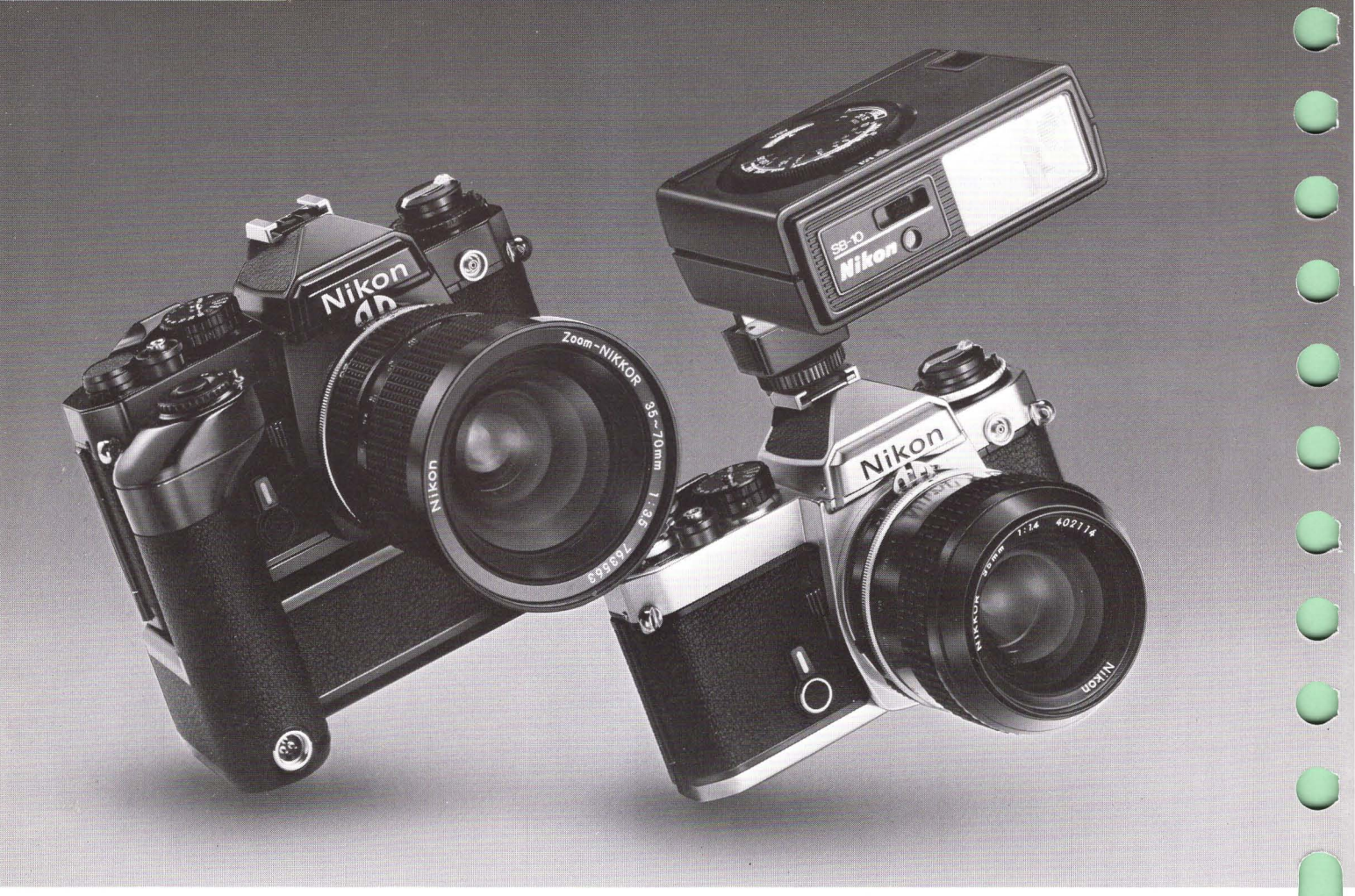
FE SALES MANUAL

Nikon



General Introduction to the Nikon FE

The automatic Nikon FE is the second in a series of compact Nikon cameras—a series which features reductions in size, weight, and price without a reduction in the quality your customers have come to expect from Nikon.

The design of the Nikon FE is not a radical departure from that of other Nikon cameras. On the contrary, its styling and the layout of its controls are based on nearly three decades of high-quality camera production, during which time Nikon has listened to the advice of its users. Traditionally, one of the main reasons for the overwhelming popularity of Nikon cameras has been their ease of handling, and the Nikon FE is no exception. If anything, the FE is even easier to handle than other Nikon cameras. This fact means two very important things to your customers. One: If he is considering the purchase of his first 35mm single-lens reflex camera, then the FE is a natural. It's so easy to use that he will not need superior mechanical aptitude to learn how to operate the controls nor will he have to refer constantly to the instruction manual for explanations. All dials, levers, and buttons on the FE are just the right size and shape, but, more importantly, are in the right *position* for comfortable, foolproof handling. Two: If your customer owns other Nikon cameras, then he can buy the FE knowing full well that he will not have to relearn his established camera-handling techniques. This is a major consideration for a working professional who cannot afford to make mistakes on the job, or, for that matter, an advanced amateur shooting with two or three camera bodies. In addition, most of the accessories he has bought for other Nikon cameras are usable with the FE.

The Nikon FE uses the performance-proven aperture priority system of exposure automation first developed for the Nikkormat EL in 1972 and later refined in the Nikon EL2. With this system, all your customer has to do is set the desired f/stop on the lens, and the FE takes over from there . . . automatically selecting just the right shutter speed to give correct exposure in a variety of lighting situations. Its electronically controlled shutter provides infinitely variable speeds ranging from 1/1000 second down to 8 full seconds. On the other hand, suppose he wants to choose a definite shutter speed to freeze the action or to prevent camera shake when using a telephoto lens. By adjusting the aperture ring on the lens, the appropriate shutter speed can be selected without having to turn the shutter speed dial off the "Auto" setting. However, the real beauty of aperture-priority automation, as employed in the FE, is that the camera can be used with almost any optical device, including a mirror lens, microscope, telescope, or

bellows unit, and still deliver automatic exposures. To produce accurate exposures, two metering cells are positioned, one on each side of the eyepiece, to give a "center-weighted" meter reading, a system pioneered by Nikon more than 10 years ago in the FTN Photomic finder for the Nikon F and still by far the most reliable way of measuring the light coming through the lens. Silicon photodiodes are utilized in the FE, because of their almost instantaneous response to changing light levels, extreme sensitivity to dim light, and linear spectral response. Yet Nikon realizes that auto-exposure control is not always the answer. Therefore, the FE provides not one, but *two* ways of modifying the automatic meter reading: a memory lock lever for holding close-up readings of back-lit subjects *and* an exposure compensation dial for easy bracketing or when shooting predominantly light or dark-colored scenes (e.g. snowscapes or moon-lit shots). Furthermore, the FE offers match-needle manual control of all shutter speeds; plus there are two mechanical speeds, "M90" (1/90 second) and "B," so that the camera can be used for flash photography or shooting time exposures without causing any drain on the batteries. And, of course, the FE can still be used at either of the two mechanical settings with a hand-held exposure meter in the event of battery failure.

Like the Nikon FM, the new FE accepts the compact and lightweight MD-11 motor drive for single-frame shooting or continuous sequences up to 3.5 frames per second. The MD-11 was created exclusively for Nikon's compact camera series and matches the size and weight of each body perfectly. The motor drive's design allows the fingers of the right hand to wrap around the handgrip as if the two were made for each other (which, of course, they were). Operation of the MD-11 is the essence of simplicity, because there are so few controls. The ON/OFF switch not only turns on the motor drive, but activates the camera's metering circuit, too, while the SINGLE/CONTINUOUS mode selector is located on the top of the grip and is concentric with the trigger button for one-touch handling. The framing rate adjusts automatically to the shutter speed giving a maximum of 3.5 fps at speeds of 1/125 second or above and progressively lower rates at slower shutter speeds.

Motor-driven multiple exposures—pictures that seem to vibrate with action—are an exclusive feature of the Nikon FE (as well as the FM) and cannot be found on any other *compact* camera being manufactured today. In fact, Nikon originated this creative shooting possibility with the introduction of the Nikon F2/MD-1 Motor Drive combination in 1971 and continues to offer it on all Nikon cameras that accept motor drives. To make a motor-driven multiple exposure, all your customer has to do is pull back the FE's multi-exposure lever while firing off as many shots as he desires. All of them will be registered on the same frame of film creating a unique abstract photograph which resembles a "Cubist" painting, or a photo taken under a rapidly pulsating stroboscopic light.

Nikon provides three interchangeable focusing screens for the FE, because, frankly, one screen is never perfectly suitable for use with all lenses. The Nikon Type K screen comes as standard equipment and consists of a central split image surrounded by a microprism collar in an overall matte field. This screen works well with the great majority of Nikkor lenses. Type B has a fine matte center and is ideal for shooting close-ups or super-telephoto pictures, because there is no blackout in the center of the screen. Type E is the same as Type B with the addition of vertical and horizontal etched lines for reference in document copying or when doing architectural photography with "perspective correction" lenses. A special pair of tweezers is provided for easy screen interchange.

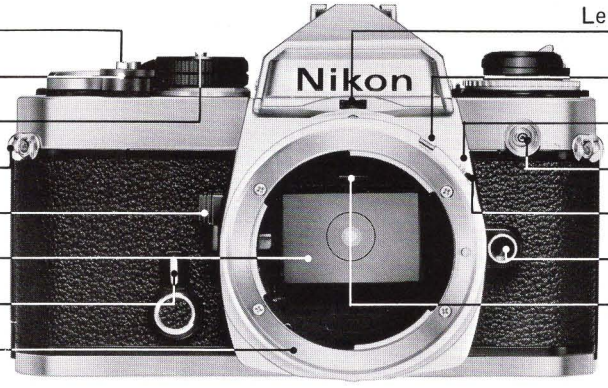
The new Nikon SB-10 Speedlight was designed expressly for the FE and is an energy-saving electronic flash unit offering a choice of two f/stops on automatic. All that's necessary is to mount the SB-10 in the FE's hot shoe, set the lens to the prescribed f/stop, and turn the flash unit on. Even with the FE's shutter speed dial set to "Auto," the proper flash synchronization speed of 1/90 second is set automatically as soon as the speedlight is turned on. It's that simple. There is even an LED ready-light above the camera's eyepiece to indicate when the flash is fully charged and ready to fire.

But best of all, the compact and automatic Nikon FE is an integral part of the extensive Nikon System. The prospective owner of an FE has no less than 55 superb Nikkor lenses to choose from—lenses ranging from 6mm fisheye to 2000mm super-telephoto.* Not that Nikon expects everyone to own every single Nikkor lens. That's not the point. The fact is, regardless of focal length or maximum aperture required, there is always just the right Nikkor lens available. Nikon makes the widest wideangle (13mm) and the longest mirror telephoto lens (2000mm) available from any camera manufacturer. In addition, Nikon *invented* the designs for the fisheye, macro, and perspective correction lens. There are also 9 zoom lenses covering the focal lengths from 28mm all the way up to 1200mm! When you add to this an almost unlimited number of accessories for any type of photographic situation, you have the Nikon System, the most comprehensive in the world.

On the following pages, this sales manual provides information which we, at Nikon, hope you will find beneficial when presenting the Nikon FE to your customers.

* The 6mm f/5.6 and OP 10mm f/5.6 Fisheye-Nikkors cannot be mounted on the FE, because the camera does not have a provision for locking the mirror in the "up" position.

Nomenclature of FE

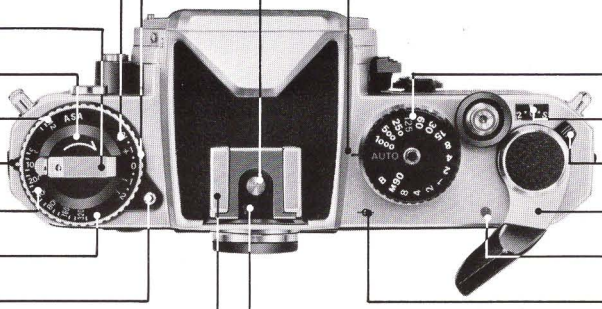


Shutter release button
Shutter release fingerguard
Shutter-speed dial lock
Neckstrap eyelet
Depth-of-field preview lever
Reflex mirror
Self-timer/memory lock
Lens mounting flange

Lens aperture direct readout window
Meter coupling lever
Meter coupling lever release
Sync terminal (cover provided)
Lens mounting index
Lens release button
Focusing screen holder release

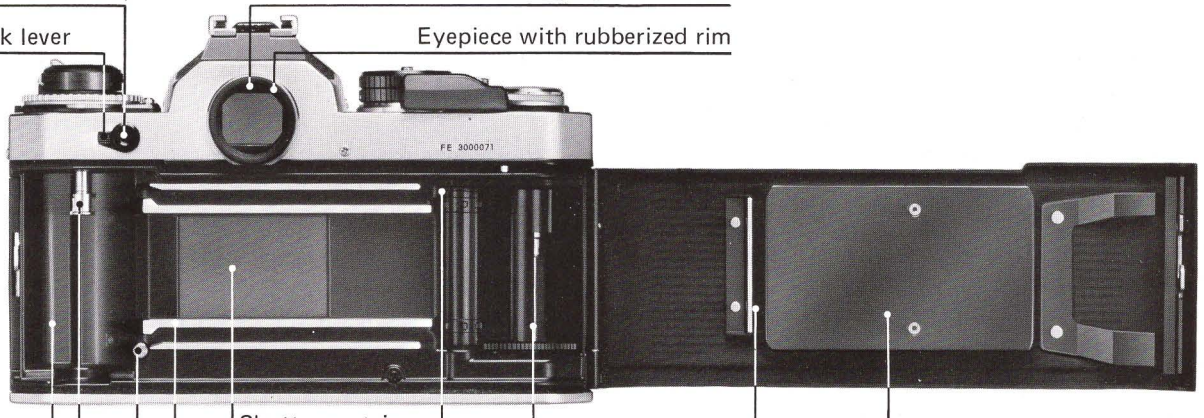
Motor drive shutter coupling
Motor drive coupling
Film rewind button

Tripod socket
Battery chamber lid
Motor drive electrical contacts
Memo holder



Exposure compensation index
Exposure compensation scale
Film rewind crank
Film rewind knob
Safety lock
Film speed scale index
ASA film speed scale/dial
Exposure compensation ring
ASA film speed dial lock
Accessory shoe

Hot-shoe contact
Shutter-speed index
Shutter-speed scale
Frame counter
Multi-exposure lever
Film advance lever
Meter ON index
Film plane indicator
Ready-light contact



Battery power LED lamp
Battery check lever

Ready-light indicator
Eyepiece with rubberized rim

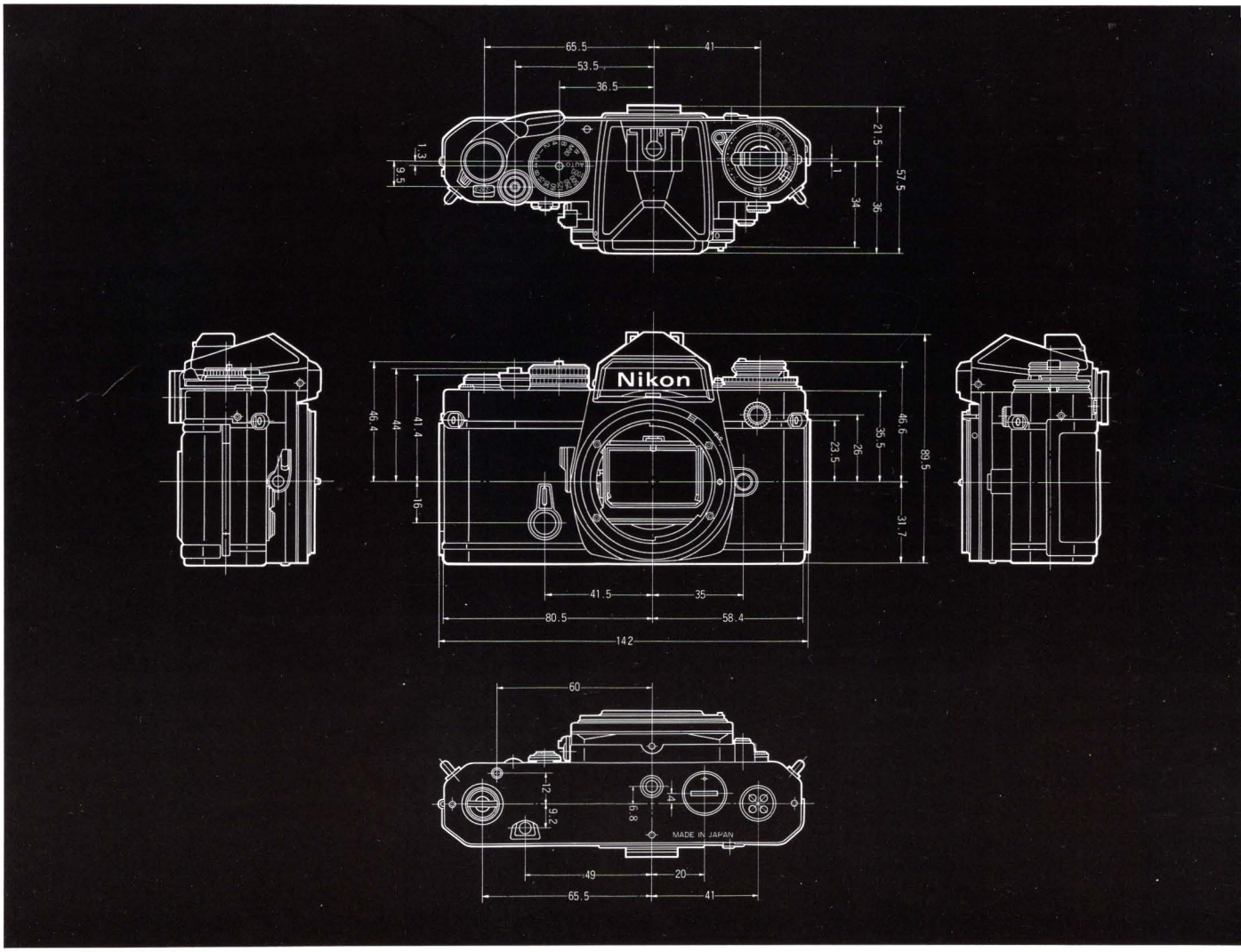
Shutter curtains
Film guide rails
Film guide roller
Rewind fork
Film chamber

Multi-slotted film take-up spool
Film sprocket

Film pressure plate
Film roller

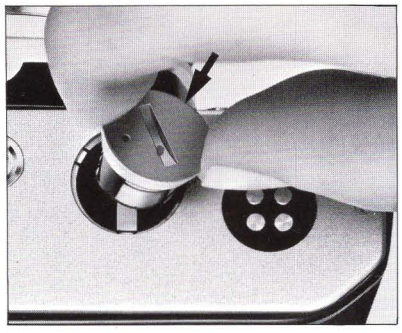
Specifications of FE

Type of camera: 35mm single-lens reflex (SLR)
Picture format: 24mm x 36mm (35mm film format)
Lens mount: Nikon bayonet mount
Lenses available: Nikkor 50mm f/1.4, f/1.8, f/2 or 55mm f/1.2 as standard; more than 55 interchangeable Nikkor lenses in all
Shutter: Vertical-travel focal-plane shutter with speeds from 8 to 1/1000 sec., "B" and M90 (mechanical, 1/90 sec.); automatic shutter speed selection within a range of 8 sec. to 1/1000 sec.; manual shutter speed selection for the 8–1/1000 sec. range plus "B" and M90; shutter speed selected indicated in the viewfield; shutter release via shutter button or self-timer
Flash synchronization: Built-in ISO-type hot-shoe contact with safety switch for synchronization with electronic flash units; built-in ready-light for use with the optional Nikon Speedlight Unit SB-10, serves also as a sync warning signal; sync terminal provided
Synchronization range: For electronic flash units, 1/125 sec. to 8 sec. plus "B" and M90; for flashbulbs, 1/30 sec. to 8 sec. plus B; sync speed of 1/90 sec. fixed when the SB-10 is mounted on the "AUTO"-set FE camera body and the flash unit is switched on
Accessory shoe: ISO-type built into the finder housing; fitted with hot-shoe contact and electric safety switch which turns on the contact as flash unit is mounted; fitted also with ready-light contact for use with the SB-10 Speedlight Unit
Viewfinder: Fixed eye-level pentaprism type with built-in through-the-lens (TTL) exposure meter; shutter speed indicated to the left within the viewfield; lens aperture setting indicated in the viewfield when lens in use is fitted with an aperture-direct-readout lens aperture scale
Focusing screen: Matte Fresnel focusing screen with central split-image rangefinder spot and microprism ring (Nikon Type K screen); two other types of screens available optionally (types B and E)
Reflex mirror: Automatic instant-return mirror
Self-timer: Can be set for approx. 8 to 14 sec. delay; setting "cancellable"; serves also as a memory-lock lever
Exposure metering: Through-the-lens, center-weighted, full-aperture exposure measurement employing two silicon photodiodes (SPD's) with Nikkor lenses fitted with meter coupling ridge; stop-down metering applies for other lenses; exposure correctly set either automatically or by matching two needles; meter cross-coupled with both lens diaphragm and shutter speed controls; meter powered by two 1.5V silver-oxide batteries
Metering range: EV 1 to EV 18 (i.e., f/1.4, 1 sec.–f/16, 1/1000 sec.) with 50mm f/1.4 lens at ASA 100; built-in meter coupling lever can be locked up, enabling use of non-AI-type Nikkor lenses; aperture-coupling range f/1.2 for f/32; film speed setting ASA 12 to ASA 4000; exposure compensation range EV +2 to EV –2 (up to –1 at ASA 4000; up to +1 when set at 12)
Film winding: Via single-stroke lever with 135° winding angle and 30° stand-off angle; lever also serves as meter on/off switch; automatic film winding also possible using the optional Motor Drive MD-11
Frame counter: Additive type; automatically resets to "S," two frames before "0," when camera back is opened
Film rewinding: Manual crank-type
Depth-of-field preview: Via lever provided on front of camera
Camera back: Hinged, swing-open type; removable; memo holder provided
Dimensions: 142mm x 89.5mm x 57.5mm (approx.)
Weight: 590g (body only, approx.)
Other features included are multiple-exposure facility and motor drive functions

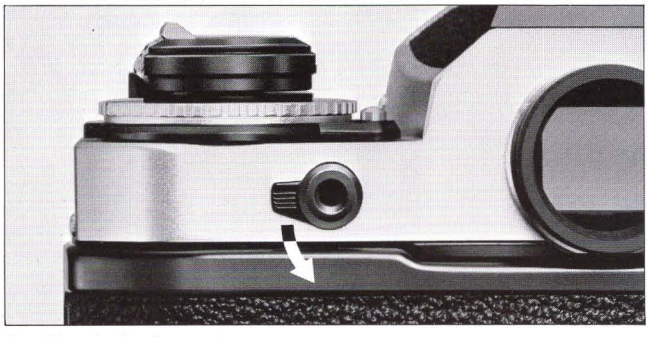


Basic Guide to Camera Handling

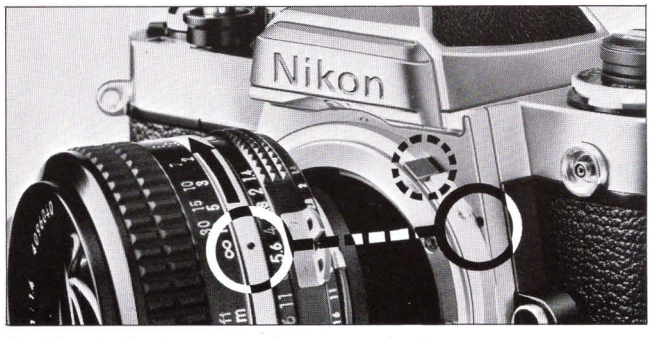
The following steps are provided to show you how *smooth* and *easy* the Nikon FE is to operate.



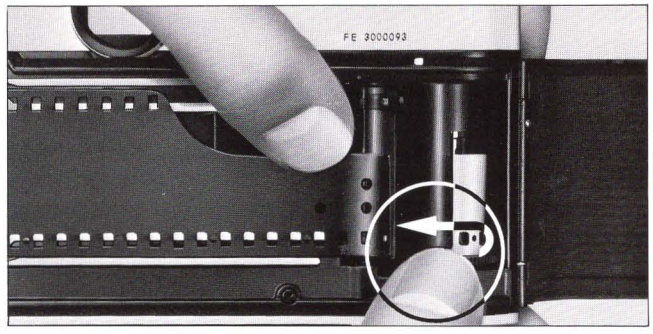
1. Install two 1.5V silver-oxide batteries.



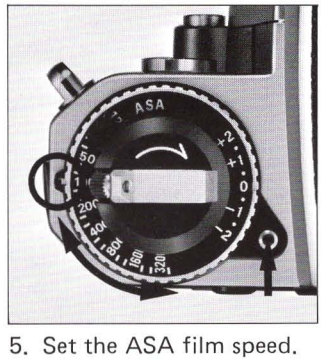
2. Check the batteries.

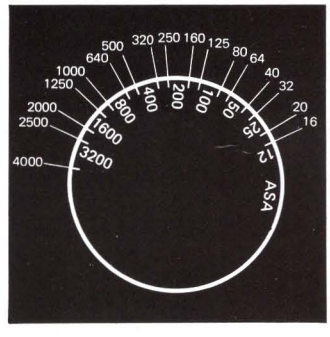


3. Mount the lens onto the camera body.

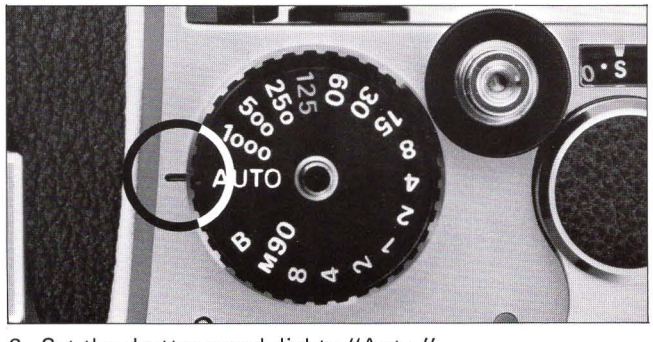


4. Load the film.



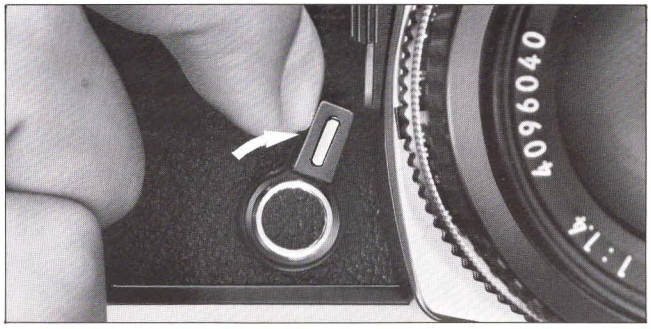


5. Set the ASA film speed.

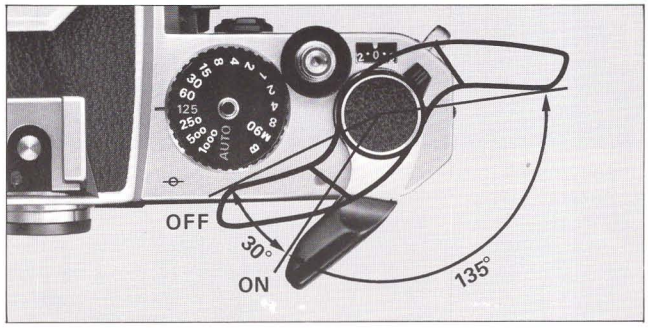


6. Set the shutter speed dial to "Auto."

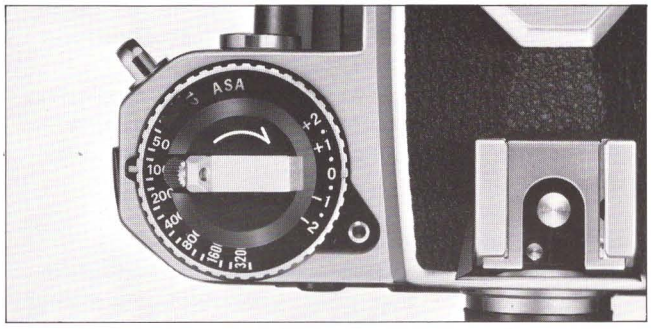
7. Set the f/stop on the lens aperture ring.



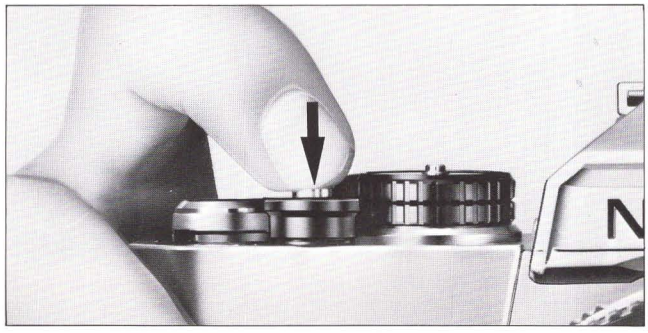
Using the memory-lock lever.



8. Pull the advance lever out to the stand-off position.

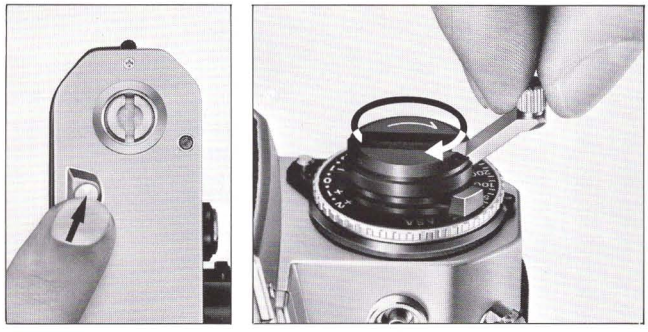


Using the exposure compensation dial.

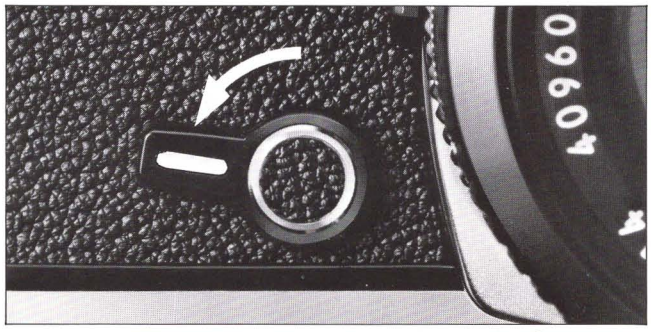


9. Push the shutter button.

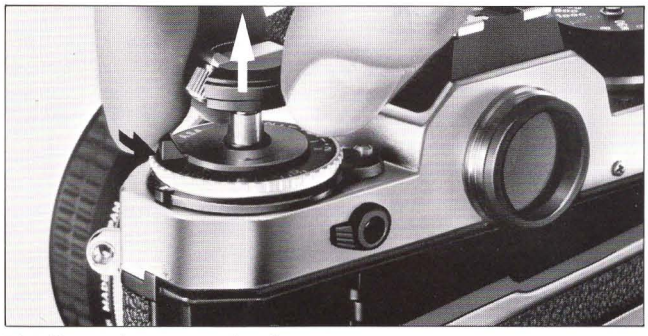
Making a multiple exposure.



10. Rewind the film.



Operating the self-timer.



11. Open the camera back.

Using the tripod adapter.

Viewing

The Nikon FE is a single-lens reflex camera having a fixed pentaprism offering convenient eye-level viewing and focusing. Viewfinder coverage is approximately 93 percent of the actual picture area and corresponds to the picture area of a mounted transparency. The image projected on the focusing screen is extremely bright and clear thanks to Nikon's silver coating applied to the pentaprism, plus the design of its newly developed interchangeable focusing screen.

Finder Information

All information necessary for fast and foolproof picture-taking is present in the FE's viewfinder. To the left of the screen are the shutter speed scale, black meter needle, and green shutter speed indicator all arranged in a logical, legible manner. Above the screen is the f/number to which the aperture ring is set.

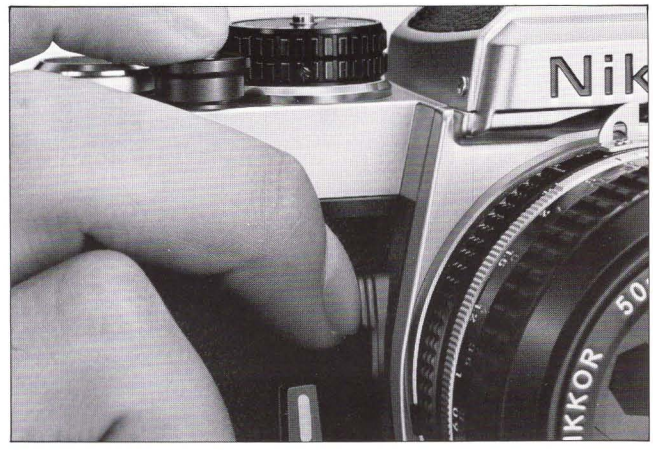
Depth-of-Field Preview

A depth-of-field preview lever is conveniently located next to the lens mount, so that it can be depressed with the right middle finger. The purpose of this lever is twofold: (1) It offers a visual indication of the portions of the subject, from foreground to background, which will be sharp in the final photograph; (2) It is also used for stopped-down metering when non AI-type Nikkor lenses are used on the FE. (For further information, see the description of Stopped-Down Metering in Exposure Control section.)

Reflex Mirror

The FE uses the same type of mirror mechanism originally developed for the Nikon F2. After the shutter button is pushed, the mirror's hinge actually moves back, then up, as the mirror flips out of the way before the shutter opens. The advantage of this system is that an extra-large mirror can be used in the FE, a mirror that doesn't cause any image cutoff even when an 800mm telephoto lens is used. Noise and vibration created by the mirror's movement are held to a minimum by the use of a special air-dampened shock absorber in the mirror box. In addition, the back of the mirror is treated with black felt to reduce flare caused by possible internal reflections. Since there is no provision for locking the mirror in the "up" position, two Fisheye-Nikkor lenses—the 6mm f/5.6 and the OP 10mm f/5.6—cannot be mounted on the FE.

Image as seen in the viewfinder (with lens wide open at f/1.4)



Previewing depth of field

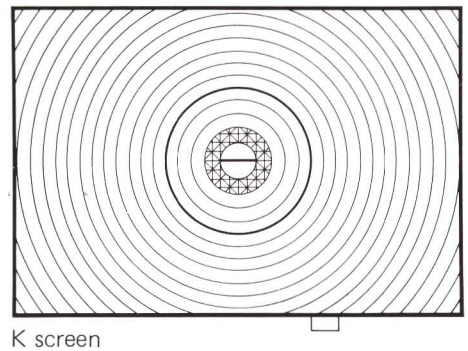

Final photograph (at f/16)

Finder Eyepiece

The eyepiece rim is rubberized to allow eyeglass wearers to view and focus without scratching their glasses. For those who want to use the FE without wearing their glasses, there are nine eyepiece-correction lenses ranging from –5 to +3 diopters. In addition, the eyepiece accepts accessory attachments including a rubber eyecup, right-angle finder, and 2X eyepiece magnifier.

Standard Focusing Screen

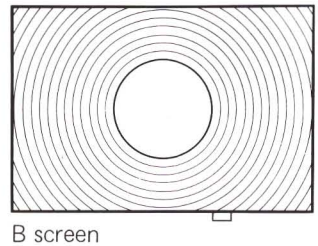
The standard focusing screen in the FE is the Nikon Type K, which consists of a central split-image rangefinder encircled by a microprism collar set in a fine matte Fresnel-type field. The split-image rangefinder is ideal for focusing on a subject having straight lines; the microprism works well when the subject has indistinct boundaries; and the surrounding fine matte field should be used when shooting with telephoto lenses of small maximum aperture or in close-up or macrophotography.



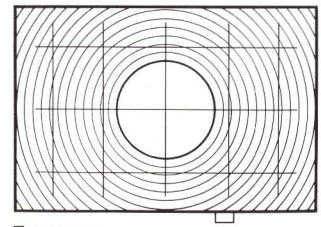
K screen

Accessory Focusing Screens

Presently there are two interchangeable focusing screens available for the FE—Type B and Type E. Type B has a fine matte Fresnel-type field with a central 12mm-diameter fine-ground matte focusing spot and is particularly suitable for close-up work or photography with super-telephoto lenses. The 12mm spot corresponds to the area of center-weighted exposure measurement. Type E is exactly the same as Type B with the addition of horizontal and vertical grid lines, which are very useful when doing document copywork or architectural photography with PC-Nikkor lenses.



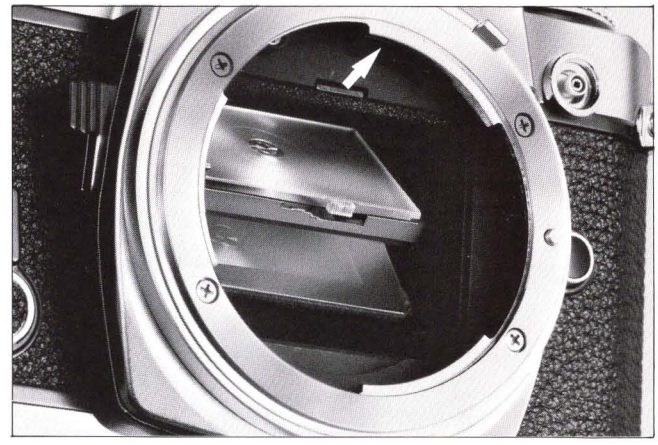
B screen

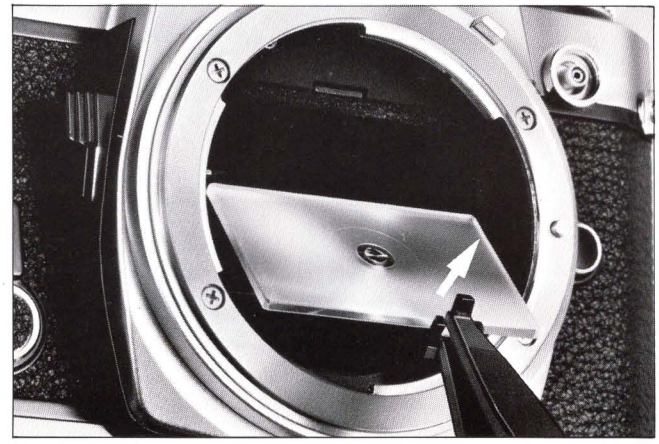


E screen

Changing the Focusing Screen

First remove the lens. Then, insert the tip of the special tweezers (which come in the accessory screen's box) under the small latch located at the top of the mirror box, and pull straight out. The frame holding the focusing screen will fall down into position directly above the mirror. Now, the screen can be removed by grasping the front tab with the tweezers and then stored on end in the slot provided in the screen's box. To install the new screen, grasp its tab with the tweezers, and lay it into the holder with the flat side down. Then, use the tip of the tweezers to push the frame holder up until it click-locks into position. Finally, the screen, which is still standing on end, can be returned to its compartment, the tweezers replaced, and the lid closed for storage. Although you can change the screen with your fingers, it's not recommended because of the likelihood of getting fingerprints on it.





Exposure Control

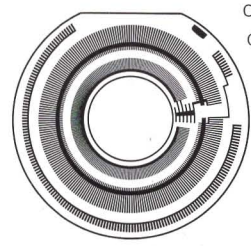
The Nikon FE features the aperture-priority system of automatic exposure control, in which the user sets the f/stop on his lens, while the camera automatically adjusts its own shutter speed to give just the right exposure . . . steplessly over a range from 1/1000 of a second down to 8 full seconds. For instance, if 1/345 second at f/5.6 is required to match the particular lighting conditions, then that's what the FE delivers. Thus, improper exposure—one of the biggest stumbling blocks to good pictures—is completely overcome in the FE. The photographer can now concentrate his full attention on capturing the decisive moment rather than worrying about mechanics. And because the photographer controls the f/stop, he also controls depth of field—an important consideration when shooting with ultra-wideangle or wideangle lenses. But the real beauty of aperture-priority auto-exposure is that almost any lens or camera accessory can be used with the FE to produce automatic exposures, and that includes items like bellows units, extension tubes, telescopes, and microscopes.

Light Sensors

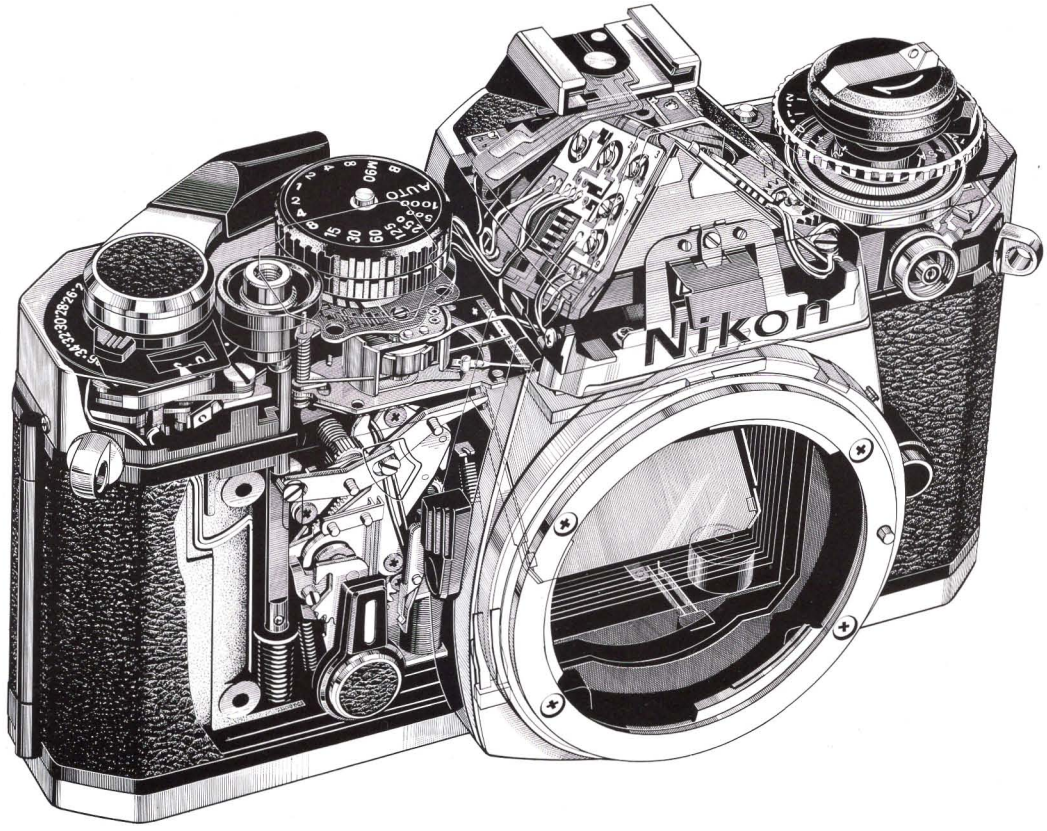
Two silicon photodiodes (SPD's) are positioned, one on each side of the eyepiece, to measure the light coming through the lens. Their almost instantaneous response to rapidly changing light levels and extreme sensitivity to dim light make them the perfect choice for the light metering cells used in an automatic exposure camera, like the FE, where fast handling is essential.

FRE, Monolithic IC, and Reflow Soldering

At Nikon, reliability is a major consideration when designing a new camera, and the FE is certainly no exception. Special care has been given to the design of the FE's metering circuit, so that the camera will deliver accurate exposures despite extremes of temperature and humidity, or the bumps and jolts of normal everyday use. The Functional Resistance Element (FRE) incorporated into the FE's metering system is Nikon's own development. Consisting of an ultra-precise metallic thin-film resistor on a hard glass baseplate, it transmits to the meter the precise information on the ASA film speed set for the film loaded in the camera, the lens aperture selected, and the shutter speed in use. Virtually impervious to changes in temperature and humidity, this important component has been made extra-durable by the use of gold alloy and other precious metals in its connecting tapes and noise-free brushes. Like the FRE, the Bi-mos monolithic IC (integrated circuit) used in the metering system is also Nikon-developed. It consists of 212 elements placed on a mere 2 x 2.6mm silicon wafer. Performance is enhanced by the unification of two types of transitors: Bi-polar and field-effect. This IC computes information from the SPD's and the FRE to control the shutter speed. In addition, a recently developed technique called "reflow soldering" is used to connect the electronic components together. The reflow soldering method features automation of assembly and ensures high-quality, trouble-free performance by the elimination of lead wires.

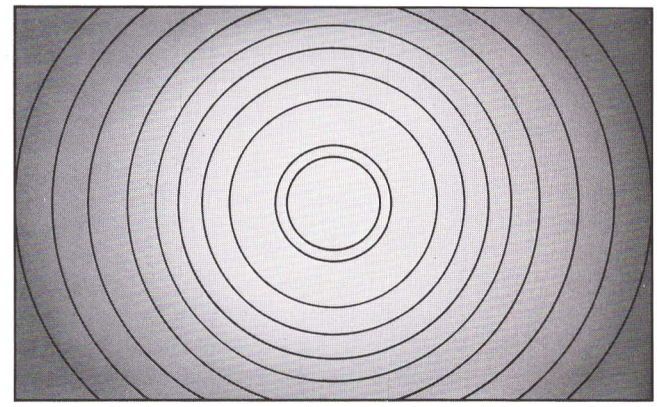


FRE



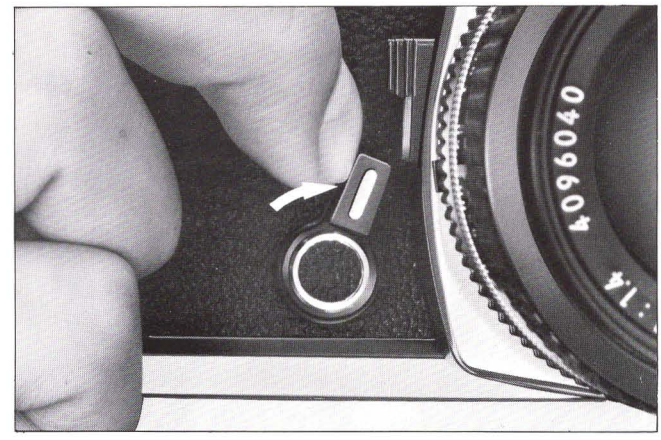
Center-Weighted Metering

First employed in the Photomic FTN finder for the Nikon F in 1967, center-weighted metering has become the standard of the 35mm camera industry for one very simple reason: it assures accurate exposures in nearly all of the lighting conditions encountered in everyday shooting. By concentrating the majority of its sensitivity (60 percent, to be exact) into a 12mm-diameter circle in the center of the frame, the FE's metering system makes certain that the main subject, which most photographers center in the viewfinder, will be properly exposed. Yet, the rest of the picture still receives 40 percent of the meter's sensitivity and is therefore taken into account, too. Center-weighted metering is the perfect compromise between averaging and true spot-meter reading systems.

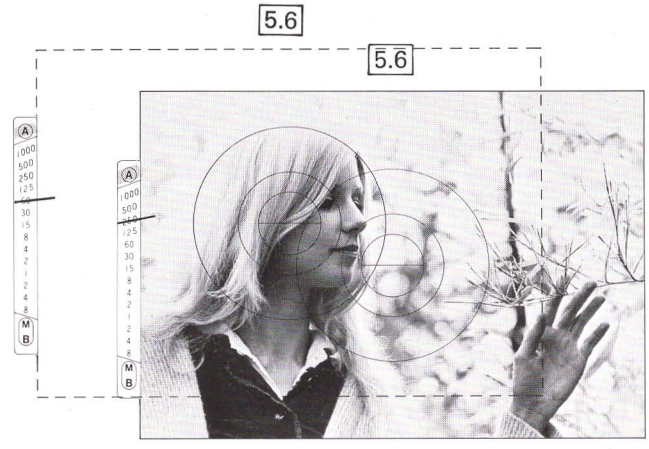


Memory Lock

For those situations, in which you don't want to place the main subject in the center of the frame, or when the subject is back-lit, the FE has the ability to lock in an automatic exposure setting. Because the 12mm-diameter center-weighted spot is clearly etched on all three of the focusing screens available for the FE, it's a simple matter to place this spot over the main subject, push the self-timer/memory lock lever in toward the lens to lock in the reading, then recompose, and shoot. When the lever is released, the FE instantly reverts to its normal automatic operation, in case you change your mind before the shot is taken. Even though the meter needle continues to deflect while the memory lock lever is depressed, the meter reading is still locked in electronically.



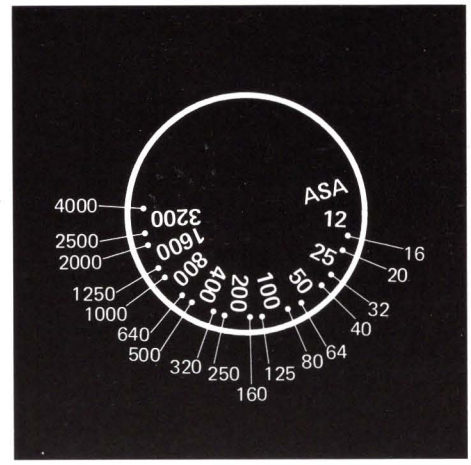
Metering with a bright area in the center will cause underexposure of the main subject.



For correct exposure, first measure the main subject. Then, activate memory lock, recompose and shoot.

Film Speed Selector

A wide range of film speed settings from ASA 12 to 4000 are provided on the FE's ASA dial to accommodate those people who like to shoot the extra-slow specialty films or who push-process their own black-and-white. When used in conjunction with the exposure compensation ring, ASA settings all the way from 6 to 8000 are possible. To change the ASA, push the locking button while rotating the dial until the desired number is lined up with the red index.



Lens/Meter Coupling

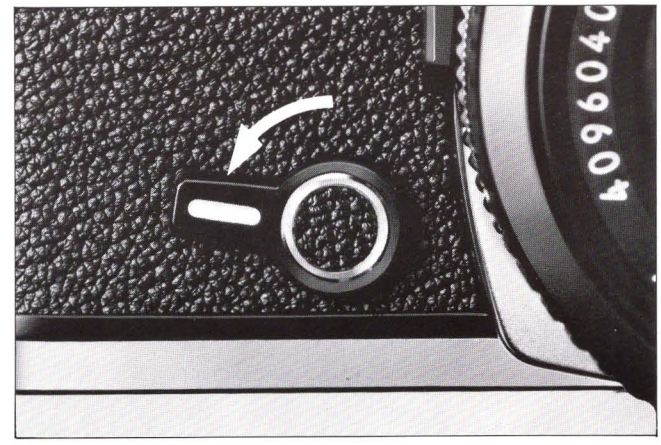
The FE's bayonet mount is fitted with Nikon's Automatic Maximum Aperture Indexing (AI) system; there is a small meter-coupling lever whose purpose is to connect the lens aperture ring to the camera's metering circuit. This system, when used in conjunction with a lens fitted with a meter-coupling ridge, automatically indexes the maximum aperture of the lens in use without having to rotate the aperture ring back and forth.

Stopped-Down Metering

If you intend to use a non-AI-type Nikkor lens on the FE, it's imperative to lock the meter-coupling lever up out of the way ***before*** mounting the lens on the camera. Just push in the small button and lift up the lever. With a 500, 1000, or 2000mm Reflex-Nikkor lens mounted, the FE is a joy to use, because the camera sets its own shutter speed for you automatically and steplessly over its entire range. No other step is necessary, except having the shutter speed dial set to "Auto." When using a preset lens, such as a PC-Nikkor, or a lens mounted on a bellows unit, the lens diaphragm must be stopped-down manually to the desired f/stop to get the correct exposure. For non-AI-type Nikkor lenses (the older types without a meter coupling ridge), it's necessary to push in the depth-of-field preview lever and to hold it in until after the picture is taken. Of course, adjustments in the shutter speed can be made (while the preview lever is depressed) by rotating the aperture ring until the black meter needle indicates the desired speed. Because this is a a time-consuming process, we recommend that your customers have their older lenses AI-modified by Nikon, so that the superior fast-handling characteristics of the FE can be realized.

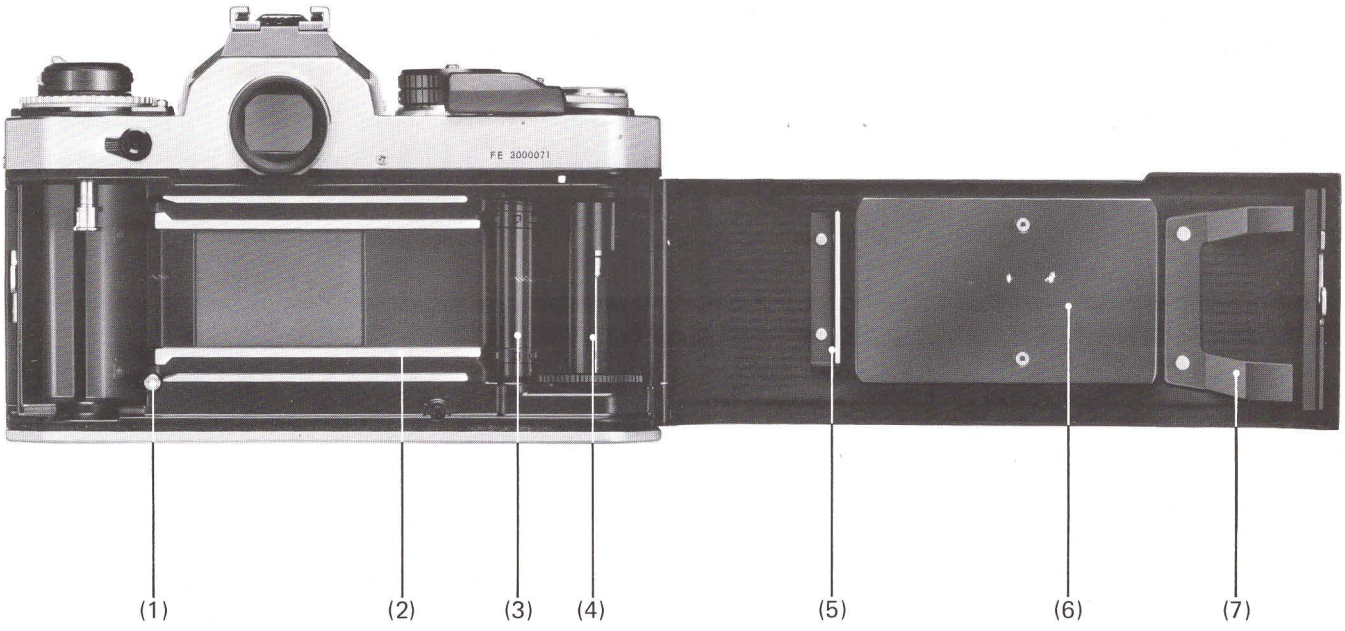
Self-Timer

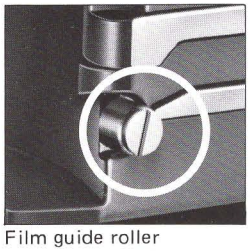
The FE's self-timer is used to trip the shutter after a delay of approximately 10 seconds. To take a picture using the self-timer, first cock the shutter, then rotate the lever counterclockwise until it stops. When the shutter button is pushed, the reflex mirror immediately flips up, the lens diaphragm stops down to the f/stop set on the aperture ring, and the self-timer lever starts to move. Ten seconds later the shot will be taken. Not only is the self-timer useful for taking self-portraits, or including yourself in group shots, but you can use it in lieu of a cable release. It's perfect for critical close-up situations, because the vibrations created by the movement of the reflex mirror have ceased by the time the shutter actually opens. A handy feature of the FE's self-timer is that its action can be cancelled either before or after the shutter button is pushed. Suppose you cock the self-timer, but then decide not to use it. By simply turning the lever back to its upright position and pushing it in toward the lens automatically uncocks the time setting without wasting a frame. You can also terminate the self-timer's action prematurely before the 10 seconds is up by pushing the lever in toward the lens to release the shutter.



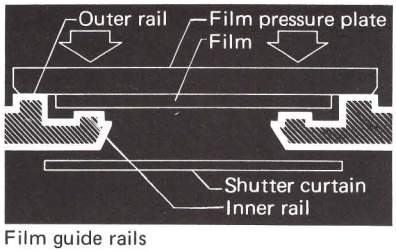
Film Transport

It's a fact that the sharpest lenses in the world will not produce sharp photographs unless the film is held perfectly flat in the camera body and is positioned accurately in the film plane. Therefore, the FE uses the same performance-proven system that was originally designed for the compact Nikon FM. The various parts of the mechanism not only ensure flatness and correct positioning, but allow the film to be advanced through the camera at motor-driven speeds up to 3.5 frames per second with a minimum of friction.





Film guide roller



Film guide rails

Seven-Point Film-Transport System

The FE's film-transport system has the following features:

(1) **A film guide roller,** which guides the lower edge of the film from the cassette onto the guide rails.

(2) **Two pairs of precisely ground rails,** one outer and one inner, to guide the film smoothly and accurately across the film gate.

(3) **A sprocket** with teeth on both ends to transport the film positively through the camera.

(4) **A three-slotted take-up spool,** which firmly grips the film leader and rotates in the opposite direction from the natural film curl for increased flatness.

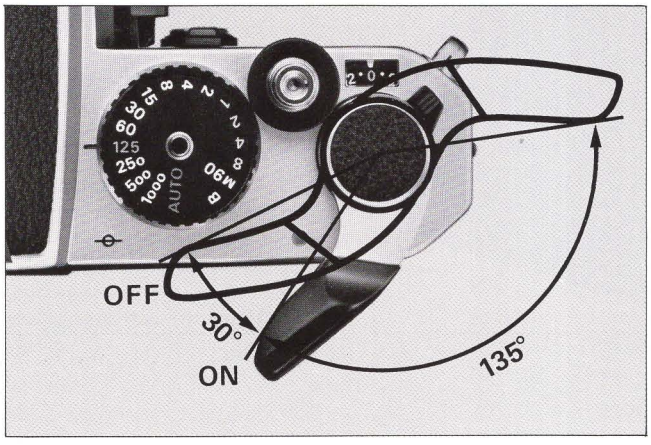
(5) **A film roller** on the inside of the camera back to guide the film from the guide rails to the sprocket.

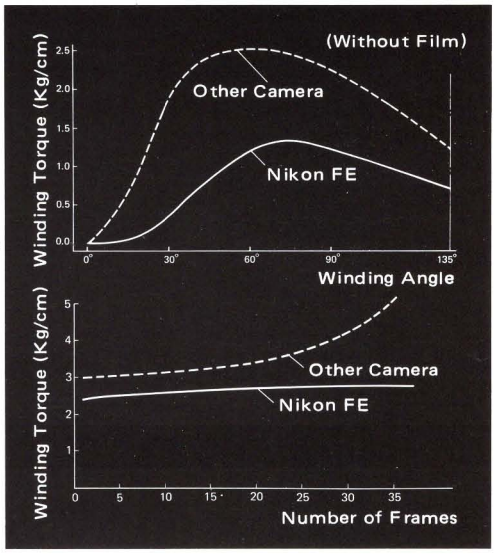
(6) **An extra-large film pressure plate** to keep the film perfectly flat when it's over the film gate.

(7) **A film cassette stabilizer,** which prevents the cassette from wobbling in its chamber.

Film Advance Lever

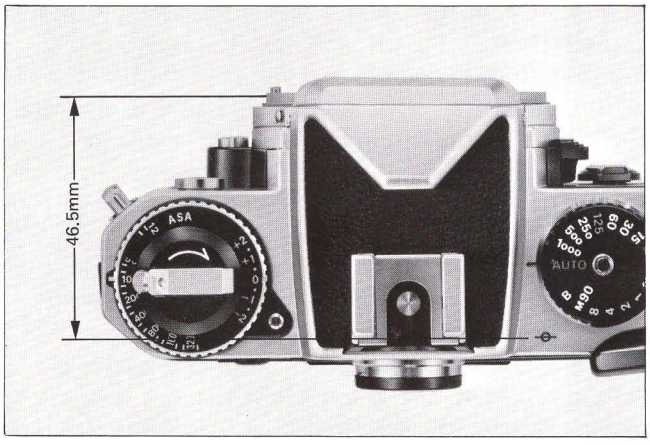
Like the FE's reflex mirror, the film advance lever is exceptionally large. Nikon's engineers did not cut corners here just to make the FE compact. The lever has a comfortable, contoured plastic tip, which fits the thumb perfectly and never feels cold to the touch, even when shooting in near-freezing temperatures. Its throw is a short 135° (in addition to its 30° stand-off). Strategically positioned ball bearings, in combination with a double-shaft winding mechanism, give the lever extra-low torque for consistently smooth operation from the first frame to the last. Stroking the lever simultaneously advances the film, cocks the shutter, and advances the frame counter by one frame.





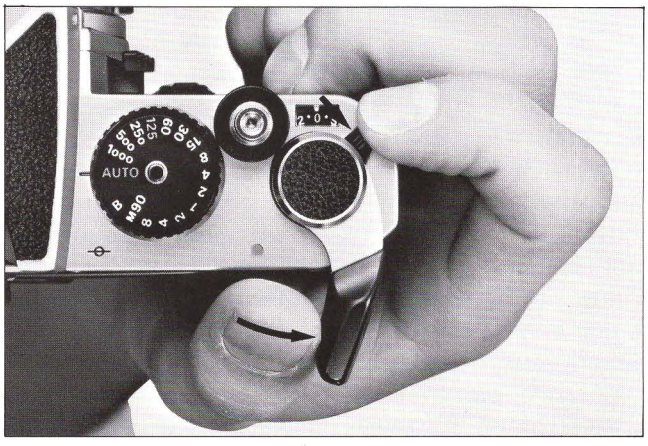
Film Plane Indicator

Located just behind and slightly to the left of the shutter speed dial is the ⊖ mark indicating the exact position of the film inside the camera body; from the film plane to the front surface of the lens mounting flange is 46.5mm. In certain close-up or copywork situations, it is necessary to actually measure the subject-to-film-plane distance in determining the reproduction ratio.



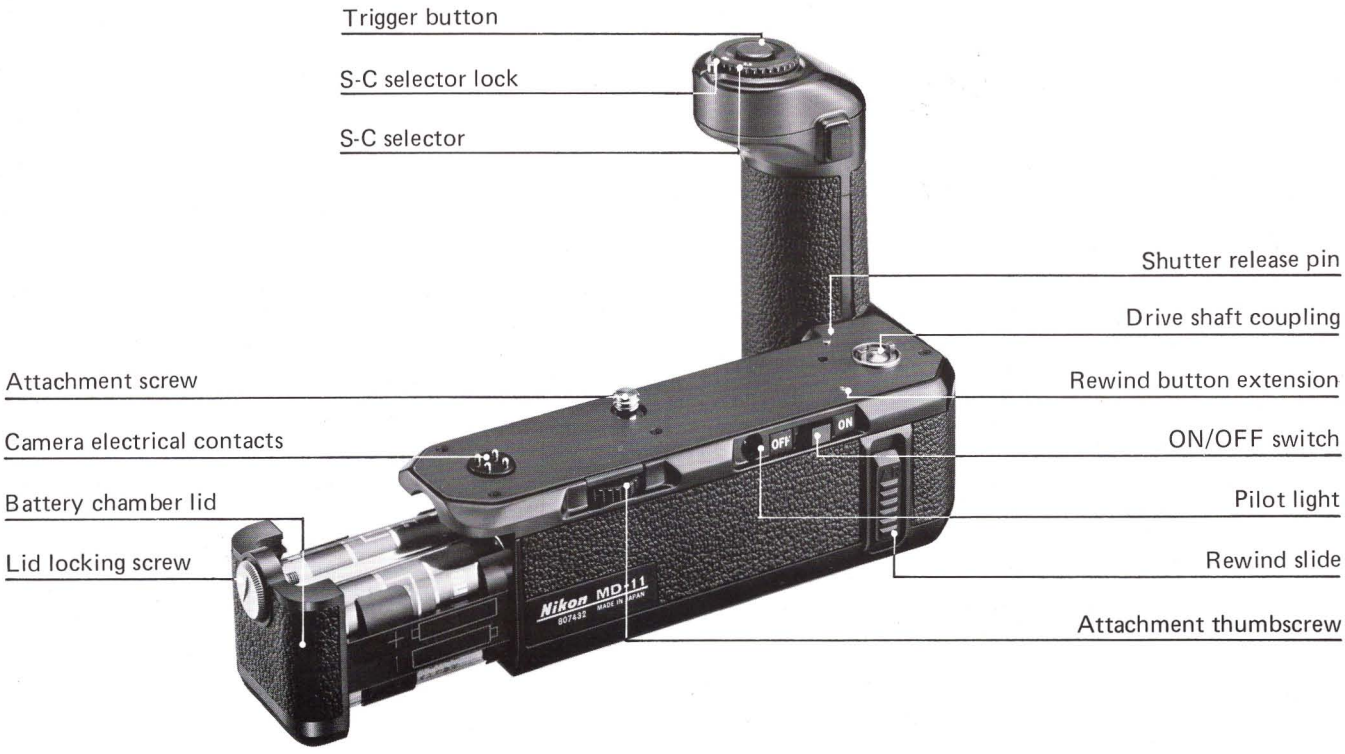
Multi-Exposure Lever

Concentric with the film advance lever and conveniently positioned where the right index finger can reach it, the multi-exposure lever allows the photographer to make one-handed, intentional multiple exposures either manually or in conjunction with the optional motor drive. By pulling back the multi-exposure lever while operating the advance lever, the FE's sprocket is automatically disengaged to allow the shutter to be cocked without the film moving at all. The frame counter also does not move during multiple exposure operation, so the photographer can keep track of the actual number of film frames he has exposed.



Motor Drive Photography

Nikon MD-11 Motor Drive Unit



In 1957, Nikon was the first to introduce an electric motor drive for a 35mm camera. It was designed for the Nikon SP rangefinder model and had a separate and rather bulky (by today's standards) battery pack. Back then, motor driven cameras were only used by "professionals"—those rugged-looking individuals wearing fatigue jackets and having at least three cameras strung around their necks. But now everyone, even the casual snap-shooter, seems to own a camera with motor drive. Why? Because the motor-driven camera offers *two* distinct advantages over its manual film-advance counterpart: (1) instantaneous cocking of the shutter after each shot; and (2) sequence shooting.

In the single shooting mode, a motor drive automatically advances the film and cocks the camera's shutter after each shot. Even though most photographers can manually advance the film almost as fast as a motor drive, sometimes they forget to do so and end up missing the picture, because the camera was not ready. In the same vein, many cameramen pull their eye away from the eyepiece when stroking the advance lever, thus causing a break in the continuity of shooting.

In the continuous mode, a camera with motor drive can produce a sequence of shots of fast action, so that form and movement can be analyzed and studied frame by frame. Some examples are tennis, golf, gymnastics and high diving. But contrary to popular belief, a motor drive-equipped camera is not a panacea for "decisive moment" shooting. What usually happens is that the peak of the action occurs *between* the frames, even at 3.5 frames per second. No, capturing just the right instant on film still requires a thorough knowledge of the sporting activity and a good sense of timing. The experienced photographer will fire off short bursts of two or three shots in anticipation of the peak, rather than blindly holding the motor drive button down continuously.

The MD-11 Motor Drive, designed to fit both the compact Nikon FM and FE cameras without modification, is reliable and versatile enough for professional use, yet is so light and easy to operate that even the beginning photographer will want to own one. Eight AA penlight batteries fit into a special battery clip in its base and power the FE up to 3.5 fps at shutter speeds of 1/125 second and above. When the MD-11 is mounted on the FE, the camera/motor drive combination is almost the same size and weight as a traditional larger-sized 35. The MD-11's controls are uncomplicated and responsive. Just turn the motor drive on, rotate the mode selector to "Single" or "Continuous," and push the trigger button.

And because the FE sets its own exposure automatically, the photographer can track subjects, moving quickly from sunlight to shade and back again, without missing the shot because of improper exposure.

Powered Film Advance

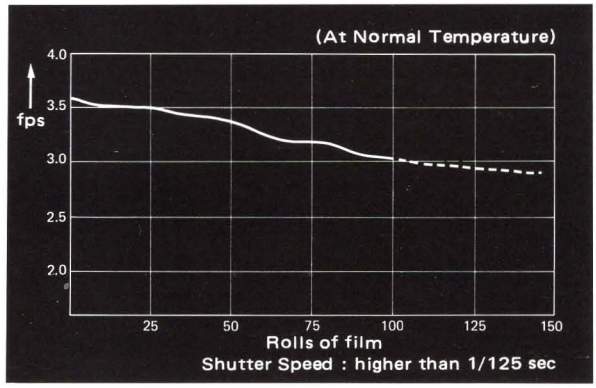
Located at the top of the handgrip and concentric with the trigger button, the Single/Continuous mode selector can be set with the right index finger by pushing the locking button while turning the knurled ring. At the "S" setting, the motor drive advances the film one frame and cocks the shutter as soon as the trigger button is released. At "C," the motor drive fires the FE continuously at 3.5 fps at shutter speeds of 1/125 second and above and at progressively slower rates at 1/90 second and below. All shutter speeds, except "B," can be used at either the "S" or "C" settings.

Human-Engineered Design

The handgrip on the MD-11 is truly a work of art and went through many prototype design stages before its final adoption. Not only does the grip fit the hand comfortably, but it acts as a convenient handle when carrying the FE at arm's length (with the neckstrap wrapped around the hand for safety). Many photographers also find that an easy way to shoot vertical-format pictures, especially when using a flash unit on-camera, is to cradle the grip in the right hand with the thumb on top of the trigger button.

Extended Shooting Capacity

At normal temperatures, the MD-11 will allow shooting of up to 100 rolls of 36-exposure film without needing a change of batteries. Winding torque is approximately 5kg/cm, assuring stable operation all the way up to 3.5 fps.

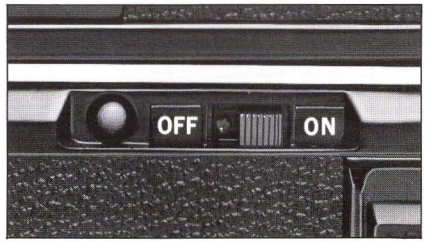


Recessed Trigger Button

Encircled by the S/C mode selector (which doubles as a fingerguard), the MD-11's trigger button is recessed just enough to prevent accidental tripping of the shutter. The button has a total release stroke of 1.1mm, including a safety margin of 0.8mm.

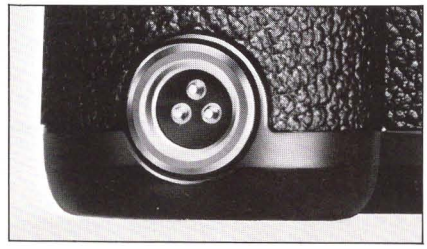
ON/OFF Switch and LED Indicator

When the MD-11's ON/OFF switch is turned on, the FE's metering system is automatically switched on, too, so it's unnecessary to pull the film advance lever out to the stand-off position. A light emitting diode (LED) on the back of the motor drive lights up intermittently to indicate when a shot has been fired and glows continuously when the roll of film in the camera is exhausted and needs rewinding.



Remote-Control Photography

The MD-11 has a built-in three-pin remote terminal at the base of its handgrip to accommodate the connecting cords for various Nikon remote-control accessories, including the MT-1 Intervalometer, ML-1 Modulite Control Set, and MW-1 Radio Control Unit. (For a detailed description of these products, please refer to the Nikon F2 or FM Sales Manual.) In addition, the Terminal Release MR-1 can be plugged into the remote terminal to allow firing of the MD-11 with a Nikon AR-2 cable release.



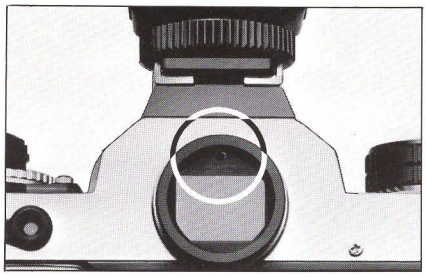
Terminal Release MR-1

Flash Photography

Although the FE is an automatic exposure camera having extreme sensitivity to dim light, there are certain situations which can be improved by using flash. For instance, when photographing fast-moving activities, like birthday parties or rock concerts, a flash unit is the best way to freeze the action. Or, when shooting under artificial illumination with daylight-type color slide film, electronic flash is perfect for eliminating any unnatural color casts which might arise otherwise. Nikon makes a wide variety of electronic flash units, including the SB-5, 6, 7E, and 8E, all of which may be used successfully with the FE. In addition, there is a special companion unit, the SE-10, which has been designed exclusively for the FE to make shooting with flash easier than ever. When the SB-10 is mounted in the FE's hot shoe and the flash unit turned on, the correct flash synchronization speed of 1/90 second is automatically set with the shutter speed dial set on "Auto." (When manually set, shutter speeds up to 1/125 second are usable.) The SB-10 offers a choice of two f/stops on automatic (f/4 and f/8 with ASA 100 film) and has a manual guide number of 25 (ASA 100 and meters) or 41 (ASA 25 and feet). Recycling time is almost instantaneous when shooting subjects at close range, because the SB-10 utilizes an energy-saving, thyristor circuit. Four alkaline-manganese AA penlight batteries, housed in a quick-change clip, provide enough energy for approximately 160 flashes on manual and many more on automatic. Coverage is wide enough for a 35mm wideangle lens.

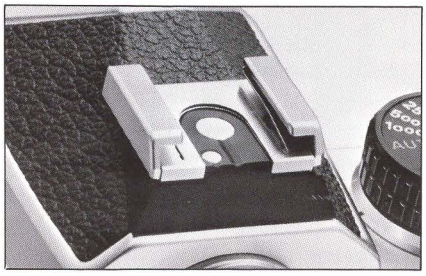
LED Ready-Light

A red LED is built into the top of the FE's eyepiece and is activated when the SB-10 is mounted in the hot-shoe and turned on. As soon as the speedlight is fully charged, the LED will begin to glow. It goes out immediately after a shot is taken and comes back on again when the flash is recharged. In addition to its ready-light function, the LED also serves as a blinking warning signal, when the FE's shutter speed dial has been set manually to a speed higher than 1/125 second.



Hot-Shoe Contact

The FE's built-in accessory shoe offers a convenient place to mount a flash unit, like the SB-10. The main electrical contact in the center of the shoe provides for direct synchronization with all electronic or bulb flash units having an ISO-type "hot-shoe" contact. Simply mount the unit and it's ready to go. A secondary contact links the SB-10 Nikon Speedlight Unit directly to the FE's metering circuit for automatic setting at 1/90 second on "Auto."

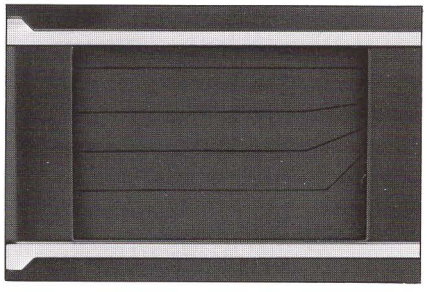


Sync Terminal

The FE has a threaded sync terminal on the front of the camera just below the rewind knob. When using a bracket-mounting flash unit like the Nikon SB-5, or if you want to use the SB-10 off-camera, then a separate sync cord must be connected between the camera and flash. As an added safety feature, the hot-shoe is automatically disconnected from the synchronization circuit to avoid the possibility of electrical shock to the photographer.

Flash Synchronization

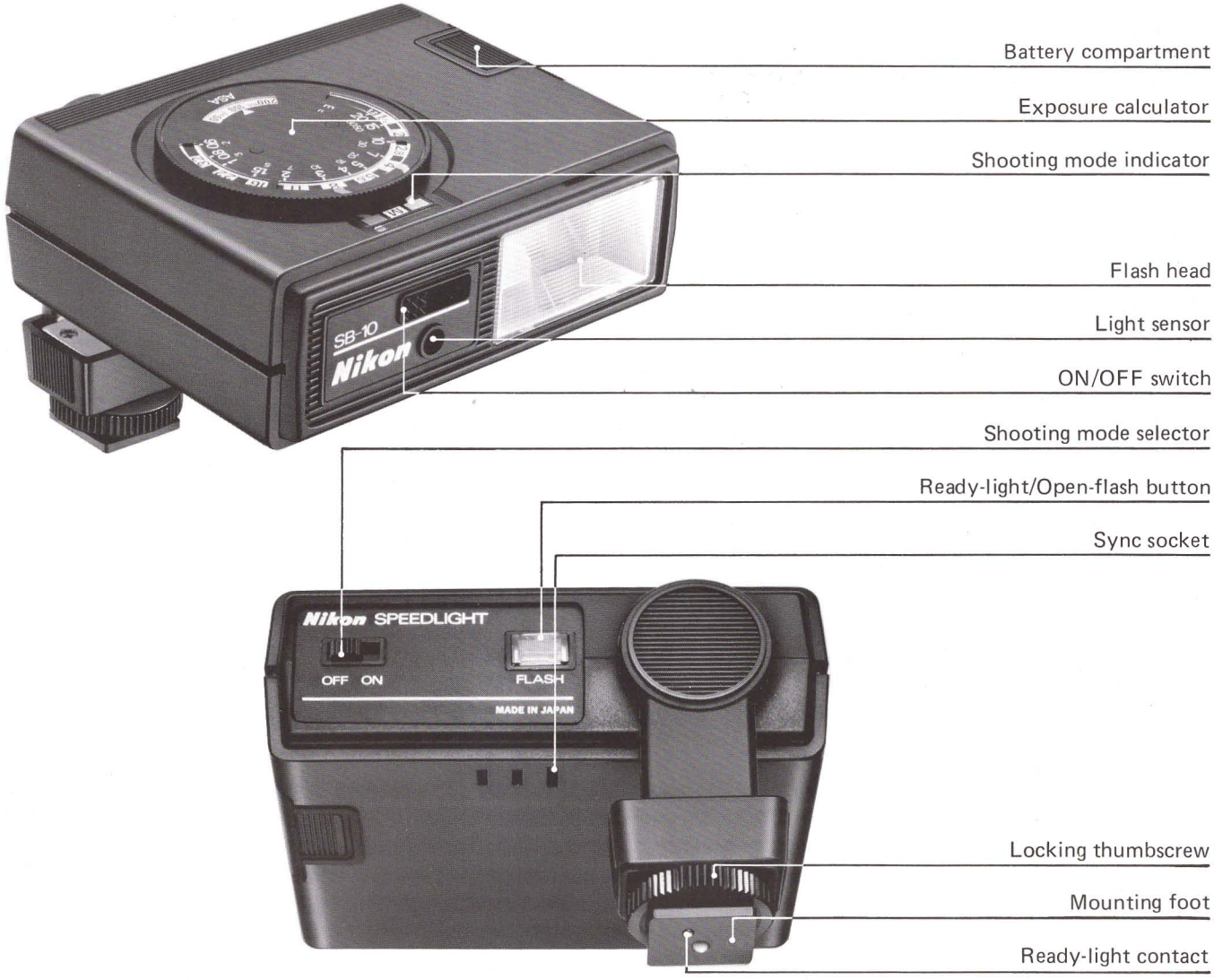
Through the incorporation of a compact Copal Square shutter, whose metal curtains run vertically from bottom to top in approximately 7 milliseconds, the Nikon FE is able to synchronize with electronic flash at all speeds up to 1/125 sec. including the M90 setting (1/90 sec.). For flashbulbs, see the chart below.



Flashbulb	Shutter speed (sec.)															
	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4	8	M90	B
Speedlight																
FP																
M																
MF																

Synchronized Cannot be used

Nikon SB-10 Speedlight Unit



The SW-2 Wide-Flash Adapter slips easily over the reflector of the SB-10 to increase its area of coverage from 56° to 67° horizontally and 40° to 48° vertically making the flash ideal for use with a 28mm lens. In this case, the guide number is reduced to 18 (ASA 100 and meters) or 25 (ASA 25 and feet).

The Battery Holder MS-2 accommodates four spare AA penlight batteries in an extra quick-change clip and is small enough to be stored easily in the corner of a gadget bag.

Reference for Ordering

ITEM	CODE NO.	REMARKS
Nikon FE Camera Body Chrome w/1.5V Silver Oxide Batteries	100-36-000	
Nikon FE Camera Body Black w/1.5V Silver Oxide Batteries	100-36-040	
Type K Focusing Screen	100-36-220	
Type B Focusing Screen	100-36-221	
Type E Focusing Screen	100-36-222	
SB-10 Nikon Speedlight Unit	124-01-012	

Nikon

NIPPON KOGAKU K.K.
Fuji Bldg., 2-3, 3-chome, Marunouchi, Chiyoda-ku, Tokyo 100, Japan Tel: (03) 214-5311 Printed in Japan FE-1 (7807)