make sure the subject is within the range of flash-shooting distance, then shoot.

(Example: with SB-27)



- ... Press the F button to obtain the same value as the aperture setting on the lens.
- ... Lightly press the shutter release button and check that the ready light is lit, then shoot.

### Tips

<ISO 100>

- Equation to obtain the camera-to-subject distance:  
 $D \text{ (distance to subject)} = GN \text{ (guide number)} / f \text{ (aperture)}$
- Equation to obtain the aperture:  
 $f \text{ (aperture)} = GN \text{ (guide number)} / D \text{ (distance to subject)}$



If the ready light blinks for approx. 3 sec. immediately after firing the flash, check the camera-to-subject distance, aperture setting, and range of flash-shooting distance, and shoot again.



### Flash attachments from other manufacturers

- NEVER use a flash attachment from another manufacturer. The full performance of this camera can only be obtained with Nikon brand accessories. Other brands may apply a voltage of ISO 24V or higher to the camera's "X" contacts, or otherwise short-circuit the accessory-shoe contacts, resulting in damage to the circuits in the camera.
- Before using the Speedlight, make sure that the Speedlight flash flashes when the shutter is released.



# AE-Lock Photography

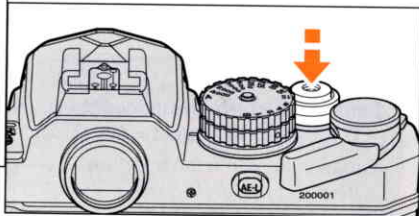
## Tips

- AE-lock photography is possible in Aperture-Priority Auto Exposure mode. You cannot use it in Manual Exposure mode.
- Since the composition of a shot can be changed with the EV temporarily stored in memory, AE-lock photography of a subject of normal (intermediate) brightness proves to be highly effective when back lighting is present that makes it difficult to specify the exposure, or when subjects of high and low reflectance are intermingled in the viewfinder.

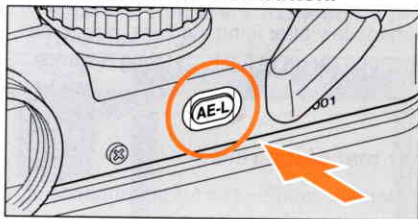
### 1 Locate the subject in the center of the viewfinder and focus.



### 2 Lightly press the shutter-release button.



### 3 Press the AE-lock button.



### 4 Compose your shot, and shoot with the AE-lock button held pressed.



- Apply the auto exposure lock when the exposure meter is active.
- The exposure-meter indicator in the viewfinder is fixed in AE-Lock mode.

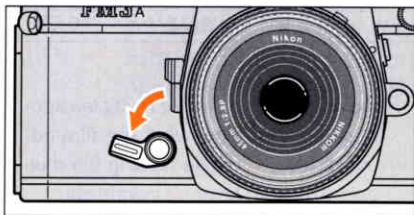
# Self-Timer Photography

## Tips

The self-timer is useful when you want to include yourself in a group shot or to prevent camera shake.

... The maximum count-down time of the self-timer is approx. 10 seconds.

### 1 Pull the self-timer lever in the direction of the arrow.



### 2 Check the focus and exposure, then shoot.



... The shutter is released with a delay of approx. 10 seconds.

... The countdown time of the self-timer can be set from 4 to 10 seconds, according to how far you cock the self-timer lever.



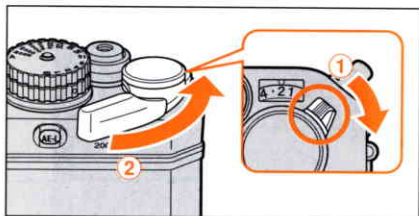
- You can cancel self-timer operation after you set it. To cancel, pull the lever back toward the lens completely until it stops before you press the shutter-release button. (If you pull the self-timer lever back when it is already in operation, the shutter is released the moment the lever reaches its original position.)
- When you shoot without looking through the viewfinder in Aperture-Priority Auto Exposure mode, cover the eyepiece to prevent interference from stray light when you press the shutter-release button.

# Multiple-Exposure Photography

## Tips

- Exposing a single frame more than once to overlap multiple images is called multiple-exposure photography.
- If images are to be overlapped in the background, exposure compensation is required, depending on the number of exposures in multiple-exposure photography. (When images do not overlap, no compensation is necessary.)

Number of exposures	2	3	4	8 or 9
Standard compensation value	- 1.0 EV	- 1.5 EV	- 2.0 EV	- 3.0 EV



- Do not advance film for multiple-exposure photography, wind the film-advance lever ② while holding the multiple-exposure lever ① toward you.

\*\*\* As the film does not advance, the frame counter does not count up.



Frames may shift slightly in some cases of multiple-exposure photography. In particular, film advance may be slightly unstable at the beginning and end of a roll, so multiple-exposure photography using the first or last frame of a film roll is not recommended.

# Additional Information

Keeping this information in mind may help you avoid problems.

In particular, do not forget to read “Tips on Handling the Camera and Batteries” on page 48.

# Shutter Speed and Aperture Setting

The shutter-speed setting specifies the length of time the film will be exposed by opening and closing of the shutter curtains, while the aperture setting determines the amount of light that passes through the lens. The combined value of these settings is called EV (Exposure Value).

For example: using ISO100 film with a shutter speed of one second and an aperture setting of f/1.0, the EV is defined as 0 (EV 0). This value increases by one each time the aperture is stopped down or the shutter speed is increased by one unit.

The shutter speed and the aperture value converted from the EV are displayed in the viewfinder of the camera. The same EV can result from various possible combinations of shutter speed and aperture setting. For example, as shown in the EV table below, when the correct exposure is obtained with a shutter speed of 1/125 second and an aperture setting of f/11 (EV14), you can obtain the same amount of light also at 1/60 second and f/16 or at 1/250 second and f/8, for the correct exposure. Understanding these combinations, you can change only the effect on the picture by changing the combination of shutter speed and aperture setting without changing the exposure value.

## Tips

Priority should be given to shutter speed when movement is more important, and to the aperture setting when depth of field is more important.

## Exposure Values

when using ISO100 film

Aperture setting (f) \ Shutter speed (sec)	1.0	1.4	2	2.8	4	5.6	8	11	16	22	32
8	-3	-2	-1	0	1	2	3	4	5	6	7
4	-2	-1	0	1	2	3	4	5	6	7	8
2	-1	0	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	7	8	9	10
1/2	1	2	3	4	5	6	7	8	9	10	11
1/4	2	3	4	5	6	7	8	9	10	11	12
1/8	3	4	5	6	7	8	9	10	11	12	13
1/15	4	5	6	7	8	9	10	11	12	13	14
1/30	5	6	7	8	9	10	11	12	13	14	15
1/60	6	7	8	9	10	11	12	13	14	15	16
1/125	7	8	9	10	11	12	13	14	15	16	17
1/250	8	9	10	11	12	13	14	15	16	17	18
1/500	9	10	11	12	13	14	15	16	17	18	19
1/1000	10	11	12	13	14	15	16	17	18	19	20
1/2000	11	12	13	14	15	16	17	18	19	20	21
1/4000	12	13	14	15	16	17	18	19	20	21	22

# Depth of Field

When you focus on your subject, you will find that not only is the subject itself in focus but objects in a certain distance range both in front of and behind the subject appear reasonably sharp. This in-focus zone is known as "depth of field."

Control of depth of field enables selective blurring of the background elements of a picture or letting the major subject stand out.

By pressing the depth of field preview lever, you can check how the background image will appear in the photograph.

## Tips

- The depth of field changes depending on three factors; aperture, focal length of the lens, and shooting distance as follows.
  - 1) The wider the aperture opening, the shallower the depth of field, and the narrower the aperture opening, the deeper the depth of field.
  - 2) The longer the focal length (such as with a telephoto lens), the shallower the depth of field, and the shorter the focal length (as with a wideangle lens), the deeper the depth of field.
  - 3) The closer the subject is to the lens, the shallower the depth of field, and the farther away the subject is from the lens, the deeper the depth of field.
- Controlling the depth of field gives your picture its own character.

# Light-Metering Methods

## ■ Full-aperture metering

With a built-in sensor, this camera employs TTL full-aperture metering to determine the exposure by measuring the brightness of subjects through the lens. With an Ai-type lens attached, full-aperture metering is performed, and you can set the exposure while maintaining full brightness in the viewfinder.

## ■ Stop-down metering

This method is used when the meter coupling lever does not operate in synchronization with the lens aperture.

With this method, after making the aperture setting for actual shooting, the light is measured when a Non-Ai-type lens or close-up ring is used.

# Lens Compatibility

Any of the following lenses can be used with this camera.

Exposure mode Lens	Aperture-priority auto	Manual	Remarks
<b>CPU lens</b> • D-type AF • Non-D-type AF • Ai-P • PC Micro 85mm f/2.8D	yes* <sup>1</sup>	yes* <sup>1</sup>	
<b>Non CPU lens</b> • Ai-S • Ai / Ai-modified • Series E	yes	yes	
Medical 120mm f/4	no	yes* <sup>2</sup>	Stop-down metering
Reflex lenses	yes	yes	
PC lenses	yes* <sup>3</sup>	yes* <sup>4</sup>	Stop-down metering
PB-6 Bellows Focusing Attachment	yes* <sup>5</sup>	yes	Stop-down metering
IX lenses G-type lenses	no	no	

\*1: When using the PC Micro 85mm f/2.8D, only manual exposure can be used. Note, however, that the exposure-meter indication will not be correct if you shift and/or tilt the camera or if you have an aperture setting other than full aperture. In addition, the TTL flash and the flash compensation will not work.

\*2: Only manual exposure is enabled and is usable with shutter speeds under 1/125 second.

\*3: In aperture-priority auto exposure, first preset the aperture on the lens, then shift and/or tilt the camera.

\*4: In manual exposure, first preset the aperture on the lens, then measure the light to determine the exposure before shifting and/or tilting the camera.

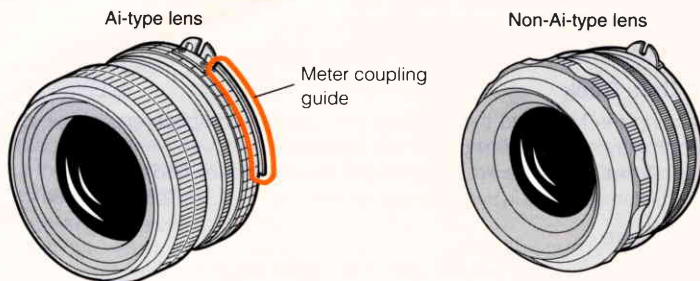
\*5: First make the aperture setting for the bellows focusing attachment, then measure the light and shoot.

Note that the following lenses and accessories cannot be attached to this camera. (If you try to forcibly attach them, the camera and/or lens may be damaged.)

- Non-Ai-type lenses
- TC-16A Teleconverter
- Lenses used with the AU-1 Focusing Unit (400mm f/4.5, 600mm f/5.6, 800mm f/8, and 1200mm f/11)
- Fisheye lenses (6mm f/5.6, 8mm f/8 and OP 10mm f/5.6)
- Old-type 21mm f/4
- K2 ring
- ED 180-600mm f/8 (Product No. 174041-174180)
- ED 360-1200mm f/11 (Product No. 174031-174127)
- 200-600mm f/9.5 (Product No. 280001-300490)
- 80mm f/2.8, 200mm f/3.5, and TC-16 Teleconverter for F3AF
- PC 28mm f/4 (Product No. 180900 or smaller)
- PC 35mm f/2.8 (Product No. 851001-906200)
- Old-type PC 35mm f/3.5
- Old-type Reflex 1000mm f/6.3
- Reflex 1000mm f/11 (No. 142361-143000)
- Reflex 2000mm f/11 (No. 200111-200310)

## Tips

### How to distinguish Ai-type lenses from non-Ai-type lenses



An Ai-type lens has a meter-coupling guide, but a non-Ai-type lens does not.



# Optional Accessories

## ■ Lenses

### 45mm f/2.8P Lens

- Top quality and unique design with metallic silver or black appearance is an ideal combination with the FM3A camera.
- Lightweight and superthin lens of 17mm (0.7 in.) total length, optimum as a regular-use lens.
- The minimum shooting distance is as close as 45cm (17.7 in.).
- While being a manual-only lens, it can provide all exposure modes with the built-in CPU, enabling use with an auto-focus camera.

A wide variety of lenses — 14mm to 1000mm; wideangle, telephoto, zoom, Micro or DC (Defocus image Control) — is available for the FM3A.



## ■ MD-12 Motor Drive

With the MD-12 motor drive attached to the bottom of the camera body, automatic film advance and continuous shooting at a maximum rate of approx. 3.2 frames per second are enabled.

This proves very convenient when shooting fast-moving subjects.

## ■ SB-27 Speedlight

- A compact, lightweight flash attachment that enables TTL light metering, external automatic light metering, and manual flash firing.
- The mounting position of the light-emission block can be changed to horizontal at the right, and vertical, or horizontal at the left, so that you can easily control the shadow of the subject.
- The built-in reflective plate enables you to bounce flash upward or to the left.
- The catch-light effect (to reflect part of flash on eyes) and the diffuser (to soften the flash) allow additional effects for close-up photography.
- The SB-50DX, SB-28, SB-23, and SB-22s are also available.

## ■ MF-16 Data Back

- By attaching the MF-16 to this camera, you can superimpose any of the following: year/month/day, day/hour/minute, or the frame number.
- The alarm function can be set to sound a buzzer at a specified time.
- The MF-16 also operates in synchronization with the MD-12 motor drive when attached.

## ■ Camera Case

- The CF-27S, CF-28S, and CF-29S semi-soft cases are available.
- The CF-27S case accommodates the camera with a mounted lens of 50mm f/1.4 or smaller. The CF-28S case accommodates the camera with a mounted lens between 50mm f/1.2 and 135mm f/2.8.
- When the MD-12 motor drive is attached to the camera, use the CF-29S. In addition, the CF-28A front cover for a 35-70mm zoom lens is available.

## ■ Filters

- Nikon filters are divided into three types: screw-on, drop-in and rear-interchange. With the FM3A, the filter factor need not be considered except with the R60 filter. Compensate exposure +1 EV when using the R60.
- For a filter to protect the lens, use of an L37C or NC filter is recommended.
- Moiré may occur when shooting a subject against bright light or if a bright light source is in the frame. In this case, remove the filter before shooting.

## ■ Neck straps

The leather AN-1 (black), the mesh-type AN-4Y (yellow) and AN-4B (black), and the wide AN-6Y (yellow) and AN-6W (wine red) are available.

## ■ Others

### AR-3 Cable release

A screw-in type cable release is available so that you can eliminate camera shake caused by pressing the shutter-release button. This also enables you to lock the shutter-release button in Bulb mode without holding the button pressed with your finger.

### DK-3 Eyepiece attachment

When attached to the camera's eyepiece, this makes the field of vision in the viewfinder clearer, and may reduce eye strain. The DK-3 is made of rubber.

### Eyepiece correction lens (for dioptre adjustment)

For nearsighted or farsighted photographers. This eyepiece can be easily attached just by screwing it onto the camera's eyepiece. Nine models (-5, -4, -3, -2, 0, +0.5, +1, +2, or +3) are available. It is recommended to try them before purchasing, as proper dioptre greatly differs among individuals.

### DB-2 Anti-cold battery pack

When you keep the DB-2 external power supply for the camera body in your pocket, power is steadily supplied even when the ambient temperature is low. (AA-type NiCd, NiMH and Lithium batteries cannot be used for this battery pack. When the DB-2 battery pack is mounted to the camera, tripod cannot be used.)

### DG-2 Eyepiece Magnifier

When attached to the viewfinder eyepiece, this accessory enlarges the image at the center of the viewfinder to assure precise focusing in close-up photography, duplication work and telephotography.

### DR-4 Right-Angle Viewing Attachment

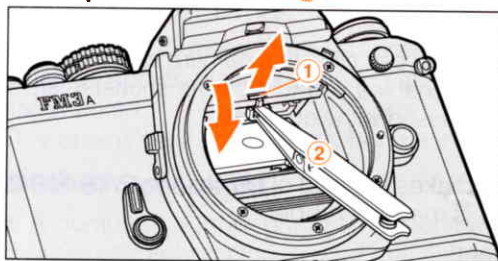
Screws onto the viewfinder eyepiece to provide a viewfinder image at a 90° angle to the camera's optical axis. An Adapter Ring DK-13 (optional) is required.

# Changing the Focusing Screen

## Tips

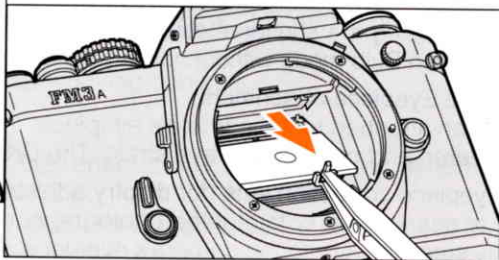
- Different types of focusing screens can be used with this camera. The K3-type Clear Matte screen IIa comes with the camera as a standard accessory.
- Two types of screen are available for replacement as options: B3 type and E3 type. Select the one that matches your particular requirements.

- 1** Pull the focusing screen release latch ① towards you using the special tweezers ②.

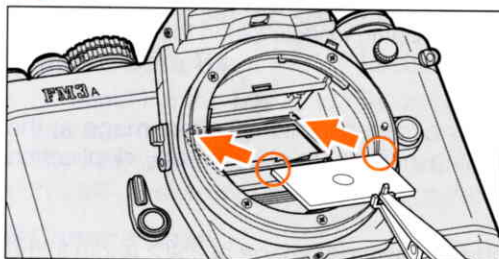


- ... The focusing screen comes down.
- ... The special tweezers are supplied with a focusing screen for replacement.

- 2** Grip the screen by pinching the tab of the screen and remove it.

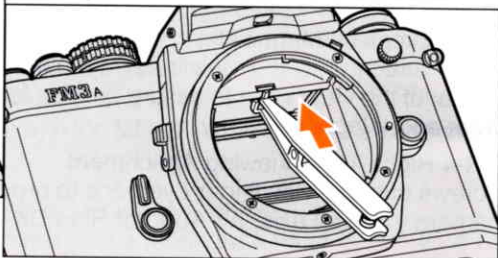


- 3** Place the replacement screen on the screen holder.



- ... Be sure to place the screen in the right position on the holder.

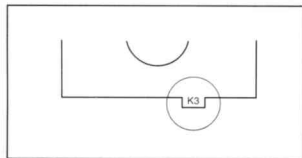
- 4** Push the front edge of the holder upward to secure the screen.



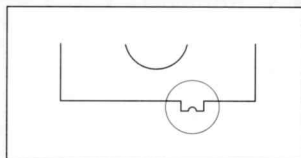
- ... Push up on the holder until it snaps into place.

## Tips

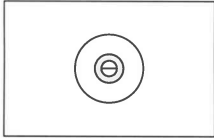
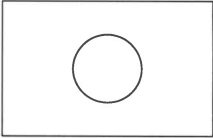
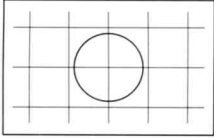
How to distinguish the applicable types.



K3 type, B3 type, E3 type



K2 type, B2 type, E2 type  
(for New FM2 and FE2)

Type	Name/style	Features
K3	Split-image rangefinder/ microprism system 	Suitable for general photography. It has a microprism collar around the central split-image rangefinder spot. With a PC lenses or lenses having a maximum aperture less than $f/4.5$ , the split-image rangefinder or microprism collar is dim. In this case, focus on the surrounding matte area.
B3	Matte system 	Works well for general photography, close-up photography, and duplication work. Especially useful for people who prefer to focus on the matte focusing spot at the center of the screen, or when it is inconvenient to use the split-image rangefinder for focusing, as is the case with telephoto lenses.
E3	Etched system with horizontal and vertical lines 	Extremely useful in pictorial composition. It consists of a B3-type matte field with etched horizontal and vertical lines. Also useful with PC lenses.

... K2, B2 and E2 types for the FE2 or New FM2 can be used with this camera without exposure compensation. K3, B3, and E3 type for this camera can be used with an FE2 or New FM2 camera, no compensation is required.

# Tips on Handling the Camera and Batteries

## ■ Camera Care



**WARNING**



**Do NOT use thinner, benzene or other organic solvents to clean the camera.**

They may damage the camera, cause it to catch fire, or harm your health.

### • Cleaning the camera

First lightly blow off dirt and dust with a blower, then gently wipe the body with a clean soft cloth. After using the camera near sea water, wipe the body with a soft cloth slightly moistened with tap water to remove salt, then lightly wipe it with a dry cloth.

### • Cleaning the mirror and lens

The mirror and lens are very sensitive. Clean them only by lightly blowing off dust with a blower.

If the lens is smeared, such as with fingerprints, gently wipe it with a clean, soft cloth moistened with commercially available lens cleaner.

### • Do NOT subject the camera or lens to strong shock.

Be careful not to drop the camera and lens or hit them against a hard surface.

Such strong shock may damage the camera or badly affect the precisely adjusted parts.

### • Do NOT touch the shutter curtains.

The shutter curtains are made of a very thin material. NEVER hold, push, or strongly blow with a blower. Such actions can crack, deform, or damage the curtains.

### • Avoid locations where strong radio waves or strong electromagnetic fields are generated.

The camera may not operate correctly in a location where a strong radio wave or strong electromagnetic field is generated, such as near a television tower.

### • Store the camera in a cool, dry, well-ventilated place.

To eliminate mold and damage, store the camera in a dry place with sufficient ventilation.

• Do NOT leave the camera in a place exposed to chemicals such as camphor or naphthalene, near equipment generating a strong magnetic emission, or in an excessively hot place, such as inside a car or in front of a heater.

### • Avoid extreme temperature changes.

Extreme temperature changes can cause condensation outside and inside the camera. When taking the camera to very hot place from a cold place or vice versa, place it inside an airtight container such as a plastic bag and leave it inside awhile to expose the camera gradually to the temperature change.

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• **Remove the battery (batteries) and store the camera with a desiccant.**

If you do not intend to use the camera for a long time, store it after removing the battery (batteries) to protect the camera from battery leakage.

- When storing the camera, it is recommended to store it with a desiccant in a plastic bag. Note, however, that storing the leather camera cases in plastic bags may cause the leather to deteriorate. Keep the batteries in a cool, dry place.
- A desiccant will lose its effect after absorbing a certain amount of moisture. Occasionally replace it with new one.
- Leaving the camera unused for a long period of time will allow mold to grow and result in malfunction. To prevent this, insert a battery (batteries) once a month and release the shutter a few times.

■ **Handling the Batteries**



**WARNING**



**Keep batteries out of the reach of children.**

If a battery is swallowed, immediately contact a physician.

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• **Use the following battery (batteries):**

- ① One 3V lithium battery (CR-1/3N type)
- ② Two 1.55V silver-oxide batteries (SR44 type)
- ③ Two 1.5V alkaline batteries (LR44 type)

- Before important photographic occasions, check and replace the battery (batteries) well before exhaustion, or have spare batteries handy.

• **Turn the power to the camera off when replacing battery (batteries).**

When changing the battery (batteries), fold the film-advance lever and insert the new battery (new batteries) with the + and – ends positioned correctly.

- The supplied battery is for checking the operation of the camera at the time of purchase. It may have a shorter life than a new one.
- Stains on the battery poles may cause lack of contact. Wipe the batteries with a dry cloth before inserting.

• **Use a fresh battery (batteries) when using the camera in very cold temperature.**

The camera may not operate with exhausted batteries.

It is recommended to carry spare batteries, and keep them warm for alternate use.

- The number of film rolls that can be shot decreases in very cold temperatures. However, battery power may recover when the temperature returns to normal.

• **Do NOT throw batteries into a fire.**

Do NOT throw batteries into a fire, short-circuit, disassemble, heat or charge batteries.

## **A AE lock**

A function to temporarily store the exposure setting determined by the camera in memory. After measuring the light on a specific portion of the subject (face, etc.) or another object, you can change the angle as desired, maintaining the exposure setting (AE lock is activated with the AE button). When the subject is back lit, first direct the camera to a dark area or fill the frame with the subject for AE lock, then return the camera to the desired angle and framing to shoot.

## **Aperture-priority auto exposure**

An automatic mechanism to obtain the proper exposure by automatically controlling the shutter speed depending on the aperture specified by the operator. This mechanism provides flexible photographing, such as focusing on the foreground subject and having an out-of-focus background with a wide aperture opening, or to keep the overall picture in clear focus with a small aperture opening.

## **B Blank exposure**

With a camera with manual film winding, initial film advancing is required by repeatedly releasing the shutter and winding the film until the film counter indicates the first frame.

## **C Cable release**

A shutter release device designed to eliminate vibration caused by slight movement of the camera from pressing the shutter button with the camera on a tripod.

## **Center-weighted metering**

Light is measured with priority given to the center of the image, gradually decreasing the metering level towards the edges.

## **Correct exposure**

The exposure setting for the film that best reproduces the lighting condition of the subject, from its highlights to shadowed portions. Or, the setting that can best provide an image that matches the intention of the photographer. While the best combination of shutter speed and aperture value for the sensitivity of film in use may normally provide the correct exposure, this may not be true for the specific result you are looking for.

## **D DX code**

The bar code on a cartridge of 35mm film. The bar code contains information on the type of film, sensitivity, and number of frames. A camera that can read DX code is automatically adjusted by reading the information.

## **E EV**

EV stands for Exposure Value, which indicates the exposure settings. For example: using ISO 100 film with a shutter speed of one second and an aperture setting of  $f/1.0$ , the EV is defined as 0 (EV 0). This value increases by one each time the aperture is stopped down or the shutter speed is increased by one unit. The aperture and shutter speed are indicated in the built-in exposure meter of the camera as values converted from the EV.

## **Exposure**

Exposing the film to light with a combination of the aperture and shutter speed settings. The aperture is used to adjust the amount of light that reaches the film, and the shutter speed is used to adjust the length of time the film is exposed, thus providing the correct exposure.

## **Exposure compensation**

To change the standard exposure determined by an exposure-meter. By intentionally changing the exposure setting, you may obtain a desired effect. Increasing the exposure is called positive compensation, and decreasing it is called negative compensation. Exposure compensation may be effective when the luminance, reflection, position, or size of the subject may cause an exposure error.

## **F Flash-exposure compensation**

The light-control system that automatically controls the illumination level of the flash according to the ambient brightness is called flash exposure. Flash-exposure compensation is a function to increase/decrease this automatic-level-control range.

## **Flash-shooting distance range**

The range in which the proper exposure can be obtained in flash photography. The higher the film sensitivity, the wider the range, and vice versa. The wider the lens aperture, the wider the range, and vice versa. Pictures must be taken within the flash shooting distance range.

## **Full aperture**

The minimum aperture value (smallest f-number) for a lens is "full aperture." With the full aperture opening, the depth of field is shallow, and images are defocused more in the background while widening the shootable range for the amount of light.



### **F Full-aperture metering**

One of the light-metering systems of a camera with a built-in TTL exposure meter. After you make the aperture setting, the camera determines the correct shutter speed by measuring the light with full aperture. As the aperture is kept fully open, the view in the viewfinder is bright, enabling easy focusing. The lens will then be stopped down to your aperture setting when you release the shutter. On the contrary, metering the light with the actual aperture setting for shooting is called "stop-down metering." This may darken the view in the viewfinder making focusing difficult. With some special lenses or certain accessories (such as a bellows attachment), only stop-down metering is available.

### **G Guide number**

Used as a standard value to numerically show the illumination level (ISO 100, m, 20°C / 68°F) of flash. The value is indicated in units of GN (ISO 100, m). An aperture setting value for the correct exposure can be obtained by the following equation.  $\text{Aperture value (f)} = \text{Guide number (GN)} / \text{Shooting distance (meters)}$ .

### **I ISO film speed**

A unit to indicate the film sensitivity, defined by the ISO (International Organization for Standardization).

### **M Manual exposure**

Shooting is performed by manually setting the shutter speed and aperture value based on the light level measured by an external or built-in exposure meter. With manual exposure, shooting can be performed independent from changes in conditions. You may want to make a solemn image by setting the exposure to a low level, or add a cheerful atmosphere by setting it to a high level.

### **Mechanical shutter**

A shutter system that mechanically controls the shutter speed. Its advantage is that no power is required, permitting you to shoot even when the battery power is exhausted. This may be especially effective for photographing with long-time exposure or at low temperatures at which batteries would have to be warmed.

### **Multiple-exposure photography**

To expose a single frame more than once.

### **N ND filter**

ND stands for Neutral Density. ND filters can flatly decrease the light level without masking out any specific wavelength (color).

### **O Overexposure**

A state in which the total exposure is too great when compared with standard exposure.

## **T**     **TTL**

An abbreviation of "Through the Lens," which represents a system to determine the brightness of the subject by metering the light through the lens with the built-in exposure meter of the camera.

### **TTL flash**

A function to obtain the correct exposure for the main subject by firing the flash regardless of the ambient light. By measuring the amount of the flash light reflected from the subject, the camera stops light emission when the correct illumination level is reached. This may possibly cause an imbalance in brightness between the main subject and the background.

## **U**     **Underexposure**

A state in which the total exposure is insufficient when compared with standard exposure.

# Specifications

## Type of camera

35mm single-lens reflex with electronically and mechanically controlled focal-plane shutter

## Applicable film

35mm film in a cartridge

## Frame size

24 x 36mm

## Lens mount

Nikon F mount

## Shutter

Vertical-travel, metal focal-plane shutter

## Shutter-speed settings

A (aperture-priority auto): 8 to 1/4000 sec., electronic stepless control (indications are 1 to 1/4000)  
Manual: Bulb, 1 to 1/4000 sec., mechanical control

## Viewfinder

Eye-level pentaprism

## Eyepoint

14mm (at -1.0 m<sup>-1</sup>)

## Focusing screen

K3 type (splitprism-image micropism type, Clear Matte Screen IIa) standard, B3 type and E3 type optional

## Viewfinder frame coverage

Approx. 93% (objective screen)

## Viewfinder magnification

0.83x with 50mm lens set to infinity

## Viewfinder information

Shutter speed, exposure meter indication, shutter indication, direct aperture value, exposure compensation mark, ready light

## Reflex mirror

Quick-return type

## Exposure meter sync

Ai type (automatic compensation at full-aperture f-stop)

## Metering system

TTL center-weighted, full-aperture exposure metering system, approx. 60% of the meter's sensitivity concentrated on a 12mm diameter circle

## Metering range

EV1 to EV20 at ISO100 (with a 50mm f/1.4 lens)

## Film-sensitivity settings

DX system or manual. DX: ISO 25 to 5000 Manual: ISO 12 to 6400

## Exposure compensation

Exposure compensated to  $\pm 2$  EV in units of 1/3 EV (compensation to the + side not possible with ISO 12, and that to the - side not possible with ISO 6400)

## Auto exposure lock

Enabled by pressing the AE lock button

## Film advance

Lever provided, 30-degree standoff angle and 135-degree winding angle, automatic film advance enabled with MD-12 Motor Drive (sold separately)

## Frame counter

Additive type (S, 1 to 36), automatic reset

## Film rewinding

Film rewind button and crank

## Self-timer

Mechanical controlled, countdown time of approx. 4 to 10 seconds, cancellation possible

## Depth of field preview

Can stop down lens aperture by pressing the depth of field lever

## Multiple exposure

Activated with multiple exposure lever

## Sync contact

X-contact only; synchronized with the flash at a low speed of under 1/250 sec.

## Flash control

TTL flash: Enabled by using SB-28, SB-27, etc. in combination

TTL flash compensation: Compensation to -1 EV activated with the TTL flash compensation button on the camera

Film speed synchronization in TTL flash: ISO 12 to 1000

## Sync terminal

Equipped with sync terminal (ISO 519), locking screw type

## Accessory shoe

Hot-shoe contact (ISO 518, sync contact, ready-light contact, monitor contact, stop-signal contact for TTL flash) with a lock hole to prevent accidental dropping

### Ready light

Lights when the flash is fully charged with SB-28, SB-27, etc.; blinks for full-output warning or shutter-speed settings from 1/500 to 1/4000 sec.

### Camera back

Detachable hinged back; MF-16 Data Back can be attached in place.

### Camera-back opening

Achieved with the film-rewind lever

### Power source

One 3V lithium battery (CR-1/3N type), two 1.55V silver-oxide batteries (SR44 type), or two 1.5V alkaline batteries (LR44 type)

### Meter-on timer

To turn the camera on when the shutter-release button is pressed lightly, turning it off 16 seconds after your finger leaves the button. With the MD-12 Motor Drive, the camera is turned on when the shutter release button of the MD-12 is pressed lightly, and it turns off approx. 66 seconds after your finger leaves the button.

### Battery power check

Displayed for 16 seconds with the meter-on timer. The exposure meter does not work if the batteries are exhausted.

### Number of film rolls that can be shot

When repeating the procedure of holding the shutter-release button in the lightly-pressed position for 10 seconds, pressing it all the way, and waiting until the meter-on timer counts up to the end, with 36-frame film rolls, a shutter speed of 1/250 second in Aperture-Priority Auto mode:

Power Temperature	One 3V lithium battery	Two 1.55V silver-oxide batteries	Two 1.5V alkaline batteries
At normal temperature (20°C)	approx. 100 rolls	approx. 100 rolls	approx. 45 rolls
At low temperature (-10°C)	approx. 50 rolls	approx. 50 rolls	approx. 10 rolls

### Optional exclusive or common accessories

MD-12 Motor Drive  
SB-27 Speedlight and equivalents  
MF-16 Data Back  
CF-27S / CF-28S / CF-29S Camera Case  
AR-3 Cable release  
etc.

### Tripod socket

1/4 (ISO 1222)

### Dimensions (W × H × D)

Approx. 142.5 × 90 × 58mm / 5.6 × 3.5 × 2.3 in.  
(camera body only)

### Weight

Approx. 570g / 20.1 oz. (camera body only, including battery)

- All specifications are calculated assuming fresh batteries are used at normal temperature (20°C / 68°F).
- Specifications and design are subject to change without notice.