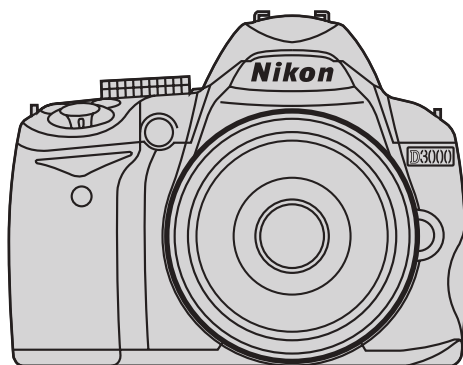


Nikon

DIGITAL CAMERA

D3000

User's Manual



D3000

En

En

Product Documentation

The manuals for this product are divided into two parts. This manual (the *User's Manual*) takes you through the steps of readying your camera for use, taking pictures, and viewing them. Complete information on such topics as **P**, **S**, **A**, and **M** modes, playback, copying pictures to a computer, printing pictures, viewing pictures on TV, camera menus, troubleshooting, and optional flash units may be found in the *Reference Manual*, which is available in pdf format on the supplied reference CD. The *Reference Manual* can be viewed using Adobe Reader or Adobe Acrobat Reader 5.0 or later, available for free download from the Adobe website.

- 1 Start the computer and insert the reference CD.
- 2 Double-click the CD (**Nikon D3000**) icon in Computer or My Computer (Windows) or on the desktop (Macintosh).
- 3 Double-click the **INDEX.pdf** icon to display a language selection screen and click a language to display the *Reference Manual*.

Additional information on camera menus and other topics can be found using the camera's on-board help system as described on page 7 of this guide.

For Your Safety

Before using the camera for the first time, read the safety instructions in "For Your Safety" (ii-iv).

Digitutor

"Digitutor," a series of "watch and learn" manuals in movie form, is available from the following website: http://www.nikondigitutor.com/index_eng.html

Life-Long Learning

As part of Nikon's "Life-Long Learning" commitment to ongoing product support and education, continually-updated information is available on-line at the following sites:

- **For users in the U.S.A.:** <http://www.nikonusa.com/>
- **For users in Europe and Africa:** <http://www.europe-nikon.com/support/>
- **For users in Asia, Oceania, and the Middle East:** <http://www.nikon-asia.com/>

Visit these sites to keep up-to-date with the latest product information, tips, answers to frequently-asked questions (FAQs), and general advice on digital imaging and photography. Additional information may be available from the Nikon representative in your area. See the following URL for contact information: <http://imaging.nikon.com/>

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For Your Safety

To prevent damage to your Nikon product or injury to yourself or to others, read the following safety precautions in their entirety before using this equipment. Keep these safety instructions where all those who use the product will read them.

The consequences that could result from failure to observe the precautions listed in this section are indicated by the following symbol:



This icon marks warnings. To prevent possible injury, read all warnings before using this Nikon product.

■ WARNINGS

Keep the sun out of the frame

Keep the sun well out of the frame when shooting backlit subjects. Sunlight focused into the camera when the sun is in or close to the frame could cause a fire.

Do not look at the sun through the viewfinder

Viewing the sun or other strong light source through the viewfinder could cause permanent visual impairment.

Turn off immediately in the event of malfunction

Should you notice smoke or an unusual smell coming from the equipment or AC adapter (available separately), unplug the AC adapter and remove the battery immediately, taking care to avoid burns. Continued operation could result in injury. After removing the battery, take the equipment to a Nikon-authorized service center for inspection.

Do not use in the presence of flammable gas

Do not use electronic equipment in the presence of flammable gas, as this could result in explosion or fire.

Keep out of reach of children

Failure to observe this precaution could result in injury.

Do not disassemble

Touching the product's internal parts could result in injury. In the event of malfunction, the product should be repaired only by a qualified technician. Should the product break open as the result of a fall or other accident, remove the battery and/or AC adapter and then take the product to a Nikon-authorized service center for inspection.

Do not place the strap around the neck of an infant or child

Placing the camera strap around the neck of an infant or child could result in strangulation.

Observe caution when using the flash

- Using the camera with the flash in close contact with the skin or other objects could cause burns.
- Using the flash close to the subject's eyes could cause temporary visual impairment. Particular care should be observed when photographing infants, when the flash should be no less than one meter (39 in.) from the subject.

Using the viewfinder diopter control

When operating the viewfinder diopter control with your eye to the viewfinder, care should be taken not to put your finger in your eye accidentally.

Avoid contact with liquid crystal

Should the monitor break, care should be taken to avoid injury due to broken glass and to prevent the liquid crystal from the monitor touching the skin or entering the eyes or mouth.

Use appropriate cables

When connecting cables to the input and output jacks, use only the cables provided or sold by Nikon for the purpose to maintain compliance with product regulations.

CD-ROMs

CD-ROMs containing software or manuals should not be played back on audio CD equipment. Playing CD-ROMs on an audio CD player could cause hearing loss or damage the equipment.

Observe proper precautions when handling batteries

Batteries may leak or explode if improperly handled. Observe the following precautions when handling batteries for use in this product:

- Use only batteries approved for use in this equipment.
- Do not short or disassemble the battery.
- Be sure the product is off before replacing the battery. If you are using an AC adapter, be sure it is unplugged.
- Do not attempt to insert the battery upside down or backwards.
- Do not expose the battery to flame or to excessive heat.
- Do not immerse in or expose to water.
- Replace the terminal cover when transporting the battery. Do not transport or store the battery with metal objects such as necklaces or hairpins.
- Batteries are prone to leakage when fully discharged. To avoid damage to the product, be sure to remove the battery when no charge remains.
- When the battery is not in use, attach the terminal cover and store in a cool, dry place.
- The battery may be hot immediately after use or when the product has been used on battery power for an extended period. Before removing the battery turn the camera off and allow the battery to cool.
- Discontinue use immediately should you notice any changes in the battery, such as discoloration or deformation.

⚠ Observe proper precautions when handling the quick charger

- Keep dry. Failure to observe this precaution could result in fire or electric shock.
- Dust on or near the metal parts of the plug should be removed with a dry cloth. Continued use could result in fire.
- Do not handle the power cable or go near the charger during thunderstorms. Failure to observe this precaution could result in electric shock.
- Do not damage, modify, or forcibly tug or bend the power cable. Do not place it under heavy objects or expose it to heat or flame. Should the insulation be damaged and the wires become exposed, take the power cable to a Nikon-authorized service representative for inspection. Failure to observe this precaution could result in fire or electric shock.
- Do not handle the plug or charger with wet hands. Failure to observe this precaution could result in electric shock.
- Do not use with travel converters or adapters designed to convert from one voltage to another or with DC-to-AC inverters. Failure to observe this precaution could damage the product or cause overheating or fire.

Notices

- No part of the manuals included with this product may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form, by any means, without Nikon's prior written permission.
- Nikon reserves the right to change the specifications of the hardware and software described in these manuals at any time and without prior notice.
- Nikon will not be held liable for any damages resulting from the use of this product.
- While every effort has been made to ensure that the information in these manuals is accurate and complete, we would appreciate it were you to bring any errors or omissions to the attention of the Nikon representative in your area (address provided separately).

Notices for Customers in the U.S.A.

The Battery Charger

IMPORTANT SAFETY INSTRUCTIONS—SAVE THESE INSTRUCTIONS DANGER—TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, CAREFULLY FOLLOW THESE INSTRUCTIONS

For connection to a supply not in the U.S.A., use an attachment plug adapter of the proper configuration for the power outlet if needed. This power unit is intended to be correctly oriented in a vertical or floor mount position.

Federal Communications Commission (FCC) Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.



Nikon
D3000

CAUTIONS

Modifications

The FCC requires the user be notified that any changes or modifications made to this device that are not expressly approved by Nikon Corporation may void the user's authority to operate the equipment.

Interface Cables

Use the interface cables sold or provided by Nikon for your equipment. Using other interface cables may exceed the limits of Class B Part 15 of the FCC rules.

Notice for Customers in the State of California

WARNING: Handling the cord on this product may expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm. *Wash hands after handling.*

Nikon Inc., 1300 Walt Whitman Road, Melville, New York
11747-3064, U.S.A.
Tel.: 631-547-4200

Notices for Customers in Canada

CAUTION

This Class B digital apparatus complies with Canadian ICES-003.

ATTENTION

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Notice for Customers in Europe

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

This symbol indicates that this product is to be collected separately.

The following apply only to users in European countries:

- This product is designated for separate collection at an appropriate collection point. Do not dispose of as household waste.
- For more information, contact the retailer or the local authorities in charge of waste management.



This symbol on the battery indicates that the battery is to be collected separately.

The following apply only to users in European countries:

- All batteries, whether marked with this symbol or not, are designated for separate collection at an appropriate collection point. Do not dispose of as household waste.
- For more information, contact the retailer or the local authorities in charge of waste management.



Disposing of Data Storage Devices

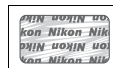
Please note that deleting images or formatting memory cards or other data storage devices does not completely erase the original image data. Deleted files can sometimes be recovered from discarded storage devices using commercially available software, potentially resulting in the malicious use of personal image data. Ensuring the privacy of such data is the user's responsibility.

Before discarding a data storage device or transferring ownership to another person, erase all data using commercial deletion software, or format the device and then completely refill it with images containing no private information (for example, pictures of empty sky). Be sure to also replace any pictures selected for preset manual white balance. Care should be taken to avoid injury when physically destroying data storage devices.

Use Only Nikon Brand Electronic Accessories

Nikon cameras are designed to the highest standards and include complex electronic circuitry. Only Nikon brand electronic accessories (including battery chargers, batteries, AC adapters, and flash accessories) certified by Nikon specifically for use with this Nikon digital camera are engineered and proven to operate within the operational and safety requirements of this electronic circuitry.

The use of non-Nikon electronic accessories could damage the camera and may void your Nikon warranty. The use of third-party rechargeable Li-ion batteries not bearing the Nikon holographic seal shown at right could interfere with normal operation of the camera or result in the batteries overheating, igniting, rupturing, or leaking.



For more information about Nikon brand accessories, contact a local authorized Nikon dealer.

Notice Concerning Prohibition of Copying or Reproduction

Note that simply being in possession of material that has been digitally copied or reproduced by means of a scanner, digital camera, or other device may be punishable by law.

• Items prohibited by law from being copied or reproduced

Do not copy or reproduce paper money, coins, securities, government bonds, or local government bonds, even if such copies or reproductions are stamped "Sample."

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The copying or reproduction of stamps issued by the government and of certified documents stipulated by law is prohibited.

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The copying or reproduction of copyrighted creative works such as books, music, paintings, woodcuts, prints, maps, drawings, movies, and photographs is governed by national and international copyright laws. Do not use this product for the purpose of making illegal copies or to infringe copyright laws.



Introduction

Overview



Thank you for your purchase of a Nikon single-lens reflex (SLR) digital camera. This manual takes you through the steps of readying your camera for use, taking pictures, and viewing them.

■ ■ *Symbols and Conventions*

To make it easier to find the information you need, the following symbols and conventions are used:



This icon marks cautions; information that should be read before use to prevent damage to the camera.



This icon marks notes; information that should be read before using the camera.



This icon marks references to other pages in this manual.



Use Only Nikon Brand Accessories

Only Nikon brand accessories certified by Nikon specifically for use with your Nikon digital camera are engineered and proven to operate within its operational and safety requirements. THE USE OF NON-NIKON ACCESSORIES COULD DAMAGE YOUR CAMERA AND MAY VOID YOUR NIKON WARRANTY.



Servicing the Camera and Accessories

The camera is a precision device and requires regular servicing. Nikon recommends that the camera be inspected by the original retailer or a Nikon-authorized service representative once every one to two years, and that it be serviced once every three to five years (note that fees apply to these services). Frequent inspection and servicing are particularly recommended if the camera is used professionally. Any accessories regularly used with the camera, such as lenses or optional flash units, should be included when the camera is inspected or serviced.



Before Taking Important Pictures

Before taking pictures on important occasions (such as at weddings or before taking the camera on a trip), take a test shot to ensure that the camera is functioning normally. Nikon will not be held liable for damages or lost profits that may result from product malfunction.



Camera Settings

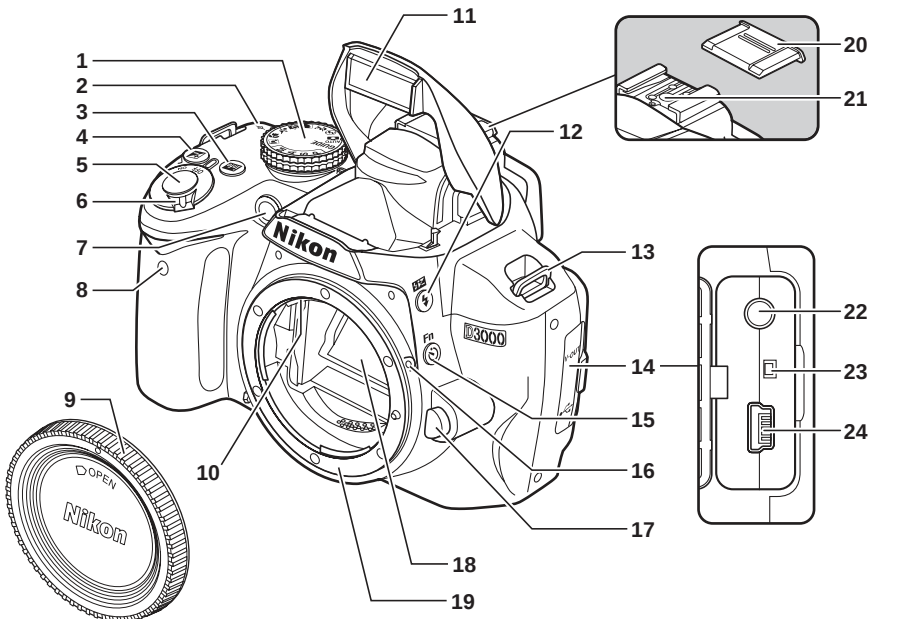
The explanations in this manual assume that default settings are used.

Getting to Know the Camera

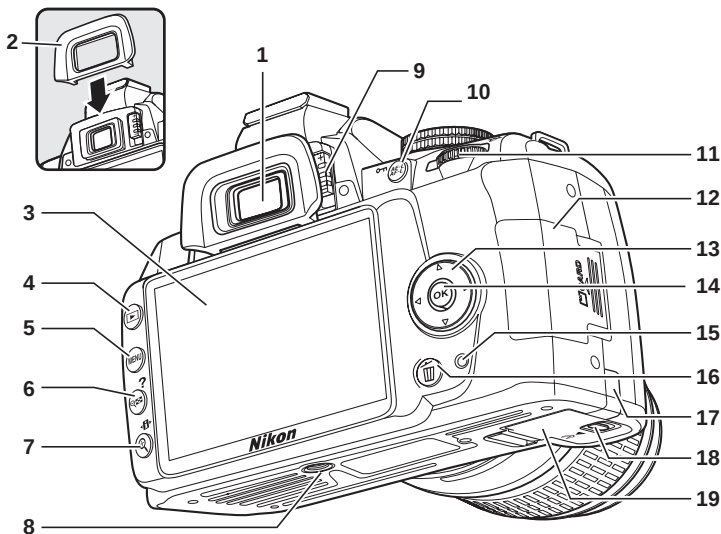
Take a few moments to familiarize yourself with camera controls and displays. You may find it helpful to bookmark this section and refer to it as you read through the rest of the manual.



The Camera Body



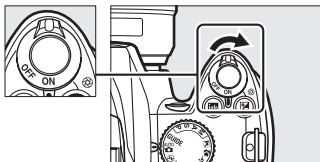
1	Mode dial.....	4	8	Infrared receiver	16	Mounting index.....	12
2	Focal plane mark (—○—)		9	Body cap	17	Lens release button	
3	info (information) button.....	6	10	CPU contacts	18	Mirror	
4	☑ (exposure compensation) button		11	Built-in flash.....	42	19	Lens mount
	Ⓜ (aperture) button		12	⚡ (flash mode) button.....	42	20	BS-1 accessory shoe cover
	Flash compensation button			☑ (flash compensation) button		21	Accessory shoe (for optional flash unit)
5	Shutter-release button.....	21	13	Eyelet for camera strap	22	VIDEO-OUT connector	
6	Power switch.....	3	14	Connector cover	23	Reset switch	
7	AF-assist illuminator		15	⌚ (self-timer) button	24	USB connector	
	Self-timer lamp.....	40		Fn (function) button			
	Red-eye reduction lamp.....	44					



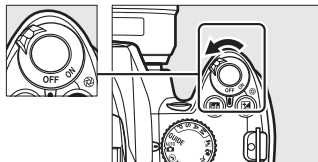
1 Viewfinder eyepiece.....16	7 (playback zoom in) button 25	13 Multi selector 8
2 DK-20 rubber eyecup	8 Tripod socket	14 (OK) button.....8
3 Monitor	9 Diopter adjustment control 16	15 Memory card access lamp 14, 21
Viewing settings6	10 (AE-L/AF-L) button	16 (delete) button25
Viewing pictures24	(protect) button	17 Power connector cover for optional power connector
4 (playback) button24	11 Command dial	18 Battery-chamber cover latch11
5 MENU (menu) button 7	12 Memory card slot cover 14	19 Battery-chamber cover11
6 (thumbnail/playback zoom out) button25		
7 (help) button.....7		

The Power Switch

Rotate the power switch as shown to turn the camera on.



Rotate the power switch as shown to turn the camera off.



The Mode Dial

The camera offers a choice of the following modes:

GUIDE Mode

GUIDE (☞ 27): Take and view pictures and adjust settings with the help of an on-screen guide.

Auto Modes

Select these modes for simple, point-and-shoot photography.

AUTO Auto (☞ 17): Camera adjusts settings automatically to produce optimal results with “point-and-shoot” simplicity. Recommended for first-time users of digital cameras.

Auto (flash off) (☞ 17): As above, except that the flash will not fire even when lighting is poor.

Scene Modes

Selecting a scene mode automatically optimizes settings to suit the selected scene.

Portrait (☞ 22): Shoot portraits with background in soft focus.

Landscape (☞ 22): Preserve details in landscape shots.

Child (☞ 23): Create portraits of children. Clothing and background details are vividly rendered while skin tones remain soft and natural.

Sports (☞ 23): Freeze motion for dynamic sports shots.

Close up (☞ 23): Take vivid close-ups of flowers, insects, and other small objects.

Night portrait (☞ 23): Shoot portraits against a dimly-lit backdrop.

P, S, A, and M Modes

Select these modes for full control over camera settings.

P—Programmed auto:

Camera chooses shutter speed and aperture, user controls other settings.

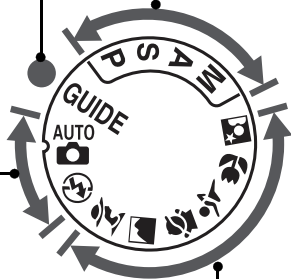
S—Shutter-priority auto:

Choose fast shutter speeds to freeze action, slow shutter speeds to suggest motion by blurring moving objects.

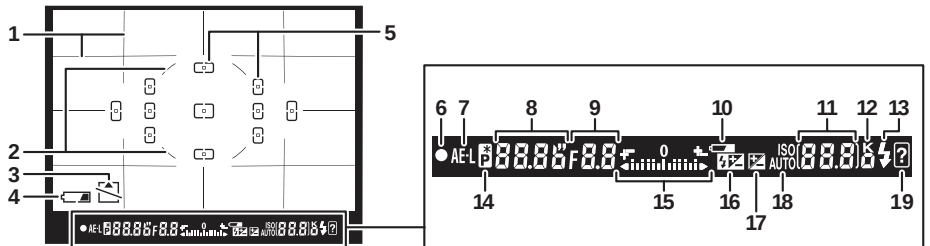
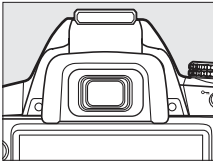
A—Aperture-priority auto:

Adjust aperture to soften background details or increase depth-of-field to bring both main subject and background into focus.

M—Manual: Match shutter speed and aperture to your creative intent.



The Viewfinder



1	Framing grid (displayed when On is selected for Viewfinder options > Viewfinder grid in the setup menu)	8	Shutter speed	12	"K" (appears when memory remains for over 1000 exposures).....18
2	Reference circle for center-weighted metering	9	Aperture (f-number)	13	Flash-ready indicator21
3	Card warning indicator.....53	10	Battery indicator.....17	14	Flexible program indicator
4	Battery indicator17	11	Number of exposures remaining18	15	Exposure indicator
5	Focus points		Number of shots remaining before memory buffer fills39		Exposure compensation display
6	Focus indicator20		White balance recording indicator	16	Electronic rangefinder
7	Autoexposure (AE) lock indicator		Exposure compensation value	17	Flash compensation indicator
			Flash compensation value	18	Exposure compensation indicator
			ISO sensitivity45	19	Auto ISO sensitivity indicator
					Warning indicator

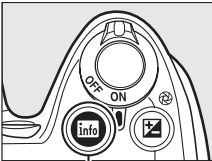
☒ **No Battery**
When the battery is exhausted or no battery is inserted, the display in the viewfinder will dim. This is normal and does not indicate a malfunction. The viewfinder display will return to normal when a fully-charged battery is inserted.

☒ **The Viewfinder Display**
Owing to the characteristics of this type of viewfinder display, you may notice fine lines radiating outward from the selected focus point. This is normal and does not indicate a malfunction.

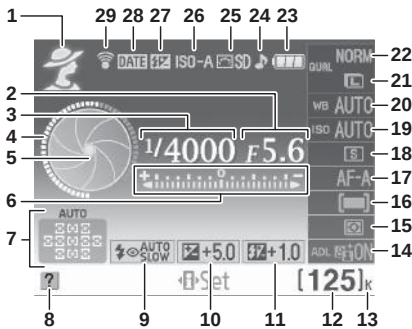
☒ **The Viewfinder**
The response time and brightness of the viewfinder display may vary with temperature.

The Information Display

Shooting information, including shutter speed, aperture, and the number of exposures remaining, is displayed in the monitor when the **info** button is pressed. To clear information from the display, press the **info** button again. Note that the monitor turns off automatically while the shutter-release is pressed or if no operations are performed for 8 s (the default value). The information display can be restored by pressing the **info** button.



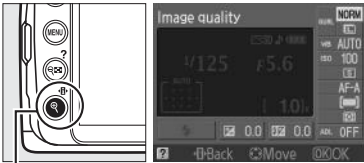
info button



1 Shooting mode AUTO auto (flash off) 17 Scene modes 22 Guide mode 27 P, S, A, and M modes.....4	7 Auto-area AF indicator35 3D-tracking indicator35 Focus point	17 Focus mode 33
2 Aperture (f-number)	8 Help icon	18 Release mode..... 38
3 Shutter speed	9 Flash mode.....43	19 ISO sensitivity..... 45
4 Shutter-speed display	10 Exposure compensation	20 White balance
5 Aperture display	11 Flash compensation	21 Image size 37
6 Exposure indicator Exposure compensation indicator Electronic rangefinder	12 Number of exposures remaining 18	22 Image quality 36
	13 "K" (appears when memory remains for over 1000 exposures)..... 18	23 Battery indicator..... 17
	14 Active D-Lighting46	24 "Beep" indicator
	15 Metering	25 Picture Control
	16 AF-area mode.....35	26 Auto ISO sensitivity indicator
		27 Manual flash indicator Flash compensation indicator for optional flash units
		28 Date imprint indicator
		29 Eye-Fi connection indicator

Changing Settings in the Information Display

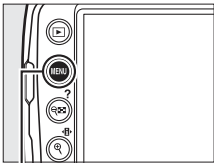
To change settings for the items listed in the information display, press the **info** button. Highlight items using the multi selector and press **OK** to view options for the highlighted item. Some items can also be adjusted using the command dial and camera buttons.



info button

Camera Menus

Most shooting, playback, and setup options can be accessed from the camera menus. To view the menus, press the **MENU** button.



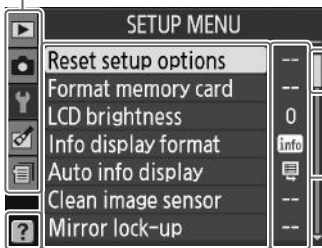
MENU button



Tabs

Choose from the following menus:

- ▶: Playback
- 📷: Shooting
- 🔧: Setup
- 🖌️: Retouch
- 📄: Recent settings



Slider shows position in current menu.

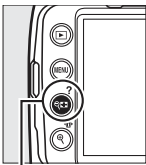
Current settings are shown by icons.

Menu options

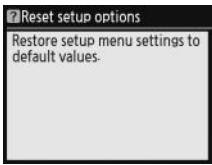
Options in current menu.



If a **?** icon is displayed at the bottom left corner of the monitor, help can be displayed by pressing the **?** (📷) button. A description of the currently selected option or menu will be displayed while the button is pressed. Press **▲** or **▼** to scroll through the display.



? (📷) button



Guide Mode

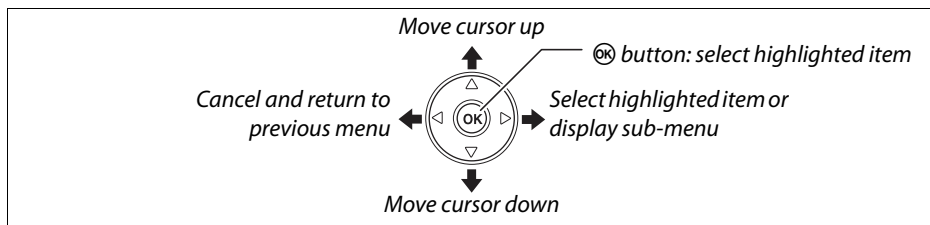
To display the guide menu, rotate the mode dial to **GUIDE** (📖 27).

Recent Settings

The recent settings menu lists the twenty most recently used settings.

Using Camera Menus

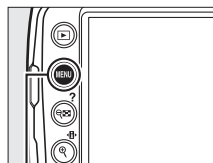
The multi selector and **OK** button are used to navigate the camera menus.



Follow the steps below to navigate the menus.

1 Display the menus.

Press the **MENU** button to display the menus.



MENU button

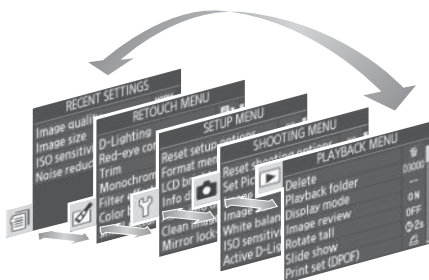
2 Highlight the icon for the current menu.

Press **◀** to highlight the icon for the current menu.



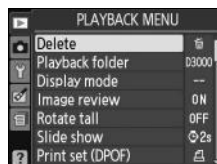
3 Select a menu.

Press **▲** or **▼** to select the desired menu.



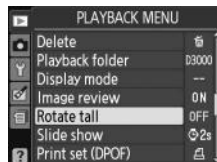
4 Position the cursor in the selected menu.

Press ► to position the cursor in the selected menu.



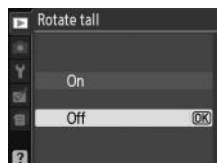
5 Highlight a menu item.

Press ▲ or ▼ to highlight a menu item.



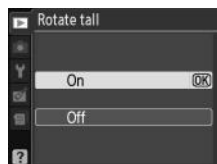
6 Display options.

Press ► to display options for the selected menu item.



7 Highlight an option.

Press ▲ or ▼ to highlight an option.



8 Select the highlighted item.

Press OK to select the highlighted item. To exit without making a selection, press the MENU button.



Note the following:

- Menu items that are displayed in gray are not currently available.
- While pressing ► generally has the same effect as pressing OK, there are some cases in which selection can only be made by pressing OK.
- To exit the menus and return to shooting mode, press the shutter-release button halfway (□ 21).

For More Information

Information on individual menu options is available using the camera's on-board help (□ 7) and in the *Reference Manual* on the supplied reference CD (for information on viewing the *Reference Manual*, see the inside front cover of this booklet).

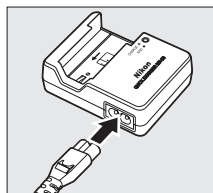
First Steps

Charge the Battery

The camera is powered by an EN-EL9a rechargeable Li-ion battery (supplied). To maximize shooting time, charge the battery in the supplied MH-23 quick charger before use. About one hour and forty minutes are required to fully recharge the battery when no charge remains.

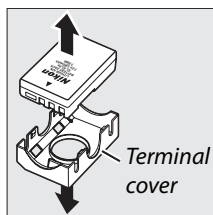
1 Plug the charger in.

Insert the AC adapter plug into the battery charger and plug the power cable into an electrical outlet.



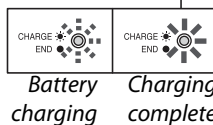
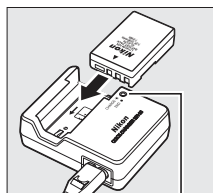
2 Remove the terminal cover.

Remove the terminal cover from the battery.



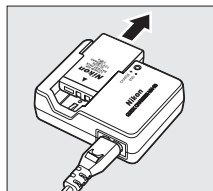
3 Insert the battery.

Insert the battery as shown in the illustration on the charger. The **CHARGE** lamp will blink while the battery charges.



4 Remove the battery when charging is complete.

Charging is complete when the **CHARGE** lamp stops blinking. Remove the battery and unplug the charger.

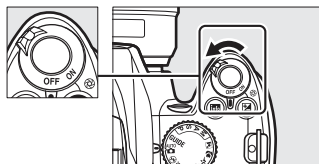


Insert the Battery

1 Turn the camera off.

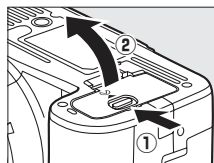
 **Inserting and Removing Batteries**
Always turn the camera off before inserting or removing batteries.

Power switch



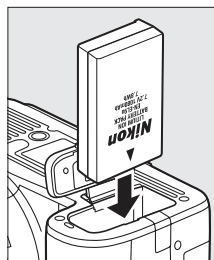
2 Open the battery-chamber cover.

Unlatch (①) and open (②) the battery-chamber cover.

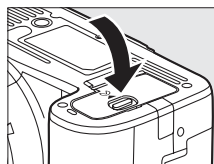


3 Insert the battery.

Insert the battery as shown at right.



4 Close the battery-chamber cover.



The Battery and Charger

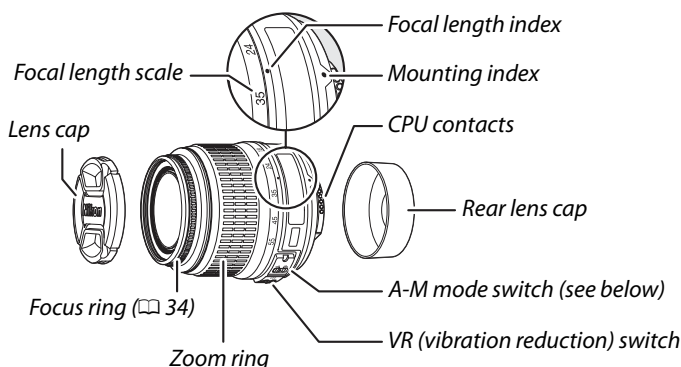
Read and follow the warnings and cautions on pages ii–iii and 50–52 of this manual. Do not use the battery at ambient temperatures below 0°C (32°F) or above 40°C (104°F). Charge the battery indoors at ambient temperatures between 5–35°C (41–95°F); for best results, charge the battery at temperatures above 20°C (68°F). Battery capacity may temporarily drop if the battery is charged at low temperatures.

The battery may be hot immediately after use. Wait for the battery to cool before recharging.

Use the charger with compatible batteries only. Unplug when not in use.

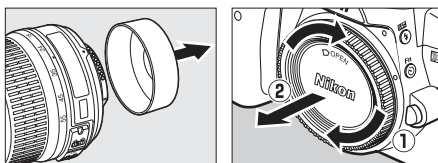
Attach a Lens

Care should be taken to prevent dust from entering the camera when the lens is removed. The lens generally used in this manual for illustrative purposes is an AF-S DX NIKKOR 18–55mm f/3.5–5.6G VR.



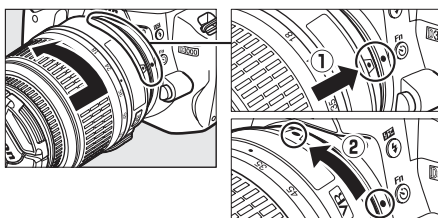
1 Turn the camera off.

2 Remove the rear lens cap and the camera body cap.



3 Attach the lens.

Keeping the mounting index on the lens aligned with the mounting index on the camera body, position the lens in the camera's bayonet mount (①). Being careful not to press the lens-release button, rotate the lens counter-clockwise until it clicks into place (②).



Slide the **A-M** switch to **A** (autofocus; if the lens has an **M/A-M** switch, select **M/A** for autofocus with manual priority).



✓ Autofocus

Autofocus is supported with only AF-S and AF-I lenses, which are equipped with autofocus motors. Autofocus is not available with other AF lenses.

Basic Setup

A language-selection dialog will be displayed the first time the camera is turned on. Choose a language and set the time and date. Photographs can not be taken until you have set the time and date.

1 Turn the camera on.

A language-selection dialog will be displayed.

2 Select a language.

Press ▲ or ▼ to highlight the desired language and press **OK**.



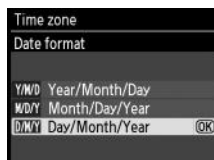
3 Choose a time zone.

Press ◀ or ▶ to highlight the local time zone (the **UTC** field shows the difference between the selected time zone and Coordinated Universal Time, or UTC, in hours) and press **OK**.



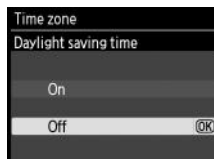
4 Choose a date format.

Press ▲ or ▼ to choose the order in which the year, month, and day will be displayed. Press **OK** to proceed to the next step.



5 Turn daylight saving time on or off.

Daylight saving time is off by default; if daylight saving time is in effect in the local time zone, press ▲ to highlight **On** and press **OK**.



6 Set the date and time.

The dialog shown at right will be displayed. Press ◀ or ▶ to select an item, ▲ or ▼ to change. Press **OK** to set the clock and exit to shooting mode.



The Camera Clock

The camera clock is less accurate than most watches and household clocks. Check the clock regularly against more accurate time pieces and reset as necessary.

Insert a Memory Card

The camera stores pictures on Secure Digital (SD) memory cards (available separately).

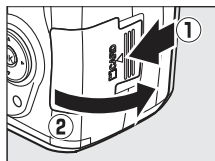
1 Turn the camera off.

Inserting and Removing Memory Cards

Always turn the camera off before inserting or removing memory cards.

2 Open the card slot cover.

Slide the card slot cover out (①) and open the card slot (②).

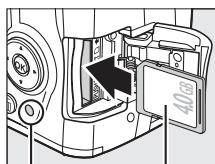


3 Insert the memory card.

Holding the memory card as shown at right, slide it in until it clicks into place. The memory card access lamp will light for a few seconds. Close the memory card slot cover.

Inserting Memory Cards

Inserting memory cards upside down or backwards could damage the camera or the card. Check to be sure the card is in the correct orientation.



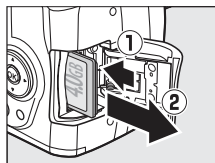
Front

Access lamp

If this is the first time the memory card will be used in the camera or the card has been formatted in another device, format the card as described on page 15.

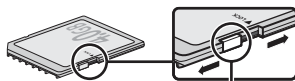
Removing Memory Cards

After confirming that the access lamp is off, turn the camera off, open the memory card slot cover, and press the card in to eject it (①). The card can then be removed by hand (②).



The Write Protect Switch

Memory cards are equipped with a write protect switch to prevent accidental loss of data. When this switch is in the “lock” position, the memory card can not be formatted and photos can not be deleted or recorded (a beep will sound if you attempt to release the shutter). To unlock the memory card, slide the switch to the “write” position.



Write-protect switch

Format the Memory Card

Memory cards must be formatted before first use or after being formatted in other devices. Format the card as described below.

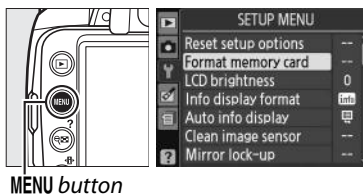
✓ Formatting Memory Cards

Formatting memory cards permanently deletes any data they may contain. Be sure to copy any photographs and other data you wish to keep to a computer before proceeding.

1 Turn the camera on.

2 Display format options.

Press the **MENU** button to display the menus. Highlight **Format memory card** in the setup menu and press **▶**. For more information on using the menus, see page 7.



3 Highlight Yes.

To exit without formatting the memory card, highlight **No** and press **OK**.



4 Press OK.

The message at right will be displayed while the card is formatted. *Do not remove the memory card or remove or disconnect the power source until formatting is complete.*



✓ Memory Cards

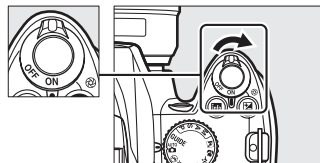
- Memory cards may be hot after use. Observe due caution when removing memory cards from the camera.
- Turn the power off before inserting or removing memory cards. Do not remove memory cards from the camera, turn the camera off, or remove or disconnect the power source during formatting or while data are being recorded, deleted, or copied to a computer. Failure to observe these precautions could result in loss of data or in damage to the camera or card.
- Do not touch the card terminals with your fingers or metal objects.
- Do not bend, drop, or subject to strong physical shocks.
- Do not apply force to the card casing. Failure to observe this precaution could damage the card.
- Do not expose to water, heat, high levels of humidity, or direct sunlight.

Adjust Viewfinder Focus

The camera is equipped with diopter adjustment to accommodate individual differences in vision. Check that the display in the viewfinder is in focus before framing pictures in the viewfinder.

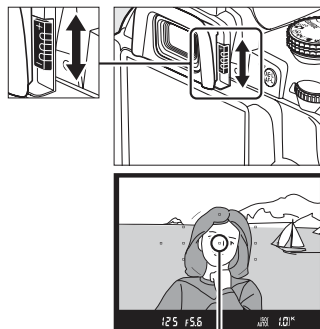
- 1 Remove the lens cap and turn the camera on.

Power switch



- 2 Focus the viewfinder.

Slide the diopter adjustment control up and down until the viewfinder display and focus point are in sharp focus. When operating the control with your eye to the viewfinder, be careful not to put your fingers or fingernails in your eye.



Focus point

Adjusting Viewfinder Focus

If you are unable to focus the viewfinder as described above, select single-servo autofocus (**AF-S**;  34), single-point AF ( 35), and the center focus point, and then frame a high-contrast subject in the center focus point and press the shutter-release button halfway to focus the camera. With the camera in focus, use the diopter adjustment control to bring the subject into clear focus in the viewfinder. If necessary, viewfinder focus can be further adjusted using optional corrective lenses.



Basic Photography and Playback

“Point-and-Shoot” Photography

(and Modes)

This section describes how to take photographs in  (auto) mode, an automatic “point-and-shoot” mode in which the majority of settings are controlled by the camera in response to shooting conditions, and in which the flash will fire automatically if the subject is poorly lit. To take photographs with the flash off while leaving the camera in control of other settings, rotate the mode dial to  to select auto (flash off) mode.

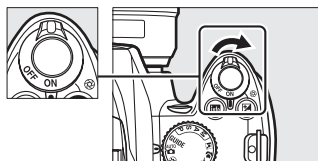


Step 1: Turn the Camera On

1 Turn the camera on.

Remove the lens cap and turn the camera on. The information display will appear in the monitor.

Power switch



2 Check the battery level.

Check the battery level in the information display or the viewfinder (if the monitor is off, press the  button to view the information display; if the monitor does not turn on, the battery is exhausted and must be recharged).



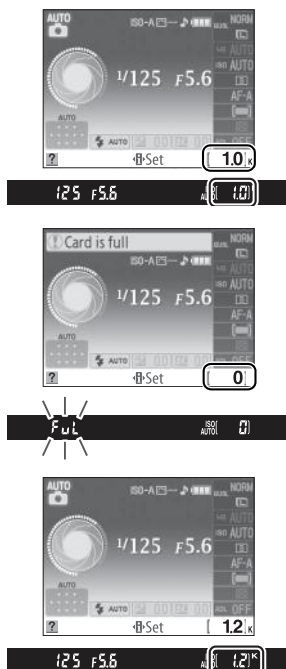
Information display	Viewfinder	Description
	—	Battery fully charged.
	—	Battery partially discharged.
		Low battery. Ready fully-charged spare battery or prepare to charge battery.
 (blinks)	 (blinks)	Battery exhausted; shutter release disabled. Charge or exchange battery.

3 Check the number of exposures remaining.

The information display and viewfinder show the number of photographs that can be stored on the memory card. Check the number of exposures remaining.

If there is not enough memory to store additional photographs at current settings, a warning will be displayed. No further pictures can be taken until the memory card has been replaced (14) or photographs have been deleted (25).

When enough memory remains on the memory card to record a thousand or more pictures at current settings, the number of exposures remaining will be shown in thousands, rounded down to the nearest hundred (e.g., if there is room for 1,260 exposures, the exposure count display will show 1.2 K).



Auto Meter Off

At default settings, the viewfinder and information display will turn off if no operations are performed for about eight seconds (auto meter off), reducing the drain on the battery. Press the shutter-release button halfway to reactivate the display (21).



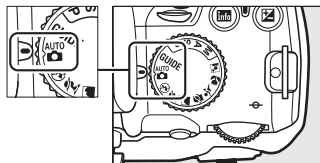
Image Sensor Cleaning

At default settings, the camera vibrates the low-pass filter covering the image sensor to remove dust when the camera is turned on or off.

Step 2: Select ^{AUTO} or Mode

To shoot where use of a flash is prohibited, photograph infants, or capture natural lighting under low light conditions, rotate the mode dial to . Otherwise, rotate the mode dial to ^{AUTO} .

Mode dial



 mode



^{AUTO} mode

Step 3: Frame the Photograph

1 Ready the camera.

When framing photographs in the viewfinder, hold the handgrip in your right hand and cradle the camera body or lens with your left. Keep your elbows propped lightly against your torso for support and place one foot half a pace ahead of the other to keep your upper body stable.

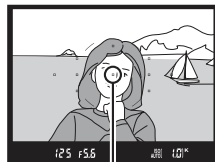
Hold the camera as shown at right when framing photographs in portrait (tall) orientation.

In  mode, shutter speeds slow when lighting is poor; use of a tripod is recommended.



2 Frame the photograph.

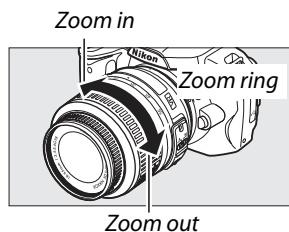
Frame a photograph in the viewfinder with the main subject in at least one of the 11 focus points.



Focus point

Using a Zoom Lens

Use the zoom ring to zoom in on the subject so that it fills a larger area of the frame, or zoom out to increase the area visible in the final photograph (select longer focal lengths on the lens focal length scale index to zoom in, shorter focal lengths to zoom out).



Step 4: Focus

1 Press the shutter-release button halfway.

Press the shutter-release button halfway to focus. The camera will select the focus points automatically. If the subject is poorly lit, the flash may pop up and the AF-assist illuminator may light.



2 Check the indicators in the viewfinder.

When the focus operation is complete, the selected focus points will be briefly highlighted, a beep will sound, and the in-focus indicator (●) will appear in the viewfinder.

In-focus indicator	Description
●	Subject in focus.
● (blinks)	Camera unable to focus using autofocus. See page 34.



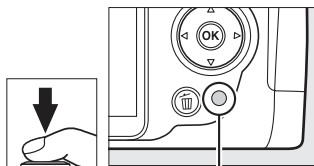
In-focus indicator

Buffer capacity

While the shutter-release button is pressed halfway, the number of exposures that can be stored in the memory buffer ("r"; 39) will be displayed in the viewfinder.

Step 5: Shoot

Smoothly press the shutter-release button the rest of the way down to release the shutter and record the photograph. The access lamp next to the memory card slot cover will light and the photograph will be displayed in the monitor for a few seconds (the photo will automatically clear from the display when the shutter-release button is pressed halfway). *Do not eject the memory card or remove or disconnect the power source until the lamp has gone out and recording is complete.*

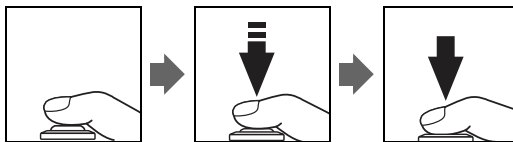


Access lamp



The Shutter-Release Button

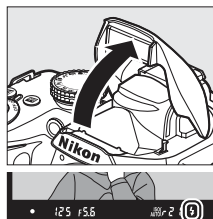
The camera has a two-stage shutter-release button. The camera focuses when the shutter-release button is pressed halfway. To take the photograph, press the shutter-release button the rest of the way down.



The Built-in Flash

If additional lighting is required for correct exposure in  mode, the built-in flash will pop up automatically when the shutter-release button is pressed halfway. If the flash is raised, photographs can only be taken when the flash-ready indicator () is displayed. If the flash-ready indicator is not displayed, the flash is charging; remove your finger briefly from the shutter-release button and try again.

To save battery power when the flash is not in use, return it to its closed position by pressing it gently downward till the latch clicks into place.



Using the Flash

For more information on using the flash, see page 42.

Creative Photography (Scene Modes)

The camera offers a choice of “scene” modes. Choosing a scene mode automatically optimizes settings to suit the selected scene, making creative photography as simple as selecting a mode, framing a picture, and shooting as described on pages 17–21.

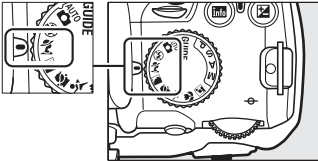


■ ■ The Mode Dial

The following scenes can be selected with the mode dial:

	Mode
	Portrait
	Landscape
	Child
	Sports
	Close up
	Night portrait

Mode dial



■ ■ Scene Modes

Portrait



Use for portraits with soft, natural-looking skin tones. If the subject is far from the background or a telephoto lens is used, background details will be softened to lend the composition a sense of depth.

Landscape



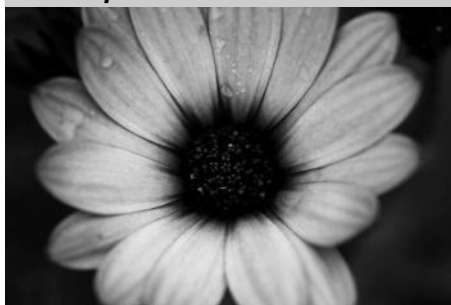
Use for vivid landscape shots in daylight. The built-in flash and AF-assist illuminator turn off; use of a tripod is recommended to prevent blur when lighting is poor.

Child



Use for snapshots of children. Clothing and background details are vividly rendered, while skin tones remain soft and natural.

Close Up



Use for close-up shots of flowers, insects, and other small objects (a macro lens can be used to focus at very close ranges). Use of a tripod is recommended to prevent blur.



Sports



Fast shutter speeds freeze motion for dynamic sports shots in which the main subject stands out clearly. The built-in flash and AF-assist illuminator turn off.

Night Portrait



Use for a natural balance between the main subject and the background in portraits taken under low light. Use of a tripod is recommended to prevent blur.

Basic Playback

At default settings, photographs are automatically displayed for about four seconds after shooting. If no photograph is displayed in the monitor, the most recent picture can be viewed by pressing the  button.

1 Press the button.

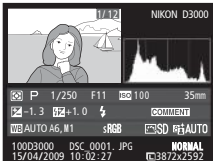
A photograph will be displayed in the monitor.



2 View additional pictures.

Additional pictures can be displayed by pressing  or  or rotating the command dial.

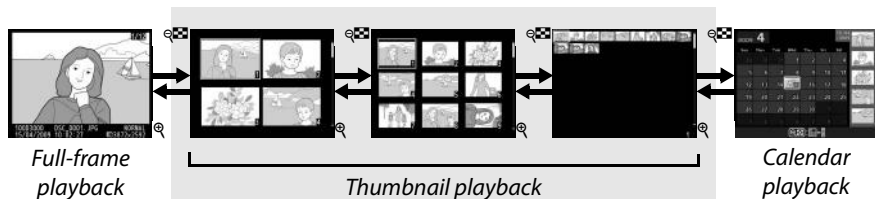
To view additional information on the current photograph, press  and .



To display images in “contact sheets” of four, nine, or 72 images (thumbnail playback), press the  button. Use the multi selector or command dial to highlight images and press  to display the highlighted image full frame. Press  to reduce the number of images displayed.



 button



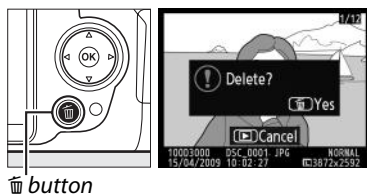
To view images taken on a selected date (calendar playback), press the  button when 72 images are displayed. Press the  button to toggle between the date list and the list of thumbnails for the selected date. Use the multi selector to highlight dates in the date list or to highlight pictures in the thumbnail list. Press  when the cursor is in the date list to return to 72-frame playback.

Thumbnail list



Date list

To delete the photograph currently displayed in full-frame playback or highlighted in thumbnail playback or the thumbnail list, press the  button. A confirmation dialog will be displayed; press the  button again to delete the image and return to playback (to exit without deleting the picture, press ).



 button

To end playback and return to shooting mode, press the shutter-release button halfway.





G Guide Mode

The Guide Menu

The guide menu gives access to a variety of frequently-used and useful functions. The top level of the guide menu is displayed when the mode dial is rotated to **GUIDE**.



Choose from the following menus:

Shoot	View/delete	Set up
Take pictures.	View and/or delete pictures.	Change camera settings.

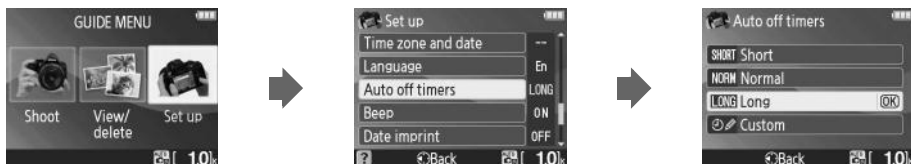
Battery indicator (17)

Shooting mode: A guide mode indicator appears on the shooting mode icon.

Number of exposures remaining (18)

✓ Guide Mode

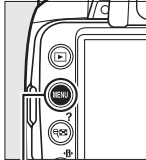
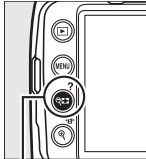
Guide mode is reset to **Easy operation > Auto** when the mode dial is rotated to another setting or the camera is turned off. If no other option is selected when the shutter-release button is pressed, the camera will take pictures in auto mode. If the monitor turns off, the top level menu can be displayed by pressing the **MENU** button. To increase the time the monitor remains on when no operations are performed, select **Set up > Auto off timers** in the guide menu.

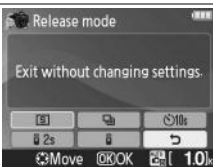


🔧 Displaying the Top Level of the Guide Menu

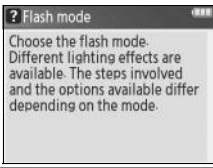
Press the **MENU** button at any time to return to the top level of the guide menu.

The following operations can be performed while the guide menu is displayed:

To	Use	Description
Highlight options		Press ▲ or ▼ to highlight options in the guide menu.
		Press ▲, ▼, ◀, or ▶ to highlight options in displays like that shown at right.
Select highlighted option		Press OK to select the highlighted option.
Return to previous display		Press ◀ to return to the previous display.
		To cancel and return to the previous display from displays like that shown at right, highlight ↵ and press OK.
Return to top level menu	 MENU button	Press MENU to return to the top level of the guide menu.
View help	 ? (help) button	If a ? icon is displayed at the bottom left corner of the monitor, help can be displayed by pressing the ? (help) button. A description of the currently selected option will be displayed while the button is pressed. Press ▲ or ▼ to scroll through the display.



? (help) icon



Shoot: *Taking Pictures in Guide Mode*

Select **Shoot** to take pictures using settings that suit the scene.



Highlight **Shoot** in the top level of the guide menu and press **OK** to display the following options:

Easy operation

Auto	Close-ups	Landscapes ^{1, 2}
No flash	Sleeping faces	Portraits
Distant subjects ^{1, 2}	Moving subjects ^{1, 2}	Night portrait

Advanced operation³

Soften backgrounds: Select aperture	Soften backgrounds Aperture 1/125 F 5.6 Choose lower f-numbers to blur the background. [?] [Set] [OK/Next] [10.0]
Freeze motion (people): Select a shutter speed	Freeze motion (people) Shutter speed 1/125 F 5.6 Choose fast shutter speeds to "freeze" motion. [f] [Set] [OK/Next] [10.0]
Freeze motion (vehicles): Select a shutter speed	

Timers & remote control

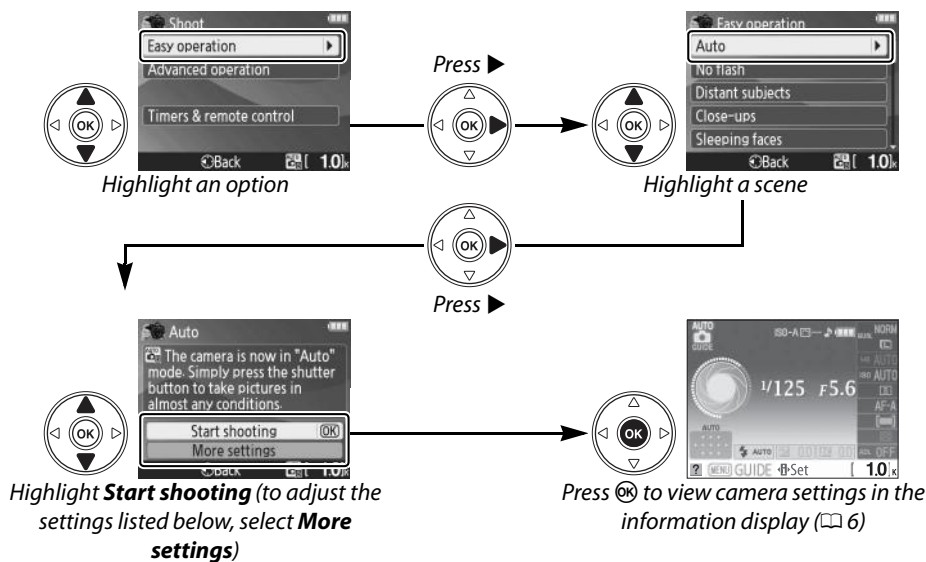
Single frame
Continuous
10s 10-second self-timer
2s Delayed remote
Quick-response remote

¹ Built-in flash turns off automatically. Optional flash units can still be used.

² AF-assist illuminator turns off automatically.

³ If the subject is poorly lit, you can raise ISO sensitivity as described on page 45 after selecting **Start shooting**.

To select a scene (**Easy operation** > **Auto** in this example):

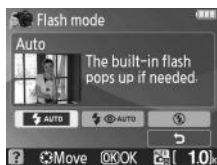


More Settings

G

Select **More settings** to adjust the following:

Flash mode ¹



Picture Control ²



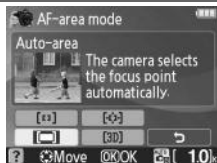
Release mode



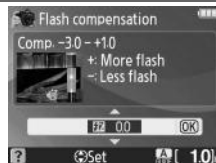
Exposure compensation ²



AF-area mode



Flash compensation ²



1 Modes available vary with shooting option selected in guide mode.

2 **Advanced operation** only.

Displaying the Top Level of the Guide Menu

Press the **MENU** button at any time to return to the top level of the guide menu.

View/Delete: *Viewing and Deleting Pictures in Guide Mode*

Select **View/delete** to view and delete pictures.



Highlight **View/delete** in the top level of the guide menu and press **OK** to display the following options:

View single photos

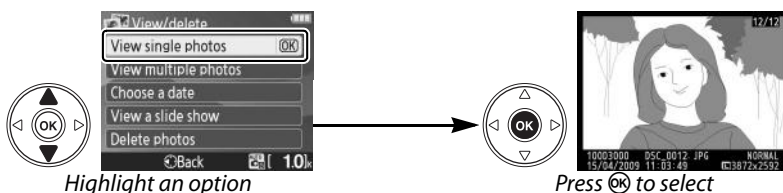
View multiple photos

Choose a date

View a slide show

Delete photos

To select an option (**View single photos** in this example):

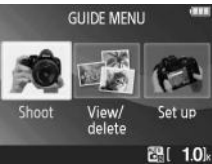


Displaying the Top Level of the Guide Menu

Press the **MENU** button at any time to return to the top level of the guide menu.

Set up: *Changing Camera Settings in Guide Mode*

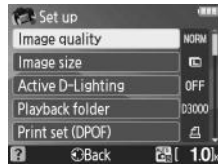
Select **Set up** to format memory cards or adjust camera settings.



Press MENU to display guide menu



Highlight **Set up**



Press OK to display options

Highlight **Set up** in the top level of the guide menu and press OK to display the following options:

Image quality
Image size
Active D-Lighting
Playback folder
Print set (DPOF)
Format memory card

LCD brightness
Info background color
Auto info display
Video mode
Time zone and date
Language

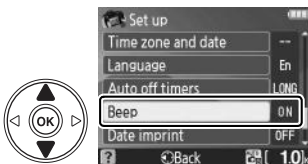
Auto off timers
Beep
Date imprint
No memory card?
Eye-Fi upload*

* Only available when compatible Eye-Fi memory card is inserted.

6

Changes to settings other than **Playback folder**, **Print set (DPOF)**, **Format memory card**, **Video mode**, **Time zone and date**, **Language**, **No memory card?**, and **Eye-Fi upload** only apply in guide mode and are not reflected in other shooting modes.

To select an option (**Beep > Off** in this example):



Highlight a setting



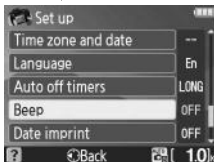
Press OK



Highlight an option



Press OK to select



Displaying the Top Level of the Guide Menu

Press the MENU button at any time to return to the top level of the guide menu.



More on Photography

For More Information

See the *Reference Manual* (available in pdf format on the supplied reference CD) for information on **P**, **S**, **A**, and **M** modes, playback, copying pictures to a computer, printing pictures, viewing pictures on TV, camera menus, troubleshooting, and optional flash units. For information on viewing the *Reference Manual*, see the inside front cover of this booklet.

Focus

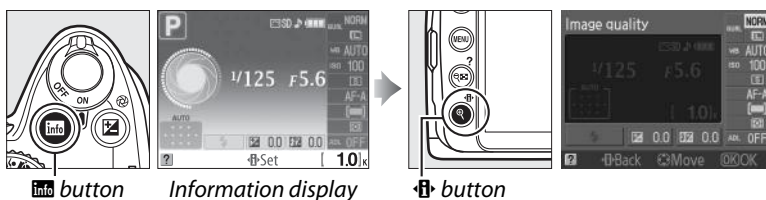
Focus can be adjusted automatically or manually (see “Focus Mode,” below). The user can also select the focus point for automatic or manual focus using the multi selector.

Focus Mode

Choose from automatic and manual focus modes.

1 Place the cursor in the information display.

If shooting information is not displayed in the monitor, press the **Info** button. Press the **Multi-selector** button to place the cursor in the information display.



2 Display focus-mode options.

Highlight the current focus mode in the information display and press **OK**.



3 Choose a focus mode.

Highlight one of the following options and press

OK. Note that **AF-S** and **AF-C** are available only in modes **P**, **S**, **A**, and **M**.



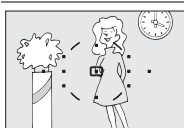
Option	Description
AF-A Auto-servo AF	Camera automatically selects single-servo autofocus if subject is stationary, continuous-servo autofocus if subject is moving.
AF-S Single-servo AF	For stationary subjects. Focus locks when shutter-release button is pressed halfway. Shutter can only be released if camera is able to focus.
AF-C Continuous-servo AF	For moving subjects. Camera focuses continuously while shutter-release button is pressed halfway. Shutter can only be released if camera is able to focus.
MF Manual focus	Focus using lens focus ring (if lens is equipped with A/M switch, slide switch to M before focusing).

✓ Continuous-servo Autofocus

In **AF-C** mode or when continuous-servo autofocus is selected in **AF-A** mode, the camera gives higher priority to focus response (has a wider focus range) than in **AF-S** mode, and the shutter may be released before the in-focus indicator is displayed.

✍ Getting Good Results with Autofocus

Autofocus does not perform well under the conditions listed below. The shutter release may be disabled if the camera is unable to focus under these conditions, or the in-focus indicator (●) may be displayed and the camera may sound a beep, allowing the shutter to be released even when the subject is not in focus. In these cases, focus manually or use focus lock to focus on another subject at the same distance and then recompose the photograph.



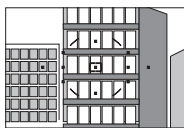
There is little or no contrast between the subject and the background.

Example: Subject is the same color as the background.



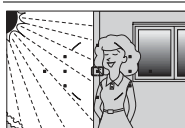
The focus point contains objects at different distances from the camera.

Example: Subject is inside a cage.



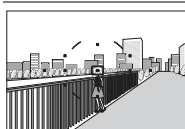
The subject is dominated by regular geometric patterns.

Example: A row of windows in a skyscraper.



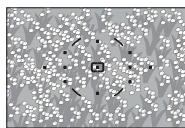
The focus point contains areas of sharply contrasting brightness.

Example: Subject is half in the shade.



Background objects appear larger than the subject.

Example: a building is in the frame behind the subject.



The subject contains many fine details.

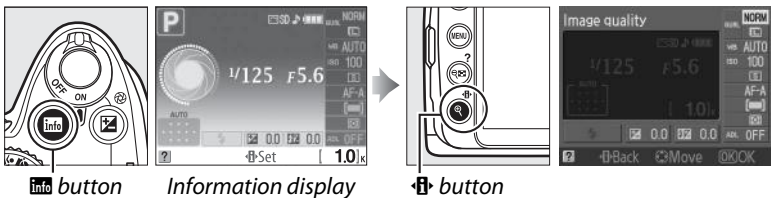
Example: A field of flowers or other subjects that are small or lack variation in brightness.

AF-Area Mode

Choose how the focus point for autofocus is selected.

1 Place the cursor in the information display.

If shooting information is not displayed in the monitor, press the **Info** button. Press the **Info** button to place the cursor in the information display.



2 Display AF-area mode options.

Highlight the current AF-area mode in the information display and press **OK**.



3 Choose an AF-area mode.

Highlight one of the following options and press **OK**. **[3D] 3D-tracking (11 points)** is not available when **AF-S** is selected for focus mode.



Option	Description
[+/-] Single point	User selects focus point using multi selector; camera focuses on subject in selected focus point only. Use with stationary subjects.
[+/-] Dynamic area	In AF-A and AF-C focus modes , user selects focus point using multi selector, but camera will focus based on information from surrounding focus points if subject briefly leaves selected point. Use with erratically moving subjects. In AF-S focus mode , camera focuses only on subject in focus point selected by user.
[] Auto-area	Camera automatically detects subject and selects focus point.
[3D] 3D-tracking (11 points)	In AF-A and AF-C focus modes , user selects focus point using multi selector. If subject moves after camera has focused, camera uses 3D-tracking to select new focus point and keep focus locked on original subject while shutter-release button is pressed halfway. If subject leaves viewfinder, remove your finger from shutter-release button and recompose photograph with subject in selected focus point. Note that 3D-tracking may not produce the desired results with subjects that are the same color as the background.



Image Quality and Size

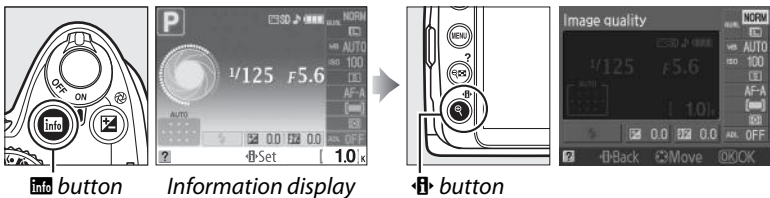
Together, image quality and size determine how much space each photograph occupies on the memory card. Larger, higher quality images can be printed at larger sizes but also require more memory, meaning that fewer such images can be stored on the memory card.

Image Quality

Choose a file format and compression ratio (image quality).

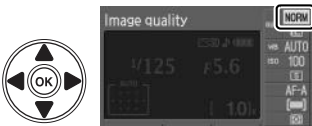
1 Place the cursor in the information display.

If shooting information is not displayed in the monitor, press the **info** button. Press the **right arrow** button to place the cursor in the information display.



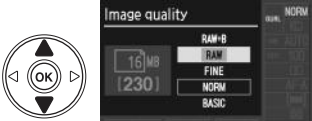
2 Display image quality options.

Highlight the current image quality in the information display and press **OK**.



3 Choose a file type.

Highlight one of the following options and press **OK**.



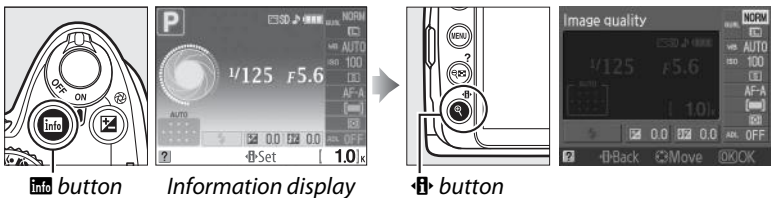
Option	File type	Description
NEF (RAW)	NEF	Raw 12-bit data from the image sensor are saved directly to the memory card. Choose for images that will be processed on a computer.
JPEG fine	JPEG	Record JPEG images at a compression ratio of roughly 1 : 4 (fine image quality).
JPEG normal		Record JPEG images at a compression ratio of roughly 1 : 8 (normal image quality).
JPEG basic		Record JPEG images at a compression ratio of roughly 1 : 16 (basic image quality).
NEF (RAW) + JPEG basic	NEF/ JPEG	Two images are recorded: one NEF (RAW) image and one basic-quality JPEG image.

Image Size

Image size is measured in pixels.

1 Place the cursor in the information display.

If shooting information is not displayed in the monitor, press the **Info** button. Press the **Info** button to place the cursor in the information display.



2 Display image size options.

Highlight the current image size in the information display and press **OK**.



3 Choose an image size.

Highlight one of the following options and press **OK**.



Image size	Size (pixels)	Approximate size when printed at 200 dpi
Large	3,872 × 2,592	49.2 × 32.9 cm (19.4 × 13.0 in.)
Medium	2,896 × 1,944	36.8 × 24.7 cm (14.5 × 9.7 in.)
Small	1,936 × 1,296	24.6 × 16.5 cm (9.7 × 6.5 in.)

File Names

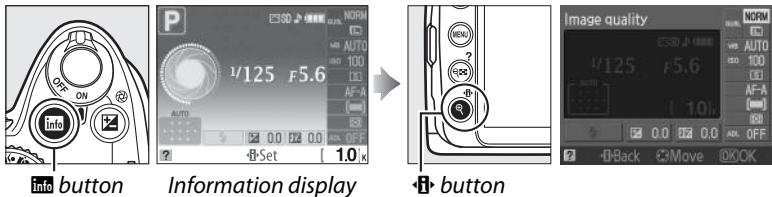
Photographs are stored as image files with names consisting of a three-letter identifier ("DSC" for photos, "SSC" for copies created with the small picture option in the retouch menu, "ASC" for stop-motion movies, and "CSC" for copies created with other retouch options) followed by "_nnnn.xxx," where nnnn is a four-digit number between 0001 and 9999 assigned automatically in ascending order by the camera, and xxx is one of the following three letter extensions: "NEF" for NEF images, "JPG" for JPEG images, or "AVI" for stop-motion movies. The NEF and JPEG files recorded at a setting of **NEF (RAW) + JPEG basic** have the same file names but different extensions.

Release Mode

Release mode determines how the camera takes photographs: one at a time, in a continuous sequence, or with a timed shutter-release delay or remote control.

1 Place the cursor in the information display.

If shooting information is not displayed in the monitor, press the **Info** button. Press the **Right Arrow** button to place the cursor in the information display.



2 Display release mode options.

Highlight the current release mode in the information display and press **OK**.



3 Choose a release mode.

Highlight one of the following options and press **OK**.



Mode	Description
Single frame	Camera takes one photograph each time shutter-release button is pressed.
Continuous	Camera records about 3 frames per second while shutter-release button is held down.
Self-timer	Use for self-portraits or to reduce blurring caused by camera shake (□ 39).
2s Delayed remote	Optional ML-L3 wireless remote control required. Shutter is released after two-second delay (□ 39).
Quick-response remote	Optional ML-L3 wireless remote control required. Shutter is released immediately (□ 39).

The Memory Buffer

The camera is equipped with a memory buffer for temporary storage, allowing shooting to continue while photographs are being saved to the memory card. Up to 100 photographs can be taken in succession; note, however, that frame rate will drop when the buffer is full.

While photographs are being recorded to the memory card, the access lamp next to the memory card slot will light. Depending on the number of the images in the buffer, recording may take from a few seconds to a few minutes. *Do not remove the memory card or remove or disconnect the power source until the access lamp has gone out.* If the camera is switched off while data remain in the buffer, the power will not turn off until all images in the buffer have been recorded. If the battery is exhausted while images remain in the buffer, the shutter release will be disabled and the images transferred to the memory card.

Continuous Release Mode

Continuous release mode () can not be used with the built-in flash; rotate the mode dial to  (□ 19) or turn the flash off (□ 42–44).

Buffer Size

The approximate number of images that can be stored in the memory buffer at current settings is shown in the viewfinder exposure-count display while the shutter-release button is pressed. The illustration shows the display when space remains in the buffer for about 21 pictures.



Self-Timer and Remote Modes

The self-timer and optional ML-L3 wireless remote control can be used to reduce camera shake or for self-portraits.

1 Mount the camera on a tripod.

Mount the camera on a tripod or place the camera on a stable, level surface.

2 Select a release mode (38).

Select self-timer () , delayed remote ( 2s), or quick-response remote mode ().



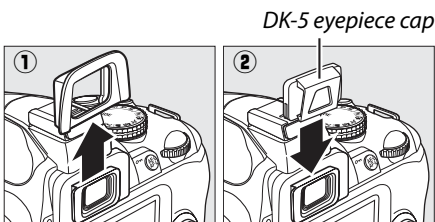
3 Frame the photograph.

Using a Remote Control

If autofocus is in effect in delayed remote or quick-response remote mode, the camera can be focused by pressing the shutter-release button halfway (the shutter will not be released if the shutter-release button is pressed all the way down).

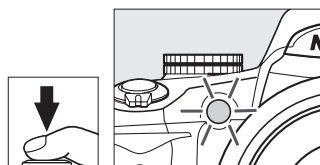
Cover the Viewfinder

After framing the photograph, remove the DK-20 rubber eyecup (①) and insert the supplied DK-5 eyepiece cap as shown (②). This prevents light entering via the viewfinder interfering with exposure. Hold the camera firmly when removing the rubber eyecup.



4 Take the photograph.

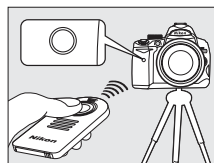
Self-timer mode: Press the shutter-release button halfway to focus, and then press the button the rest of the way down to start the self-timer. The self-timer lamp will start to blink and a beep will begin to sound. Two seconds before the photograph is taken, the self-timer lamp will stop blinking and the beeping will become more rapid. The shutter will be released ten seconds after the timer starts.



The timer will not start if the camera is unable to focus or in other situations in which the shutter can not be released.

Delayed remote and quick-response remote

modes: From a distance of 5 m (16 ft.) or less, aim the transmitter on the ML-L3 at the infrared receiver on the camera and press the shutter-release button on the ML-L3. In delayed remote mode, the self-timer lamp will light for about two seconds before the shutter is released. In quick-response remote mode, the self-timer lamp will flash after the shutter has been released. No picture will be taken if the camera is unable to focus or in other situations in which the shutter can not be released.



If no operations are performed for about five minutes after selecting delayed remote or quick-response remote modes, the camera will automatically return to single frame or continuous mode, cancelling remote control mode.

Turning the camera off cancels self-timer and remote release modes and restores single frame or continuous mode.

✔ Before Using the Remote Control

Before using the remote control for the first time, remove the clear plastic battery insulator sheet.

✔ Using the Built-in Flash

Before taking a photograph with the flash in **P**, **S**, **A**, or **M** modes, press the  button to raise the flash and wait for the  indicator to be displayed in the viewfinder (▢ 42). Shooting will be interrupted if the flash is raised after the self-timer or delayed remote timer has started. In auto or scene modes in which the flash pops up automatically, the flash will begin charging when delayed remote or quick-response remote mode is selected; once the flash is charged, it will automatically pop up and fire if required when the shutter-release button on the ML-L3 is pressed. The camera will only respond to the shutter-release button on the ML-L3 once the flash has charged.



Using the Built-in Flash

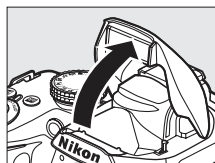
The camera supports a variety of flash modes for photographing poorly lit or backlit subjects.

■ ■ Using the Built-in Flash: ^{AUTO}, , , , and Modes

1 Choose a flash mode (📖 43).

2 Take pictures.

The flash will pop up as required when the shutter-release button is pressed halfway, and fire when a photograph is taken.



■ ■ Using the Built-in Flash: P, S, A, and M Modes

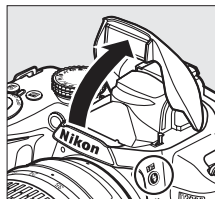
1 Raise the flash.

Press the  button to raise the flash.

2 Choose a flash mode (📖 43).

3 Take pictures.

The flash will fire whenever a picture is taken.



 button

■ ■ Lowering the Built-in Flash

To save power when the flash is not in use, press it gently downward until the latch clicks into place.

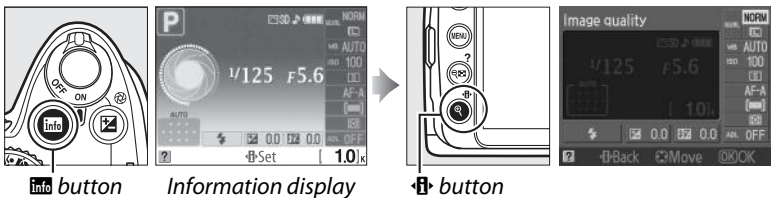


Flash Mode

To choose a flash mode:

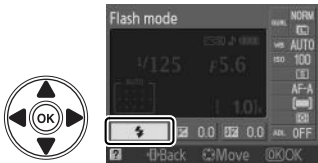
1 Place the cursor in the information display.

If shooting information is not displayed in the monitor, press the **Info** button. Press the **Info** button to place the cursor in the information display.



2 Display flash mode options.

Highlight the current flash mode in the information display and press **OK**.



3 Choose a flash mode.

Highlight a mode and press **OK**. The flash modes available vary with shooting mode:



AUTO,  ,  ,  , 	
 AUTO	Auto
 AUTO	Auto + red-eye reduction
 Off	Off

	
 AUTO SLOW	Auto + slow sync + red-eye reduction
 AUTO SLOW	Auto + slow sync
 Off	Off

P, A	
 Fill flash	Fill flash
 Red-eye reduction	Red-eye reduction
 SLOW	Slow sync + red-eye reduction
 SLOW	Slow sync
 REAR *	Rear curtain + slow sync

S, M	
 Fill flash	Fill flash
 Red-eye reduction	Red-eye reduction
 REAR	Rear-curtain sync

* **SLOW** appears in information display when setting is complete.

The flash modes listed on the previous page may combine one or more of the following settings, as shown by the flash mode icon:

- **AUTO (auto flash):** When lighting is poor or subject is back lit, flash pops up automatically when shutter-release button is pressed halfway and fires as required.
- **👁 (red-eye reduction):** Use for portraits. Red-eye reduction lamp lights before flash fires, reducing “red-eye.”
- **🔇 (off):** Flash does not fire even when lighting is poor or subject is back-lit.
- **SLOW (slow sync):** Shutter speed slows automatically to capture background lighting at night or under low light. Use to include background lighting in portraits.
- **REAR (rear-curtain sync):** Flash fires just before shutter closes, creating a stream of light behind moving light sources (below at right). If this icon is not displayed, flash will fire as the shutter opens (front-curtain sync; the effect this produces with moving light sources is shown below at left).



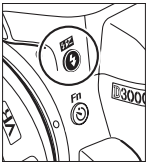
Front-curtain sync



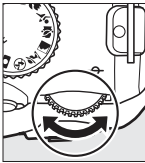
Rear-curtain sync

🔧 Choosing a Flash Mode

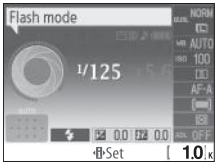
The flash mode can also be selected by pressing the **⚡** button and rotating the command dial (in **P**, **S**, **A**, and **M** modes, raise the flash before using the **⚡** button to choose the flash mode).



⚡ button



Command dial



Information display

🔧 The Built-in Flash

Remove lens hoods to prevent shadows. The flash has a minimum range of 0.6 m (2 ft.) and can not be used in the macro range of macro zoom lenses.

The shutter release may be briefly disabled to protect the flash after it has been used for several consecutive shots. The flash can be used again after a short pause.

🔧 Shutter Speeds Available with the Built-in Flash

The following shutter speeds are available with the built-in flash.

Mode	Shutter speed
AUTO, , , , P , A	$\frac{1}{200}$ – $\frac{1}{60}$ s
	$\frac{1}{200}$ – $\frac{1}{125}$ s
	$\frac{1}{200}$ –1 s

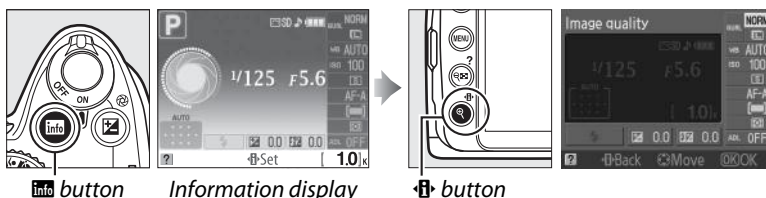
Mode	Shutter speed
S	$\frac{1}{200}$ –30 s
M	$\frac{1}{200}$ –30 s, bulb

ISO Sensitivity

“ISO sensitivity” is the digital equivalent of film speed. The higher the ISO sensitivity, the less light needed to make an exposure, allowing higher shutter speeds or smaller apertures.

1 Place the cursor in the information display.

If shooting information is not displayed in the monitor, press the **Info** button. Press the **Set** button to place the cursor in the information display.



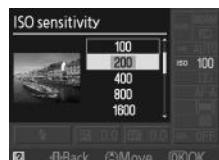
2 Display ISO sensitivity options.

Highlight the current ISO sensitivity in the information display and press **OK**.



3 Choose an ISO sensitivity.

Highlight an option and press **OK**. ISO sensitivity can be set between values roughly equivalent to ISO 100 and ISO 1600 in steps equivalent to 1 EV. For special situations, ISO sensitivity can be raised above ISO 1600 by about 1 EV (Hi 1, equivalent to ISO 3200). Auto and scene modes also offer an **AUTO** option, which allows the camera to set ISO sensitivity automatically in response to lighting conditions.



Hi 1

Pictures taken at this setting are more likely to be subject to noise and color distortion.

Active D-Lighting

If **On** is selected, the camera automatically adjusts Active D-Lighting during shooting to preserve details in highlights and shadows, creating photographs with natural contrast. Use for high contrast scenes, for example when photographing brightly lit outdoor scenery through a door or window or taking pictures of shaded subjects on a sunny day. It is most effective when used with  **Matrix** metering.



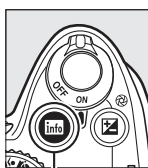
Active D-Lighting: **OFF Off**



Active D-Lighting: **ON On**

1 Place the cursor in the information display.

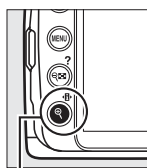
If shooting information is not displayed in the monitor, press the  button. Press the  button to place the cursor in the information display.



 button



Information display



 button



2 Display Active D-Lighting options.

Highlight Active D-Lighting in the information display and press .



3 Choose an option.

Highlight **ON On** or **OFF Off** and press .



Active D-Lighting

Noise (graininess, banding, and mottling) may appear in photographs taken with Active D-Lighting at high ISO sensitivities. More time is required to record images when Active D-Lighting is on.



Technical Notes

Compatible CPU Lenses

Autofocus is available with AF-S and AF-I CPU lenses only; autofocus is not supported with other autofocus (AF) lenses. IX NIKKOR lenses can not be used. The features available with compatible CPU lenses are listed below. For information on compatible non-CPU lenses and lenses that can be used with the flash and AF-assist illuminator, see the *Reference Manual* (on CD).

Lens/accessory	Camera setting	Focus		Mode		Metering		
	AF	MF (with electronic rangefinder)	MF	Auto and scene modes; P, S, A	M	3D	Color	Spot
AF-S, AF-I NIKKOR ¹	✓	✓	✓	✓	✓	✓	—	✓ ²
Other type G or D AF NIKKOR ¹	—	✓	✓	✓	✓	✓	—	✓ ²
PC-E NIKKOR series	—	✓ ³	✓	✓ ³	✓ ³	✓ ³	—	✓ ^{2,3}
PC Micro 85mm f/2.8D ⁴	—	✓ ³	✓	—	✓	✓	—	✓ ^{2,3}
AF-S/AF-I teleconverter ⁵	✓ ⁶	✓ ⁶	✓	✓	✓	✓	—	✓ ²
Other AF NIKKOR (except lenses for F3AF)	—	✓ ⁷	✓	✓	✓	—	✓	✓ ²
AI-P NIKKOR	—	✓ ⁸	✓	✓	✓	—	✓	✓ ²

1 Use AF-S or AF-I lenses to get the most from your camera. Vibration Reduction (VR) supported with VR lenses.

2 Spot metering meters selected focus point.

3 Can not be used with shifting or tilting.

4 The camera's exposure metering and flash control systems may not function as expected when the lens is shifted and/or tilted or an aperture other than the maximum aperture is used.

5 AF-S or AF-I lens required.

6 With maximum effective aperture of f/5.6 or faster.

7 When AF 80–200mm f/2.8, AF 35–70mm f/2.8, AF 28–85mm f/3.5–4.5 (New), or AF 28–85mm f/3.5–4.5 lenses are zoomed all the way in at the minimum focus distance, the in-focus indicator may be displayed when the image on the matte screen in the viewfinder is not in focus. Focus manually until image in viewfinder is in focus.

8 With maximum aperture of f/5.6 or faster.

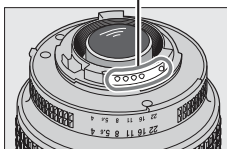
Identifying AF-S and AF-I Lenses

AF-S lenses have names beginning with AF-S, AF-I lenses names beginning with AF-I.

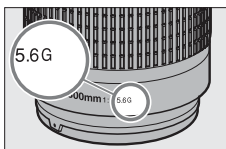
Identifying CPU and Type G and D Lenses

CPU lenses can be identified by the presence of CPU contacts, type G and D lenses by a letter on the lens barrel. Type G lenses are not equipped with a lens aperture ring.

CPU contacts

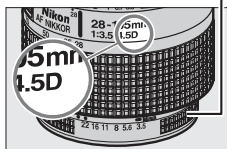


CPU lens



Type G lens

Aperture ring



Type D lens

Lens f-number

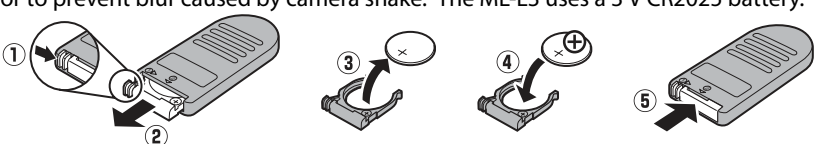
The f-number given in lens names is the maximum aperture of the lens.

Other Accessories

At the time of writing, the following accessories were available for the D3000.

Power sources	• Rechargeable Li-ion Battery EN-EL9a (☞ 10): Additional EN-EL9a batteries are available from local retailers and Nikon service representatives. The EN-EL9a can be recharged using an MH-23 quick charger. EN-EL9 batteries can also be used. • Quick Charger MH-23 (☞ 10): The MH-23 can be used to recharge EN-EL9a and EN-EL9 batteries. • Power Connector EP-5, AC Adapter EH-5a: These accessories can be used to power the camera for extended periods (EH-5 AC adapters can also be used). The EP-5 is required to connect the camera to the EH-5a or EH-5.
Video cable	Video Cable EG-D100 : Use the EG-D100 to connect the camera to a TV.
Filters	• Nikon filters can be divided into three types: screw-on, slip-in, and rear-interchange. Use Nikon filters; filters manufactured by other makers may interfere with autofocus or the electronic rangefinder. • The D3000 can not be used with linear polarizing filters. Use the C-PL circular polarizing filter instead. • The NC and L37C filters are recommended for protecting the lens. • To prevent ghosting, use of a filter is not recommended when the subject is framed against a bright light, or when a bright light source is in the frame. • Center-weighted metering is recommended with filters with exposure factors (filter factors) over $1 \times$ (Y44, Y48, Y52, O56, R60, X0, X1, C-PL, ND2S, ND4, ND4S, ND8, ND8S, ND400, A2, A12, B2, B8, B12). See the filter manual for details.
Viewfinder eyepiece accessories	• DK-20C Eyepiece Correction Lenses: Lenses are available with diopters of -5, -4, -3, -2, 0, $+0.5$, $+1$, $+2$, and $+3 \text{ m}^{-1}$ when the camera diopter adjustment control is in the neutral position (-1 m^{-1}). Use eyepiece correction lenses only if the desired focus can not be achieved with the built in diopter adjustment control (-1.7 to $+0.5 \text{ m}^{-1}$). Test eyepiece correction lenses before purchase to ensure that the desired focus can be achieved. The rubber eyecup can not be used with eyepiece correction lenses. • Magnifier DG-2: The DG-2 magnifies the scene displayed in the center of the viewfinder. Use for close-up photography, copying, telephoto lenses, and other tasks that require added precision. Eyepiece adapter required (available separately). • Eyepiece Adapter DK-22: The DK-22 is used when attaching the DG-2 magnifier. • Right-Angle Viewing Attachment DR-6: The DR-6 attaches at a right angle to the viewfinder eyepiece, allowing the image in the viewfinder to be viewed at right angles to the lens (for example, from directly above when the camera is horizontal).



Optional flash units	• Nikon Speedlights SB-900, SB-800, SB-600, and SB-400 • Nikon Wireless Remote Speedlight SB-R200 • Wireless Speedlight Commander SU-800
Software	Capture NX 2: A complete photo editing package. Note: Use the latest versions of Nikon software. Most Nikon software offers an auto update feature when the computer is connected to the Internet. See the websites listed on the inside front cover of this booklet for the latest information on supported operating systems.
Body cap	BF-1B and BF-1A Body Caps: The body cap keeps the mirror, viewfinder screen, and low-pass filter free of dust when a lens is not in place.
Remote controls	Wireless Remote Control ML-L3 (☞ 39): Use as a remote shutter release for self-portraits or to prevent blur caused by camera shake. The ML-L3 uses a 3 V CR2025 battery.  Pressing the battery-chamber latch to the right (①), insert a fingernail into the gap and open the battery chamber (②). Ensure that the battery is inserted in the correct orientation (④).



Caring for the Camera

Storage

When the camera will not be used for an extended period, remove the battery and store it in a cool, dry area with the terminal cover in place. To prevent mold or mildew, store the camera in a dry, well-ventilated area. Do not store your camera with naphtha or camphor moth balls or in locations that:

- are poorly ventilated or subject to humidities of over 60%
- are next to equipment that produces strong electromagnetic fields, such as televisions or radios
- are exposed to temperatures above 50 °C (122 °F) or below –10 °C (14 °F)

Cleaning

Camera body	Use a blower to remove dust and lint, then wipe gently with a soft, dry cloth. After using the camera at the beach or seaside, wipe off sand or salt with a cloth lightly dampened in distilled water and dry thoroughly. Important: <i>Dust or other foreign matter inside the camera may cause damage not covered under warranty.</i>
Lens, mirror, and viewfinder	These glass elements are easily damaged. Remove dust and lint with a blower. If using an aerosol blower, keep the can vertical to prevent the discharge of liquid. To remove fingerprints and other stains, apply a small amount of lens cleaner to a soft cloth and clean with care.
Monitor	Remove dust and lint with a blower. When removing fingerprints and other stains, wipe the surface lightly with a soft cloth or chamois leather. Do not apply pressure, as this could result in damage or malfunction.

Do not use alcohol, thinner, or other volatile chemicals.

Servicing the Camera and Accessories

The camera is a precision device and requires regular servicing. Nikon recommends that the camera be inspected by the original retailer or Nikon service representative once every one to two years, and that it be serviced once every three to five years (note that fees apply to these services). Frequent inspection and servicing are particularly recommended if the camera is used professionally. Any accessories regularly used with the camera, such as lenses or optional Speedlights, should be included when the camera is inspected or serviced.



Caring for the Camera and Battery: Cautions

- Do not drop:** The product may malfunction if subjected to strong shocks or vibration.
- Keep dry:** This product is not waterproof, and may malfunction if immersed in water or exposed to high levels of humidity. Rusting of the internal mechanism can cause irreparable damage.

Avoid sudden changes in temperature: Sudden changes in temperature, such as those that occur when entering or leaving a heated building on a cold day, can cause condensation inside the device. To prevent condensation, place the device in a carrying case or plastic bag before exposing it to sudden changes in temperature.

Keep away from strong magnetic fields: Do not use or store this device in the vicinity of equipment that generates strong electromagnetic radiation or magnetic fields. Strong static charges or the magnetic fields produced by equipment such as radio transmitters could interfere with the monitor, damage data stored on the memory card, or affect the product's internal circuitry.

Do not leave the lens pointed at the sun: Do not leave the lens pointed at the sun or other strong light source for an extended period. Intense light may cause the image sensor to deteriorate or produce a white blur effect in photographs.

Turn the product off before removing or disconnecting the power source: Do not unplug the product or remove the battery while the product is on or while images are being recorded or deleted. Forcibly cutting power in these circumstances could result in loss of data or in damage to product memory or internal circuitry. To prevent an accidental interruption of power, avoid carrying the product from one location to another while the AC adapter is connected.

Cleaning: When cleaning the camera body, use a blower to gently remove dust and lint, then wipe gently with a soft, dry cloth. After using the camera at the beach or seaside, wipe off any sand or salt using a cloth lightly dampened in pure water and then dry the camera thoroughly.

The lens and mirror are easily damaged. Dust and lint should be gently removed with a blower. When using an aerosol blower, keep the can vertical to prevent discharge of liquid. To remove fingerprints and other stains from the lens, apply a small amount of lens cleaner to a soft cloth and wipe the lens carefully.

See the *Reference Manual* (on CD) for information on cleaning the low-pass filter.

Lens contacts: Keep the lens contacts clean.

Do not touch the shutter curtain: The shutter curtain is extremely thin and easily damaged. Under no circumstances should you exert pressure on the curtain, poke it with cleaning tools, or subject it to powerful air currents from a blower. These actions could scratch, deform, or tear the curtain.

Storage: To prevent mold or mildew, store the camera in a dry, well-ventilated area. If you are using an AC adapter, unplug the adapter to prevent fire. If the product will not be used for an extended period, remove the battery to prevent leakage and store the camera in a plastic bag containing a desiccant. Do not, however, store the camera case in a plastic bag, as this may cause the material to deteriorate. Note that desiccant gradually loses its capacity to absorb moisture and should be replaced at regular intervals.

To prevent mold or mildew, take the camera out of storage at least once a month. Turn the camera on and release the shutter a few times before putting it away.

Store the battery in a cool, dry place. Replace the terminal cover before putting the battery away.



Notes on the monitor: The monitor may contain a few pixels that are always lit or that do not light. This is common to all TFT LCD monitors and does not indicate a malfunction. Images recorded with the product are unaffected.

Images in the monitor may be difficult to see in a bright light.

Do not apply pressure to the monitor, as this could cause damage or malfunction. Dust or lint on the monitor can be removed with a blower. Stains can be removed by wiping lightly with a soft cloth or chamois leather. Should the monitor break, care should be taken to avoid injury from broken glass and to prevent liquid crystal from the monitor touching the skin or entering the eyes and mouth.

Moiré: Moiré is an interference pattern created by the interaction of an image containing a regular, repeating grid, such as the pattern of weave in cloth or windows in a building, with the camera image sensor grid. If you notice moiré in your photographs, try changing the distance to the subject, zooming in and out, or changing the angle between the subject and the camera.

Batteries: Dirt on the battery terminals can prevent the camera from functioning and should be removed with a soft, dry cloth before use.

Batteries may leak or explode if improperly handled. Observe the following precautions when handling batteries:

Turn the product off before replacing the battery.

The battery may become hot when used for extended periods. Observe due caution when handling the battery.

Use only batteries approved for use in this equipment.

Do not expose the battery to flame or excessive heat.

After removing the battery from the camera, be sure to replace the terminal cover.

Charge the battery before use. When taking photographs on important occasions, ready a spare EN-EL9a battery and keep it fully charged. Depending on your location, it may be difficult to purchase replacement batteries on short notice.

On cold days, the capacity of batteries tends to decrease. Be sure the battery is fully charged before taking photographs outside in cold weather. Keep a spare battery in a warm place and exchange the two as necessary. Once warmed, a cold battery may recover some of its charge.

Continuing to charge the battery after it is fully charged can impair battery performance.

Used batteries are a valuable resource. Please recycle used batteries in accord with local regulations.



Error Messages

This section lists the indicators and error messages that appear in the viewfinder and monitor.

 **Warning Icons**
A flashing  in the monitor or  in the viewfinder indicates that a warning or error message can be displayed in the monitor by pressing the  (ⓘ) button.

Indicator		Solution
Monitor	Viewfinder	
Lock lens aperture ring at minimum aperture (largest f/-number).	 (blinks)	Set lens aperture ring to minimum aperture (largest f-number).
Lens not attached.	 (blinks)	• Attach non-IX NIKKOR lens. • If non-CPU lens is attached, select mode M.
Shutter release disabled. Recharge battery.	 (blinks)	Turn camera off and recharge or replace battery.
This battery can not be used. Choose battery designated for use in this camera.		Use Nikon-approved battery (EN-EL9a).
Initialization error. Turn camera off and then on again.		Turn camera off, remove and replace battery, and then turn camera on again.
Battery level is low. Complete operation and turn camera off immediately.	—	End cleaning and turn camera off and recharge or replace battery.
Clock not set.	—	Set camera clock.
No memory card.	 (- ⓘ -)	Turn camera off and confirm that card is correctly inserted.
Memory card is locked. Slide lock to “write” position.	 (blinks)	Memory card is locked (write protected). Slide card write-protect switch to “write” position.
This memory card cannot be used. Card may be damaged. Insert another card.	 (blinks)	• Use approved card. • Format card. If problem persists, card may be damaged. Contact Nikon-authorized service representative. • Error creating new folder. Delete files or insert new memory card. • Insert new memory card. • Eye-Fi card is still emitting wireless signal after Disable has been selected for Eye-Fi upload. To terminate wireless transmission, turn the camera off and remove the card.



Indicator		Solution
Monitor	Viewfinder	
This card is not formatted. Format card?	(F a r) (blinks)	Format card or turn camera off and insert new memory card.
Card is full	F u l (blinks)	• Reduce quality or size. • Delete photographs. • Insert new memory card.
—	● (blinks)	Camera can not focus using autofocus. Change composition or focus manually.
Subject is too bright.	H i	• Use a lower ISO sensitivity • Use commercial ND filter • In mode: S Increase shutter speed A Choose a smaller aperture (larger f-number)
Subject is too dark.	L o	• Use a higher ISO sensitivity • Use flash • In mode: S Lower shutter speed A Choose a larger aperture (smaller f-number)
No Bulb in S mode.	b u l b (blinks)	Change shutter speed or select manual exposure mode.
	— (blinks)	
—	⚡ (blinks)	Flash has fired at full power. Check photo in monitor; if underexposed, adjust settings and try again.
Flash is in TTL mode. Choose another setting or use a CPU lens.		Change flash mode setting on optional flash unit or use CPU lens.
—	⚡/? (blinks)	• Use the flash. • Change distance to subject, aperture, flash range, or ISO sensitivity. • Optional SB-400 flash unit attached: flash is in bounce position or focus distance is very short. Continue shooting; if necessary, increase focus distance to prevent shadows from appearing in photograph.
Flash error		Error occurred updating firmware for optional flash unit. Contact Nikon-authorized service representative.
Error. Press shutter release button again.	E r r (blinks)	Release shutter. If error persists or appears frequently, consult Nikon-authorized service representative.
Start-up error. Contact a Nikon-authorized service representative.		Consult Nikon-authorized service representative.
Autoexposure error. Contact a Nikon-authorized service representative.		

Indicator		Solution
Monitor	Viewfinder	
Folder contains no images.	—	Folder selected for playback contains no images. Insert another memory card or select a different folder.
File does not contain image data.	—	File has been created or modified using a computer or different make of camera, or file is corrupt.
Cannot select this file.		
No image for retouching.	—	Memory card does not contain NEF (RAW) images for use with NEF (RAW) processing .
Check printer.	—	Check printer. To resume, select Continue (if available).
Check paper.	—	Paper is not selected size. Insert paper of correct size and select Continue .
Paper jam.	—	Clear jam and select Continue .
Out of paper.	—	Insert paper of selected size and select Continue .
Check ink supply.	—	Check ink. To resume, select Continue .
Out of ink.	—	Replace ink and select Continue .

* See printer manual for more information.



Specifications

■ ■ Nikon D3000 Digital Camera

Type	
Type	Single-lens reflex digital camera
Lens mount	Nikon F mount (with AF contacts)
Effective picture angle	Approx. $1.5 \times$ lens focal length (Nikon DX format)
Effective pixels	
Effective pixels	10.2 million
Image sensor	
Image sensor	23.6×15.8 mm CCD sensor
Total pixels	10.75 million
Dust-reduction System	Image sensor cleaning, Image Dust Off reference data (optional Capture NX 2 software required)
Storage	
Image size (pixels)	• $3,872 \times 2,592$ (L) • $2,896 \times 1,944$ (M) • $1,936 \times 1,296$ (S)
File format	• NEF (RAW) • JPEG: JPEG-Baseline compliant with fine (approx. 1 : 4), normal (approx. 1 : 8), or basic (approx. 1 : 16) compression • NEF (RAW)+JPEG: Single photograph recorded in both NEF (RAW) and JPEG formats
Picture Control System	Can be selected from Standard, Neutral, Vivid, Monochrome, Portrait, Landscape; selected Picture Control can be modified
Media	SD (Secure Digital) memory cards, SDHC-compliant
File system	DCF (Design Rule for Camera File System) 2.0, DPOF (Digital Print Order Format), Exif 2.21 (Exchangeable Image File Format for Digital Still Cameras), PictBridge
Viewfinder	
Viewfinder	Eye-level pentamirror single-lens reflex viewfinder
Frame coverage	Approx. 95% horizontal and 95% vertical
Magnification	Approx. $0.8 \times$ (50 mm f/1.4 lens at infinity, -1.0 m^{-1})
Eyepoint	18 mm (-1.0 m^{-1})
Diopter adjustment	$-1.7 - +0.5 \text{ m}^{-1}$
Focusing screen	Type B BriteView Clear Matte Mark V screen with focus frame (framing grid can be displayed)
Reflex mirror	Quick return
Lens aperture	Instant return, electronically controlled



Lens	
Compatible lenses	• AF-S or AF-I: All functions supported. • Type G or D AF NIKKOR without built-in autofocus motor: All functions except autofocus supported. IX NIKKOR lenses not supported. • Other AF NIKKOR: All functions supported except autofocus and 3D color matrix metering II. Lenses for F3AF not supported. • Type D PC NIKKOR: All functions supported except autofocus and some shooting modes. • AI-P NIKKOR: All functions supported except autofocus and 3D color matrix metering II. • Non-CPU: Autofocus not supported. Can be used in exposure mode M, but exposure meter does not function. Electronic rangefinder can be used if lens has a maximum aperture of f/5.6 or faster.
Shutter	
Type	Electronically-controlled vertical-travel focal-plane shutter
Speed	$\frac{1}{4000}$ – 30 s in steps of $\frac{1}{3}$ EV, bulb, time (requires optional ML-L3 wireless remote control)
Flash sync speed	X= $\frac{1}{200}$ s; synchronizes with shutter at $\frac{1}{200}$ s or slower
Release	
Release mode	[] (single frame), [] (continuous), [] (self-timer), [] 2s (delayed remote), [] (quick-response remote)
Frame advance rate	Up to 3 fps (manual focus, mode M or S , shutter speed $\frac{1}{250}$ s or faster, and other settings at default values)
Self-timer	Can be selected from 2, 5, 10, and 20 s duration
Exposure	
Metering	TTL exposure metering using 420-pixel RGB sensor
Metering method	• Matrix: 3D color matrix metering II (type G and D lenses); color matrix metering II (other CPU lenses) • Center-weighted: Weight of 75% given to 8-mm circle in center of frame • Spot: Meters 3.5-mm circle (about 2.5% of frame) centered on selected focus point
Range (ISO 100, f/1.4 lens, 20 °C/68 °F)	• Matrix or center-weighted metering: 0–20 EV • Spot metering: 2–20 EV
Exposure meter coupling	CPU
Mode	Auto modes ([] auto; [] auto (flash off)); scene modes ([] portrait; [] landscape; [] child; [] sports; [] close up; [] night portrait); programmed auto with flexible program (P); shutter-priority auto (S); aperture-priority auto (A); manual (M)
Exposure compensation	–5 – +5 EV in increments of $\frac{1}{3}$ EV
Exposure lock	Luminosity locked at detected value with AE-L/AF-L button
ISO sensitivity (Recommended Exposure Index)	ISO 100 – 1600 in steps of 1 EV; can also be set to approx. 1 EV above ISO 1600 (ISO 3200 equivalent); auto ISO sensitivity control available
Active D-Lighting	Can be selected from On or Off



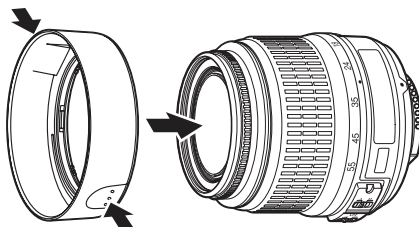
Focus	
Autofocus	Nikon Multi-CAM 1000 autofocus sensor module with TTL phase detection, 11 focus points (including one cross-type sensor), and AF-assist illuminator (range approx. 0.5–3 m/1 ft. 8 in.–9 ft. 10 in.)
Detection range	–1 – +19 EV (ISO 100, 20 °C/68 °F)
Lens servo	• Autofocus (AF): Single-servo AF (AF-S); continuous-servo AF (AF-C); auto AF-S/AF-C selection (AF-A); predictive focus tracking activated automatically according to subject status • Manual focus (MF): Electronic rangefinder can be used
Focus point	Can be selected from 11 focus points
AF-area mode	Single point, dynamic area, auto-area, 3D-tracking (11 points)
Focus lock	Focus can be locked by pressing shutter-release button halfway (single-servo AF) or by pressing AE-L/AF-L button
Flash	
Built-in flash	     : Auto flash with auto pop-up P, S, A, M: Manual pop-up with button release
Guide Number	Approx. 12/39, 13/43 with manual flash (m/ft, ISO 100, 20 °C/68 °F)
Flash control	• TTL: i-TTL balanced fill-flash and standard i-TTL flash for digital SLR using 420-pixel RGB sensor are available with built-in flash and SB-900, SB-800, SB-600, or SB-400 (i-TTL balanced fill-flash is available when matrix or center-weighted metering is selected) • Auto aperture: Available with SB-900/SB-800 and CPU lens • Non-TTL auto: Supported flash units include SB-900, SB-800, SB-80DX, SB-28DX, SB-28, SB-27, and SB-22S • Distance-priority manual: Available with SB-900 and SB-800
Flash mode	•    : Auto, auto with red-eye reduction, off; fill-flash and red-eye reduction available with optional flash units •  : Auto slow sync, auto slow sync with red-eye reduction, off; slow sync and slow sync with red-eye reduction available with optional flash units •  : Fill-flash and red-eye reduction available with optional flash units • P, A: Fill-flash, rear-curtain with slow sync, slow sync, slow sync with red-eye reduction, red-eye reduction • S, M: Fill-flash, rear-curtain sync, red-eye reduction
Flash compensation	–3 – +1 EV in increments of $\frac{1}{3}$ EV
Flash-ready indicator	Lights when built-in flash or optional flash unit such as SB-900, SB-800, SB-600, SB-400, SB-80DX, SB-28DX, or SB-50DX is fully charged; blinks for 3 s after flash is fired at full output
Accessory shoe	ISO 518 hot-shoe contact with sync and data contacts and safety lock
Nikon Creative Lighting System (CLS)	Advanced Wireless Lighting supported with SB-900, SB-800, or SU-800 as commander; Flash Color Information Communication supported with built-in flash and all CLS-compatible flash units
Sync terminal	AS-15 sync terminal adapter (available separately)
White balance	
White balance	Auto, incandescent, fluorescent (7 types), direct sunlight, flash, cloudy, shade, preset manual, all except preset manual with fine tuning.
Monitor	
Monitor	3-in., approx. 230k-dot TFT LCD with brightness adjustment

Playback	
Playback	Full-frame and thumbnail (4, 9, or 72 images or calendar) playback with playback zoom, playback of stop-motion movies created with D3000, slide show, histogram display, highlights, auto image rotation, and image comment (up to 36 characters)
Interface	
USB	Hi-Speed USB
Video output	Can be selected from NTSC and PAL
Supported languages	
Supported languages	Chinese (Simplified and Traditional), Danish, Dutch, English, Finnish, French, German, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish
Power source	
Battery	One rechargeable Li-ion EN-EL9a battery
AC adapter	EH-5a AC adapter; requires EP-5 power connector (available separately)
Tripod socket	
Tripod socket	$\frac{1}{4}$ in. (ISO 1222)
Dimensions/weight	
Dimensions (W × H × D)	Approx. 126 × 97 × 64 mm (5.0 × 3.8 × 2.5 in.)
Weight	Approx. 485 g (1 lb. 1.1 oz.) without battery, memory card, or body cap
Operating environment	
Temperature	0–40 °C (+32–104 °F)
Humidity	Less than 85% (no condensation)
- Unless otherwise stated, all figures are for a camera with a fully-charged battery operating at an ambient temperature of 20 °C (68 °F). - Nikon reserves the right to change the specifications of the hardware and software described in this manual at any time and without prior notice. Nikon will not be held liable for damages that may result from any mistakes that this manual may contain.	
MH-23 quick charger	
Rated input	AC 100–240 V (50/60 Hz)
Rated output	DC 8.4 V/900 mA
Supported batteries	Nikon EN-EL9a or EN-EL9 rechargeable Li-ion battery
Charging time	Approx. 1 hour and 40 minutes (EN-EL9a) or 1 hour and 30 minutes (EN-EL9) when battery is fully discharged
Operating temperature	0–40 °C (+32–104 °F)
Dimensions (W × H × D)	Approx. 82.5 × 28 × 65 mm (3.2 × 1.1 × 2.6 in.)
Length of cord	Approx. 1800 mm (5 ft. 11 in.)
Weight	Approx. 80 g (2.8 oz.), excluding power cable
EN-EL9a rechargeable Li-ion battery	
Type	Rechargeable lithium-ion battery
Rated capacity	7.2 V/1080 mAh
Dimensions (W × H × D)	Approx. 36 × 14 × 56 mm (1.4 × 0.6 × 2.2 in.)
Weight	Approx. 51 g (1.8 oz.), excluding terminal cover



AF-S DX NIKKOR 18–55mm f/3.5–5.6G VR lens

Type	G-type AF-S DX Zoom-NIKKOR lens with built-in CPU and Nikon bayonet mount
Supported cameras	Nikon digital SLR cameras (DX format)
Focal length	18–55 mm
Maximum aperture	f/3.5–5.6
Construction	11 elements in 8 groups (including 1 aspherical element)
Picture angle	76 °–28 ° 50 ´
Focal length scale (mm)	18, 24, 35, 45, 55
Distance information	Output to camera
Zoom control	Zoom adjusted by rotating separate zoom ring
Focusing	Autofocus with Silent Wave Motor; manual focus
Vibration reduction	Lens-shift method using voice coil motors (VCMs)
Closest focus distance	0.28 m (11 in.) from focal plane mark at all zoom settings
Diaphragm	Seven-blade diaphragm with rounded blades and fully automatic aperture
Aperture range	f/3.5–22 at 18 mm; f/5.6–36 at 55 mm
Metering	Maximum aperture
Attachment size	52 mm (P=0.75 mm)
Dimensions	Approx. 73 mm diameter × 79.5 mm/2.9 × 3.1 in. (from surface of bayonet mount to end of lens)
Weight	Approx. 265 g (9.3 oz.)
Lens hood	HB-45 (available separately; attaches as shown below)



Nikon reserves the right to change the specifications of the hardware and software described in this manual at any time and without prior notice. Nikon will not be held liable for damages that may result from any mistakes that this manual may contain.

Battery Life

The number of shots that can be taken with fully-charged batteries varies with the condition of the battery, temperature, and how the camera is used. Sample figures for EN-EL9a (1080 mAh) batteries are given below.

- **Single-frame release mode (CIPA standard ¹):** Approximately 550 shots
- **Continuous release mode (Nikon standard ²):** Approximately 2000 shots
 - 1 Measured at 23 °C/73.4 °F (±2 °C/3.6 °F) with an AF-S DX NIKKOR 18–55mm f/3.5–5.6G VR lens under the following test conditions: lens cycled from infinity to minimum range and one photograph taken at default settings once every 30 s; after photograph is taken, monitor is turned on for 4 s; tester waits for exposure meters to turn off after monitor is turned off; flash fired at full power once every other shot.
 - 2 Measured at 20 °C/68 °F with an AF-S DX NIKKOR 18–55mm f/3.5–5.6G VR lens under the following test conditions: vibration reduction off, continuous release mode, focus mode set to **AF-C**, image quality set to JPEG basic, image size set to **M** (medium), white balance set to **AUTO**, ISO sensitivity set to ISO 100, shutter speed $\frac{1}{250}$ s, focus cycled from infinity to minimum range three times after shutter-release button has been pressed halfway for 3 s; six shots are then taken in succession and monitor turned on for 4 s and then turned off; cycle repeated once exposure meters have turned off.

The following can reduce battery life: using the monitor for extended periods; keeping the shutter-release button pressed halfway; repeated autofocus operations; taking NEF (RAW) photographs; slow shutter speeds; and using VR (vibration reduction) mode with VR lenses.

To ensure that you get the most from rechargeable Nikon EN-EL9a batteries:

- Keep the battery contacts clean. Soiled contacts can reduce battery performance.
- Use batteries immediately after charging. Batteries will lose their charge if left unused.





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