

The essentials of imaging

www.minolta.com



DIMAGE 7L

COLOR MODE

The color mode controls whether a still image is color or black and white. The color mode is set in the custom 2 section of the recording-mode menu (p. 78). The live image on the monitors will reflect the selected color mode. For more on the color mode see page 96.



Natural Color - reproduces the colors in the scene faithfully.



Black & White - produces monochrome images.



Vivid Color - increases the saturation of the colors in the scene.



Solarization - produces a partial reversal of tones in the image.

BEFORE YOU BEGIN

Thank you for purchasing this Minolta digital camera. Please take the time to read through this instruction manual so you can enjoy all the features of your new camera.

This manual contains information regarding products introduced before May, 2002. To obtain compatibility information for products released after this date, contact a Minolta Service Facility listed on the back cover of this manual.

Check the packing list before using this product. If any items are missing, immediately contact your camera dealer.

Minolta DiMAGE digital camera
Ni-MH batteries (set of four)
Ni-MH battery charger set
Neck strap NS-DG7
Lens shade DLS-7i
16MB CompactFlash card
AV cable AVC-300
USB cable USB-100
DiMAGE software CD-ROM
DiMAGE Viewer instruction manual
Camera instruction manual
Warranty card

This product is designed to work with accessories manufactured and distributed by Minolta. Using accessories or equipment not endorsed by Minolta may result in unsatisfactory performance or damage to the product and its accessories.

Because the performance of alkaline batteries with digital cameras is low, the use of Ni-MH batteries is recommended.

FOR PROPER AND SAFE USE

Read and understand all warnings and cautions before using this product.

MARNING

Using batteries improperly can cause them to leak harmful solutions, overheat, or explode which may damage property or cause personal injury. Do not ignore the following warnings.

- Only use the batteries specified in this instruction manual.
- Do not install the batteries with the polarity (+/-) reversed.
- Do not use batteries which show wear or damage.
- Do not expose batteries to fire, high temperatures, water, or moisture.
- Do not attempt to short or disassemble batteries.
- Do not store batteries near or in metallic products.
- Do not mix batteries of different types, brands, ages, or charge levels.
- Do not charge alkaline batteries.
- When recharging rechargeable batteries, only use the recommended charger.
- Do not use leaking batteries. If fluid from the batteries enters your eye, immediately
 rinse the eye with plenty of fresh water and contact a doctor. If fluid from the batteries
 makes contact with your skin or clothing, wash the area thoroughly with water.
- Use only the specified AC adapter within the voltage range indicated on the adapter unit. An inappropriate adapter or current may cause damage or injury through fire or electric shock.
- Do not disassemble this product. Electric shock may cause injury if a high voltage circuit inside the product is touched.
- Immediately remove the batteries or unplug the AC adapter and discontinue use if the
 camera is dropped or subjected to an impact in which the interior, especially the flash
 unit, is exposed. The flash has a high voltage circuit which may cause an electric shock
 resulting in injury. The continued use of a damaged product or part may cause injuries
 or fire.

- Keep batteries or small parts that could be swallowed away from infants. Contact a
 doctor immediately if an object is swallowed.
- Store this product out of reach of children. Be careful when around children, not to harm them with the product or parts.
- Do not fire the flash directly into the eyes. It may damage eyesight.
- Do not fire the flash at vehicle operators. It may cause a distraction or temporary blindness which may lead to an accident.
- Do not use the monitor while operating a vehicle or walking. It may result in injury or an
 accident.
- Do not use this product in a humid environment, or operate this product with wet hands.
 If liquid enters the product, immediately remove the batteries or unplug the AC adapter and discontinue use. The continued use of a product exposed to liquids may cause damage or injury through fire or electric shock.
- Do not use the product near inflammable gases or liquids such as gasoline, benzine, or paint thinner. Do not use inflammable products such as alcohol, benzine, or paint thinner to clean the product. The use of inflammable cleaners and solvents may cause an explosion or fire.
- When unplugging the AC adapter, do not pull on the power cord. Hold the adapter unit when removing it from an outlet.
- Do not damage, twist, modify, heat, or place heavy objects on the AC adapter cord. A damaged cord may cause damage or injury through fire or electric shock.
- If the product emits a strange odor, heat, or smoke, discontinue use. Immediately remove the batteries taking care not to burn yourself as the batteries become hot with use. The continued use of a damaged product or part may cause injuries or fire.
- Take the product to a Minolta Service Facility when repairs are required

FOR PROPER AND SAFE USE

∆ CAUTION

- Do not use or store the product in a hot or humid environment such as the glove compartment or trunk of a car. It may damage the product and batteries which may result in burns or injuries caused by heat, fire, explosion, or leaking battery fluid.
- If batteries are leaking, discontinue use of the product.
- The camera temperature rises with extended periods of use. Care should be taken to avoid burns.
- Burns may result if the CompactFlash card or batteries are removed immediately after extended periods of use. Turn the camera off and wait for it to cool.
- Do not fire the flash while it is in contact with people or objects. The flash unit discharges a large amount of energy which may cause burns.
- Do not apply pressure to the LCD monitor. A damaged monitor may cause injury, and
 the liquid from the monitor may cause inflammation. If liquid from the monitor makes
 contact with skin wash the area with fresh water. If liquid from the monitor comes in
 contact with the eyes, immediately rinse the eyes with plenty of water and contact a
 doctor.
- The rim of the lens hood can cause injury. Take care not to accidentally strike anyone with the camera when the lens hood is attached.
- When using the AC adapter, insert the plug securely into the electrical outlet.
- Do not use if the AC adapter cord is damaged.
- Do not cover the AC adapter. A fire may result.
- Do not obstruct access to the AC adapter; this can hinder the unplugging of the unit in emergencies.
- Unplug the AC adapter when cleaning or when the product is not in use.

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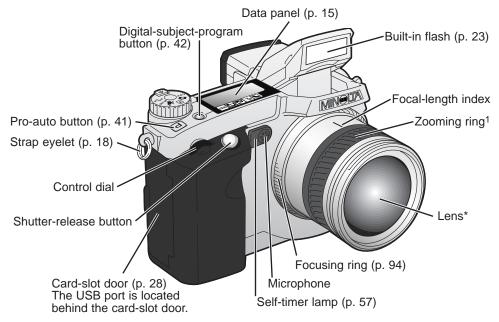
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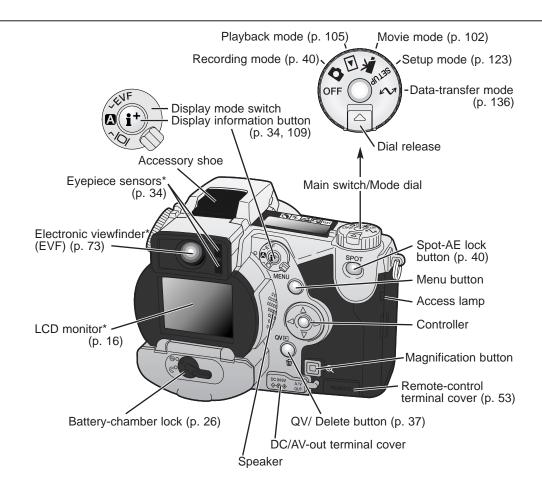
NAMES OF PARTS

CAMERA BODY

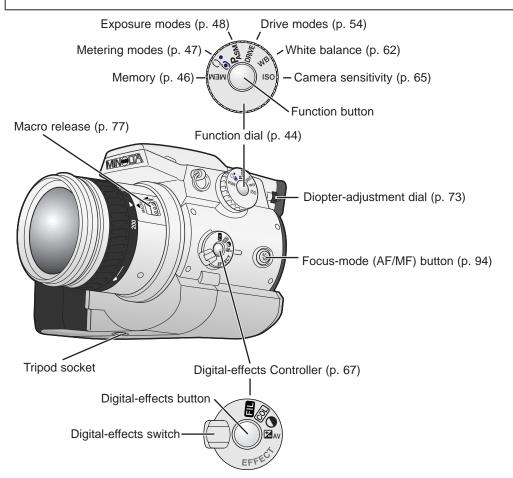
* This camera is a sophisticated optical instrument. Care should be taken to keep these surfaces clean. Please read the care and storage instructions in the back of this manual (p. 156).



1 The focal-length scale on the zooming ring is given in 35mm focal-length equivalents. The DiMAGE Viewer software supplied with the camera can display the actual focal length used to capture the recorded image as well as the equivalent focal length in 35mm photography.



NAMES OF PARTS



DATA PANEL

Located on the top of the camera body, the data panel shows the status of the camera. All icons have been shown for clarity.



Digital-subject-program icons (p. 42)

Digital-subject-program indicators (p. 42)

Battery-condition indicator (p. 27)

PASM Exposure-mode indicators (p. 48)

White-balance indicators (p. 62)

SO Camera-sensitivity indicator (p. 65)

Flash-compensation indicator (p. 68)

Red-eye reduction indicator (p. 86)

WL Wireless/Remote flash indicator (p. 88)

MF Manual-focus indicator (p. 94)

Drive-mode indicators (p. 54)

RAW QUAL III Image-quality display (p. 83)

SIZE ■■■■ Image-size display (p. 82)

ber of recordable images
exceeds this, 999 will be displayed. The frame counter
will continue to count down
when the number of recordable images falls below one thousand.

Frame counter (p. 82)

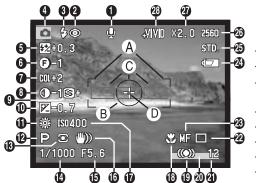
The frame counter cannot

exceed 999. When the num-

8888 888 Shutter-speed and aperture display / exposure/flash compensation display

Names of Parts

EVF AND LCD MONITOR DISPLAY



- 1. Microphone indicator
- 2. Flash-mode indicator (p. 86)
- 3. Flash signal (p. 23)
- 4. Mode indicator
- 5. Flash-compensation display (p. 68)
- 6. Filter display (p. 71)
- 7. Color-saturation-compensation display (g
- 8. Contrast-compensation display (p. 70)
- 9. Sharpness display (p. 97)

- 10. Exposure-compensation display (p. 68)
- 11. White-balance indicator (p. 62)
- 12. Exposure-mode/Digital-subject-program indicator (p. 48, 42)
- 13. Metering-mode indicator (p. 47)
- 14. Shutter-speed display
- 15. Aperture display
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- 17. Camera-sensitivity (ISO) display (p. 65)
- 18. Macro-mode indicator (p. 77)
- 19. Focus signal (p. 33)
- 20. Data-imprinting indicator (p. 95)
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- 24. Battery-condition indicator (p. 27)
- 25. Image-quality indicator (p. 83)
- display (p. 71) 26. Image-size display (p. 82)
 - 27. Digital-zoom display (p. 76)
 - 28. Color-mode indicator (p. 96)
- A. Focus frame
- B. Spot metering area (p. 47)
- C. AF sensors
- D. Flex Focus Point (p. 75)

GETTING UP AND RUNNING

This is a quick reference guide so that the camera can be used as soon as possible. However, it is recommended that the entire manual be read to properly operate the camera and to achieve the best results.

CAMERA-SHAKE WARNING

If the shutter speed falls below the point where the camera can be hand held safely, the camera-shake warning will appear on the monitors. Camera shake is slight blurring caused by subtle hand motion and is more pronounced at the telephoto setting of the lens than at the wide-angle setting. The warning appears at approximately the reciprocal of the focal length used; if the lens is set at 100mm, the camera shake warning will appear at 1/100 second. Although the warning appears, the shutter can still be released. If the warning appears, the following steps can be taken:

- Place the camera on a tripod.
- Use the built-in flash (p. 23).
- Increase the camera sensitivity (ISO) (p. 65).
- Zoom the lens towards the wide-angle position.

ATTACHING THE CAMERA STRAP

Attach the camera strap to the strap eyelets as shown.

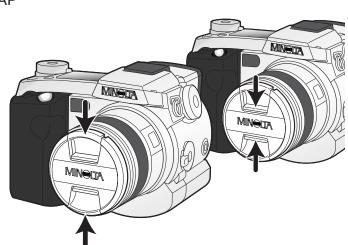
Always keep the camera strap around your neck in the

event that you drop the camera.

REMOVING THE LENS CAP

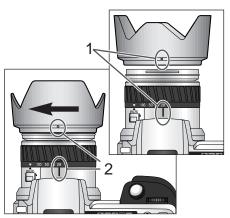
Using your thumb and index finger, pinch the inside or outside tabs of the lens cap to remove.

• When the camera is not in use, always replace the lens cap.



ATTACHING THE LENS HOOD

The lens hood is used to control stray light from entering the lens and causing flare. When using the camera under bright light, the use of the lens hood is recommended. The lens hood should not be used with the built-in flash as it can cause a shadow.



To mount the lens hood, align the rectangular dimple on the rim of the hood with the focallength index on the top of the lens barrel (1).

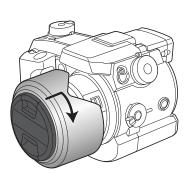
Slide the hood onto the end of the lens and turn it 90° clockwise until it clicks and the circular dimple is aligned with the focal-length index (2).

- When mounted correctly, the large petals of the lens hood should be to the top and bottom.
- Never force the lens hood. If it does not fit, check its orientation.
- To detach the lens hood, turn it 90° counterclockwise and remove.

The lens hood can be reverse mounted when the camera is not is use.

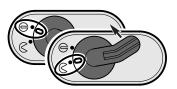
With one of the large petals to the top, slide the hood onto the end of the lens. Turn it 90° clockwise until it stops.

- The lens hood can be attached or removed with the lens cap on the camera.
- To detach the lens hood, turn it 90° counterclockwise and remove.



INSERTING BATTERIES

The AA nickel-metal hydride batteries supplied with the camera must be charged before their initial use. Refer to the charger manual for instructions on safe use and handling.



Open the battery-chamber door by moving the batterychamber lock to the open position $\langle \cdot \rangle$.



Insert the batteries.

• Make sure the positive and negative battery terminals are orientated as illustrated on the diagram in the battery chamber.

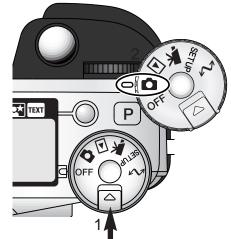
HANDLING THE CAMERA

While using the electronic viewfinder (EVF) or LCD monitor, grip the camera firmly with your right hand while supporting the body with the palm of your left hand. Keep your elbows at your side and your feet shoulder-width apart to hold the camera steadily.

The EVF can be tilted between 0° and 90°. This is useful for low-level camera positions.



TURNING ON THE CAMERA AND DISPLAYS

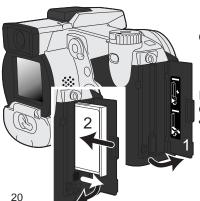


While pushing in the dial release (1), turn the mode dial (2) to the still-image recording position.

The display switch at the back of the camera controls which display will activate during camera operation. Turn the switch to the auto-display position (A); the display will alternate between the electronic viewfinder (EVF) and LCD monitor automatically.



INSERTING THE COMPACTFLASH CARD



Open the card-slot door (1).

Insert the CompactFlash card (2) and fold down the card-eject lever.

 Insert the card so that the face is toward the front of the camera. Always push the card in straight, never at an angle. Never force the card. If the card does not fit, check its orientation.

TAKING PICTURES

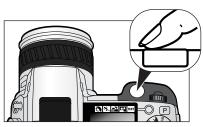


With the mode dial set to still-image recording, the camera will be on and the electronic viewfinder (EVF) and LCD monitor will activate.

The zooming ring can be used to frame the subject. The effect of the zoom is immediately displayed in the EVF and on the LCD monitor.



Compose the image in the EVF or on LCD monitor taking care to place the subject within the focus frame.

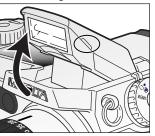


Press the shutter-release button all the way down to take the picture.

 The access lamp will glow indicating the image data is being written to the CompactFlash card. Never remove the CompactFlash card while data is being transferred.

USING THE BUILT-IN FLASH

In low-light conditions or indoors, the flash is needed to illuminate the subject and reduce blurring through camera shake. The flash can also be used as a fill light in direct sunlight to soften harsh shadows.



To use the flash, simply pull up the unit by the tabs on each side. Icons will appear in the upper left corner of the EVF and LCD monitor (see chart below).

- The flash position must be set manually.
- The flash will always fire regardless of the amount of ambient light.
- Always remove the lens hood when using the built-in flash.
 The hood may cast a shadow if mounted.

| ₹ | When pressing the shutter-release button partway down, the red flash icon indicates the flash is charging. | |
|----------------|---|--|
| ₹ - | When pressing the shutter-release button partway down, the white flash icon indicates the flash is ready to fire. | |
| ₽ | After taking a picture, a blue flash icon appears if the flash properly exposed the subject. | |
| F | Flash warning. In backlit situations, the icon appears to recommend the use of the flash. | |

FLASH RANGE - AUTOMATIC OPERATION

The camera will automatically control the flash output. For well-exposed images, the subject must be within the flash range. Because of the optical system, the flash range is not the same at the lens' wide-angle position as it is at the telephoto position.

| Wide-angle position | 0.5m ~ 3.8m (1.6 ft. ~ 12.5 ft.) |
|---------------------|----------------------------------|
| Telephoto position | 0.5m ~ 3.0m (1.6 ft. ~ 9.8 ft.) |

VIEWING AND DELETING PICTURES IN QUICK VIEW



Captured images can be viewed in recording mode. Simply press the QV/delete button to access the images, and use the controller to scroll through the pictures on the CompactFlash card.

In quick view, images can also be deleted. Care should be taken when deleting image; once deleted it is impossible to recover the picture. When selecting an image for deletion, a confirmation screen will appear before the operation is executed. For more information about Quick View, see page 36.



Press the QV/delete button to playback the recorded images.

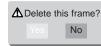


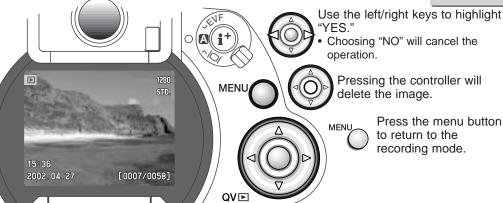
Use the left/right keys of the controller to scroll through the images.



To delete the displayed image, press the QV/delete button.

 A confirmation screen will appear.





BASIC OPERATION

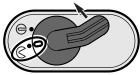
This section covers the basic operation of the camera. Please thoroughly familiarize yourself with the operations in this section before moving on to other sections in the manual.

CHANGING BATTERIES

This digital camera uses four AA-size nickel-metal hydride (Ni-MH) batteries. When using new Ni-MH batteries, fully charge them before their initial use.



When replacing batteries, check that the mode dial is in the off position.

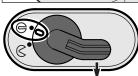


Open the battery-chamber door by moving the battery-chamber lock to the open position.



Insert the batteries.

 Make sure the positive and negative battery terminals are orientated as illustrated on the diagram in the battery chamber.



Close the battery-chamber door and slide the lock lever to the close position.

Although alkaline batteries can be used with this product, their performance will be limited. Only use alkaline batteries for test photographs or when Ni-MH batteries, the Minolta External High-power Battery Pack, or AC adapter are not available.

BATTERY CONDITION INDICATOR

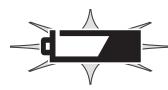
This camera is equipped with an automatic battery-condition indicator. When the camera is on, the battery-condition indicator appears on the data panel and monitors. The monitor icon will change from white to red when battery power is low. If the data panel and monitors are blank, the batteries may be dead or installed incorrectly.



Full-battery - the batteries are fully charged. This icon is displayed for five seconds on the monitors when the camera is turned on. The icon remains on the data panel.



Low battery warning - battery power is very low, but all functions are operational. The batteries should be replaced as soon as possible. This warning automatically appears and remains on the display until the batteries are changed.



Blinking low battery warning - displayed on the data panel with no other icons. Power is insufficient for camera operation. The shutter will not release. Replace or recharge the batteries immediately.

AUTO POWER SAVE

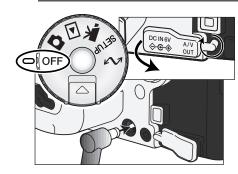
To conserve battery power, the camera will turn off displays and unnecessary functions if an operation is not made within a certain period. The LCD monitor will turn off after thirty seconds. The EVF and data panel turn off after one minute. To restore the displays, press the shutter-release button partway down or press the displayinformation button. The length of the auto-power-save period for the EVF and data panel can be changed in the custom 2 section of the setup menu (p. 124).

EXTERNAL POWER SUPPLIES (SOLD SEPARATELY)

The AC Adapter allows the camera to be powered from an electrical household outlet. The AC Adapter is recommended when the camera is interfaced with a computer or during periods of heavy use. AC Adapter model AC-1L is for use in North America, Japan, and Taiwan, and AC-2L is for use in all other areas.

The External High-power Battery Pack Kit EBP-100 is a portable source of power for the camera. The kit contains a high-power lithium-ion battery, holder, and charger. The battery, holder, and charger are also available separately. This battery pack will significantly extend the operating time of the camera.

Always turn off the camera before changing between power supplies.



Remove the DC terminal cover from the left.

• The cover is attached to the body to prevent loss.

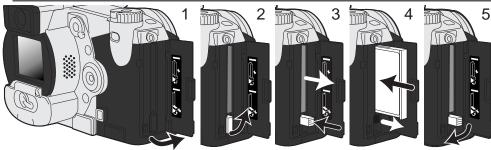
Insert the mini plug of the AC adapter or battery pack into the DC terminal.

Insert the AC adapter plug into an electrical outlet.

CHANGING THE COMPACTFLASH CARD

A CompactFlash card must be inserted for the camera to operate. If a card has not been inserted, a no-card warning will automatically be displayed on the monitors. IBM Microdrives are compatible with this camera. For recording media care and storage, see page 157.

Always turn off the camera and confirm the access lamp is not lit before inserting or removing a CompactFlash card, otherwise the card may be damaged, and data lost.



Open the card-slot door in the direction indicated (1).

To eject a CompactFlash card, lift (2) then press (3) the card-eject lever. The card can now be pulled out.

• Take care when removing the card as it becomes hot with use.

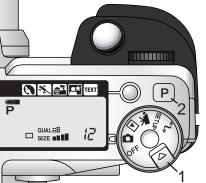
Insert the CompactFlash card into the card slot until the card-eject lever pops out (4).

• Insert the card so the face is toward the front of the camera. Always push the card in straight. Never force the card. If the card does not fit, check that it is orientated correctly.

Fold the card-eject lever down as shown (5) and close the card-slot door.

If the card-not-recognized message appears, the inserted card in the camera may need to be formatted. A CompactFlash card used in another camera may have to be formatted before being used. If the unable-to-use-card message appears, the card is not compatible with the camera and should not be formatted. A card can be formatted in the basic section of the playback menu (p. 110). When a card is formatted, all the data on the card is permanently erased. If the card-error message appears, press the central button of the controller to close the window; check the Minolta web site for the latest compatibility information: North America: http://www.minoltausa.com, Europe: http://www.minoltaeurope.com/pe/digital/languages_stage.html.

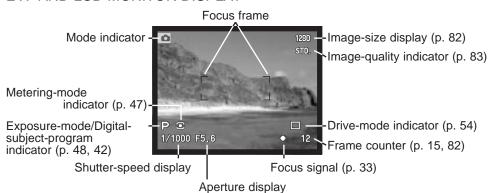
SETTING THE CAMERA TO RECORD IMAGES AUTOMATICALLY



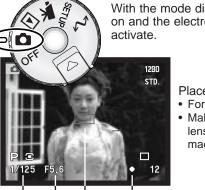
While holding in the dial release (1), turn the mode dial to still-image recording. Press the pro-auto button (2) to reset the programmed and automatic functions.

All camera operations are now fully automatic. The autofocus, exposure, and imaging systems will work together to bring professional results effortlessly.

EVF AND LCD MONITOR DISPLAY



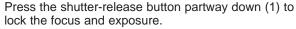
BASIC RECORDING OPERATION



With the mode dial set to still-image recording, the camera will be on and the electronic viewfinder (EVF) and LCD monitor will activate.

Place the subject within the focus frame.

- For off-center subjects use the focus-lock function (p. 32).
- Make sure the subject is within the focus range of the lens: 0.5m - ∞. For subjects closer than 0.5m, use the macro function (p. 77).



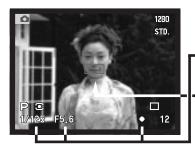
- The focus signals (p. 33) in the monitors will confirm that the image is in focus. If the focus signal is red, the camera was unable to focus on the subject. Repeat the previous steps until the signal is white.
- When the focus is set, an AF sensor will briefly appear on the live image to indicate the point of focus.
- The shutter speed and aperture value will change from white to black indicating the exposure is locked.

Press the shutter-release button all the way down (2) to take the picture.

 The access lamp will glow indicating the image data is being written to the CompactFlash card. Never remove a CompactFlash card while data is being transferred.

FOCUS LOCK

The focus-lock function is used when the subject is off-center and outside the focus frame. Focus lock may also be used when a special focusing situation prevents the camera from focusing on the subject.



Place the subject within the focus frame. Press and hold the shutter-release button partway down.

- The focus signals will indicate that the focus is locked.
 The shutter speed and aperture value will change from white to black indicating the exposure is locked.
- When the focus is set, an AF sensor will briefly appear on the live image to indicate the point of focus.



Without lifting your finger from the shutter-release button, recompose the subject within the image area. Press the shutter-release button all the way down to take the picture.

FOCUS SIGNALS

This digital camera has a quick, accurate autofocusing system. The focus signals in the lower right corner of the EVF and LCD monitor indicate the focus status. For more information on autofocus modes see p. 81.

| 0 | Focus icon: white | Focus confirmed. |
|---|-------------------|--|
| 0 | Focus icon: red | Cannot focus. The subject is too close or a special situation is preventing the AF system from focusing. |

- The shutter can be released even if the camera cannot focus on the subject.
- When the AF system cannot focus, the focus is set between 5 m and infinity (16.4 ft and ∞). When the flash is in use, the focus is set between 3.0 m and 3.8 m (9.8 ft and 12.5 ft). In this case, focus lock can be used with an object at the same distance as the main subject or the camera can be focused manually (p. 94).

SPECIAL FOCUSING SITUATIONS

The camera may not be able to focus in certain situations. If the autofocus system cannot focus on a subject, the focus icon will turn red. In this situation the focus-lock function can be used to focus on another object at the same distance as your main subject, and then the image can be recomposed to take the picture.



The subject is too dark.

The subject in the focus frame is low in contrast.

Two subjects at different distances overlap in the focus frame.

The subject is near a very bright object or area.

DISPLAY CONTROLS - RECORDING MODE

Located on the back of the camera, the display-mode switch and the display-information button control on which monitor the image is displayed and what information is included in the display. The three position switch allows the choice between automatic display and setting the display to the EVF or LCD monitor.



Auto display - the camera will automatically change between displaying the live image in the EVF or on the LCD monitor. The EVF's eye sensors monitor if the EVF is being used and switches the display location accordingly.



EVF display - the live image will only be displayed in the electronic viewfinder. Under bright light, the image is easier to see in the EVF than on the LCD monitor.

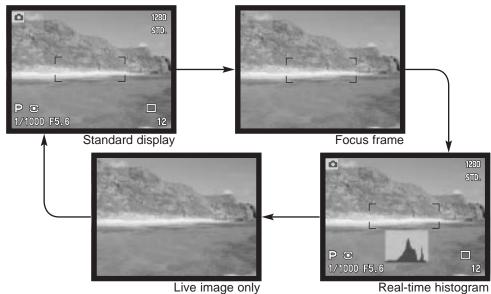


LCD monitor display - the live image will only be displayed on the LCD monitor.

If battery power is a concern, have the eye sensor activate the EVF when in use, but not the LCD monitor. The auto-display function can be changed in the custom 2 section of the setup menu (p. 124).



In the center of the display switch, the display-information button controls what information is displayed with the live image. Each time the button is pressed, the display cycles to the next format: standard display, focus frame, real-time histogram, and live image only. The number of screens and their formats can be changed in the custom 1 section of the setup menu (p. 124).



The real-time histogram shows the approximate luminance distribution of the live image. This histogram will not be accurate when the monitor image is amplified (p. 52, 73), or the built-in or a compatible Minolta flash unit is used. The histogram of a recorded image may not have the same distribution as the real-time histogram.

QUICK VIEW



Still images can be viewed in recording mode. Simply press the QV/delete button to access the images, and use the controller to scroll through the pictures on the CompactFlash card. Images is displayed with various information: date and time of capture, frame number, printing and lock status, and voice-memo recording. A histogram of the image with shooting data can be displayed.



Press the QV/delete button to play back the recorded images.

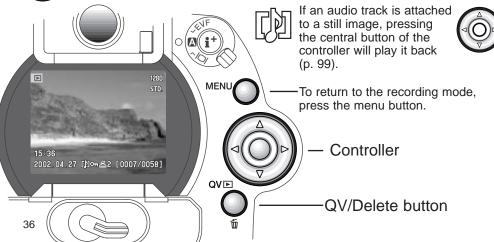


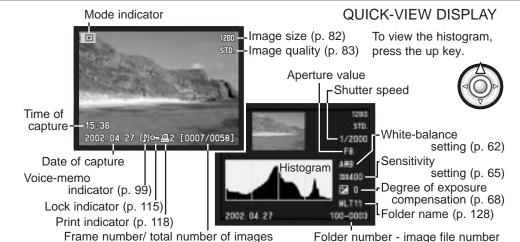
Use the left/right keys of the controller to scroll through the images.



Press the up key to see the histogram of the displayed image.

Pressing the down key returns to Quick View.





DELETING IMAGES IN QUICK VIEW

In quick view, the displayed image can be deleted. When selecting an image for deletion, a confirmation screen will appear before the operation is executed.

To delete a displayed image, press the QV/delete button.

A confirmation screen will appear.



Use the left/right keys to highlight "Yes."

"No" will cancel the operation.



Pressing the controller will execute the command on the confirmation screen.

• The camera will return to quick view.

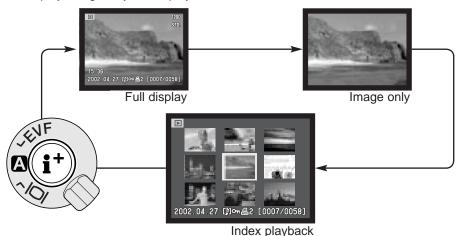
Once deleted, an image cannot be recovered.



Confirmation screen

CHANGING THE QUICK VIEW DISPLAY

In the center of the display switch, the display-information button controls the display format. Each time the button is pressed, the display cycles through to the next format: full display, image only, index playback.



In index playback, the left/right keys of the controller will move the yellow border to the next or the previous image. When the image is highlighted with the border, the date of recording, voice-memo icon, the lock and printing status, and the frame number of the image are displayed at the bottom of the screen. The highlighted image can be deleted using the QV/delete button (p. 37) or an accompanying audio track can be played by pressing the central button of the controller. When the display information button is pressed again, the highlighted image will be displayed in the single-frame playback mode. A nine or four image index can be displayed. The index-playback format can be changed in the basic section of the playback-mode menu (p. 110).

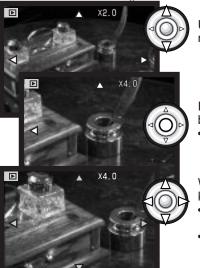


ENLARGED PLAYBACK

In single-frame playback, a still image can be enlarged for closer examination. Images can be magnified between 1.2X and 4.0X in 0.2X increments. 640 X 480 size images can only be magnified between 1.2X and 2.0X. RAW and super fine images cannot be enlarged.

With the image to be enlarged displayed, press the magnification button (1).

 The degree of magnification is displayed on the monitors.



Use the up/down keys of the controller to adjust the magnification.

Press the central button of the controller to switch between the magnification and scroll functions.

• The scroll arrows or magnification display will turn blue to indicate the active function.

When the scroll arrows are blue, use the four-way key to scroll the image.

- Press the magnification button to exit the enlarged playback mode.
- Press and hold the four-way key to scroll continuously.

ADVANCED OPERATION

This section contains detailed information on the camera's recording functions and operation. Read the sections pertaining to your interest and need. The sections, setting the function dial (p.44), Digital Effects Control (p. 67), and the navigating the recording-mode menu (p. 78), cover setting most of the advanced features in this camera. Each of these sections is followed by detailed descriptions of the settings.

SPOT-AE LOCK BUTTON

SPOT

The spot-AE lock button below the main dial on the back of the body locks the automatic exposure system. This function allows the exposure to be set by a specific element within the scene or a gray card outside the scene.

When pressed, the spot metering circle is displayed indicating the area used for the exposure calculation; the shutter speed and aperture of the

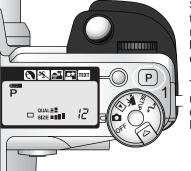
exposure will be displayed in black on the monitor. The setting will remain in effect until the button is released. Focus is locked by pressing the shutter-release button partway down.

The operation of the spot button can be customized in the custom 1 section of the recording-mode menu (p. 78, 93).



Spot metering display

PRO-AUTO BUTTON



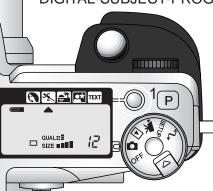
Simply pressing the pro-auto button (1) resets the camera to programmed and automatic functions in the still-image recording mode. The camera's systems work together to bring professional results leaving the operator free to concentrate on aesthetic decisions.

The pro-auto button only affects functions in the recording mode. The button has a limited affect in the movie mode; changes made with the Digital Effects Control and the Movie menu are reset.

| Digital subject program (p. 42) | Canceled |
|--|----------------------------|
| Exposure mode (p. 48) | Program |
| Drive mode (p. 54) | Single-frame advance |
| Focus mode (p. 81, 94) | Single AF |
| Autofocus area (p. 74) | Wide |
| White balance (p. 62) | Auto white balance |
| Metering mode (p. 47) | Multi-segment metering |
| Exposure compensation (p. 68) | 0.0 |
| Contrast compensation (p. 70) | 0 |
| Color-saturation compensation (p. 71) | 0 |
| Filter (p. 71) | Normal |
| Flash control (p. 92) | ADI metering |
| Flash compensation (p. 68) | 0.0 |
| Flash mode (p. 86) | Fill or red-eye reduction* |
| Sharpness (p. 97) | Normal |
| * The first condition that the condition is a first condition to the condition of the condition is a first condition to the condition of the c | |

^{*} The flash mode is reset to whichever of the two modes was set last.

DIGITAL-SUBJECT-PROGRAM BUTTON



The subject-program button (1) optimizes the camera's performance for various conditions and subjects. Exposure, white-balance, and image-processing systems work in unison for beautiful results.

Pressing the subject-program button cycles through the modes: portrait, sport action, sunset, night portrait, text, and the original exposure mode. A pointer will indicate the active subject program. The subject program will remain in effect until it is changed.

| | Portrait | Optimized to reproduce warm, soft skin tones and a slight defocusing of the background. |
|------------|----------------|--|
| % | Sports action | Used to capture fast action by maximizing shutter speeds and tracking subjects with continuous AF. |
| | Sunset | Optimized to reproduce rich, warm sunsets. |
| ₽ * | Night portrait | For deep, subtle night scenes. When used with flash, the subject and background are balanced. |
| TEXT | Text | For the crisp reproduction of black text on white backgrounds. |

While camera performance is optimized for each shooting condition, some changes can be made to camera settings with subject programs. The autofocus mode can be changed (p. 81). The sports action mode uses continuous AF, the other modes use single AF. The digital effects controller can be used to adjust image brightness, contrast, and color (p. 67). White balance can be changed in all modes except sunset and night portrait (p. 62). Sharpness can be changed in the sport action, sunset, and text modes (p. 97). The metering mode cannot be changed.



Shooting tips

Portrait - Most portraits look best at a telephoto setting; the longer focal length does not exaggerate facial features and the shallower depth of field softens the background. Use the built-in flash with strong direct sunlight or backlight to reduce harsh shadows.

Sports action - When using a flash, make sure the subject is within the flash range (p. 66). The flash range can be extended by changing the camera sensitivity (p. 65). A monopod is more flexible and compact than a tripod when shooting events.

Sunset - When the sun is above the horizon, do not point the camera toward the sun for prolonged periods of time. The intensity of the sun could damage the CCD. Between exposures, turn off the camera or cover the lens.

Night portrait - When taking pictures of a landscape at night, use a tripod to eliminate blurring from camera shake. The flash can only be used with close subjects such as with a portrait of a person. When using the flash, ask your subjects not to move after the burst; the shutter will still be open for the background exposure.

Text - When taking pictures of small text on a sheet of paper, the macro mode (p. 77) can be used. Use a tripod to eliminate camera shake and ensure the sharpest images.

SETTING THE FUNCTION DIAL

The memory function, metering mode, exposure mode, drive mode, white balance, and camera sensitivity are controlled by the function dial. Making changes with the function dial is simple. The function dial can only be used for still photography.

Turn the function dial to the mode to be changed (1).



While pressing the button in the center of the function dial, turn the control dial near the shutter-release button to change the mode (2). Release the function button to set the mode.

• Changes are displayed on the monitors and data panel.

| MEM | Memory | To store and recall camera settings (p. 46). | |
|------------|--------------------|--|--|
| ⊙ C | Metering modes | Changes the metering mode (p. 47). | |
| Pasm | Exposure modes | Changes exposure mode (p. 48). | |
| DRIVE | Drive modes | Changes drive mode (p. 54). | |
| WB | White balance | Changes between automatic, preset, and custom white balance (p. 62). | |
| ISO | Camera sensitivity | Changes camera sensitivity (p. 65). | |

| Function Dial | Function Dial Display Setting | | Page | EVF & Monitor Display |
|---------------|-------------------------------|--|------|---------------------------------|
| MEM | Menu | Memory resisters or the setting function are selected with a special menu displayed on the monitors. | 46 | |
| ••• | | Multi-segment Center weighted Spot | 47 | No data panel display. |
| | Р | Program | 49 | |
| PASM | А | Aperture priority | 50 | Display for the |
| PASIVI | S | Shutter priority | 51 | data panel, EVF and LCD monitor |
| | M | Manual | 52 | are the same |
| | | Single-frame advance | 31 | unless indicated. |
| | | Continuous advance | 55 | |
| DRIVE | ৩ | Self-timer | 57 | |
| DIXIVE | | Bracketing | 58 | |
| | int | Interval | 60 | 4 |
| | UH5 🖳 | UHS continuous advance | 56 | ₩ |
| | Ruto | Automatic white balance | 63 | AWB (No display when set) |
| | <u> </u> | Daylight | | |
| MAD | - <u>\</u> | Tungsten | 63 | |
| WB | | Fluorescent | _ | |
| | • | Cloudy | | |
| | | Custom setting | 64 | |
| | <u>№</u> 58t | Custom calibration | J . | |
| | Ruto | Automatic gain | | (No display when set) |
| ISO | 100, 200, 400, 800. | Preset camera sensitivity in ISO equivalents. | 65 | ISO value is displayed |

MEMORY - STORING CAMERA SETTINGS



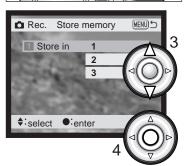
Three sets of camera settings can be saved. This saves time under frequently repeating conditions by eliminating the need to set the camera. Except for the spot AEL button, subject programs, data imprinting, voice memo, and instant playback settings, all recording-mode camera settings will be saved including the position of the Flex Focus Point, the custom white balance setting, and changes made with the function dial and digital effects control. Although the

bracketing drive mode setting can be saved, the type of bracket, exposure, contrast, color saturation, or filter must be reset.

Memory 1
Memory 2
Memory 3
Store memory

Camera settings are saved with the function dial (p. 44). Initially, each memory location contains the camera's original settings.

To save the current camera settings, turn the function dial to the memory position, and press the function button (1) to display the memory settings on the monitor. Turn the control dial to highlight the storememory option. Release the function button to open the store-memory screen.



On the store-in-memory screen, use the up/down keys of the controller (3) to select the memory register in which the camera settings are to be saved. Press the central button of the controller (4) to save the settings; the previous settings will be erased and replaced by the new ones. A confirmation screen will open; press the central button of the controller to close.

To recall a setting, press the function button and highlight the memory register using the control dial. Release the function button to apply the memory settings.

Camera settings cannot be deleted from memory by turning the camera off, using the pro-auto button, or choosing the default function on the setup menu.

METERING MODES



The icons indicating the metering mode are displayed on the monitors only. Do not confuse these icons with the focus signals (p. 33). The metering mode is changed with the function dial (p. 44). When centerweighted or spot metering is selected, pressing the shutter-release button partway down will activate the exposure system, but will not lock the exposure; the spot AE lock button (p. 40) can be used to lock the exposure, but uses the spot metering area only.



Multi-segment - uses 300 segments to measure luminance and color. This data is combined with distance information to calculate the camera exposure. This advanced metering system will give accurate worry-free exposures in almost all situations.



Center weighted - a traditional metering method in silver-halide cameras. The system measures light values over the entire image area with emphasis given the the central region.



Spot - uses a small area within the image to calculate the exposure. When this mode is selected, a small circle will appear in the middle of the live image indicating the measuring area. The spot allows precise exposure measurements of a particular object without being influenced by extremely bright or dark areas within the scene.



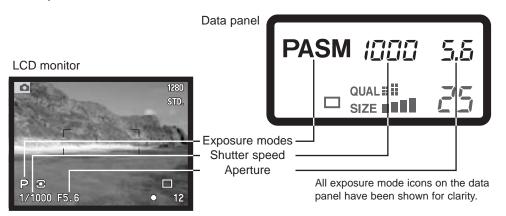
Spot metering display

EXPOSURE MODES



The four exposure modes allow extensive control over image making. Programmed AE gives carefree operation, aperture and shutter priority allow photographers to maximize exposures in different situations, and manual exposure provides complete freedom in controlling the final image. See setting the function dial section on page 44.

- **Program** the camera controls both the shutter speeds and aperture.
- A Aperture priority the photographer selects the aperture and the camera sets the appropriate shutter speed.
- **Shutter priority** the photographer selects the shutter speed and the camera sets the appropriate aperture.
- Manual exposure the photographer selects both the shutter speed and aperture.



PROGRAM - P

The programmed AE exposure control uses luminance and focal-length information to ensure perfect exposures. The sophisticated exposure system allows the photographer the freedom to shoot without having to worry about the technical details of exposure settings. The shutter speed and aperture values of the exposure are displayed on the monitors and data panel. The shutter speed range in program exposure mode is 4 to 1/4000 second. If the brightness level of the scene is outside the exposure control range of the camera, the shutter-speed and aperture displays will turn red.

The program line adjusts with the changes in focal length of the zoom lens. The camera is programmed to maximize depth of field in the wide-angle range to provide sharp landscape pictures, and to maximize shutter speed in the telephoto range to minimize camera shake and blurred images. When the shutter speed falls below an acceptable limit for the camera to be hand held, the camera-shake warning appears in the lower left corner of the monitors (p. 17).

PROGRAM SHIFT

Although exposure calculations can be left to the camera, photographers can still have control over the final exposure with the program-shift function. As described in the basic recording operation (p. 31), press the shutter-release button partway down (1) until the shutter speed and aperture value are displayed. The control dial (2) can then be used to shift the shutter speed and aperture combination; each combination will give the optimum exposure.



The built-in flash cannot be used with program shift. The camera gives priority to the flash exposure; once the flash is raised, any changes made with the program shift will be canceled.

APERTURE PRIORITY - A



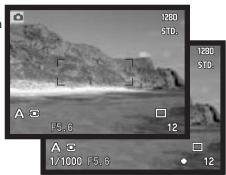
The photographer selects the aperture and the camera sets the appropriate shutter speed to ensure correct exposure. When A mode is selected, the aperture value on the monitors turns blue.

Turn the control dial (1) to set the desired aperture. Press the shutter-release button partway down to activate the exposure system (2); the corresponding shutter speed will be displayed.

The aperture values can be changed by half stop increments between f/2.8 and f/8 at the lens' wide-angle position and f/3.5 to f/9.5 at the lens' telephoto position. If the aperture value is beyond the shutter-speed range, the shutter-speed display will blink on the data panel and turn red on the monitors. The shutter speed range in aperture-priority exposure mode is 4 to 1/4000 second.

When the shutter speed falls below an acceptable limit for the camera to be hand held, the camera-shake warning (p. 17) appears in the lower left corner of the EVF and LCD monitor. When the warning appears, decrease the aperture value until the warning disappears or place the camera on a tripod.

Because the shutter speeds can be adjusted in fine steps, the same shutter speed maybe displayed when the aperture is changed. With the camera sensitivity (ISO) set to auto, the shutter speed may not change when the aperture is adjusted.



SHUTTER PRIORITY - S



The photographer selects the shutter speed and the camera sets the appropriate aperture to ensure correct exposure. When S mode is selected, the shutter speed on the monitors turns blue.

Turn the control dial (1) to set the desired shutter speed. Press the shutter-release button partway down to activate the exposure system (2); the corresponding aperture will be displayed.



The shutter speeds can be changed by half stop increments from 4 seconds to 1/2000. If the shutter speed is beyond the aperture range, the aperture display will blink on the data panel and turn red on the monitors.

Camera Notes

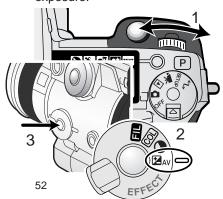
For 35mm photographers, an aperture range of f/2.8 to f/8 does not seem impressive. However, because of the CCD size and the actual focal length of the lens, the apertures on this digital camera give significantly more depth of field at any given angle of view with any given aperture than a 35mm camera. So even with the minimum aperture of f/8, the depth of field will give the coverage needed to create beautiful, sharp images.

MANUAL EXPOSURE - M

Manual exposure mode allows individual selection of shutter speeds and apertures. This mode overrides the exposure system giving the photographer total control over the final exposure. The shutter speeds and aperture values can be changed in half stop increments. The shutter speed range in manual exposure mode is 4 to 1/2000 second including bulb. The camera sensitivity is set to ISO 100, but can be changed with the function dial (p. 44).



As changes are made to the exposure, the effect will be visible on the monitors. The shutter-speed and aperture display will blink on the data panel and turn red on the monitors if the image is extremely under or overexposed. If the monitors are black, increase the exposure until the image is visible; decrease the exposure if the monitors are white. If the monitor image is too dark because of the exposure setting. Press the function button and display-information button (i+) at the same time to amplify the image; the M on the monitor will turn red. The AE system will maintain a bright image on the monitors, however, the image nor the real-time histogram will reflect the final exposure. Repeat the procedure to cancel the amplified display. When using the built-in flash, the monitor image is also amplified and does not reflect the ambient light exposure.



To set the shutter speed:

• Turn the control dial (1) to set the shutter speed.

To set the aperture:

- Set the digital effects switch (2) to the exposurecompensation position.
- While pressing the digital effects button (3), turn the the control dial (1) to set the aperture. Flash compensation (p. 68) can also be set with the up/down key of the controller.

BULB EXPOSURES

Bulb photographs can be taken in the manual-exposure mode (M). Exposures up to thirty seconds can be made by pressing and holding the shutter-release button. The use of a tripod and a remote cord is recommended for bulb exposures.

Use the control dial (1) to decrease the shutter-speed value below four seconds until "bulb" is displayed.

To set the aperture value, turn the digital effects switch to exposure compensation (2) position. While pressing the digital effects button (3), turn the control dial (1) until the correct aperture is displayed.

 The camera's exposure system cannot be used to calculate bulb exposures. The use of a separate light meter is recommended.

To take the picture, press and hold the shutter-release button for the duration of the exposure.

- Releasing the shutter button will end the exposure.
- The monitors will be blank during the exposure. If on, the shutter sound effect will signal the end of the exposure. The monitors will remain blank for a period equal to the exposure time while noise-reduction processing is applied to the image

time while noise-reduction processing is applied to the image ATTACHING A REMOTE CORD (SOLD SEPARATELY)

The optional remote cords (RC-1000S or RC-1000L) can be used to reduce vibrations from touching the camera during long exposures.

Remove the remote-control terminal cover.

- Use the notch on the right side of the cover.
- The cover is attached to the body to prevent loss.

Insert the plug of the cord into the terminal.



DRIVE MODES



The drive modes control the rate and method images are captured. Icons indicating the selected drive mode appear on the data panel and LCD monitor and in the EVF. See setting the function dial section on page 44.



Single-frame advance - to take a single image each time the shutter-release button is pressed.



Continuous advance - to take multiple images when the shutterrelease button is pressed and held.



Self-timer - to delay the release of the shutter. Used for self-portraits.



Bracketing - to take a series of images with differing exposure, contrast, saturation, and color.

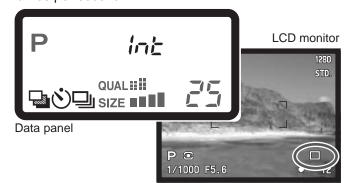


Interval - to take a series of images over a period of time.



UHS continuous advance - to take multiple 1280 X 960 images at approximately 7 frames per second.

All icons have been shown for clarity. The single-frame advance and continuous advance indicators occupy the same area of the data panel. All the drive-mode icons appear in the lower right corner of the monitors.



CONTINUOUS ADVANCE □/□

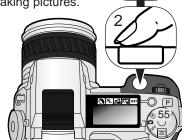
Continuous-advance mode allows a series of images to be captured while holding down the shutter-release button. Continuous advance acts like a motor drive on a film camera. The number of images that can be captured at one time depends on the image-quality and image-size setting. The maximum rate of capture is 2 fps with full-size images with manual focus in manual-exposure mode. The continuous-advance mode is set with the function dial (p. 44).

When the shutter-release button is pressed and held, the camera will begin recording images until the maximum number has been taken or the shutter button is released. This mode cannot be used with super-fine or RAW image (p. 84). If image quality is set to RAW or super fine before selecting the drive mode, it is reset to standard. The built-in flash can be used, but the rate of capture is reduced because the flash must recharge between frames. The following chart lists the maximum number of images

that can be captured with different imagequality and image-size combinations.

| Size Quality | 2560 X 1920 | 1600 X 1200 | 1280 X 960 | 640 X 480 |
|-----------------|-------------|-------------|------------|-----------|
| Fine | 4 | 8 | 11 | 23 |
| Standard | 7 | 11 | 16 | 32 |
| Economy | 11 | 17 | 22 | 40 |

Compose the picture as described in the basic operation section (p. 31). Press the shutter-release button partway down (1) to lock the exposure and focus for the series; if the autofocus mode is set to continuous AF, the lens will continually focus during the series (p. 81). Press and hold the shutter-release button all the way down (2) to begin taking pictures.



UHS CONTINUOUS ADVANCE ☐ / 1/1/1/15

UHS continuous-advance mode allows a series of 1280 X 960 images to be captured at a rate of approximately 7 frames per second; image size is changed to 640 X 480 when the digital zoom is used. The number of images that can be captured at one time depends on the image-quality setting: fine - 15 frames, standard - 31 frames, and economy - 39 frames; the number of frames increases with the use of the digital zoom. This mode cannot be used with super-fine or RAW images (p. 84), flash illumination, or Digital Subject Programs. If image quality is set to RAW or super fine before selecting the drive mode, it is reset to standard. Shutter speeds slower than 1/8th of a second cannot be used. If the low battery power indicator (p. 27) appears, the shutter cannot be released. The UHS continuous-advance mode is set with the function dial (p. 44).

When the shutter-release button is pressed and held, the camera will begin recording images until the maximum number has been taken or the shutter button is released.

Compose the picture as described in the basic operation section (p. 31). Press the shutter-release button partway down (1) to lock the exposure and focus for the series. Press and hold the shutterrelease button all the way down (2) to begin taking pictures. Very bright light sources in the image may cause streaking. A recorded image may show black areas caused by a loss of data. After the series is captured, the monitor will remain blank white the images are saved.

UHS CONTINUOUS-ADVANCE MOVIES

By turning on the UHS movie function in the custom 1 section of the recording-mode menu, a separate VGA (640 X 480) movie file with audio will be created automatically from the captured still images. When the function is active, the movie camera icon is displayed next to the UHS continuous-advance indicator on the monitors. The time required to make the movie file is approximately equal to the recording time, the monitor will be blank and the access lamp will glow during that period. The shutter sound effect is disabled.



SELF-TIMER (*)/80

Used for self-portraits, the self-timer will delay the release of the shutter for approximately ten seconds after the shutter is released. The self-timer is set with the function dial (p. 44).

With the camera on a tripod, compose the picture as described in the basic operation section (p. 31). Focus lock (p.32) or the Flex Focus Point (p. 75) can be used with off-center subjects. Press the shutter-release button partway down (1) to lock the exposure and focus. Press the shutter-release button all the way down (2) to begin the countdown. Because focus and exposure are determined when the shutter-release button is pressed. do not stand in front of the camera when taking a selftimer image. Always confirm the focus with the focus signals before beginning the countdown (p. 33).

During the countdown, the self-timer lamp on the front of the camera will start to blink and is accompanied by an audio signal. A few seconds before the exposure, the selftimer lamp will blink rapidly. The lamp will glow steadily just before the shutter fires. To stop the countdown, press the pro-auto button or change the position of the flash (lift it or push it down). The audio signal can be turned off in the basic section of the setup menu (p. 124).

Shooting tips

The self-timer can be used to minimize camera shake with long exposures. When using the camera on a tripod, photographs of static subjects (landscapes, still-lifes, or close-up photographs) can be made with the self-timer. Because no contact is made with the camera during exposure, there is no risk of camera shake caused by the operator.

BRACKETING -/



This mode makes a three image bracket of a scene. Bracketing is a method of taking a series of images of a static subject in which each image has a slight variation in exposure. The camera is not limited to exposure brackets, but can also make contrast, saturation, and filter brackets. Only one image characteristic can be bracketed at a time. The bracketing mode is set with the function dial (p. 44).



Turn the function dial to the drive-mode position (1). While pressing the function button (2), turn the control dial (3) to set the bracketing mode.



Turn the digital-effect switch to the image characteristic to be bracketed. For more on the Digital Effect Control, see page 67.

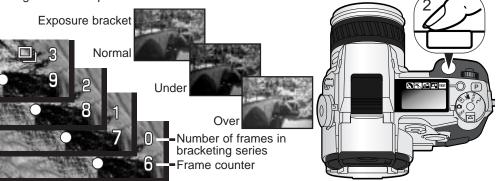
Contrast bracket

Color-saturation bracket FIL Filter bracket

The order of the exposure bracket series is normal exposure (as indicated by the shutter-speed and aperture displays), underexposure, and overexposure. The exposure bracket is set to 0.3Ev increments, but can be adjusted to 0.5Ev or 1.0Ev increments in the custom 2 section of the recording-mode menu (p. 78).

Set the contrast, color saturation or filter to the desired level; the bracket series is from the Digital Effect Control setting to one unit under to one unit over. See the Digital Effects Control section on page 67 to set the contrast, color saturation, and filter. Except for a RAW image, if the contrast or color saturation is set to the maximum or minimum level (±3), one bracket will be made at ± 4: +3, +2, +4. A RAW image cannot exceed the maximum and minimum levels and will contain two identical brackets: +3. +2, +3. A black and white Filter bracket is made to the Filter settings before and after the set Filter (p. 71). If filter 10 is selected, the bracket series will be 10, 9, 0.

Compose the picture as described in the basic-operation section (p. 31). Press the shutter-release button partway down (1) to lock the exposure and focus for the series; the camera will continue to focus during the series if set to continuous AF (p. 81). Press and hold the shutter-release button all the way down (2) to make the bracket series; three consecutive images will be captured.



NOTES ON BRACKETING

If the CompactFlash card is filled or the shutter button is released before the series has completed, the camera will reset and the entire bracket must be made again.

With super fine and RAW image qualities or when using flash, the bracket will not advance automatically; the shutter-release button must be pressed for each frame of the series. Once the series begins, the focus and exposure values are set and do not have to be made again. The remaining number of frames in the bracket series is displayed on the monitors next to the bracketing icon.

INTERVAL /n上/動

The interval mode makes a series of still or moving images over a period of time. Similar to time-lapse photography, a series of images of a slow moving event can be taken: the blossoming of a flower, the construction of a building. The built-in flash can be used. Instant playback (p. 98) is disabled.

The parameters of the interval series is set up in the custom 1 section of the recordingmode menu. Refer to the navigation section on page 78 on how to use the menu. The length of the interval between frames can be set at 1 - 10, 15, 20, 30, 45, and 60 minutes. The number of images in the series is set with the frames menu option: 2 - 99 frames. To capture a series of still images or to make a movie file is selected with the interval-mode option.

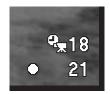


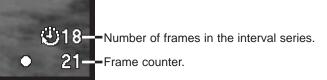
Still image - to create a series of still images specified within the parameters set on the recording-mode menu. Image size and quality can be changed.



Time-lapse movie - to create a movie specified within the parameters set on the recording-mode menu. The movie file is played back at four frames per second. Image size can be changed.

Set the drive mode to interval with the function dial (p. 44). After mounting the camera on a tripod, compose the image so that the subject area falls within the focus frames; the camera sets the focus, exposure, and white balance, and charges the flash just before each exposure. Continuous AF can be used. Settings locked with the spot AE lock button are canceled after the first frame (p. 40). To override the automatic systems, use manual focus (p. 94), manual exposure (p. 52), and preset or custom white balance (p. 62).





Confirm the CompactFlash card has enough storage capacity for the series by comparing the number of frames in the interval series with the number of recordable images displayed on the frame counter. When taking still-images, image size and quality settings can be changed to increase the number of pictures that can be saved on the CompactFlash card (p. 78).

Press the shutter-release button to begin the series. During the interval series, the monitors will be turned off to conserve power. "Int" will be displayed on the data panel and the data-panel frame counter will countdown the remaining frames in the interval series. The access lamp will glow when an image is being recorded.



The setting sun: 10 minute intervals

The camera will stop recording images and reset to the first frame when the number of frames set has been taken, or when the CompactFlash card is full. To cancel the interval series, turn off the camera.

When viewing time-lapse movies on a computer, the computer performance is important. On slower computers, frames may be dropped during the playback of movies recorded at 2560 X 1920 or 1600 X 1200.

WHITE BALANCE



White Balance is the camera's ability to make different types of lighting appear neutral. The effect is similar to selecting daylight or tungsten film, or using color compensating filters in conventional photography.

When setting the white balance, "Auto" (data panel) and "AWB" (monitors) will be displayed to indicate the auto white-balance setting. An icon will be displayed on the data panel and monitors if a setting other than auto white-balance was chosen. See setting the function dial section on page 44.



| No display | AUTO / AWB | The AUTO setting will detect the type of light and adjust the white balance accordingly. | | |
|--|--|--|--|--|
| - Ö: | Daylight | For outdoor and sunlit subjects. | | |
| -\\\;- | Tungsten | For incandescent lighting: household filament light bulbs. | | |
| \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | Fluorescent | For fluorescent lighting: office ceiling lights. | | |
| 4 | Cloudy | For overcast outdoor scenes. | | |
| | Custom setting | For using the custom white-balance setting. | | |
| № 5Et | Custom calibration For manual white-balance calibration. | | | |

AUTOMATIC WHITE BALANCE

The automatic white balance compensates for the color temperature of a scene. In most cases, the AUTO setting will balance the ambient light and create beautiful images, even under mixed-lighting conditions. When the built-in flash is used, the white balance is set for the color temperature of the flash.

PRESET WHITE BALANCE

Preset white-balance settings must be set before the image is taken. Once set, the effect is immediately visible on the monitors.

The built-in flash can be used with preset white-balance settings, but will create a pinkish or blueish cast with the fluorescent and tungsten settings. The flash is daylight balanced and will produce excellent results with the daylight and cloudy settings.

Shooting tips

The daylight and cloudy settings are primarily for outdoor shooting conditions. Daylight is used for sunny weather when the light is relatively warm. The light during overcast conditions is much cooler and requires a different white balance: cloudy. Office lighting will produce a strong green cast in photographs; the fluorescent setting restores the natural color under these conditions. Traditional household light bulbs emit very yellow light, which can be corrected with the tungsten setting.

Auto, preset, and custom white balance will not change the color of neon signs. White balance cannot correct high-energy vapor lighting: sodium-vapor (yellow highway lights), or mercury vapor. For portraits under these lighting conditions, the flash can be used to overpower the ambient light. With landscapes containing these types of lights, set the white balance to the preset daylight setting.

CUSTOM WHITE BALANCE

Custom-white-balance function allows a photographer to calibrate the camera to a specific lighting condition. The setting can be used repeatedly until reset. Custom white balance is especially useful with mixed-lighting conditions or when critical control over color is needed.

To calibrate the camera, press the function button and turn the control dial until the custom white-balance icon and "SET" appear on the data panel and red on the monitors. Select a white object and fill the image area with it; the object does not need to be in focus. Press the shutter-release button to calibrate the camera. If an error occurs during calibration, an error message will appear on the monitors. Press the controller to cancel the message, then recalibrate using a suitable reference target and the shutter-release button. This sequence can be repeated as many times as necessary.



Calibration display

The setting will remain until another calibration is made. If the custom white-balance setting needs to be used again, while pressing the function button, turn the control dial until the custom white-balance icon is displayed *without* the "SET" on the data panel and white on the monitors. The camera will use the last custom setting.

The built-in flash can be used with the custom setting. However, since the flash is daylight balanced, it will give an unusual color cast to an image if the camera is calibrated to any other light source.

Shooting tips

When making the calibration, the color of the object used is critical. The object should be white. A colored object will cause the calibration to compensate for the object color rather than the color temperature of the ambient light. A blank piece of white paper is an ideal surface and can easily be carried in a camera bag.

CAMERA SENSITIVITY - ISO



Five settings can be selected for camera sensitivity: Auto, 100, 200, 400, and 800; the numerical values are based on an ISO equivalent. ISO is the standard used to indicate film sensitivity: the higher the number, the more sensitive the film. See setting the function dial section on page 44 to change the ISO setting.

The auto setting automatically adjusts the camera sensitivity to the light conditions between ISO 100 and 400. When the flash is activated and camera sensitivity is set to auto, the ISO value is set between ISO 100 and 200. When any other setting than auto is used, "ISO" will appear on the data panel, and "ISO" and the set value will be displayed on the monitors.

Photographers can select a specific sensitivity setting. Like grain in silver-halide film that increases with speed, noise increases with sensitivity in digital imaging; an ISO setting of 100 will have the least noise and 800 will have the most noise. A change in ISO also affects the flash range (p. 66); the higher the ISO, the greater the range.

As the ISO value doubles, the camera sensitivity doubles; changing the ISO between 100 and 200, 200 and 400, or 400 and 800 changes the camera sensitivity by one stop or 1 Ev (p. 151). A change between 100 and 800 changes the camera sensitivity by a factor of 8 or three stops. High ISO settings (400, 800) will allow the photographer to hand hold the camera in low-light conditions without the need of a flash.

Camera Notes

When making bulb exposures (p. 53), noise can be more pronounced because of the unusually long exposure times, especially at 400 and 800 ISO. When making long bulb exposures of 20 to 30 seconds, a camera sensitivity setting of 100 or 200 will produce excellent results. At higher ISO settings, using shorter exposure times (8 - 16 seconds) will reduce the effect of noise. With long exposures at high ISO settings, noise from interference may be noticeable.

FLASH RANGE AND CAMERA SENSITIVITY

For correct flash exposures, the subject must be within the flash range. The flash range can be extended by changing the camera sensitivity (p. 65). When the camera sensitivity is set to auto, the ISO is set between ISO 100 and 200. The flash range is measured from the CCD. Because of the optical system, the flash range is not the same at the lens' wide-angle position as it is at the telephoto position.

| ISO setting | Flash range (wide angle) | Flash range (telephoto) | |
|-------------|----------------------------------|----------------------------------|--|
| AUTO | 0.5m ~ 3.8m / 1.6 ft. ~ 12.5 ft. | 0.5m ~ 3.0m / 1.6 ft. ~ 9.8 ft. | |
| 100 | 0.5m ~ 2.7m / 1.6 ft. ~ 8.8 ft. | 0.5m ~ 2.1m / 1.6 ft. ~ 6.9 ft. | |
| 200 | 0.5m ~ 3.8m / 1.6 ft. ~ 12.5 ft. | 0.5m ~ 3.0m / 1.6 ft. ~ 9.8 ft. | |
| 400 | 0.5m ~ 5.4m / 1.6 ft. ~ 17.6 ft. | 0.5m ~ 4.2m / 1.6 ft. ~ 13.8 ft. | |
| 800 | 0.5m ~ 7.6m / 1.6 ft. ~ 25 ft. | 0.5m ~ 6.0m / 1.6 ft. ~ 19.6 ft. | |

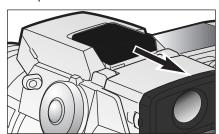
ATTACHING A MINOLTA ACCESSORY FLASH UNIT

To extend the versatility of the camera, an accessory flash unit (sold separately) can be mounted on the camera. See page 150 for a list of compatible flash units.

Slide the accessory-shoe cap off as shown.

Mount the flash unit on the accessory shoe by sliding it forward until it stops.

 Always remove the accessory flash when the camera is not in use. Replace the accessory-shoe cap to protect the contacts.



DIGITAL EFFECTS CONTROL

The Digital Effects Controller is a powerful tool. As well as being able to make adjustments to exposure, the controller can also change image contrast, color, and saturation. The effect of any change is instantly visible on the monitors before the image is captured. Since compensation is applied to the image before it is compressed and saved, image information can be maximized before leaving the scene. The digital effects controller can be used with movie recording.

Operating the controller is very simple:



Turn the digital-effect switch to the image characteristic to be adjusted.

≱_{AV} Exposure

Contrast

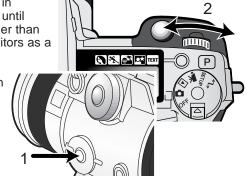
COL Color-saturation

Filter

Press and hold the digital-effects button (1) in the center of the switch and adjust the setting by turning the control dial (2) next to the shutter-release button. Release the digital-effects button to set the adjustment.

Adjustments can be made repeatedly and in combination. Adjustments remain in effect until manually reset. When set to any value other than zero, an icon will be displayed on the monitors as a warning.

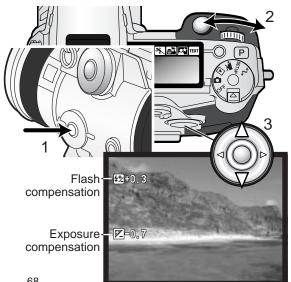
To adjust flash compensation, the up/down keys of the controller are used instead of the control dial. See page 68.



EXPOSURE AND FLASH COMPENSATION

The ambient light and flash exposure can be adjusted before the image is captured to make the final picture lighter or darker. Exposure can be adjusted by as much as ±2Ev in 1/3 increments (p. 151). The exposure and flash compensation will remain in effect until it has been reset.

Adjustments to exposure must be set before the image is captured. When setting exposure or flash compensation, the change in Ev is shown on the data-panel aperture display and on the monitors. After the setting is made, the shutter-speed and aperture displays will indicate the actual exposure. Because the shutter speeds can be adjusted in fine steps, the same shutter speed or aperture value may be displayed after the exposure is compensated.



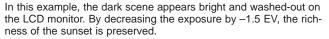
Set the digital effects switch the the exposure-compensation position.

Press and hold the digital-effects button (1) in the center of the switch and adjust the exposure compensation by turning the control dial (2), or the flash compensation by using the up/down key of the controller (3).

Release the digital-effects button (1) to set the adjustment.

Shooting tips

Sometimes the camera's exposure meter is deceived by certain conditions. Changing the exposure value can compensate for these situations. For example, a very bright scene, such as a snowy landscape or a white sandy beach, can appear too dark in the captured image. Before taking the picture, adjusting the exposure by +1 or +2 EV will result in an image with normal tonal values.





When using the fill-flash to reduce harsh shadows on the subject's face caused by bright illumination or direct sunlight, flash compensation can be used to change the ratio between the highlights and shadows. The fill-flash will affect the darkness of the shadows without affecting the area illuminated by the main light source. By decreasing the flash output with a negative Ev setting, the shadows will receive less light than with normal fill-flash and be harder, but will bring out subtle details in the shadows that would not appear without the flash. Increasing the flash output by using a positive Ev setting will soften and can even nearly eliminate shadows.



Negative compensation

CONTRAST COMPENSATION

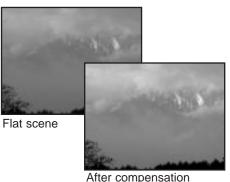


The contrast of a scene can be adjusted within seven levels (±3) with the digital effects controller. If a scene is too contrasty, information will be lost; if a scene is flat, the image information is not optimized for the recording ability of the camera. Control over the contrast gives photographers the ability to maximize the image information at the scene.

The contrast must be set before the image is captured. When changing the contrast setting, an icon will appear in the live image. The monitors will indicate if an increase (+) or decrease (-) in contrast has been made. If contrast is set to any other value than zero, the icon will remain on the displays as a warning.



After compensation



mpensation After compen

Shooting tips

Unlike the display on a computer monitor, changes to contrast and color saturation can be difficult to see in the EVF and LCD monitor. To ensure the optimum level of contrast or color saturation, make an automatic bracket (p. 58) or manual bracket of the scene.

COLOR-SATURATION COMPENSATION



The color saturation of a scene can be adjusted within seven levels (±3) with the digital effects controller. Colors can be accented or subdued.

The color saturation must be set before the image is captured. When changing the color-saturation setting, an icon will appear in the live image. The monitors will indicate if an increase (+) or

decrease (–) in saturation has been made. If color saturation is set to any other value than zero, the icon will remain on the displays as a warning.

FILTER



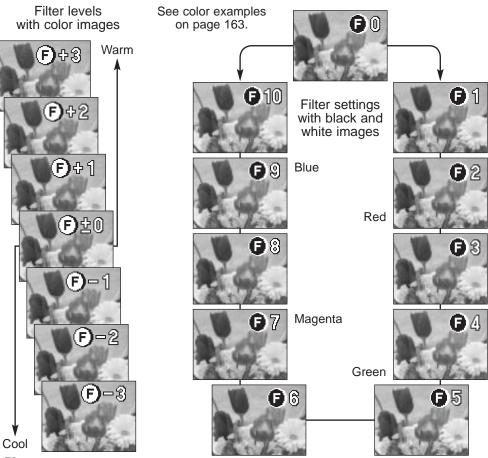
The overall color of a scene can be adjusted with the digital effects controller. The Filter effects differ between the color mode in use (p. 96).

The filter must be set before the image is captured. When changing the setting, an icon and numeral will indicate the filter controls in effect. Any changes are immediately applied to the monitor image. If the Filter is set to any other value than zero, the

icon will remain on the displays as a warning.

When used with Natural Color or Vivid Color, the Filter can be adjusted in seven levels from +3 to -3. A positive adjustment acts like a warming filter. A negative adjustment has the opposite effect and makes the image cooler.

When used with the black-and-white color mode, the Filter can tone the neutral monochrome image in eleven steps. The Filter effect cycles from neutral to red, to green, to magenta, to blue, and returning to neutral. The zero position is neutral. Black and white filter settings have no effect on RAW images

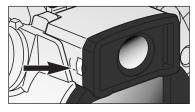


ELECTRONIC VIEWFINDER

The EVF displays 100% field of view. When using the camera outdoors or under strong lighting conditions, the viewfinder image is not affected by the ambient light and remains bright and clear.

The electronic viewfinder can be tilted between 0° to 90°. Simply grip the finder between your fingers and move it to the position desired. Always store the camera with finder down against the body.

DIOPTER ADJUSTMENT



The EVF has a built-in diopter that can be adjusted between –5.0 to +0.5. While looking through the EVF, turn the diopter-adjustment dial until the viewfinder image is sharp.

73

AUTOMATIC MONITOR AMPLIFICATION

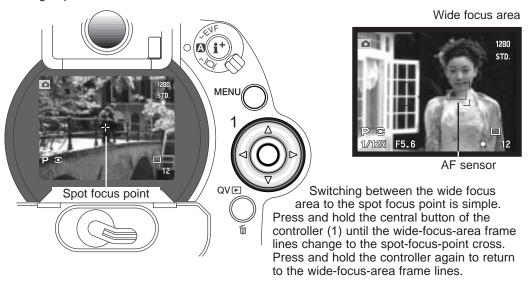
In extremely low-light conditions when the camera-sensitivity gain has reached its limit, the automatic monitor-amplification function will intensify the EVF and LCD monitor image. The live image will be brighter, however, the display will be black and white. This will have no effect on the final color image.

When the automatic monitor amplification activates, the electronic-magnification function cannot be used. If the real-time histogram is used, the display will reflect the amplified image and not the final values of the exposure.

AUTOFOCUS AREAS AND CONTROL

In still-image recording mode, the controller selects the focus area used and moves the spot-focus area within the image. The two focus areas, wide focus area and spot focus point, allow flexibility over a variety of situations.

The wide focus area is an array of local focus areas that work together to control focus. This system is especially effective with moving subjects or quick shooting during fast-moving events. When the focus is locked in single AF mode, one of the AF sensors within the wide focus area will briefly indicate the point of focus. The spot focus point gives critical control over focus. It can be used to single out an individual subject from a group.



FLEX FOCUS POINT

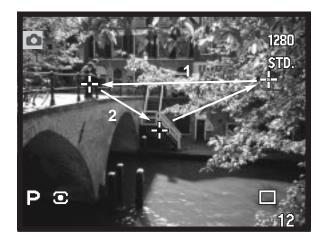
Once displayed, the spot focus area can be moved to any point in the image area. This Flex Focus Point is a powerful tool for off-center subjects. The Flex Focus Point cannot be used with the digital zoom (p. 76).

With the spot-focus-area cross displayed, use the controller's four-way keys (1) to move the focus point anywhere within the live image. Press the shutter-release button partway down to focus; the cross will turn red to confirm focus.



Pressing the central button of the controller (2) returns the focus point to the center of the image area. To return to the wide-focus-area mode press and hold the button until the wide-focus-area frame lines appear.





DIGITAL ZOOM

The digital zoom doubles the lens magnification. The digital zoom cannot be used with RAW image quality or in movie recording.

Press the magnification button on the back of the camera. The effect is immediately displayed.

- The live image is enlarged on the LCD monitor and is cropped with a shaded border in the EVF.
- X2.0 is displayed in the monitors when the digital zoom is in effect.
- Pressing the magnification button a second time cancels the digital zoom.
- When using the wide focus area (p. 74), the AF sensor will not appear to indicate the point of focus.

LCD monitor

X2.0 1280

EVF

When an image is taken with the digital zoom, the final image size depends on the image-size setting on the camera. The image is trimmed and then the total number of pixels are interpolated to produce an image with a pixel resolution shown in the chart.

| | Image size setting | | | | |
|---------------------|--------------------|-------------|------------|-----------|--|
| | 2560 X 1920 | 1600 X 1200 | 1280 X 960 | 640 X 480 | |
| Recorded image size | 1280 X 960 | 1280 X 960 | 1280 X 960 | 640 X 480 | |

1280 X 960 UHS continuous-advance images are resized to 640 X 480.

MACRO MODE



The macro mode is used for close-up photographs of small objects. The marco mode can be used with the digital zoom to increase the close-up effect. Subject programs and movie recording can be used with the macro setting. The built-in flash cannot be used with macro mode.

Align one of the arrows on the zoom ring with the arrow next to the macro switch.

• The lens must be zoomed to the wide-angle or telephoto position for the macro switch to engage.

Slide the macro switch on the lens barrel forward.

- The camera is now in macro mode. The macro icon is displayed in the lower right corner of the monitors.
- Make sure the subject is within the macro focusing range. Wide angle: 0.3 - 0.6m / 1.0 - 2.0 ft from the CCD. Telephoto: 0.25 - 0.6m / 0.8 - 2.0 ft from the CCD.
- The zoom ring will be locked at the wide-angle position in macro mode. At the telephoto position, the zoom ring can move slightly to make fine adjustments to image size.
- To return to normal recording mode, slide the macro switch towards the rear of the lens.



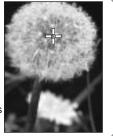


Shooting tips

Because of the high image magnification, hand holding cameras during close-up photography is very difficult. When possible, use a tripod.

Use the Flex Focus Point (p. 75) to specify the area to be within focus. Because depth of field (the area in focus) is narrow in close-up photography, using focus lock with off-center subjects can cause minor errors which are exaggerated at high magnifications.

The variable position EVF makes working in tight spaces and at low levels easy. The EVF can be tilted between 0° and 90°.



NAVIGATING THE RECORDING-MODE MENU

In recording mode, press the menu button (1) to activate the menu. The menu button also turns off the recording-mode menu after making settings. The four-way key of the controller (2) are used to move the cursor in the menu. Pressing the central button of the controller will enter a setting.



Activate the recording-mode menu with the menu button (1). The "Basic" tab at the top of the menu will be highlighted. Use the left/right keys of the controller (2) to highlight the appropriate menu tab; the menus will change as the tabs are highlighted.

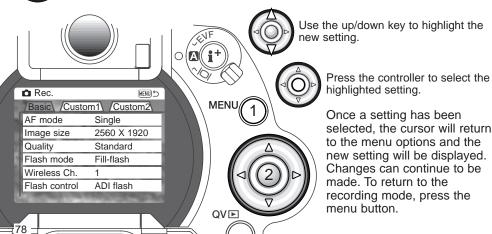


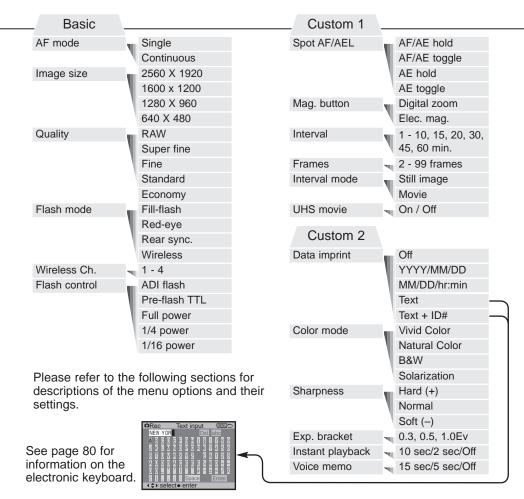
When the desired menu section is displayed, use the up/down key (2) to scroll through the menu options. Highlight the option whose setting needs to be changed.



Press the right controller key to display the settings; the current setting is indicated by an arrow.

To return to the menu options, press the left key.





ELECTRONIC KEYBOARD

The electronic keyboard is used to enter text for imprinting data or for naming new folders. The keyboard automatically appears when text needs to be entered.

To enter text. Text block Delete key Case key simply use the four-way keys Rec. MENU) ◆ Text input of the controller NEW YOR Del abc to highlight the desired character and then press the central button of the controller to enter it. Entering the case key will switch between upper and lower case; the change is immediately displayed on the keyboard. When complete, highlight the enter key and press the controller to enter the Space Enter text and complete the **♦ ♦**:select •:enter operation. To cancel the operation, press the menu Enter key button.

To delete text, move the cursor into the text block at the top of the screen. Use the cursor to highlight the character to be deleted. Press the down key; the delete key will be highlighted. Press the center of the controller to delete the character.

To replace a character, repeat the previous procedure, but when the delete key is highlighted, use the four-way keys to highlight the character to replace the one highlighted in the text box; press the controller to replace the character.

AUTOFOCUS MODES

This digital camera has two autofocusing modes. The single and continuous AF are selected in the basic section of the recording-mode menu (p. 78).

Single AF - for general purpose photography and static subjects. When the shutter-release button is pressed partway down, the autofocus system locks onto the subject in the focus area and will remain locked until the shutter button is released.

Continuous AF - for moving subjects. When the shutter-release button is pressed partway down, the autofocus system will activate and continue to focus until the exposure is made.

- When using continuous AF with the wide focus area (p. 74), the AF sensors used to indicate the point of focus will not be displayed.
- The continuous AF mode may have difficulty focusing on extremely fast subjects. In this situation, use manual focus to focus on a point in the subject's path and release the shutter just before the subject reaches that point; there is a slight delay between the time the shutter-release button is pressed and the shutter opens.
- Direct Manual focus (p. 131) can be used with single AF.
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Single AF icon - Focus confirmed.



Continuous AF icon - Focus confirmed.



Focus icon: red - Cannot focus. The subject is too close or a special situation is preventing the AF system from focusing.

- Do not confuse these icons with the metering-mode icons (p. 47).
- The shutter can be released even if the camera cannot focus on the subject.