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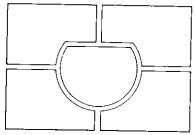
The large manuals are split only for easy download size.

EXPOSURE METERING SYSTEMS

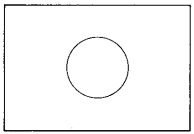
The Nikon F-601 provides three types of exposure metering systems – Matrix Metering, Centre-Weighted Metering and Spot Metering.



MATRIX METERING

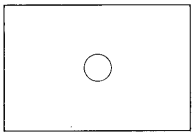
This system is ideally suited for quick operation and for the most dependable auto exposure control. It can also be used for manual metering and flash exposure control operation with any Nikon TTL Speedlight.

In Matrix Metering, the meter automatically provides the correct exposure of the main subject in virtually any lighting situation, without requiring manual exposure compensation. The Matrix Metering sensor determines scene brightness by dividing the scene into five areas, then analysing each area for brightness and scene contrast.



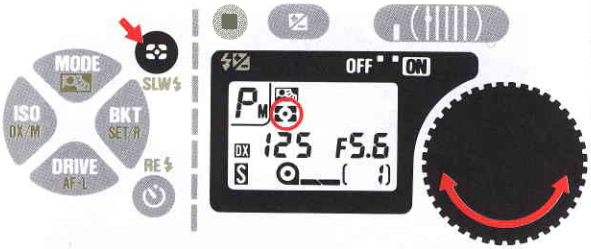
CENTRE-WEIGHTED METERING

Choose Centre-Weighted Metering when you want to base exposure on either auto or manual exposure control for a centrally located subject. Selecting Centre-Weighted Metering overrides Matrix Metering and concentrates 75% of the meter's sensitivity into the centre of the viewfinder outlined by a 12mm circle.

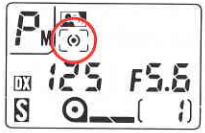


SPOT METERING

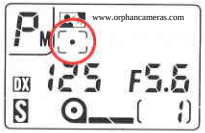
For selective metering of tiny subjects or for advanced manual metering techniques, use Spot Metering.
The area metered is represented by the approx. 3.5mm-diameter circle in the centre of the viewfinder. This metering system is effective when precise measurement of a special portion of the subject is required.



Matrix Metering



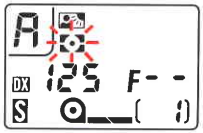
Center-Weighted Metering



Spot Metering

METERING SYSTEM SETTING

1. Slide main switch to ON.
2. While pressing metering system button, rotate command dial until your desired symbol — ▣ for Matrix Metering, ◎ for Centre-Weighted Metering or · for Spot Metering appears in the LCD panel.



Matrix Metering is possible only with lenses that have a built-in CPU (such as AF Nikkor and AI-P lenses). When a lens without a built-in CPU or no lens is used, the metering system is automatically set to Centre-Weighted. In either case, if you lightly press the shutter release button, the ▣ symbol blinks.

METERING SYSTEM SELECTION – WHEN TO USE MATRIX OR CENTRE-WEIGHTED METERING

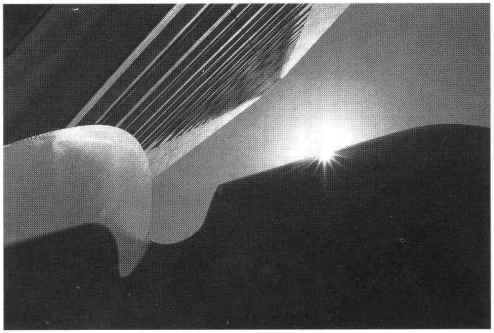
In scenes with both very bright and very dark areas, these two metering systems produce varying results. For example:

A. Scene containing the sun or scenes with high reflectivity
If a scene contains strong highlights, such as the sun, snow or bright reflections, Centre-Weighted Metering renders the main subject as a silhouette. With Matrix Metering, however, the light value of darker parts is evaluated, resulting in an overall well-balanced exposure.

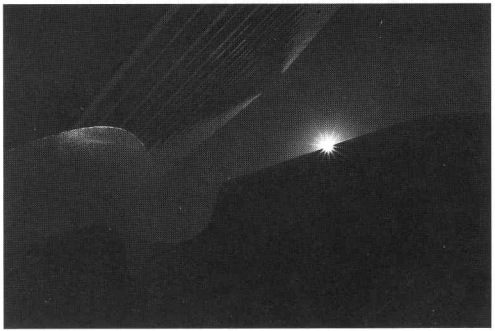
B. Outdoor backlit subject
With Centre-Weighted Metering, a backlit subject or scene with people against a bright sky and/or clouds may lead to an underexposed shot. With Matrix Metering, however, the camera automatically gives more exposure to darker subjects to ensure a balanced overall exposure.

C. Front-lit subject against dark background
If a brightly lit off-centre subject is positioned against a dark background, Centre-Weighted Metering places too much emphasis on the dark centre of the picture. So although the background is correctly exposed, the main subject will be overexposed. Matrix Metering, however, automatically integrates a dark background with a bright subject to ensure the best overall exposure.

Scene containing the sun



Matrix Metering



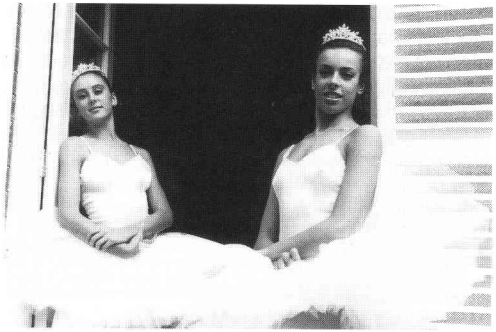
Centre-Weighted Metering

Outdoor backlit subject

Matrix Metering

Centre-Weighted Metering

Front-lit subject



Matrix Metering

Centre-Weighted Metering

D. Small dark subjects against a bright background

A subject significantly smaller than any of the Matrix Metering sections may not be recognised and integrated into the automatic exposure evaluation. For such subjects, switch to Centre-Weighted Metering and make exposure compensation with AE lock lever* or exposure compensation button** in Auto exposure mode, or obtain correct exposure meter reading on the main subject*** in Manual exposure mode.

* *See pp 64 - 65*
** *See pp 66 - 67*
*** *See pp 62 - 63*

Matrix Metering

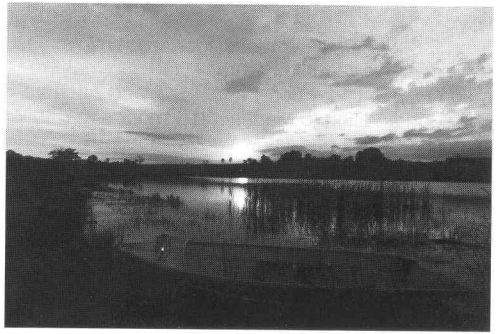
Centre-Weighted Metering (with AE Lock)

Centre-Weighted Metering (without AE Lock)

E. Sunset scenes

If you want to emphasise a dramatic sunset but don't want Matrix Metering to lighten the scene for a dark foreground subject, use Centre-Weighted Metering with or without exposure compensation.

Matrix Metering



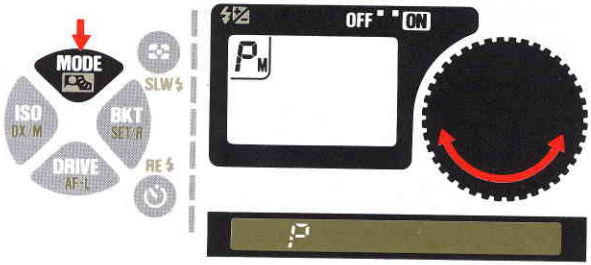
Center-Weighted Metering

EXPOSURE MODE

Light reaching the film is controlled by the shutter and aperture. The proper combination of shutter and aperture settings results in the correct exposure. The necessary settings will be based upon the ISO speed set for the film in use and the operation of the camera's exposure control system.
The relationship between aperture and shutter is as follows: One change in shutter speed either doubles or halves the light transmitted. For example, 1/500 passes half the light as 1/250 and double the light of 1/1000. The aperture f/8 passes half the light of f/5.6 and double the light of f/11. If the correct exposure for a scene is 1/500 at f/8, then we can also select 1/250 at f/11 or 1/1000 at f/5.6 and achieve the same exposure results.

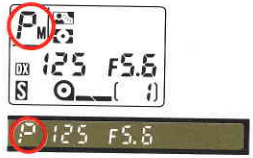
Selecting the exposure control mode means deciding if you want the shutter speed/aperture to be set automatically or manually.
The Nikon F-601 offers five modes: four automatic exposure control modes — Auto Multi-Program (P), Normal-Programmed (P), Shutter-Priority auto (S), and Aperture-Priority auto (A) — in addition to Manual (M) mode.
Each exposure mode has its own advantages.
In Programmed auto exposure mode, as the optimum combination of shutter speed and aperture is automatically set by the F-601's microcomputer, you can concentrate completely on picture composition and have greater opportunities to shoot, without worrying about exposure.

In Shutter-Priority auto exposure mode, you can manually set shutter speed as desired. That is, you can freeze the action with sharp, clear images using a fast shutter speed, or create motion effects by choosing slower shutter speeds.
In Aperture-Priority auto exposure mode, you can control depth of field by varying the aperture. You can use a larger aperture (smaller f-number) for shallower depth of field to create softer, less distinct backgrounds, or choose a smaller aperture (larger f-number) for greater depth of field.
In Manual exposure mode, in addition to controlling both shutter speed and aperture, you can easily create intentionally over- or underexposed photos.

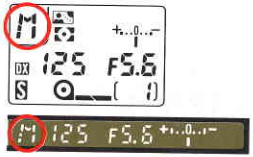


EXPOSURE MODE SETTING

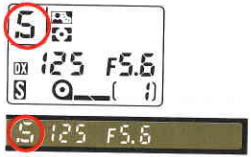
After turning power switch on, while pressing MODE button, rotate command dial. Exposure mode changes in the following sequence:



Auto Multi-Program



Manual

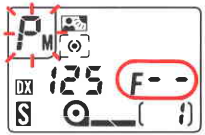


Shutter-Priority Auto

Normal Program

Aperture-Priority Auto

Correspondingly, PM, S, A, M or P will appear on the LCD panel while P (for both Auto Multi-Program and Normal Program), S, A and M will appear inside viewfinder.



For Programmed auto or Shutter-Priority auto exposure mode, use only lenses that have a built-in CPU such as AF Nikkor or AI-P lenses. With other lenses, exposure mode is automatically set to Aperture-Priority auto and the metering system to Centre-Weighted.
In this case, when you lightly press shutter release button, exposure mode indicator blinks and **F--** appears on the LCD panel.

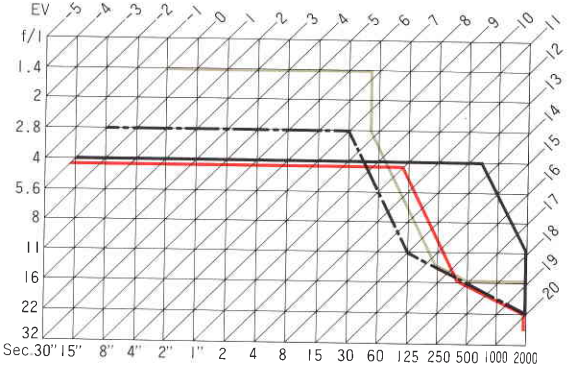
PROGRAMMED (P_M AND P) AUTO

The F-601 offers two programmed auto exposure modes: Auto Multi-Program mode and Normal Program mode.

Picture sharpness can vary with the shutter speed used. Different focal length lenses handle differently at slow shutter speeds. The recommended slowest shutter speed to be used with any lens when hand-holding the camera is 1/focal length (FL) of the lens. For example, with a 60mm lens, use 1/60 sec. as the slowest hand-held speed. Keep in mind, however, that 1/30 sec. is the lowest recommended shutter speed for blur-free hand-held shooting.
The F-601's Auto Multi-Program varies the exposure program lines according to the focal length and lens maximum aperture. The inclinations of lines in the chart are designed to reduce the possibility of picture blur by avoiding slower shutter speeds. With Normal Program, you get a standard combination of shutter speed and aperture.

Program Charts

The EV (exposure value) charts demonstrate the difference between F-601 Auto Multi-Program and Normal Program. Follow either coloured line to where it intersects a diagonal line. This shows the combination of aperture (vertical line) and shutter speed (horizontal line), which will automatically be selected at each EV brightness level.

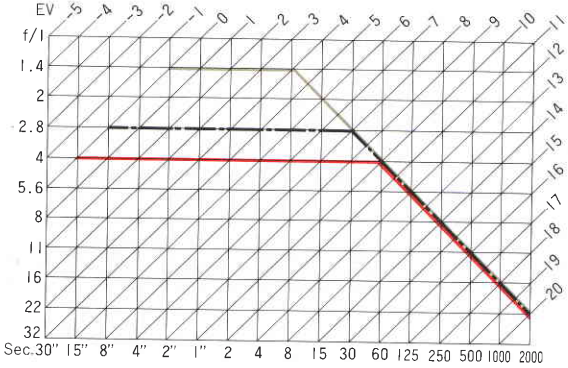


Auto Multi-Program Chart (ISO 100)

- With 50mm f/1.4
- With 28mm f/2.8
- With Zoom 35-135mm f/3.5-f/4.5 at 100mm (f/4.2) setting
- With 500mm f/4

Operation in programmed auto exposure mode

Operation for Auto-Multi Program and Normal Program are performed in the same manner. See BASIC SHOOTING on pp 16 - 21.

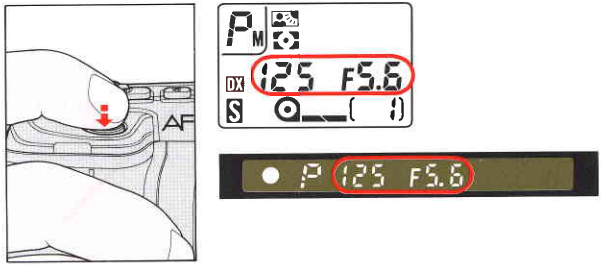


Normal Program Chart (ISO 100)

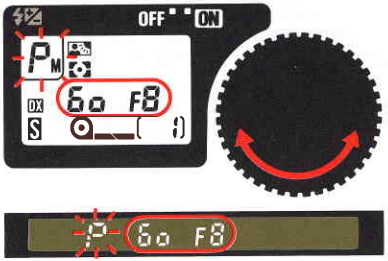
- With f/1.4 lens
- With f/2.8 lens
- With f/4 lens

FLEXIBLE PROGRAM

When you want to use a specific shutter speed or aperture in Programmed auto exposure mode, use the Flexible Program function. Flexible Program enables you to temporarily change an automatically set shutter speed/aperture combination in 1 EV steps, while maintaining the correct exposure.



1. Lightly press shutter release button.

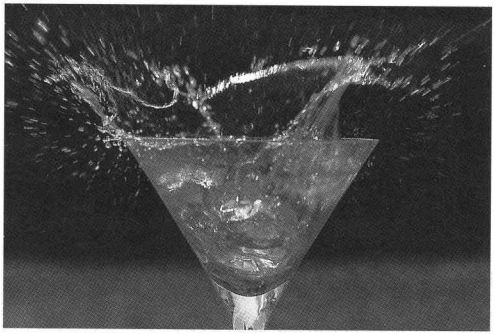


2. Turn command dial until desired shutter speed or aperture value appears in viewfinder and in LCD panel.

- *When program is shifted, exposure mode indicator blinks in LCD panel and viewfinder.*
- *As soon as the display in LCD panel and viewfinder disappears (i.e., as soon as meter is automatically turned off), Flexible Program is cancelled.*

SHUTTER-PRIORITY AUTO EXPOSURE MODE

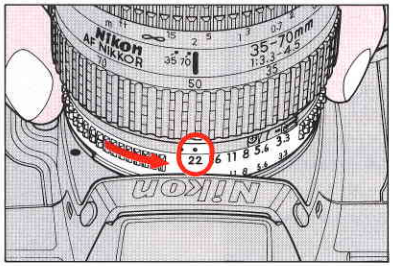
Subject movement and your ability to hold the camera steady will determine what shutter speed you should choose. Faster speeds will generally produce sharper images. For creative effects you may use slower speeds. Make your choice accordingly. The F-601's computer automatically selects the proper aperture to match the selected shutter speed for correct exposure. Shutter-Priority auto mode operates only with Nikon lenses that have a built-in CPU (AF Nikkor and AI-P Nikkor).



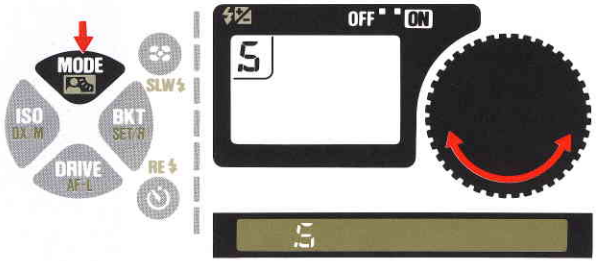
At a fast shutter speed

At a slow shutter speed

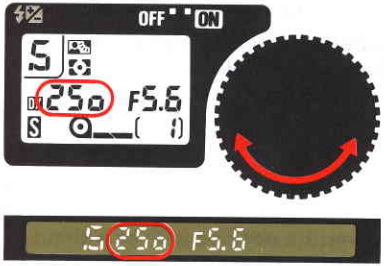
OPERATION IN SHUTTER-PRIORITY AUTO EXPOSURE MODE



1. Set lens to its minimum aperture setting (highest f-number).
With AF Nikkor and AI-P-Nikkor lenses, lock lens aperture at minimum setting.



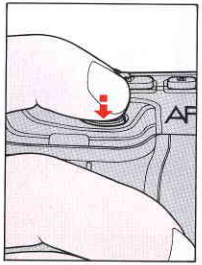
2. While pressing MODE button, rotate command dial until "S" appears on LCD panel and viewfinder.



3. Remove finger from MODE button, and rotate command dial to select desired shutter speed.

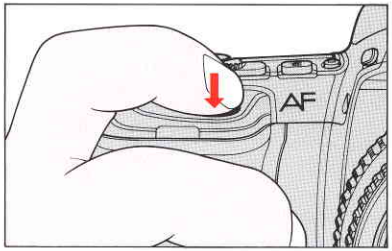
- Shutter speed indication changes one step at a time in the following sequence:
  30″-15″-8″-4″-2″-1″-2-4-8-15-30-60-125-250-500-1000-2000

If meter has automatically turned off and LCD indicators disappear, turn meter on again by lightly pressing shutter release button.

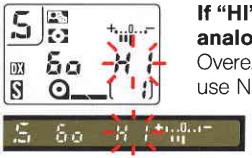


4. Look inside viewfinder, compose and lightly press shutter release button.

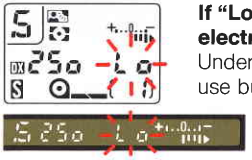
5. Confirm aperture value.
Camera selects correct aperture for shutter speed selected.



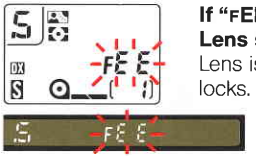
6. Fully depress shutter release button to take the picture.



If "HI" blinks in the aperture position with electronic analog display* — Overexposure alert:
Overexposure may occur. Select higher shutter speed or use Nikon ND filter.



If "Lo" blinks in the aperture position with or without electronic analog display* — Underexposure alert:
Underexposure may occur. Select slower shutter speed, or use built-in TTL flash or an accessory Nikon Speedlight.



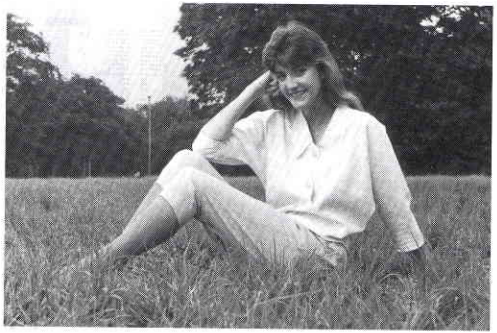
If "FEE" blinks in the aperture position — Lens setting error alert:
Lens is not set to smallest aperture setting and shutter locks. Set lens to smallest aperture.

** Shows value difference from correct exposure.*

APERTURE-PRIORITY AUTO EXPOSURE MODE

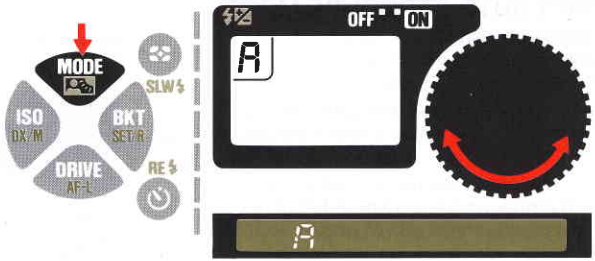
Select the aperture based on how shallow or large you want depth of field to be. Smaller apertures will make the background and foreground sharper (good for scenic pictures) while larger apertures will produce a shallower depth of field (good for portraits). Your selected aperture will determine the shutter speed which is automatically set by the camera's computer. When using the smaller apertures with corresponding slower shutter speeds, remember as a rule of thumb that any speed below 1/30 sec. may require the use of a tripod to prevent picture blur due to camera shake. Also, the higher the corresponding shutter speed, the easier it is to stop action. Adjust the selected aperture if the speed is not appropriate for conditions or the specific effect you want.

At wide aperture

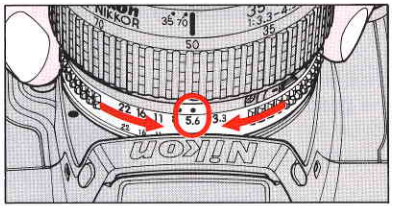


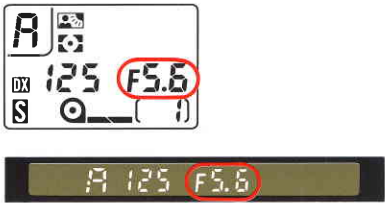
At small aperture

OPERATION IN APERTURE-PRIORITY AUTO EXPOSURE MODE



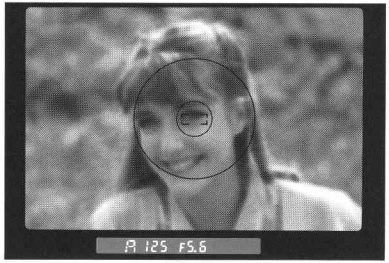
1. While pressing exposure MODE button, rotate command dial until "A" appears on the LCD panel and viewfinder.

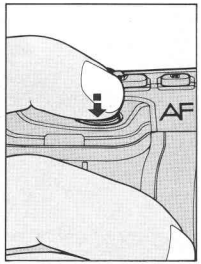




2. Remove finger from exposure mode setting button and set lens to desired f-number by rotating lens aperture ring.
Aperture changes in the following sequence, as indicated in LCD panel and viewfinder.
F1-F1.4-F2-F2.8-F4-F5.6-F8-F11-F16-F22-F32-F45-F64
(Available apertures limited to those on lens in use.)

If meter is automatically turned off and LCD indicators disappear, turn meter on again by lightly pressing shutter release button.

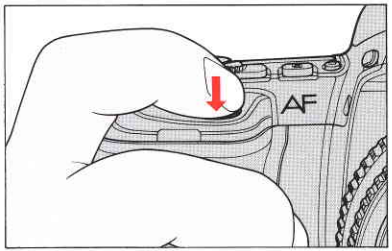




- *An intermediate figure (e.g. F1.8, F3.3) displayed indicates a lens' maximum aperture. Also, with zoom lenses, the maximum aperture for different focal length settings appears in 1/6 EV steps.*
- *With lenses having no CPU, "F--" appears instead of aperture value on the LCD panel and viewfinder.*
- *With an AF Nikkor or AI-P lens, make sure to unlock aperture ring before rotating it.*

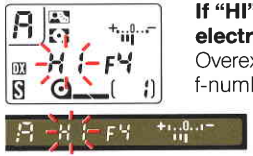
3. Look inside viewfinder, compose and lightly press shutter release button.

4. Confirm shutter speed.
Camera selects correct shutter speed to match your aperture setting.

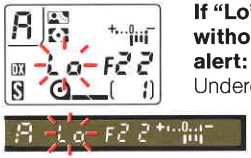


5. Fully depress shutter release button to take the picture.

If shutter speed indicator blinks – Picture blur alert:
A shutter speed of 1/FL is generally accepted as the minimum speed for hand-held photography, but since not everyone can hold a camera equally steady, this is just a guideline. The blinking shutter speed indication warns you that the exposure conditions call for a speed of 1/FL or slower. For example, with a 200mm lens, shutter speed indication blinks when automatically selected speed is 1/200 sec. or slower. Make adjustments to shutter/aperture if that speed is inappropriate for the picture conditions.



If "HI" blinks in the shutter speed position with electronic analog display* – Overexposure alert:
Overexposure may occur. Select smaller aperture (larger f-number) or use ND filter.

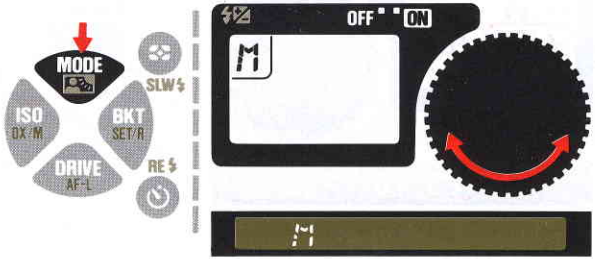


If "Lo" blinks in the shutter speed position with or without electronic analog display* – Underexposure alert:
Underexposure may occur. Select wider aperture (smaller f-number), or use a Nikon Speedlight.

** Shows value difference from correct exposure.*

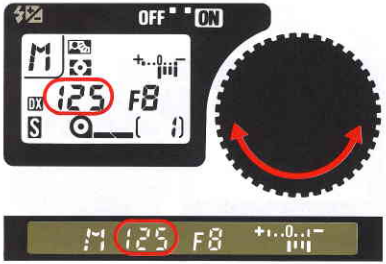
MANUAL EXPOSURE MODE

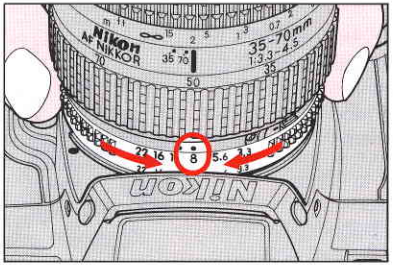
Manual exposure control allows you to make both aperture and shutter speed settings. You'll probably follow the recommendation of the camera's light meter for technically correct exposure, but you may choose otherwise and modify exposure settings for creative effects or special requirements.

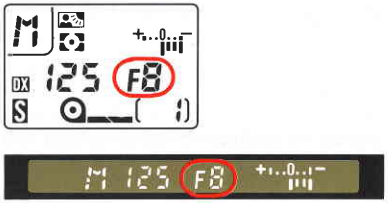


OPERATION IN MANUAL EXPOSURE MODE

1. While pressing exposure mode button (MODE), rotate command dial until "M" appears on the LCD panel and viewfinder.



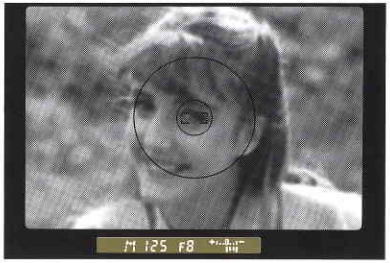


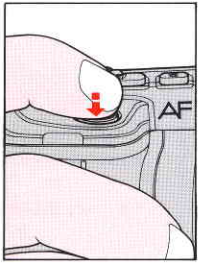


2. Remove finger from exposure mode button, set shutter speed using command dial, and aperture using lens aperture ring.

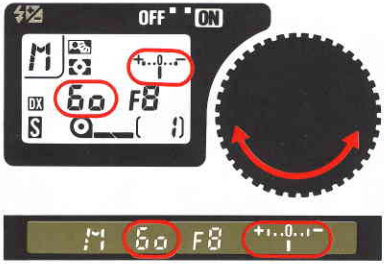
- *With lenses that have no CPU, "F--" appears instead of aperture value on the LCD panel and viewfinder.*

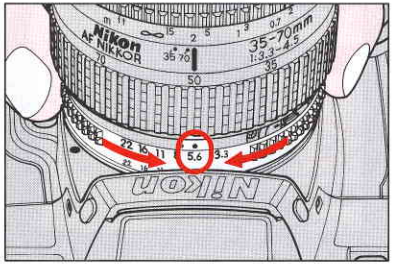
If meter is automatically turned off and LCD indicators disappear, turn meter on again by lightly pressing shutter release button.





3. Look into the viewfinder, compose and lightly press shutter release button.





4. Adjust aperture and/or shutter speed until Electronic Analog Display indicates "0" or the desired exposure.

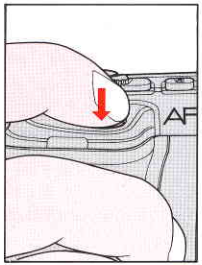
- *With an AF Nikkor or AI-P lens, make sure to unlock aperture ring before rotating it.*

The electronic analog display range is +1EV to –1EV, in increments of 1/3EV.
◀ and ▶ appear in the electronic analog display when exposure is beyond ±1EV.

Examples:

Over +1EV | +1EV | +1/3EV

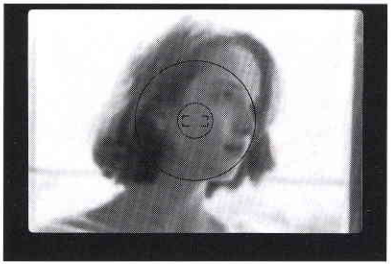
±0EV | –2/3EV | Below –1EV



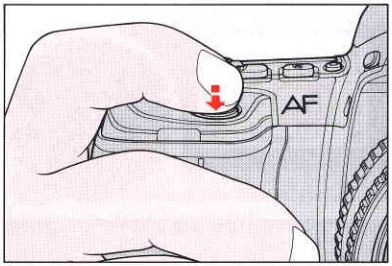
5. Fully depress shutter release button to take the picture.

TO OBTAIN EXPOSURE METER READING FOR A MAIN SUBJECT OFF CENTRE OR TOO SMALL SUBJECT

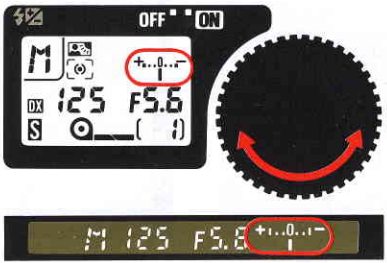
If you want to set exposure as desired on a particular subject, use Centre-Weighted or Spot Metering. With a subject located off centre in the viewfinder, when a subject is too small to cover the 12mm-diameter centre circle, or when there is a substantial difference in brightness between the main subject and the background (e.g., a strongly backlit subject), use the following method.

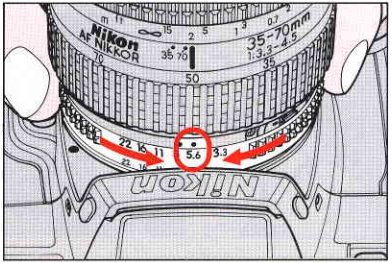


1. Centre main subject inside viewfinder's 12mm circle and/or move in closer so the circle is covered by the subject.

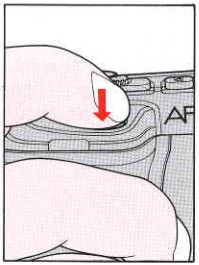


2. Lightly press shutter release button.



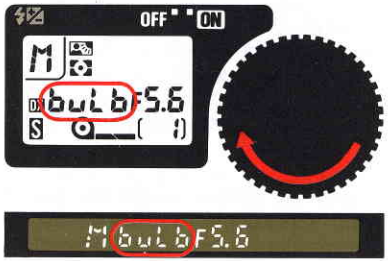


3. Adjust shutter speed and aperture until electronic analog display shows desired exposure.



4. Recompose the picture, focus and shoot.

BULB SETTING



For long-time exposure, use B (bulb) setting. On bulb setting, shutter remains open as long as shutter release button remains depressed. This setting can only be used in Manual exposure mode. To select, rotate command dial clockwise until "**buLb**" appears.

- When using bulb setting, camera must be held very steady. Use a tripod and cable release.
- You can perform long-time exposure for approximately 7 hours with a fresh battery set.

EXPOSURE COMPENSATION

Matrix Metering provides the main subject with correct exposure in virtually any lighting situation, without having to use manual exposure compensation. But in Center-Weighted Metering or Spot Metering, for situations where you want to change compositions or for unusual situations such as snowscapes, backlit subjects or when the main subject contrasts sharply with the background, exposure compensation is recommended.

Also, in Matrix Metering, "correct" exposure is a value based on a combination of film sensitivity, aperture and shutter speed necessary to produce a "technically correct" exposure result. We often want to vary the exposure results to create different versions of the same picture or put creative emphasis on a specific part of the picture. This is accomplished by using exposure compensation.

Exposure compensation can be accomplished in either one or a combination of the following ways.

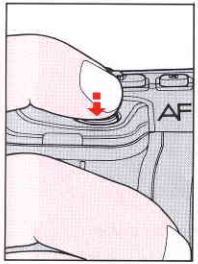
- AE (Auto Exposure) Lock Lever
- Exposure Compensation Button
- Auto Exposure Bracketing

As the results can vary depending on conditions, you may want to experiment with each method.

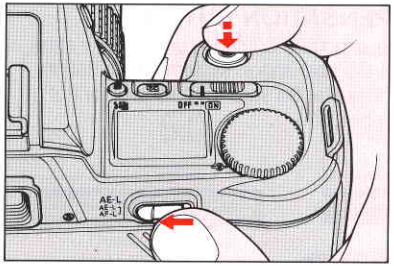
AE (AUTO EXPOSURE) LOCK LEVER

In auto exposure mode with Centre-Weighted or Spot Metering, when you want to control exposure based on a particular brightness area of the scene, use the AE-L (auto exposure lock) lever, as follows.

1. Centre main subject inside viewfinder's 12mm circle and/or move in closer so the circle is covered by the subject.

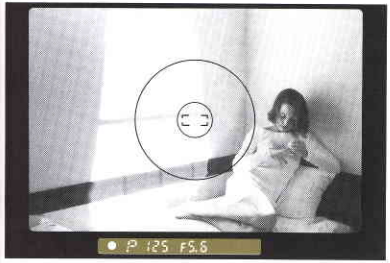


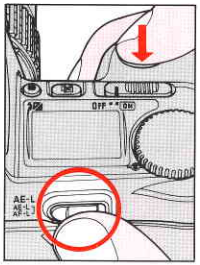
2. Lightly press shutter release button, and confirm shutter speed and aperture in viewfinder.



3. While lightly pressing shutter release button, slide AE-L lever and hold in.

- While AE-L lever is held in, shutter speed indication does not blink for picture-blur alert even if a slow shutter speed is selected.



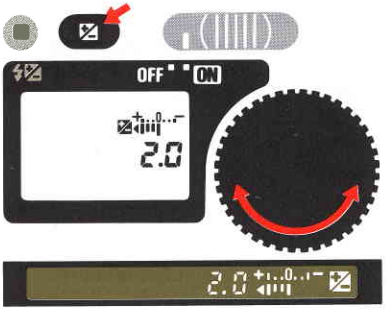


4. Recompose and shoot.

In Focus-Priority Single autofocus, both focus and exposure are locked when subject is in focus.
In Focus-Priority Continuous autofocus, when autofocus lock function is set, focus will be simultaneously locked while AE-L lever is held in. (See pages 64 to 65)

EXPOSURE COMPENSATION BUTTON

If you wish to modify the exposure control (from the ISO standard), use the Exposure Compensation system. Modification from –5EV to +5EV is possible. Be sure to reset the control to zero to resume normal operation.

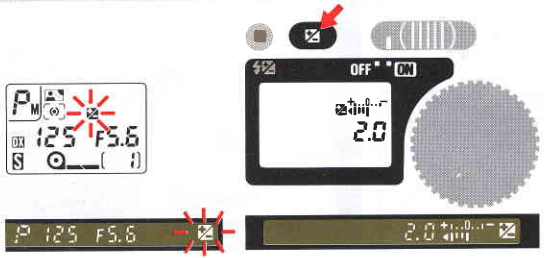


While pressing exposure compensation ⊠ button, rotate command dial to set desired compensation value. The following display appears on the LCD panel and viewfinder:

⊠ symbol

Electronic analog display with indications from –1 to +1 EV in 1/3 steps: Confirm the direction of exposure (– or +).

Compensation value (from –5 to +5 EV in 1/3 steps): Confirm amount of exposure compensation.

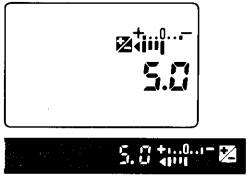


- Once set, exposure compensation remains fixed until reset.
  Although blinking ⊠ symbol stays on to indicate that exposure compensation remains, compensation value and electronic analog display disappear after you remove finger from ⊠ button. To confirm compensation value, press button again.
- Exposure compensation can also be achieved by setting film speed manually. (See pages 25 to 26)

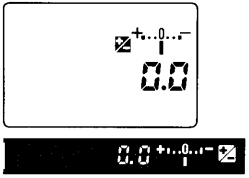
Without compensation

+2EV compensation

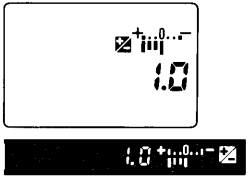
Examples:



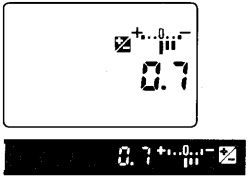
Over +1EV
(+5EV)



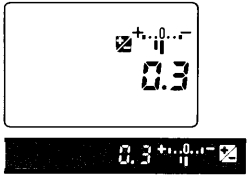
±0EV



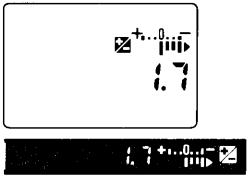
+1EV



−2/3EV



+1/3EV



Below −1EV
(−1$^{2}/_{3}$EV)

AUTO EXPOSURE BRACKETING

When you want a variety of exposures of the same subject (e.g., when shooting a sunset), use the F-601's auto exposure bracketing function to obtain three or five different exposures.

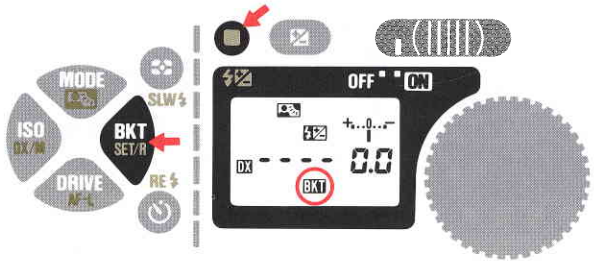
Auto exposure bracketing only operates in connection with any of the auto exposure control modes.

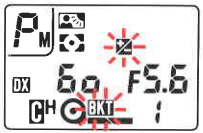
P PM S A

P S A

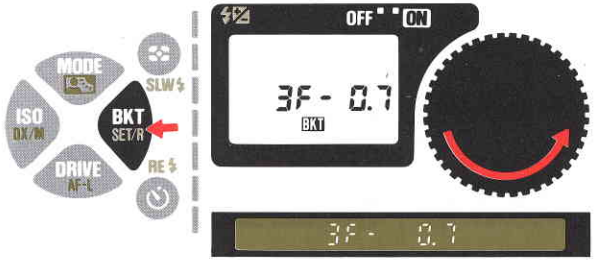
1. Set exposure mode to Programmed auto, Shutter-Priority auto or Aperture-Priority auto.
In Programmed auto exposure mode, both shutter speed and aperture will be changed for your set compensation value in stepped sequence. Aperture will be changed in Shutter-Priority auto; shutter speed will be changed in Aperture-Priority auto.

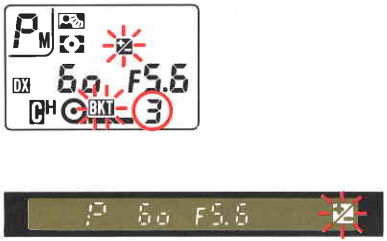
With exposure mode set at Manual, no exposure compensation will be made but as many shots as number of frames set will be taken.





2. While pressing shift button, push BKT button to set auto exposure bracketing. Blinking BKT* and ± marks appear on the LCD panel. Inside viewfinder, ± symbol is blinking.
** BKT symbol remains after meter is turned off, but stops blinking.*

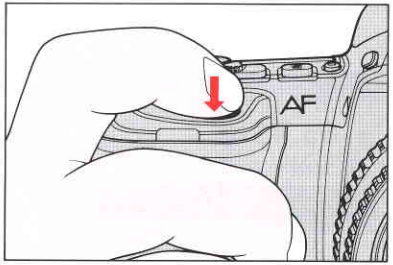




3. While pressing BKT button, rotate command dial until your desired combination of number of frames and compensation value appear on the LCD panel and viewfinder. For example, to shoot three frames with 0.7 degree compensation, set 3F-0.7.

Indication changes:
1F—00 (just after the BKT button is pressed)
3F—0.3
3F—0.7
3F—1.0
5F—0.3
5F—0.7
5F—1.0

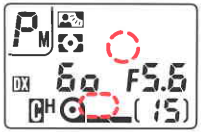
4. Remove your finger from BKT button. On the LCD panel, the number of frames you set for auto exposure bracketing appears instead of normal frame counter and blinking BKT and ± marks remain to show auto exposure bracketing is set. Inside the viewfinder, ± symbol blinks.
Now, exposure is compensated as you set in step 3.
(Depending on compensation value you set, LCD panel and viewfinder may show exposure indication different from that shown before step 3.)



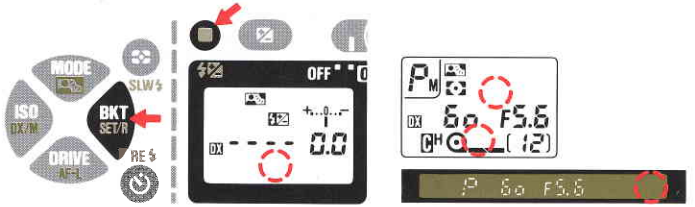
5. Depress shutter release button to release shutter and start auto exposure bracketing operation.
Number of frames for auto exposure bracketing decreases each time shot is taken.
For example, if you have set number of frames and compensation value as 3F-0.7, three shots — the first with –0.7 underexposed, the second without compensation and the third with +0.7 overexposed — will be taken.

With film advance mode set at S:
Camera takes three or five shots as set — one shot each time you depress shutter release button.

With film advance mode set at C_L or C_H:
Depressing shutter release button and holding it in triggers three or five shots as set. If you remove your finger from shutter release button before the set number of shots is taken, the operation stops. To take the remaining shots, depress and hold shutter release button again.



6. When all frames set are taken, BKT and ± marks disappear showing auto exposure bracketing operation completed and automatically cancelled.



- To cancel auto exposure bracketing before or during operation, while pressing shift button, push BKT button. BKT and ± marks disappear.
- If you set auto exposure bracketing with self-timer function, auto exposure bracketing is automatically cancelled and normal self-timer operation will be performed.
- Auto exposure bracketing in flash photography compensates amount of flash output regardless of camera's exposure mode.
- If film reaches end of roll during shooting, auto exposure bracketing automatically stops. After loading a new film roll, push shutter release button to resume operation.
- If auto exposure bracketing is performed with another exposure compensation on camera or Speedlight, any compensation value can be added.