# F2 SALES MANUAL

Nikon


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NIKKOR 50mm 1:1.4
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## Contents



# General Introduction to the F2 Nikon Cameras



In 35mm SLR photography today, one name stands above all others to epitomize the finest in precision and solid camera performance. That name is the F2 from Nikon—the successor to the world-famous Nikon F that made the concept of system-atization a standard for all 35mm SLR makers to follow. The basic F2 body configuration, which serves as the foundation for all F2 Nikon cameras, continues in the Nikon tradition, providing a new level of performance and versatility by which all other cameras are judged.

The secret of the F2's success is the advanced planning that established the basic design concepts. Nikon chose *building-block construction*, *total ruggedness* to meet professional requirements and *precision without compromise* as the three guiding principles for the development of the F2 System. As a result, all F2 Nikons are built to the highest standards of precision, with painstaking attention to details. The basic body is capable of accepting, without modifications or adjustments, a full range of major components and accessories to meet user requirements as diverse as photomicrography and motorized sports photography. And all components, including the interchangeable focusing screens, viewfinders, camera backs, motor drives, or lens-related equipment, meet the same high standards of precision to ensure the finest results.

Careful selection of construction materials, too, helps the F2 meet the high standards that only Nikon dares claim—and that only Nikon can provide. The shutter, for example, is made of durable, space-age titanium for top performance even at high shooting speeds as encountered during motorized photography. And the bayonet mount uses a specially-selected, hardened steel to assure years of wear-free lens interchange.

In fact, no matter where you look, the F2 body can boast a level of construction that is virtually unmatched in any other camera made today—all to ensure unbeatable performance for years to come.

Of course, to the serious photographer, the most gratifying feature of the F2 is its capacity to meet the changing needs of modern photography via the simple introduction of new building blocks within the system. Nikon calls this feature built-in resistance to obsolescence, and it guarantees that the F2 is ready for any assignment, no matter how demanding. With the new-generation Nikons presented in this manual, Nikon has again expanded the F2 benefits by incorporating the new Automatic Maximum Aperture Indexing (or AI) system to provide for simplified lens/meter coupling, yet has maintained the integrity of the system by employing the same lens mount. For the photographer, this advance means faster, sure operation, and another step forward for the finest camera available today.

# Outstanding Features of the F2 Camera Body

- **Full-frame precison TTL viewing.** The F2 Nikons offer thru-the-lens (TTL) viewing that's second to none—virtually 100% of the image recorded on film—to enable the photographer to compose right up to the edge of the frame. With the F2 viewing system, critical photographic situations can be handled with the confidence that the results will match the original composition. And for greater convenience, there's a wide standard accessory lineup of full-coverage interchangeable finders and focusing screens which can be combined to meet virtually every photographic speciality and need.
- **Strong and durable Nikon bayonet mount.** The Nikon bayonet mount has proven itself over more than a decade of unmatched reliability. It's the same mount first fitted on the Nikon F camera—strong, reliable and virtually immune to the daily wear and tear generally associated with lens interchange on 35mm SLR cameras. The Nikon stainless steel mounting flange is fitted on all F2 Nikon cameras to ensure Nikkor lens users of the continued usability of their lenses for years to come.
- **Nikon-built precision focal-plane shutter.** The F2 shutter is a direct result of Nikon's advanced manufacturing capabilities and comprehensive research and development. The shutter curtains are made of titanium—a Nikon first and exclusive for 35mm SLR photography—for the finest and strongest operation. With titanium, the shutter curtains are fully capable of resisting the severe strain and tendency to elongate, experienced during demanding, high-speed shooting with the motor drive. The shutter is capable of more stable operation even under extreme temperature conditions. The shutter also provides an exceptionally fast transit time of 10 milliseconds for curtain traveling, a brake system which resists shutter bounce, and other solid features to equip the F2 Nikon cameras with the means to capture the shots precisely, each and every time.
- **Unique, precision self-timer mechanism.** In addition to the standard operation for delayed exposures, as for self-portraits, the built-in self-timer mechanism can be used in conjunction with the shutter mechanism via the special internal coupling for extra-long exposures to a full ten seconds. Thus, a combined setting of the shutter speed selector and T-L fingerguard actuates the self-timer for extended exposure without the need for accessory equipment.
- **Full motor drive system capabilities.** Nikon cameras pioneered 35mm SLR motorized photography, so it's only appropriate that one of the foremost features of the F2 Nikons is their capacity for high-speed motorized operation—up to 5 fps, and without the need for special modifications. At the baseplate are found all the necessary couplings, including access for power rewind operation, to enable full operation without removing or changing the camera back. Thus, connection is quick, strong, and precise to match the F2 with applications as demanding as scientific and industrial photography.
- **Ease of operation with flash.** The F2 Nikons offer some distinct advantages when working with flash photography. The shutter offers extended electronic flash operation range, sync timing selection is automatic with shutter speed selection, and a hot-shoe accessory mount is provided for fast and sure flash unit connection. Also, all three F2 Nikons feature the unique viewfinder ready-light that lets the the photographer know the flash condition at the eyepiece. Yes, flash photography and the F2 Nikons are made to go together.
- **Comprehensive system capabilities.** The building-block design of the F2 is used to the fullest with the F2 System of Photography. Within this system are found a wealth of the most precision photographic tools that make for the finest results, whether improving the camera's operation convenience or extending the operational range. Indeed, the comprehensive F2 System, with its versatile lineup and over 55 Nikkor lenses, ensures that the photographer is fully prepared to translate creative ideas into creative results.

The F2 Nikon camera configuration. It offers the photographer the total coverage to meet the most demanding photographic applications, via an extensive system and proven features unmatched by any other 35mm SLR camera available today.

### The Nikon F2 Camera

The Nikon F2 is the basic F2 Nikon, offering the advantages of the F2 body configuration with the conveniences of eye-level shooting. The DE-1 eyelevel finder provided with the camera as standard equipment offers full-frame viewing with the subject both erect and unreversed, and assures viewing and convenient operation in situations where built-in metering is not a requirement. Some of the features of this camera include reduced weight and increased compactness for greater portability and easier handling, silver coating of the pentaprism for maximum image brightness, and the convenience of a ready-light at the eyepiece for use with electronic flash.

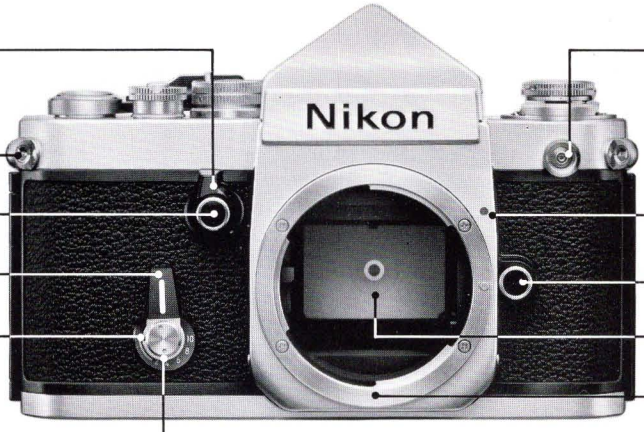

### The Nikon F2A Photomic Camera

The combination of the basic F2 body and the DP-11 Photomic finder provides the Nikon F2A Photomic camera with the ruggedness and versatility that make it an ideal choice for general-purpose photographic applications. The DP-11 finder fitted on this camera features the renowned Nikon center-weighted, TTL metering system that concentrates 60% of the light reading in only one-eighth of the image area, while simultaneously covering the entire field. As a result, this camera provides greater responsiveness for metering under varying or contrasting lighting conditions and, with a range covering EV 1 to EV 17, full suitability to meet the needs of all but the most extreme lighting situations. Other features of the F2A Photomic camera include the display of exposure information within the viewfinder and atop the finder assembly, the convenience of AI meter coupling for quicker lens mounting, and the capacity for both full-aperture and stop-down exposure measurement.

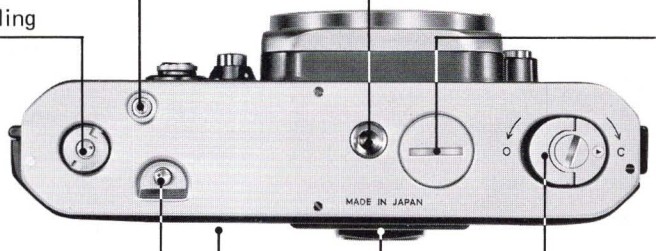

### The Nikon F2AS Photomic Camera

Combining the latest in metering technology for extended performance to low lighting levels, and the convenience of the new AI system for lens/meter coupling, the Nikon F2AS Photomic camera is the state-of-the-art in today's 35mm SLR photography. This camera features the basic camera body and the sophisticated DP-12 Photomic finder to provide the F2 Nikon lineup with an automatic EE control camera. The DP-12 finder employs special silicon photodiodes (SPD's) for rapid response to lighting changes, even as low as EV −2, and provides for greater operation ease via a high-visibility exposure display using light-emitting diodes (LED's). An external connection is provided for use with the accessory DS-12 aperture control unit to enable full "shutter-priority" automatic exposure operation capable of meeting the needs of even fully-unmanned/remote-control photography. And, of course, the camera offers the new AI coupling system for use with all new AI Nikkor lenses for error-free meter operation. Yes, fully featured to meet the most demanding and wide-ranging photographic applications, the Nikon F2AS Photomic camera is the finest 35mm SLR camera available today.

# Nomenclature

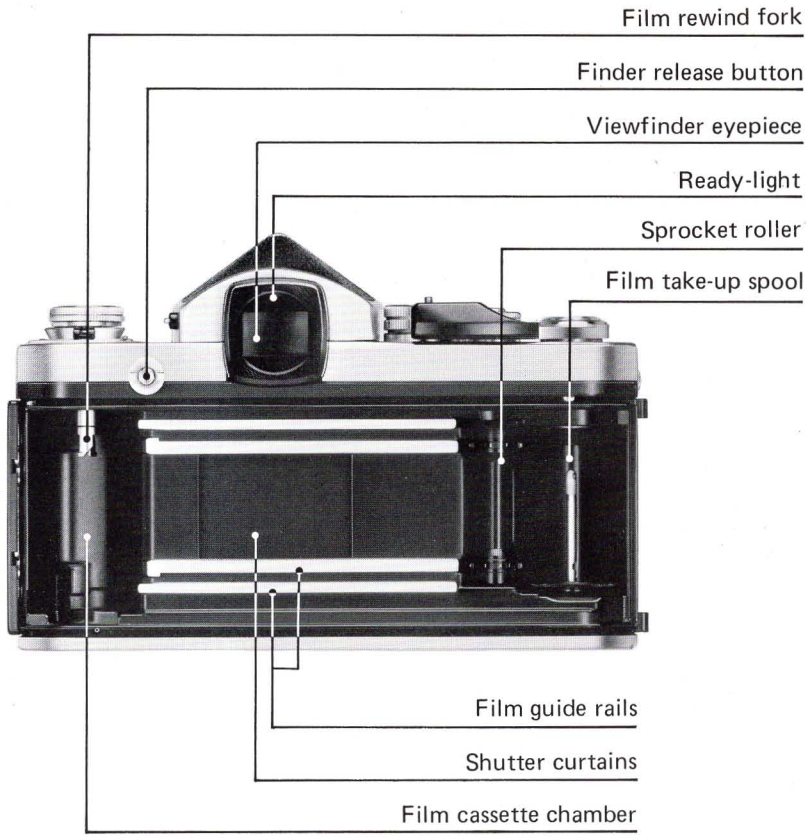


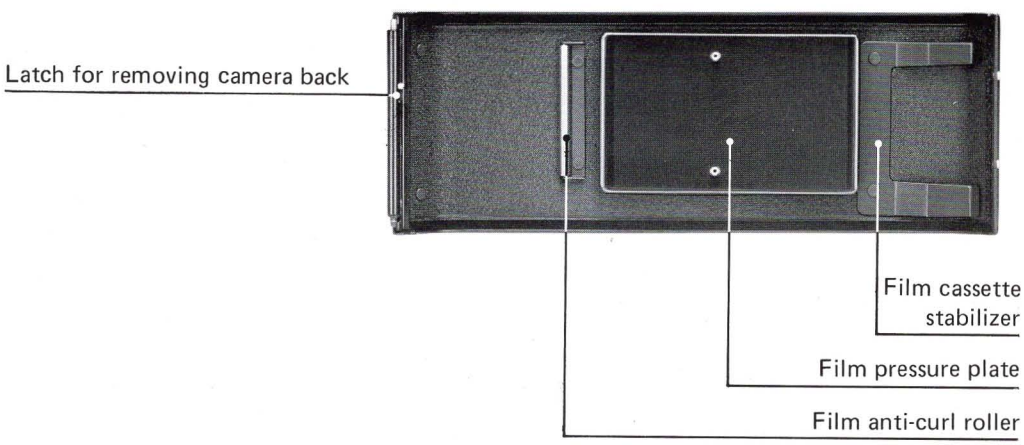

Mirror lockup lever
Neckstrap eyelet
Depth-of-field preview button
Self-timer
Timer index
Timer scale
Threaded sync terminal
Lens mounting index
Lens release button
Reflex mirror
Lens mounting flange



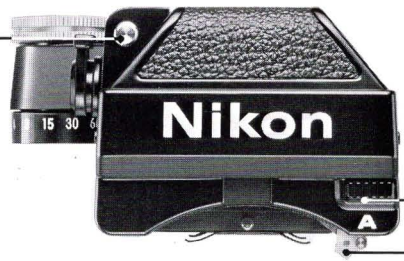

Motor drive shutter-release coupling
Motor drive film-advance coupling
Film rewind button
Camera back
Tripod socket
Battery chamber
O/C key
Memo holder

Film rewind knob
Film rewind crank
Accessory shoe
Hot-shoe contact
Finder release button
Ready-light contact
Shutter-release button
T-L fingerguard
Frame counter
Meter ON index
Film-advance lever
Shutter-speed dial
Viewfinder eyepiece


Film rewind fork
Finder release button
Viewfinder eyepiece
Ready-light
Sprocket roller
Film take-up spool
Film guide rails
Shutter curtains
Film cassette chamber


Latch for removing camera back
Film cassette stabilizer
Film pressure plate
Film anti-curl roller

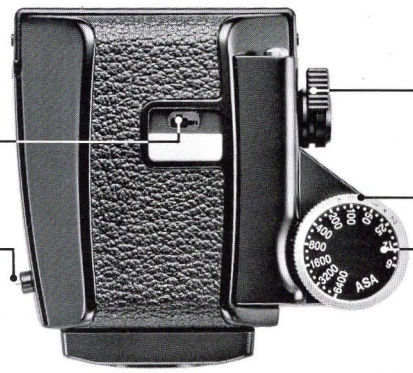
## F2A Photomic Finder DP-11




Power check button

Coupling lever release

Meter coupling lever




Finder release lever

Meter window

ASA film-speed index ring

Ready-light contact

ASA film-speed scale

Shutter-speed selector

Shutter-speed index

Ready-light

Shutter-speed scale

Viewfinder eyepiece



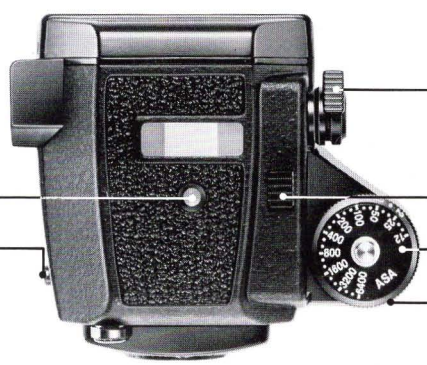
## F2AS Photomic Finder DP-12

Shutter-speed dial lock

Shutter-speed selector


Coupling lever release

Meter coupling lever




Finder release lever

External "correct exposure" indicator

Finder illuminator switch

Ready-light contact

ASA film-speed scale

ASA film-speed index ring

Eyepiece shutter control

Shutter-speed index

Ready-light

Extra-long exposure scale

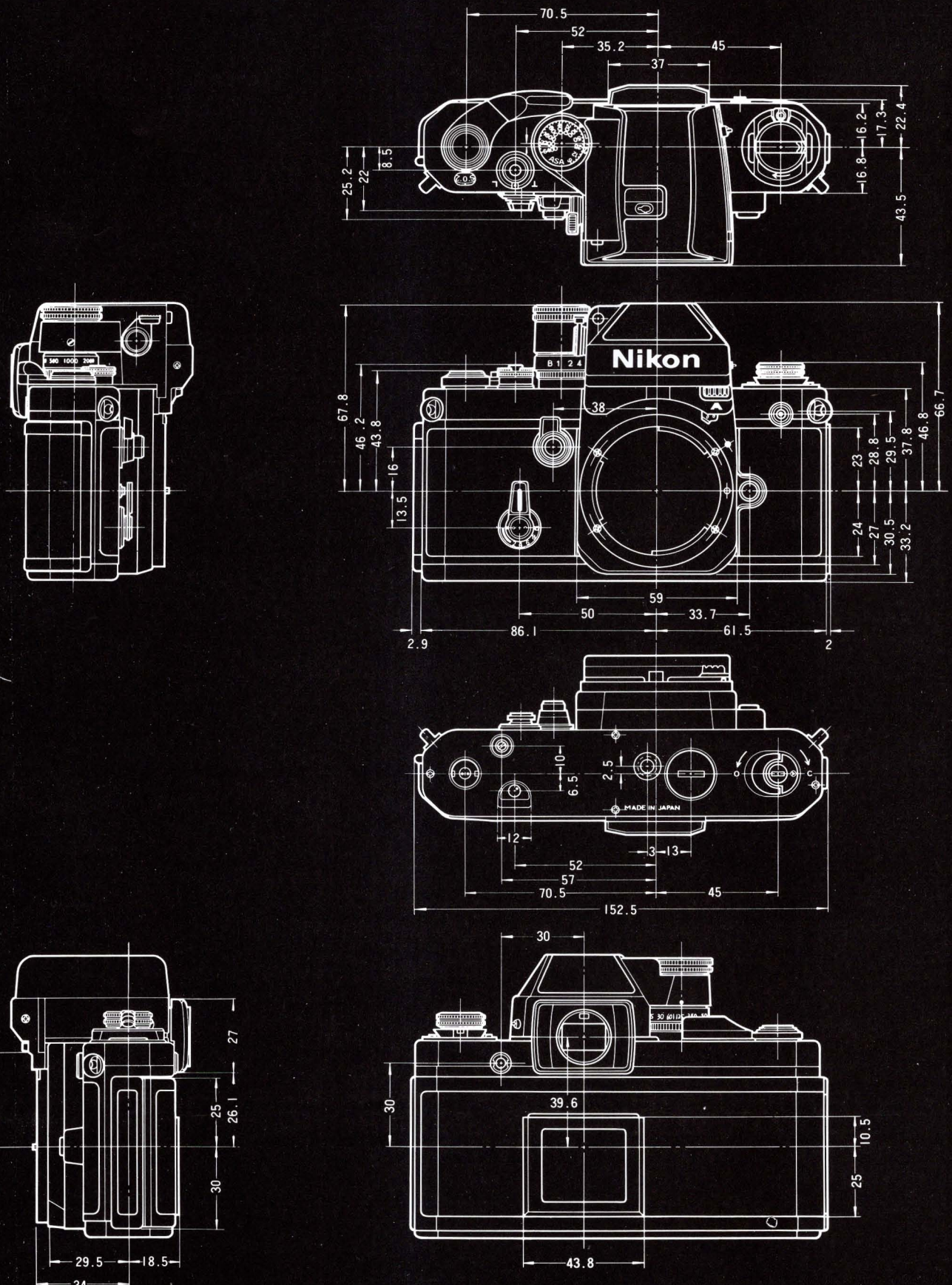
Viewfinder eyepiece

Shutter-speed scale

# Specifications

| | Nikon F2 | Nikon F2A Photomic | Nikon F2AS Photomic |
|---|---|---|---|
| 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/2 and 55mm f/1.2 as standard; more than 55 Nikkor lenses in all | | |
| Shutter | Horizontal-travel titanium focal-plane shutter; speeds of from 1 to 1/2000 second and "B" in fourteen steps direct via shutter-speed dial; intermediate dial settings possible between 1/80 and 1/2000 second; speeds of from 2 to 10 seconds also available at "B" using self-timer and "T" setting of T-L fingerguard; shutter release via self-timer and built-in shutter-release button | | |
| Shutter mode selection | Operation mode selected via T-L fingerguard positioned coaxial with shutter-release button; three positions provided on fingerguard for standard speed selection via shutter-speed dial (center position), self-timer-controlled "B" time exposures to 10 seconds ("T" position) and shutter-release button lock ("L" position); "T" position also suitable for extended exposures without self-timer | | |
| Flash synchronization | Automatic selection of sync timing as shutter speed is set; cordless electrical connection for flash operation via built-in accessory shoe with hot-shoe contact; off-camera flash operation using sync connecting cord via single threaded PC terminal provided | | |
| Synchronization range | 1/2000 ~ 1/125 second, 1/30 ~ 1 second and "B" for FP bulbs; 1/30 ~ 1 second and "B" for M and MF bulbs; 1/80 ~ 1 second and "B" for electronic flash | | |
| Accessory shoe | Special Nikon-type shoe built into body; shoe fitted with hot-shoe contact and electrical safety switch which turns on contact as flash unit is mounted | | |
| Viewfinder | Interchangeable eyelevel pentaprism type (model DE-1); virtually 100% frame coverage provided | Interchangeable eyelevel pentaprism type with built-in thru-the-lens (TTL) exposure meter (model DP-11); virtually 100% frame coverage provided | Interchangeable eyelevel pentaprism type with built-in thru-the-lens (TTL) exposure meter (model DP-12); virtually 100% frame coverage provided |
| Focusing screen | Matte Fresnel field with central split-image rangefinder surrounded by microprism ring; 12mm diameter reference circle defines area of center-weighting when using Photomic finder; Nikon Type K screen; interchangeable with any of 18 other models | | |
| Reflex mirror | Instant-return type; lockup lever provided | | |
| Exposure metering | – | Thru-the-lens (TTL), center-weighted system; both full-aperture and stop-down measurement possible; exposure correctly set by adjusting aperture and/or shutter speed controls for meter needle centering; automatic aperture indexing provided for AI Nikkor lenses; powered by two 1.5V silver-oxide batteries | Thru-the-lens (TTL), center-weighted system; both full-aperture and stop-down measurement possible; exposure correctly set by adjusting aperture and/or shutter speed controls; exposure indication illuminator provided; automatic aperture indexing provided for AI Nikkor lenses; powered by two 1.5V silver-oxide batteries |
| Exposure indication | – | Via single meter display within the finder and one atop the finder; selected aperture and shutter speed displayed within finder (aperture visible only with AI lenses) | Via three light-emitting diodes (LED's) within the finder and one atop the finder; selected aperture and shutter speed displayed within finder (aperture visible only with AI lenses) |
| Metering range | – | EV 1 ~ EV 17 (i.e., f/1.4 at 1 second ~ f/8 at 1/2000 second) with 50mm f/1.4 lens and ASA 100 film | EV –2 ~ EV17 (i.e., f/1.4 at 8 seconds ~ f/8 at 1/2000 second) with 50mm f/1.4 lens and ASA 100 film |
| Film speed scale | – | Settings provided for ASA 6 to ASA 6400 | Settings provided for ASA 12 to ASA 6400 |
| Lens/meter coupling | – | Built-in meter coupling lever for Nikkor lenses capable of automatic maximum aperture indexing; coupling range of from f/1.2 to f/32 provided | |
| Film winding | Manual via rapid-action lever fitted atop body; 20° standoff position provided at start of lever throw; 120° winding action possible in one continuous stroke or several shorter strokes; coupling also provided at baseplate for winding via motor drive | | |
| Frame counter | Shows number of frames exposed (additive type); calibrations provided for up to 40 frames for operation with Nikon AM-1 reloadable cassette; counter automatically resets to "S" (two frames before "0") as camera back is opened | | |
| Film rewinding | Manual via continuous-rotation crank fitted atop body; coupling also provided at baseplate for rewinding via motor drive | | |
| Depth-of-field preview | Manual via button provided at front of body | | |
| Body finish | Satin-chrome and semi-gloss black | | |
| Special features | Direct motor drive mounting; finder/screen interchangeability; eyepiece ready-light built into finder; threaded eyepiece for accessory mounting | Direct motor drive mounting; finder/screen interchangeability; eyepiece ready-light built into finder; threaded eyepiece for accessory mounting; power check button built into finder | Direct motor drive mounting; finder/screen interchangeability; eyepiece ready-light built into finder; threaded eyepiece for accessory mounting; illuminator and eyepiece shutter built into finder; EE aperture control interface |
| Weight | 730g (body only) | 830g (body only) | 840g (body only) |
| Dimensions (W x H x D) | 152.5mm x 98mm x 56mm | 152.5mm x 102mm x 65.5mm | 152.5mm x 102mm x 66mm |

# Dimensions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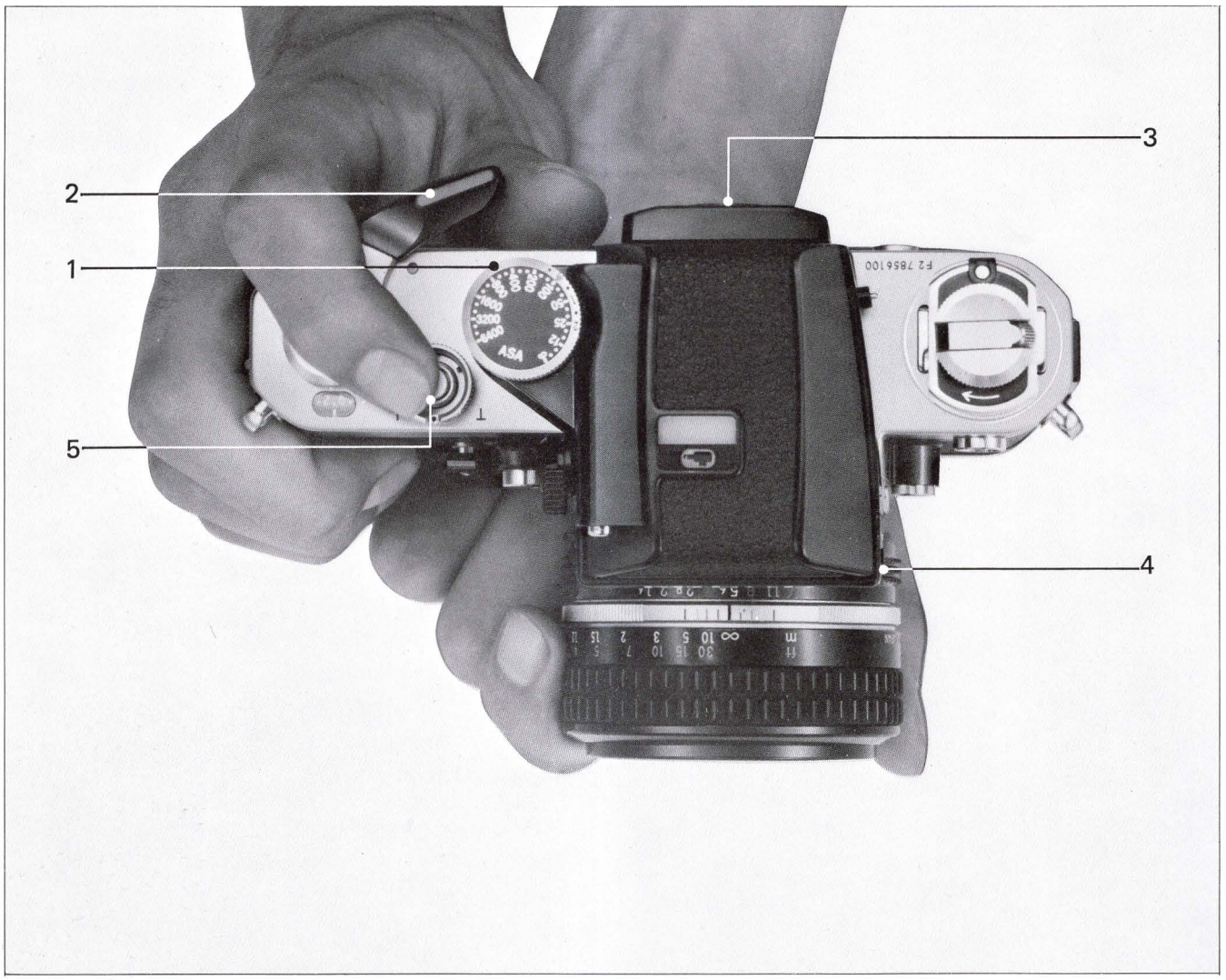
# Brief Guide to Camera Handling





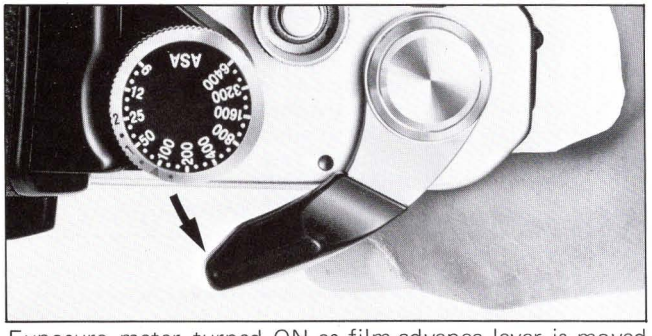

The F2's conveniently-placed controls facilitate operation of the camera under even rapidly-changing conditions. After performing the standard preparatory steps (e.g., loading the film, setting the film speed, etc.), shooting with the F2A/AS Photomic for most situations is as easy as the following steps.

1. **Set the shutter speed** via the conveniently-placed dial.*
2. **Advance the film** by stroking the lever, this action will also turn on the built-in meter.
3. **View/focus/compose the subject** through the viewfinder, turning the lens' focusing ring as necessary to achieve a sharp image.
4. **Set the aperture ring*** to get correct exposure as indicated by the meter display.
5. **Assume a shooting stance and expose the film** by depressing the shutter-release button.

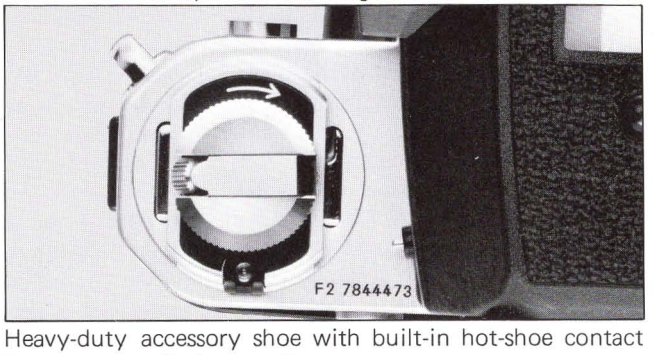
* Interchangeable steps


Ready access to batteries via the baseplate battery chamber.

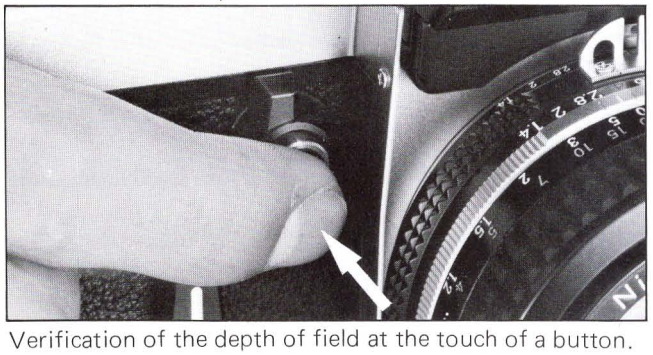

Quick 60°-twist lens mounting with simultaneous automatic maximum aperture indexing.



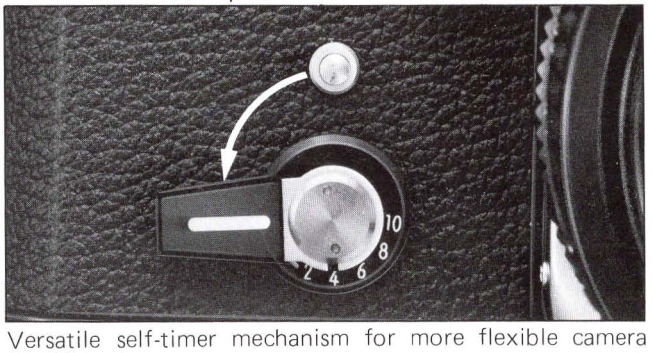

Exposure meter turned ON as film-advance lever is moved to the 20° standoff position.



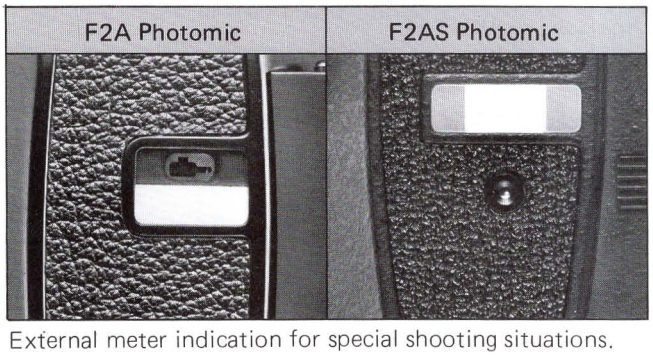

Heavy-duty accessory shoe with built-in hot-shoe contact for on-camera flash operation.



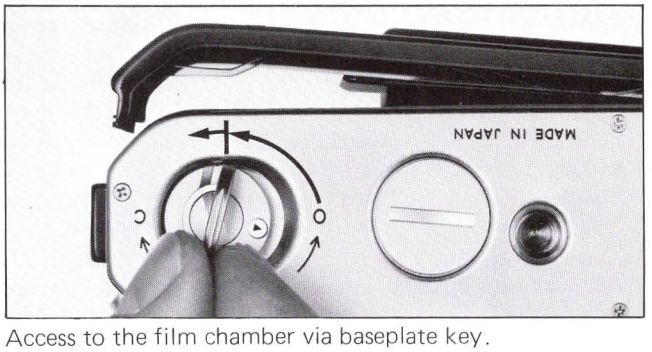
Verification of the depth of field at the touch of a button.



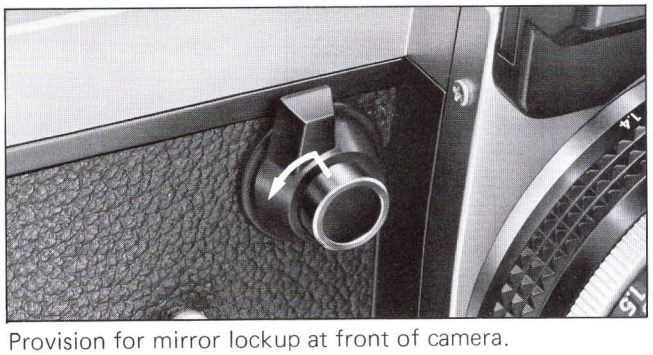

Versatile self-timer mechanism for more flexible camera control.




External meter indication for special shooting situations.

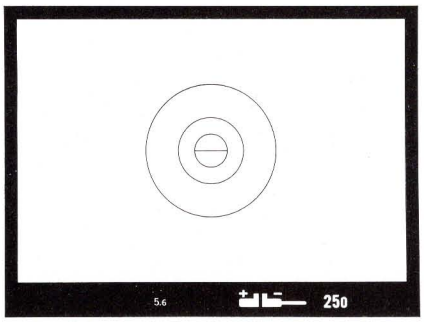


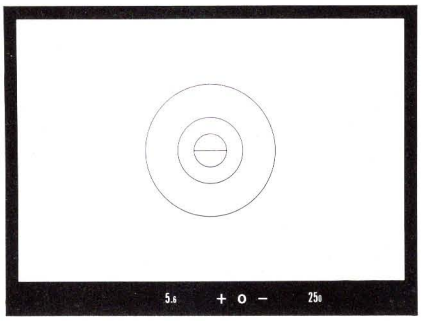

Access to the film chamber via baseplate key.



Provision for mirror lockup at front of camera.

# Viewing/Metering Functions

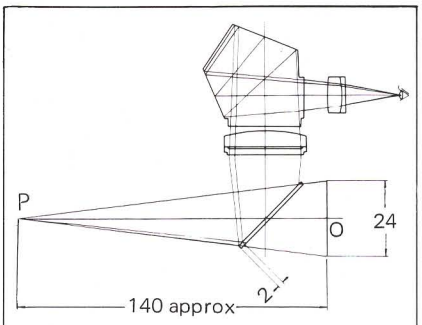


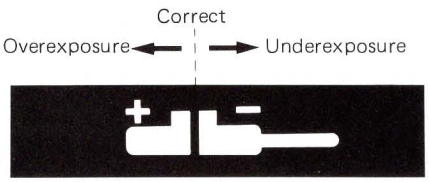

The F2 camera body excels in the area of viewing and metering, thanks to the provision for interchangeability of the finders. The upper portion of the mirror box provides for mounting of the finder and focusing screen, and it offers a special locking/seating mechanism that ensures ultra-precision alignment for exact focusing. Another feature of the viewing system is the precision construction that ensures virtually 100% coverage of the image (regardless of finder/screen combination) as recorded on film to enable composition right up to the edges of the frame. The focusing screen fitted as standard with all three F2 Nikons is the Type K screen, selected for its versatility under a wide variety of shooting applications; the central portion of the screen features a split-image rangefinder for precision focusing, surrounded by a microprism collar and a matte Fresnel field; with this screen, the photographer can select any of the three portions of the screen for the specific focusing "aid" most suited to the particular requirements of either the subject or the lens in use.

Nikon's Photomic center-weighted metering system is used in Nikon finders offering thru-the-lens (TTL) metering. With these finders, the light is measured over the entire image area, but favoring the central 12mm-diameter portion of the field (as engraved on the focusing screen). This central area, while representing only one-eighth of the total field, is responsible for approximately 60% of the meter reading; the remaining 40% of the reading is taken in gradually diminishing degrees of sensitivity over the remainder of the field. By using this time-proven method, the meter provides for more balanced readings over the widest range of lighting conditions, and equally so whether it is used for vertical or for horizontal format shooting. All meter readings with Photomic-type finders are performed at full aperture with AI Nikkor lenses via the cross-coupling of the shutter-speed and aperture controls; for lenses and accessories not offering the AI facility, lens/meter coupling is not provided, and stop-down exposure measurement is required.

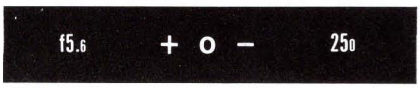
The viewfinder display in the Photomic-type finders provides the photographer with all the information essential to correct exposure; and to enhance readability of the exposure information while reducing eyestrain, the display is presented parfocal with the focusing screen image. Specific information displayed includes the meter indicator, the selected shutter speed and (in case of operation with Nikkor lenses offering the AI facility) the selected aperture. The shutter speed display is provided via internal mechanical coupling, while the aperture display is optically relayed from the special secondary scale (called the "Aperture-Direct-Readout," or ADR, scale) on the lens' aperture ring via the supplementary prism built-in at the front of the finder. The meter indication display of the DP-11 is illuminated via transmitted light through the translucent mask atop the finder assembly; "correct exposure" setting is achieved by positioning the needle within the notched center portion, with over- and underexposure conditions clearly denoted on either side via the plus (+) and minus (−) marks, respectively. The meter display provided in the DP-12 finder, on the other hand, is fully electronic and employs light-emitting diodes (LED's) in a five-step, three-diode configuration; as the LED's provide their own illumination, visibility is no problem, even at low-light levels, and exact indication of the "correct exposure" point is facilitated. As an added convenience with both Photomic-type finders, external display (from atop the finder housing) of the meter information is provided—useful when working in special shooting situations.




PO value is the distance between P and O in the above diagram, where the optical axis intersects a line connecting the vertical edges of the film frame and reflecting mirror. The larger the PO value, the smaller the possibility of image cutoff by the mirror or when long focal length lenses are used. The Nikon F2's reflex mirror is 2mm longer than the Nikon F's.



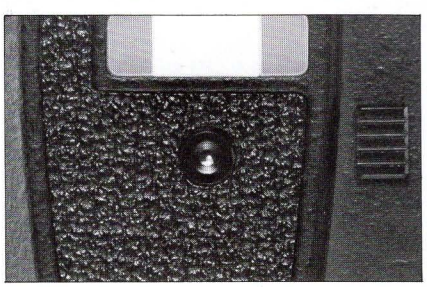

▲ F2A Photomic




▲ F2AS Photomic

| | |
|---|---|
| − | Underexposure by more than 1 stop |
| 0 − | Underexposure by 1/5 to 1 stop |
| 0 | Correct exposure |
| + 0 | Overexposure by 1/5 to 1 stop |
| + | Overexposure by more than 1 stop |

▲ F2A's External Meter Window

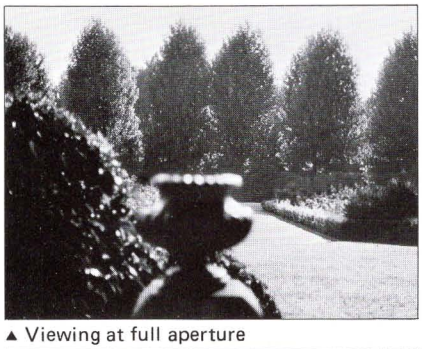


▲ F2AS's External "Correct Exposure" Indicator

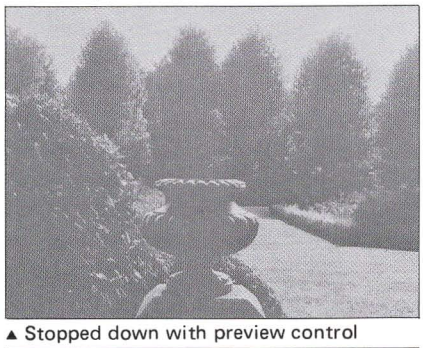
Additional camera controls related to viewing and metering are as follows:

## Depth-of-field preview control

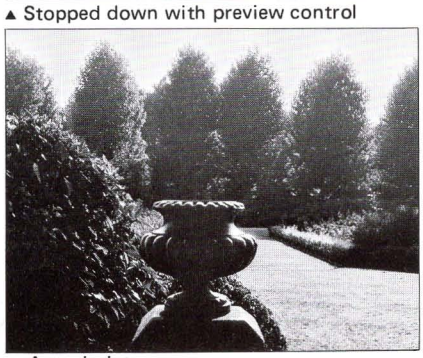
The conveniently positioned depth-of-field button proves a useful viewing/focusing aid as it allows the photographer to close the iris diaphragm to the selected aperture to "preview" the range (or depth) of focus. This control is also used in stop-down exposure measurement with automatic Nikkor lenses not fitted with a meter coupling ridge; the preview button is depressed and the lens stops down to the selected aperture for light reading at that opening.



▲ Viewing at full aperture



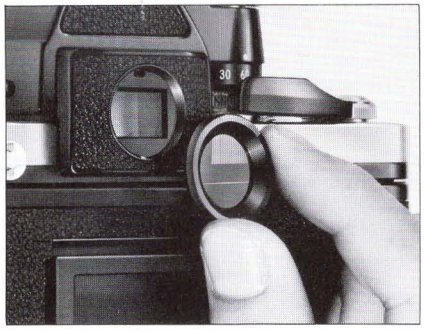
▲ Stopped down with preview control



▲ Actual picture

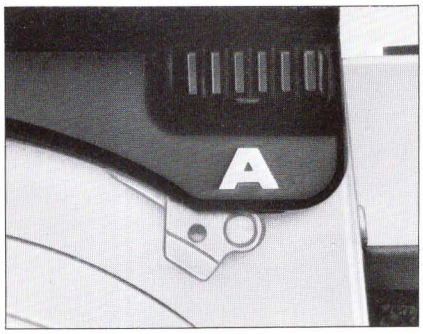
## Finder eyepiece/ready-light

The Photomic-type and eyelevel model finders (DP-11, DP-12 and DE-1) offer the adaptability for attaching viewing aids via the threaded eyepiece mount fitted. Items available include correction lenses, a right-angle viewing attachment, rubber eyecup, etc. These models also feature an internal eyepiece ready-light that indicates the charging condition of the mounted electronic flash unit. This latter feature, exclusive to the F2 Nikon cameras, is of benefit to the photographer as continuous viewing through the eyepiece is possible without the need to look away to check the "ready" condition of the flash unit.



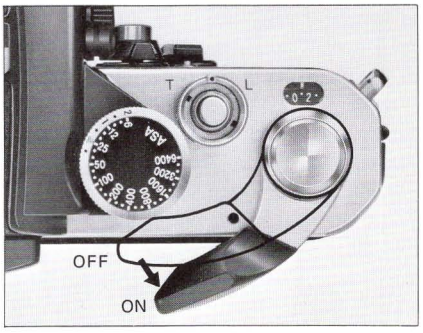
## Meter coupling lever

The Photomic finders for both the F2A (model DP-11) and F2AS (model DP-12) cameras provide for automatic maximum aperture indexing (known as AI) with any Nikkor lens fitted with a meter coupling ridge via the built-in meter coupling lever. Lever/ridge coupling is automatic when the lens is locked "home" on the camera's mounting flange, thus ensuring the user of the convenience of full-aperture metering. An additional feature with this lever is the capacity to override for operation with lenses or accessories not offering the AI facility. When the lever is locked up, the meter is ready for exposure measurement via the stop-down method; lever release is provided at the touch of a button when operation with such lenses or accessories is desired.

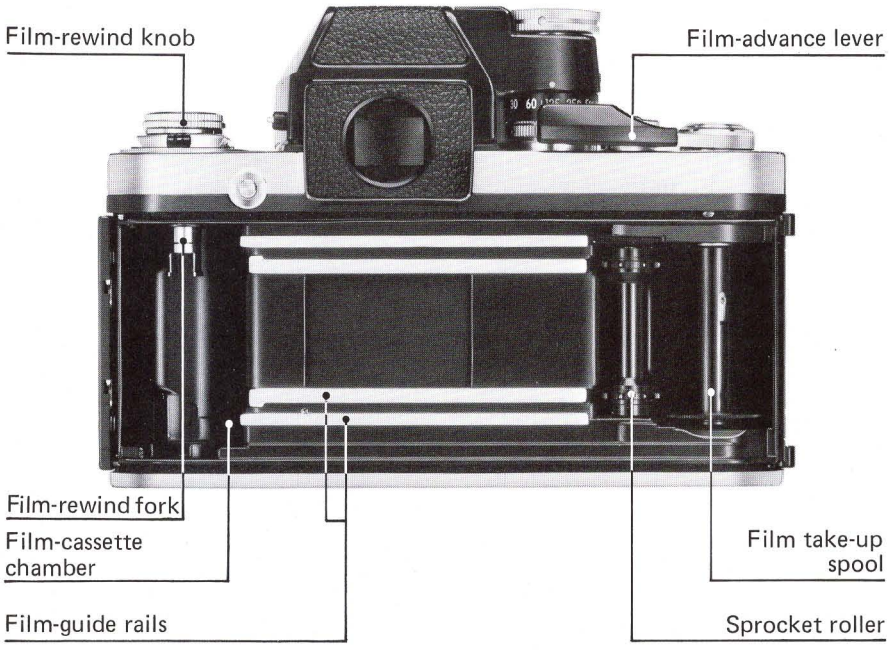



## Film-advance lever

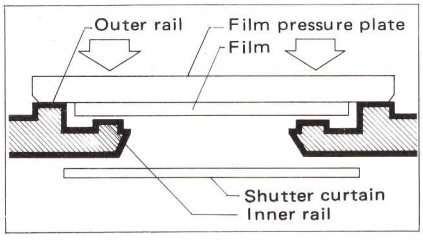
The metering circuit of the finder is powered by the two silver-oxide batteries mounted in the baseplate battery chamber. The wiring connecting the finder and the chamber is through a switch operated by the film-advance lever. As the lever is moved out to the 20° standoff position, the meter is turned on, as indicated by the red meter ON index at the top of the body; when the lever is moved back flush with the body at the completion of shooting, the switch is opened to break the circuit, thus, turning off the meter.



The F2 body offers an exceptionally precise film transport mechanism that maintains the highest degree of film flatness for the sharpest images regardless of the focal length/aperture setting in use. The film chamber of the body has two pairs of finely-honed rails that carry/guide the film across the film gate with the highest accuracy of registration. The inner "carrying" rails are extra wide for improved film support during transit from the film cassette to the take-up spool. The outer "guiding" rail pair minimizes lateral film play and provides an accurate and flat surface for the film pressure plate (attached to the camera back) to ride on; thus, these components in combination serve to ensure that the film is properly backed to prevent curling, without inducing drag. Additional components contributing to accurate film movement and registration include the cassette stabilizer and anti-curl roller on the camera back, the twin-sprocketed roller to guide the film feed to the take-up spool, and the advance drive mechanism that ensures proper (and slip-free) sprocket/spool operation.






Manual film advance operation is accomplished via the rapid-stroke lever atop the body. Ease and speed of operation are noteworthy features, thanks to the exceptionally short 120° stroke angle—the smallest available in 35mm SLR photography. Additionally, ergonomic design and careful attention to the inner mechanism construction (i.e., the use of special ball bearings and Teflon bushings) make for the superior comfort of operation that distinguishes the F2. The lever itself can be operated in either a single throw or a series of shorter strokes; shutter release is possible even with the lever fully extended. The advance stroke action, in addition to advancing the film one frame, also serves to cock the shutter, advance the frame counter one graduation, and free the shutter release mechanism for the next exposure. And, as the lever is moved out to the 20° standoff position, the power circuit between the baseplate battery chamber and the finder electrical contacts (located at the periphery of the finder mounting seat) are turned on for powering the meter circuitry in the finder.

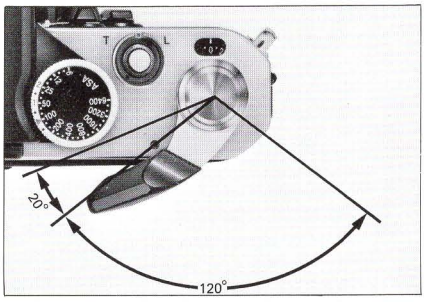
Essential to accurate film advance operation, as performed when operating the rapid-stroke lever is the robust and precisely-geared take-up spool and sprocket roller mechanism. The spool winds the film emulsion-side-out to compensate for the film's natural tendency to curl. Feed-in to the spool is via the sprocket roller; the spool and the roller are both tandem clutched to ensure smoother film advance.

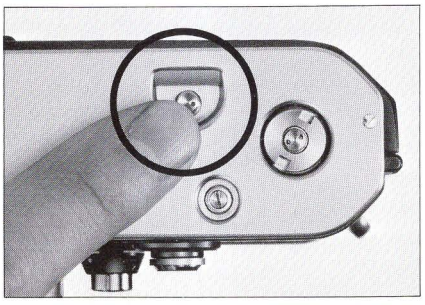
As for multiple-exposure operation, this is performed by depressing the film rewind button at the baseplate and holding it at that position while any number of exposures are made on the same frame. You can confirm multiple-exposure operation via the frame counter: it will stay on the same frame while the rewind button is held.

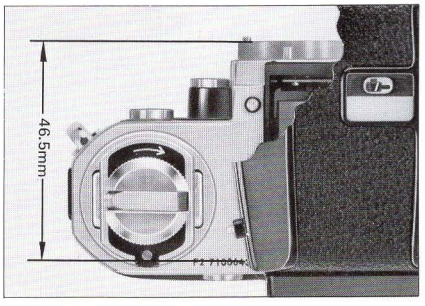
Additional elements of the film transport/control system are as follows:

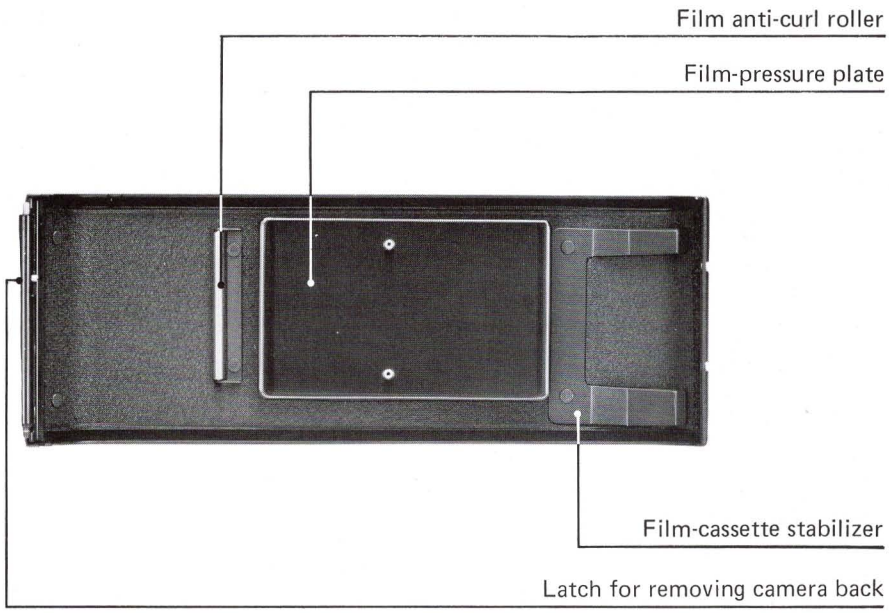
## Film-plane indicator

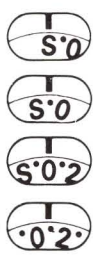
Physical measurement of the exact film-to-subject distance is often an essential requirement for critical high magnification applications, or other situations requiring full knowledge of the subject-to-film distance. With the F2 camera body, accurate indication of the film plane is provided to facilitate such measurement. The camera body serial number at the upper left portion of the body is engraved with the top edge of the numbers/letters positioned at the film plane. This reference point is located precisely 46.5mm from the front surface of the lens mounting flange.








when loading film

1st blank exposure

2nd blank exposure

for 1st exposure

## Frame counter

The additive-type counter at the upper right (in front of the film-advance lever) provides at-a-glance indication of the number of frames exposed on the roll. The counter has 43 positions from *S* (start) to *40*, with numbers provided at every second frame from 0 to 40 and "hash mark" graduations at intermediate positions; additionally, *S*, *12*, *20* and *36* are in red for ease of recognition. The extra graduations provided after *36* are included for operation when the Nikon reloadable magazine (AM-1) is used to its maximum 40-frame capacity. During rewinding, the counter is deactivated and will reset to *S* (two frames before *0*) as the camera back is opened to remove the cassette from the film chamber. Note that as the frame counter is disengaged whenever the film rewind button is depressed, an accurate count of the number of *frames* exposed is maintained even when performing multiple exposure photography.

## Camera back

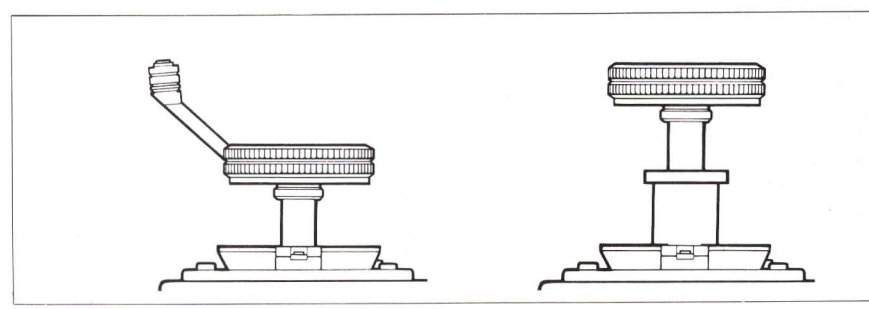
The F2 body offers the convenience of camera back removal to facilitate expanded system capabilities via special interchangeable camera back units, including 250- and 750-exposure magazine backs. The hinged right-hand end of the standard camera back can be removed via the slide catch provided. The hinge points on the body portion are precisely positioned to ensure accurate back mounting and seating when closed.

## Film rewind button/crank

When pressed, the rewind button at the baseplate disengages the film advance mechanism; film rewind then becomes possible. Manual film rewind is via a fold-out rewind crank forming part of the rewind knob assembly. The knob is designed for coaxial operation with the two-step telescoping fork shaft which engages the central spool in the loaded cassette when depressed and when the back is closed; for rewinding, the crank/knob assembly is pulled up to the first shaft step, and is turned in the direction of the engraved arrow. Then, after the back is opened, the knob can be pulled up to the second step to release the cassette for removal.

## Camera back open/close (O/C) key

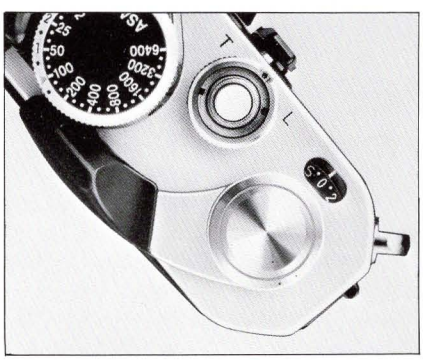
The open/close, or O/C, key provided at the baseplate of the camera body is positioned coaxial with the film cassette spool so that, when removed, coupling for power rewind via motor drive is available. The key is turned approximately 90° to release the back for opening and then turned to the opposite direction to hold the back closed. The key is also designed to open and close the film gate of the AM-1 magazine; its design ensures that inadvertent opening, with resulting fogging of the film, is virtually impossible.



# Shutter Functions

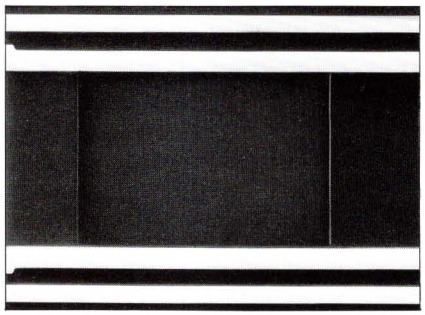
The F2 camera body features a Nikon designed and built focal-plane shutter (horizontal-travel type) capable of operation from 10 seconds to 1/2000 second without the need for accessories. The shutter mechanism itself offers speeds of from one second to 1/2000 second in thirteen steps, with intermediate speeds available from 1/80 second to 1/2000 second; also, a "B" (bulb) setting is provided for time exposures controllable up to 10 seconds via the built-in self-timer, or manually for longer settings. The shutter curtains are made of titanium foil, dimpled for increased strength to resist the severe strain incurred during demanding photographic applications such as high-speed, continuous motor drive operation; titanium offers the additional advantages of excellent temperature stability and minimum distortion (e.g., elongation, etc.) during operation. The film-gate transit time for the F2 shutter is an exceptionally short 10 milliseconds, considering that the curtains are traveling over the longer 36mm horizontal film gate dimension; thus, with this short transit time, the shutter provides for improved fast-shutter speed performance, while enabling "X" synchronization up to 1/80 second. Camera body controls related to the shutter and shutter operation are as follows:



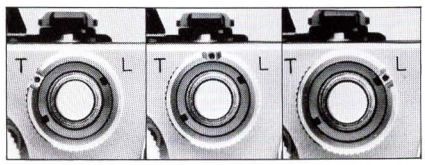



## T-L fingerguard

An extended shutter-speed range of from 2 to 10 seconds is available via the T-L fingerguard and self-timer. This is done by setting the shutter-speed dial to "B," the T-L fingerguard to "T" (time) and the self-timer to the position corresponding to the desired shutter speed. Additionally, when the camera is shuttered with the fingerguard at "T" and the shutter-speed dial at "B" (but without the self-timer being set), even longer-duration exposures are possible. When triggered in this latter mode of operation, the shutter opens and remains so until the

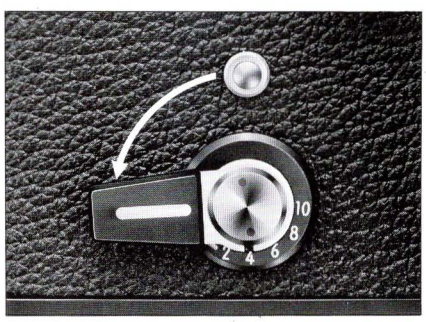


fingerguard is manually reset to the center position. Exposures of virtually any duration are thus possible.




## Self-timer

The self-timer also provides for delayed release of the shutter for special shooting situations such as self-portraits. After advancing the film, setting the lens aperture and shutter speed controls, and turning the self-timer lever to the desired amount of delay, the camera is set for delayed shutter release; the countdown begins when the small button just above the timer is depressed. Should the self-timer be accidentally set prior to advancing the film, disengaging the timer is possible by simply depressing the button above the timer; even when the timer is set after advancing the film, exposure can still be made without using the timer, via the standard release button; after the completion of the exposure, the timer can be disengaged and reset as normal.




## Shutter-speed dial

The selection of shutter speeds up to one second is via the shutter-speed dial. When a non-Photomic finder is used, the dial is directly accessible and can be continuously (360°) rotated in either direction; when used with a Photomic-type finder, on the other hand, the dial couples to the underside of the finder's speed selector knob enabling interface with the finder's metering circuitry. With the Photomic-type finders, this interlocking feature enables the inclusion of a shutter speed indication mechanism for display within the finder of the selected setting; thus, the photographer can make necessary adjustments in the shutter speed while continuing to view through the finder. On the dial itself, all fourteen settings are provided in high-visibility colors and click-stopped for ease of selection. Specific dial settings provided are B ("bulb") for time exposures, 1 for one second, and 2, 4, 8, 15, 30, 60, 125, 250, 500, 1000 and 2000 for fractional values of from 1/2 second to 1/2000 second; also a red index is provided between the 1/60 and 1/125 second positions to denote 1/80 second—the fastest shutter speed providing "X" synchronization for electronic flash. It should be noted that, although unmarked, intermediate positions in the 1/80 ~ 1/2000 second range can be selected for precise readings in special shooting situations, such as with fixed-aperture Reflex-Nikkor lenses.

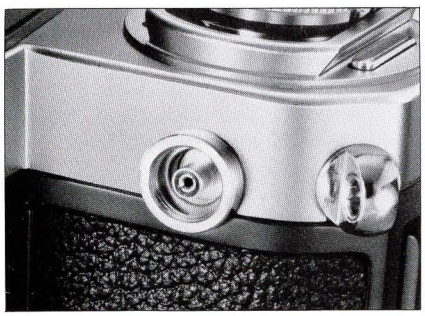

## Shutter-release button

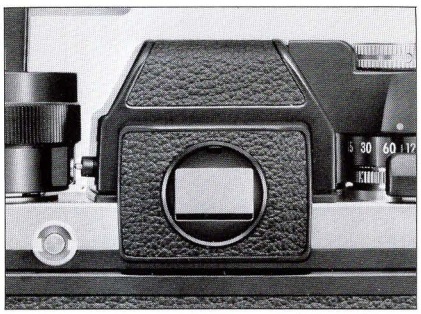
Manual release of the shutter is through the shutter-release button, either by direct finger pressure or by using one of the cable releases that can be connected via the special mounting thread at the base of the button. At shutter-speed settings of from 1 second to 1/2000 second, the button serves to trigger the shutter's escapement mechanism for complete shutter action as set on the shutter-speed dial. However, when the dial is set to "B" and the camera is fired, the shutter operation is untimed and will remain open as long as the button is held depressed.

# Flash Synchronization Functions

The F2 offers extensive capabilities for flash operation with both bulb- and electronic-type flash units. Thanks to the rapid shutter curtain transit time, the F2 can handle "X" synchronization with electronic-type units to 1/80 second; thus, the photographer has at his disposal a half-stop increase in the fastest available shutter speed over that offered by other horizontal-travel-shutter cameras. And selection of the synchronization timing is fully automatic via the built-in switchover mechanism; as the shutter-speed dial is set, timing appropriate for the speed setting is automatically selected, ensuring virtually error-free operation.

The F2 camera body is fitted with a special high-strength accessory shoe mounted directly on the main casting for exceptionally solid support for the attached flash unit. The mount's dovetail-type design offers an extra margin of protection, assuring that the mounted flash unit is free of skew or slippage once placed in position; presently available equipment designed for direct connection with the F2's mounting shoe include the Flash Unit BC-7, various Nikon Speedlight Units, miscellaneous synchronization and sensor unit accessories, and the Flash Unit Coupler AS-1 for secure mounting of flash units designed for ISO-type connection. The shoe also features both a built-in hot-shoe contact and safety switch; the contact enables cordless connection between the body and flash accessory, while the safety switch ensures that the shoe is free of electrical shock when no unit is mounted. When a flash unit not fitted with a hot-shoe contact is used (or when any type of flash unit is used off-camera), flash synchronization is available via cord connection to the PC synchronization terminal at the frontal, upper left-hand side of the body. The terminal is threaded to prevent accidental disconnection during operation. When operating with one of the EE aperture control attachments, the synchronization terminal (in conjunction with the accessory shoe) serves to both secure the unit to the camera and provide for electrical connection between the unit and the camera body. The shutter operation and flash synchronization timing interrelationship is depicted in the figure on this page. The upper curves represent the light output of various type flash sources, with the shutter travel timing depicted below. The table accompanying the graphs details all suitable speeds for the various type sources used with the F2 body.



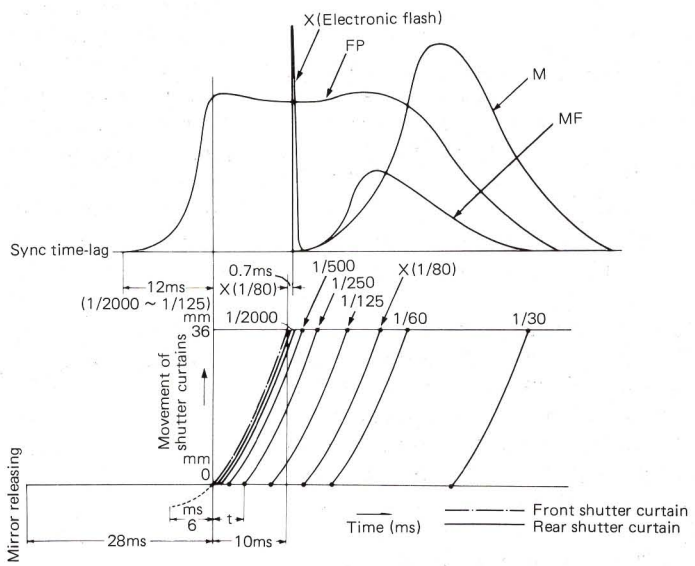




| Shutter speed / Class | 1/2000 | 1/1000 | 1/500 | 1/250 | 1/125 | 1/180 | 1/60 | 1/30 | 1/15 | 1/8 | 1/4 | 1/2 | 1 | B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FP | | | | | | | | | | | | | | |
| M* | | | | | | | | | | | | | | |
| MF | | | | | | | | | | | | | | |
| X | | | | | | | | | | | | | | |

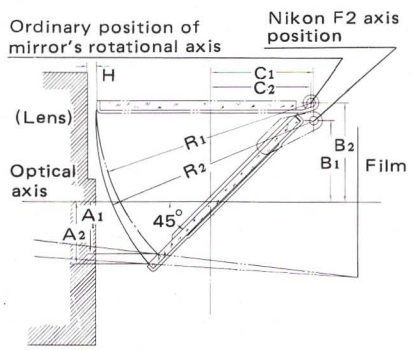
= Synchronized = Cannot be used

*Some M-class bulbs have longer flash duration covering all shutter speeds up to 1/2000 sec. except for 1/60 and 1/80 (X) sec.



The reflex mirror of the F2 body is designed to provide the finest in comfortable and accurate thru-the-lens viewing/composing/focusing. The mirror pivot point (located slightly forward of the rear edge of the mirror) has been specially selected to reduce the radius of pivot and, thus, enable the adoption of a larger mirror surface that ensures cut-off-free coverage of the image, even when using super-telephoto lenses. To reduce vibration and noise, a special damping device is provided. Since proper mirror seating is essential to accurate focusing, careful attention has been taken in designing the mirror mounting and seating components to ensure the highest degree of alignment. During upward movement of the mirror, the iris diaphragm of the lens is stopped down to the selected aperture via the actuating lever located just within the mirror box; release of the lever to permit the diaphragm to return to its maximum aperture position occurs as the mirror moves downward to its normal position. Additional camera controls related to lens operation are as follows:

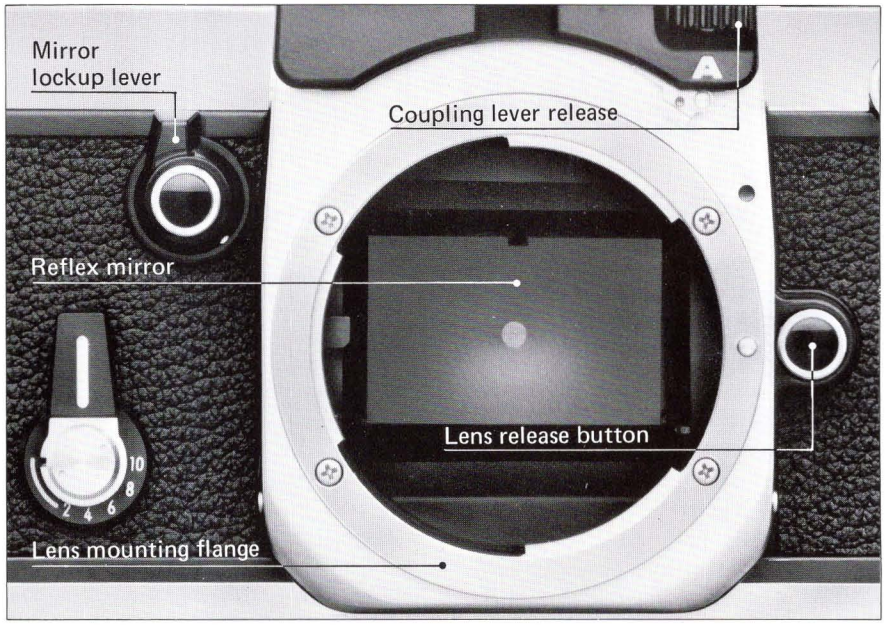





**H:** The clearance required between the ends of a lens barrel and a reflecting mirror.
**$A_1$:** Distance from the end of Nikkormat EL's mirror to the optical axis.
**$B_1$, $C_1$:** Dimensions that determine the mirror's position.
**$R_1$:** Movement of the mirror.
**$A_2$, $B_2$, $C_2$, $R_2$:** The dimensions when a mirror is placed in ordinary axis position.

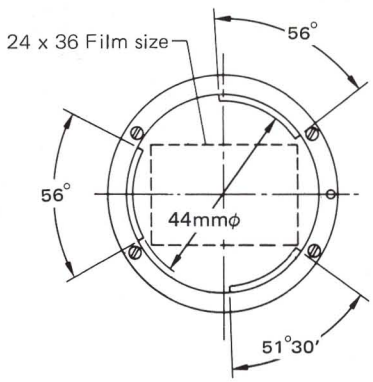
## Mirror lockup lever

Coaxial with the depth-of-field preview button is the mirror lockup lever. This control allows the photographer to lock the mirror up for mounting special Fisheye-Nikkor lenses which protrude into the interior of the mirror box. Mirror lockup is achieved by first depressing the lockup lever and then rotating it approximately 120° downward until the two white index marks are aligned; this operation can be performed at any time, either before or after advancing the film, with release of the mirror equally independent of other control settings. The mirror lockup function is also useful for special-purpose exposure situations—when secured up, mirror mechanical vibration is eliminated to prevent image blur that might otherwise occur.




## Lens mounting flange

The F2 camera body is fitted with the world's finest lens mount—the Nikon standard 44mm-diameter steel mounting flange. This bayonet-type mount enables the attachment of all Nikkor interchangeable lenses manufactured since the introduction of the first Nikon SLR camera. The flange is made of specially-treated and hardened steel that ensures precise seating of the lens at exactly 46.5mm from the film plane. The use of steel ensures that the flange is virtually immune from the everyday wear and tear experienced by most mounting systems. The bayonet design of the mount also makes for easy and quick mounting of the lens—simply insert and twist a short 60° and the lens is locked and ready to go.

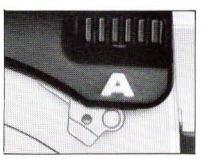



## Lens release button

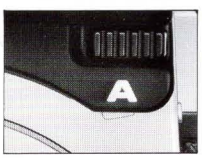
Solid body/lens connection is retained via the lens-locking mechanism fitted at the lens mounting flange. The locking pin fitted is spring-loaded to engage the lens as the latter is twisted to the "home" position. During removal of the lens, the conveniently placed release button is depressed to retract the locking pin, thus permitting the lens to be twisted free and removed. The simple, yet highly reliable design of the lens-locking system is another assurance of the finest performance and total reliability of the F2 camera body.

## Meter coupling lever release

When the F2A and F2AS model camera bodies are used with lenses or accessories not fitted with a meter coupling ridge, the finder's meter coupling lever must be moved out of the way to prevent interference with the unit being mounted; with this action, meter/lens coupling is lost and exposure measurement is performed via the stop-down method. Later, when a meter-coupling-ridge-equipped lens is to be used, the coupling lever release (located just above the coupling lever) enables the photographer to return the lever to its normal (lowered) position for automatic maximum aperture indexing and meter coupling. To release the lever, the release button is simply moved to the right.

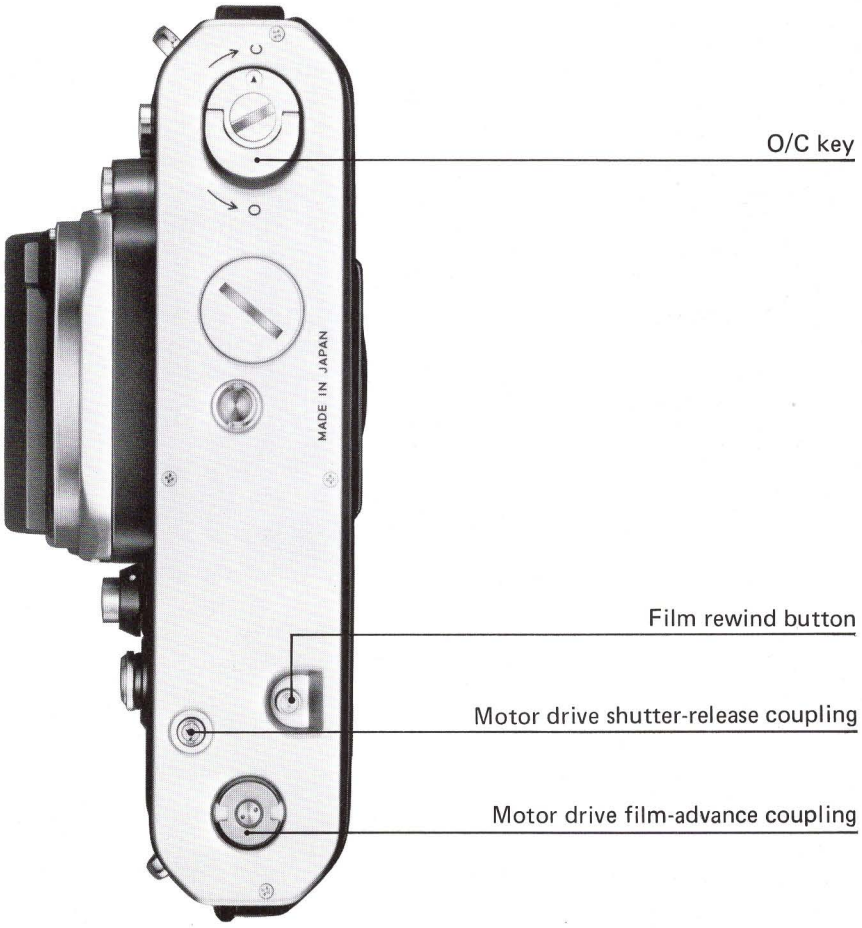


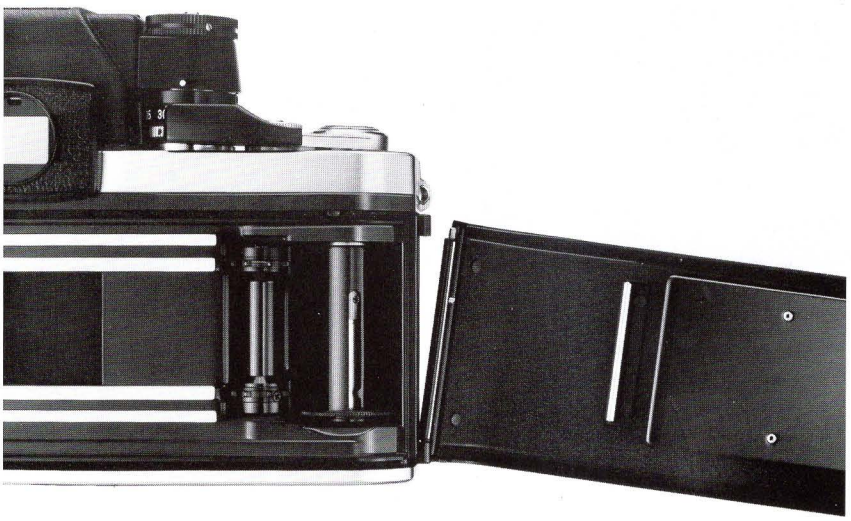

Normal lowered position for AI lenses/accessories




Locked-up for non-AI lenses/accessories

# Motor Drive Interface Functions



Easy interchange of camera backs

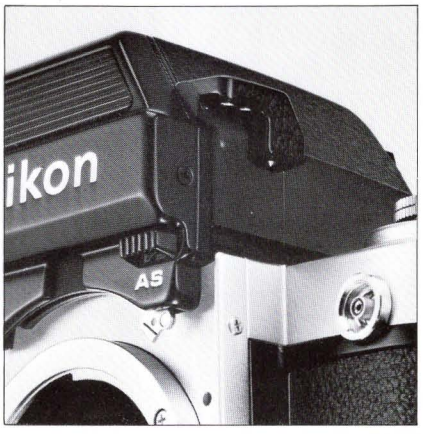
The F2 body was designed and built to provide full motor drive system capabilities. The motor drive interface is provided at the camera body baseplate for ready access and maximum flexibility of use. As an integral part of the basic design concept, Nikon built the F2 body so that the main body casting included the baseplate portion, thus, providing a strong and rigid platform for the attachment of various motor drive system equipment. As a result, motor drive/camera connection is exceptionally strong without impairing system versatility. Motor drive units screw-connect to the bottom of the body via the standard ¼" tripod socket provided. Film-advance operation interface from the underside is via a special coupler which keys directly to the motor drive unit's drive shaft. Additionally, the rewind button and the underside shutter-release coupling ensure that transport mechanism disengagement (used for both film rewind and multiple exposure shooting) and shutter release functions are directly accessible to the motor drive. In the case of power rewind operation with the MD-2 Motor Drive Unit, the removable O/C key proves a convenience for the motor drive user, when detached, the MD-2's rewind shaft is provided with ready access to the film chamber to enable coupling to the spool of the mounted film magazine or cassette.

Additional interface capability is provided by the F2's removable camera back feature. When the standard back is dismounted, the rear of the F2 body serves to accept any of the alternate accessory camera backs including those for bulk 250-/750-exposure shooting (models MF-1 and MF-2) and automatic rewind stop (model MF-3). The fully baffled camera back seating grooves interlock with the mounted accessory back to ensure light-tight closure—and without the need for modification or adjustments to provide for a solid fit. Within the seating groove at the upper right end is also provided the frame counter coupling lever. When a camera back offering standard-load shooting is mounted, the lever will be depressed to actuate the frame counter for operation up to 40 frames; when backs offering bulk-load shooting (i.e., 250- or 750-exposure magazine type units) are mounted, the lever is not depressed as the frame counter provided on the accessory magazine back is used for frame count and control operation.

# EE Aperture Control Interface


One of the truly outstanding features of the F2 is its capability to provide fully automatic "shutter-priority" exposure control when using the DP-12 finder, via the simple addition of the EE Aperture Control Attachment DS-12. This special precision servo-drive assembly is accommodated on the camera body without the need for modifications or adjustments and is assured of perfect alignment at all times, thanks to the high quality standard of body construction. Mounting of the DS-12 is via connection with the F2's special hot-shoe accessory mount and the threaded sync terminal at the front of the camera; these two body connection points assure accurate placement of the drive loop around the lens mounting flange, with connection possible using any AI-type Nikkor lens.

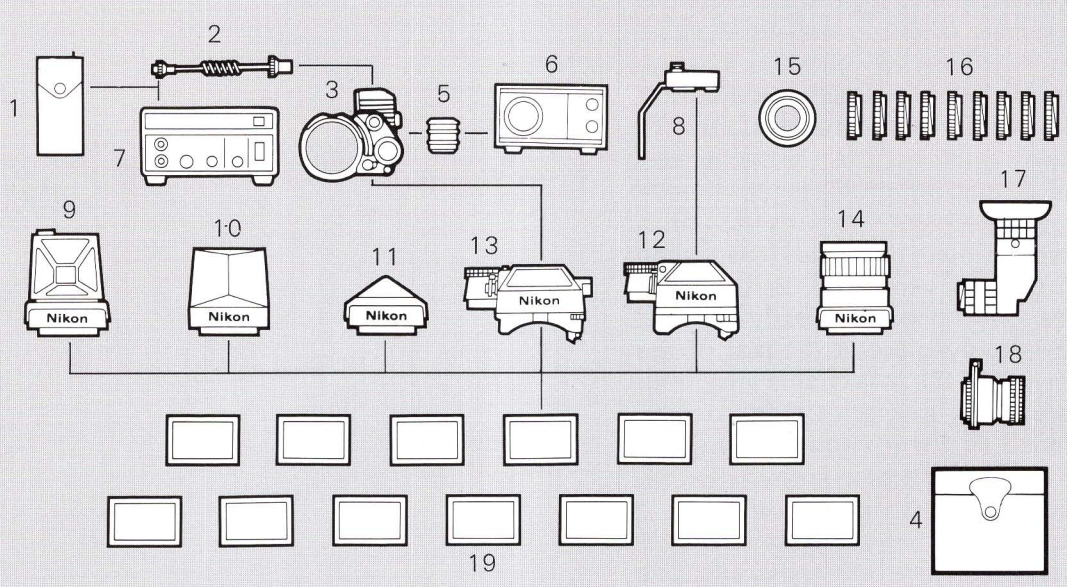
Electrical connection between the aperture control unit and the camera is provided at the finder where the special electrical contacts fitted enable electrical interface for the transfer of exposure information used in controlling the aperture setting so that it matches the shutter speed setting in use. And these contacts also serve to save the battery power of the two silver-oxide units mounted in the baseplate chamber by shifting meter power to the power source employed for the DS-12 itself. Additionally, the DS-12 is fitted with




its own sync terminal which is interconnected to the camera's sync terminal during mounting to enable the use of additional sync-timed units such as Nikon databacks and speedlights.

Once the aperture unit is mounted, lens mounting operation with AI-type Nikkor lenses is virtually identical with the procedure used for a standard AI-type F2 camera. Mounting of the lens consists of the following: The lens' aperture ring is set to the maximum aperture position and the DS-12's drive loop coupling is moved to the top-most position; then, the lens is slipped into the bayonet mount and locked "home" to secure in place. With this triple interface action (i.e., interconnection of the body, lens and control unit), the camera is ready to begin fully automatic "shutter-priority" operation, and can even be employed for remote control shooting when fitted with Nikon motor drive and remote control units.

# F2 Nikon Viewfinders & Accessories




1. Battery Pack DB-1
2. Connecting Cord DM-1
3. EE Aperture Control Attachment DS-12
4. Aperture Control Attachment Case DS-1H
5. NC Battery DN-1
6. Battery Charger DH-1
7. AC/DC Converter MA-4
8. Photomic Illuminator DL-1
9. Waist-Level Finder DW-1
10. Action Finder DA-1
11. Eyelevel Finder DE-1
12. F2A Photomic Finder DP-11
13. F2AS Photomic Finder DP-12
14. 6X Focusing Finder DW-2
15. Rubber Eyecup
16. Eyepiece Correction Lenses
17. Right-Angle Viewing Attachment
18. Eyepiece Magnifier
19. Focusing Screens



## Contents

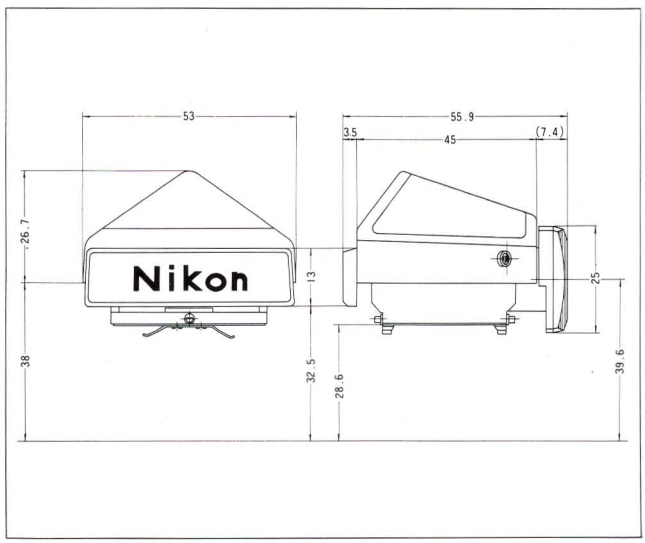
# Eyelevel Finder DE-1

Ultra-light in weight and exceptionally compact, the Nikon Eyelevel Finder DE-1 provides the photographer with a precision viewing aid that allows the operation of the camera at the convenient eyelevel shooting position most desired for today's action photography. The DE-1 employs a precision optical glass pentaprism with three silvered surfaces for increased reflectivity and brighter finder image. The design of the pentaprism provides for laterally reversing the image while maintaining it erect—thus, the subject is viewed through the finder (even when the camera is positioned vertically) in the same manner as it appears when viewed directly with the unaided eye. The large eyepiece at the rear of the finder enables viewing of the total frame area, even for those persons wearing spectacles. Additionally, the finder is designed to provide an image magnification of 0.8 : 1 at a dioptry of −1, the latter for providing visualization as though viewing at a distance of one meter (normal eyesight accommodation). Other features include a threaded eyepiece mount for accepting various accessories (e.g., eyepiece correction lenses, rubber eyecup, etc.), full-frame viewing for the most accurate subject composition, a choice of either satin-chrome or black enamel finish, and a built-in ready-light (with external electrical contact) for use with Nikon speedlight units. This finder is often selected for use in applications where reduced weight is desired, or when metering is not required, such as indoor flash applications.




## Specifications

| | |
|---|---|
| Type of unit: | Interchangeable type finder with eyelevel viewing |
| Cameras usable: | Any F2 Nikon camera body; no modifications or adjustments required for mounting; also, usable on F Nikon camera bodies after removal of front nameplate on finder |
| Finder coverage: | Virtually 100% of image recorded on film |
| Visual image magnification: | 0.8 : 1 (50mm standard lens set to infinity focus) |
| Eye-relief distance: | 15 ~ 18mm |
| Dimensions: | 39.5mm (H) x 53mm (W) x 56mm (D) |
| Weight: | 100g |
| Accessories included: | Plastic Prism Guard |
| Optional accessories: | Eyepiece Correction Lenses<br>Rubber Eyecup<br>Eyepiece Magnifier<br>Right-Angle Viewing Attachment DR-3<br>Hard Leather Case |



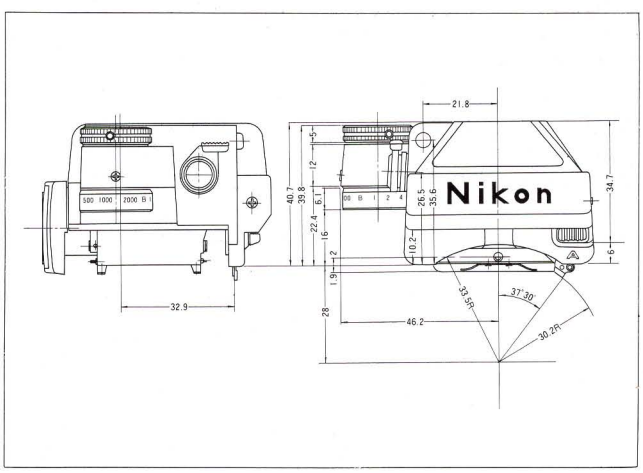
# F2A Photomic Finder DP-11

Virtually the "standard" model finder for most photographic applications, the F2A Photomic Finder DP-11 combines the convenience of eyelevel viewing, the advantages of thru-the-lens exposure measurement in a compact and precision assembly that mounts on any F2 Nikon camera body. The heart of the DP-11 is the renowned Nikon center-weighted metering system that concentrates 60% of the light reading within the central 12mm-diameter portion of the screen, while reading the entire screen area. With this system, more precise readings of selected areas of the image and greater balance for both vertical and horizontal format shooting are ensured. To set the correct exposure with the DP-11, adjustment of the aperture and/or shutter speed until the meter display visible within (and atop) the finder is centered is all that is required; and, as both the aperture and shutter speed settings are visible within the finder, total control is maintained for the precise focus/speed requirements of the situation. New with the DP-11 is the convenience of lens mounting via automatic maximum aperture indexing. As meter-coupling-ridge-equipped Nikkor lenses are mounted on the camera, the finder's coupling lever automatically contacts the ridge for indexing of the lens' maximum aperture setting. Special features available with the F2A Photomic Finder DP-11 include battery check button, finder-fitted ready-light for use with Nikon speedlight units, eyepiece accessory mounting via the frame threads provided, and suitability for stop-down exposure measurement with non-AI-type Nikkor lenses.

## Specifications

| | |
|---|---|
| Type of unit: | Interchangeable type finder with eyelevel viewing and built-in exposure metering circuitry employing CdS photo sensor |
| Cameras usable: | Any F2 Nikon camera body; no modifications or adjustments required for mounting |
| Finder coverage: | Virtually 100% of image recorded on film |
| Visual image magnification: | 0.8 : 1 (50mm standard lens set to infinity focus) |
| Eye-relief distance: | 15 ~ 18mm |
| Exposure measurement: | Thru-the-lens (TTL) center-weighted system; both full-aperture and stop-down measurement possible |
| Exposure indication: | Via meter needle display visible within finder; over- and under-exposure markings provided; display also provided atop finder with provision for battery power check indication |
| Film speed range: | ASA 6 ~ 6400 |
| Metering range: | EV 1 to EV 17 (f/1.4 at 1 second to f/8 at 1/2000 second) with 50mm f/1.4 lens and ASA 100 |
| Aperture coupling: | f/1.2 ~ f/32; meter coupling lever provided for coupling with metering circuitry and automatic maximum aperture indexing with AI-type Nikkor lenses |
| Shutter speed coupling: | 1 second to 1/2000 second |
| Meter ON switch: | Built into camera's film-advance lever |
| Power source: | Two 1.5V (button-cell type) silver-oxide batteries mounted in camera body |
| Dimensions: | 43mm (H) x 66mm (D) x 78mm (W) |
| Weight: | 220g |
| Accessories included: | Plastic Prism Guard |
| Optional accessories: | Eyepiece Correction Lenses<br>Rubber Eyecup<br>Eyepiece Magnifier<br>Right-Angle Viewing Attachment DR-3<br>Photomic Illuminator DL-1<br>Hard Leather Case |



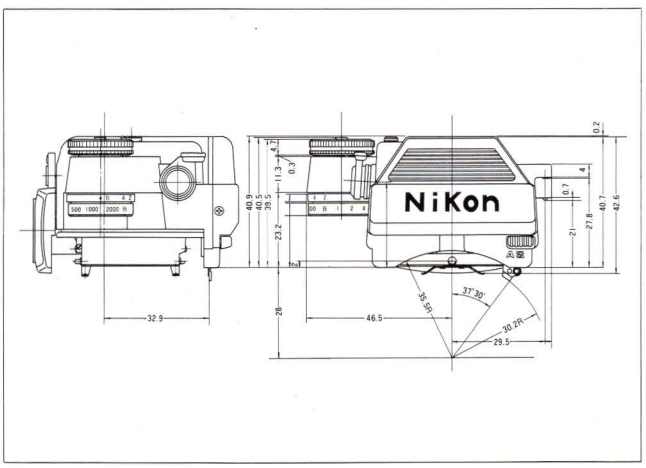
# F2AS Photomic Finder DP-12

The Nikon F2AS Photomic Finder DP-12 offers the latest in metering technology for the finest results over a wide range of lighting conditions. Housed within this compact, precision unit is a Nikon thru-the-lens, center-weighted exposure measurement system incorporating silicon photo-diodes (SPD) for rapid response to changing light levels. Other sophistications employed include a monolithic integrated circuit (IC) and a metallic thin-film resistor, both to help ensure dependable operation under the most demanding shooting conditions. The DP-12 also features the new Automatic Maximum Aperture Indexing (AI) system for effortless, error-free coupling of the lens' aperture setting for full-aperture exposure measurement operating convenience. Exposure settings are easy to see, easy to set via the use of light-emitting diodes (LED) for visual display. The combination of three LED's within the finder enables five-step display of the exposure measurement for fine adjustments to the precise setting desired. An additional LED is provided atop the finder for the dual functions; when turning on the finder illuminator switch, it lights up for the illumination of shutter speed setting within the finder for easier reading in low-light levels, and when closing the built-in eyepiece shutter, it serves as an external meter indication of correct exposure. Further merits of the DP-12 include the ready-light for electronic flash, and usability with the DS-12 EE Aperture Control Attachment for fully automatic ("shutter priority") exposure control suitable for even unmanned photographic applications.



## Specifications

| | |
|---|---|
| Type of unit: | Interchangeable type finder with eyelevel viewing and built-in exposure metering circuitry employing SPD (Silicon Photo-Diode) sensor |
| Cameras usable: | Any F2 Nikon camera body; no modifications or adjustments required for mounting |
| Finder coverage: | Virtually 100% of image recorded on film |
| Visual image magnification: | 0.8 : 1 (50mm standard lens set to infinity focus) |
| Eye-relief distance: | 15 ~ 18mm |
| Exposure measurement: | Thru-the-lens (TTL) center-weighted system; both full-aperture and stop-down measurement possible |
| Exposure indication: | Five-step display via three LED's visible within finder; one additional LED provided atop finder for correct exposure indication with built-in eyepiece shutter closed; illuminator provided for checking shutter-speed setting under low-light conditions |
| Film speed range: | ASA 12 ~ 6400 |
| Metering range: | EV −2 to EV 17 (f/1.4 at 8 seconds to f/8 at 1/2000 second) with 50mm f/1.4 lens and ASA 100. Extra-slow shutter speed scale is provided for light reading under poorly-lit conditions |
| Aperture coupling: | f/1.2 ~ f/32; meter coupling lever provided for coupling with metering circuit and automatic maximum aperture indexing with AI-type Nikkor lenses |
| Shutter speed coupling: | 10 seconds to 1/2000 second |
| Meter ON switch: | Built into camera's film-advance lever |
| Power source: | Two 1.5V (button-cell type) silver-oxide batteries mounted in camera body |
| Dimensions: | 43mm (H) x 66mm (D) x 78mm (W) |
| Weight: | 230g |
| Accessories included: | Plastic Prism Guard |
| Optional accessories: | Eyepiece Correction Lenses<br>Rubber Eyecup<br>Eyepiece Magnifier<br>Right-Angle Viewing Attachment DR-3<br>Hard Leather Case |

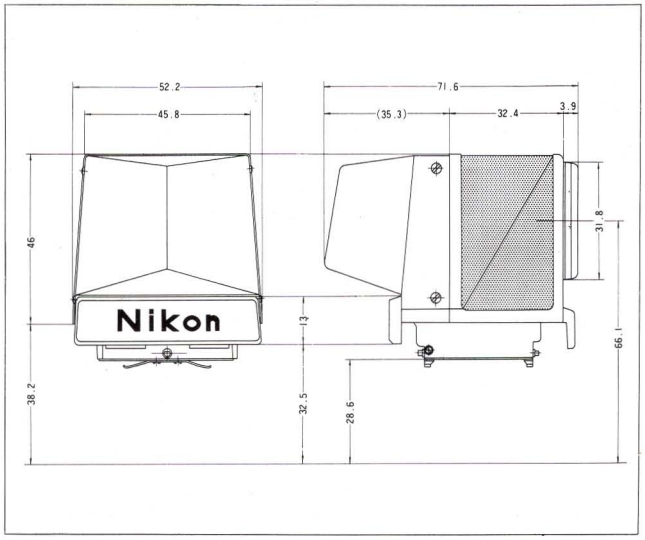
# Action Finder DA-1

The Action Finder DA-1 is unique among Nikon interchangeable finders offering eyelevel-type viewing, as the DA-1 is specially designed to provide large-field viewing/composing/focusing, with the photographer's eye positioned at an extended distance from the finder. The special, extra-large pentaprism and ancillary optical system offer a fixed −7 dioptry that permits an eye-relief distance of as much as 60mm, and with the total field visible; and, when the photographer views at closer distances, eyepoint positioning can be off-axis by as much as 16mm vertically and 24mm horizontally (at a 20mm eye-relief distance), while still retaining full coverage of the entire image field. Thus, with these special capabilities, the DA-1 proves an invaluable tool for the serious photographer. For example, those shooting sports and fashion shots, or other types of photography in which action or speed are essential, will truly appreciate the ease of operation afforded by using the DA-1; and for those situations where viewing at a distance is essential, such as when wearing protective eyewear, or when the camera is enclosed in an underwater housing or the like, the Action Finder DA-1 provides for operation that other finders cannot match. The DA-1 provides an image magnification scale of 0.7:1 at the normal viewing distance. This finder is available in either satin-chrome or black enamel finish.




## Specifications

| | |
|---|---|
| Type of unit: | Interchangeable type finder with eyelevel viewing |
| Cameras usable: | Any F2 Nikon camera body; no modifications or adjustments required for mounting; also, usable on F Nikon camera bodies after removal of front nameplate on finder |
| Finder coverage: | Virtually 100% of image recorded on film |
| Visual image magnification: | 0.7 : 1 (50mm standard lens set to infinity focus) |
| Eye-relief distance: | 60mm |
| Dimensions: | 52mm (W) x 56mm (H) x 72mm (D) |
| Weight: | 310g |
| Accessories included: | Plastic Prism Guard<br>Plastic Face Guard |
| Optional accessories: | Hard Leather Case |



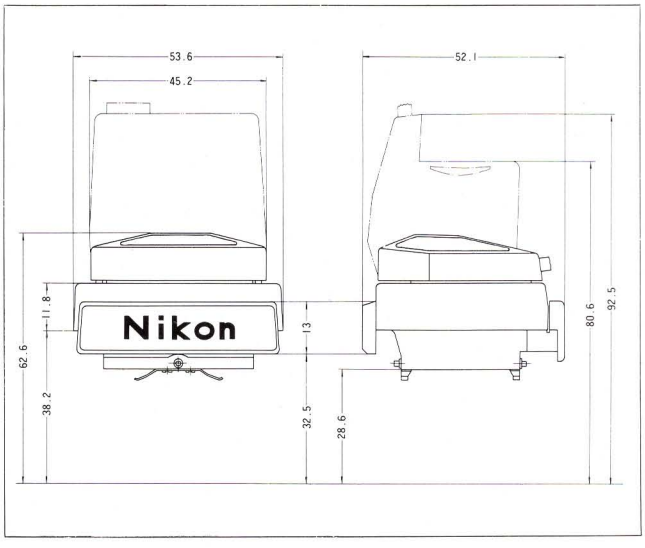
# Waist-Level Finder DW-1

When shooting from low (or high) view-points, or when the camera is mounted vertically as on a copystand, the use of an eyelevel-type finder often proves undesirable because of the difficulty encountered in focusing, composing, etc. The lightweight Nikon Waist-Level Finder DW-1 is one of two Nikon interchangeable finders designed to alleviate these problems by offering focusing operation looking directly down on the camera's focusing screen (hence the name "waist-level" finder). The design of the DW-1 contributes to the brightest possible viewing, as the focusing screen is fully surrounded by the finder's pop-up hood to block out extraneous light; also, there are no optical elements to cause darkening. The photographer simply erects the hood (by pushing the button at the rear of the unit) and is ready to start shooting. And, when critical focusing is required, the built-in, pop-up 5X magnifier is available at the touch of a button to aid the photographer. At the completion of photography, the Waist-Level Finder DW-1 can be closed by pushing down on the top-plate, even when the 5X magnifier is in the pop-up position. Once closed, the focusing screen is sealed against the entry of dust, and the camera offers the most compact and lightweight configuration possible.

## Specifications



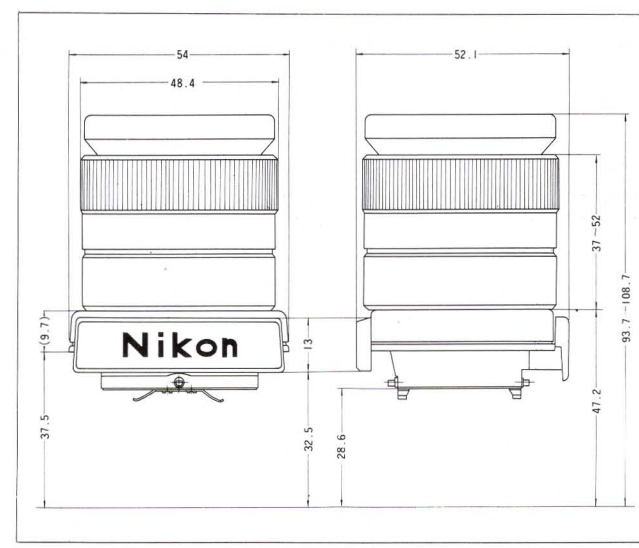
| | |
|---|---|
| Type of unit: | Interchangeable type finder with waist-level direct viewing of focusing screen |
| Cameras usable: | Any F2 Nikon camera body; no modifications or adjustments required for mounting; also, usable on F Nikon camera bodies after removal of front nameplate on finder |
| Finder coverage: | Virtually 100% of image recorded on film without magnifier |
| Visual image magnification: | 0.9 : 1 (50mm standard lens set to infinity focus) via special 5X pop-up magnifier fitted |
| Eye-relief distance: | 16 ~ 19mm with magnifier |
| Dimensions: | 34mm (H) x 52mm (D) x 54mm (W) (collapsed); 64mm (H) x 52mm (D) x 54mm (W) (erected) |
| Weight: | 90g |
| Accessories included: | Plastic Prism Guard |
| Optional accessories: | Hard Leather Case |

# 6X Focusing Finder DW-2

The Nikon 6X Focusing Finder DW-2 provides precise focusing and right-angle viewing for F and F2 users, along with the advantages of a distortion-free image and higher magnification covering the entire field; thus, the DW-2 proves invaluable for applications such as photomicrography, close-ups, or other situations where critical focusing is required. Critical focusing of the aerial image is performed with the DW-2 via the parallax focusing technique. With this method, the photographer focuses his eye with the cross-hair on the clear screen, etc. (the Type C and M screens prove excellent for this) and then focuses object image via the camera lens or by means of bellows as normal; then, to verify critical focusing, the photographer shifts his eye (either right/left or up/down) and, if image shift is noted, readjusts the image focus until the image does not shift from the crossline. The DW-2 is also provided with an adjustment mechanism permitting continuous eyesight correction of from +3 to −5 diopters; the index dot and reference line permit alignment for the standard −1 diopter setting (i.e., the image appears as though viewed at a distance of one meter) as most comfortable for viewing. Note that this finder can also be used with F Nikon camera bodies; simply remove the screws securing the finder nameplate in place, slip off the nameplate, and mount the finder on the camera in the normal way.




**Specifications**

| | |
|---|---|
| Type of unit: | Interchangeable type finder with aerial-image, waist-level viewing |
| Cameras usable: | Any F2 Nikon camera body; no modifications or adjustments required for mounting; also, usable on F Nikon camera bodies after removal of front nameplate on finder |
| Finder coverage: | Virtually 100% of image recorded on film |
| Visual image magnification: | 1.2 : 1 (50mm standard lens set to infinity focus); finder provided with +3 ~ −5 diopter adjustment range |
| Eye-relief distance: | 16 ~ 19mm |
| Dimensions: | 52mm (W) x 54mm (D) x 65mm (H) |
| Weight: | 230g |
| Accessories included: | Plastic Prism Guard<br>Rubber Eyecup<br>Eyecup Retaining Ring |
| Optional accessories: | Hard Leather Case |

# EE Aperture Control Attachment DS-12

Specifically designed for operation with the new AI-type Nikkor lenses, the Nikon EE Aperture Control Attachment DS-12 serves to automatically control the aperture setting of the lens fitted on the F2AS Photomic camera. The design of this EE control unit differs from that of previous models by its use of a new aperture ring coupling method available exclusively with AI-type Nikkor lenses; the DS-12 engages the aperture ring's EE Servo Coupling Post for operation across the full range of the aperture setting. The DS-12 couples with the meter over the shutter speed range from 1/2000 second to 10 seconds (and with aperture settings to f/16) via the electrical contacts fitted which transmit the electric signal from meter to servo mechanism to control the lens' aperture ring to the correct setting for the shutter speed in use. Although operation is automatic, the photographer can select either the "continuous" or the "push-to-operate" modes of operation to meet the needs of the specific photography being undertaken. And the photographer has the additional capability to override the automatic features for fully manual operation at the touch of a button. Other special features of the EE Aperture Control Attachment DS-12 include a front-mounted synchronization terminal for operation with Nikon Data Camera Sets MF-10/MF-11, a built-in battery check facility and a choice of any of three battery or AC power source options. Lightweight and compact, the DS-12 brings the advantages of automatic exposure operation to the F2 Nikon user for even fully unmanned photographic applications.



**Specifications**

| | |
|---|---|
| Type of unit: | Servo-drive assembly for automatic adjustment of lens aperture setting |
| Cameras usable: | Any F2 Nikon camera body equipped with F2AS Photomic Finder DP-12; no modifications or adjustments required for mounting |
| Lenses usable: | Any Nikkor interchangeable 35mm SLR lens fitted with EE servo coupling post; no modifications or adjustments required for mounting |
| Servo control operation: | Via internal circuitry and TTL center-weighted metering system built into DP-12 finder; control signal interface via electrical contacts fitted on each unit and engaged during mounting |
| EV operation range: | EV 0 to EV 17 (f/1.4 at 2 seconds to f/8 at 1/2000 second) with 50mm f/1.4 lens and ASA 100 |
| Operation modes: | Servo-control mode both for "push-to-operate" and automatic continuous operation; full manual override also provided |
| Aperture coupling: | f/1.2 ~ f/16 for automatic servo operation; f/1.2 ~ f/32 for manual override operation |
| Shutter speed coupling: | 10 seconds to 1/2000 second |
| Power sources: | Voltage : DC 6V, supplied via any one of the following units: Direct-mount NiCd Battery Unit DN-1, AC/DC Converter MA-4, or four 1.5V C-type batteries via Battery Pack DB-1; power check switch/indicator lamp provided |
| Dimensions: | 71.5 mm (W) x 95.5 mm (H) x 106 mm (L) |
| Weight: | 230g (without battery) |
| Accessories included: | Plastic Sync Terminal Cap |
| Optional accessories: | NiCd Battery Unit DN-1<br>Quick Charger DH-1<br>Battery Pack DB-1 with DM-1 Cord<br>Connecting Cord DM-1<br>AC/DC Converter MA-4<br>Hard Leather Case DS-1H |

## Accessories for EE Aperture Control Attachment DS-12

### Battery Unit DN-1

The Battery Unit DN-1 is a fully rechargeable 6V NiCd battery used for powering the DS-12 aperture control unit. The DN-1 fits directly into the chamber at the front of the control unit, and it can provide approximately three hours of continuous servo control operation; when the DS-12 is used in the intermittent push-to-operate mode of operation, slightly longer operation time is possible. This battery also provides the power for the metering circuitry of the camera's DP-12 finder during EE aperture control operation.

### Quick Charger DH-1

The Nikon Quick Charger DH-1 is a compact unit used to charge the DN-1 battery for the aperture control attachment. The DH-1 can recharge a fully depleted battery to the 80% power level in a brief three hours. A voltage selector at the rear of the unit lets the user adjust the DH-1 to the line voltage in use, and the indicator lamps at the front inform when power is on and charging is taking place.

### Battery Pack DB-1

One of the alternate power sources for the EE aperture control attachment, the Battery Pack DB-1 proves particularly useful where many hours of virtually continuous aperture control operation are desired. The DB-1 holds four C-type 1.5V batteries and features its own voltage stabilizer for uniformity of voltage output. The DB-1 comes with an accessory carrying strap for over-the-shoulder or around-the-neck wear, plus a model DM-1 connecting cord for feeding power to the DS-12 unit.

### Connecting Cord DM-1

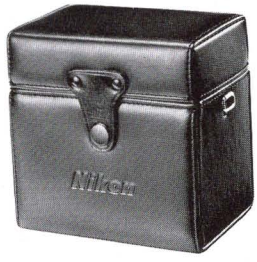
The DM-1 serves to connect the EE aperture control unit with either the Battery Pack DB-1 or the AC/DC Converter MA-4. One end of the cord is specially designed for direct mounting into the battery chamber of the DS-12, while the other end hooks up to the power source output terminal. This unit comes with a 1-meter length cord, and is included with the DB-1 as a standard accessory.

### AC/DC Converter MA-4

The MA-4 is designed to provide stable and continuous 15V DC output for powering both the motor drive and the DS-12. (See page 47 for details.)


### Aperture Control Attachment Case DS-1H

The unique shape of the EE aperture control unit makes for difficulty in properly storing the unit with maximum protection against damage. But with the model DS-1H Case, total protection is provided. The DS-1H is fully lined and padded, and finished in a hard leatherette exterior for solid protection under the roughest handling.






## General Accessories for Viewfinder System

### Eyepiece Correction Lenses

These are threaded for direct connection to model DE-1, DP-11 and DP-12 finders. Available are nine models with diopter powers of from +3D to –5D.

### Right-Angle Viewing Attachment DR-3

This accessory finder aid enables right-angle viewing when using any of the Photomic metering finders or the Eye-level Finder DE-1. It offers brighter images with the total field (including meter indication) visible. The unit is fitted with its own rubber eyecup and diopter adjustments.

### Eyepiece Magnifier

This convenient focusing aid for model DE-1, DP-11 and DP-12 provides 2X magnification of the central portion of the finder image for extra-critical focusing applications. It includes a built-in eyesight adjustment screw for eyesight correction of from –4 to +2 diopters.

### Rubber Eyecup

This prevents stray light from entering the finder. When mounted, it also offers excellent protection for eyeglass wearers.

### Photomic Illuminator DL-1

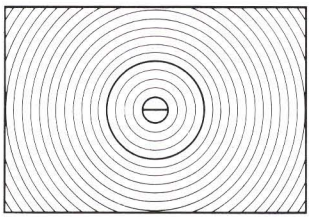
Under low-light shooting conditions, the shutter speed indicator and meter needle display visible within the DP-11 finder often become difficult to read. With the DL-1, this condition is avoided. The DL-1 mounts on the threaded eyepiece of the DP-11 and, when switched on, illuminates the inner display via the upper finder window.

### Finder Cases

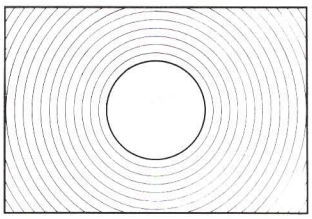
Available in two sizes which cover the complete range of interchangeable finders, these cases are solidly constructed to protect the finder. The larger case is for Photomic and other bulky finders. The smaller case will accommodate either the DE-1 or DW-1.

# F2 Nikon Focusing Screens

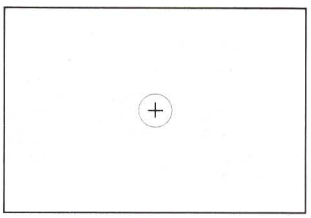
The method of focusing with the single-lens reflex camera is via the focusing screen positioned in the viewing system consisting of lens and reflex mirror. The mirror makes possible viewing through the mounted lens and, thus, enables the photographer to view and compose the image exactly as it will appear on film—a feature not available with cameras employing separate viewing/focusing systems. The mirror also facilitates focusing by directing the image to the focusing screen, the latter positioned to duplicate the location of the film plane; thus, focusing is possible with great accuracy, but without the difficulties associated with large-format cameras requiring focusing right at the film plane. Nikon focusing screens are available in a solid line-up of models and types to meet the needs of various



**TYPE A:** Matte/Fresnel with horizontal rangefinder
Matte/Fresnel field with central 3mm-diameter split-image rangefinder, horizontally aligned. Designed for quick and accurate focusing, particularly with lenses of brighter maximum aperture. Rangefinder prism alignment makes for rapid operation with subjects containing vertical lines and/or surfaces. Screen also provided with centrally-positioned, 12mm-diameter etched reference circle denoting area of center-weighting when using Photomic finders for TTL exposure measurement. Excellent for general photographic applications with lenses brighter than f/4.5 in maximum aperture.

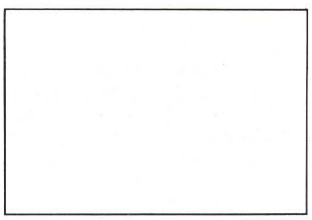


**TYPE B:** Matte/Fresnel with focusing spot
Matte/Fresnel field with central 12mm-diameter fine-ground matte focusing spot. Absence of central rangefinder/microprism aid makes for less distraction when viewing and focusing, particularly with ultra-wide or super-telephoto lenses. Focusing spot corresponds to area of center-weighted TTL exposure measurement with Photomic finders. Rated excellent with all lenses, this screen proves especially good with lenses having small maximum apertures, such as Reflex-Nikkors, as well as for close-up photography applications.

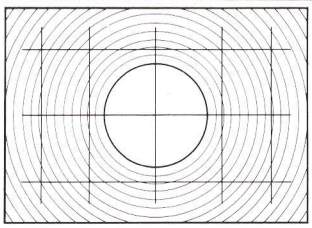


**TYPE C:** Matte with cross-hair and clear spot
Fine-ground matte field with central 4mm-diameter clear spot and black cross-hair reticle. Absence of Fresnel lens makes usability of this screen most suitable to applications, such as photomicrography or astrophotography, employing high magnification finders for aerial-image, parallax focusing. For these purposes use with the 6X Focusing Finder DW-2 is recommended. Not for general applications.

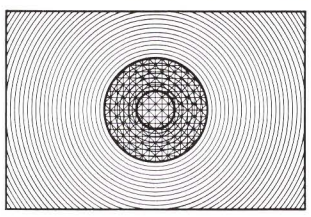




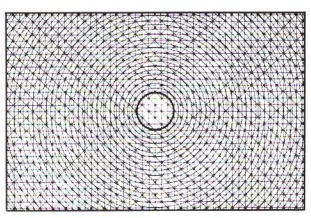
**TYPE D:** Plain matte
Overall fine-ground matte field. Absence of other focusing aids ensures unobstructed viewing. Excellent for use with long telephoto lenses (particularly those lenses having an exit pupil at long distance from the focal plane), as well as fisheye lenses producing a circular image. Limited suitability with telephoto lenses down to a focal length of 135mm. Recommended for experienced photographers who are not in need of other focusing aids.



**TYPE E:** Matte/Fresnel with focusing spot and grid
Matte/Fresnel field with central 12mm-diameter fine-ground matte focusing spot and etched grid. Focusing spot corresponds to area of center-weighted TTL exposure measurement with Photomic finders. Vertical and horizontal lines forming grid (consisting of four 7.5mm squares and four 7.5 x 6mm rectangles) aid in composing subject. Rated excellent with all lenses, this screen proves especially good for exacting reproduction work, such as copying, as well as for architectural photography with PC-Nikkor lenses.

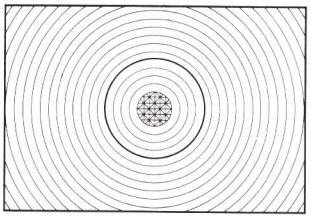


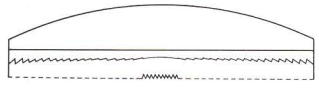
**TYPE G:** Fresnel with microprism focusing spot
Clear Fresnel field with central 12mm-diameter microprism focusing spot. Designed for extremely bright viewing and focusing, particularly suitable for use in poor light, and available in four models (G1 ~ G4) that match the focal length of the lens in use. 12mm-diameter microprism focusing spot corresponds to area of center-weighted TTL exposure measurement with Photomic finders. Depth of field not observable with these screens.



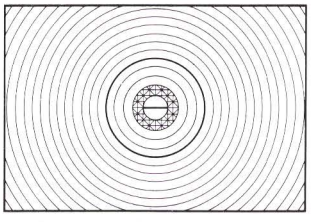
**TYPE H:** Fresnel with overall microprism
Fresnel field with overall microprism pattern. Designed for rapid-focusing on any part of the field, with maximum edge-to-edge brightness. Available in four models (H1 ~ H4) for lenses of specific focal length. Excellent for poor lighting conditions, and for taking shots of moving objects. Depth of field not observable with these screens.

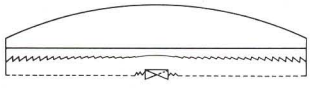
focal lengths and maximum aperture conditions, as well as for special types of photography requiring high magnification of the subject. Presently, 19 different screens are available for direct mounting in F2 Nikons equipped with virtually any finder configuration. As the selection of the type of screen needed to meet the needs of the photography at hand can be, at first appearance, a difficult task, familiarity of the structure and use of Nikon screens is essential. The following tables and technical information provide the comprehensive information required to make the task of selection that much easier.



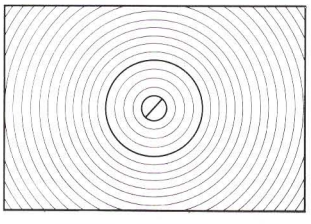


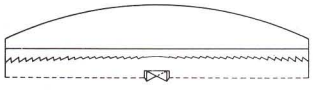
**TYPE J:** Matte/Fresnel with microprism focusing spot
Matte/Fresnel field with central 4mm-diameter microprism focusing spot. Designed for quick and accurate focusing, particularly with lenses of brighter maximum aperture. Screen also provided with centrally-positioned, 12mm-diameter etched reference circle denoting area of center-weighting when using Photomic finders for TTL exposure measurement. Excellent for general photography applications with f/8 or brighter lenses.





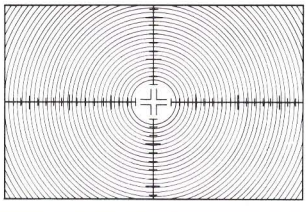
**TYPE K:** Matte/Fresnel with horizontal rangefinder and microprism
Matte/Fresnel field with central 3mm-diameter split-image rangefinder (horizontally aligned) surrounded by 1mm-wide microprism band. This screen combines the split-image feature of the Type A screen and the microprism feature of the Type J screen for quick and accurate focusing, particularly with lenses of brighter maximum aperture. Screen also provided with centrally positioned, 12mm-diameter etched reference circle denoting area of center-weighting when using Photomic finders for TTL exposure measurement. Excellent for general photography, the Type K screen is standard equipment on all Nikon cameras.

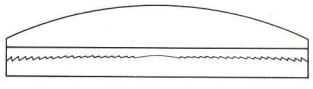




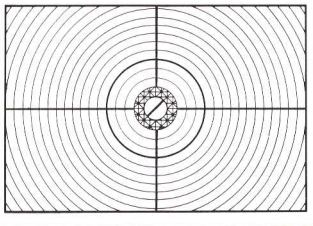
**TYPE L:** Matte/Fresnel with diagonal rangefinder
Matte/Fresnel field with central 3mm-diameter split-image rangefinder, diagonally aligned. Identical to Type A screen except for 45° angle of split-image rangefinder. Rangefinder prism alignment makes for rapid operation with subjects containing horizontal lines and/or surfaces. Subject to rangefinder darkening when used with lenses having maximum aperture of f/4.5 or darker.

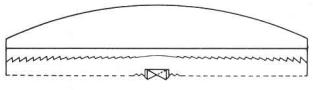




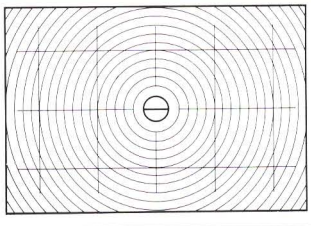


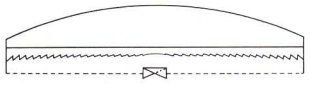
**TYPE M:** Fresnel with double cross-hair and scales
Clear Fresnel field with double cross-hair reticle and reference scales, both etched. Designed for applications, such as close-up photography, photomicrography, employing high magnification finders for aerial-image, parallax focusing. Reference scales graduated in 1mm increments for aid in determining magnification ratios. This screen produces brilliant images even in dim light.





**TYPE P:** Matte/Fresnel with diagonal rangefinder, microprism and lines
Matte/Fresnel field with central 3mm-diameter split-image rangefinder (diagonally aligned) surrounded by 1mm-wide microprism band. Also provided with etched vertical and horizontal lines as an aid for composition, plus centrally-positioned, 12mm-diameter etched reference circle denoting area of center-weighted TTL exposure measurement with Photomic finders. As with the Type K screen, this model offers excellent versatility for virtually all general photography applications.





**TYPE R:** Matte/Fresnel with horizontal rangefinder and grid
Matte/Fresnel field with central 3mm-diameter split-image rangefinder (horizontally aligned) and etched grid. Designed for quick and accurate focusing (via a shallower rangefinder prism angle) with lenses of from f/3.5 to f/5.6 maximum aperture. Vertical and horizontal lines of grid aid in composing subject. Excellent general-purpose screen for use with lenses of slightly darker maximum aperture.

## Lens/Focusing Screen Selection

The characteristics of a screen when used with a specific lens should always be considered carefully before making the final selection. The following chart provides convenient reference when selecting the best model screen for the application at hand.

**Excellent**

**Acceptable**
The image is brilliant from edge to edge, but the center area (rangefinder, microprism or cross-hair) is dim. Focusing should be performed on the surrounding matte area.

**Acceptable**
Slight vignetting (or moire phenomenon, in the case of the microprism) affects the screen image. The image on the film, however, shows no trace of this.

**Acceptable**
Focusing by split image prism or microprism may be inaccurate for bright lenses of f/1.2~f/2.8 because of shallow angle of prism. Focusing should be performed on the surrounding matte area.

**Not Usable**

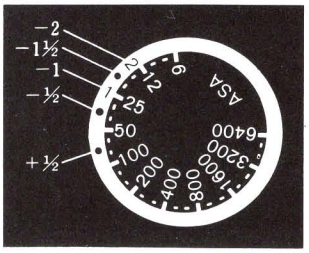
### Focusing Screen Selector Guide

| Lens | Screen | A/L | B | C | D | E | G1 | G2 | G3 | G4 | H1 | H2 | H3 | H4 | J | K/P | M | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fisheye | 6mm F2.8 | | | | | | | | | | | | | | | | | |
| | 8mm F2.8 | | | | | | | | | | | | | | | | | |
| | 16mm F3.5 | | | | | | | | | | | | | | | | | |
| Wideangle | 13mm F5.6 | | | | | | | | | | | | | | | | | |
| | 15mm F5.6 | | | | | | | | | | | | | | | | | |
| | 18mm F4 | | | | | | | | | | | | | | | | | |
| | 20mm F4 | | | | | | | | | | | | | | | | | |
| | 24mm F2 | | | | | | | | | | | | | | | | | |
| | 24mm F2.8 | | | | | | | | | | | | | | | | | |
| | 28mm F2 | | | | | | | | | | | | | | | | | |
| | 28mm F2.8 | | | | | | | | | | | | | | | | | |
| | 28mm F3.5 | | | | | | | | | | | | | | | | | |
| | 35mm F1.4 | | | | | | | | | | | | | | | | | |
| | 35mm F2 | | | | | | | | | | | | | | | | | |
| | 35mm F2.8 | | | | | | | | | | | | | | | | | |
| Normal | 50mm F1.4 | | | | | | | | | | | | | | | | | |
| | 50mm F2 | | | | | | | | | | | | | | | | | |
| | 55mm F1.2 | | | | | | | | | | | | | | | | | |
| Telephoto | 85mm F2 | | | | | | | | | | | | | | | | | |
| | 105mm F2.5 | | | | | | | | | | | | | | | | | |
| | 135mm F2 | | | | | | | | | | | | | | | | | |
| | 135mm F2.8 | | | | | | | | | | | | | | | | | |
| | 135mm F3.5 | | | | | | | | | | | | | | | | | |
| | 180mm F2.8 | | | | | | | | | | | | | | | | | |
| | 200mm F4 | | | | | | | | | | | | | | | | | |
| | ※IF-ED 300mm F2.8 | | | | | | | | | | | | | | | | | |
| | 300mm F4.5 | | | | | | | | | | | | | | | | | |
| | ED 300mm F4.5 | | | | | | | | | | | | | | | | | |
| | 400mm F4.5 | | | | | | | | | | | | | | | | | |
| | ※IF-ED 400mm F3.5 | | | | | | | | | | | | | | | | | |
| | ED 400mm F5.6 | | | | | | | | | | | | | | | | | |
| | 600mm F5.6 | | | | | | | | | | | | | | | | | |
| | ※IF-ED 600mm F5.6 | | | | | | | | | | | | | | | | | |
| | ED 600mm F5.6 | | | | | | | | | | | | | | | | | |
| | 800mm F8 | | | | | | | | | | | | | | | | | |
| | ED 800mm F8 | | | | | | | | | | | | | | | | | |
| | 1200mm F11 | | | | | | | | | | | | | | | | | |
| | ED1200mm F11 | | | | | | | | | | | | | | | | | |
| Zoom | 28~45mm F4.5 | | | | | | | | | | | | | | | | | |
| | 43~86mm F3.5 | | | | | | | | | | | | | | | | | |
| | 50~300mm F4.5 | | | | | | | | | | | | | | | | | |
| | ED50~300mm F4.5 | | | | | | | | | | | | | | | | | |
| | 80~200mm F4.5 | | | | | | | | | | | | | | | | | |
| | ED180~600mm F8 | | | | | | | | | | | | | | | | | |
| | 200~600mm F9.5 | | | | | | | | | | | | | | | | | |
| | ED360~1200mm F11 | | | | | | | | | | | | | | | | | |
| PC | 28mm F4 | | | | | | | | | | | | | | | | | |
| | 35mm F2.8 | | | | | | | | | | | | | | | | | |
| GN | 45mm F2.8 | | | | | | | | | | | | | | | | | |
| Noct | 58mm F1.2 | | | | | | | | | | | | | | | | | |
| Micro | 55mm F3.5 | | | | | | | | | | | | | | | | | |
| | 105mm F4 | | | | | | | | | | | | | | | | | |
| Medical | 200mm F5.6 | | | | | | | | | | | | | | | | | |
| Reflex Telephoto | 500mm F8 | | | | | | | | | | | | | | | | | |
| | 1000mm F11 | | | | | | | | | | | | | | | | | |
| | 2000mm F11 | | | | | | | | | | | | | | | | | |

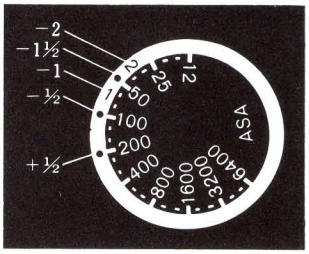
※Internal focusing type

## Exposure Correction

Light transmission properties vary somewhat with particular combinations of types of focusing screen and lens, thus occasionally requiring exposure correction when using TTL exposure measurement via the Photomic-type finders to compensate for the combined effects of the lens/screen/finder combination in use. The numbers listed in various blocks of the charts on the opposite page denote the amount of correction necessary in f/stops (or shutter speed steps). Although the lens' aperture setting (or shutter speed) can be adjusted each time a picture is taken, the easiest way to compensate for the transmission properties is to adjust the finder's film-speed index ring prior to the start of shooting. To adjust the finder via the index ring, lift and turn the ring until the ASA value for the film in use is aligned with the appropriate mark engraved on the ring. In the right-hand figure below, ASA 100 is aligned with the $-\frac{1}{2}$ mark to provide the correction required when using the Type C screen with a Photomic F2AS-equipped F2 Nikon camera and the Fisheye-Nikkor 6mm f/2.8 lens, as indicated in the chart. Note that when "0" is indicated in the chart, no compensation is required.




▲F2A




▲F2AS

## ■ Exposure Compensation Chart/Metering Method

### F2A Photomic

| Lens | Screen | A/L | B | C | D | E | G1 | G2 | G3 | G4 | H1 | H2 | H3 | H4 | J | K/P | M | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fisheye | 6mm F2.8 | 0 | 0 | −½ | −½ | 0 | 0 | 0 | | | 0 | 0 | | | 0 | 0 | | 0 |
| | 8mm F2.8 | 0 | 0 | −½ | −½ | 0 | 0 | 0 | | | 0 | 0 | 0 | | 0 | 0 | | 0 |
| | 16mm F3.5 | 0 | 0 | | | 0 | −½ | | | | 0 | | | | 0 | 0 | | 0 |
| Wideangle | 13mm F5.6 | 0 | 0 | | | 0 | | −1 | | | | −½ | | | 0 | 0 | | 0 |
| | 15mm F5.6 | 0 | 0 | | | 0 | | −1·½ | | | | −½ | | | 0 | 0 | | 0 |
| | 18mm F4 | 0 | 0 | | | 0 | −1 | | | | −1 | | | | 0 | 0 | | 0 |
| | 20mm F4 | 0 | 0 | | | 0 | −1 | | | | −½ | | | | 0 | 0 | | 0 |
| | 24mm F2 | 0 | 0 | | | 0 | | 0 | | | +½ | 0 | | | 0 | 0 | | 0 |
| | 24mm F2.8 | 0 | 0 | | | 0 | | 0 | | | +½ | 0 | | | 0 | 0 | | 0 |
| | 28mm F2 | 0 | 0 | | | 0 | +½ | +½ | | | +½ | +½ | | | 0 | 0 | | 0 |
| | 28mm F2.8 | 0 | 0 | | | 0 | −½ | | | | 0 | | | | 0 | 0 | | 0 |
| | 28mm F3.5 | 0 | 0 | | | 0 | −1 | −½ | | | 0 | 0 | | | 0 | 0 | | 0 |
| | 35mm F1.4 | 0 | 0 | | | 0 | | +½ | | | +½ | +½ | | | 0 | 0 | | 0 |
| | 35mm F2 | 0 | 0 | | | 0 | +½ | 0 | | | +½ | 0 | | | 0 | 0 | | 0 |
| | 35mm F2.8 | 0 | 0 | | | 0 | 0 | | | | 0 | 0 | | | 0 | 0 | | 0 |
| Normal | 50mm F1.4 | 0 | 0 | | | 0 | | +½ | | | | +½ | | | 0 | 0 | | 0 |
| | 50mm F2 | 0 | 0 | | | 0 | +½ | +½ | | | +½ | +½ | | | 0 | 0 | | 0 |
| | 55mm F1.2 | 0 | 0 | | | 0 | | 0 | | | | 0 | | | 0 | 0 | | 0 |
| Telephoto | 85mm F2 | 0 | 0 | | | 0 | | +½ | | | +½ | +½ | | | 0 | 0 | | 0 |
| | 105mm F2.5 | 0 | 0 | | | 0 | | 0 | | | +½ | +½ | | | 0 | 0 | | 0 |
| | 135mm F2 | 0 | 0 | 0 | 0 | 0 | | +½ | | | | +½ | | | 0 | 0 | | 0 |
| | 135mm F2.8 | 0 | 0 | 0 | 0 | 0 | | 0 | | | | +½ | | | 0 | 0 | | 0 |
| | 135mm F3.5 | 0 | 0 | | | 0 | | −½ | | | | +½ | | | 0 | 0 | | 0 |
| | 180mm F2.8 | 0 | 0 | 0 | 0 | 0 | | | 0 | | | 0 | 0 | 0 | 0 | 0 | | 0 |
| | 200mm F4 | 0 | 0 | 0 | 0 | 0 | | −1½ | | | | −1 | | | 0 | 0 | | 0 |
| | ※IF-ED 300mm F2.8 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | +½ | 0 | 0 | 0 | 0 | | 0 |
| | 300mm F4.5 | 0 | 0 | 0 | 0 | 0 | | | −1·½ | | | −1½ | −1 | −1½ | 0 | 0 | | 0 |
| | ED 300mm F4.5 | 0 | 0 | 0 | 0 | 0 | | | −1·½ | | | −1½ | −1 | −1½ | 0 | 0 | | 0 |
| | 400mm F4.5 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ※IF-ED 400mm F3.5 | 0 | 0 | 0 | 0 | 0 | | | −1 | −½ | | | 0 | −½ | 0 | 0 | | 0 |
| | ED 400mm F5.6 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 600mm F5.6 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ※IF-ED 600mm F5.6 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ED 600mm F5.6 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 800mm F8 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ED 800mm F8 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 1200mm F11 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ED1200mm F11 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| Zoom | 28~45mm F4.5 | 0 | 0 | | | 0 | | | | | −1½ | | | | 0 | 0 | | 0 |
| | 43~86mm F3.5 | 0 | 0 | | | 0 | | −½ | | | | −½ | | | 0 | 0 | | 0 |
| | 50~300mm F4.5 | 0 | 0 | | | 0 | | | −2 | | | | −1·½ | | 0 | 0 | | 0 |
| | ED50~300mm F4.5 | 0 | 0 | | | 0 | | | −1 | | | −1·½ | −½ | | 0 | 0 | | 0 |
| | 80~200mm F4.5 | 0 | 0 | | | 0 | | | −1 | | | −1·½ | −½ | | 0 | 0 | | 0 |
| | ED180~600mm F8 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 200~600mm F9.5 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ED360~1200mm F11 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| PC | 28mm F4 | 0 | 0 | | | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 35mm F2.8 | 0 | 0 | | | 0 | | | | | | | | | 0 | 0 | | 0 |
| GN | 45mm F2.8 | 0 | 0 | | | 0 | 0 | | | | 0 | | | | 0 | 0 | | 0 |
| Noct | 58mm F1.2 | 0 | 0 | | | 0 | | 0 | | | 0 | 0 | | | 0 | 0 | | 0 |
| Micro | 55mm F3.5 | 0 | 0 | | | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 105mm F4 | 0 | 0 | | | 0 | | | | | | | | | 0 | 0 | | 0 |
| Medical | 200mm F5.6 | 0 | 0 | | | 0 | | | | | | | | | 0 | 0 | | 0 |
| Reflex Telephoto | 500mm F8 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 1000mm F11 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 2000mm F11 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |

※Internal focusing type



### F2AS Photomic

| Lens | Screen | A/L | B | C | D | E | G1 | G2 | G3 | G4 | H1 | H2 | H3 | H4 | J | K/P | M | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fisheye | 6mm F2.8 | 0 | 0 | −½ | −½ | 0 | −½ | 0 | | | 0 | 0 | | | 0 | 0 | | 0 |
| | 8mm F2.8 | 0 | 0 | −½ | −½ | 0 | −½ | 0 | | | 0 | 0 | 0 | | 0 | 0 | | 0 |
| | 16mm F3.5 | 0 | 0 | | | 0 | −½ | | | | 0 | | | | 0 | 0 | | 0 |
| Wideangle | 13mm F5.6 | 0 | 0 | | | 0 | | −1 | | | | −½ | | | 0 | 0 | | 0 |
| | 15mm F5.6 | 0 | 0 | | | 0 | | −1 | | | | −½ | | | 0 | 0 | | 0 |
| | 18mm F4 | 0 | 0 | | | 0 | −1½ | | | | −1 | | | | 0 | 0 | | 0 |
| | 20mm F4 | 0 | 0 | | | 0 | −1 | | | | −½ | | | | 0 | 0 | | 0 |
| | 24mm F2 | 0 | 0 | | | 0 | | 0 | | | +½ | 0 | | | 0 | 0 | | 0 |
| | 24mm F2.8 | 0 | 0 | | | 0 | | 0 | | | +½ | 0 | | | 0 | 0 | | 0 |
| | 28mm F2 | 0 | 0 | | | 0 | +½ | +½ | | | +½ | +½ | | | 0 | 0 | | 0 |
| | 28mm F2.8 | 0 | 0 | | | 0 | 0 | | | | +½ | | | | 0 | 0 | | 0 |
| | 28mm F3.5 | 0 | 0 | | | 0 | −1 | −½ | | | 0 | 0 | | | 0 | 0 | | 0 |
| | 35mm F1.4 | 0 | 0 | | | 0 | | +½ | | | +½ | +½ | | | 0 | 0 | | 0 |
| | 35mm F2 | 0 | 0 | | | 0 | +½ | +½ | | | +½ | +½ | | | 0 | 0 | | 0 |
| | 35mm F2.8 | 0 | 0 | | | 0 | 0 | | | | +½ | 0 | | | 0 | 0 | | 0 |
| Normal | 50mm F1.4 | 0 | 0 | | | 0 | | +½ | | | | +½ | | | 0 | 0 | | 0 |
| | 50mm F2 | 0 | 0 | | | 0 | +½ | +½ | | | +½ | +½ | | | 0 | 0 | | 0 |
| | 55mm F1.2 | 0 | 0 | | | 0 | | 0 | | | | 0 | | | 0 | 0 | | 0 |
| Telephoto | 85mm F2 | 0 | 0 | | | 0 | | +½ | | | +½ | +½ | | | 0 | 0 | | 0 |
| | 105mm F2.5 | 0 | 0 | | | 0 | | 0 | | | +½ | +½ | | | 0 | 0 | | 0 |
| | 135mm F2 | 0 | 0 | 0 | 0 | 0 | | +½ | | | | +½ | | | 0 | 0 | | 0 |
| | 135mm F2.8 | 0 | 0 | 0 | 0 | 0 | | 0 | | | | +½ | | | 0 | 0 | | 0 |
| | 135mm F3.5 | 0 | 0 | | | 0 | | −1 | | | | 0 | | | 0 | 0 | | 0 |
| | 180mm F2.8 | 0 | 0 | 0 | 0 | 0 | | | 0 | | | 0 | 0 | 0 | 0 | 0 | | 0 |
| | 200mm F4 | 0 | 0 | 0 | 0 | 0 | | −1½ | | | | −½ | | | 0 | 0 | | 0 |
| | ※IF-ED 300mm F2.8 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | | +½ | 0 | 0 | 0 | 0 | | 0 |
| | 300mm F4.5 | 0 | 0 | 0 | 0 | 0 | | | −1½ | | | −2 | −1 | −1 | 0 | 0 | | 0 |
| | 300mm F4.5 | 0 | 0 | 0 | 0 | 0 | | | 1 | | | −1½ | −½ | −½ | 0 | 0 | | 0 |
| | 400mm F4.5 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ※IF-ED 400mm F3.5 | 0 | 0 | 0 | 0 | 0 | | | −1 | −½ | | | 0 | −½ | 0 | 0 | | 0 |
| | ED 400mm F5.6 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 600mm F5.6 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ※IF-ED 600mm F5.6 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ED 600mm F5.6 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 800mm F8 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ED 800mm F8 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 1200mm F11 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ED1200mm F11 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| Zoom | 28~45mm F4.5 | 0 | 0 | | | 0 | | | | | −½ | | | | 0 | 0 | | 0 |
| | 43~86mm F3.5 | 0 | 0 | | | 0 | | −1 | | | | −½ | | | 0 | 0 | | 0 |
| | 50~300mm F4.5 | 0 | 0 | | | 0 | | | −2 | | | | −1 | | 0 | 0 | | 0 |
| | ED50~300mm F4.5 | 0 | 0 | | | 0 | | | −1 | | | −1½ | −½ | | 0 | 0 | | 0 |
| | 80~200mm F4.5 | 0 | 0 | | | 0 | | | −1 | | | −1½ | −½ | | 0 | 0 | | 0 |
| | ED180~600mm F8 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 200~600mm F9.5 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | ED360~1200mm F11 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| PC | 28mm F4 | 0 | 0 | | | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 35mm F2.8 | 0 | 0 | | | 0 | | | | | | | | | 0 | 0 | | 0 |
| GN | 45mm F2.8 | 0 | 0 | | | 0 | 0 | | | | 0 | | | | 0 | 0 | | 0 |
| Noct | 58mm F1.2 | 0 | 0 | | | 0 | | 0 | | | 0 | 0 | | | 0 | 0 | | 0 |
| Micro | 55mm F3.5 | 0 | 0 | | | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 105mm F4 | 0 | 0 | | | 0 | | | | | | | | | 0 | 0 | | 0 |
| Medical | 200mm F5.6 | 0 | 0 | | | 0 | | | | | | | | | 0 | 0 | | 0 |
| Reflex Telephoto | 500mm F8 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 1000mm F11 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |
| | 2000mm F11 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | 0 | 0 | | 0 |

※Internal focusing type

Exposure measurement via full-aperture method

Exposure measurement via stop-down method

Exposure measurement not possible; lens/screen combination permits only focusing operation.

Not Usable

## Basic Elements of the Focusing Screen

Focusing screens used in F2 Nikon cameras are a complex structure of optical elements much more sophisticated than the simple framed ground-glass plates used in large-format cameras. Nikon focusing screens universally offer several basic elements, including Fresnel (or field) lens and condenser lens, to ensure the brightest images and the finest focusing to meet the exact needs of the lens and/or subject in use. The basic elements of Nikon screens, and their applications, are detailed in the table on the right.

| Element | For Viewing | For Focusing | Function |
|---|---|---|---|
| Matte field | ○ | ○ | Scatters the light from the image so that the entire screen can be observed, with the image on the surface appearing sharp. |
| Condenser lens | ○ | | Converges the light rays into the eye. |
| Fresnel lens | ○ | | Same as condenser lens but much flatter. The G and H screens come in four models each with different powers to correspond to the focal length of various lenses. |
| Split-image prisms | | ○ | For quick and accurate focusing. Specially arranged prism wedges split the image into two distinct parts when the image is out of focus. Correct focusing unites the image. |
| Microprisms | | ○ | Deflect the light and break the image into a myriad of fragments for a blurred effect when image is not in focus. Usable with slower lens speeds than possible with split-image. |
| Cross-hair reticle on clear spot | | ○ | Permits parallax focusing when extremely accurate focusing is required as in photomicrography and astrophotography. |

### Matte field for viewing and focusing

Most Nikon focusing screens incorporate the basic elements of a matte-backed Fresnel lens with additional condenser lens. The matte field of the Fresnel lens functions to scatter the light reaching it through the lens so that the image can be viewed from some point above the screen. This scattering effect is essential, as without it, the photographer would be able to see only one, relatively small portion of the image at any one time; also, the matte surface is positioned in the location of the plane corresponding to the film plane, thus enabling focusing. The effectiveness of the matte field for viewing and focusing is a function of its granularity—a coarse grain produces a bright image, but less effectiveness for focusing, while a fine-grained surface enhances focusing at the expense of brightness (a fact particularly noticeable when working at small lens aperture). Nikon focusing screens incorporate the finest matte grain possible for the application and lens suitability of the screen, adding the Fresnel and condenser lenses to compensate for any resulting loss in brightness; the result is a comprehensive lineup of models offering excellent balance in meeting the needs of both critical focusing and maximum image brightness for ease of viewing for the full range of Nikkor lenses. See accompanying figures for additional details.



**Fig. 1** **Focusing Screen Type A**

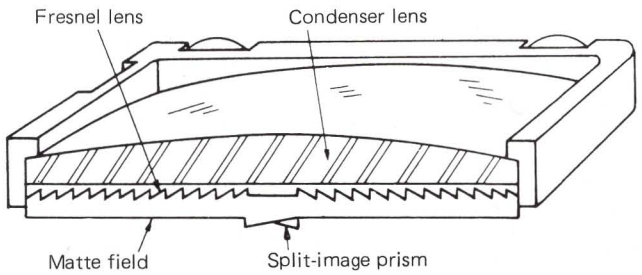
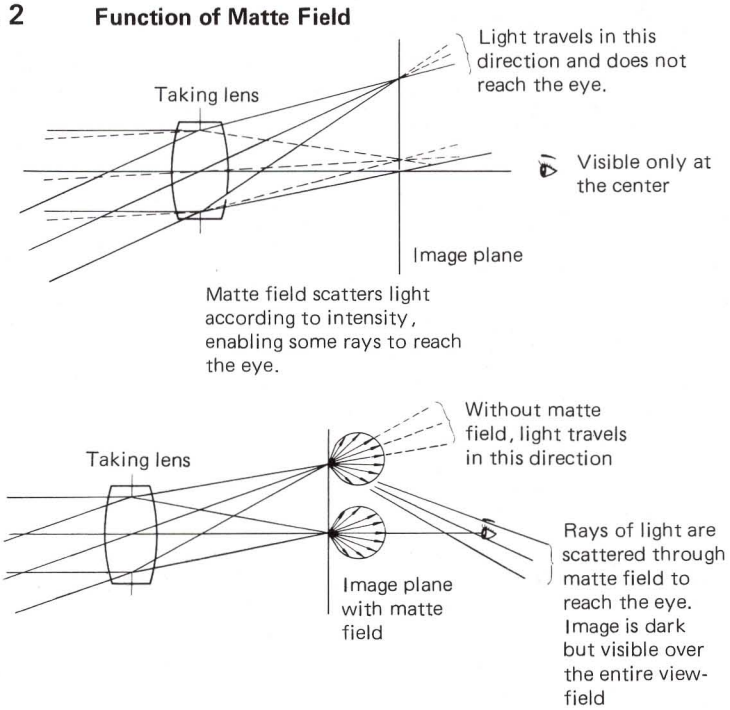


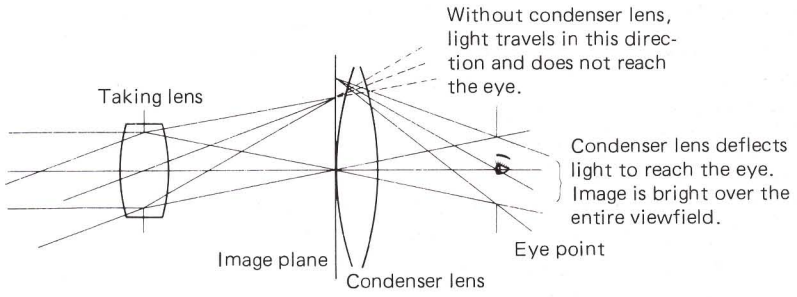

**Fig. 2** **Function of Matte Field**



## Condenser lens for viewing

Although the matte field at the focusing plane enhances the photographer's ability to view and focus the camera, brightness is still confined to a relatively small area of the field due to the problem of granularity, as explained previously. The use of a lens to collect the light and direct it to the viewing eye, however, can solve many of the problems of the matte field alone. Thus, the condenser (it "collects" or condenses the light) lens proves exceptionally useful in enhancing operation when placed between the matte field and the viewing eye. Nikon screens incorporate two condenser lenses (one in the form of a Fresnel lens) to provide for maximum brightness right up to the edges and corners of the screen.

**Fig. 3** **Function of Condenser Lens**




## Fresnel lens for viewing

The Fresnel lens (named after the French physicist who first invented it) is actually a special type of condenser lens offering the advantages of thinner construction (it's sometimes known as a flat lens) that reduces the bulk of the focusing screen assembly. The upper surface of the Fresnel lens is constructed in a series of concentric rings, with the upper surface of each ring curved to match a portion of a convex lens surface of a condenser lens; this effect results in a stepped, but level surface that matches the characteristics of a condenser lens without the bulk. With the Fresnel lens, it's possible to incorporate various condenser lens powers by simply changing the curvature of the upper surfaces of the concentric rings. Thus, Fresnel lenses can be constructed to meet the needs of various lens types and shooting applications; this change of curvature is done in the case of Type H and Type G screens, with four models of each type available to direct the transmitted light from the screen to the eye wherever a wideangle lens or a telephoto lens is used. See Figure 5 for details concerning Fresnel lens powers.

**Function of Fresnel Lens**

**Fig. 4**

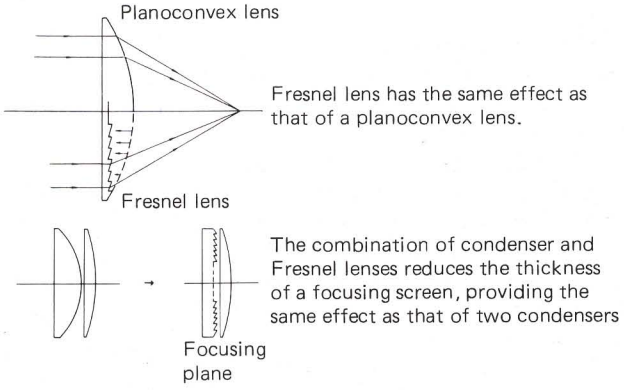
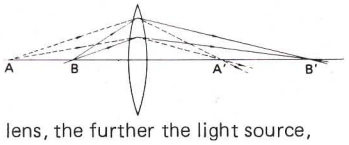
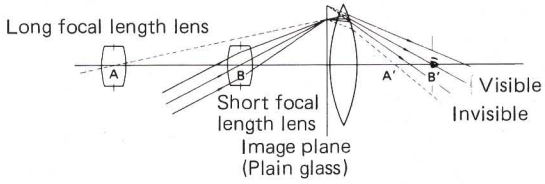


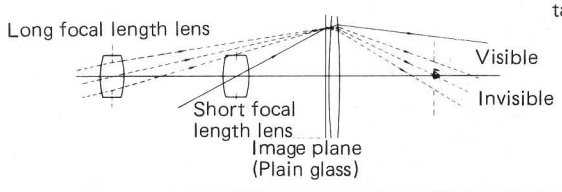

**Fig. 5** Why condenser lens (Fresnel lens) power must be changed to fit taking lens' focal length




In biconvex lens, the further the light source, the closer the converging point to the lens.
Light from point A converges at point A'.
Light from point B converges at point B'.
AA' and BB' are conjugated.




Light deflection varies according to convex lens power, which must be adjusted through the taking lens.



## Split-image rangefinder for focusing

The most popular and widely-used screens (i.e., Types A, K, L, P and R) incorporate a special focusing element known as the split-image rangefinder. Perceived by the photographer as a circle bisected by a center line, the split-image rangefinder is actually two thin prisms at opposite angles placed side by side (see Figure 6). The function of the prisms is to produce a distinctly clear indication of the focus condition (either "in-focus" or "out-of-focus") when operating the camera. The characteristic of the rangefinder due to the opposing angles of the prisms is to produce two semi-circular images which gradually come together from opposite sides as the lens is brought into focus (see Figure 7); this effect makes for rapid focusing because the images will only align at the exact focus point (if the lens is brought beyond the focus point, the two-semi-circle images will begin to move apart rather than together). With the split-image rangefinder construction, then, operation is rapid and extremely precise for outstanding results attested to by the popularity of these screens. The one disadvantage of split-image operation, however, is the critical relationship between the slope angle of the prism and the maximum aperture of the lens in use; specifically, with darker lenses (i.e., lenses with a maximum aperture of less than approximately f/4) the prisms may blacken out when the viewing eye is shifted just slightly off the optical axis of the viewing system. This problem is overcome for most situations by using the Type R screen (designed for lenses with maximum apertures of from f/3.5 to f/5.6) or focusing on the surrounding matte field. For additional details on rangefinder operation, refer to accompanying figures.

**Fig. 6**

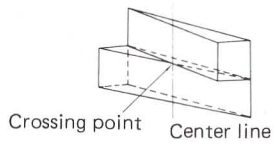
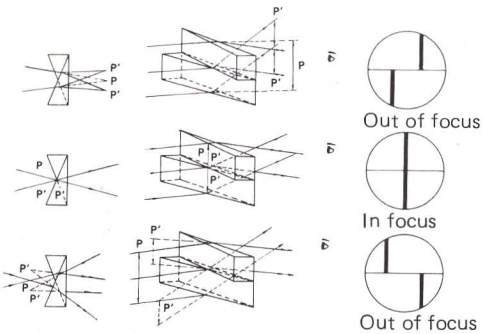
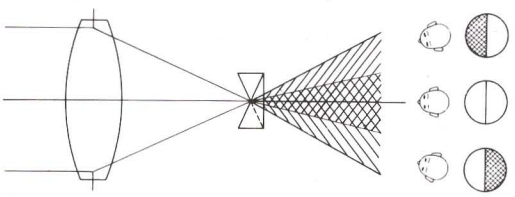



**Fig. 7**



As illustrated above, this method of focusing cannot be employed unless the taking lens has a maximum aperture in excess of f/5.6 with some portion of hatching overlapping. However, even if the maximum aperture of the lens should be more than f/5.6, shading may occur on one side of the split-prism to darken the screen image: this occurs when the overlapped portion of hatching is minimal.

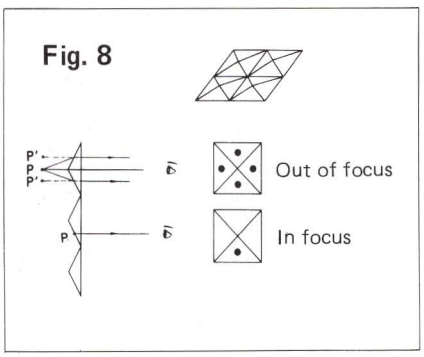


## Microprisms for focusing

Second in popularity to rangefinder-equipped screens, microprism-equipped focusing screens (i.e., Types G, H, J, K and P) offer similarly rapid focusing via the incorporation of virtually thousands of miniscule prisms. The principle of operation with the microprism is similar to that of the rangefinder in that out-of-focus images are displaced in relationship to one another; however, with many thousands of microprisms on a single screen, the photographer visualizes the effect as a generally blurred, slightly darkened image. Thus, as the subject is brought into focus, it appears to jump into clarity.

Microprism focusing, however, is not without its difficulties. For one, microprisms do not allow the observation of depth of field—only the exact in-focus image is seen sharply. Also, microprism screens are subject to similar darkening problems with lenses of smaller aperture, just as with the rangefinder. For this latter problem, Nikon offers screens with various prism constructions (i.e., some with 8° and some with 4.5° refraction angles) to meet the focusing needs of lenses as dark as f/8 ~ f/11 in maximum aperture. Thus, the excellent characteristics of microprism focusing are available to cover the needs of virtually all Nikon lenses.

**Fig. 8**

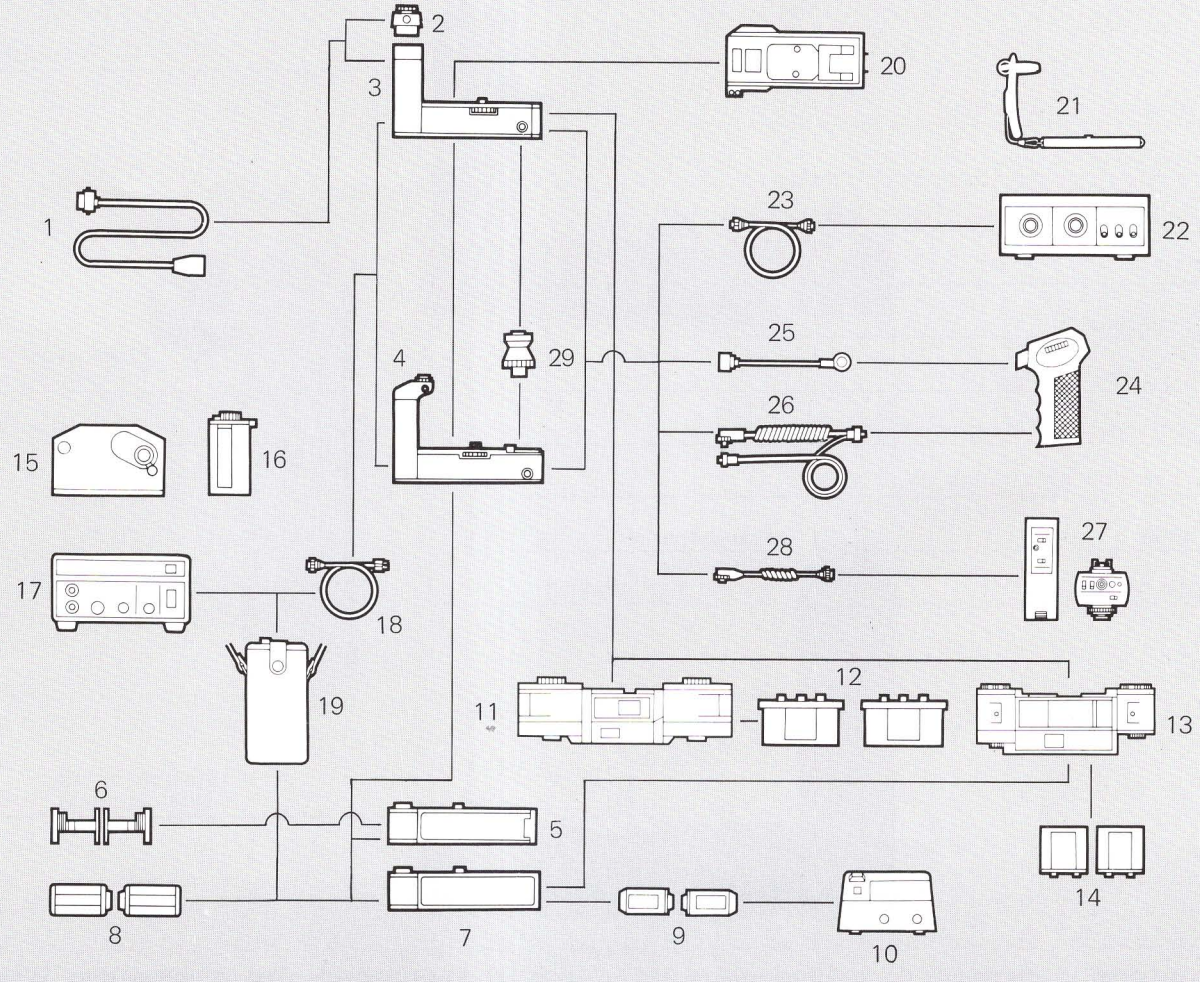



## Cross-hair and clear spot for focusing

The cross-hair and clear spot prove excellent for the most critical focusing as they eliminate the potential darkening characteristics associated with rangefinder and microprism focusing. However, the focusing technique used with the cross-hair and clear spot is more time-consuming, and thus generally limited to operation with non-moving subjects, such as associated with copying, close-up work, photomicrography, astrophotography, etc.

With the cross-hair and clear spot, focusing is performed on the aerial image via the parallax method (actually similar to the method used with the split-image rangefinder). While focusing the eye on the cross-hair (engraved on the clear screen plane), the photographer adjusts the lens or bellows until the portion of the subject to be focused appears to be "stuck" with the cross-hair; then, by shifting the eye slightly left/right: or up/down, comparison of the cross-hair and the subject images is made. If no image shift is noticed, the focus is correct; if image shift is noticed, refocusing is required.

# F2 Nikon Motor Drive System

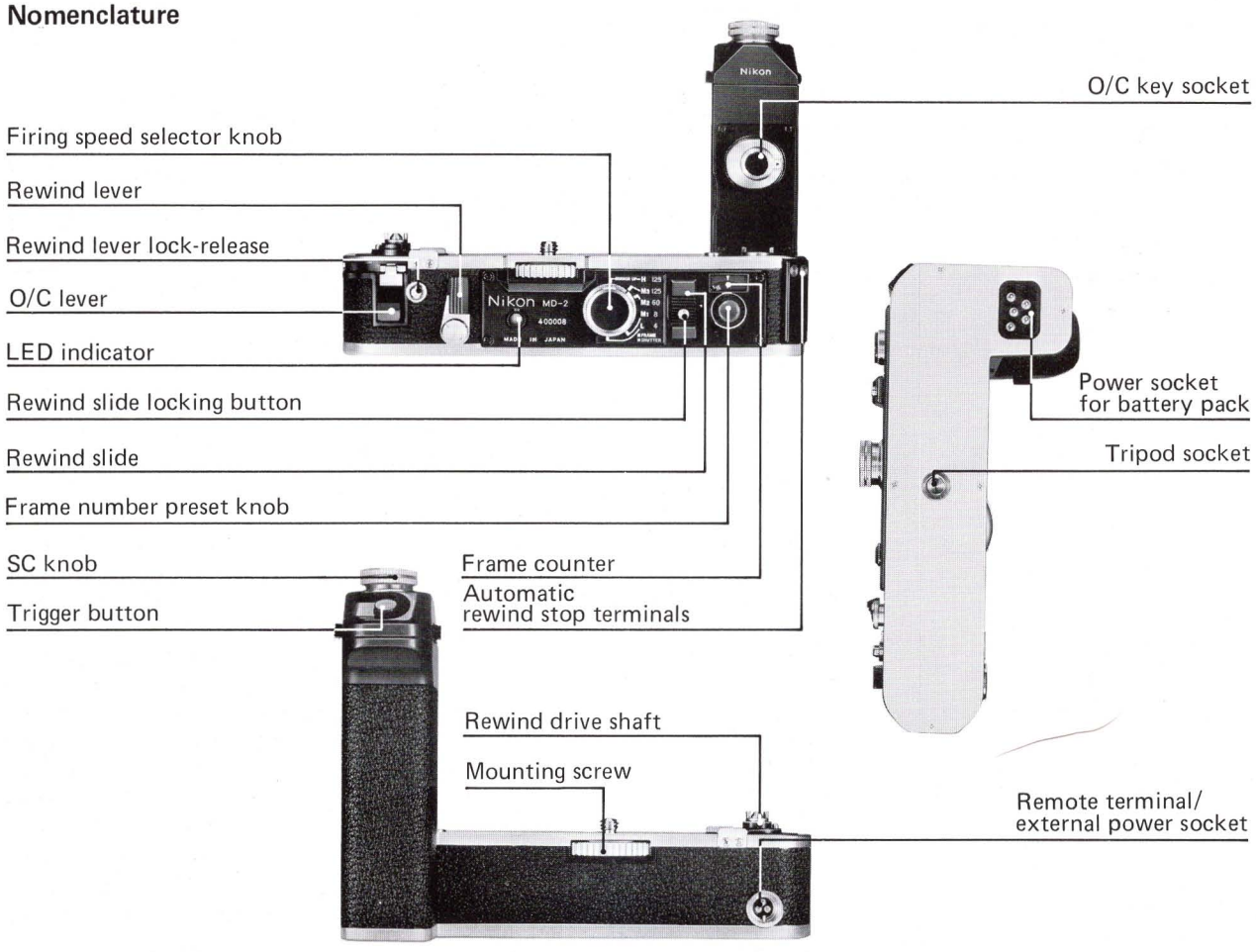



1. SC Remote Cord MC-1
2. SC Unit (Grip Head)
3. Motor Drive MD-2
4. Motor Drive MD-3
5. Cordless Battery Pack MB-2
6. Battery Holder MS-2
7. Cordless Battery Pack MB-1
8. Battery Holder MS-1
9. NC Battery Unit MN-1
10. NC Battery Charger MH-1
11. 750 Magazine Back MF-2
12. 750-Exposure Film Cassette MZ-2
13. 250 Magazine Back MF-1
14. 250-Exposure Film Cassette MZ-1
15. Bulk Film Loader
16. Film Magazine AM-1
17. AC/DC Converter MA-4
18. 3m Connecting Cord MC-2
19. Battery Pack Jacket MA-3
20. Camera Back MF-3
21. Handstrap AH-1
22. Intervalometer MT-1
23. 1m Remote Cord MC-4
24. Pistol Grip Model 2
25. Connecting Cord MC-8
26. Battery-Grip Cord
27. Modulite Remote Control Set ML-1
28. Connecting Cord MC-3
29. Terminal Release MR-1



## Contents

## Nomenclature




Nikon ushered in the era of the professional motor drive with the introduction of the first Nikon motor drive in 1958. Since then, Nikon's engineers have produced, with the MD-2 as its base, the world's most extensive, comprehensive and proven motor drive system. The necessity for a motor drive system arose from the simple fact that professionals in areas of photography other than sports or photojournalism quickly realized what an asset a motor drive could really be. This started the expansion of the system to include accessories for every purpose, such as 250 and 750-exposure bulk-loading backs for uninterrupted shooting, time-lapse and remote control equipment, plus interchangeable battery packs.

As one would expect from the core of the Nikon motor drive system, the MD-2 is as tough and rugged as they come, built from the outset to take the rough and tumble of hard use. No pains have been spared and no corners cut to ensure that the materials and components that go into every MD-2 are the finest. Coupled with impeccable design, with total attention to detail, is precision workmanship of the highest order.

Ruggedness, versatility and precision are all very important aspects of a professional camera, and the motor drive has to be built to match. But equally important is ease of operation. With the MD-2, operation is simple and straightforward. Every control is where it should be, every step is what it should be—in fact, operation is so "natural" it becomes almost automatic.

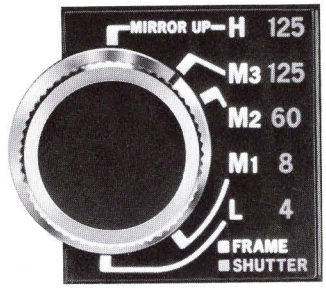
Simple and logical operation has not been obtained, however, at the expense of vital controls—they are all there, located precisely where the fingers fall naturally.

Of course, the MD-2 is the fastest off-the-shelf motor drive available, with its maximum firing speed of 5 fps. But a fast maximum speed is only one advantage of a motor drive (although in the case of most other motor drives, it may be their only characteristic). Professionals other than sports or action photographers are interested in having a range of precisely controlled speeds—and the MD-2 offers this. It is not just a fast-action motor drive, but a scientifically precise one, too.

Other MD-2 features include a power rewind capability for rewinding a standard 36-exposure cassette in a mere 7 seconds, provision for an extensive range of power supply options, plus the almost endless capability to accept whatever accessories are necessary to accomplish the job, whatever it may be.

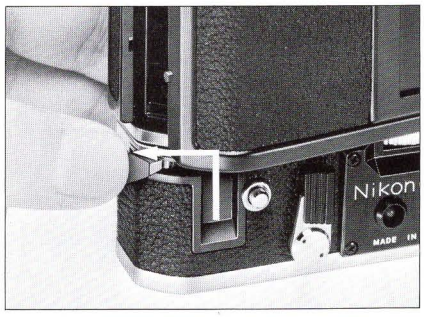
## Firing speed selector

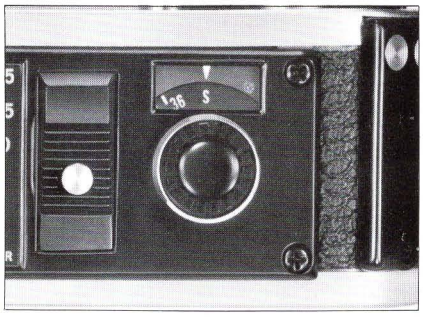
The firing speed selector is conveniently placed at the center of the control panel on the rear of the MD-2 and provides for precise setting of any one of the five firing speeds available. Simple lift-and-turn setting controls can be operated easily even with cold fingers or when wearing heavy gloves. Positive lock when set ensures that the selected speed setting cannot "drift" or be changed by accident. Each setting is clearly marked with the slowest usable shutter speed; there is also an indication (MIRROR UP) for the necessity to lock the mirror when the **H** (high speed) setting is used. This eliminates the need to carry tables or refer to instruction books in the field.




## Camera back opening

Attaching the MD-2 to the camera's baseplate does not mean sacrificing the advantages of the F2's positive operation, secure, back closure lock. The MD-2 incorporates all the necessary linkages and connectors to enable the camera's back to be opened easily, yet remain positively locked during shooting. The foldaway back opening lever remains securely recessed during shooting, and can be flipped up and turned to open with one thumb smoothly and easily. Final release of the catch takes place against a very positive spring pressure to eliminate the possibility of inadvertent operation.



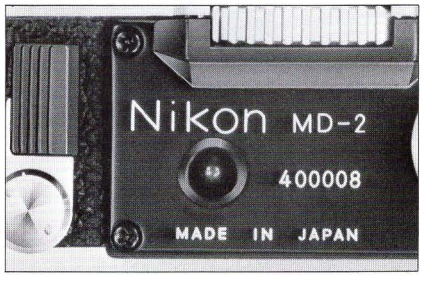



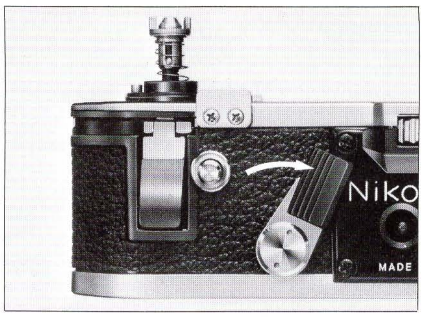
## Frame counter

The MD-2's subtractive frame counter serves a double function. It lets you know how many frames are remaining so that the motor can be stopped automatically when the film has been exposed, thus preventing the film from being pulled out of the cassette. On the other hand, it can be preset to expose only the number of frames required so that you can keep the trigger depressed, confident that after a predetermined number of frames has been exposed, the motor drive will automatically shut off. As the camera's own frame counter continues to operate with the MD-2 attached, keeping track of the number of exposures made is simple, regardless of which way the MD-2's frame counter is used.

## LED indicator

To reassure the user that the motor drive is functioning correctly, the MD-2 is fitted with an LED indicator lamp which lights up while the motor is transporting the film. The use of an LED, instead of a conventional lamp, eliminates the possibility of lamp failure and minimizes battery drain. The LED also lights up to signal the completion of power rewind.



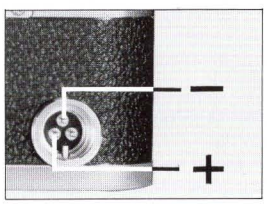

## Power rewind

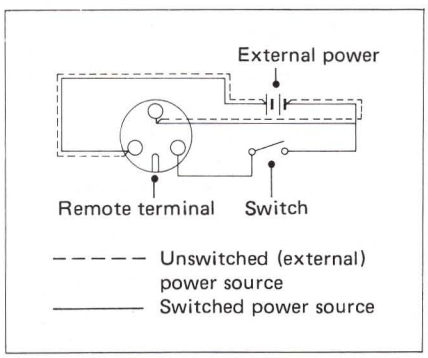
Important events have a way of happening "unexpectedly," and for the press or action photographer, nothing can be more embarrassing than running out of film just as things start to happen. With the MD-2, time lost reloading can be virtually eliminated. Power rewind—7 seconds for a standard 36-exposure cassette—makes all the difference. Switching the motor drive is a simple one-thumb operation, yet secure against accidental operation. The left thumb depresses the lock button and then slides over to switch the rewind lever. The whole operation takes less time than to read this; when the accessory MF-3 camera back is used, rewinding will stop automatically as soon as the film leader clears the transport sprockets, leaving the leader protruding from the cassette.

## Remote control terminal / external power socket

For more specialized remote-control applications, the MD-2 is provided with a remote control socket on its front panel. Connection to this socket is by special Nikon three-pin connectors, which also incorporate a screw-over locking collar to ensure that the remote control lead cannot pull out accidentally and thereby ruin the shooting session. For connection to the socket, Nikon provides a wide range of cords for virtually every conceivable application, including a lead with standard 'banana' type plugs, the MC-4 cord, which allows the user to make up his own cord for his specialized use in the shortest possible time. To round out the MD-2's list of remote control capabilities, there are also the radio control and modulite units which plug into the socket. The remote control terminal also serves a double function as the power supply socket when power supply units other than the cordless battery packs are used. Alternative power sources available include the Nikon MA-4 AC/DC converter, in addition to stabilized laboratory power supplies. The diagrams below may be useful in establishing a power circuit.

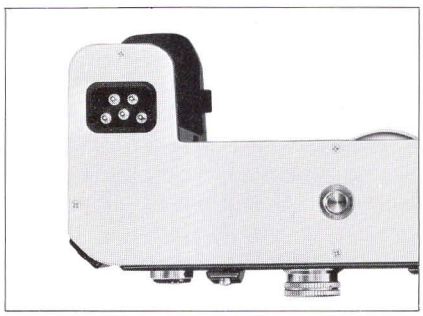




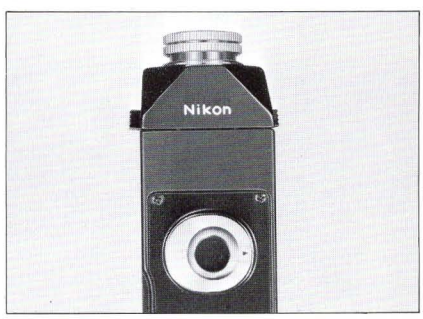

## Power socket for battery pack

The outstanding reliability and convenience of the modern motor drive stems in no small way from the development of the cordless battery pack. In addition to forming a handy, compact unit, Nikon's MB-1 Battery Pack also eliminates the need for cord connectors, which for the action or press photographer means a dramatic increase in reliability. To ensure secure and durable connection between the motor drive and the MB-1, Nikon has incorporated into the base of the MD-2's handgrip a multiple connection socket, with the MB-1 itself equipped with a corresponding plug; when mated, the two form virtually a single unit.



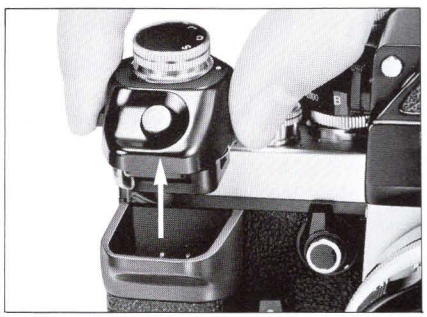
## O/C key storage

The F2's open/close key has to be removed (a very simple operation) to allow the MD-2's power rewind shaft access to the film chamber. To ensure that this O/C key is not lost while the motor drive is attached to the camera, the MD-2 is fitted with a socket on the back of the handgrip into which the key can be screwed. A very small point by itself, but another example of Nikon foresight and planning.

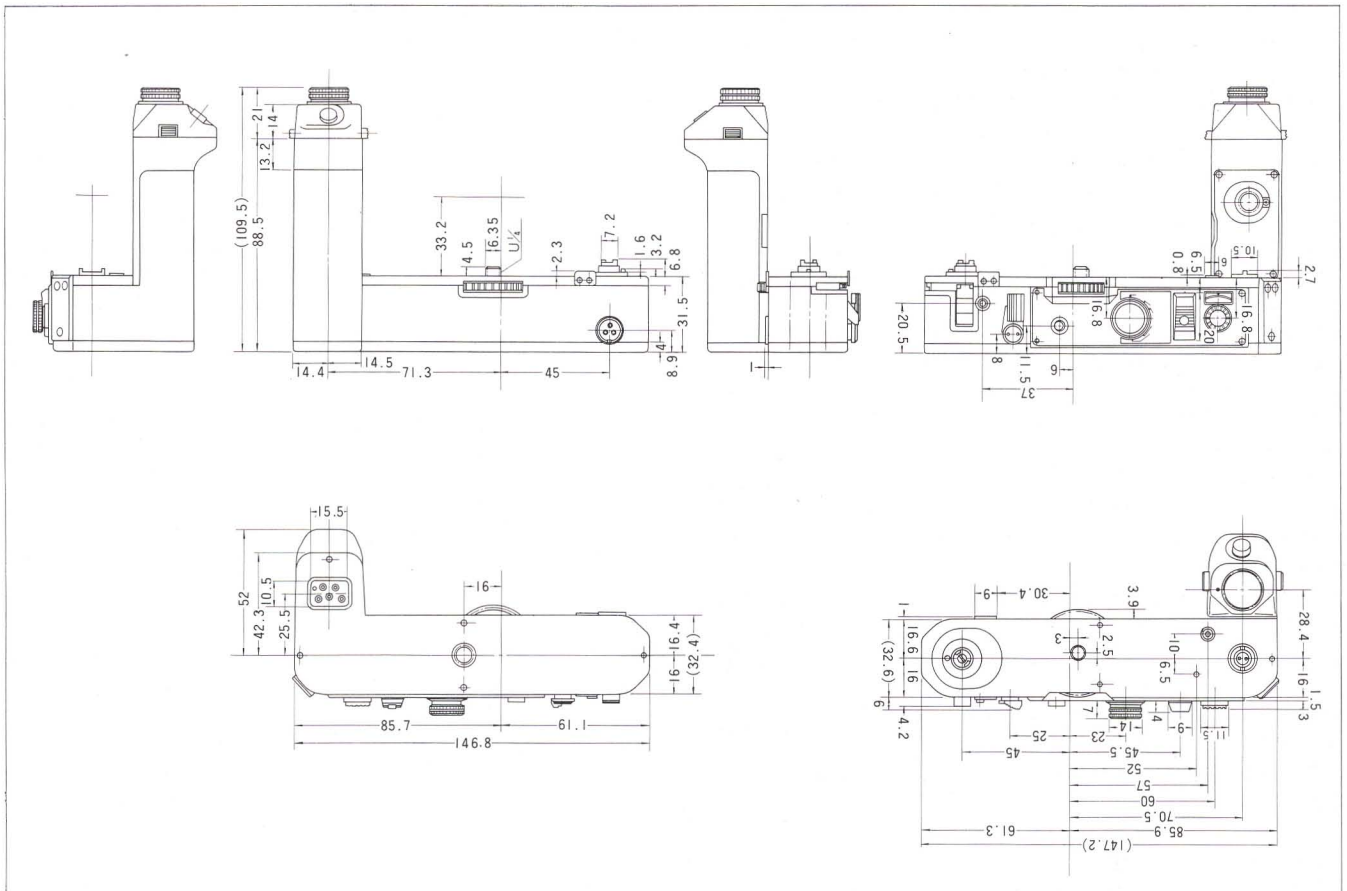



## Removable grip head

The motor drive trigger button and the S/C selector knob form a self-contained module which plugs into the top of the motor drive handgrip. The firing button is located on the handgrip, just where the finger rests when the right hand is curled around the grip. The firing button action is just right, giving the precise feel of the moment of release so vital to capturing the decisive moment. The mode selector, while giving the choice of single frame or continuous shooting, is positioned just above the trigger button. A positive lift-and-turn selection is simple and fast, and can be performed with ease even when the photographer is wearing bulky gloves. Simply depressing the two clips, one on either side of the handgrip, allows the module to be lifted out. The module can then be plugged into the socket on the MC-1 remote control cord, the other end of which is plugged into the socket on



the motor drive handgrip. A full three meters (10 ft.) long, the MC-1 cord permits full remote control operation of the motor drive, including mode selection, up to the limit of the cord length. This simple, reliable method of remote control is ideal for the vast majority of remote control applications which are usually studio, copying or short-distance outdoor situations.





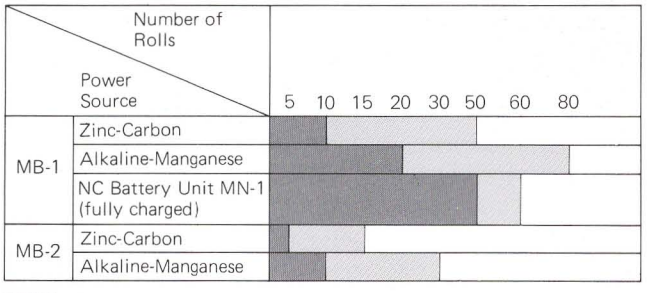
## Specifications

**Type of unit:** Multi-speed 35mm SLR camera motor drive
**Cameras usable:** Any F2 Nikon camera body; no modifications or adjustments required for mounting
**Operation modes:** Choice of single-frame (S) or continuous (C) firing via mode control (SC) knob on handgrip; lock (L) position also provided for prevention of inadvertent release
**Shutter speeds:** For single-frame shooting usable at any of the camera's standard shutter speeds (i.e., 1/2000 second to 10 seconds) or longer; for continuous shooting usable at settings from 1/2000 second to 1/4 second
**Firing speed:** Firing speed selector provided at rear control panel, preset settings of low (L), medium (M, M2, and M3)) and high (H); intermediate settings also usable; speed performance with various power supplies as follows:

| Power Source \ Firing Speed Setting / Usable Shutter Speed | | H | M3 | M2 | M1 | L |
|---|---|---|---|---|---|---|
| | | 1/125~ 1/2000 | 1/125~ 1/2000 | 1/60~ 1/2000 | 1/8~ 1/2000 | 1/4~ 1/2000 |
| MB-1 (15V) | Alkaline-Manganese Penlight Batteries | 4 frames/ sec. | 3.5 | 3 | 2 | 1 |
| | Zinc-Carbon Penlight Batteries | | | | | |
| | NC Battery Unit MN-1 | 5 | 4.3 | 3.8 | 2.5 | 1.3 |
| MB-2 (12V) | Alkaline-Manganese Penlight Batteries | 2.7 | 2.5 | 2.1 | 1.7 | 0.9 |
| | Zinc-Carbon Penlight Batteries | | | | | |
| AC/DC Converters MA-2 and MA-4 | | 5 | 4.3 | 3.8 | 2.5 | 1.3 |

**Power source:** DC power sources within 10—15V.

The following table shows the approximate number of 36-exposure rolls of film which can be fired on one set of batteries.
(Rewinding power consumption included)



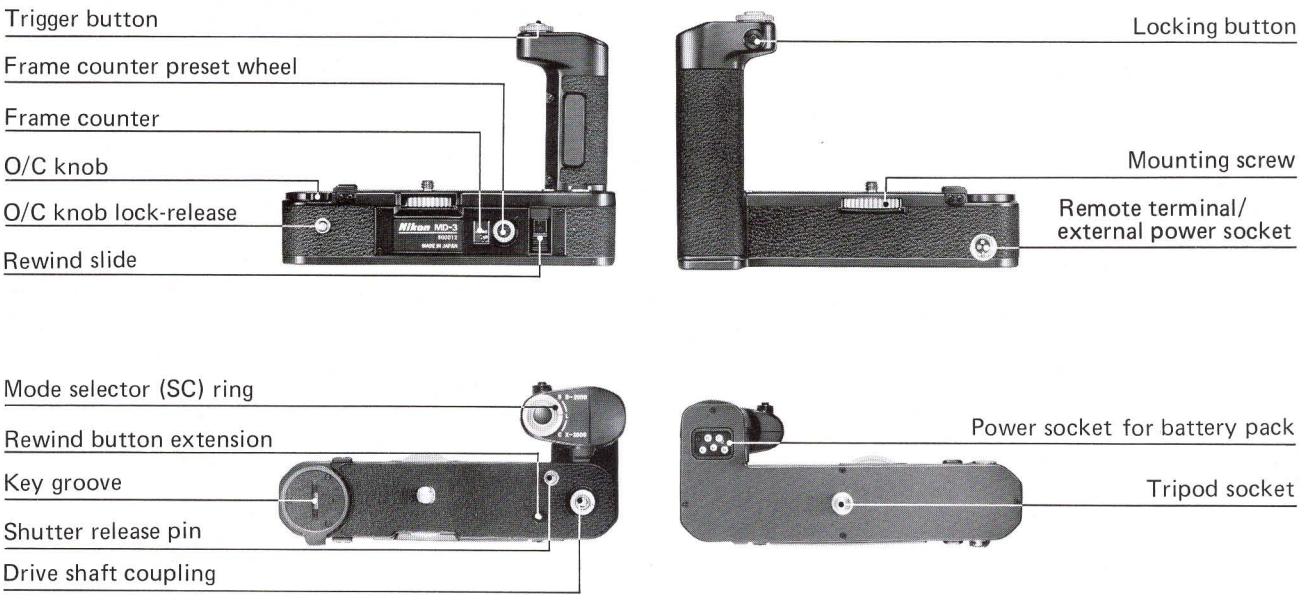

The range of the guaranteed firing speed
The range within operative battery power, but without guarantee of the rated firing speed

**Frame counter:** Shows number of frames remaining (subtractive type); manually set to 20 or 36 (in red) at start of shooting; can be used to control the number of frames in a sequence burst; not functional when magazine back is used
**Film rewind:** Automatic seven-second power rewind as standard; manual rewind also possible; terminals provided on motor drive for automatic rewind stop operation with optional Camera Back MF-3
**Operation display:** Red LED (Light-Emitting Diode) indicator provided for visual display film winding; also lights when rewinding is completed via Camera Back MF-3
**Remote control:** Via wire or radio using control relay built into MD-2 handgrip
**Dimensions:** 77mm (D) x 110mm (H) x 147mm (W)
**Weight:** 470g (MD-2 only); 695g (with MB-1 attached)

# Nikon Motor Drive MD-3

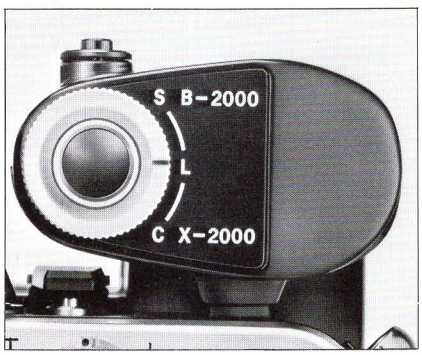
Why the MD-3? The simple truth of the matter is that there are many people who need or would like a motor drive for use in everyday shooting situations, such as for merely advancing the film. Lightweight and compactness are, of course, taken for granted. Continuous operation is desirable for use when needed, as is a fast enough shooting speed for handling sports or action shooting requirements. With these ideas in mind, the MD-3 was born. Nikon's engineers took a close look at motor drive photography and eliminated all features which were judged superfluous to the lightweight, compact motor drive concept. The fact is, it is generally not the motor drive which is the heavy, bulky part of the system; it is really the battery pack, i.e., high-speed drives require powerful and, therefore, heavy batteries. Consequently, the MD-3 gives a choice of battery packs; the maximum firing speed available varies with the pack chosen. In the case of the MB-2 Battery Pack, which has been created specially for the MD-3, the available maximum firing speed of 2.5 frames per second is more than enough for virtually all amateur applications. For professionals or amateurs who really need higher speeds of up to 4 fps, the MB-1 Battery Pack and Nikon NiCd batteries should be used.

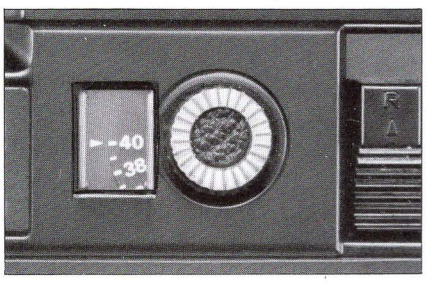
## Nomenclature






A choice of continuous firing speeds is not provided with the MD-3, for generally, this motor drive will be used for continuous shooting with action subjects which demand a high shutter speed. Thus, the MD-3 can be set for continuous shooting only in the shutter speed range of 1/80 to 1/2000 sec. Single-frame shooting can, of course, be used at any shutter speed. The S/C selector knob is located on the top of the handgrip, coaxial with the trigger button. A lock is provided to ensure that the setting selected cannot drift inadvertently.

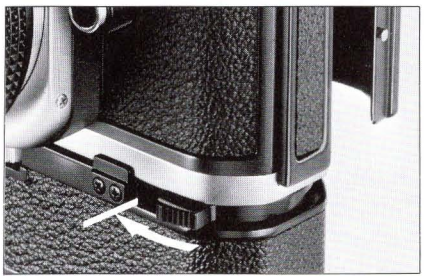




### Frame counter

To eliminate any risk of pulling the film out of the cassette when fully exposed, the MD-3 is fitted with a subtractive frame counter. Set when the film is loaded, the counter shows precisely how many frames are remaining on the film. When the counter reaches **0** the motor drive stops automatically. Another use for the counter is limited burst shooting, which is achieved by merely setting the counter for the number of frames required; when the counter reaches 0, it stops the motor automatically.

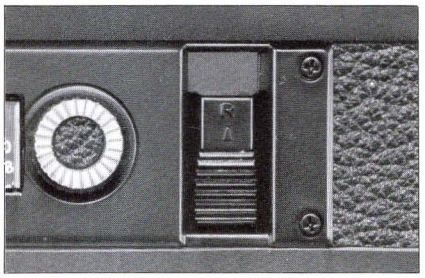
## Opening the camera back

To allow the F2's back to be opened, for loading or unloading film, the MD-3 is fitted with a very simple, but ingenious back opening mechanism. When mounting the MD-3 onto the F2, the F2's O/C key is folded out and inserted into the slot on the MD-3. Then, to open the back, all that is needed is to depress the lock button on the MD-3, which positively prevents the back from opening inadvertently, and push the back opening lever through 180°. The camera back will then swing open.



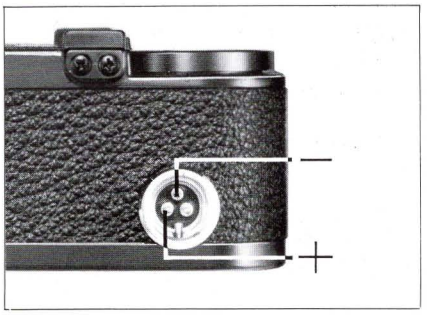
## Rewind slide

For ease of rewinding, the MD-3 is fitted with a rewind slide that couples directly to the rewind button on the F2 body. Actuation is simple and positive, without requiring that the motor drive be removed from the camera body. One of the more advanced features of the F2 is fully retained when the MD-3 is mounted, which is the F2's capability for multiple exposure operation. This is made even more interesting when the motor drive is used in the continuous mode and the subject is moving.



## Remote terminal

The MD-3's standard Nikon three-pin remote control/power terminal is positioned on the front of the motor drive at the end farthest away from the handgrip. Taking standard Nikon connectors, with their screw-in locking collars, the terminal allows the full use of all Nikon remote control accessories and alternative power sources.



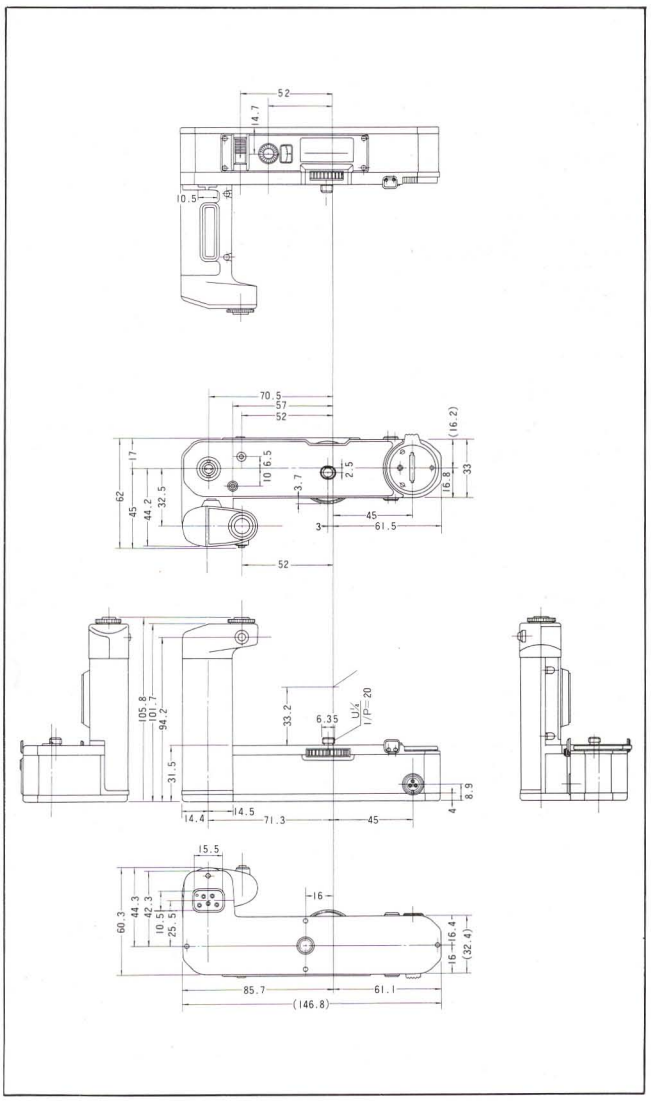

Note: Power rewinding is not possible with the MD-3. Nor does it accept camera/bulk backs like the MF-1, MF-2 or the MF-3.

## Specifications

**Type of unit:** 35mm SLR camera motor drive
**Cameras usable:** Any F2 Nikon camera body; no modifications or adjustments required for mounting
**Operation modes:** Choice of single-frame (S) or continuous (C) firing via mode control (SC) knob on handgrip; lock (L) position also provided for prevention of inadvertent release
**Firing speeds:** Fixed firing speed provided as mode control knob is set to continuous shooting setting; speed performance with various power supplies as follows:

| Type of Battery \ Number of Frames per Second | |
|---|---|
| Cordless Battery Pack MB-1 | |
| • Zinc-Carbon | 3.5 |
| • Alkaline-Manganese | 3.5 |
| • NC Battery Unit MN-1 | 4 |
| Cordless Battery Pack MB-2 | |
| • Zinc-Carbon | 2.5 |
| • Alkaline-Manganese | 2.5 |
| AC/DC Converter MA-4 | 4 |

**Power source:** DC power within 12 ~ 15 volts
**Shutter speeds:** For single-frame shooting, usable at any of the camera's standard shutter speeds (i.e., 1/2000 second to 10 seconds) or longer, for continuous shooting usable at speeds from 1/2000 second to 1/80 second
**Frame counter:** Shows number of frames remaining (subtractive type); manually set to 20 or 36 (in red) at start of shooting; can be used to control the number of frames in a sequence burst
**Film rewind:** Manual via rewind crank on camera body
**Remote control:** Via wire or radio using control relay built into MD-3 handgrip
**Dimensions:** 62mm (D) x 106mm (H) x 147mm (W)
**Weight:** Approx. 355g (MD-3 only); 505g (with MB-2 attached)



# Power Sources and Accessories for Motor Drive System

## Cordless Battery Pack MB-1

Designed for operation with any motor drive in the F2 System, the Cordless Battery Pack MB-1 attaches directly to the base of the motor drive for compactness without the need for electrical connecting cords. The MB-1 is designed to accept standard penlight-type batteries via the two MS-1 battery holders fitted, or two MN-1 Nikon rechargeable NiCd battery units; thus, the photographer is afforded a wide choice in the power source batteries to be used. This unit is also fitted with a versatile battery checker capable of indicating both charged and weak battery conditions.

## Battery Holder MS-1

Provided as a standard accessory with the MB-1 battery pack, the Battery Holder MS-1 mounts five AA-type (penlight) batteries for fast, easy installation in the pack. Two holders are supplied with each MB-1.



## NiCd Battery Unit MN-1

Capable of providing a stable and powerful output for hundreds of firings, the NiCd Battery Unit MN-1 is the choice of power source for photographers using their motorized F2 Nikon frequently. The MN-1 is designed for mounting in the MB-1 battery pack in place of the standard battery holder, and can be recharged approximately 100 times before replacement is necessary. Two MN-1 units are required for operation.

## Quick Charger MH-1

The Quick Charger MH-1 provides for rapid recharging of MN-1 battery units used in the Battery Pack MB-1. Two receptacles are provided for charging batteries in a pair, and individual neon lamps let you know as soon as the battery power level has reached the 80% charge level. This unit is fitted with a power switch (and neon indicator) and a selector switch for choosing the correct line voltage from among the four (100V, 117V, 220V and 240V) suitable.

## Battery Pack Jacket MA-3

Cold-weather battery deterioration when operating a motor-drive-equipped F2 can be virtually eliminated thanks to the Nikon Battery Pack Jacket MA-3. This unique accessory allows the photographer to maintain full operation portability, while providing an insulated holder in which to place the motor drive's battery pack when shooting. Connection between the MA-3 and the motor drive is via the MC-2 connecting cord supplied with the unit. The jacket is also fitted with straps to permit the battery/jacket assembly to be waist, shoulder or neck slung. S/C mode selection is via the motor drive.

## Cordless Battery Pack MB-2

Smaller and more economical to operate than the MB-1, the Nikon Cordless Battery Pack MB-2 is the perfect choice for operation with the Nikon Motor Drive MD-3. This battery pack houses eight penlight-type batteries via the two MS-2 holders supplied with the pack and provides the power needed for up to 2.5 fps operation with the MD-3. The MB-2 is also provided with a battery power checker and corresponding LED light-up indication.

## Battery Holder MS-2

This handy accessory, consisting of a standard 4-battery holder and protective case, offers the photographer a convenient and safe means for storing a fresh set of batteries ready for installation in the Battery Pack MB-2. Two holders are required for a complete change of batteries for one MB-2.

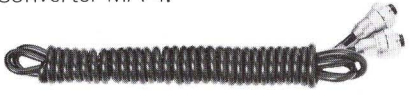
# General Accessories for Motor Drive System

## AC/DC Converter MA-4

The function of the Nikon AC/DC Converter MA-4 is to provide a stable and continuous 15V DC output for powering the motor drive during operation in shooting locations convenient to an AC wall outlet. The converter is set at the factory for use with either the 100-120V or 200-240V AC range, as indicated by the figures engraved on the plate on the rear of the unit. In addition to the standard output terminal for powering the motor drive, the MA-4 also is fitted with a release button for triggering and a 6V output terminal for powering the EE aperture control unit for automatic exposure operation. Optional connecting cords MC-2 and DM-1 are required for operation with motor drive and EE aperture control DS-12, respectively.


## Connecting Cord MC-2

This 3-meter cord provides for connection of an external power source to the front socket of the motor drive. Each end of the cord is fitted with a precision, keyed screw-on plug for solid connection. This cord comes as standard equipment with the Battery Pack Jacket MA-3, and is available separately for use with the AC/DC Converter MA-4.

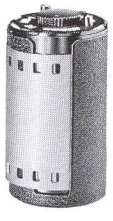


## Camera Back MF-3

Used in place of the standard camera back when operating with the Motor Drive MD-2, the Camera Back MF-3 enables automatic cutoff of the rewind operation with the film leader trailing out of the cassette—a condition that makes for easier film handling when working in the darkroom. Rewind stop operation with the MF-3 is indicated at the back panel of the MD-2 by illumination of the LED indicator.

## Film Cassette AM-1

The Film Cassette AM-1 features an outer-and-inner-shell design to assure the most friction-free and smooth film travel, particularly when a motor drive is used. Cassette film gate opening or closing is coupled to the camera's O/C key, i.e., when the key is turned to "C" to lock the camera back, the cassette film gate is fully opened to minimize film transport resistance for maximum motor drive performance. The AM-1 is reloadable for repeated use and holds up to 40 frames of film from standard bulk film. Rugged in construction, it is conveniently fitted with an ASA film reminder at the base.



## Handstrap AH-1

The AH-1 is designed to make holding a motor-drive/battery-pack-equipped camera easier and safer. The mounting plate provided attaches directly to the base of the battery pack for solid support. The flexible, fully-padded handstrap piece is then hooked up between the mounting plate and the camera's standard neckstrap eyelet to provide support to the hand as it grips the motor drive's front grip.

## Terminal Release MR-1

With the Terminal Release MR-1, the electrical release function of the motor drive's front 3-pin socket is converted to a mechanical triggering capability via the release's built-in microswitch. The MR-1 is screwed into the socket of the motor drive in the same manner as any of the standard socket accessories, with triggering of the motor-drive-equipped camera performed by simply depressing the release button on the MR-1. This accessory is also threaded around the button to accept such accessories as a cable release for triggering operation.

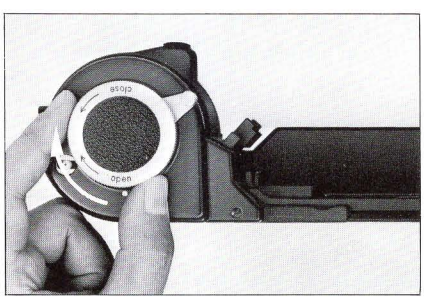
# Bulk Film Backs for Motor Drive System

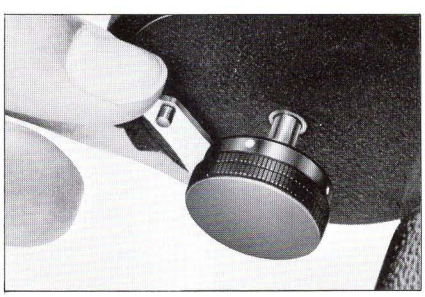
## Magazine Back MF-1




Designed to work in close harmony with the MD-2-equipped camera body, the Magazine Back MF-1 brings the benefits of bulk film transport to the F2 user in a package that's surprisingly compact and lightweight, yet exceptionally rugged. The MF-1 attaches to the rear of the motorized camera in place of the standard camera back, providing a bulk capacity for up to 10.5m of film—enough to handle up to 250 exposures in one load. As the magazine back utilizes two special bulk film cassettes (one for film supply and one for film take-up) for operation, there is no need for rewinding film at the completion of each load. Film transport speeds provided for when using the MF-1 are identical to those available with the MD-2 mounted on the camera. Furthermore, with the magazine back, the motor drive serves only to control the interval of film feeding while triggering and cocking the shutter; the actual film winding is performed via the motor built into the MF-1 which drives the film take-up spool.

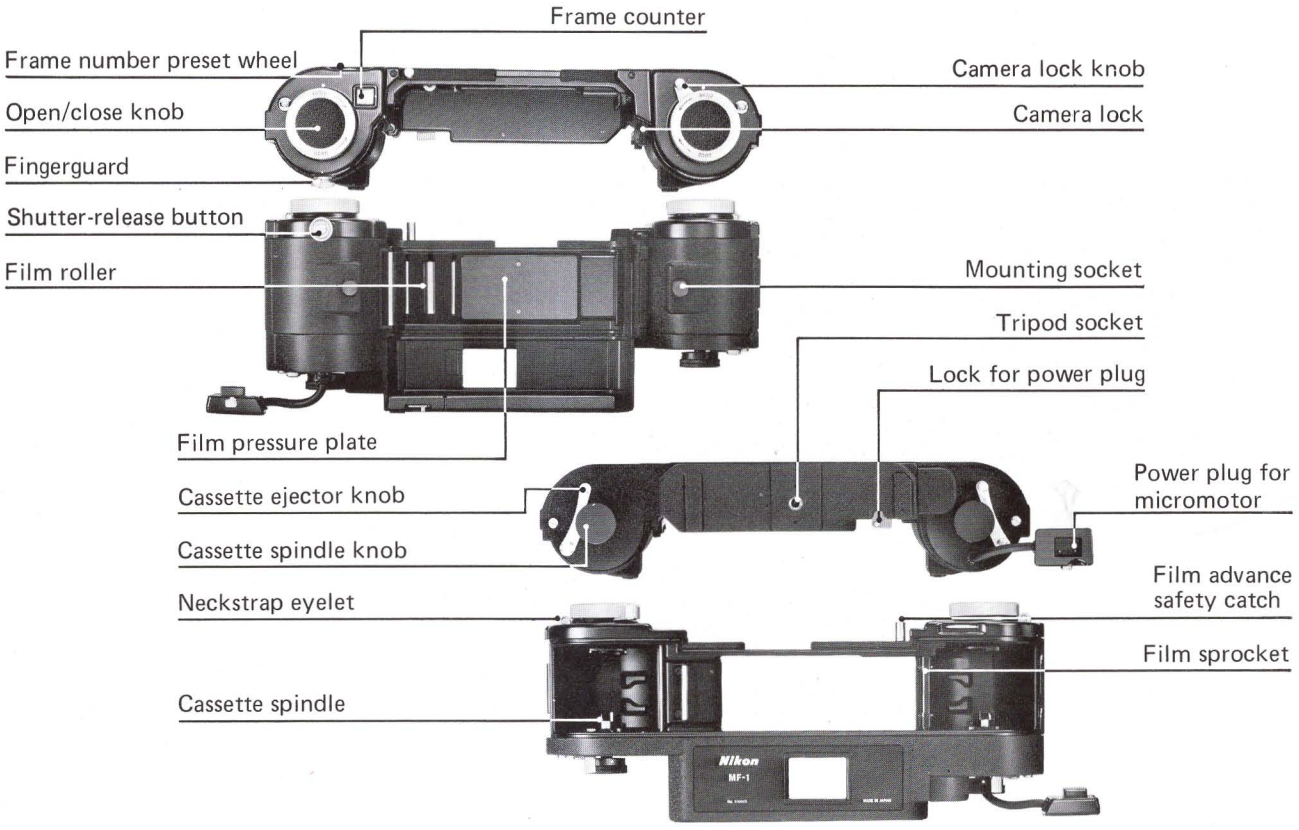
Operation with the MF-1 is enhanced via the wealth of controls provided. The cassette open/close knobs are extra-wide for easy gripping and fast operation; also, cassette ejectors are positioned at the bottom of each chamber to make for rapid removal of the bulk cassettes at the completion of shooting.



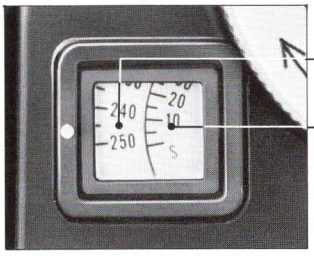




The right-hand film chamber is fitted with a shutter-release button (with lock to prevent accidental operation) that can be used in place of the motor drive's standard controls if desired. The film counter mechanism of the MF-1 is fitted with two dials (one subtractive and one additive) for simultaneous counting of the number of frames remaining and the number of frames already exposed; also, the subtractive counter can be set for control of an exposure burst via the automatic stop function that halts firing as the counter returns to the "0" position. Other features of the MF-1 include reinforced tripod mounting sockets at the bottom of the magazine, the special power plug extender assembly that enables

## Nomenclature



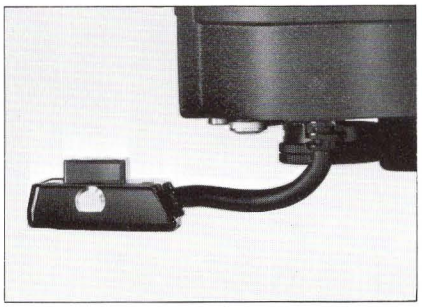


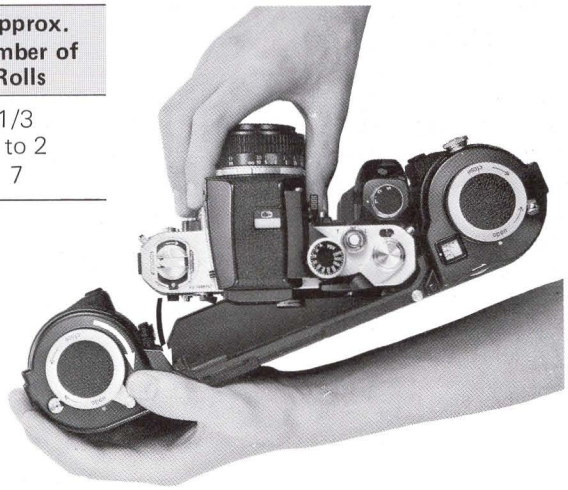



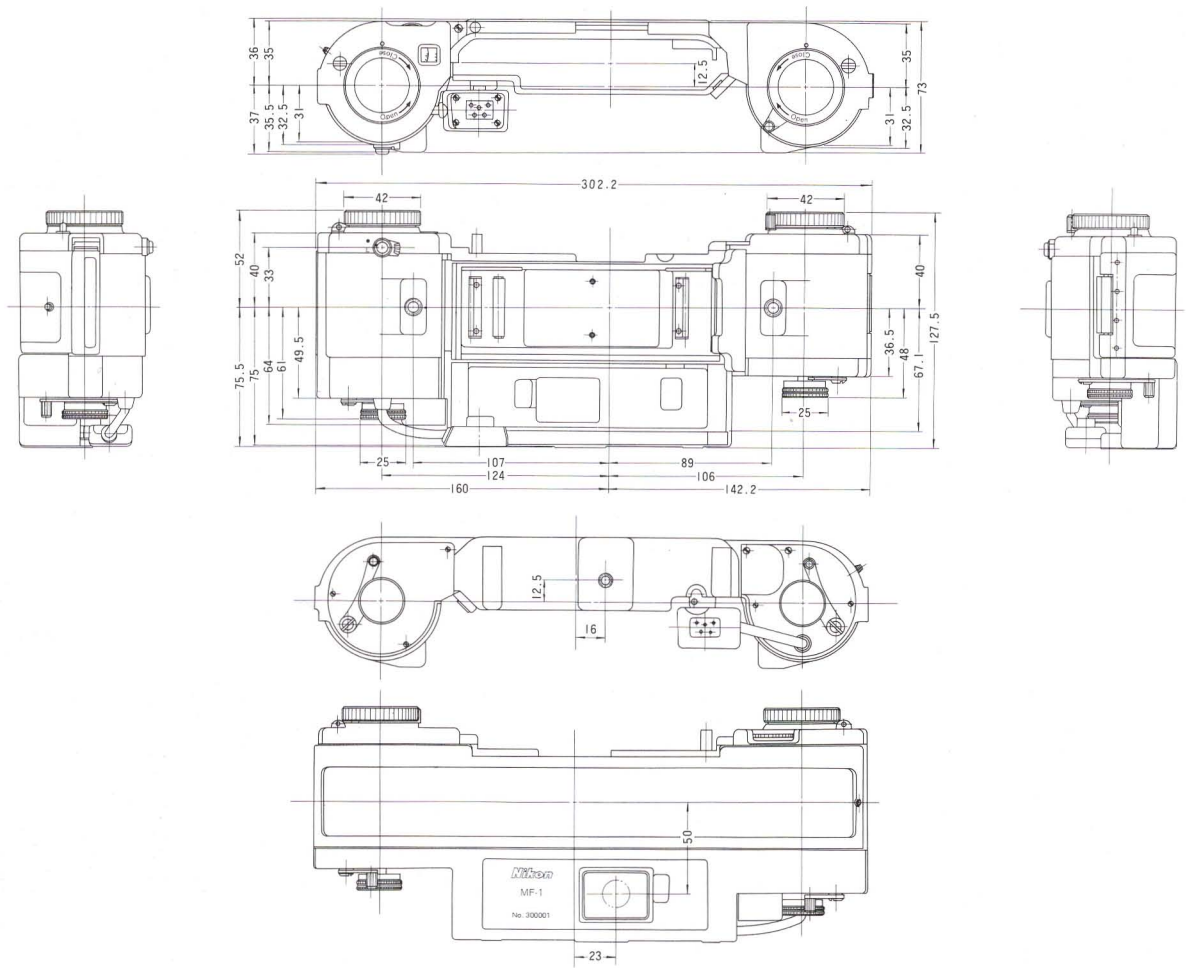

the use of the Battery Pack MB-1 as a power source while mounted at the base of the unit, suitability for operation with a variety of power source and remote control options, the special camera body lock mechanism that provides for precise alignment and sure setting and the fully fitted film transport system that makes for outstanding film flatness across the film gate.

The following is a rough approximation of the number of 250-exposure rolls of film that can be exposed on one set of fresh batteries when the motor drive operates at continuous shooting using the Cordless Battery Pack MB-1.

| Type of Battery | Approx. Number of Rolls |
|---|---|
| Zinc-Carbon | 1/3 |
| Alkaline-Manganese | 1 to 2 |
| NC Battery Unit MN-1 | 7 |



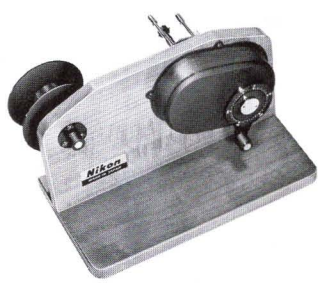







## Bulk Film Loader

Designed for operation in the darkroom, the Nikon Bulk Film Loader is an indispensable aid when loading film cassettes for operation with the Magazine Back MF-1. This unit is fitted with a handy crank-operated drive mechanism with built-in counter. As the crank is operated, the counter mechanism counts down from the number set, with operation automatically stopped as the counter reaches zero. The Bulk Film Loader features a sturdy wooden base, high-visibility phosphorescent numerals and easy operation for top results.

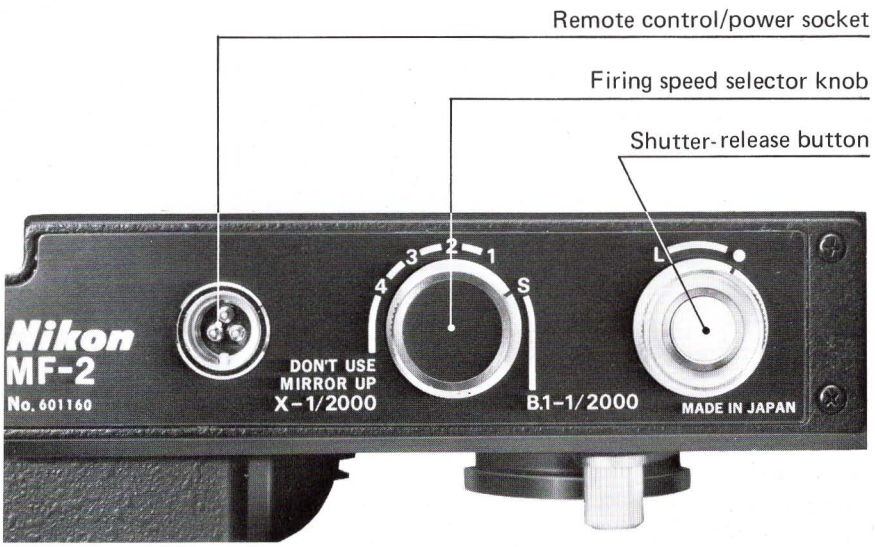


## 250-Exposure Film Cassette MZ-1

Specially designed to handle a bulk film load of 250 exposures, the MZ-1 is used with the Nikon MF-1 Magazine Back. The MZ-1 is always used in pairs—one for film supply, the other for film take-up—and eliminates the need for film rewind. The special outer-and-inner shell design assures friction-free and smooth film transport, thus adding up to motor drive performance. A protective leather case is provided.

## Magazine Back MF-2




The MF-2 provides the largest bulk film transport capacity presently available in 35mm SLR photography and fully meets the needs of advanced scientific and industrial photography. Its film chambers and optional bulk film cassettes accept standard 100-foot bulk loads of perforated film for up to 750 exposures at a time. Most manufacturer-wound spools can be directly inserted in the cassette without having to rewind them first, thus adding to loading operation simplicity. Film advance itself is done by the MF-2's own built-in motor. When the MF-2 is attached to an MD-2-equipped camera, it "blanks out" all the speed and operation controls (including the S/C knob) of the MD-2. Speed selection of up to 4 frames per second is then made via the MF-2's rear control panel, regardless of the motor drive's firing rate. In terms of operation, most of the MF-2's controls and functions—except those already mentioned—are basically similar to those of the 250-Exposure Magazine Back MF-1. The large film open/close knobs provided at the top and cassette ejectors on the bottom side facilitate loading/unloading. The MF-2's major control features are as follows:

### Firing speed selector knob

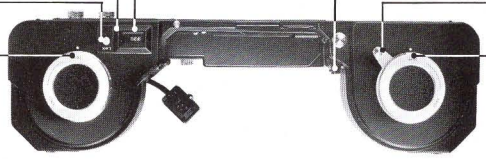
The firing speed selector knob on the magazine back control panel permits the photographer to set the motor drive for continuous operation at four different firing rates, in addition to single-frame shooting. The engraved numbers around the knob—4, 3, 2, 1—correspond to the approximate number of frames per second obtained in sequential firing at these respective settings; the "S" setting is for single-frame operation. Every five settings are click-stopped; the usable shutter speed ranges (1/80 ~ 1/2000 second for continuous; 1 ~ 1/2000 second plus B for single-frame operation) are also engraved for fast and easy reference.

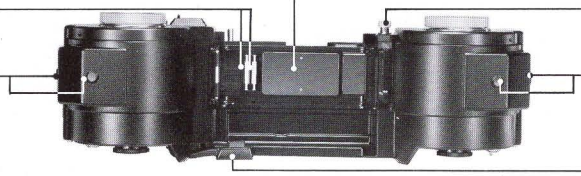
### Shutter-release button

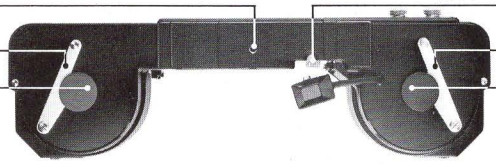
The shutter-release button is used to trigger the motor drive, and has a fingerguard-type lock to prevent inadvertent firing. Note that with the MF-2 mounted, this button is the only means for triggering the unit—unless a remote control accessory is used.

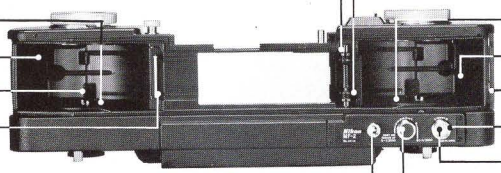
Naturally, the camera's own shutter-release button serves to release the shutter. However, as neither manual film winding nor shutter cocking with the film-advance lever are possible, the use of the shutter-release button of the camera is impractical. Although the film-advance lever, with the MF-2 mounted, is physically locked and cannot be wound manually, it still works as a switch for Photomic viewfinder meters, when set to the stand-off position.

## Nomenclature



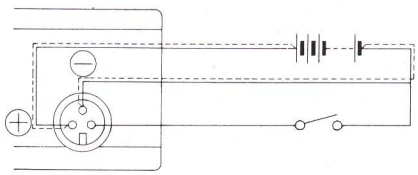



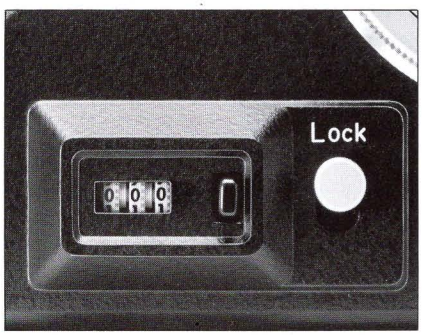








Power supply only
Switched power supply

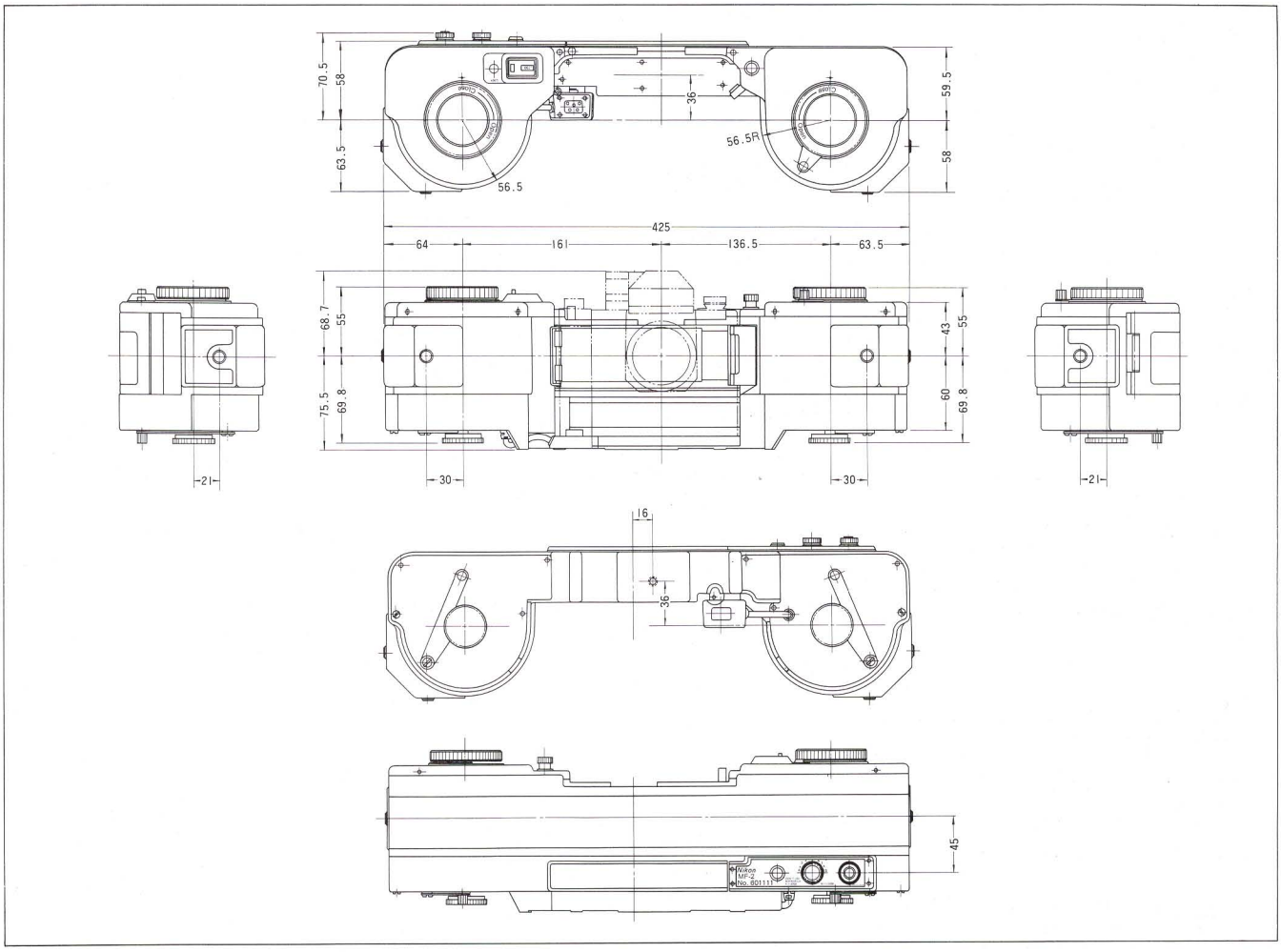



### Frame counter

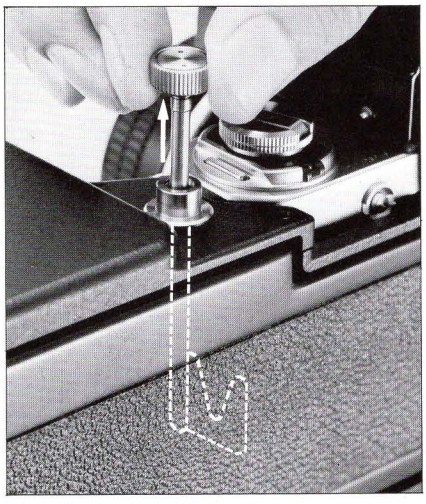
A precision counter mechanism (additive type) ensures that the photographer knows at all times how many exposures have been made. The counter will reset to zero by pushing the locking catch and depressing the reset button.

### Power socket/remote terminal

Operating power is supplied by the Nikon AC/DC Converter MA-2/MA-4 or a stabilized DC power supply capable of continuously supplying 0.6A (2.3A transient) at 15V. This will ensure sufficient power to meet the needs of a full 750-frame load. The MC-2 Connecting Cord is used to connect the AC/DC Converter to either the three-pin socket on the motor drive or the remote terminal on the magazine back. Photographers can choose either of these terminals depending upon the photographic situation. For remote control operation, the remote terminal on the MF-2 should be used for connection to the remote control unit; the terminal on the motor drive for the power supply.





## Film cutter

A film cutter is included in the transport mechanism to enable the photographer to remove short lengths of exposed film prior to the completion of all 750 exposures. This unique feature effectively extends the MF-2's application to short jobs, without the risk of wasting film.

## Film sensing device

A film sensing switch, located near the frame counter sprocket, automatically shuts off the winding operation when the film runs out.

Other special features of the MF-2 include multiple threaded mounting sockets for tripods on both sides, and on the bottom of the magazine back, for very solid support, using two or three tripods, and a specially designed multi-roller film transport system to maintain film flatness even at speeds to 4 fps.

## 750-Exposure Film Cassette MZ-2

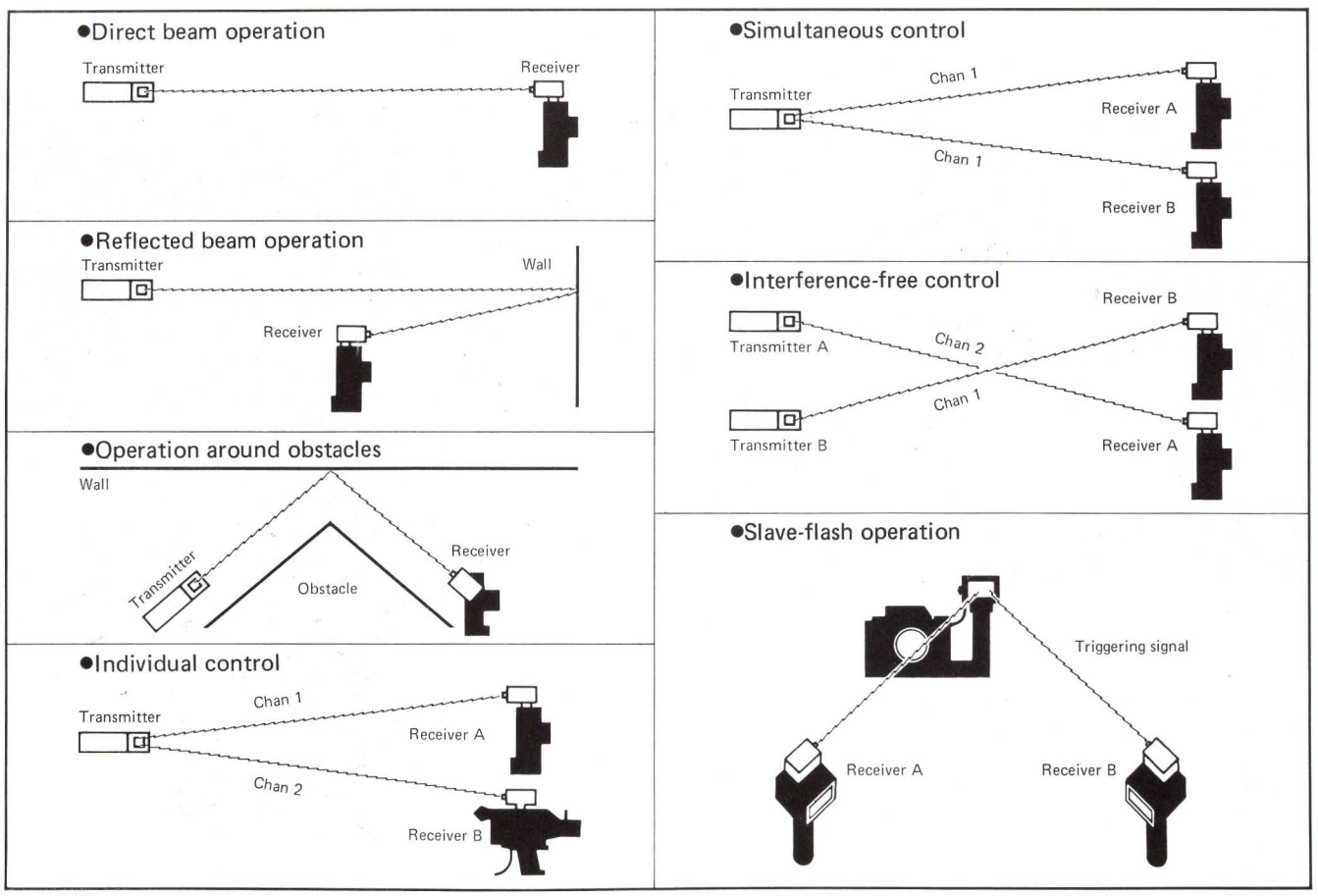
The MZ-2 is identical to the MZ-1 in all technical aspects, except that it goes with the Nikon MF-2 Magazine Back and handles a bulk film load of 750 exposures, accepting the standard 30.5m (100 ft) bulk loads whatever the type—spooled, cored or coreless.

# Remote Control Units for Motor Drive System

## Modulite Remote Control Set ML-1


The Modulite Remote Control Set ML-1 is unique among remote control devices employing transmitted-light triggering, as it is the first available to employ a modulated-light output signal for interference-free operation, even at distances up to approximately 60m. The special signal used for ML-1 operation, although appearing to the eye as a short-duration, high-intensity light burst identical to that of an electronic flash unit, is actually multi-pulsed (or "modulated") so as to be easily distinguishable by the receiver from all other light sources. This effect makes for greater versatility, with increased range of operation, and even around obstacles that would inhibit the operation of other light-actuated systems. Special features enhancing operation with the Modulite Remote Control Set ML-1 include mode selection for both single-frame and continuous (multiple frame) shooting, a choice of either of two channels for various multi-camera operation situations, built-in and easy-to-operate battery check function, long operation life via replaceable dry-cell batteries, compatibility with Nikon speedlight electronic flash units for special slave-flash illumination techniques and more. The ML-1 set includes the transmitter unit with four-battery holder and the receiver unit with accessory adapter, sensor hood and connecting cord.





## Intervalometer MT-1


Timing control of exposures and exposure intervals for advanced photographic recording effects are available to the F2 user via the Intervalometer MT-1. Designed for use with motor-drive-equipped cameras, the MT-1 extends and enhances the photographer's range of precision shooting techniques by providing the full capabilities to meet the needs of time-lapse (i.e., single-frame exposures at regular intervals) photography, work-sampling (i.e., multiple-frame sequences at regular intervals) photography, time exposures and delayed exposures. The two timing control dials at the front of the unit enable selection of any of twenty different settings each for shooting and rest periods of up to eight minutes. Also, mode (i.e., one-time or multiple sequence operation) and starting (i.e., instantaneous or delayed) functions are available via selector switches provided. Other features enhancing operation with the MT-1 include advanced solid-state circuitry for reduced weight and increased ruggedness, remote control capability for operation with other control devices such as the Radio Control Set MW-1, temperature compensation and voltage stabilizer circuits for increased adaptability of output for the shooting environment, full portability suitable for infield operation, through the use of penlight batteries, battery check provision, timing signal (LED) indicator, and a full complement of cords for connection to cameras, external power source or remote control equipment.

Note that the DC output of the power source should be 5.7±1V.



# Accessories for Remote Control

## Pistol Grip Model II/Grip Release Cable

The Pistol Grip Model II and Grip Release Cable provide for easier camera operation with telephoto lenses by enabling triggering and support with one hand. The grip connects to the tripod socket of the lens (or the camera) via a special, easy-to-operate connection. The release cable is used to connect the grip's built-in triggering mechanism to the camera's shutter release button. The pistol grip can also be used with the Connecting Cord MC-3 with motor-drive-equipped cameras. These two units are available separately.

## Connecting Cord MC-3

Specifically designed for use with the Pistol Grip Model II, the Connecting Cord MC-3 provides for an electrical triggering capability when operating with motor drive. The screw-on connection provided for attachment to the grip features a sealed microswitch which is actuated by operation of the trigger mechanism. The other end of the cord features the standard precision keyed plug for attachment to the threaded socket at the front of the motor drive.

## Battery-Grip Cord

This special cord permits the photographer to trigger the motor-equipped camera with the battery pack mounted in the Battery Pack Jacket MA-3 via the pistol grip. The coiled length of cord for pistol grip connection features the standard microswitch connector, while the non-coiled length is fitted with the correct plug for mounting to the remote terminal in motor drive; the two cords are joined via a special heavy-duty plug designed for connection to the MA-3.

## SC Remote Cord MC-1

Used in conjunction with the special removable grip head on the Motor Drive MD-2, the SC Remote Cord MC-1 enables mode selection and triggering control of the motor-drive-equipped camera at distances up to three meters from the camera. This feature makes for ease of operation when working with the camera mounted on a copying stand, or when shooting portraits; for the latter, the photographer can move in close to the subject to see facial expressions more clearly to capture the desired mood.

## Remote Cord MC-4

The 1m-long Remote Cord MC-4 features two color-coded (black and red) lead wires with banana plugs fitted for simple and direct connection to remote control equipment of the photographer's choice. The other end offers the standard threaded plug for connection to the socket at the front of the motor drive. This accessory makes for easy setup when performing special remote control operation, such as simultaneous firing of two or more motor-drive-equipped cameras via a junction box or other control device.

# F2 Nikon Data Camera Sets

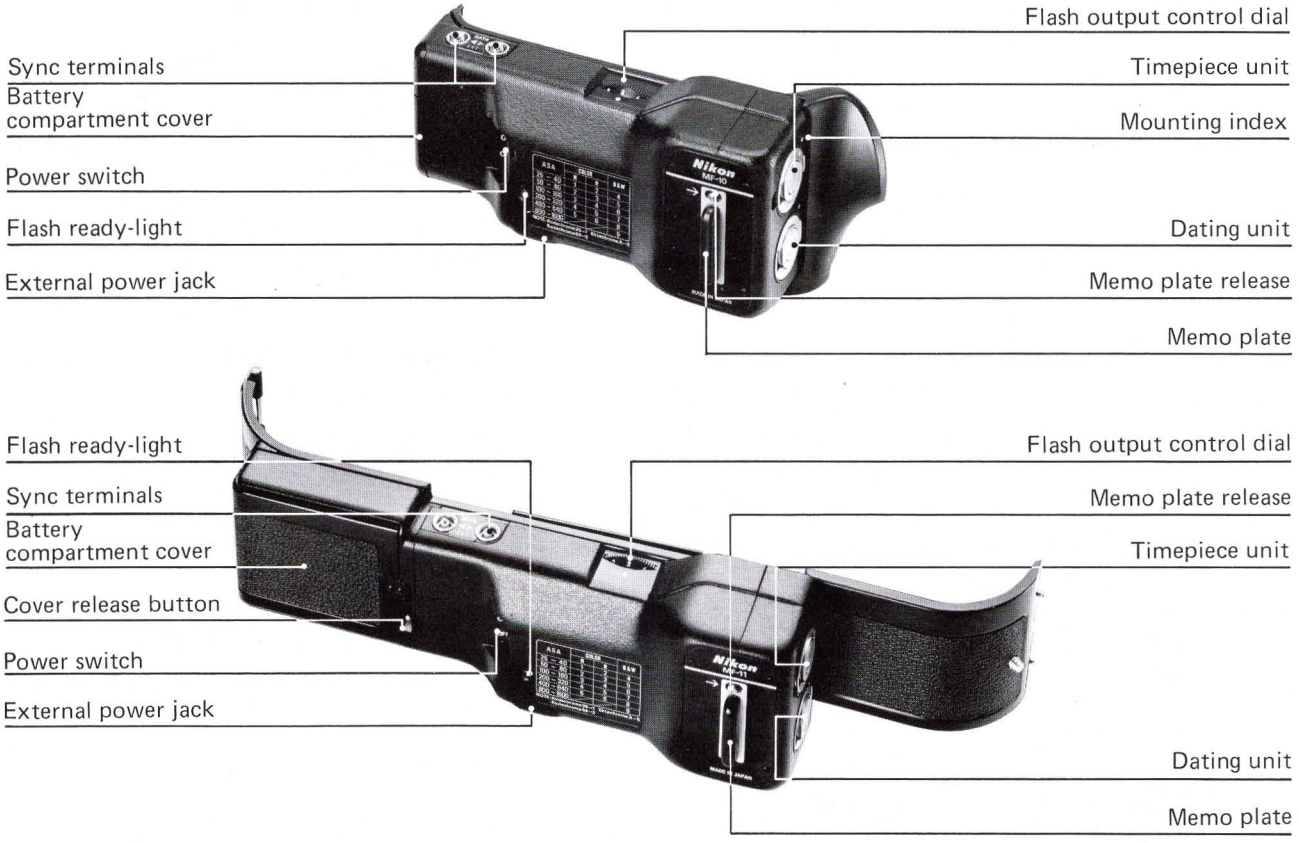

MF-11


MF-10



The extensive range and versatility of the F2 body configuration is typified by two special camera products available for advanced scientific/industrial applications—the F2 Nikon 36-exposure and 250-Exposure Data Camera Sets. Consisting of a slightly modified standard F2 Nikon body equipped with finder of choice, plus either a Databack MF-10 for 36-exposure operation or Databack MF-11 (with Magazine Back MF-1) for 250-exposure operation, these sets provide the most advanced step yet available for precision 35mm recording techniques. The design of the MF-10 and MF-11 enables the superimposition at the left edge of frame of picture- and/or exposure-related information including date, time, etc.; and Nikon databack-equipped cameras are capable of operating with both color and black-and-white films. As the body included with each set is virtually standard (only a special focusing screen and film mask differentiate these bodies), it offers all normal camera functions including non-data operation, finder/lens interchange, automatic exposure control operation via the DS-12 control unit, automatic maximum aperture indexing operation with AI-type Nikkor lenses, motorized photography, flash photography and more. Also, when used with the motor drive unit, the data-back-equipped camera is capable of providing continuously data-annotated recording at speeds to one frame per second (1 fps) regardless of the firing speed of the motor drive.

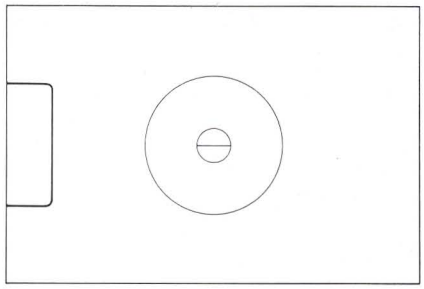
## Nomenclature

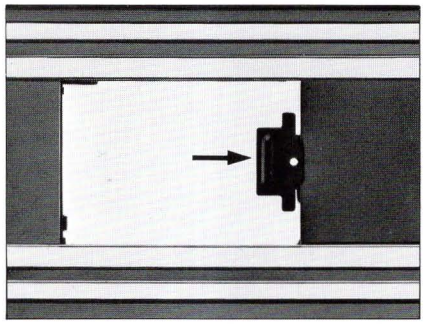





### Special camera body features

Although virtually identical to a standard F2 configuration, the F2 body provided with each data camera set is specially fitted with two unique elements to ensure the most precise data recording operation. The focusing screen included with each camera (designated Type S) offers all the features of the popular Type A screen, but with the addition of an etched marking denoting the area of data superimposition; with this screen, composing can be performed with full knowledge of the "data area," thus, eliminating the possibility of cropping off an essential part of the subject matter. Also, a special masking plate is fitted at the picture frame (removable for non-data operation) to prevent exposure of the data area by the subject image, this special feature ensures that the data area has sufficient contrast for easier reading. Note that factory alignment of the masking plate and the databack are performed during camera assembly; thus, bodies and backs are not interchangeable.



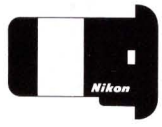


### Data entry

Nikon Databacks MF-10 and MF-11 offer three separate devices for entering data—the timepiece unit, the dating unit and the memo plates. The timepiece unit is a miniature 3-hand clock with main-spring-powered movement for up to 24 hours of continuous operation. The dating unit offers control of data information and features year/month/day selection via click-stopped thumb-wheel controls. The memo plates are available for entry of hand-written information such as lens settings, shooting location, type of film, etc.; a set of ten memo plates is provided for rapid operation in situations requiring rapid change of data information. All units fit into special mounts at the rear of the databack for error-free installation.

Dating unit

Timepiece unit

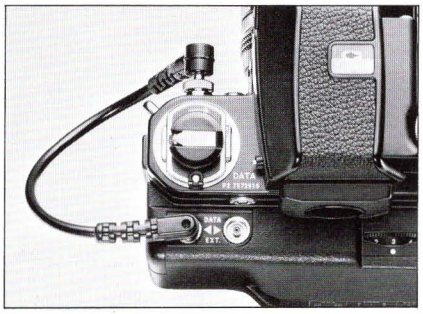


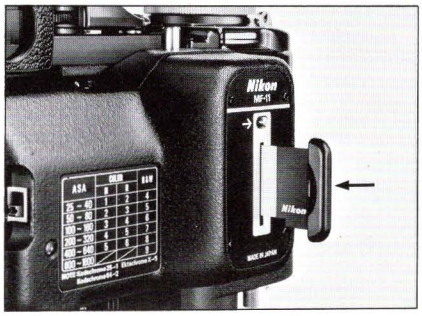
Memo plate

## Specifications

| | F2 Nikon 36-Exposure Data Camera Set | F2 Nikon 250-Exposure Data Camera Set |
|---|---|---|
| Type of device | 35mm SLR camera with data superimposition mechanism | |
| Type of camera | Specially-prepared F2 Nikon camera body | |
| Type of back | Nikon Databack MF-10 for 36-exposure operation | Nikon Databack MF-11 mounted on Magazine Back MF-1 for 250-exposure operation |
| Usable motor drive unit | MD-2, MD-3 | MD-2 |
| Usable film | All black-and-white films of from ASA 25 to ASA 1600; color films (both transparency and negative types) of from ASA 25 to ASA 640 | |
| Flash unit | Short-duration output type powered by two (model MF-10) or four (model MF-11) 1.5V AA-type batteries mounted in the rear of the databack; maximum flash operation rate approximately one flash per second; trigger synchronized with shutter release | |
| Optical system | 10mm f/1.8 lens fitted in databack for illumination of data superimposition area; lens construction of 4 elements in 4 groups; lens fitted with iris diaphragm for control of illumination level; | |
| Data superimposed | Time via removable timepiece unit mounted in databack (maximum 24-hour operation); date via removable dating unit (year settings for ten-year period, month settings of 01 ~ 12, day settings of 00 ~ 99); additional miscellaneous data (hand-written) via slip-in memo plates (area of 12 x 21mm reproduced); one set of 10 memo plates provided | |
| Superimposition area | Data area of 2.2 x 3.8mm recorded at left side of frame; reproduction ratio of 1:5.56 employed | Data area of 2.0 x 3.5mm recorded at left side of frame; reproduction ratio of 1:6.08 employed |
| Number of flashes | Approximately 250 when fired every 1 second at normal temperatures and using alkaline-manganese batteries | Approximately 1000 when fired every 1 second at normal temperatures and using alkaline-manganese batteries |
| External power | Via socket provided at lower rear of databack; stable 315V DC input required | |
| Databack weight | Approximately 400g (without batteries) | Approximately 650g (without batteries) |
| Optional accessories | External Power Cord MC-6; Handstrap AH-1 | External Power Cord MC-6 |








### Data superimposition mechanism

The special design of Nikon Databacks incorporates a high-intensity, short-duration electronic flash capable of synchronization at any shutter speed. The film is illuminated from the rear via a precision 10mm f/1.8 lens (4 elements in 4 groups) incorporating an iris diaphragm for control of exposure to match the requirements of the film in use. The flash unit also features a rapid recharge circuit that enables continuous exposure operation at the rate of one flashing per second letting the condenser be fully charged for every flashing; and when motor drive operation is performed at faster speeds, proper data area exposure is maintained intermittently, giving approximately one superimposed frame per second for every 2–5 frames without data printing.

### Unmanned photography capabilities

Nikon data cameras are also designed to permit remote control or unmanned operation, as is often required for general data photography applications. The databack-equipped camera can be operated with motor drive, EE Aperture Control Unit DS-12, flash (via the second sync terminal provided), any of the various remote control devices available to F2 Nikon cameras (i.e., Intervalometer MT-1, Radio Control Set MW-1, etc.) and external power (a socket is provided) for the finest results under virtually any shooting condition including low-light photography.

# Camera Cases for F2 Nikon


## Hard Cases CH-4/CH-5/CH-11

Featuring a two-piece construction consisting of rugged camera cradle and flip-open nosepiece, both with semi-gloss black finish and full plush lining, these sturdy leather cases offer the finest protection for F2 Nikon cameras. The model CH-4 case accepts standard finder/body combinations with lenses of from wideangle to 85mm telephoto; the Hard Case CH-5 accepts the same body configurations, but with slightly longer lenses including the popular Zoom-Nikkor 43-86mm f/3.5 lens. The all-new CH-11 case accepts an aperture-control-unit-fitted camera with a lens as big as the 43-86mm zoom lens for the roomiest configuration of all.

## Semi-Soft Cases CF-1/CF-2

Offering the same sturdy body section as the hard cases, but with a more flexible front flap, semi-soft cases come in two models for different finder/body combinations. Model CF-1 accepts the same finder/body/lens combinations as the Hard Case CH-4 to meet the needs of most users. The CF-2 case, on the other hand, is designed to accept an action-finder-equipped camera with lens of up to 85mm focal length.

## Soft Case CS-12

Made of genuine cowhide for extra toughness, the Soft Case CS-12 provides excellent camera protection, yet is lightweight and fully collapsible for pocket storage after removal from the camera. This case is designed to accept all standard finder/body configurations of the F2 Nikon camera with a lens of wideangle or normal focal length mounted.

# Code Numbers

| • Description | • Code number | • Price |
|---|---|---|
| **F2 Nikon Camera Body** | | |
| Nikon F2 Camera Body, chrome | 100-07-003 | |
| Nikon F2 Camera Body, black | 100-07-043 | |
| Nikon F2A Photomic Camera Body, chrome | 100-08-006 | |
| Nikon F2A Photomic Camera Body, black | 100-08-046 | |
| Nikon F2AS Photomic Camera Body, chrome | 100-09-008 | |
| Nikon F2AS Photomic Camera Body, black | 100-09-061 | |
| 1.5V Silver-Oxide Battery for DP-11, DP-12 | 100-08-202 | |
| **F2 Nikon Viewfinders** | | |
| DE-1 Eye-Level Finder, chrome | 100-07-202 | |
| DE-1 Eye-Level Finder, black | 100-07-203 | |
| DP-11 F2A Photomic Finder | 100-08-212 | |
| DP-12 F2AS Photomic Finder | 100-09-212 | |
| 1.5V Silver-Oxide Battery for DP-11, DP-12 | 100-08-202 | |
| DA-1 Action Finder, chrome | 100-07-207 | |
| DA-1 Action Finder, black | 100-07-208 | |
| DW-1 Waist-Level Finder | 100-07-211 | |
| DW-2 6X Focusing Finder | 100-07-210 | |
| Leather Case for Waist-Level Finder | 100-01-204 | |
| Leather Case for Photomic or Action Finder | 100-03-202 | |
| Plastic Prism Guard | 100-03-204 | |
| **EE Aperture Control Attachment** | | |
| DS-12 EE Aperture Control Attachment | 100-09-411 | |
| ○ Accessories for DS-12 | | |
| DN-1 NC Battery | 100-09-401 | |
| DH-1 NC Battery Charger | 100-09-402 | |
| DB-1 Battery Pack | 100-09-405 | |
| MA-4 AC/DC Converter 100-120V | 100-07-513 | |
| MA-4 AC/DC Converter 200-240V | 100-07-514 | |
| DM-1 Connecting Cord | 100-09-403 | |
| DS-1H Leatherette Case | 100-09-500 | |
| **General Accessories for Viewfinder System** | | |
| ○ Eyepiece Correction Lens | | |
| −5.0 Dptr. Eyepiece Correction Lens | 100-26-267 | |
| −4.0 Dptr. Eyepiece Correction Lens | 100-26-266 | |
| −3.0 Dptr. Eyepiece Correction Lens | 100-26-265 | |
| −2.0 Dptr. Eyepiece Correction Lens | 100-26-264 | |
| 0 Dptr. Eyepiece Correction Lens | 100-26-260 | |
| 0.5 Dptr. Eyepiece Correction Lens | 100-26-268 | |
| 1.0 Dptr. Eyepiece Correction Lens | 100-26-261 | |
| 2.0 Dptr. Eyepiece Correction Lens | 100-26-262 | |
| 3.0 Dptr. Eyepiece Correction Lens | 100-26-263 | |
| ○ Finder Eyepiece | 109-05-054 | |
| ○ DR-3 Right-Angle Viewing Attachment | 100-26-203 | |
| ○ Eyepiece Magnifier | 100-26-201 | |
| ○ Rubber Eyecup | 100-03-280 | |
| ○ Eyecup Holder | 109-05-021 | |
| ○ DL-1 Photomic Illuminator | 100-05-204 | |
| **Focusing Screens** | | |
| A Type Focusing Screen | 100-01-220 | |
| B Type Focusing Screen | 100-01-221 | |
| C Type Focusing Screen | 100-01-222 | |
| D Type Focusing Screen | 100-01-223 | |
| E Type Focusing Screen | 100-01-224 | |
| G1 Type Focusing Screen | 100-01-226 | |
| G2 Type Focusing Screen | 100-01-227 | |
| G3 Type Focusing Screen | 100-01-228 | |
| G4 Type Focusing Screen | 100-01-229 | |
| H1 Type Focusing Screen | 100-01-230 | |
| H2 Type Focusing Screen | 100-01-231 | |
| H3 Type Focusing Screen | 100-01-232 | |
| H4 Type Focusing Screen | 100-01-233 | |
| J Type Focusing Screen | 100-01-234 | |
| K Type Focusing Screen | 100-01-235 | |
| L Type Focusing Screen | 100-01-236 | |
| M Type Focusing Screen | 100-01-237 | |
| P Type Focusing Screen | 100-01-238 | |
| R Type Focusing Screen | 100-01-239 | |
| S Type Focusing Screen | 100-01-241 | |

| • Description | • Code number | • Price |
|---|---|---|
| **F2 Nikon Motor Drive Equipment** | | |
| MD-2 Motor Drive | 100-07-516 | |
| MD-3 Motor Drive | 100-07-540 | |
| ○ Power Sources and Accessories for Motor Drive System | | |
| MB-1 Cordless Battery Pack | 100-07-501 | |
| MS-1 Battery Holder | 109-05-102 | |
| MN-1 NiCd Battery Unit | 100-07-502 | |
| MH-1 Quick Charger | 100-07-503 | |
| MA-3 Battery Pack Jacket | 100-07-518 | |
| MC-2 Connecting Cord | 100-07-505 | |
| MB-2 Cordless Battery Pack | 100-07-542 | |
| MS-2 Battery Holder | 100-07-543 | |
| MA-4 AC/DC Converter 100-120V | 100-07-513 | |
| MA-4 AC/DC Converter 200-240V | 100-07-514 | |
| AH-1 Handstrap | 100-07-535 | |
| AM-1 36-exposure Film Magazine | 100-07-900 | |
| CP-7 Plastic Case for AM-1 | 100-07-902 | |
| MF-3 Camera Back (for MD-2) | 100-07-517 | |
| MR-1 Terminal Shutter | 100-07-536 | |
| MC-7 Connecting Cord for Battery Pack | 100-07-541 | |
| 10M SC Extension Cord (for MD-2) | 109-05-220 | |
| 20M SC Extension Cord (for MD-2) | 109-05-221 | |
| SC-2 Unit for MD-2 | 109-05-113 | |
| ○ Bulk Film Backs (for MD-2) | | |
| MF-1 250-Exposure Magazine Back | 100-07-512 | |
| Bulk Film Loader | 100-01-518 | |
| MZ-1 250 Exposure Film Cassette | 100-01-530 | |
| Leather Case for 250 Exp. Film Cassette or K Extension Ring Set | 100-01-324 | |
| Cassette Spool for 250 Exp. Film Cassette | 100-01-517 | |
| MF-2 750-Exposure Magazine Back | 100-07-528 | |
| MZ-2 750 Exposure Film Cassette | 100-07-527 | |
| ○ Remote Control Accessories | | |
| MW-1 Radio Control Set | 100-07-533 | |
| ML-1 Modulite Remote Control Set | 100-07-534 | |
| ML-1 Modulite Remote Control Transmitter | 109-05-218 | |
| ML-1 Modulite Remote Control Receiver | 109-05-219 | |
| MC-8 Connecting Cord for ML-1 | 100-07-530 | |
| EA-4 Connecting Cord for ML-1 | 140-06-211 | |
| MT-1 Intervalometer | 100-07-521 | |
| Pistol Grip Model 2 | 100-01-941 | |
| MC-3 Coiled Connecting Cord for Pistol Grip | 100-07-506 | |
| Battery Grip Cord | 109-00-361 | |
| MC-1 SC Remote Cord (for MD-2) | 100-07-504 | |
| MC-4 1M Remote Cord | 100-07-507 | |
| **F2 Data Equipment** | | |
| Nikon F2 Data Camera Body, black, w/MF-10 | 100-07-160 | |
| Nikon F2A Photomic Data Camera Body, black, w/MF-10 | 100-08-160 | |
| Nikon F2AS Photomic Data Camera Body, black, w/MF-10 | 100-09-160 | |
| Nikon F2 Data Camera Body, black, w/MF-11 and MF-1 | 100-07-161 | |
| Nikon F2A Photomic Data Camera Body, black w/MF-11 and MF-1 | 100-08-161 | |
| Nikon F2AS Photomic Data Camera Body black, w/MF-11 and MF-1 | 100-09-161 | |
| 1.5V Silver-oxide Battery for DP-11, DP-12 | 100-08-202 | |
| MC-6 Connecting Cord for MF-10, MF-11 | 100-07-539 | |
| AH-1 Handstrap | 100-07-535 | |
| Sync Cord for MF-10, MF-11 | 109-05-223 | |
| Memo Plate for MF-10, MF-11 | 109-05-222 | |
| S Type Focusing Screen | 100-01-241 | |
| **Camera Cases** | | |
| ○ Hard Camera Cases | | |
| CH-4 Hard Leather Camera Case | 100-07-814 | |
| CH-5 Hard Leather Camera Case | 100-07-815 | |
| CH-11 Hard Leather Camera Case | 100-07-817 | |
| ○ Semi-Soft Camera Cases | | |
| CF-1 Semi-Soft Leather Camera Case | 100-07-800 | |
| CF-2 Semi-Soft Leather Camera Case | 100-07-803 | |
| ○ Camera Pouch | | |
| CS-12 Semi-Soft Leather Camera Pouch | 100-07-809 | |

Nikon

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

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