SONY

Digital Still Camera
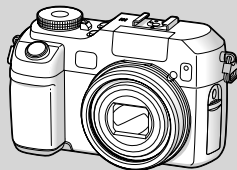
Operating Instructions
Before operating the unit, please read this manual thoroughly, and retain it for future reference.

Owner's Record
The model and serial numbers are located on the bottom. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. DSC-V3

Serial No. _____

Cyber-shot

MEMORY STICK TM

InfoLITHIUM TM R TYPE

DSC-V3

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For the Customers in the U.S.A. and Canada

RECYCLING LITHIUM-ION BATTERIES

Lithium-Ion batteries are recyclable.
You can help preserve our environment by returning your used rechargeable batteries to the collection and recycling location nearest you.

For more information regarding recycling of rechargeable batteries, call toll free 1-800-822-8837, or visit http://www.rbrc.org/

Caution: Do not handle damaged or leaking Lithium-Ion batteries.

For the customers in the United Kingdom

A moulded plug complying with BS 1363 is fitted to this equipment for your safety and convenience.
Should the fuse in the plug supplied need to be replaced, a fuse of the same rating as the supplied one and approved by ASTA or BSI to BS 1362, (i.e., marked with ⊛ or ⊽ mark) must be used.
If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

Attention for the Customers in Europe

```
CLASS 1 LASER PRODUCT
LASER KLASSE 1
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT
```
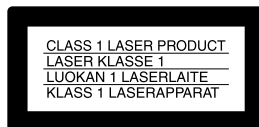
This product has been tested and found compliant with the limits sets out in the EMC Directive for using connection cables shorter than 3 meters (9.8 feet).

Attention

The electromagnetic field at the specific frequencies may influence the picture and sound of this camera.

Notice

If static electricity or electromagnetism causes data transfer to discontinue midway (fail), restart the application or disconnect and connect the USB cable again.

Notice

Certain countries and regions may regulate disposal of the battery used to power this product. Please consult with your local authority.

3

Read this first

Trial recording

Before you record one-time events, you may want to make a trial recording to make sure that the camera is working correctly.

No compensation for contents of the recording

Contents of the recording cannot be compensated for if recording or playback is not possible due to a malfunction of your camera or recording media, etc.

Back up recommendation

To avoid the potential risk of data loss, always copy (back up) data to a disk.

Notes on image data compatibility

- This camera conforms with the Design rule for Camera File system universal standard established by the JEITA (Japan Electronics and Information Technology Industries Association).
- Playback of images recorded with your camera on other equipment and playback of images recorded or edited with other equipment on your camera are not guaranteed.

Precaution on copyright

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Do not shake or strike the camera

In addition to malfunctions and inability to record images, this may render the recording medium unusable or image data breakdown, damage or loss may occur.

LCD screen, LCD finder (only models with an LCD finder) and lens

- The LCD screen and the LCD finder are manufactured using extremely high-precision technology so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue or green in color) that constantly appear on the LCD screen and the LCD finder. These points are normal in the manufacturing process and do not affect the recording in any way.
- Be careful when placing the camera near a window or outdoors. Exposing the LCD screen, the finder or the lens to direct sunlight for long periods may cause malfunctions.
- Do not press the LCD screen hardly. The screen may be uneven and that may cause a malfunction.
- Images may be trailed on the LCD screen in a cold location. This is not a malfunction.

The power zoom lens

This camera is equipped with a power zoom lens. Be careful not to bump the lens, and be careful not to apply force to it.

Clean the flash surface before use

The heat of flash emission may cause dirt on the flash surface to become discolored or to stick to the flash surface, resulting in insufficient light emission.

Do not get the camera wet

When taking pictures outdoors in the rain or under similar conditions, be careful not to get the camera wet. Water entering the inside of the camera may cause malfunctions which in some cases may not be repairable. If moisture condensation occurs, see page 143 and follow the instructions on how to remove it before using the camera.

Do not expose the camera to sand or dust

Using the camera in sandy or dusty locations may cause malfunction.

Do not aim the camera at the sun or other bright light

This may cause irrecoverable damage to your eyes. Or it may cause the malfunction of your camera.

Notes on the camera locations

Do not use the camera near a location that generates strong radio waves or emits radiation. The camera may not be able to record or play back properly.

About the Carl Zeiss lens

This camera is equipped with a Carl Zeiss lens which is capable of reproducing fine images. The lens for this camera uses the MTF* measurement system for cameras developed jointly by Carl Zeiss, in Germany, and Sony Corporation, and offers the same quality as other Carl Zeiss lenses.

* MTF is an abbreviation of Modulation Transfer Function, a numeric value indicating the amount of light from a specific part of the subject gathered at the corresponding position in the image.

The pictures used in this manual

The photographs used as examples of pictures in this manual are reproduced images, and are not actual images shot using this camera.

Trademarks

- Cyber-shot is a trademark of Sony Corporation.
- "Memory Stick," MEMORY STICK, "Memory Stick PRO," MEMORY STICK PRO, "Memory Stick Duo," MEMORY STICK DUO, "Memory Stick PRO Duo," MEMORY STICK PRO DUO , "MagicGate" and MAGICGATE are trademarks of Sony Corporation.
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- Picture Package is a trademark of Sony Corporation.
- Microsoft, Windows, WindowsMedia, and DirectX are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Macintosh, Mac OS, QuickTime, iMac, iBook, PowerBook, Power Mac and eMac are trademarks or registered trademarks of Apple Computer, Inc.
- Macromedia and Flash are trademarks or registered trademarks of Macromedia, Inc. in the United States and/or other countries.
- Intel, MMX, and Pentium are trademarks or registered trademarks of Intel Corporation.
- CompactFlash is a trademark of SanDisk Corporation.
- In addition, system and product names used in this manual are, in general, trademarks or registered trademarks of their respective developers or manufacturers. However, the ™ or ® marks are not used in all cases in this manual.

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Advanced still image shooting

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8

Identifying the parts

See the pages in parentheses for details of operation.
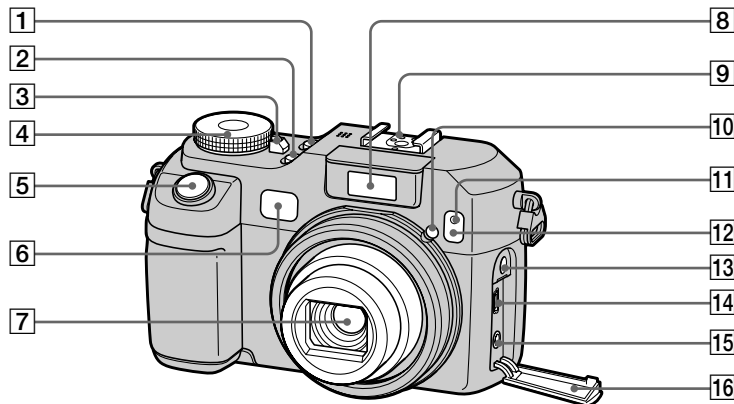
1. **POWER button** (17)
2. **NIGHTFRAMING/NIGHTSHOT button** (77)
3. **POWER lamp** (17)
4. **Mode dial** (12, 136)
5. **Shutter button** (30)
6. **Finder window**
7. **Lens**
8. **Flash emitter** (35)
9. **Advanced accessory shoe** (72)
10. **Hologram AF emitter** (35, 140)
11. **Self-timer lamp** (34)
12. **Infrared ray emitter** (77)
13. **ACC (Accessory) jack**
14. **ψ(USB) jack** (104)
15. **A/V OUT (MONO) jack** (44)
16. **Jack cover** (44)

• The flash automatically pops up and strobes. Close the flash by hand after use.
• Use the ACC (accessory) jack to connect an external flash or the remote control tripod.

13 **Control button**
Menu on: ▲/▼/◀/▶/● (17)**/**
Menu off: ⚡/⏱/☺/🌷 (69/34/31/33)

14 ⠶ / 🗑 **(Image Size/Delete) button**
(24, 46)

15 **DC IN jack cover** (13, 16)

16 **DC IN jack** (13, 16)

1 **Microphone**

2 **Finder** (36)

Self-timer (34)**/recording lamp (red)** (30)

AE/AF lock lamp (green) (30)

CHG/⚡ lamp (orange) (14, 35, 69)
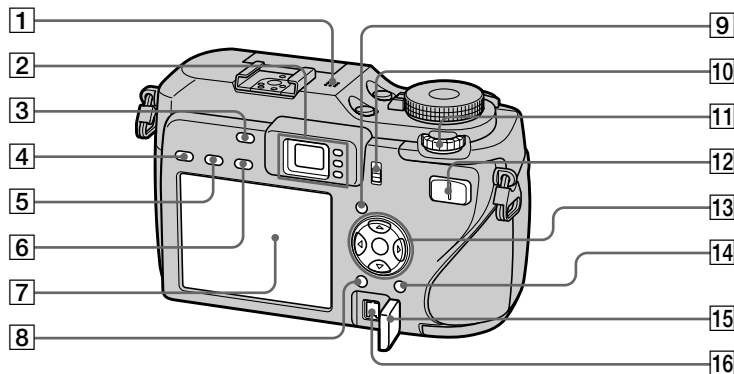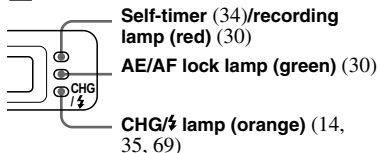
3 **AE LOCK button** (63)

4 ☑ **(Exposure) button** (61)

5 **FOCUS button** (66, 69)

6 **FRAME button** (66)

7 **LCD screen**
For details on the items on the LCD screen, see page 149 to 153.

8 **MENU button** (50, 136)

9 |▢| **(Display/LCD screen on/off) button** (36)

10 ⬆ **/CF ("Memory Stick"/CF card) switch** (21)

11 **Jog dial** (51)

12 **For shooting: Zoom (W/T) button** (31)
For viewing: ⊖/⊕ **(Playback zoom) button** (83)**/**
▦ **(Index) button** (42)

10

1 **Hook for shoulder strap**

2 **Speaker**

3 **Tripod receptacle**

4 **CF card eject lever** (24)

5 **Battery/"Memory Stick"/CF card cover**

6 **Battery insertion slot** (13)

7 **Battery eject lever** (14)

8 **CF card insertion slot** (23)

9 **RESET button** (119)

10 **Access lamp** (22)

11 **"Memory Stick" insertion slot** (22)

• Use a tripod with a screw length of less than 5.5 mm (7/32 inch). You will be unable to firmly secure the camera to tripods having longer screws, and may damage the camera.

Shoulder strap

11

Mode dial

Before using your camera, set the desired mark on the mode dial onto the POWER lamp side.
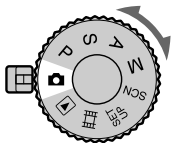
○ (Auto adjustment mode)
The focus, exposure and white balance are automatically adjusted to allow easy shooting. The image quality is set to [Fine] (page 52).

P (Program auto shooting)
The shooting adjustments are made automatically just as in the auto adjustment mode, but you can also change the focus and other adjustments as desired. In addition, you can set various shooting functions using menus (pages 50 and 136).

S (Shutter speed priority)
You can select the shutter speed (page 57). In addition, you can set the desired shooting functions using menus (pages 50 and 136).

A (Aperture priority)
You can select the aperture value (page 58). In addition, you can set the desired shooting functions using menus (pages 50 and 136).

M (Manual exposure shooting)
You can manually adjust the aperture value and the shutter speed (page 60). In addition, you can set various shooting functions using menus (pages 50 and 136).

SCN (Scene Selection)
You can shoot effective pictures according to the scene (page 39). In addition, you can set various shooting functions using menus (pages 50 and 136).

SET UP (Set up)
You can change the settings of the camera (pages 51 and 140).

▤ (Movie shooting)
You can shoot movies (page 97).

▶ (Playback/Edit)
You can play back or edit recorded still images and movies (pages 42 and 87).

Charting the battery pack

1
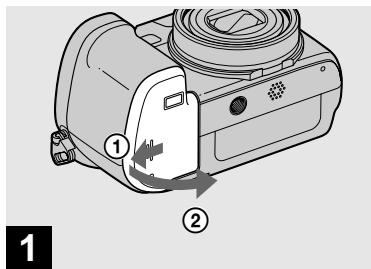
➡ Open the battery/"Memory Stick"/CF card cover.

Slide the cover in the direction of the arrow.

- **Be sure to turn off your camera when charging the battery pack (page 17).**
- Your camera operates with the "InfoLITHIUM" NP-FR1 battery pack (R type) (supplied). You can use only R type battery pack (page 146).

◀ mark

Battery eject lever

2
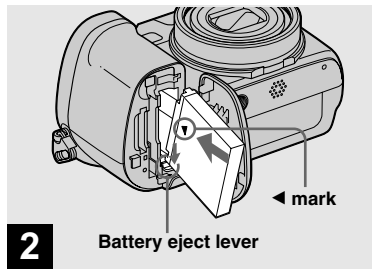
➡ Install the battery pack, then close the battery/"Memory Stick"/CF card cover.

Make sure the battery pack is firmly inserted all the way, then close the cover.

Battery insertion slot
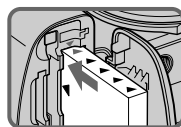
Insert the battery pack so that tip of the ▲ marks on the side of the battery pack face the tip of the ▲ mark on the battery insertion slot.

- The battery pack is easily inserted by pushing the battery eject lever at the front of the battery compartment toward the LCD screen.

DC IN jack cover

AC Adaptor

DC plug

3
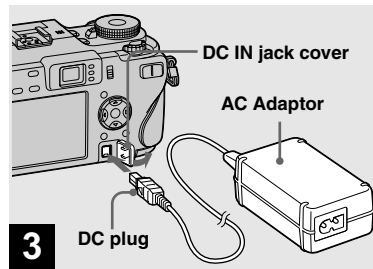
➡ Open the DC IN jack cover and connect the AC Adaptor (supplied) to the DC IN jack of your camera.

Connect the plug with the ▲ mark facing left.

- Do not short the DC plug of the AC Adaptor with a metallic object, as this may cause malfunction.
- Clean the DC plug of the AC Adaptor with a dry cotton bud. Do not use the dirty plug. Use of the dirty plug may not properly charge the battery pack.

13

To a wall outlet (wall socket)

②

①

4

Power cord (mains lead)
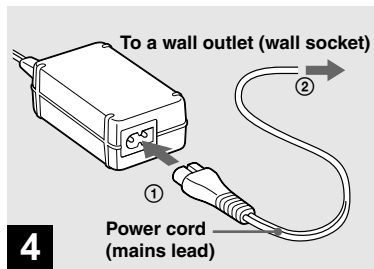
➡ **Connect the power cord (mains lead) to the AC Adaptor and to a wall outlet (wall socket).**

The CHG /⚡ lamp lights up when charging begins.

CHG/⚡ lamp

The CHG/⚡ lamp goes off when charging is completed.

• After charging the battery pack, disconnect the AC Adaptor both from the DC IN jack of the camera and from a wall outlet (wall socket).

Battery remaining indicator

The battery remaining indicator on the LCD screen shows the remaining shooting or viewing time.

Remaining indicator

60min

Remaining time

• When you switch the LCD screen on/off, it takes about one minute for the correct battery remaining time to appear.
• The displayed remaining time may not be correct under certain circumstances or conditions.

Charging time

Approximate time to charge a completely discharged battery pack using the AC Adaptor at a temperature of 25°C (77°F).

Battery pack	Charging time (min.)
NP-FR1 (supplied)	Approx. 180

• The charging time may become longer under certain circumstances or conditions.

To remove the battery pack
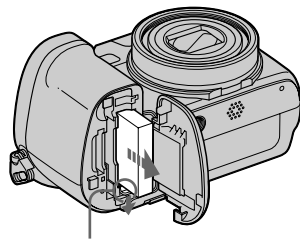
Battery eject lever

Open the battery/"Memory Stick"/CF card cover. Slide the battery eject lever in the direction of the arrow, and remove the battery pack.

• Be careful not to drop the battery pack when removing it.

Number of images and battery life that can be recorded/viewed

The tables show the approximate number of images and the battery life that can be recorded/viewed when you shoot images in normal mode with a fully charged battery pack (supplied) at a temperature of 25°C (77°F). The numbers of images that can be recorded or viewed take into account changing the recording medium as necessary. Note that the actual numbers may be less than indicated depending on the conditions of use.

- The battery capacity decreases as the number of uses increases and over time (page 147).

Shooting still images

Under the average conditions[1]

Recording medium	NP-FR1 (supplied)		
	LCD screen	No. of images	Battery life (min.)
"Memory Stick"	On	Approx. 300	Approx. 150
	Off	Approx. 400	Approx. 200
CF card	On	Approx. 300	Approx. 150
	Off	Approx. 400	Approx. 200

[1] Shooting in the following situations:
- (P.Quality) is set to [Fine]
- Shooting one time every 30 seconds
- The zoom is switched alternately between the W and T ends
- The flash strobes once every two times
- The power turns on and off once every ten times
- [AF Mode] is set to [Single] in the SET UP settings

The measurement method is based on CIPA standard. (CIPA: Camera & Imaging Products Association)

Viewing still images[2]

Recording medium	NP-FR1 (supplied)	
	No. of images	Battery life (min.)
"Memory Stick"	Approx. 6800	Approx. 340
CF card	Approx. 6800	Approx. 340

[2] Viewing single images in order at about three second intervals

Shooting movies[3]

Recording medium	NP-FR1 (supplied)	
	LCD screen On	LCD screen Off
"Memory Stick"	Approx. 120 min.	Approx. 170 min.
CF card	Approx. 120 min.	Approx. 170 min.

[3] Shooting movies continuously with the image size [160]

- The number of images and the battery life that can be recorded/viewed are decreased under the following conditions:
  - The surrounding temperature is low
  - The flash is used
  - The camera has been turned on and off many times
  - The zoom is used frequently
  - The NightFraming or NightShot function is activated
  - [LCD Backlight] is set to [Bright] in the SET UP settings
  - [AF Mode] is set to [Monitor] or [Cont] in the SET UP settings
  - The battery power is low
- The battery life and the number of images recordable or viewable does not depend on the image size setting.

Using the AC adaptor

DC IN jack cover
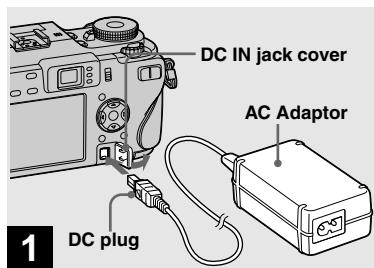
AC Adaptor

1 **DC plug**

➡ **Open the DC IN jack cover, connect the AC Adaptor (supplied) to the DC IN jack of the camera.**

Connect the DC plug with the ▲ mark facing left.

• Connect the AC Adaptor to an easily accessible wall outlet (wall socket) close by. If any trouble occurs while using the adaptor, immediately shut off the power by disconnecting the plug from the wall outlet (wall socket).

To a wall outlet (wall socket)

②

①

2 **Power cord (mains lead)**
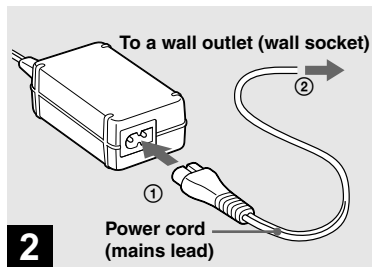
➡ **Connect the power cord (mains lead) to the AC Adaptor and then to a wall outlet (wall socket).**

• After using the AC Adaptor, disconnect it both from the DC IN jack of the camera and from a wall outlet (wall socket).
• The set is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet (wall socket) even if the set itself has been turned off.

Using your camera abroad

Power sources

You can use your camera in any country or region with the AC Adaptor/power cord (mains lead) (supplied) within 100 V to 240 V AC, 50/60 Hz. Use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet (wall socket) **[b]**.

AC–LS5/LS5B

[a] **[b]**
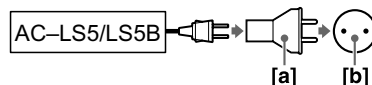
• Do not use an electronic transformer (travel converter), as this may cause a malfunction.

Turning on/off your camera
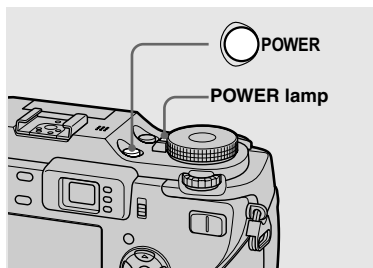
POWER
POWER lamp

➡ **Press POWER.**

The POWER lamp (green) lights up and
the power is on. When you turn on your
camera for the first time, the Clock Set
screen appears (page 18).

Turning off the power

Press POWER again. The POWER lamp
goes out, and the camera turns off.

• **Do not leave the camera with the lens
portion extended for a long period of
time with the battery or the AC Adaptor
removed, etc., as this may cause
malfunction.**
• If you turn on the power when the mode dial
is set to ◘, P, S, A, M, SCN or 🎬, the lens
portion moves. Do not touch the lens portion
while it is operating.

Auto power-off function

If you do not operate the camera for about
three minutes during shooting or viewing
or when performing SET UP, the camera
turns off automatically to prevent wearing
down the battery. The auto power-off
function only operates when the camera is
operating using a battery pack. The auto
power-off function also will not operate in
the following circumstances.

• When viewing movies
• When playing back a slide show
• When a plug is connected to the
  Ψ (USB) jack or the A/V OUT (MONO)
  jack

How to use the control button

Camera 1	
AF Mode:	Single
Digital Zoom:	Smart
Date/Time:	Off
Red Eye Reduction:	Off
Hologram AF:	Auto
Auto Review:	Off
◆ SELECT	

Setup 2	
File Number:	
USB Connect:	
Video Out:	OK
Clock Set:	Cancel
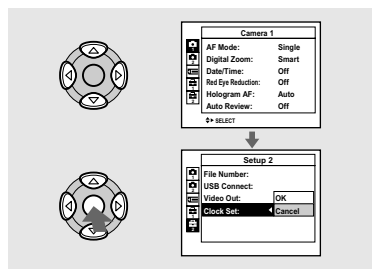
To change the current settings of the
camera, bring up the menu or the SET
UP screen (page 51), and use the control
button to make the changes.
To set a menu item, press ▲/▼/◄/► on the
control button to select the desired item
and setting and make the setting. To set
a SET UP item, press ▲/▼/◄/► on the
control button to select the desired item
and setting, then press ● to make the
setting.

Setting the date and time

Mode dial

1
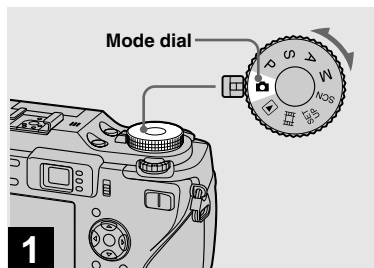
➡ **Set the mode dial to ▣.**

- **To change the date and time, set the mode dial to SET UP, select [Clock Set] in ▣ (Setup 2) (pages 51 and 142), and perform the procedure from step 3.**

• You can also carry out this operation when the mode dial is set to P, S, A, M, SCN, ▤ or ▶.

2
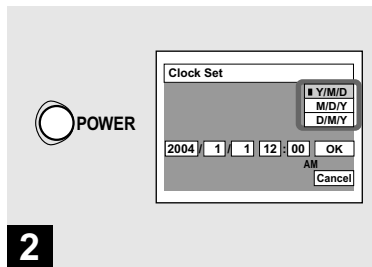
➡ **Press POWER to turn on the power.**

The POWER lamp (green) lights up and the Clock Set screen appears on the LCD screen.

3
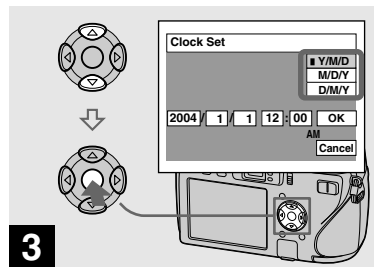
➡ **Select the desired date display format with ▲/▼ on the control button, then press ●.**

Select from [Y/M/D] (year/month/day), [M/D/Y] (month/day/year) or [D/M/Y] (day/month/year).

• If the rechargeable button battery (page 144), which provides the power for saving the time data, ever becomes low, the Clock Set screen will appear again. When this happens, reset the date and time, by starting from step 3 above.

18

4
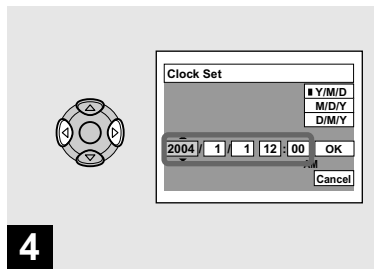
➜ **Select the year, month, day, hour or minute item you want to set with ◄/► on the control button.**

The item to be set is indicated with ▲/▼.

5
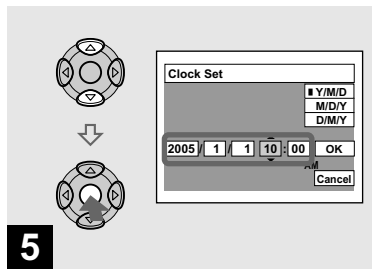
➜ **Set the numeric value with ▲/▼ on the control button, then press ● to enter it.**

After entering the number, ▲/▼ moves to the next item. Repeat steps **4** and **5** until all of the items are set.

• If you selected [D/M/Y] in step **3**, set the time on a 24-hour cycle.
• Midnight is indicated as 12:00 AM, and noon as 12:00 PM.

6
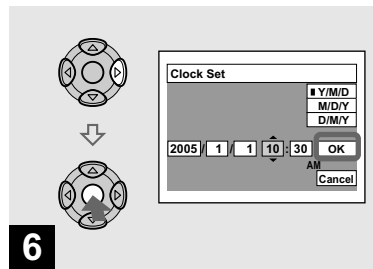
➜ **Select [OK] with ► on the control button, then press ●.**

The date and time are entered and the clock starts to keep time.

• To cancel the date and time setting, select [Cancel] with ▲/▼/◄/► on the control button, then press ●.

Changing the language setting

You can change the screen display like
menu items, warnings and messages in
your desired language.
To change the language setting, in the SET
UP settings, select **Ａ** (Language) in ▇
(Setup 1) (pages 51 and 141), and select
the desired language.

Inserting and removing a recording medium
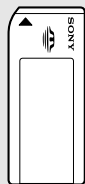
"Memory Stick"
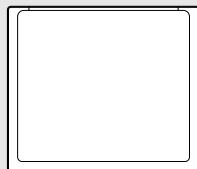
CompactFlash card

You can use a "Memory Stick" or CompactFlash card (CF card) as a recording medium. This camera is not compliant with CompactFlash Type II.

CompactFlash card

SanDisk
SDCFH-1024-903 (1 GB)
SDCFB-1024-J60 (1 GB)

We have checked the compatibility of above CF cards compliant with CompactFlash Type I, however, we cannot guarantee proper operation of all CF cards.

- Copying between media cannot be done with this camera.
- For more information about the "Memory Stick", see page 144.
- Before using a CF card, be sure to format it using this camera. Otherwise, satisfactory performance may not be obtained (page 48).

Switching the recording medium
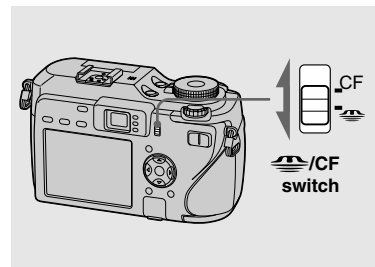
/CF switch

➡ **Select the recording medium with the ⏚/CF switch.**

⏚ : When recording images onto a "Memory Stick" or playing back images from a "Memory Stick".

CF : When recording images onto a CF card or playing back images from a CF card.

Shooting still images

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Inserting and removing a "Memory Stick"
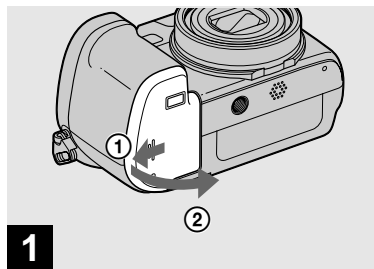
1

➡ **Open the battery/"Memory Stick"/CF card cover.**

Slide the cover in the direction of the arrow.

Terminal side

Label side

2

➡ **Insert the "Memory Stick".**

Insert the "Memory Stick" all the way in until it clicks as shown in the illustration.

• Whenever you insert a "Memory Stick", push it as far as it can go. If you do not insert it correctly, a proper recording or playback may not be carried out.

Access lamp

3
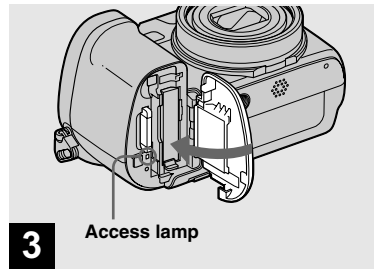
➡ **Close the battery/"Memory Stick"/CF card cover.**

To remove the "Memory Stick"
Open the battery/"Memory Stick"/CF card cover, then push the "Memory Stick" to pop it out.

• **Whenever the access lamp is lit, the camera is recording or reading out an image. Never remove the "Memory Stick" or turn off the power at this time. The data may be corrupted.**

Inserting and removing a CF card
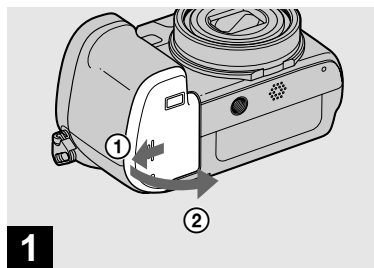
1

➜ **Open the battery/"Memory Stick"/CF card cover.**

Slide the cover in the direction of the arrow.

Connector side

Front side

2

➜ **Insert the CF card.**

Insert the CF card all the way in from the connector side as shown in the illustration.

• If you cannot insert the CF card all the way in, do not push it forcefully. Also, check the direction of the CF card. If you try to insert it in the wrong direction, the camera or CF card may be damaged.

3

➜ **Close the battery/"Memory Stick"/CF card cover.**

To remove the CF card

Open the battery/"Memory Stick"/CF card cover, then push the CF card eject lever so that the CF card is ejected.
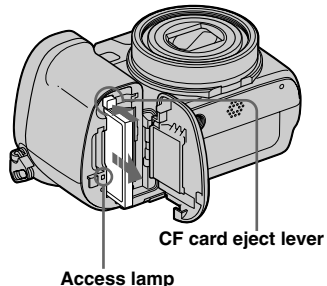
CF card eject lever

Access lamp

- **Whenever the access lamp is lit, the camera is recording or reading out an image. Never remove the CF card or turn off the power at this time. The data may be corrupted or the CF card may become unusable.**

Setting the still image size

1
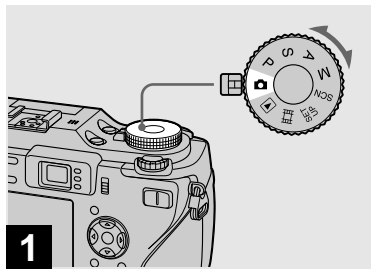
➡ **Set the mode dial to ☐, and turn on the power.**

- You can carry out this operation even when the mode dial is set to P, S, A, M, SCN.

2 ⊞ / �🗑
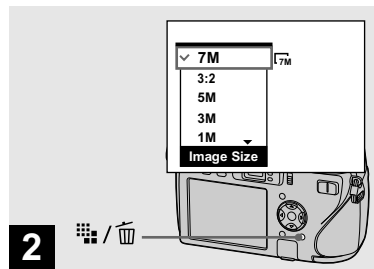
➡ **Press ⊞ / 🗑 (Image Size).**

The Image Size setup appears.

- For details on the image size, see page 26.

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3
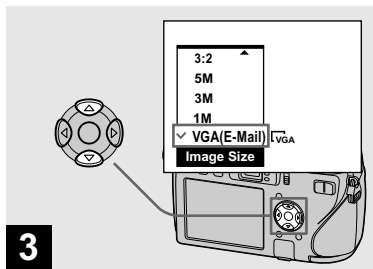
➡ **Select the desired image size with ▲/▼ on the control button.**

The image size is set.
When the setting is complete, press ⊞ / 🗑 (Image Size) so that the Image Size setup disappears from the LCD screen.

• The image size selected here is maintained even when the power is turned off.

Image size and quality

You can choose image size (number of pixels) and image quality (compression ratio) based on the kind of images you want to shoot.

The image size is shown by the number of pixels (dots) (horizontal × vertical), which compose an image. For example, a 7M (3072×2304) size image indicates that there are 3072 pixels horizontally and 2304 pixels vertically. The larger the number of pixels, the larger the image size.

You can select from Fine (high quality) or Standard image quality. Each uses a different compression ratio.

When you select Fine, the image quality improves as the image size increases, but the amount of recorded data also increases and the number of images that can be recorded on a recording medium decreases. Refer to the table on the right and choose the image size and image quality appropriate to the kind of images you want to shoot.

Short description of the image size

The following illustration shows a brief image using the maximum image size and the minimum one.

Image size
7M $\boxed{7M}$
3072 pixels × 2304 pixels = 7,077,888 pixels

Image size
VGA (E-Mail) $\boxed{VGA}$
640 pixels × 480 pixels = 307,200 pixels
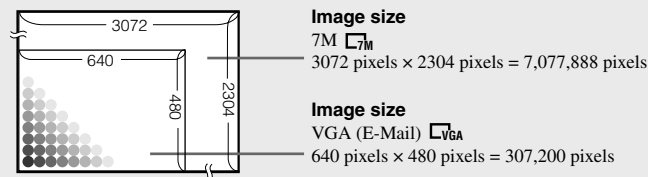
Examples based on the image size

Image size		Usage guidelines
7M[1] (3072×2304)	Larger	• For saving important images, printing in A3 size or printing A4 size high density images
3:2[2] (3072×2048)		
5M (2592×1944)		• For printing in A4 size or printing A5 size high density images
3M (2048×1536)		
1M (1280×960)		• For printing in postcard size
VGA (E-Mail) (640×480)	Smaller	• For recording a larger number of images • For attaching images to e-mail or creating home pages

[1] The factory setting is [7M]. It is the highest image quality on this camera.
[2] Images are recorded in the same 3:2 aspect ratio as photograph printing paper or postcards, etc.

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Examples based on the image quality

Image quality (Compression ratio)		Usage guideline
Fine	Low compression (looks better)	• For recording or printing with better image quality.
Standard	High compression (normal)	• For recording a larger number of images.

Number of still images that can be recorded

The number of images that can be saved in a recording medium[1]

The number of images that can be saved when [P.Quality] is set to [Fine] ([Standard])[2] are shown below.

• The table below shows the approximate number of images that can be recorded on a recording medium that has been formatted by this camera.

"Memory Stick" (Units: number of images)

Capacity / Image size	16MB	32MB	64MB	128MB	256MB	512MB	1GB
7M	4 (9)	9 (18)	18 (36)	37 (73)	67 (132)	137 (268)	279 (548)
3:2	4 (9)	9 (18)	18 (36)	37 (73)	67 (132)	137 (268)	279 (548)
5M	6 (11)	12 (23)	25 (48)	51 (96)	92 (174)	188 (354)	384 (723)
3M	10 (18)	20 (37)	41 (74)	82 (149)	148 (264)	302 (537)	617 (1097)
1M	24 (46)	50 (93)	101 (187)	202 (376)	357 (649)	726 (1320)	1482 (2694)
VGA (E-Mail)	97 (243)	196 (491)	394 (985)	790 (1975)	1428 (3571)	2904 (7261)	5928 (14821)

[1] When [REC Mode] is set to [Normal].
For the number of images that can be saved in other modes, see page 133.

[2] For more information about the image quality (compression ratio), see page 52.

CF card (Units: number of images)

Capacity / Image size	1GB
7M	294 (578)
3:2	294 (578)
5M	406 (762)
3M	651 (1157)
1M	1563 (2842)
VGA (E-Mail)	6252 (15631)

[1] When [REC Mode] is set to [Normal].
For the number of images that can be saved in other modes, see page 135.

[2] For more information about the image quality (compression ratio), see page 52.

• When images recorded using earlier Sony models are played back on this camera, the display may differ from the actual image size.
• When the images are viewed on the LCD screen of the camera, they all look the same size.
• The number of shooting images may differ from these values according to the shooting mode, shooting conditions and the subject.
• When the number of remaining shooting images is greater than 9,999, the ">9999" indicator appears on the LCD screen.
• You can resize the images later (Resize function, see page 88).

Basic still image shooting — Using auto adjustment mode

Holding the camera correctly
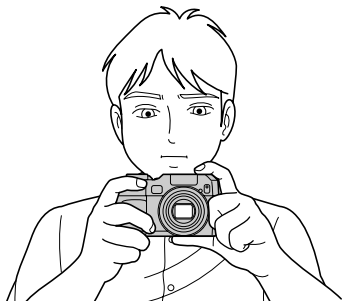
When shooting pictures with the camera, be careful so that your fingers do not block the lens portion, finder window, flash emitter, infrared ray emitter or speaker (page 9).

1
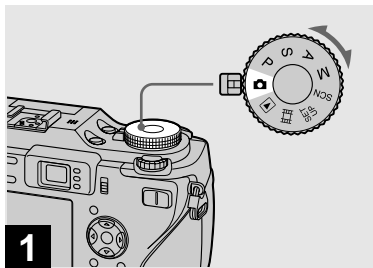
➡ **Set the mode dial to ◻, and turn on the power.**

- To select the recording medium, use the ⬆/CF switch (page 21).
- The lens cover opens when the power is turned on.
- Do not touch the lens portion while it is operating, such as when you press POWER to turn on the power or when the zoom function is working (page 31).

2
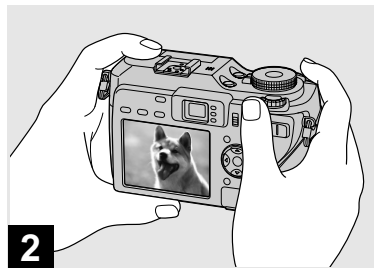
➡ **Hold the camera steadily with both hands and position the subject in the center of the focus frame.**

- The minimum focal distance to a subject is approx. 50 cm (19 3/4 inches).
- The frame indicated on the LCD screen shows the focus adjustment range (AF range finder, page 66).

AE/AF lock indicator Flashes in green → Light up

3
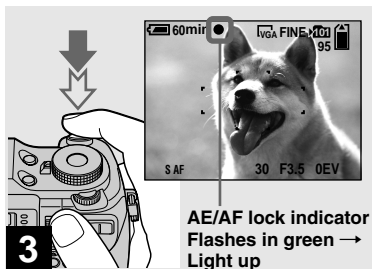
➜ **Press and hold the shutter button halfway down.**

The beep sounds but the image is not yet recorded. When the AE/AF lock indicator changes from flashing to steadily lit, the camera is ready for shooting.
(The LCD screen may be frozen for a split second depending on the subject.)
When the surroundings are dark, the flash automatically pops up and strobes.

- If you release the shutter button, shooting will be canceled.
- You can continue and shoot even when the camera does not beep, but in this case the focus is not set properly (except in Continuous AF, page 68).
- No beep sounds when [Beep] is set to [Off] in the SET UP settings (page 141).

4
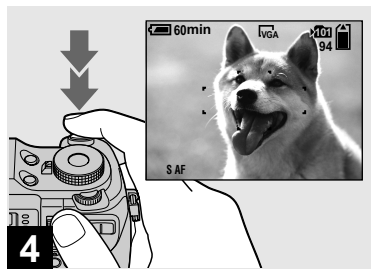
➜ **Press the shutter button fully down.**

The shutter sounds. The image will be recorded in the recording medium. The recorded image is displayed for approximately two seconds (Auto Review, page 140). When the recording lamp (page 10) goes out, you can shoot the next image.

- When operating the camera using a battery pack, if you do not operate the camera for a while during recording or playback, the camera turns off automatically to prevent wearing down the battery (page 17).

Auto Focus

When you try to shoot a subject that is difficult to focus on, the AE/AF lock indicator changes to flashing slowly. In addition, the AE locked beep does not sound (except in Continuous AF, page 68). The Auto Focus function may have difficulty working under the following conditions. In such cases, release the shutter button, then recompose the shot and focus again.

- The subject is distant from the camera and dark.
- The contrast between the subject and its background is poor.
- The subject is seen through glass, such as a window.
- A fast-moving subject.
- The subject reflects or has a lustrous finish, such as a mirror or a luminous body.
- A flashing subject.
- A backlit subject.

There are two Auto Focus functions: "AF range finder frame" which sets the focus position according to the subject position and size, and "AF mode" which sets the focus start/finish timing. See page 66 for details.

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Checking the last image you shot — Quick Review
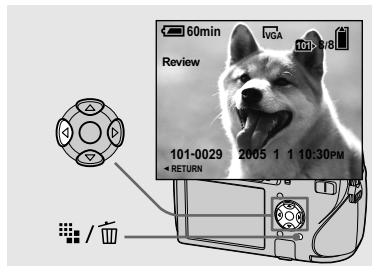
➡ **Press ◄ (⊜) on the control button.**

To return to the normal shooting mode, press lightly on the shutter button or press ◄ (⊜) again.

To delete the image displayed on the LCD screen

1 Press ⊞ / 🗑 (Delete).
2 Select [Delete] with ▲ on the control button, then press ●.
  The image is deleted.

• The image may appear rough right after playback starts due to the image processing.

Using the zoom feature
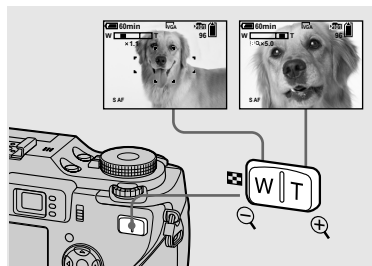
➡ **Press the zoom buttons to choose the desired zoom position for shooting.**

The minimum focal distance to the subject

Approx. 50 cm (19 3/4 inches) from the lens surface

• The lens portion moves during zoom operation. Do not touch the lens portion while it is operating.
• You cannot change the zoom scale while shooting movie (page 97).

Zoom

Your camera is equipped with the following zoom functions.
The enlargement method and the zoom scale differ according to the image size and the zoom type, so select the zoom to match the shooting purpose.

Optical zoom

The telephoto and wide angle adjustment is made by the lens in the same manner as a conventional film camera.
The maximum optical zoom is 4×.

Digital zoom

The camera has the following two types of digital zoom.

Smart zoom
The image is enlarged with almost no distortion. This lets you use smart zoom with the same feeling as optical zoom.
The maximum smart zoom scale depends on the selected image size as shown in the following table.

Precision digital zoom

All image sizes are enlarged up to a maximum 8×. Precision digital zoom function cuts out and enlarges a certain portion of the image, so the image quality deteriorates.
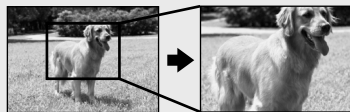
Optical zoom   **Precision digital zoom**

Image size	Maximum smart zoom scale	Maximum precision digital zoom scale
7M	—*	8×
3:2	—*	8×
5M	Approx.4.7×	8×
3M	Approx.6×	8×
1M	Approx.9.6×	8×
VGA (E-Mail)	Approx.19×	8×

* The maximum optical zoom scale is 4×.

• The maximum smart zoom and precision digital zoom scale includes the optical zoom scale.

• You cannot confirm the image with the finder when using the smart zoom function.
• When using the smart zoom, the image on the LCD screen may look rough. However, this phenomenon has no effect on the recorded image.
• You cannot use the smart zoom in the Multi Burst mode.

To set digital zoom

Set [Digital Zoom] to [Smart] or [Precision] in the SET UP settings (page 140).
(When you purchase your camera, [Digital Zoom] is set to [Smart].)

When you press the zoom button, the zoom scaling indicator appears on the LCD screen as follows.

The W side of this line is optical zoom, and the T side is digital zoom
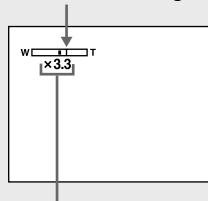
Zoom scaling indicator

• The zoom scaling indicator differs according to the zoom type.
  – Optical zoom: ✕
  – Smart zoom: 𝗦Q✕
  – Precision digital zoom: 𝗣Q✕
• The AF range finder frame does not appear when using the digital zoom. The ▣ , ▯ or ◪ indicators flashes, and AF operates with priority on subjects located near the center.
• The digital zoom cannot be used when shooting in RAW mode (page 79).

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Shooting close-ups — Macro

The close-ups (Macro) recording mode is used when zooming up subjects such as flowers or insects. Setting the zoom all the way to the W side lets you shoot subjects at distances as close as 10 cm (4 inches). However, the minimum focus distance varies according to the zoom position. Therefore, shooting with the zoom set all the way to the W side is recommended.

When the zoom is set all the way to the W side:
Approx. 10 cm (4 inches) from the lens surface

When the zoom is set all the way to the T side:
Approx. 40 cm (15 3/4 inches) from the lens surface

- We recommend that you use Flexible Spot AF (page 66).
- When shooting in the close-ups (Macro) mode, use the LCD screen. If you shoot using the finder, the range you can see through the finder may differ from the actual recording range. This is due to parallax.
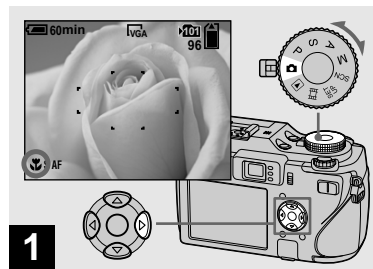
➡ **Set the mode dial to ◻, and press ▶ (♥) on the control button.**

The ♥ (Macro) indicator appears enlarged on the LCD screen (page 140).

- If the menu is currently displayed, press MENU first so that the menu disappears.
- You can also carry out this operation when the mode dial is set to P, S, A, M, SCN (other than ☽ (Twilight mode), ▲ (Landscape mode), ☗ (Candle mode)) or 🎞.
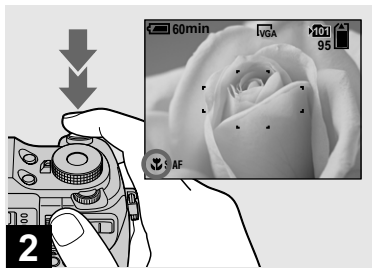
33

Using the self-timer

2

➡ **Center the subject in the frame. Press and hold the shutter button halfway down to focus on, then press the shutter button fully down.**

To return to normal recording mode

Press ▶ (✿) on the control button again. The ✿ indicator disappears from the LCD screen.

- When shooting in close-ups (Macro) mode, the in-focus range becomes extremely narrow, and the entire subject may not be in focus.
- When shooting in close-ups (Macro) mode, the AF speed drops in order to focus accurately on close subjects.

1
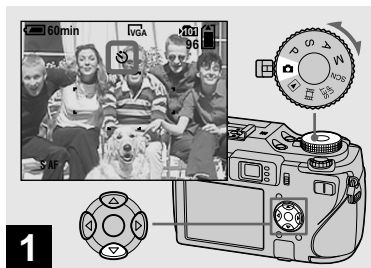
➡ **Set the mode dial to ▣, and press ▼ (⟳) on the control button.**

The ⟳ (self-timer) indicator appears enlarged on the LCD screen (page 140).

- If the menu is currently displayed, press MENU first so that the menu disappears.
- You can also carry out this operation when the mode dial is set to P, S, A, M, SCN or ▦.

2
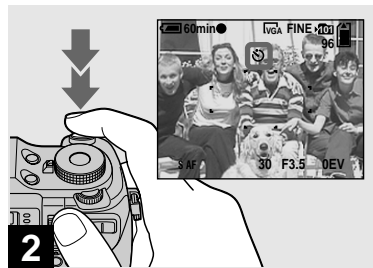
➡ **Center the subject in the frame. Press and hold the shutter button halfway down to focus on, then press the shutter button fully down.**

The self-timer lamp (page 9) flashes and a beep sounds after you press the shutter button until the shutter operates (approximately 10 seconds later).

To cancel the self-timer in the middle of the operation

Press ▼ (⟳) on the control button again. The ⟳ indicator disappears from the LCD screen.

- If you press the shutter button while standing in front of the camera, the focus and the exposure may not be correctly set.

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Using the flash

Flash emitter

Hologram AF emitter
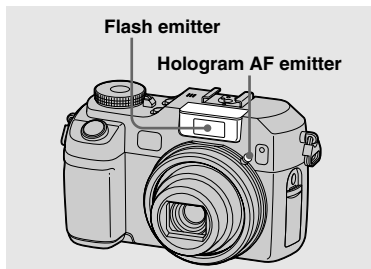
The flash automatically pops up and strobes when the surroundings are dark. Close the flash by hand after using it.

- When [ISO] is set to [Auto] in the menu settings, the recommended shooting distance using the flash is approx. 0.4 m to 3 m (15 3/4 inches to 118 1/8 inches) (W)/0.4 m to 2.5 m (15 3/4 inches to 98 1/2 inches) (T).
- The flash strobes twice. The first time is the pre-flash which is used to adjust the flash light quantity, and the second time is the actual flash during which the image is recorded.
- While the flash is being charged, the CHG/$\textbf{\textit{4}}$ (flash) lamp flashes. After charging is completed, the lamp goes out.
- You can also select the following flash modes: $\textbf{\textit{4}}$(Forced flash), $\textbf{\textit{4}}$SL (Slow synchro), and $\textbf{\textcircled{\textit{4}}}$ (No flash). For details on these modes, see page 69.

Shooting images with the Hologram AF

The hologram AF is fill light to focus more easily on a subject in dark surroundings. The $\textbf{\textit{ON}}$ appears on the LCD screen and the hologram AF emits red light when the shutter button is pressed halfway until the focus is locked.

When this function is not needed, set [Hologram AF] to [Off] in the SET UP settings (page 140).

- If hologram AF light does not reach the subject sufficiently or the subject has no contrast, focus will not be achieved. (An approximate distance of 0.5 m to 3.0 m (19 3/4 inches to 118 1/8 inches) is recommended.)
- Focus is achieved as long as hologram AF light reaches the subject, even if the light is slightly off the center of the subject.
- When the focus preset distance is set (page 69), the hologram AF does not function.

- If the hologram AF emitter is dirty, the hologram AF light may be dimmed and focus may not be achieved. In this case, wipe the hologram AF emitter with a dry cloth.
- Do not block the hologram AF emitter during recording.
- The AF range finder frame is not displayed. AF range finder frame indicator flashes and the centrally-located subject has priority to focus on.
- When you mount an adaptor ring (not supplied), telephoto end conversion lens (not supplied), lens hood (not supplied) or ring light (not supplied) to the camera, the hologram AF light is blocked. We recommend using hologram AF together with the Sony HVL-F32X flash.
- The hologram AF does not function when [SCN] (Scene) is set to $\textbf{\textit{J}}$ (Twilight mode) or $\textbf{\textsf{AA}}$ (Landscape mode).

About Hologram AF

"Hologram AF (Auto-Focus)" is an AF fill light system that applies laser holograms to enable you to shoot still images in dark places. The Hologram AF system uses gentler radiation than conventional highbrightness LEDs or lamps, thus satisfying Laser Class 1* specifications and maintaining higher safety for human eyes.
No safety problems will be caused by looking directly into the hologram AF emitter at a close range. However, it is not recommended to do so, because you may experience such effects like several minutes of residual image and dazzling, that you encounter after looking into a flashlight.
* Hologram AF satisfies Class 1 (time base 30 000 seconds), specified in JIS (Japan), IEC (EU), and FDA (US) industry standards. Complying with these standards identifies the laser product as safe, under the condition that a human can look at the laser light either directly or focused through a lens for 30 000 seconds.

Shooting images with the finder
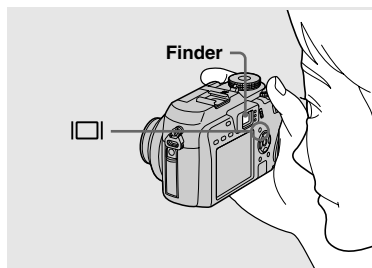
Finder

The finder is convenient when you want to save battery power, or when it is difficult to confirm the image using the LCD screen. Each time you press |□|, the display changes in the following order.

Histogram on
(Image information can also be displayed during playback.)

↓

Indicators off

↓

LCD screen off
Indicators on

- The image through the finder does not indicate the actual recordable range. This is due to parallax. To confirm the recordable range, use the LCD screen.
- Just as with the AE/AF lock indicator on the LCD screen, when the AE/AF lock lamp of the finder section stops flashing and remains on, you can start shooting (page 30).
- When the LCD screen is turned off:
  – The digital zoom does not function (page 31).
  – [AF Mode] is set to [Single] (page 68).
  – If you press ♯ (Flash mode)/♦ (Self-timer)/ ♣ (Macro), the image will be displayed on the LCD screen for approximately two seconds so you can check or change the setting.
- When shooting/viewing movies, the status of the LCD screen changes as follows: Indicators off → LCD screen off → Indicators on
- For a detailed description of the indicators, see page 149.
- For a detailed description of the histogram, see page 62.
- This setting is maintained even when the power is turned off.

Inserting the date and time on a still image

1
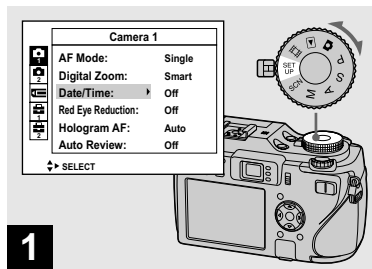
➡ **Set the mode dial to SET UP.**

The SET UP screen appears.

- When images are shot with the date and time superimposed, the date and time cannot be removed later.
- The date and time are not inserted in Multi Burst mode.
- The date and time do not appear on the LCD screen during shooting, instead, **DATE** indicator appears on the LCD screen. The actual date and time appear in red on the lower-right corner during playback only.

2
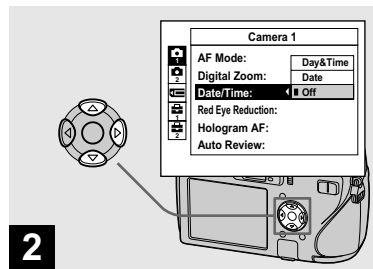
➡ **Select ◘ (Camera 1) with ▲ on the control button, then press ►.**
Select [Date/Time] with ▲/▼, then press ►.

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Camera 1	
AF Mode:	Single
Digital Zoom:	Smart
Date/Time: ▸	Day&Time
Red Eye Reduction:	Off
Hologram AF:	Auto
Auto Review:	Off

◂ PAGE SELECT

3
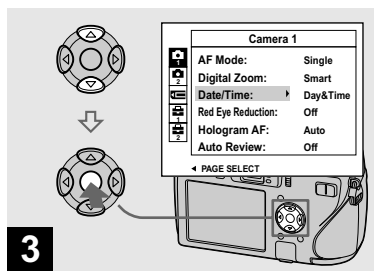
➡ **Select the date and time setting with ▲/▼ on the control button, then press ●.**

Day&Time: Superimposes the date, hour, and minute onto the image.
Date: Superimposes the year, month and day onto the image.
Off: Does not superimpose the date and time onto the image.
After the setting has been completed, set the mode dial to ▢ to shoot the image.

- You can shoot even when the mode dial is set to P, S, A, M or SCN.
- If you select [Date], the date is superimposed onto the image in the order selected in "Setting the date and time" (page 18).
- Date and time setting is maintained even when the power is turned off.

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Shooting according to scene conditions — Scene Selection

You can shoot more effectively by selecting the appropriate mode and then pressing the shutter button.

☽ Twilight mode

Allows you to shoot night scenes at far distance without losing the dark atmosphere of the surroundings.

• The shutter speed becomes slower, so using a tripod is recommended.

♪ Twilight portrait mode

Suitable for shooting portraits in dark places. Allows you to shoot sharp images of people in dark places without losing the dark atmosphere of the surroundings.

• The shutter speed becomes slower, so using a tripod is recommended.

▲ Landscape mode

Focuses only on a distant subject to shoot landscapes, etc.
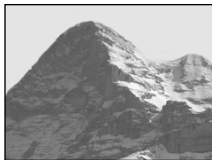
♠ Portrait mode

Backgrounds blur away, and the subject is sharpened.

❄ Snow mode

When shooting snowy scenes or other places where the whole screen appears white, use this mode to prevent sunken colors and record clear images.

🏝 Beach mode

When shooting seaside or lakeside scenes, the blue of the water is clearly recorded.

🕯 Candle mode

You can record parties, candle services and other candlelit scenes without spoiling the candlelight atmosphere.

• The shutter speed becomes slower, so using a tripod is recommended.

1
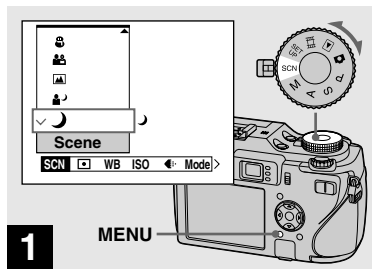
➡ **Set the mode dial to SCN, then press MENU.**

The menu appears.

2
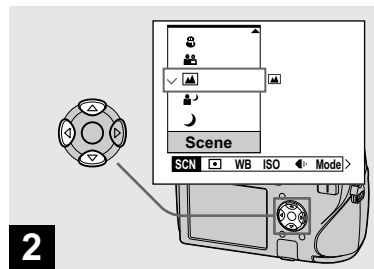
➡ **Select [SCN] (Scene) with ◄ on the control button, then select the desired mode with ▲/▼.**

To return to normal mode

Set the mode dial to different mode.

• Scene Selection setting is maintained even when the power is turned off.

Shooting with Scene Selection

When shooting with the Scene Selection function, the combination of functions such as the flash mode is predetermined to make the optimum settings to match the scene. See the table below for the function setting of each shooting mode.

Function / Shooting mode	Macro	Flash mode	Exp Brktg	AF range finder frame	Focus preset	Flash Level	White Bal	Burst/ Speed Burst/ Multi Burst
☽	—	🚫	—	○	10m, 15m, ∞	—	○	—
☽ (person)	○	⚡SL	—	○	○	○	Auto/⚡WB /🔲	—
🏔	—	⚡/🚫	○	○	10m, 15m, ∞	○	○	○
👤	○	○	○	○	○	○	○	○
⛄	○	⚡/🚫	○	○	○	○	○	○
🏖	○	⚡/🚫	○	○	○	○	○	○
🕯	—	🚫	—	Center AF	Other than ∞	—	☀	—

• ○ indicates that the function can be set to your preference.

Viewing images on the LCD screen of your camera

Single (single-image) screen

Index (nine-image/sixteen-image) screen

● SINGLE DISPLAY

● SINGLE DISPLAY

You can view images shot with your camera almost immediately on the LCD screen. You can select the following three methods for viewing images.

Single (single-image) screen

You can view one image at a time, displayed over the entire screen.

Index (nine-image/sixteen-image) screen

Nine or sixteen images are displayed simultaneously in separate panels on the LCD screen.

• You can switch the displayed image to the previous image or the next image by turning the jog dial.
• For details on viewing movies, see page 98.
• For a detailed description of the indicators, see page 151.

Viewing single images

1
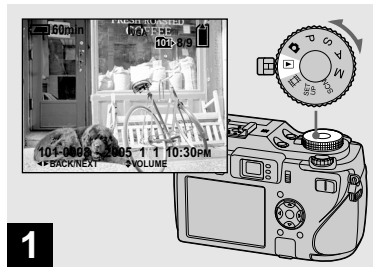
➡ **Set the mode dial to ▶, and turn on the power.**

The last image in the selected recording folder (page 82) appears on the LCD screen.

• To select the recording medium, use the 🔁 / CF switch (page 21).
• The image may appear rough right after playback starts due to the image processing.

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2
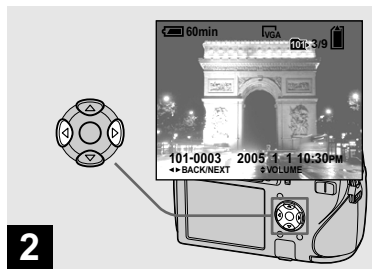
➡ **Select the desired still image with ◄/► on the control button.**

◄ : To display the preceding image
► : To display the next image
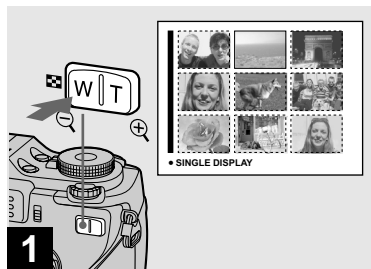
➡ **Press ▦ (index) once.**

The display switches to the **index (nine-image) screen**.

To display the next (previous) index screen

Press ▲/▼/◄/► on the control button to move the yellow frame up/down/left/right.
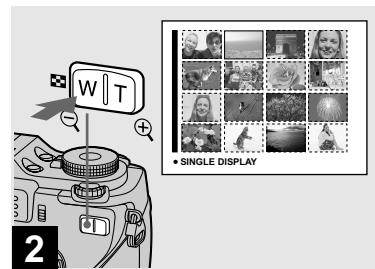
➡ **Press ▦ (index) again.**

The display switches to the **index (sixteen-image) screen**.

To display the next (previous) index screen

Press ▲/▼/◄/► on the control button to move the yellow frame up/down/left/right.

Viewing images on a TV screen

3
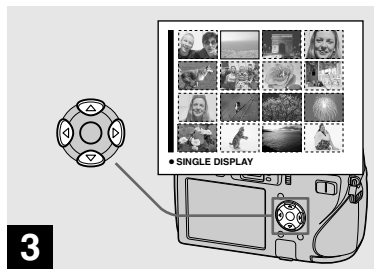
➡ **Select the desired still image with ▲/▼/◀/▶ on the control button.**

The image in the yellow frame is selected.

To return to the single-image screen
Press the zoom T button or ● on the control button.

● SINGLE DISPLAY

1 A/V connecting cable (supplied)
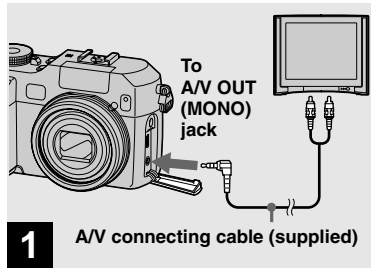
To A/V OUT (MONO) jack

➡ **Connect the A/V connecting cable (supplied) to the A/V OUT (MONO) jack of the camera and the audio/video input jacks of the TV.**

If your TV has stereo input jacks, connect the audio plug (black) of the A/V connecting cable to the left audio jack.

• Turn off both your camera and the TV before connecting the camera and the TV with the A/V connecting cable.
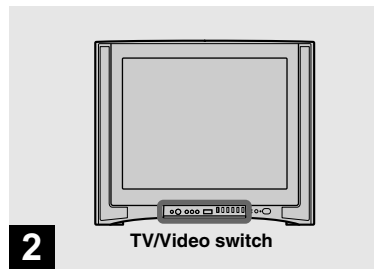
2 TV/Video switch

➡ **Turn on the TV and set the TV/Video switch to "Video".**

• The name and location of this switch may differ depending on your TV. For details, see the operating instructions supplied with the TV.
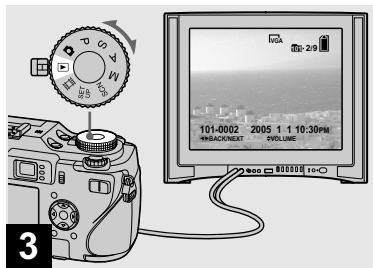
3

➡ **Set the mode dial to ▶, and turn on the camera.**

Press ◀/▶ on the control button to select the desired image.

- To select the recording medium, use the ⚏/CF switch (page 21).
- When using your camera abroad, it may be necessary to switch the video output signal to match that of your TV system (page 142).

Viewing images on a TV screen

If you want to view images on a TV screen, you need a TV with a video input jack and the A/V connecting cable (supplied).
The color system of the TV must match that of your digital still camera. Check the following lists:

NTSC system

Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system

Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Holland, Hong Kong, Hungary, Italy, Kuwait, Malaysia, New Zealand, Norway, Poland, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, United Kingdom, etc.

PAL-M system

Brazil

PAL-N system

Argentina, Paraguay, Uruguay

SECAM system

Bulgaria, France, Guiana, Iran, Iraq, Monaco, Russia, Ukraine, etc.

Deleting images

1
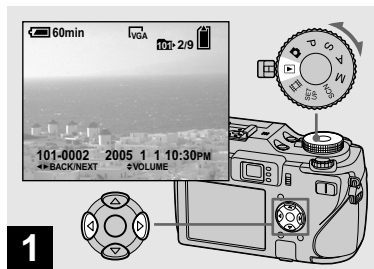
➡ **Set the mode dial to ▶, and turn on the camera. Press ◀/▶ on the control button to select the image you want to delete.**

• To select the recording medium, use the ⟐ / CF switch (page 21).
• Note that you cannot restore deleted images.

2
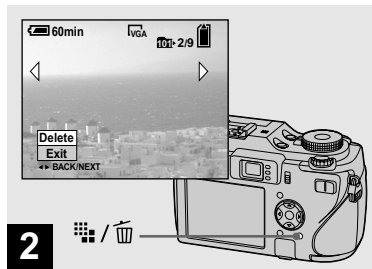
➡ **Press ⟐ / 🗑 (Delete).**

The image has not yet been deleted at this point.

• You cannot delete the protected image (page 87).
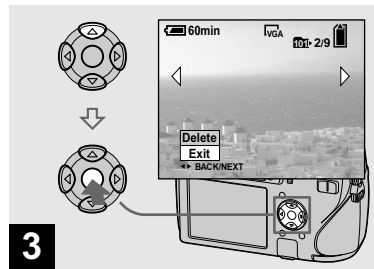
3

➡ **Select [Delete] with ▲ on the control button, then press ●.**

The message "Access" appears, and the image has been deleted.

To continue and delete other images
Display the image to be deleted with ◀/▶ on the control button. Then, select [Delete] with ▲ and press ●.

To cancel deleting
Select [Exit] with ▼ on the control button, then press ●.

Deleting images in index (nine-image or sixteen-image) mode

1
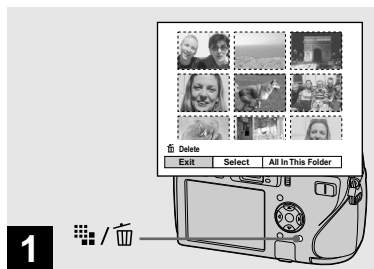
➡ **While an index (nine-image/ sixteen-image) screen (page 42) is displayed, press ⅢⅢ / 🗑 (Delete).**

• Note that you cannot restore deleted images.

2
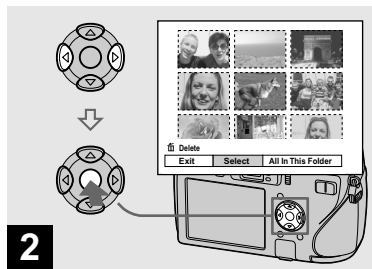
➡ **Select [Select] with ◀/▶ on the control button, then press ●.**

3
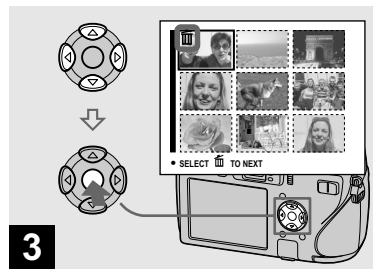
➡ **Select an image you want to delete with ▲/▼/◀/▶ on the control button, then press ●.**

The 🗑 (Delete) indicator appears on the selected image. At this point, the image has not yet been deleted. Repeat this step for all of the images you want to delete.

• To cancel a selection, select the image, then press ● on the control button again so that the 🗑 indicator disappears.

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4 ⚙ / 🗑
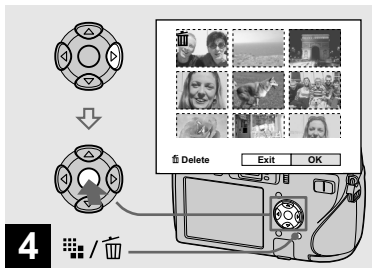
➡ **Press ⚙ / 🗑 (Delete) and select [OK] with ▶ on the control button, then press ●.**

The message "Access" appears, and the images with the 🗑 indicator have been deleted.

To cancel deleting

Select [Exit] with ◀ on the control button, then press ●.

To delete all the images in the folder

Select [All In This Folder] with ▶ on the control button in step **2**, then press ●. Select [OK], then press ●. All of the unprotected images in the folder are deleted. To cancel deleting, select [Cancel], then press ●.

• You can also delete movies (page 99).

Formatting a recording medium

⚙ /CF switch

1
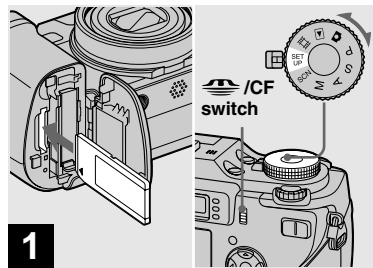
➡ **Insert the recording medium you want to format into the camera. Select the recording medium with the ⚙ /CF switch. Set the mode dial to SET UP, and turn on the camera.**

• The term "formatting" means preparing a recording medium to record images; this process is also called "initialization".
• **When you format a recording medium, be aware that all of the data in the recording medium will be permanently erased. Protected images are also erased.**

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2
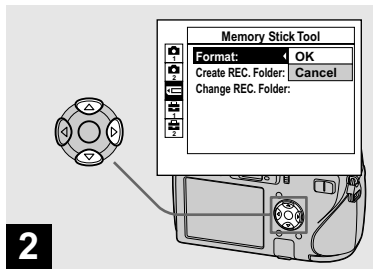
➡ **When you format a "Memory Stick", select ▣ (Memory Stick Tool) with ▲/▼ on the control button.**
When you format a CF card, select ▣ (CF Card Tool) with ▲/▼ on the control button. Select [Format] with ▶ on the control button, then press ▶.

3
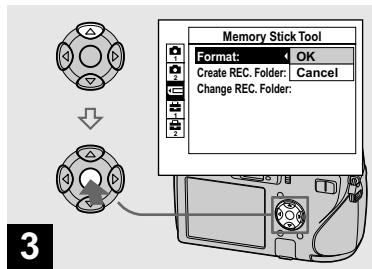
➡ **Select [OK] with ▲ on the control button, then press ●.**

To cancel the formatting
Select [Cancel] with ▼ on the control button, then press ●.

4
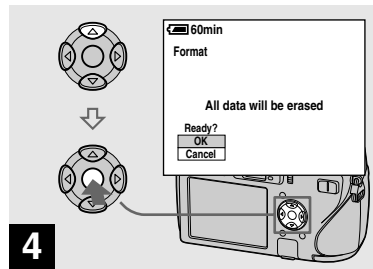
➡ **Select [OK] with ▲ on the control button, then press ●.**

The message "Formatting" appears. When this message disappears, the format is complete.

• The "Memory Stick" is already formatted, and can be used immediately.
• Be sure to format the CF card using this camera. Otherwise, satisfactory performance may not be obtained.

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How to setup and operate your camera

The usage of the menus and SET UP screen items is described below.

MENU　　　　　　　**Mode dial**
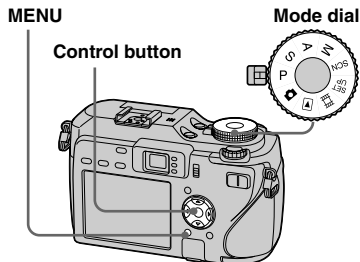
Control button

• For a detailed description of the mode dial, see page 12.

Changing the menu settings

1 Set the mode dial to ▣, P, S, A, M, SCN, 🎥 or ▶.

2 Press MENU.

The menu appears.

```
Spot
Center
✓Multi
Metering Mode
▣ WB ISO ◀: Mode BRK ▷
```
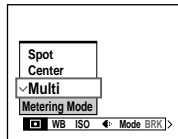
• The displayed items differ according to the mode dial position.

3 Press ◀/▶ on the control button to select the item you want to set.

```
800
400
200
100
✓Auto
ISO
▣ WB ISO ◀: Mode BRK ▷
```
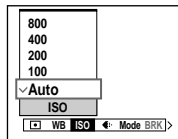
• When the mode dial is set to ▶, press ● on the control button after selecting the item.

4 Press ▲/▼ on the control button to select the desired setting.

The selected setting is enlarged and the setting is entered.

When the ▲/▼/◀/▶ marks appear with an item

There are items that are not displayed on the screen. Press ▲/▼/◀/▶ on the control button to display these items.

To turn off the menu display

Press MENU again.

• You cannot select items displayed in gray.
• For a detailed description of the menu items, see page 136.

Changing the items in the SET UP screen

a Set the mode dial to SET UP.

The SET UP screen appears.

```
         Camera 1
 AF Mode:           Single
 Digital Zoom:      Smart
 Date/Time:         Off
 Red Eye Reduction: Off
 Hologram AF:       Auto
 Auto Review:       Off

 ◆ SELECT
```
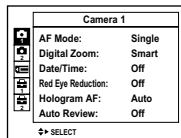
b Press ▲/▼/◀/▶ on the control button to select the item you want to set.

The frame of the selected item turns yellow.

```
         Setup 2
 File Number:
 USB Connect:
 Video Out:      OK
 Clock Set:    ◀ Cancel
```
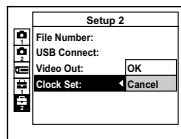
c Press ● on the control button to enter the setting.

To turn off the SET UP screen display

Set the mode dial to anything other than SET UP.

• For a detailed description of the SET UP items, see page 140.

How to use the jog dial

The jog dial is used to change the setting values when shooting with the manual adjustment modes (shutter speed priority mode, aperture priority mode, manual exposure mode), EV adjustment, focusing manually or choosing AF range finder frame.

Select   **Set**
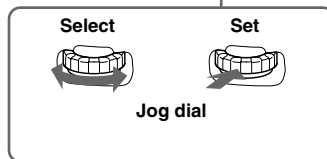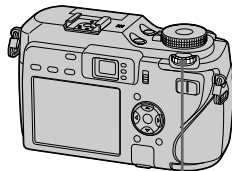
Jog dial

To select the item

a Turn the jog dial to select the item you want to set.

Move the yellow indication ▼ to select the item.

```
◀▬60min   LVGA FINE▦101
 M ⑤                   98



 SAF▦    50  F5.6  0EV
```
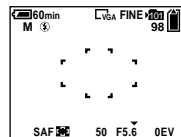
b Press the jog dial.

The value turns yellow.

```
◀▬60min   LVGA FINE▦101
 M ⑤                   98



 SAF▦    50  F5.6  0EV
```
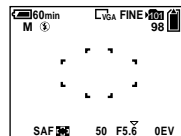
c To set other items, press the jog dial and then select the desired item.

• You cannot select items displayed in gray.

To select the value

You can select values that are displayed in yellow.

Turn the jog dial to select the value you want to set

The displayed value is set.

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Deciding the still image quality

You can select the still image quality from [Fine] (high quality) or [Standard]. This camera is equipped with other methods to select the image quality. You can select these settings using the [Mode] (REC Mode) item in the menu. These items are as follows: [RAW] which records raw data (page 79), [TIFF] which records uncompressed data (page 80).

MENU

Control button
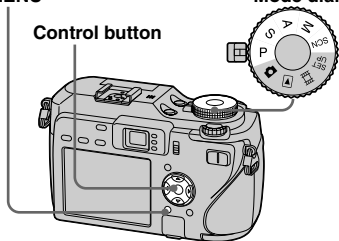
Mode dial

a **Set the mode dial to P, S, A, M or SCN.**

b **Press MENU.**
The menu appears.

c **Select ◀ (P.Quality) with ◀/▶, then select the desired image quality with ▲/▼.**

Fine	FINE
Standard	
P.Quality	

Mode BRK ⊞ ♭± PFX
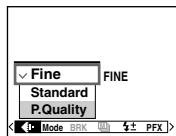
Creating or selecting a folder

Your camera can create multiple folders within a recording medium. You can select the folder used to store images before shooting, which is convenient for organizing images.
When not creating a new folder, "101MSDCF" folder is selected as the recording folder.
You can create folders up to "999MSDCF".

Control button

⊜/CF switch

Mode dial
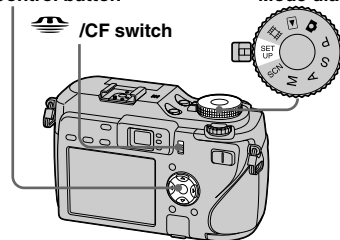
• Up to 4,000 images can be stored in one folder. When the folder capacity is exceeded, a new folder is automatically created.

Creating a new folder

1 **Set the mode dial to SET UP, and select the recording medium with the ⏚/CF switch.**

2 **Select ▤ (Memory Stick Tool) or ▥ (CF Card Tool) with ▲/▼, [Create REC. Folder] with ▶/▲/▼, and [OK] with ▶/▲, then press ●.**

The creating folder screen appears.

```
◁60min
Create REC. Folder

Creating REC. folder 102MSDCF
Ready?
OK
Cancel
```
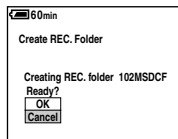
3 **Select [OK] with ▲, then press ●.**

A new folder is created with a number one higher than the largest number in the recording medium, and the folder becomes the recording folder.

To cancel folder creation

Select [Cancel] in step **2** or **3**.

• Once you create a new folder, you cannot delete the new folder with the camera.
• Images are recorded in the newly created folder until a different folder is created or selected.

Changing the recording folder

1 **Set the mode dial to SET UP, and select the recording medium with the ⏚/CF switch.**

2 **Select ▤ (Memory Stick Tool) or ▥ (CF Card Tool) with ▲/▼, [Change REC. Folder] with ▶/▼, and [OK] with ▶/▲, then press ●.**

The recording folder selection screen appears.

```
Select REC. Folder
◁  ▢ 102              2/2  ▶
Folder Name:102MSDCF
No. Of Files:  0
Created:
  2005  1  1  1:05:34AM
OK
Cancel
◀▶ BACK/NEXT
```
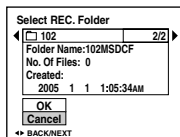
3 **Select the desired folder with ◀/▶, and [OK] with ▲, then press ●.**

To cancel changing the recording folder

Select [Cancel] in step **2** or **3**.

• You cannot select the "100MSDCF" folder as a recording folder (page 107).
• The image is stored in the newly selected folder. You cannot move recorded images to a different folder with this camera.

Manual features to photo-shooting situations

After you are familiar with your camera, let's shoot an image in various situations with some settings changed. This section describes some representative manual shooting examples.

Q: To shoot a portrait with its background blurred?

➡ **Shooting with aperture priority mode (page 58)**

When you want to enhance the person with the background blurred, adjust the aperture manually. The more the aperture is opened (the aperture value becomes smaller), the narrower the focus is. The background is blurred accordingly.

Q: To shoot a portrait against light?

➡ **Selecting a flash mode (page 69)**

Shooting a human subject in a bright place can create dim facial shadows. This occurs when the background is brighter than the person. In such cases, set the flash to ⚡ (Forced flash).

You can shoot both the person and the background clearly.

• You can use the flash within the reach of the flash light.

Q: To shoot a night scene?

➡ **Shooting with shutter speed priority mode (page 57)**

Using the flash in the auto adjustment mode restricts the shutter speed and the flash light does not reach distant subjects. The image, therefore, is not captured clearly. In such cases, slow the shutter speed manually, set the flash to 🚫 (No flash), and reduce the light using the EV adjustment. You can then shoot a clear night scene.

Q: To shoot without flash?

➡ **Selecting the ISO sensitivity (page 65)**

When you cannot use the flash or set the shutter speed slower, increase the ISO rating. The higher rated ISO setting helps maximize the effect of the surrounding light to shoot.

Q: To shoot a moving subject?

➡ **Shooting with shutter speed priority mode (page 57)**

When shooting a moving person or subject, set the shutter speed higher to freeze the motion or set the shutter speed slower to get the flow of motion of the subject. Adjust the shutter speed to express moment that is beyond what the human eye can see.

Q: To shoot the beautiful afterglow of the sunset

➡ **Adjusting color tones (page 73)**

If the image you shot is not expressed in your desired colors, change the white balance mode. Setting the white balance mode to ☀ (Daylight) enhances the redness of the sunset.

Shooting with Program auto

In program auto mode, the camera automatically adjusts the shutter speed and the aperture according to the brightness of the subject just as in the auto adjustment mode (mode dial: ☐). In addition, the program auto mode can change the shooting settings in the menu, a feature which the auto adjustment mode does not have (page 136).

Jog dial

Shutter button

Mode dial

Program Shift

You can change the aperture value and shutter speed combination while keeping the brightness fixed.

a Set the mode dial to P.

b Select the aperture value and shutter speed combination with the jog dial.

```
◀▦60min      L_VGA FINE ▓▣ ▣
   P*                      98

          ⌐      ¬

          ∟      �

 SAF ▓  250  F2.0
```
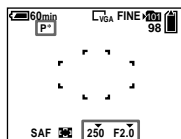
"P*" is indicated while the aperture value and shutter speed combination is shifted.

c Shoot the image.

To cancel Program Shift

Turn the jog dial to return the indication from "P*" to "P".

- You cannot shift the aperture value and shutter speed combination when the shutter button is pressed halfway down.
- When the brightness changes, the aperture value and shutter speed also change while maintaining the shift amount.
- You may not be able to change the aperture value and shutter speed combination depending on your shooting situations.

- When the flash mode setting is changed, Program Shift is canceled.
- Setting the mode dial to other than P or turning off the power cancels Program Shift.

Shooting with shutter speed priority

You can adjust the shutter speed manually. If you shoot a moving subject at a higher shutter speed, it appears as if frozen on the image. At a lower shutter speed, the subject appears as if it is flowing. Aperture value is automatically adjusted to attain correct exposure according to the brightness of the subject.

High shutter speed **Slow shutter speed**

Jog dial

Shutter button
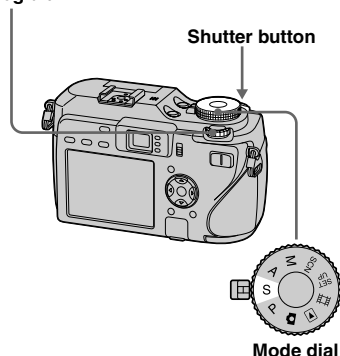
Mode dial

a **Set the mode dial to S.**

b **Select a shutter speed with the jog dial.**
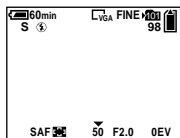
The shutter speed can be selected from 1/1000 to 30 seconds.
If you select certain shutter speeds*, the NR slow shutter function is automatically activated. In such cases, "NR" is indicated next to shutter speed indicator.
* When [ISO] is [800]:
  Shutter speeds of 1/25 second or slower
  When [ISO] is other than [800]:
  Shutter speeds of 1/6 second or slower

c **Shoot the image.**

• Shutter speeds of one second or longer are indicated with ["] after the value, such as 1".
• If the proper exposure is not obtained after making the settings, the setting value indicators on the screen flash when the shutter button is pressed halfway down. You can shoot in this condition, but we recommend that you adjust the flashing values again.
• The flash is set to ⚡(Forced flash) or ⚡(No flash).

• When the shutter speed is high, the amount of flash light may be insufficient even if you strobes the flash.
• You can adjust the exposure value (page 61).

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NR slow shutter

The NR slow shutter mode reduces noise from recorded images, providing clear images. When using certain shutter speeds*, the camera automatically works the NR slow shutter mode and "NR" is indicated next to the shutter speed indicator.

* When [ISO] is [800]:
Shutter speeds of 1/25 second or slower
When [ISO] is other than [800]:
Shutter speeds of 1/6 second or slower

Press the shutter button fully down.

↓

Capturing
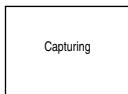
Then the screen turns black.

↓
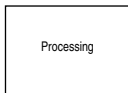
Processing

Finally, when "Processing" disappears, the image has been recorded.

- To eliminate the effects of vibration, use of a tripod is recommended.
- When a slow shutter speed is set, the processing may take some time. This is because the camera works to remove noise during the time set by the shutter speed setting.

Shooting techniques

When shooting a moving person, car, or spindrift, etc., using the high shutter speed, you can express moment that is beyond what the human eye can see.

When shooting a subject such as the flow of a river at a slower shutter speed, you can create an image that captures the subject's flowing movement. In such cases, use of a tripod is recommended to prevent camera shake.

- When you hand-hold the camera, adjust the shutter speed in a range where "📳" (Vibration warning indicator) is not indicated.

Shooting with aperture priority mode

You can adjust the amount of light that passes through the lens. If you open the aperture (a smaller F-number), the amount of light allowed into the lens increases and the in-focus range becomes narrower. Only the main subject is then in focus. When the aperture is closed (a larger F-number), the amount of light decreases and the in-focus range becomes wider. The whole image is sharpened.
The shutter speed is automatically adjusted to obtain correct exposure according to the brightness of the subject.

Open the aperture **Close the aperture**

Jog dial

Shutter button
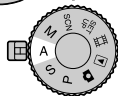
Mode dial

1 Set the mode dial to A.

2 Select an aperture value with the jog dial.

```
60min        VGA FINE  98
A  ⚡

SAF        50  F2.2   0EV
```
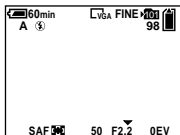
The range of values that can be selected varies, depending on the zoom position. The aperture value can be selected from F2.8 to F8.

3 Shoot the image.

- The range of values that can be selected varies, depending on the zoom position.
- The shutter speed is automatically adjusted from 1/1000 to 8 seconds. When you set an aperture value of F5.6 or more, the values start from 1/2000 second.
- If the proper exposure is not obtained after making the settings, the setting value indicators on the screen flash when the shutter button is pressed halfway down. You can shoot in this condition, but we recommend that you adjust the flashing values again.
- The flash is set to ⚡(Forced flash), ⚡SL (Slow synchro) or ⚡(No flash).
- You can adjust the exposure value (page 61).

Shooting techniques

The depth of field is the in-focus range. Opening the aperture makes the depth of field shallower (the in-focus range becomes narrower) and closing the aperture makes the depth of field wider (the in-focus range becomes wider).

Open the aperture
The subject is clear and its background is blurred.

Close the aperture
Both the subject and its background are focused on.

Adjust the aperture to suit your purpose, either to sharpen the specific area of image, or to focus on the entire image.

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Shooting with manual exposure mode

You can manually adjust the shutter speed and aperture values.
The difference between the set value and the appropriate exposure determined by the camera is displayed on the screen as the EV value (page 61). 0EV indicates the most suitable value set by the camera.
The camera maintains the setting even when the power is turned off.
Once you set a value you like, you can reproduce the same exposure by simply setting the mode dial to M.

Jog dial

Shutter button
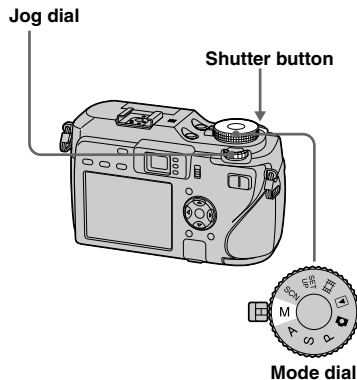
Mode dial

1 Set the mode dial to M.

2 Select the shutter speed value.
Select the shutter speed value with the jog dial (page 51).

3 Select the aperture value.
Select the aperture value with the jog dial (page 51).

4 Shoot the image.

• If the proper exposure is not obtained after making the settings, the setting value indicators on the screen flash when the shutter button is pressed halfway down. You can shoot in this condition, but we recommend that you adjust the flashing values again.
• The flash is set to ꜚ(Forced flash) or ⊘(No flash).

Selecting the metering method

You can select a metering mode to determine the exposure, depending on what part of the subject is used to measure.

Multi-pattern metering (No indicator)
The image is split up into multiple zones, each of which are evaluated individually. The camera calculates the best-fit exposure based on the subject's position and background brightness.
The default setting is multi-pattern metering.

Center-weighted metering (⊡)
Metering is performed with priority given to the center of the image. The camera determines the exposure based on the brightness of a subject near the center.

Spot metering (⊡)
Spot metering allows you to meter for the subject directly in a small area of the whole image. This lets you adjust the exposure to the subject even when the subject is backlit or there is strong contrast between the subject and the background.

Control button
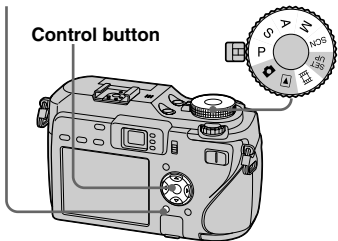
a **Set the mode dial to P, S, A, M, SCN or .**

b **Press MENU.**

The menu appears.

c **Select (Metering Mode) with ◀/▶, then select the desired metering mode with ▲/▼.**

d **When selecting [Spot] in Step c, position the spot metering cross hair on one point of the subject you want to shoot.**
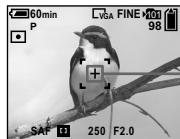
Spot metering cross hair

• When using center-weighted metering or spot metering, to focus on the same spot as used for metering, we recommend using the center weighted AF range finder frame (page 66).
• You cannot select the metering mode when using the NightFraming/NightShot function.

Adjusting the exposure

— EV adjustment

You can manually shift the exposure value determined by the camera.

Use this mode when you do not get the proper exposure, for instance, the subject and its background have high contrast (light and dark). The value can be set a range from +2.0EV to –2.0EV, in 1/3EV increments.

Adjust toward –

Adjust toward +

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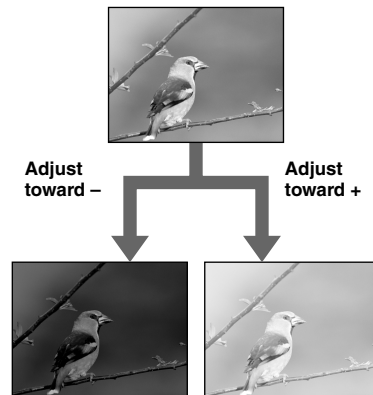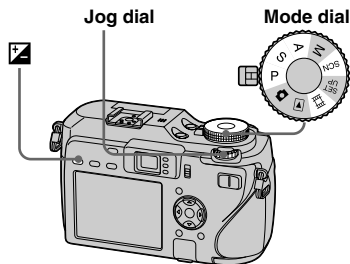
Jog dial   **Mode dial**

a **Set the mode dial to P, S, A, SCN or 🎬.**

b **Press 🔲(exposure).**

c **Select the desired exposure value with the jog dial.**

The value of the exposure adjustment is displayed. Adjust the exposure value while checking the brightness of the background.
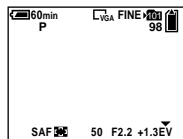
To reactivate auto exposure
Select [0EV] in step c.

• When the subject is extremely bright or extremely dark, or when you are using the flash, the adjustment may not work.

Displaying a histogram

A histogram is a graph showing the brightness of an image. The horizontal axis shows the brightness, and the vertical axis shows the number of pixels.
The graph display indicates a dark image when skewed to the left side, and a bright image when skewed to the right side.
The histogram is a useful reference for checking the exposure during recording and playback when the screen is hard to be seen.

Dark   Bright
Brightness
Number of pixels
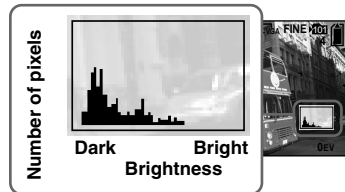
a **Set the mode dial to P, S, A or SCN.**

b **Press |🔲| to display the histogram.**

c **Adjust the exposure based on the histogram.**

• The histogram also appears when the mode dial is set to 🔲 or M, but the EV adjustment is deactivated.

• The histogram also appears when you press 🔲 while playing back a single image (page 42) or during Quick Review (page 31).
• The histogram does not appear in the following cases:
  – When the menu is displayed
  – During Quick Review of an image recorded in Exposure Bracket mode
  – When using playback zoom
  – When shooting or playing back movies
• ⊗ appears and the histogram does not appear in the following cases:
  – When recording in the digital zoom range
  – When the image size is [3:2]
  – When playing back Multi Burst mode images
  – When a still image is rotated
• The histogram before recording represents the histogram of the image displayed on the screen at that time. A difference occurs in the histogram before and after you press the shutter button. When this happens, check the histogram while playing back a single-image or during Quick Review.
  In particular a large difference may appear in the following cases:
  – When the flash strobes
  – When using the NightFraming function
  – When the shutter speed is slow or high
• The histogram may not appear for images recorded using other cameras..

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Shooting techniques

When shooting images, the camera automatically sets the exposure.
When shooting a whitish overall image such as a backlit subject or a snowy scene, the camera may judge that the subject is bright and set a darker exposure for the image. In such cases, adjusting the exposure in the + (plus) direction is effective.

Adjust in the + direction

When shooting a dark subject that fills the frame, the camera may judge that the subject is dark and set a brighter exposure for the image. In such cases, adjusting the exposure in the (minus) direction is effective.

Adjust in the – direction

Refer to the histogram and adjust so that the image is not overexposed (white out) or underexposed (black out).

Try various images with different exposures to find the brightness that suits your taste.

Shooting with the exposure fixed

— AE LOCK

You can lock the exposure before recomposing the image.
This is useful when the contrast of the subject and its background is extremely high or you shoot a backlit subject.

AE LOCK

Shutter button
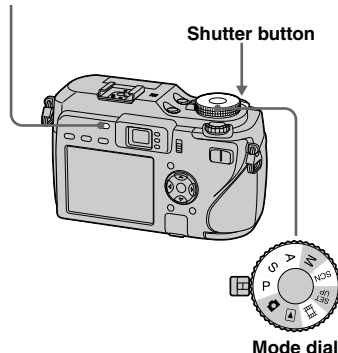
Mode dial

1 **Set the mode dial to P, S, A, SCN or ▯.**

2 **Target the subject for which you want to meter the exposure, then press AE LOCK.**

The exposure is fixed and the ✳ indicator appears.

```
⬚60min        Lᵥɢₐ FINE 101
P                          98

         SAF ▣ 250 F2.0 0EV ✳
```
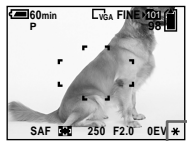
3 **Recompose the image and press and hold the shutter button halfway down.**

The focus is automatically adjusted.

4 **Press the shutter button fully down.**

To release AE LOCK

Carry out one of the followings:
- Press AE LOCK again after Step 2.
- Release your finger from the shutter button after Step 3.
- Press down the shutter button in Step 4.

Shooting techniques

The camera automatically adjusts the exposure according to the subject.
If you change the composition of your shot, the exposure may be changed, such as by changes in the brightness of the background. In such cases, use the AE lock function. You can shoot freely, regardless of the brightness of the subject.

To determine the exposure, measure the exposure of the desired portion of the subject using either center-weighted metering or the spot metering function. Press AE LOCK to lock the exposure, and then recompose the picture and shoot.

Portion of the image used to determine the exposure

Shooting three images with the exposure shifted

— Exposure Bracket

In addition to an image with the exposure automatically set by the camera, two other images are recorded with exposure values shifted to the + and – sides.
If you cannot shoot with the proper brightness due to the brightness of the subject, use the Exposure Bracket mode. You can select the image that has a suitable exposure after shooting.

Control button

Shutter button
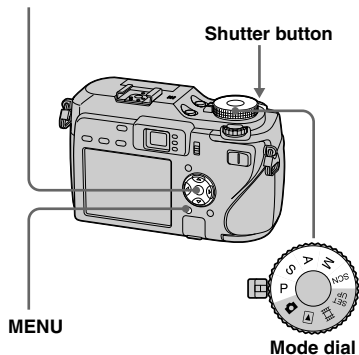
MENU

Mode dial

First shot (Adjusted in the + direction)
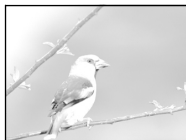
**Second shot
(Proper exposure set by the camera)**

Third shot (Adjusted in the – direction)

1 **Set the mode dial to P, S, A, M or SCN.**

2 **Press MENU.**

The menu appears.

3 **Select [Mode] (REC Mode) with ◀/▶, then [Exp Brktg] with ▲/▼.**

4 **Select [BRK] (Bracket Step) with ◀/▶, then select the desired bracket step value ▲/▼.**

±1.0EV: Shifts the exposure value by plus or minus 1.0EV.
±0.7EV: Shifts the exposure value by plus or minus 0.7EV.
±0.3EV: Shifts the exposure value by plus or minus 0.3EV.

5 **Shoot the image.**

To return to normal mode

Select [Normal] in step **3**.

- You may not be able to use the Exposure Bracket mode depending on the Scene Selection mode (page 41).
- You cannot use the flash in this mode.
- The focus and white balance are adjusted for the first image, and these settings are also used for the other images.
- When the exposure is manually adjusted (page 61), the exposure is shifted based on the adjusted brightness.
- The recording interval is approximately 0.3 second.
- If the subject is too bright or too dark, you may be unable to shoot properly with the selected bracket step value.
- You cannot select certain shutter speeds*.
  * When [ISO] is [800]:
    Shutter speeds of 1/25 second or slower
    When [ISO] is other than [800]:
    Shutter speeds of 1/6 second or slower

Selecting the ISO sensitivity

— ISO

You can change the camera's sensitivity to light. When you select a high-number setting, you can shoot in a dark place. Normally, the ISO sensitivity is set to [Auto]. When set to [Auto], the ISO sensitivity is automatically increased in a dark place.

MENU

Control button
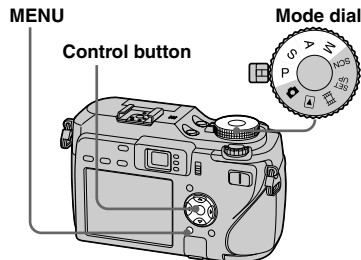
Mode dial

1 **Set the mode dial to P, S, A or M.**

2 **Press MENU.**

The menu appears.

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c **Select [ISO] with ◄/►, then select desired setting with ▲/▼.**

Choose from [800], [400], [200], [100], or [Auto].

To return to normal mode

Select [Auto] in step **c**.

- To reduce camera shake, select a large number. You can shoot a subject with higher shutter speed.
- When selecting a large number, the image becomes noisy. To give priority to image quality, select a small number.

Choosing an auto focus method

You can set the AF range finder frame and the AF mode.

AF range finder frame

This selects the focus position according to the subject position and size.

AF Mode

This sets the focus operation start and stop timing.

FOCUS   **Mode dial**

FRAME

Control button
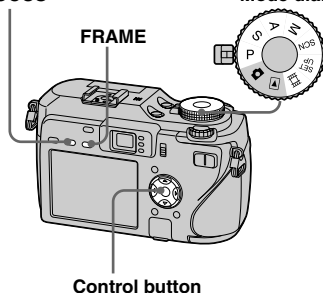
Choosing a focus range finder frame — AF range finder

Multipoint AF (▦)

The camera calculates the distance in five places to the top, the bottom, the left, the right, and in the center of the image, letting you shoot using the auto focus function without worrying about the image composition. This is useful when it is difficult to focus on the subject because it is not in the center of the frame. You can check the position where the focus was adjusted using the green frame.
The default setting is Multipoint AF.

Center AF (▣)

The AF range finder is only the center of the frame.
You can shoot in desired image composition using the AF lock method.

Flexible Spot AF (▣)

This is useful when focusing on an extremely small subject or a narrow area.
Flexible Spot AF lets you shoot in the desired image composition. This is useful when you shoot using a tripod and the subject is out of the center area. When shooting a moving subject, take care to hold the camera steady so that the subject does not deviate from the range finder frame.

1 **Set the mode dial to P, S, A, M, SCN or 🎬.**

2 **Press FOCUS to switch to AF range finder frame select.**

Each time you press FOCUS, the setting changes in the following order.

AF range finder frame select
↕
Focus preset

3 **Press FRAME repeatedly to select the desired mode.**

Each time you press FRAME, the setting changes in the following order.
Multipoint AF → Center AF →
Flexible Spot AF → Flexible AF frame movement
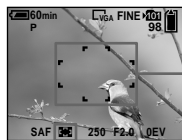
AF range finder frame

AF range finder frame indicator

When selecting Flexible AF frame movement, the color of the AF range finder frame changes from white to yellow.

4 **When selecting Flexible AF frame movement in Step 3, move the AF range finder frame to the portion you want to focus on with ▲/▼/◄/►, then press ●.**

When you press and hold the shutter button halfway down, and the focus is adjusted, the color of the AF range finder frame changes from white or yellow to green.

To return to Multipoint AF

Select Multipoint AF in step **3**.

To set the position of the AF range finder frame again

Press FRAME in step **4**.

• When you are shooting movies and you choose Multipoint AF, the distance to the center of the screen is estimated as an average, so the AF works even with a certain amount of vibration. The AF range finder frame indicator is ⬚. Center AF and Flexible Spot AF automatically focus only on selected frame, so this is convenient when you want to focus only on what you aim at.

• When selecting Flexible AF frame movement, AF mode is set to Monitoring AF and pressing ● turns to the mode set in the SET UP settings.

• When you use the digital zoom or hologram AF, priority AF movement is given to subjects in or near the center of the frame. In this case, the AF range finder frame indicator flashes and the AF range finder frame is not displayed.

• Some settings cannot be selected depending on the Scene Selection mode (page 41).

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Choosing a focus operation — AF Mode

Single AF (S AF)

This mode is useful for shooting stationary subjects. The focus is not adjusted before you press and hold the shutter button halfway down. After you press and hold the shutter button halfway down and AF lock is complete, the focus is locked.
The default setting is Single AF.

Monitoring AF (M AF)

This shortens the time needed for focusing. The camera automatically adjusts the focus before you press and hold the shutter button halfway down, letting you compose images with the focus already adjusted. After you press and hold the shutter button halfway down and AF lock is complete, the focus is locked.
• Battery consumption may be higher than in Single AF mode.

Continuous AF (C AF)

The camera adjusts the focus before you press and hold the shutter button halfway down, and then continues to adjust the focus even after AF lock is completed. This allows shooting of moving subjects with continued focus. However, focus adjustment may not be able to keep up when shooting fast moving subjects. The AF range finder frame is Center AF.

• The focus is not adjusted after the lock is completed in the following cases, and the "C AF" indicator flashes. The camera operates in Monitoring AF mode.
  – When shooting in the dark place
  – When shooting with a slow shutter speed
  – When using the NightFraming/NightShot functions
• There is no lock sound when the focus is achieved.
• When you press the shutter button all the way down using the self-timer, the focus is locked.
• Battery consumption may be higher than in any other AF mode.

Timing diagram for focus lock

Single AF

Monitoring AF

Continuous AF

[a]   [b]   [c]
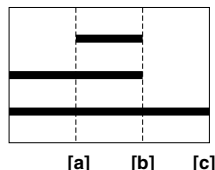
[a] Shutter button pressed halfway down
[b] AE/AF locked
[c] Shutter button pressed fully down

1 Set the mode dial to SET UP.

2 Select (Camera 1) with ▲, then select [AF Mode] with ▶/▲.

3 Select the desired mode with ▶/▲/▼, then press ●.

```
            Camera 1
  AF Mode:        ◄ ■ Single
  Digital Zoom:       Monitor
  Date/Time:          Cont
  Red Eye Reduction:
  Hologram AF:
  Auto Review:
```
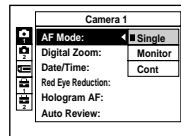
Setting the distance to the subject

— Focus preset

When shooting an image using a previously set distance to the subject, or when shooting a subject through a net or through window glass, it is difficult to get the proper focus in auto focus mode. In these cases, use of the Focus preset is convenient.

FOCUS   **Jog dial**   **Mode dial**
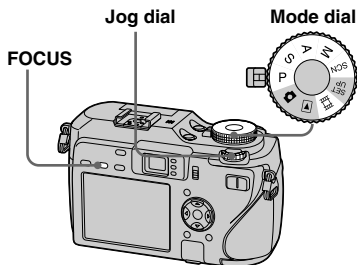
a **Set the mode dial to P, S, A, M, SCN, or 🎬.**

b **Press FOCUS to switch to focus preset.**

Each time you press FOCUS, the setting changes in the following order.
Focus preset
⇕
AF range finder frame select

The focus is fixed and the ◉F (manual focus) indicator appears.

c **Turn the jog dial to select the desired focus setting.**

You can select from the following distance settings:
0.1 m, 0.2 m, 0.3 m, 0.5 m, 0.8 m, 1.0 m, 1.5 m, 2.0 m, 3.0 m, 5.0 m, 7.0 m, 10 m, 15 m, and ∞ (infinity)

To reactivate auto focusing

Press FOCUS again so that the focus setting information disappears.

• Focus setting information is approximate, and should be used as a reference.
• If you point the lens up or down, the error will increase.
• When you select 0.1 m, 0.2 m, 0.3 m with the zoom set to the T side, you may not get a clear focus. In such cases, the focus setting information flashes. Press the zoom W button repeatedly until the indicator stops flashing.
• Some settings cannot be selected depending on the Scene Selection mode (page 41).
• The focus preset does not work properly when attaching a conversion lens (not supplied).

Selecting a flash mode

Normally, the flash automatically pops up and strobes when the surroundings are dark. You can intentionally change the flash mode.

Auto (No indicator)
The camera decides to use the flash based on lighting conditions. The default setting is Auto.

Forced flash (⚡)
The flash fires regardless of the amount of ambient light.

Slow synchro (⚡SL)
The flash fires regardless of the amount of ambient light.
In this mode, the shutter speed becomes slower under dark conditions, so you can clearly shoot a background that is out of the flash-lit area.

No flash (⊛)
The flash does not fire regardless of the amount of ambient light.

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Control button

Mode dial

1 **Set the mode dial to ▣, P, S, A, M or SCN.**

2 **Select the desired mode with ▲(⚡).**
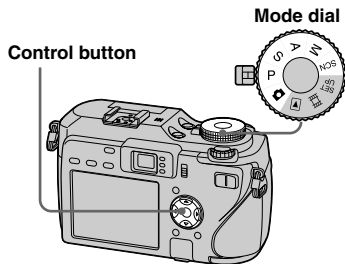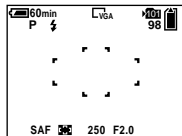
The selected flash mode indicator appears enlarged on the LCD screen (page 140).

```
60min    VGA    98
P  ⚡


SAF    250  F2.0
```

- If the menu is currently displayed, press MENU first so that the menu disappears.
- The recommended distance using the flash is about 0.4 m to 3 m (15 3/4 inches to 118 1/8 inches) (W)/0.4 m to 2.5 m (15 3/4 inches to 98 1/2 inches) (T) (when [ISO] is set to [Auto]).

- When using the ⚡SL (Slow synchro) or (No flash) mode, the shutter speed becomes slower in dark places, so using a tripod is recommended.
- While charging the flash, the CHG/⚡ lamp flashes. After the charging is complete, the lamp goes out and flash mode is ready.
- You can change the brightness of the flash using [Flash Level] in the menu settings (page 71). (Except when the mode dial is set to ▣.)
- You can mount an external flash on this camera (page 72).

To prevent subjects' eyes from appearing red

The flash pre-strobes twice or more before shooting to reduce the red-eye phenomenon. Set [Red Eye Reduction] to [On] in the SET UP settings (page 140). The ◉ indicator appears on the LCD screen.
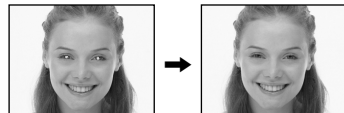
Red-eye reduction takes approximately one second before actually shooting the image, so hold the camera firmly to avoid shaking. In addition, be sure to tell the subject to hold still.

- Red-eye reduction may not produce the desired effects depending on individual differences, the distance to the subject, if the subject does not see the pre-strobe, or other conditions. In addition, red-eye reduction is more effective under bright lighting and when closer to the subject.

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Shooting techniques

Making the best of the flash gives you various options.

When you set the flash mode to $\frac{4}{7}$(Forced flash), you can shoot a back-lit subject brightly. An effect in which the flash light reflects in the subject's eye is also available.

When the flash mode is set to Auto, the flash may strobe regardless of your intentions. In such situations, setting the flash mode to (No flash) slows the shutter speed automatically. This is effective when you shoot the trail of a car, the spectrum of a light, or the sunset. We recommend you use a tripod to prevent camera shake.

The $\frac{4}{7}$ SL (Slow synchro) is effective when you shoot a person during a sunset and the like. You can shoot the person clearly using the flash light and the background using a long exposure. If the camera cannot shoot clearly using the slow shutter, it automatically increases the ISO number. We recommend you use a tripod to prevent camera shake.

Adjusting the flash level

— Flash Level

You can adjust the amount of flash light.

MENU   **Mode dial**

Control button
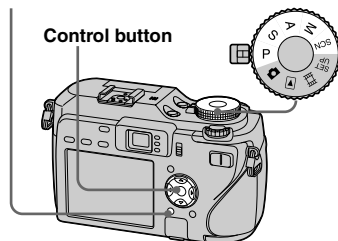
a **Set the mode dial to P, S, A, M or SCN.**

b **Press MENU.**

The menu appears.

c **Select [$\frac{4}{7}\pm$] (Flash Level) with ◀/▶, then select the desired setting with ▲/▼.**

+: Makes the flash level higher than normal.
Normal: Normal setting.
–: Makes the flash level lower than normal.

• You may not be able to set the flash level depending on the Scene Selection mode (page 41).

71

Using an external flash

You can mount an optional external flash. Using an external flash increases the amount of light and that will allow you to shoot more vivid flash pictures than when using the internal flash. For details, refer to the operating instructions supplied with your flash.

ACC (accessory) jack

Advanced accessory shoe

Mode dial

Shutter button

Control button
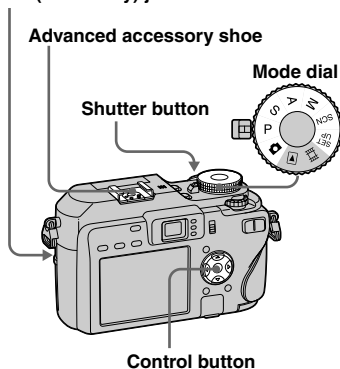
- You cannot have an external flash and the built-in flash strobe at the same time.
- If you use two or more external flashes at the same time, note that the camera may not be able to function properly, or that may cause a malfunction.
- When the proper white balance is not set using an external flash, set the flash mode to $\frac{1}{2}$ (Forced flash) or $\frac{1}{2}$SL (Slow synchro), then set the white balance using the ●SET(one-push SET) (page 73).

Using the Sony Flash

You can mount the Sony HVL-F32X or HVL-F1000 flash on the advanced accessory shoe of your camera. The HVL-F32X is also equipped with automatic flash level adjustment and AF fill light shooting functions.

a **Mount the external flash on the advanced accessory shoe.**

b **Plug the flash into the ACC (accessory) jack.**
   When using the HVL-F32X, skip Step b.

c **Turn on the external flash.**

d **Set the mode dial to ▣, P, S, A, M or SCN.**

e **Shoot the image.**

Using a commercially available external flash

You can mount a commercially available external flash that supports the advanced accessory shoe.

a **Mount the external flash to the advanced accessory shoe.**

b **Set the mode dial to SET UP.**

c **Select ▣₂ (Camera 2) with ▲/▼, [Flash] with ▶/▲/▼, [Ext.] with ▶/▲, then press ●.**

d **Turn on the external flash.**

e **Set the mode dial to M or A.**
The flash also strobes when the mode dial is set to ▣, P, S or SCN, but we recommend recording with the mode dial set to M or A.

f **Shoot the image.**

- If you record with [Flash] set to [Int.] in the SET UP settings, the built-in flash may pop up. If this happens, return the built-in flash to its original position and set [Flash] to [Ext.] (page 140).
- When you set [Flash] to [Ext.] in the SET UP settings, EXT⚡ is indicated. In this case, the built-in flash is disabled.
- Set the most appropriate aperture value according to the guide number of the flash used and the distance to the subject.

- The flash guide number varies according to the ISO sensitivity (page 65) of the camera, so be sure to check the ISO number.
- Note that the camera may not function properly or may malfunction when using a flash manufactured by another company for a specific camera (generally a flash with multiple contact points on the advanced accessory shoe), a high-voltage type flash, or a flash accessory.
- Depending on the type of commercially available external flash, you may be unable to use some functions, and other operations may be difficult.

Adjusting color tones

— White Balance

Normally, this camera adjusts color tones automatically, but you can also select the following modes according to your shooting situations. The color of the subject that you see will be captured according to the lighting conditions. When you want to fix the conditions under which the image is captured, or when the color of the entire image seems to be a bit unnatural, it is recommended that you adjust the white balance.

Auto (No indicator)
The white balance is set automatically in response to the condition of the subject. The default setting is Auto.
(Color temperature: about 3000-7000 K)

☀ (Daylight)
Used when shooting outdoors, and for shooting at night, under neon lights, for fireworks, sunrise, and twilight gloom.
(Color temperature: about 5500 K)

☁ (Cloudy)
Used when shooting under a cloudy sky.
(Color temperature: about 6500 K)

💡 (Fluorescent)

Used when shooting under fluorescent lights.
(Color temperature: about 4000 K)

☼ (Incandescent)

• Used when shooting, for example, at a party, where the lighting conditions change often.
• Used in a studio, or under video lights.
(Color temperature: about 3200 K)

⚡WB (Flash)

Adjusts the white balance only to the flash conditions.
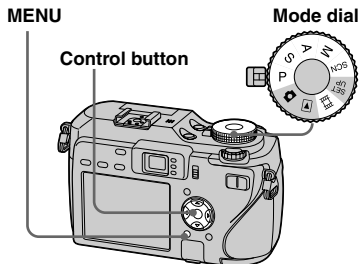This mode cannot be used with movies.
(Color temperature: about 6000 K)

◣ (One push)

For adjusting the white balance depending on the light source.
(Color temperature: about 2000-10000 K)

◣ SET (One push SET)

Memorizes the basic white color which will be used in ◣(One push) mode.

MENU   **Mode dial**

Control button

1 Set the mode dial to P, S, A, M, SCN or 🎬.

2 Press MENU.

The menu appears.

3 Select [WB] (White Bal) with ◄/►, then select the desired setting with ▲/▼.

To return to automatic settings

Select [Auto] in step 3.

• Under fluorescent lights that flicker, even if you choose 💡, the white balance may not be properly adjusted.
• When the flash strobes, the manual setting is canceled, and the image is recorded in [Auto] mode (except in ⚡WB(Flash) mode or ◣(One push) mode).

To capture the basic white color in ◣ SET(One push SET) mode

This mode memorizes the basic white color in the shooting situation for the ◣ (One push) mode. Use this mode when the other modes cannot set the color properly.

1 Select [◣] (One push).

2 Frame a white object such as a piece of paper filling the screen under the same lighting conditions as you will shoot the subject.

3 Select [◣ SET] (One push SET) with ▲.
The screen momentarily turns black and ◣ SET indicator flashes quickly.
When the white balance has been adjusted and stored in the memory, ◣ (One push) is selected again.

• When the ◣ indicator flashes slowly, the white balance is not set or was not able to be set. Record in automatic white balance mode.
• Do not shake or strike the camera while the ◣ SET indicator flashes quickly.
• When flash mode is set to ⚡(Forced flash) or ⚡SL(Slow synchro), the white balance is adjusted to the condition with the flash emitting.

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Shooting continuously

This mode is used for continuous shooting. The maximum number of images you can shoot per one shooting depends on the image size and image quality settings.

Speed Burst (⛛)

You can shoot images with a short interval (approx. 0.4 second).

Burst (⬚)

The shooting interval (approx. 1.0 second) becomes longer than Speed Burst, but even more frames can be shot continuously.

Control button

Shutter button
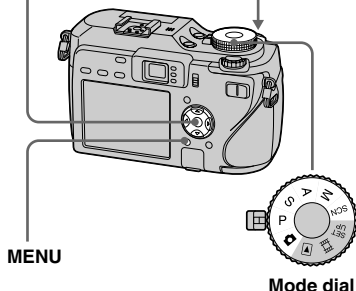
MENU

Mode dial

• When the battery power decreases with use or the capacity of the recording medium is full, recording stops even if you press and hold the shutter button.

a **Set the mode dial to ⬛, P, S, A, M or SCN.**

b **Press MENU.**
The menu appears.

c **Select [Mode] (REC Mode) with ◀/▶, then select [Speed Burst] or [Burst] with ▲/▼.**

d **Shoot the image.**
When you press and hold down the shutter button, the camera records the maximum number of images in succession. If you release the shutter button, shooting will stop at that point. When "Recording" disappears, you can shoot the next image.

The maximum number of images shot continuously

Speed Burst (Units: images)

Image size	Image quality Fine	Standard
7M	8	8
3:2	8	8
5M	8	8
3M	8	8
1M	8	8
VGA (E-Mail)	8	8

Burst (Units: images)

Image size	Image quality Fine	Standard
7M	15	28
3:2	15	28
5M	20	37
3M	31	57
1M	77	100
VGA (E-Mail)	100	100

To return to normal mode

Select [Normal] in step **c**.

Advanced still image shooting

- The flash is set to 🚫 (No flash).
- When recording with the self timer, a series of maximum eight images in Speed Burst mode or maximum five images in Burst mode are recorded each time you press the shutter button.
- You may not be able to shoot images in succession depending on the Scene Selection mode (page 41).

Recording 16 frames in succession

— Multi Burst

This mode records 16 frames in succession each time you press the shutter button. This is convenient for checking your form in sports, for example.

Control button
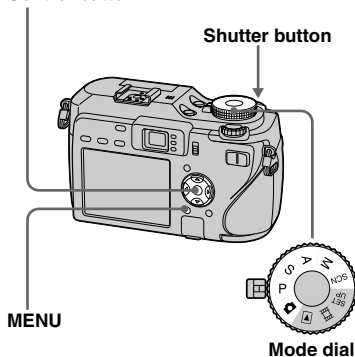
Shutter button

MENU

Mode dial

A **Set the mode dial to ◻, P, S, A, M or SCN.**

B **Press MENU.**

The menu appears.

C **Select [Mode] (REC Mode) with ◀/▶, then select [Multi Burst] with ▲/▼.**

D **Select 🔲 (Interval) with ◀/▶, then select the desired frame interval with ▲/▼.**

You can choose the frame interval from [1/7.5], [1/15] or [1/30] second.

```
1/7.5
1/15
1/30          1/30″
Interval
◀  Mode  BRK  🔲  📷±  PFX  ▶
```
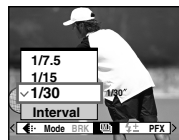
E **Shoot the image.**

A continuous burst of 16 frames are recorded within a single still image (image size 1M).

- You cannot use the following functions in Multi Burst mode:
  – Smart zoom
  – Flash
  – Inserting the date and time
  – NightFraming
- When the mode dial is set to ◻, frame interval is automatically set to [1/30].
- You cannot set the shutter speed to lower than the frame interval time.
- See page 85 to play back images recorded in Multi Burst mode using this camera.
- For the number of images that can be recorded in Multi Burst mode, see pages 134, 135.
- You may not be able to shoot images in Multi Burst mode depending on the Scene Selection mode (page 41).

Shooting in the dark

Each time you press NIGHTFRAMING/
NIGHTSHOT, this function changes
cyclically in the following order:
NightFraming → NightShot → off

Mode dial

**NIGHTFRAMING/
NIGHTSHOT**

Shutter button

Infrared ray emitter
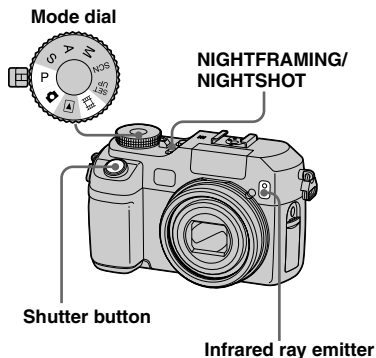
• The infrared ray light reaches within approx.
2.3 m (90 5/8 inches) (W)/2.2 m
(86 5/8 inches) (T).

NightFraming

The NightFraming function enables you
to check a subject even at night and then
record with natural colors using the flash.

a Set the mode dial to ◘ or P.

b Select NightFraming with NIGHTFRAMING/NIGHTSHOT.

The $\boxed{\bullet}_{NF}$ and "Night Framing"
indicators light. The "Night Framing"
indicator turns off after five seconds.
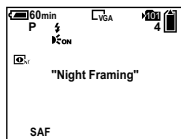
c Press and hold the shutter button halfway down.

The focus is automatically adjusted.

d Press the shutter button fully down.

The shutter sounds, the flash strobes
and the image is recorded.

To cancel the NightFraming function

Release the NightFraming function with
NIGHTFRAMING/NIGHTSHOT in step
b.

• While using the NightFraming function:
  – The white balance is set to Auto.
  – The metering mode is set to multi-pattern
    metering.
  – The AF range finder frame is not displayed.
    The centrally-located subject has priority to
    focus on.
  – If you perform any invalid operation while
    using the NightFraming function, the $\boxed{\bullet}_{NF}$
    indicator flashes and the "Night Framing"
    indicator lights for about five seconds.
• When using the NightFraming function, you
  cannot use the following functions.
  – Turning the LCD screen off
  – AE lock
  – Focus preset
• When you press the shutter button halfway
  down, you will hear a sound, but this is not the
  sound of the shutter releasing. The image is not
  recorded yet.
• When [Hologram AF] is set to [Off], you may
  not get a clear focus. Setting [Hologram AF] to
  [Auto] is recommended (page 140).
• When using the following functions, you
  cannot use the NightFraming function.
  – Exposure Bracket
  – Burst
  – Multi Burst

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NightShot

The NightShot function lets you shoot subjects in dark places without the flash such as camp scenes at night or nocturnal plants and animals. Note that images recorded using the NightShot function become greenish.

1 **Set the mode dial to ☐, P or ⬛⬛.**

2 **Select NightShot with NIGHTFRAMING/NIGHTSHOT.**

The ◉ and "Night Shot" indicators light. The "Night Shot" indicator turns off after five seconds.

```
📼60min    ⌧VGA   ▸🔲▮
P  ⑤                4

◎
⬚             ┌ ┐
          ┌  "Night Shot"  ┐
          └              ┘
          └ ┘

        SAF ▣
```
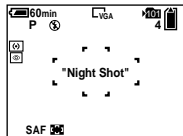
3 **Shoot the image.**

To cancel the NightShot function

Release the NightShot function with NIGHTFRAMING/NIGHTSHOT in step **2**.

- While using the NightShot function:
  – The white balance is set to Auto.
  – The metering mode is set to center weighted.
  – If you perform any invalid operation, the ◉ indicator flashes, and the "Night Shot" indicator lights for about five seconds.
- While using the NightShot function, you cannot use the following functions:
  – Turning the LCD screen off
  – AE lock
  – Shooting with hologram AF
  – Shooting with the flash
  – Focus preset
  – Adjusting the saturation, contrast, and sharpness
- Do not use the NightShot function in bright places (e.g.outdoors in the daytime). This may cause your camera to malfunction.

Shooting with special effects

— Picture Effect

You can digitally process images to obtain special effects.

B&W

The picture is monochrome (black and white).

Sepia

The picture is sepia-toned like an old photograph.

Control button

Shutter button

MENU

Mode dial

a **Set the mode dial to P, S, A, M, SCN or 🎬.**

b **Press MENU.**
The menu appears.

c **Select [PFX] (P. Effect) with ◀/▶, then select the desired mode with ▲/▼.**

d **Shoot the image.**

To cancel Picture Effects
Select [Off] in step c.

• Picture Effect setting is not maintained when the power is turned off.

Shooting still images in RAW mode

— RAW

Used when you want to record the raw data directly onto the recording medium as it is. The data can be reproduced with much less deterioration in image processing and be displayed using the exclusive software provided.

A compressed JPEG format image like that is recorded in normal shooting is recorded at the same time.

Control button

Shutter button

MENU

Mode dial

a **Set the mode dial to 📷, P, S, A, M or SCN.**

b **Press MENU.**
The menu appears.

c **Select [Mode] (REC Mode) with ◀/▶, then select [RAW] with ▲.**

d **Shoot the image.**
You can do the next shooting after "Recording" disappears from the screen.

To return to normal mode

Select [Normal] in step c.

• To reproduce a RAW data file using a computer, software is required. Install the "Image Data Converter Ver.2.0" (for Windows / Macintosh), "Picture Package" (for Windows) or "Image Data Converter Ver.1.5" (for Macintosh) software on the supplied CD-ROM on your computer. Since a RAW data file is a special type of file, ordinary software cannot open a RAW data file.
• The JPEG image is also recorded in the image size selected by the Image Size setup (page 24). (However, [3:2] cannot be selected.) RAW data images are recorded in [7M] size.
• Writing data takes more time than in normal recording mode.
• Digital zoom cannot be used.
• For the number of images that can be recorded, see pages 133, 135.

Advanced still image shooting

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Shooting images without compression

—TIFF

Used when you record an image in uncompressed file format. The image quality does not deteriorate. Images recorded in this mode are suitable for fine printing. A compressed JPEG format image like that recorded in normal shooting is recorded at the same time.

Control button

Shutter button

MENU

Mode dial

1 Set the mode dial to ◘, P, S, A, M or SCN.

2 Press MENU.
The menu appears.

3 Select [Mode] (REC Mode) with ◄/►, then select [TIFF] with ▲/▼.

4 Shoot the image.
You can do the next shooting after "Recording" disappears from the screen.

To return to normal mode
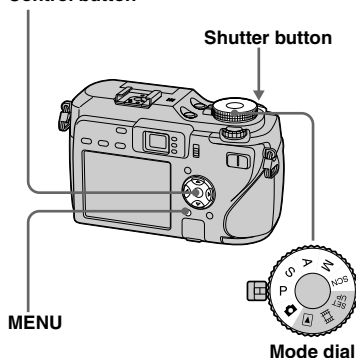Select [Normal] in step **3**.

- JPEG images are also recorded in the image size selected by the Image Size setup (page 24). Uncompressed (TIFF) images are recorded in [7M] size except when [3:2] is selected.
- Writing data takes more time than in normal recording mode.
- For the number of images that can be recorded, see pages 133, 135.

Using a conversion lens

Using a conversion lens (not supplied) will allow you to shoot with enhanced wide or telephoto effects. For details, please consult the operating instructions supplied with your conversion lens.

- **Always turn off the camera before mounting or removing the conversion lens. Failure to do so may result in damage or other malfunction.**
- **When using the built-in flash, the light from the built-in flash may be blocked, causing the lens shadow to appear. We recommend using the Sony optional external flash.**

Notes on using the Sony VCL-DEH07VA wide end conversion lens
- You cannot shoot with the NightFraming or NightShot functions.
- The camera automatically switches to the macro recording mode. However, ♣ is not displayed.
- The zoom feature cannot be used.
- The built-in hologram AF cannot be used. We recommend using the Sony HVL-F32X flash.

Notes on using the Sony VCL-DEH17VA telephoto end conversion lens

- Set the zoom to the T (telephoto) side. Moving the zoom to the W (wide) side may cause the lens shadow to appear or make it difficult to focus.
- When shooting with the NightShot function, the infrared rays may be blocked by the lens. We recommend using the Sony HVL-IRM infrared light.
- When shooting with the NightFraming function, use both the Sony HVL-F32X flash and the Sony HVL-IRM infrared light. However, note that the image may gain a reddish tint.

Using the lens hood

Attaching the optional lens hood obscures unnecessary light and prevents deterioration of your images caused by glare.
For details, please consult the operating instructions supplied with your lens hood.

- When using the built-in flash, the light from the built-in flash may be blocked, causing the lens shadow to appear. We recommend using the Sony optional external flash.
- Also, the hologram AF or infrared ray functions may be affected by use of the lens hood.

Advanced still image shooting

Selecting the folder and playing back images

Select the folder that images you want to play back are stored.

MENU   **Mode dial**

Control button
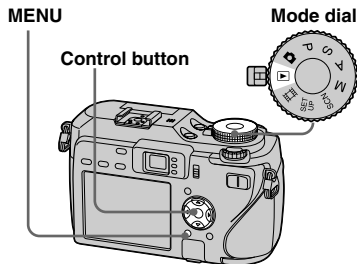
a **Set the mode dial to ▶.**

b **Press MENU.**

The menu appears.

c **Select ☐ (Folder) with ◀, then press ●.**

d **Select the desired folder with ◀/▶.**

```
Select Folder
◀ ☐ 102              2/2 ▶
  Folder Name:102MSDCF
  No. Of Files: 9
  Created:
    2005  1  1  1:05:34AM
      OK
      Cancel
◀▶ BACK/NEXT
```
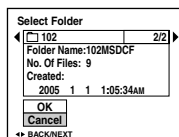
e **Select [OK] with ▲, then press ●.**

To cancel the selection

In step **e**, select [Cancel].

When multiple folders are created in the recording medium

When the first or last image in the folder is displayed, the following indicators appear on the screen.

⏎: Moves to the previous folder.

⏩: Moves to the next folder.

⏮⏭: Moves to both the previous and next folders.

Single screen

Index (nine-image) screen

Index (sixteen-image) screen
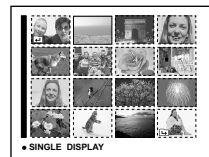
- When no images are stored in the folder, "No file in this folder" appears.

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Enlarging a portion of a still image

You can enlarge a part of an image up to five times the original size.
You can also record the magnified image as a new file.

Control button   **Mode dial**

MENU
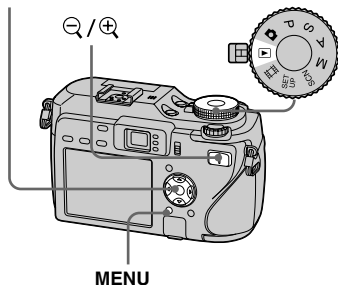
Enlarging an image
— *Playback zoom*

a **Set the mode dial to ▶.**

b **Display the image to be enlarged with ◀/▶.**

c **Press ⊕ (playback zoom) to zoom in on the image.**

d **Select the desired portion of the image with ▲/▼/◀/▶.**

Press ▲

Press ◀   Press ▶
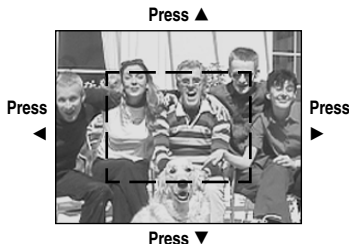
Press ▼

▲: To view more of the top of the image

▼: To view more of the bottom of the image

◀: To view more of the left side of the image

▶: To view more of the right side of the image

e **Adjust the image size with ⊖ /⊕ (playback zoom).**

To cancel playback zoom

Press ●.

• You cannot use playback zoom for movies and Multi Burst images.
• If you press ⊖ (playback zoom) while a non-enlarged image is displayed, the LCD screen switches to the index screen. (page 43)
• You can enlarge the images displayed with the Quick Review function (page 31) by performing steps c to e

Recording an enlarged image – *Trimming*

a **Press MENU after playback zoom.**

The menu appears.

b **Select [Trimming] with ▶, then press ●.**

c **Select the image size with ▲/▼, then press ●.**

The image is recorded, and the image on the LCD screen returns to the normal size after recording.

- The trimmed image is recorded in the recording folder as the newest file, and the original image is retained.
- The trimmed image may suffer some deterioration in image quality.
- You cannot trim to 3:2-sized image.
- You cannot trim RAW data files/uncompressed (TIFF) images.
- You cannot trim images displayed with Quick Review.

Playing back successive images

— Slide Show

You can play back recorded images in order. This function is useful for checking your images or for presentations, etc.
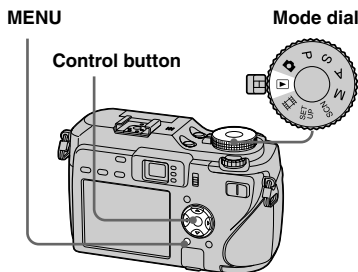
MENU   **Mode dial**

Control button

a **Set the mode dial to ▶.**

b **Press MENU.**

The menu appears.

c **Select ▣ (Slide) with ◀/▶, then press ●.**

Set the following items with ▲/▼/◀/▶.

Interval
3 sec/5 sec/10 sec/30 sec/1 min

Image
Folder: Plays back all images in the selected folder.
All: Plays back all images stored in the recording medium.

Repeat
On: Plays back images in a continuous loop.
Off: After all the images have been played back, the slide show ends.

d **Select [Start] with ▼/▶, then press ●.**

The slide show begins.

To cancel the slide show setting

Select [Cancel] in step **c**.

To stop slide show playback

Press ●, select [Exit] with ▶, then press ● again.

To skip to the next/previous image during the slide show

Press ▶ (next) or ◀ (previous).

- The interval settings time are just guidelines, so it may vary depending on the image.

Rotating still images
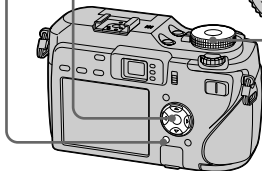
You can rotate an image recorded in portrait orientation and display it in landscape orientation.

MENU

Mode dial

Control button
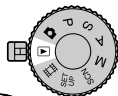
1 **Set the mode dial to ▶, and display the image to rotate.**

2 **Press MENU.**
The menu appears.

3 **Select [⟳] (Rotate) with ◀/▶, then press ●.**

4 **Select ↶ ↷ with ▲, then rotate the image with ◀/▶.**

5 **Select [OK] with ▲/▼, then press ●.**

To cancel rotation

Select [Cancel] in step **4** or **5**, then press ●.

- You cannot rotate protected images/movies/ Multi Burst images/RAW data files/ uncompressed (TIFF) images.
- You may not be able to rotate images shot with other cameras.
- When viewing images on a computer, the image rotation information may not be reflected depending on the application software.

Playing back images shot in Multi Burst mode

You can play back Multi Burst images continuously or play them back frame by frame. This function is used for checking the image.

MENU

Mode dial

Control button
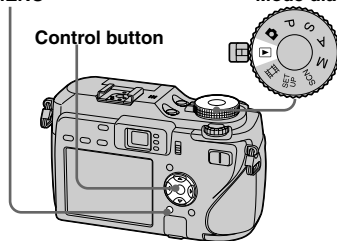
- When Multi Burst images are played back on a computer or on a camera without the Multi Burst function, the 16 frames you shot will be displayed at the same time as part of one image.
- You cannot cut the Multi Burst image.

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Playing back continuously

1 Set the mode dial to ▶.

2 Select the Multi Burst image with ◀/▶.

The selected Multi Burst image is played back continuously.

To pause playback

Press ●. To resume playback, press ● again. The playback starts from the frame displayed on the LCD screen.

Playing back frame by frame

1 Set the mode dial to ▶.

2 Select the Multi Burst image with ◀/▶.

The selected Multi Burst image is played back continuously.

3 Press ● when the desired frame is displayed.

"Step" appears.

4 Advance the frame with ◀/▶.

▶: A next frame is displayed. When you keep and press ▶, the frame advances.
◀: A previous frame is displayed. When you keep and press ◀, the frame advances in the reverse direction.

To return to the normal playback

Press ● in step **4**. The playback starts from the frame displayed on the LCD screen.

To delete shot images

When using this mode, you cannot delete only certain frames. When you delete images, all 16 of the frames are deleted at the same time.

1 Display the desired Multi Burst image to delete.

2 Press 🖳 / 🗑 (Delete).

3 Select [Delete], then press ●.
All of the frames are deleted.

Protecting images

— Protect

This function protects images against accidental erasure.

Control button　　**Mode dial**

MENU
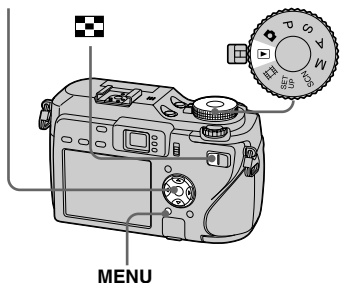
- Note that formatting the recording medium erases all the data in the recording medium even if images are protected, and these images cannot be recovered.
- It may take some time to protect the images.

In single-image mode

a **Set the mode dial to ▶.**

b **Display the image you want to protect with ◀/▶.**

c **Press MENU.**
The menu appears.

d **Select ⊶ (Protect) with ◀/▶, then press ●.**
The displayed image is protected. The ⊶ (protect) indicator appears on the image.

e **To continue and protect other images, select the desired image with ◀/▶, then press ●.**

To cancel the protection
Press ● again in step **d** or **e**. The ⊶ indicator disappears.

In index mode

a **Set the mode dial to ▶, then press ▦ (index) to display the index (nine-image) screen.**
Press ▦ (index) twice to display a sixteen-image index screen.

b **Press MENU.**
The menu appears.

c **Select ⊶ (Protect) with ◀/▶, then press ●.**

d **Select [Select] with ◀/▶, then press ●.**

e **Select the image you want to protect with ▲/▼/◀/▶, then press ●.**
The green ⊶ indicator appears on the selected image.

f **Repeat step e to protect other images.**

g **Press MENU.**

Advanced still image viewing

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8 **Select [OK] with ▶, then press ●.**

The ⊶ indicator turns white. The selected images are protected.

To exit the Protect function

Select [Cancel] in step **4** or select [Exit] in step **8**, then press ●.

To cancel individual protection

Select the image to be unprotected with ▲/▼/◀/▶ in step **5**, then press ●. The ⊶ indicator turns gray. Repeat this operation for all images that are to be unprotected. Press MENU, select [OK], and then press ●.

To protect all images in the folder

Select [All In This Folder] in step **4**, and press ●. Select [On], then press ●.

To cancel protection of all images in the folder

Select [All In This Folder] in step **4**, and press ●. Select [Off], then press ●.

Changing image size

— Resize

You can change the image size of a recorded image, and save it as a new file. You can resize to the following sizes: 7M, 5M, 3M, 1M, VGA
The original image is retained even after resizing.

MENU   **Mode dial**

Control button
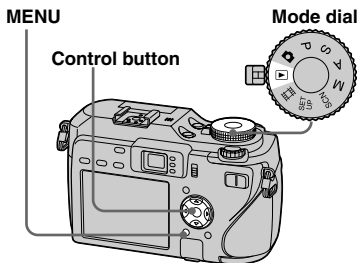
1 **Set the mode dial to ▶.**

2 **Display the image you want to resize with ◀/▶.**

3 **Press MENU.**
The menu appears.

4 **Select ⊡ (Resize) with ◀/▶, then press ●.**

5 **Select the desired size with ▲/▼, then press ●.**

The resized image is recorded in the recording folder as the newest file.

To cancel resizing

Select [Cancel] in step **5**.

• You cannot change the size of movies/Multi Burst images/RAW data files/uncompressed (TIFF) images.
• When you change from a small size to a large size, the image quality deteriorates.
• You cannot resize to an image size of 3:2.
• When you resize a 3:2 image, the upper and lower black portions will be displayed on the image.

Printing still images

You can print images shot with your
camera by the following methods.
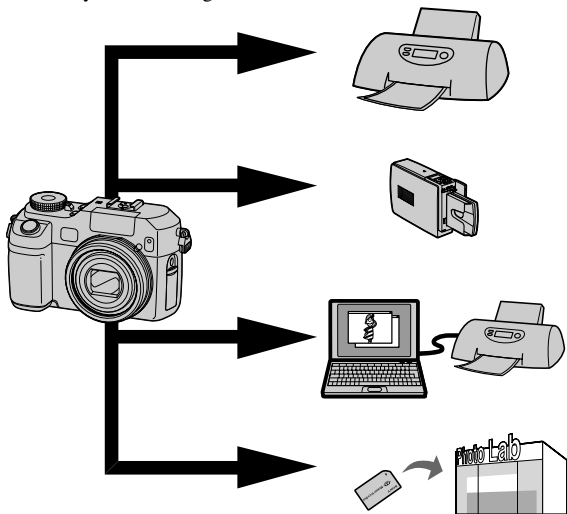
Direct printing (PictBridge compatible printer) (page 90)

You can print by connecting the camera directly to a PictBridge
compatible printer.

Direct printing ("Memory Stick"/CF card compatible printer)

You can print using a "Memory Stick" or CF card compatible printer.
See the users manual supplied with the printer for details.

Printing with a computer (page 114)

You can print images that have been loaded to a computer using the
"PicturePackage" software included on the CD-ROM supplied with
your camera. See the users manual supplied with the printer for the
printer operation method.

Printing at a shop (page 95)

Just bring the "Memory Stick" or CF card to a print service shop. You
can also mark the images you want to print beforehand with print marks.

Direct printing

Even if you do not have a computer, you can easily print images shot using your camera by connecting the camera to a PictBridge compliant printer. For preparation, you only set the USB connection in the SET UP settings and connect the camera to the printer with the USB cable.
Using a PictBridge compliant printer easily prints the index print*.

PictBridge

* An index print function may not be provided depending on a printer.

- Using the AC Adaptor is recommended to prevent the power from turning off partway through printing.
- You cannot print movies and images recorded in RAW mode.
- When printing uncompressed (TIFF) images, only their corresponding JPEG files are printed.
- When an error notification is received from the connected printer, the 🅟 indicator flashes for approximately five seconds. Check the connected printer.
- Note that printing may be canceled if you switch the 🔜 /CF switch while printing images.

Single print

Index print

- If you arrange the same image side by side, select [This image] in single-image mode, then set [Index] to [On] (page 92).
- The number of images printed on a single index print differs according to the printer.

Preparing the camera

Set the USB mode on the camera to connect the camera with a printer.

Mode dial

Control button
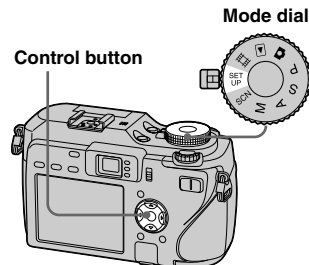
a **Set the mode dial to SET UP.**

b **Select 🛠 (Setup 2) with ▼, then select [USB Connect] with ▲/▼/▶.**

c **Select [PictBridge] with ▶/▲, then press ●.**

Setup 2	
File Number:	
USB Connect:	PictBridge
Video Out:	PTP
Clock Set:	Normal

The USB mode is set.

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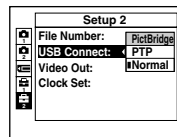
Connecting the camera to the printer

Select the recording medium with the ⊕/CF switch.

Connect the ψ (USB) jack of the camera and the USB jack on the printer with the USB cable (supplied). Turn on the camera and the printer.

The camera turns to playback mode regardless of the mode dial position, and an image in the selected playback folder and the print menu appear on the LCD screen.

After the connection is made, the 🖋 mark is indicated on the LCD screen.

Print
All In This Folder
DPOF image
Select
This image
Cancel

Printer
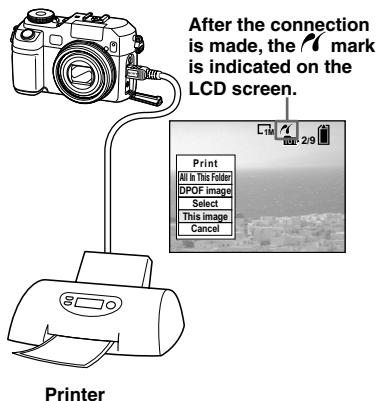
When [USB Connect] is not set to [PictBridge] on the Setup screen

Even if you turn on the camera, you cannot use the PictBridge function. Disconnect the USB cable from the camera and set [USB Connect] to [PictBridge] (page 90)

Printing in single-image mode

When you connect the camera and a printer, the print menu appears.

MENU

Control button

⊕/CF switch
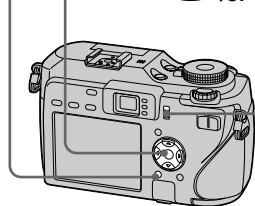
a Select the desired printing type with ▲/▼, then press ●.

Print
All In This Folder
DPOF image
Select
This image
Cancel
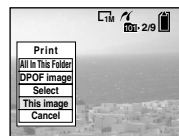
All In This Folder
Prints all the images in the folder.

DPOF image
Prints all the images with the 🖪 mark (page 95) regardless of the displayed image.

Select

Selects the images in order. Prints all the selected images.

1 Select the image you want to print with ◄/►, then press ●.
The ✔ mark appears on the selected image.
   • Repeat this step to print other images.
2 Select [Print] with ▼, then press ●.

This image

Prints the currently displayed image.
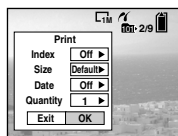
b **Set the print setting with ▲/▼/◄/►.**

```
      ☐₁₅₄  ⚲
      ☐·2/9  📋
    Print
Index     Off ►
Size      Default►
Date      Off ►
Quantity  1 ►
   Exit    OK
```

Index
Select [On] to print index-images.

Size
Selects the desired paper size.

Date
To insert the date and time on images, select [Date] or [Day&Time].

• If you select [This image] in step b and print index-images, the same images are arranged side by side.
• When you select [Date] for [Date] setting, the date will be inserted in the order set in "Setting the date and time" (page 18). Date function may not be provided depending on a printer.
• Setting items the printer does not support cannot be displayed.

c **Select [Quantity] with ▼, select the number of sheets with ◄/►.**

When [Index] is set to [Off]: the number of sheets of the selected image.
When [Index] is set to [On]: the number of sheets of index-images.
When [This image] is selected in step b, this is the number of the same image that can be arranged on a single sheet.

• Depending on the number of index-images, it may not be possible to arrange all of the images on a single sheet.

d **Select [OK] with ▼/►, then press ●.**

The image is printed.
Do not disconnect the USB cable while the ⇨⊗ (Not disconnect USB cable) indicator appears on the LCD screen.

```
            ⚲
         ⇨⊗
       Printing
         2/3



   Exit
```

To cancel printing

Select [Cancel] in step **1** or select [Exit] in step **4**.

To print other images

Select the image with ◀/▶ after step **4**, then select [Print].

Printing in index mode

If you connect your camera to the printer, the print menu appears. Press [Cancel] to exit the print menu.

1 Press (Index) to display the index (nine-image) screen.

Press (Index) twice to display a sixteen-image index screen.

2 Press MENU.

The menu appears.

3 Select (Print) with ▶, then press ●.

4 Select the desired printing type with ◀/▶, then press ●.

Select

Selects the images in order. Prints all the selected images.

1 Select the image you want to print with ▲/▼/◀/▶, then press ●.
The ✔ mark appears on the selected image.
• Repeat this step to print other images.
2 Press MENU.

DPOF image

Prints all the images with the mark (page 95) regardless of the displayed image.

All In This Folder
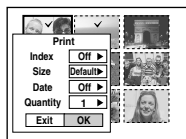
Prints all the images in the folder.

e **Set the print setting with ▲/▼/◄/►.**

Index
Select [On] to print index-images.

Size
Selects the desired paper size.

Date
To insert the date and time on images, select [Date] or [Day&Time].

• When you select [Date] for [Date] setting, the date will be inserted in the order set in "Setting the date and time" (page 18). Date function may not be provided depending on a printer.

f **Select [Quantity] with ▼, select the number of sheets with ◄/►.**

When [Index] is set to [Off]: the number of sheets of the selected image.
When [Index] is set to [On]: the number of sheets of index-images.

• Depending on the number of index-images, it may not be possible to arrange all of the images on a single sheet.

g **Select [OK] with ▼/►, then press ●.**

The image is printed.
Do not disconnect the USB cable while the ⌦⊗ (Not disconnect USB cable) indicator appears on the LCD screen.
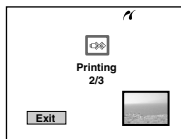
To cancel printing
Select [Cancel] in step **d** or select [Exit] in step **g**.

Having images printed at a shop

Note the following items when having images printed at a shop.

- Contact the print service shop to determine what recording medium types are supported.
- When using a print service shop that does not support "Memory Stick" or CF card, copy the images to a CD-R, etc., and bring that to the shop instead.
- Be sure to make a backup copy of the data before using a print service shop.

Marking print marks

Marking images you want to have printed beforehand with print marks is convenient when having images printed at a print service shop.

MENU

Control button

Mode dial
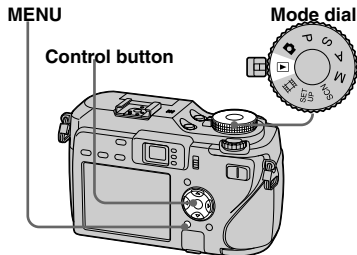
- You cannot mark movies or images recorded in RAW mode.
- When you mark images shot in Multi Burst mode, all the images are printed on one sheet divided into 16 panels.
- If you mark an image shot in TIFF mode with a print (DPOF) mark, only the uncompressed (TIFF) image is printed, and the JPEG image recorded at the same time is not printed.
- You cannot set the number of prints.

Marking print marks in single-image mode

a Set the mode dial to ▶.

b Display the image you want to mark with ◀/▶.

c Press MENU.
The menu appears.

d Select DPOF (DPOF) with ◀/▶, then press ●.
The ⊡ mark is marked on the displayed image.

```
 60min        1.9M    2/9

 ◀

    DPOF
    Exit
 ◀▶ BACK/NEXT
```

e To continue and mark other images, display the desired image with ◀/▶, then press ●.

To unmark the ⊡ mark

Press ● again in step **d** or **e**. The ⊡ mark disappears.

Marking print marks in index mode

1 **Set the mode dial to ▶, then press ⬛ (index) to display the index (nine-image) screen.**

Press ⬛ (index) twice to display a sixteen-image index screen.

2 **Press MENU.**

The menu appears.

3 **Select DPOF (DPOF) with ◀/▶, then press ●.**

4 **Select [Select] with ◀/▶, then press ●.**

• You cannot mark the ⬚ mark in [All In This Folder].

5 **Select the image you want to mark with ▲/▼/◀/▶, then press ●.**

The green ⬚ mark appears on the selected image.

● SELECT **MENU TO NEXT**

6 **Repeat step 5 to mark other images.**

7 **Press MENU.**

8 **Select [OK] with ▶, then press ●.**

The ⬚ mark turns white. The ⬚ mark setting is completed.

To unmark ⬚ marks

Select the images to be unmarked with ▲/▼/◀/▶ in step 5, then press ●.

To unmark all the ⬚ marks in the folder

Select [All In This Folder] in step 4, then press ●. Select [Off], then press ●.

To exit the ⬚ mark function

Select [Cancel] in step 4 or select [Exit] in step 8.

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Shooting movies

You can shoot movies with sound using your camera.

Control button
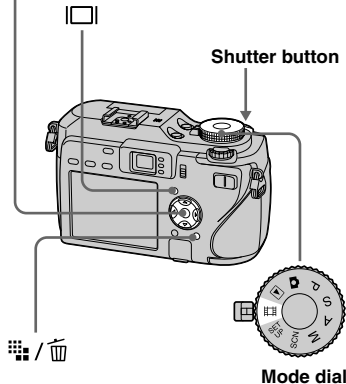
|□|

Shutter button

:::/ 🗑

Mode dial

a Set the mode dial to 🎦.

b Press :::/ 🗑 (Image Size).

The Image Size setup appears.

c Select the desired size with ▲/▼.

You can choose from [640(Fine)], [640(Standard)] and [160].

• [640(Fine)] can be recorded only on "Memory Stick PRO".

d Press the shutter button fully down.

"REC" appears on the screen and the camera starts recording the image and sound.

• Recording stops when the recording medium is full.

e Press the shutter button fully down again to stop recording.

Indicators during shooting

The screen indicators are not recorded.
Each time you press |□|, the status of the LCD screen changes as follows:
Indicators off → LCD screen off → Indicators on.
A histogram is not displayed.
For a detailed description of the indicators, see page 150.

Shooting close-ups (Macro)

Set the mode dial to 🎦 and follow the procedure on page 33.

Using the self-timer

Set the mode dial to 🎦 and follow the procedure on page 34.

• When you set the image size to [640(Fine)] while connecting the A/V connecting cable to the A/V (MONO) jack, the subject does not appear on the LCD screen. The LCD screen turns blue.
• You cannot use the following functions during shooting movies:
  – Changing the zoom scale
  – Flash
  – Inserting the date and time
• For the recording time in each movie mode, see pages 134, 135.

Enjoying movies

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Viewing movies on the LCD screen

You can view movies on the LCD screen with sound from the speaker.

Control button   **Mode dial**

Speaker
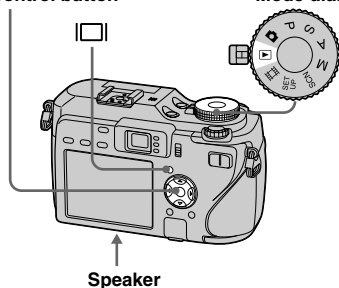
1 Set the mode dial to ▶.

2 Select the desired moving image with ◀/▶.

Movies with the image size [640(Fine)] or [640(Standard)] are displayed on the full screen.
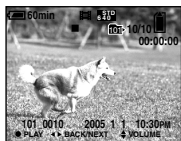
- Movies with the image size [160] are displayed a size smaller.

3 Press ●.

The movie and sound are played back. During playback, ▶ (playback) appears on the screen.

Playback bar

To stop playback

Press ● again.

To adjust the volume

Press ▲/▼ to adjust the volume.

To advance or rewind the movie

Press ▶ (cue) or ◀ (rev) during playback.
To return to the normal playback, press ●.

Indicators during viewing movies

Each time you press |□|, the status of the LCD screen changes as follows:
Indicators off → LCD screen off → Indicators on.
A histogram is not displayed.
For a detailed description of the indicators, see page 152.

- The procedure for viewing movies on a TV is the same as that for viewing still images (page 44).
- The moving images recorded using earlier Sony models may be also displayed a size smaller.

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Deleting movies

You can delete unwanted movies.

Control button   **Mode dial**

🖳 / 🗑
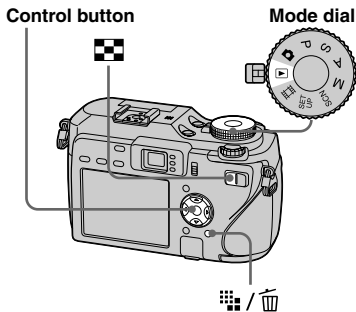
• You cannot delete protected movies.
• Note that you cannot restore deleted movies.

In single-image mode

a **Set the mode dial to ▶.**

b **Display the movie you want to delete with ◄/►.**

c **Press 🖳 / 🗑 (Delete).**
The movie has not yet been deleted at this point.

d **Select [Delete] with ▲, then press ●.**
The message "Access" appears, and the movie has been deleted.

e **To continue and delete other movie, display the movie you want to delete with ◄/►, then repeat step d.**

To cancel deletion
Select [Exit] in step d or e.

In index mode

a **Set the mode dial to ▶, then press ⊞ (index) to display an index (nine-image) screen.**
Press ⊞ (index) twice to display a sixteen-image index screen.

b **Press 🖳 / 🗑 (Delete).**

c **Select [Select] with ◄/►, then press ●.**

d **Select the movie you want to delete with ▲/▼/◄/►, then press ●.**
The green 🗑 (Delete) indicator appears on the selected movie.

The movie has not yet been deleted at this point.

e **Repeat step d to delete other movies.**

f **Press 🖳 / 🗑 (Delete).**

Enjoying movies

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g Select [OK] with ▶, then press
●.

The message "Access" appears, and
the movie has been deleted.

To cancel deletion

Select [Exit] in step **3** or **7**.

• To delete all the images in the folder, see page
48.

Cutting movies

You can cut movies, or delete unnecessary
portions of movies. Cutting or deleting
movies is the recommended function to
use when the recording medium capacity is
insufficient, or when you attach movies to
your e-mail messages.
Note that the original movie is deleted
when you cut it.

The file numbers assigned when movies are cut

The cut movies are assigned new numbers
and recorded as the newest files in the
selected recording folder. The original
movie is deleted, and that number is
skipped.

**<Example> Cutting a movie numbered
101_0002**

101_0001   101_0003

| 1 | 2 | 3 |

101_0002

1. Cutting scene A.

| 1 | A | 2 | B | 3 |

▲
Divide point   101_0002

2. Cutting scene B.

101_0004

| 1 | 3 | A | 2 | B |

101_0005   ▲
**Divide
point**
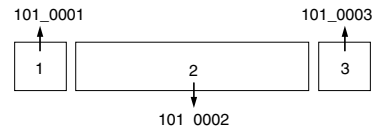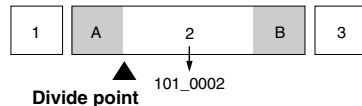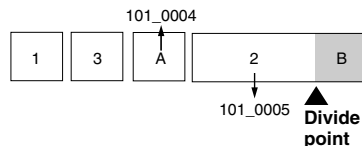
**3. Deleting scenes A and B if they are
unnecessary.**

101_0004   101_0007

| 1 | 3 | A | 2 | B |

▲   ▲
Delete   101_0006   **Delete**
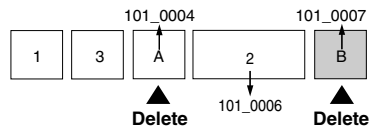
4. Only the desired scenes remain.

| 1 | 3 | 2 |

101_0006

MENU

Mode dial

Control button
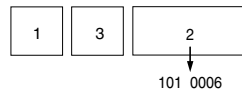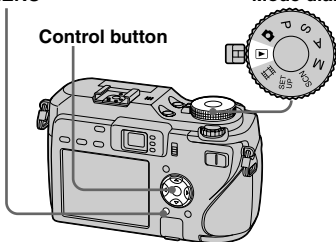
a **Set the mode dial to ▶.**

b **Select the movie you want to cut using ◄/►.**

c **Press MENU.**

The menu appears.

d **Select ✄ (Divide) with ►, then press ●. Next, select [OK] with ▲, then press ●.**

The playback of the movie starts.

e **Decide on a cutting point.**

Press the center ● at the desired cutting point.

```
60min        10: 10/10
Divide              00:00:02
Dividing
Point
◄II/II►
O K
Cancel
Exit
```
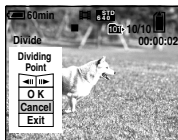
When you want to adjust the cutting point, use [◄II/II►] (frame rewind/ forward) and adjust the cutting point using ◄/►. If you want to change the cutting point, select [Cancel]. The playback of the movie starts again.

f **When you have decided on a cutting point, select [OK] with ▲/▼, and press ●.**

g **Select [OK] with ▲, then press ●.**

The movie is cut.

To cancel cutting

Select [Exit] in step e or g. The movie appears on the screen again.

- You cannot cut the following images.
  – Still image
  – Movies not long enough to cut (about more than two seconds)
  – Protected movies
- You cannot restore files once you cut them.
- The cut movies are recorded as the newest files in the selected recording folder.

Enjoying movies

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Copying images to your computer

— For Windows users

Recommended computer environment

OS: Microsoft Windows 98, Windows 98SE, Windows 2000 Professional, Windows Millennium Edition, Windows XP Home Edition, or Windows XP Professional

The above OS must be installed at the factory. Operation is not assured in an environment upgraded to the operating systems described above or in a multi-boot environment.

CPU: MMX Pentium 200 MHz or faster
USB connector: Provided as standard
Display: 800 × 600 dots or more
High Color (16-bit color, 65,000 colors) or more

- This camera is compatible with Hi-Speed USB (USB 2.0 compliant).
- Connecting with a USB interface that is compatible with Hi-Speed USB (USB 2.0-compliant) allows advanced transfer (high-speed transfer).

- If you connect two or more USB equipment to a single computer at the same time, some equipment, including your camera, may not operate depending on the type of USB equipment.
- Operations are not guaranteed when using a USB hub.
- Operations are not guaranteed for all the recommended computer environments mentioned above.

USB mode

There are two modes for a USB connection when connecting with a computer, [Normal] and [PTP]* modes. The default setting is the [Normal] mode. This section describes the [Normal] mode as an example.

* For a details on the PTP connection, see page 142.

Communication with your computer

When your computer resumes from the suspend or sleep mode, communication between your camera and your computer may not recover at the same time.

When a USB connector is not provided on your computer

When neither a USB connector nor a recording medium slot is provided, you can copy images using an additional device. See the Sony Website for details.
http://www.sony.net/

Contents of the CD-ROM

■ **USB Driver**
This driver is needed in order to connect the camera to a computer.
When using Windows XP, you need not install the USB driver.

■ **Picture Package**
This application is used to transfer images from the camera to a computer easily.
It also allows you to utilize the various functions.
When you install "Picture Package," the USB driver is also installed at the same time.

- The required operations may differ depending on your OS.
- **Close down all applications running on the computer before installing the USB driver and application.**
- When using Windows XP or Windows 2000, log on as Administrator.

Installing the USB driver

When using Windows XP, you need not install the USB driver.
Once the USB driver is installed, you need not install the USB driver.

a **Turn on your computer, and insert the CD-ROM (supplied) into the CD-ROM drive.**

Do not connect your camera to your computer at this time.

The install menu screen appears.
If it does not appear, double-click 🖳 (My Computer) → 💿 (PICTUREPACKAGE) in that order.

- When also using the supplied image utility software "Picture Package", click [Picture Package]. The USB driver will be installed when "Picture Package" is installed (page 109).
- **When the computer is in use, shut down all application software before you install the USB driver.**

b **Click [USB Driver] on the title screen.**

The "InstallShield Wizard" screen appears.

c **Click [Next].**
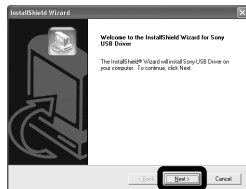
The USB driver installation starts.
When the installation is completed, the screen informs you of completion.

d **Click [Yes, I want to restart my computer now], then click [Finish].**
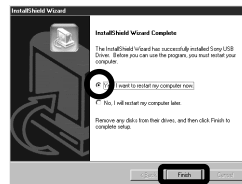
Your computer restarts. Then, you can establish USB connection.

e **Remove the CD-ROM.**

Connecting the camera to your computer

a **Insert the recording medium with the images you want to copy into the camera.**
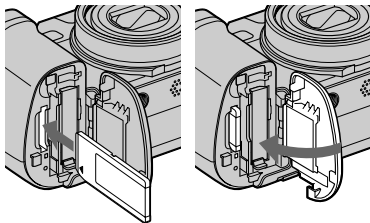
b **Open the DC IN jack cover, and connect the AC Adaptor (supplied), then plug the adaptor into a wall outlet (wall socket).**

To a wall outlet (wall socket)
②
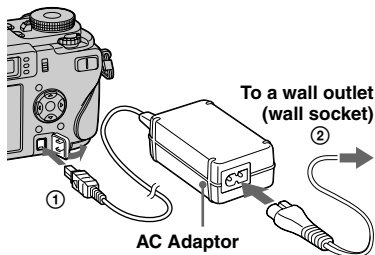
AC Adaptor
①

- Select the recording medium with the ⬛/CF switch (page 21).
- When you copy images to your computer using the battery pack, copying may be failed or cause data corruption by battery shutoff. We recommend that you use the AC Adaptor.

c **Set the mode dial to ▶. Turn on your computer and the camera.**

d **Connect the USB cable (supplied) to the ψ (USB) jack of the camera.**
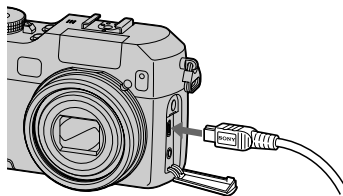
e **Connect the USB cable to your computer.**
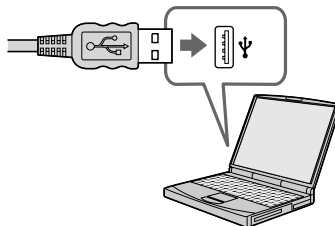
- When using Windows XP, the AutoPlay wizard automatically appears on the desktop. Proceed to page 106.

```
USB Mode
Normal
○○○○○          Access
Memory Stick   indicators*

Switch on MENU
```
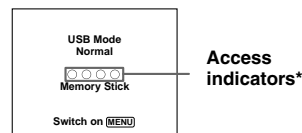
"USB Mode Normal" appears on the LCD screen of the camera. When a USB connection is established for the first time, your computer automatically runs the used program to recognize the camera. Wait for a while.

* During communication, the access indicators turn red. Do not operate the computer until the indicators turn white.

- If "USB Mode Normal" does not appear in step **e**, press MENU, select [USB Connect], and set it to [Normal].

▉ Disconnecting the USB cable from your computer, removing the recording medium from your camera or turning off the power during USB connection

For Windows 2000, Me, or XP users

1 Double-click 🖭 on the tasktray.

🖭 🍌 12:00 PM

Double-click here

2 Click 🖴 (Sony DSC), then click [Stop].

3 Confirm the device on the confirmation window, then click [OK].

4 Click [OK].
Step **4** is unnecessary for Windows XP users.

5 Disconnect the USB cable, remove the recording medium, or turn off the power.

For Windows 98 or 98SE users

Confirm that the access indicators (page 104) on the screen are turned white and carry out only step **5** above.

Copying images
– Windows 98/98SE/2000/Me

1 **Double-click [My Computer], then double-click [Removable Disk].**

The contents of the recording medium inserted in your camera appear.

- This section describes an example of copying images to the "My Documents" folder.
- When the "Removable Disk" icon is not shown, see page 106.
- When using Windows XP, see page 106.

2 **Double-click [DCIM], then double-click the folder that the image files you want to copy are stored.**

3 **Right-click the image file to display the menu, then select [Copy] from the menu.**

4 **Double-click the [My Documents] folder and right-click on the "My Documents" window to display the menu, then select [Paste] from the menu.**

The image files are copied to the "My Documents" folder.

When an image with the same file name exists in the copy destination folder

The overwrite confirmation message appears. When you overwrite the existing image with the new one, the original file data is deleted.

To change the file name

To copy an image file to the computer without overwriting, change the file name to the desired name and then copy the image file. However, note that if you change the file name, you may not be able to play back that image with your camera. To play back images with the camera, perform the operation on page 109.

Enjoying images on your computer

When a removable disk icon is not shown

1 Right-click [My Computer] to display the menu, then click [Properties].
The "System Properties" screen appears.

2 Display [Device Manager].
① Click [Hardware].
② Click [Device Manager].
  • For Windows 98, 98SE, Me users, step ① is unnecessary. Click the [Device Manager] tab.

3 If [Sony DSC] is displayed, delete it.
① Right-click [Sony DSC].
② Click [Uninstall].
  The "Confirm Device Removal" screen appears.
  • For Windows 98, 98SE, Me users, click [Remove].
③ Click [OK].
  The device is deleted.

Try the USB driver installation again using the CD-ROM (page 103).

– Windows XP

Copying images using the Windows XP AutoPlay wizard

a **Make a USB connection (page 104). Click [Copy pictures to a folder on my computer using Microsoft Scanner and Camera Wizard], then click [OK].**
The "Scanner and Camera Wizard" screen appears.

b **Click [Next].**
The images stored on the recording medium are displayed.

c **Click the checkbox of images that you do not want to copy to your computer to remove the checkmark, then click [Next].**
The "Picture Name and Destination" screen appears.

d **Select a name and destination for your pictures, then click [Next].**
Image copying starts. When the copying is completed, the "Other Options" screen appears.

e **Select [Nothing. I'm finished working with these pictures], then click [Next].**
The "Completing the Scanner and Camera Wizard" screen appears.

f **Click [Finish].**
The wizard closes.

• To continue copying other images, follow the procedure given under on page 105 to disconnect the USB cable and reconnect it. Then, perform the procedure from step a again.

Viewing the images on your computer

1 Click [Start], then click [My Documents].

The "My Documents" folder contents are displayed.

- This section describes the procedure for viewing copied images in the "My Documents" folder.
- When not using Windows XP, double-click [My Documents] on the desktop.

2 Double-click the desired image file.

The image is displayed.

Image file storage destinations and file names

The image files recorded with your camera are grouped as folders in the recording medium.

Example: when viewing folders on Windows XP (When using a "Memory Stick")

```
Desktop
  My Documents
  My Computer
    3½ Floppy
    Local Disk
    Local Disk
    CD Drive
    Sony MemoryStick
      DCIM
        100MSDCF  ──── Folder containing image data which was recorded using the camera not equipped with the folder creating function
        101MSDCF  ──┐
                     ├── Folder containing image data which was recorded using your camera. When not creating any folders, there is only the "101MSDCF" folder
        999MSDCF  ──┘
      MSSONY  ──── Folder containing movie data, etc., which was recorded using the camera not equipped with the folder creating function
```

- Even when using a CF card, "Sony MemoryStick" may be displayed, depending on your computer environment.
- You cannot record any images to "100MSDCF" or "MSSONY" folders. The images in these folders are available only for viewing.
- For more information about the folder, see pages 52, 82.

Enjoying images on your computer

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Folder	File name	File meaning
101MSDCF to 999MSDCF	DSC0□□□□.JPG	• Still image files shot in – Normal mode (page 29) – Exposure Bracket mode (page 64) – Burst mode (page 75) – Multi Burst mode (page 76) • Still image files recorded simultaneously in – RAW mode (page 79) – TIFF mode (page 80)
	DSC0□□□□.TIF	• Uncompressed (TIFF) image file recorded in TIFF mode (page 80)
	DSC0□□□□.SRF	• RAW data file recorded in RAW mode (page 79)
	MOV0□□□□.MPG	• Movie files (page 97)
	MOV0□□□□.THM	• Index image files recorded simultaneously in movie mode (page 97)

• □□□□ stands for any number within the range from 0001 to 9999.
• The numerical portions of the following files are the same.
  – A RAW data file shot in RAW mode and its corresponding image file
  – An uncompressed image file shot in TIFF mode and its corresponding image file
  – A movie file recorded in movie mode and its corresponding index image file
• To view a RAW data file, you have to install application software from the supplied CD-ROM.

Viewing image files once copied to a computer with your camera

When an image file copied to a computer no longer remains in a recording medium, you can view that image again on your camera by copying the image file in the computer to a recording medium.

- Step **1** is not necessary when the file name set with your camera has not been changed.
- You may be unable to play back some images depending on the image size.
- When an image file has been processed by a computer or when the image file was recorded using a model other than your camera, playback on your camera is not guaranteed.
- When the overwrite confirmation message appears, enter a different number in step **1**.
- When there is no folder, first create a folder with your camera and then copy the image file (page 52).

1 **Right-click the image file, then click [Rename]. Change the file name to "DSC0□□□□".**

Enter a number from 0001 to 9999 for □□□□.

- An extension may be displayed depending on the computer settings. The extension for still images is JPG, and the extension for movies is MPG. Do not change the extension.

2 **Copy the image file to the recording medium folder.**

① Right-click the image file, then click [Copy].
② Select and double-click the [DCIM] folder from [Removable Disk] or [Sony MemoryStick] in [My Computer].
③ Right-click the [□□□MSDCF] folder in the [DCIM] folder and click [Paste]. □□□ stands for any number within the range from 100 to 999.

Installing "Picture Package" and "ImageMixer VCD2"

"Picture Package" is only for Windows computers.

You can use the "Picture Package" software on your Windows computer to compile the images shot with your camera. When you install "Picture Package," the USB driver is also installed at the same time.

- When the computer is in use, shut down all application software before you install "Picture Package."

For computer environment

See page 102 for the basic Windows operating environment. Other system requirements are as follows.

Software: Macromedia Flash Player 6.0 or later, Windows Media Player 7.0 or later, DirectX 9.0b or later
Sound card: 16-bit stereo sound card with speakers
Memory: 64 MB or more (128 MB or more is recommended.)
Hard Disk: Disk space required for installation: approximately 500 MB
Display: Video card (Direct Draw driver compliant) with 4 MB of VRAM

- When automatically creating slide shows (page 113), a Pentium III 500 MHz or faster CPU is required.
- When using "ImageMixer VCD2," a Pentium III 800 MHz or faster CPU is recommended.
- This software is compatible with DirectX technology. "DirectX" must be installed for use.
- A separate environment for operating the recording device is required in order to write to CD-Rs.

When editing images recorded in RAW mode, the following computer environment is required.
OS: Microsoft Windows 98SE, Windows 2000 Professional, Windows Millennium Edition, Windows XP Home Edition, or Windows XP Professional
IBM PC/AT (DOS/V) compatible computers on which the above OS is preinstalled.
CPU: Intel MMX Pentium III 1 GHz or faster is recommended.
Memory: 256 MB or more

1 **Turn on your computer, and insert the CD-ROM (supplied) into the CD-ROM drive.**

The installation menu screen appears.

- If you have not yet installed the USB driver (page 103), do not connect the camera to the computer before you install the "Picture Package" software (except for Windows XP).

2 **Click [Picture Package/ImageMixer VCD2].**

"Choose Setup Language" screen appears.

3 **Select the desired language, then click [Next].**

- This section describes the English screen.

4 **Click [Next].**

The "License Agreement" screen appears.

Read the agreement carefully. If you accept the terms of the agreement, check the "I accept the terms of the license agreement" checkbox and click [Next].
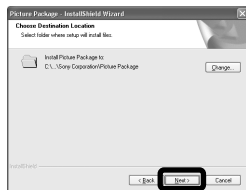
e Click [Next].

f Click [Install] on the "Ready to Install the Program" screen.

The installation starts.
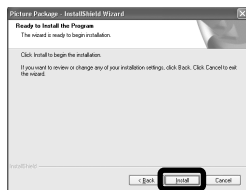
When the installation is completed, the "Welcome to setup for ImageMixer VCD2" screen appears.

g Click [Next], then follow the instructions.

If the "Welcome to setup for Direct X" screen appears after you install the application software, follow the instructions.

h Confirm if the checkbox of "Yes, I want to restart my computer now" is checked, then click [Finish].

Your computer restarts.
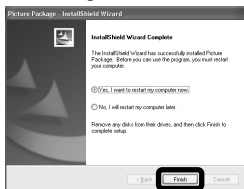
The shortcut icons of "Picture Package Menu" and "Picture Package destination Folder" are displayed.

i Remove the CD-ROM.

Copying images using "Picture Package"

Connect the camera and your computer with the USB cable.

"Picture Package" starts up automatically and the images are copied to the computer automatically. After the images are copied, "Picture Package Viewer" starts up and the images copied are displayed.
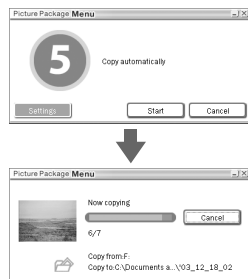
- Normally "Picture Package" and "Date" folders are created inside the "My Picture" folder, and all of the image files recorded with the camera are copied into these folders.
- If "Picture Package" cannot copy images automatically, start up "Picture Package Menu" and check [Settings] in [Copy automatically].

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Using "Picture Package"

Start up the [Picture Package Menu] on the desktop to use the various functions.

- The initial screen may differ depending on your computer. You can change the menu display order to suit your taste by clicking [Settings] at the lower-right corner of the screen.
- For details on the use of the application software, click ⓐ at the upper-right corner of each screen to show the on-line help.

Technical support of "Picture Package" is provided by the Pixela User Support Center. For more information, refer to the enclosed information with the CD-ROM.

Viewing images on a computer

Click [Viewing video and pictures on PC] on the left side of the screen, then click [Viewing video and pictures on PC] in the lower-right corner of the screen.

The screen used for viewing images appears.

- You can display the images recorded in JPEG, TIFF and RAW modes. As for RAW data files, you can edit the images. Using "Image Data Converter Ver.2.0", you can adjust various settings, such as tone curve, sharpness or in Adobe RGB color space (page 114).

Storing images on a CD-R

Click [Save the images on CD-R] on the left side of the screen, then click [Save the images on CD-R] in the lower-right corner of the screen.

The screen used for storing images on a CD-R appears.

- A CD-R drive is required to store images on a CD-R. For further information on compatible drives, see the following home page of the Pixela User Support Center.
http://www.ppackage.com/

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Creating a video CD with a menu ("ImageMixer VCD2")

"ImageMixer VCD2" is compatible with High resolution still image video CD.

a **Click [Burning Video CD] on the left side of the screen, then click [Burning Video CD] in the lower-right corner of the screen.**
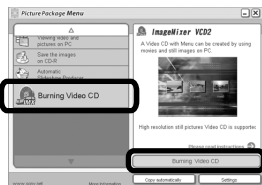
The "ImageMixer VCD2" screen appears.

b **Click [Video CD].**

c **Select the folder in which the desired images are stored.**

① Select the desired folder on the left frame, then click [Add]. The selected folder moves to the right frame.

② Click [Next].

d **Set up the menu background, buttons, titles, and so on, then click [Next].**

Confirm the set up according to your preferences.

e **Confirm the preview of the Video CD file.**

① Click the file you want to preview on the left frame.

② Click [▶] to preview the file.

f **Click [Next] and enter the disk name.**

When you insert a CD-R in the CD-R drive and click [Write], the screen used for writing to a disc appears.

Creating a slide show

Click [Automatic Slideshow Producer] on the left side of the screen, then click [Automatic Slideshow Producer] in the lower-right corner of the screen.
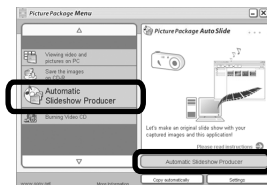
The screen used for creating a slide show appears.

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Printing images

1 **Perform the procedures described under "Viewing images on a computer" (page 112) to display the list of images.**

2 **Double-click and select the images you want to print from the list.**

3 **Click the 🖨 button on the screen.**
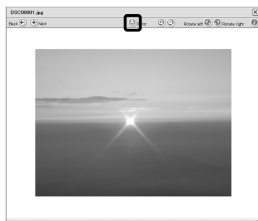
The screen used for printing images appears.

4 **Click [File] in the upper-left corner of the screen, then select [Print].**

The printing wizard screen appears.

5 **Set the paper size and the number of sheets and print images.**

Using "Image Data Converter"

Using "Image Data Converter Ver.2.0" on the CD-ROM supplied with your camera, you can correct images recorded in RAW mode using "Picture Package" (page 112). Additionally, you can adjust various settings, such as tone curve, and sharpness.

• When the computer is in use, shut down all other application software before you install "Image Data Converter."

Technical support of "Image Data Converter Ver.2.0" is provided by the Pixela User Support Center. For more information, refer to the enclosed information with the CD-ROM.

Required computer environment

OS: Microsoft Windows 98SE, Windows 2000 Professional, Windows Millennium Edition, Windows XP Home Edition, or Windows XP Professional
IBM PC/AT (DOS/V) compatible computers on which the above OS is preinstalled.
CPU: Intel MMX Pentium III 1GHz or faster is recommended.
Memory: 256 MB or more
Display: 800×600 dots or more
High Color (16-bit color, 65,000 colors) or more

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• When the display is set to less than 800 × 600 dots or 256 colors or less, the application software does not work properly.

Installing "Image Data Converter"

1 Turn on your computer.
   • The display settings should be 800 × 600 dots or higher and 65,000 colors or higher.

2 Insert the CD-ROM (Image Data Converter Ver.2.0) into the CD-ROM drive.
   The "Choose Setup Language" screen appears.

3 Select the desired language, then click [Next].

4 Click [Next].
   The "License Agreement" screen appears.
   Read the agreement carefully. If you accept the terms of the agreement, check the "I accept the terms of the license agreement" checkbox and click [Next].

5 Check the destination folder and click [Next].
   The "Ready to Install the Program" screen appears.

6 Click [Install].
   When the installation is completed, the "Installation Complete" screen appears.

7 Click [Finish].
   The install screen closes.

• When using "Image Data Converter Ver.2.0", you cannot store images in TIFF 16-bit or in Adobe RGB color space.

Copying images to your computer

— For Macintosh users

Recommended computer environment

OS: Mac OS 9.1, 9.2, or Mac OS X (v10.0/v10.1/v10.2/v10.3)
The above OS must be installed at the factory.

USB connector: Provided as standard
• If you connect two or more USB equipment to a single computer at the same time, some equipment, including your camera, may not operate depending on the type of USB equipment.
• Operations are not guaranteed when using a USB hub.
• Operations are not guaranteed for all the recommended computer environments mentioned above.

USB mode

There are two modes for a USB connection when connecting with a computer, [Normal] and [PTP]* modes. The default setting is the [Normal] mode. This section describes the [Normal] mode as an example.

* For a details on the PTP connection, see page 142.

Communication with your computer

When your computer resumes from the suspend or sleep mode, communication between your camera and your computer may not recover at the same time.

When a USB connector is not provided on your computer

When neither a USB connector nor a recording medium slot is provided, you can copy images using an additional device. See the Sony Website for details.
http://www.sony.net/

1 Connecting your camera to your computer

For details, see page 104.

Disconnecting the USB cable, removing the recording medium from your camera or turning off the power during USB connection
Drag and drop the drive icon or the icon of the recording medium to the "Trash" icon, then disconnect the USB cable, remove the recording medium, or turn off the camera.

• If you are using Mac OS X v10.0, disconnect the USB cable etc., after you have turned your computer off.

2 Copying images

1 Double-click the newly recognized icon on the desktop.
   The contents of the recording medium inserted in your camera appear.

2 Double-click [DCIM].

3 Double-click the folder that the images you want to copy are stored.

4 Drag and drop the image files to the hard disk icon.

• The image files are copied to your hard disk. For details on the storage location of the images and file names, see page 107.

3 Viewing the images on your computer

1 Double-click the hard disk icon.

2 Double-click the desired image file in the folder containing the copied files. The image file opens.

• "Picture Package" cannot be used with Macintosh.

Using "ImageMixer VCD2"

"ImageMixer VCD2" is also compatible with Macintosh (Mac OS X (v10.1.5 or later)). Using "ImageMixer VCD2" on the CD-ROM supplied with your camera, you can create a video CD using the image or movie materials that are stored in your computer.

- "ImageMixer VCD2" for Macintosh can create only the disk image to store the image file on a CD-R in the video CD format. Toast by Roxio (not supplied) is required to create a video CD.
- When the computer is in use, shut down all other application software before you install "ImageMixer VCD2."

Technical support of "ImageMixer VCD2" is provided by the Pixela User Support Center. For more information, refer to the enclosed information with the CD-ROM.

Required computer environment

OS: Mac OS X (v10.1.5 or later)
The above OS must be installed at the factory.
CPU: iMac, eMac, iBook, PowerBook, Power Mac G3/G4 series
Memory: 128 MB or more (256 MB or more is recommended.)
Hard Disk: Disk space required for installation: approximately 250 MB
Display: 1024 × 768 dots or more, 32,000 colors or more

- QuickTime 4 or later must be pre-installed. (QuickTime 5 is recommended.)
- Operations are not guaranteed for all the recommended computer environments mentioned above.

◢ Installing "ImageMixer VCD2"

1 Turn on your computer.
   - The display settings should be 1024 × 768 dots or higher and 32,000 colors or higher.

2 Insert the CD-ROM (supplied) into the CD-ROM drive.

3 Double-click the CD-ROM icon.

4 Copy the [IMXINST.SIT] file in the [MAC] folder to the hard disk icon.

5 Double-click the [IMXINST.SIT] file in the copy-to folder.

6 Double-click the [ImageMixer VCD2_ Install] extracted file.

7 After the user information screen appears, enter the desired name and password.
   The installation of the software starts.

b Creating a video CD with a menu

"ImageMixer VCD2" is compatible with High resolution still image video CD.

1 Open the [ImageMixer] folder in [Application].

2 Click [ImageMixer VCD2].

3 Carry out steps b to e on page 113.

4 Click [Next] and enter the disk name and its destination.
The preparation for storing the file on a CD-R is completed.

Using "Image Data Converter"

Using "Image Data Converter Ver.1.5" on the CD-ROM supplied with your camera, you can correct images recorded in RAW mode and store them as an ordinary file. Additionally, by installing "Image Data Converter Ver.2.0", you can adjust various settings, such as tone curve, sharpness.

• When the computer is in use, shut down all other application software before you install "Image Data Converter."

Technical support of "Image Data Converter" is provided by the Pixela User Support Center. For more information, refer to the enclosed information with the CD-ROM.

Required computer environment

OS: Mac OS X (v10.2.6 – v10.3.3)
CPU: Power PC G4 or faster
Memory: 256 MB or more
Display: 800 × 600 dots or more, 32,000 colors or more (When the display is set to less than 800 × 600 dots, 256 colors or more, the application does not work properly.)

• Operations are not guaranteed for all the recommended computer environments mentioned above.

Installing "Image Data Converter"

1 Turn on your computer.
• The display settings should be 800 × 600 dots or higher and 32,000 colors or higher.

2 Insert the CD-ROM (supplied) into the CD-ROM drive.
To install Ver.2.0, insert "Image Data Converter Ver.2.0", and to install Ver.1.5, insert "USB Driver SPVD-012".

3 Double-click the CD-ROM icon.

4 Copy the [IDCINST20.DMG.SIT] (Ver.2.0) or [IDCINST15.DMG.SIT] (Ver.1.5) file in the [MAC] folder to the hard disk.

5 Double-click the [IDCINST20.DMG. SIT] (Ver.2.0) or [IDCINST15.DMG. SIT] (Ver.1.5) file in the copy-to folder.

6 Double-click the [SONYIDC20 Install. pkg] (Ver.2.0) or [SONYIDC15 Install. pkg] (Ver.1.5) extracted file in the [SONY] virtual volume folder, on the desktop.
The installation of the software starts.

• When using "Image Data Converter Ver.2.0", you cannot store images in TIFF 16-bit or in Adobe RGB color space.

Troubleshooting

If you experience trouble with your camera, try the following solutions.

1 First check the items on the tables below. **If code displays "C:□□:□□" appear on the screen, the self-diagnosis display function is working (page 132).**

2 Should your camera still not work properly, press the RESET button inside the battery/"Memory Stick"/CF card cover using a fine-tipped object, then turn on the power again. (All the settings including date and time are cleared and reset to the factory settings.)

RESET
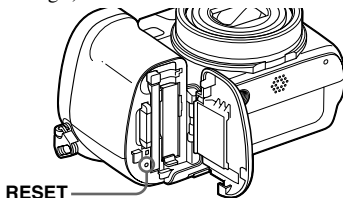
3 Should your camera still not work properly, consult your Sony dealer or local authorized Sony service facility.

Battery pack and power

Symptom	Cause/Solution
You cannot charge the battery pack.	• The camera is turned on. Turn the camera off (page 17).
The battery pack cannot be installed.	• Install the battery pack while pushing the battery eject lever toward the LCD screen side using the front edge of the battery pack (page 13). • Install the battery pack correctly (page 13).
The CHG/⚡ lamp flashes when charging a battery pack.	• Install the battery pack correctly (page 13). • The battery pack has malfunctioned. Consult your Sony dealer or local authorized Sony service facility. • The battery pack is discharged. Re-insert the AC Adaptor and then charge the battery pack.

Symptom	Cause/Solution
The CHG/⚡ lamp does not light up when charging a battery pack.	• The AC Adaptor is disconnected. Properly connect the AC Adaptor (page 13). • The AC Adaptor has malfunctioned. Consult your Sony dealer or local authorized Sony service facility. • Install the battery pack correctly (page 13). • The battery pack is completely charged. • The battery pack is discharged. Re-insert the AC Adaptor and then charge the battery pack.
The battery remaining indicator is incorrect, or sufficient battery remaining indicator is displayed but the power runs out soon.	• You have used the camera in an extremely hot or an extremely cold location (page 146). • A deviation has occurred in the remaining battery time. Fully discharge and then charge the battery pack so that the battery remaining indicator functions correctly (page 14). • The battery pack is discharged. Install a charged battery pack (page 13). • The battery pack is dead (page 147). Replace the battery pack with a new one.
The battery pack runs down too quickly.	• The battery pack is dead (page 147). Replace the battery pack with a new one. • You have used the camera in an extremely cold location (page 146). • The battery terminal is dirty. Clean the battery terminal with a cotton swab, etc., and charge the battery pack. • After charging the battery pack, disconnect the DC plug from your camera.
You cannot turn on the camera.	• Install the battery pack correctly (page 13). • The AC Adaptor is disconnected. Properly connect the AC Adaptor (page 16). • The AC Adaptor has malfunctioned. Consult your Sony dealer or local authorized Sony service facility. • The battery pack is discharged. Install a charged battery pack (page 13). • The battery pack is dead (page 147). Replace the battery pack with a new one.
The power turns off suddenly.	• If you do not operate the camera for about three minutes while the power is on, the camera turns off automatically to prevent wearing down the battery pack. Turn on the camera again or use the AC Adaptor (page 16). • The battery pack is discharged. Install a charged battery pack (page 13).

Shooting still images/movies

Symptom	Cause/Solution
The LCD screen is not turned on even when the power is turned on.	• The power was turned off with the LCD screen turned off the last time you used the camera. Turn on the LCD screen (page 36).
The subject is not visible on the LCD screen.	• Set the mode dial to ▢, P, S, A, M, SCN or ▦ (page 12).
The LCD screen turns blue and the subject does not appear when recording movies.	• The image size is set to [640(Fine)] while an A/V connecting cable is connected to the A/V OUT (MONO) jack. Disconnect the A/V connecting cable or set the image size to other than [640(Fine)].
The image is out of focus.	• The subject is too close. Set the camera to the close-ups (Macro) recording mode, and position the camera further away from the minimum shooting distance until the AE/AF lock indicator changes from flashing to lighted when the shutter button is pressed and held halfway down, then shoot the image (page 33). • When shooting still images, select the other mode than ⏾ (Twilight mode) or ▨ (Landscape mode) for the Scene Selection function. • The focus preset function is selected. Set to the auto focus mode (page 69).
Optical zoom does not work.	• You cannot change the zoom scale when shooting movies. • You cannot use the zoom while a wide end conversion lens is mounted.
Precision digital zoom does not function.	• [Digital Zoom] is set to [Smart] or [Off] in the SET UP settings. Set [Digital Zoom] to [Precision] (pages 31, 51 and 140). • You are shooting in RAW mode. The precision digital zoom cannot be used in RAW mode (pages 31 and 79). • The mode dial is set to ▦. Set the mode dial to ▢, P, S, A, M or SCN.
Smart zoom does not function.	• [Digital Zoom] is set to [Precision] or [Off] in the SET UP settings. Set [Digital Zoom] to [Smart] (pages 31, 51 and 140). • The image size is set to [7M] or [3:2]. Set image size to other settings except [7M] and [3:2] (pages 24 and 31). • The smart zoom cannot be used in Multi Burst mode (pages 31 and 76). • You are shooting in RAW mode. The smart zoom cannot be used in RAW mode (pages 31 and 79). • The mode dial is set to ▦. Set the mode dial to ▢, P, S, A, M or SCN.

Troubleshooting

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Symptom	Cause/Solution
The image is too dark.	• You are shooting a subject with a light source behind the subject. Select the metering mode (page 60), adjust the exposure (page 61) or set the flash mode to ⚡ (Forced flash) (page 69). • The brightness of the LCD screen is too low. Adjust the brightness of the LCD backlight (page 141).
The image is too bright.	• You are shooting a spotlighted subject in a dark location such as on a stage. Adjust the exposure (page 61). • The brightness of the LCD screen is too bright. Adjust the brightness of the LCD backlight (page 141).
Vertical streaks appear when you are shooting a very bright subject.	• The smear phenomenon is occurring. This phenomenon is not a malfunction.
Noise appears in the image when you view the LCD screen in a dark place.	• The camera is functioning to increase the visibility of the LCD screen by temporarily brightening the image under conditions of low illumination. There is no effect on the recorded image.
Your camera cannot record images.	• No recording medium has been inserted. Insert a recording medium (page 21). • The capacity of the recording medium is full. Delete unnecessary images saved in the recording medium (pages 46 and 99) or change the recording medium. • The write-protect switch on the "Memory Stick" is set to the LOCK position. Set the write-protect switch to the recording position (page 144). • The 🖳/CF switch is not set to the proper position. Set the switch to the proper position (page 21). • You cannot record images while charging the flash. • Set the mode dial to 🔳, P, S, A, M or SCN when shooting still images (page 12). • Set the mode dial to 🎞 when shooting movies (page 97). • The image size is set to [640(Fine)] when recording movies. Insert a "Memory Stick PRO" (pages 97 and 144) or set the image size to other than [640(Fine)].
Recording takes a long time.	• NR slow shutter function is activated (page 58).
A sound is made when changing between the NightFraming and NightShot modes, or when the shutter button is lightly pressed while NightFraming is set.	• The sound is made by the lens in operation. This is not a malfunction.
The image colors are not correct.	• The NightFraming or NightShot function is set. Cancel the NightFraming/NightShot functions (pages 77 and 78). • Picture Effect function is activated. Cancel the Picture Effect function (page 78).

Symptom	Cause/Solution
NightFraming or NightShot does not function.	• Set the mode dial to ▲, P or ▤▤(only for NightShot) (pages 77 and 78). • The NightFraming function cannot be used when focus preset mode is selected. Set to the auto focus mode (page 66).
The flash does not work.	• Set the mode dial to ▲, P, S, A, M or SCN (page 12). • The flash is set to ⊛ (No flash). Set the flash to auto (No indicator), ⚡ (Forced flash) or ⚡SL (Slow synchro) (page 69). • When shooting still images, select the other mode than ☽ (Twilight mode) or ♔ (Candle mode) for the Scene Selection function (page 41). • When ▲ (Landscape mode), ☃ (Snow mode) or 🏖 (Beach mode) is selected for the Scene Selection function, set the flash to ⚡ (Forced flash) (page 69). • Set [Mode] (REC Mode) to other than [Speed Burst], [Burst] or [Multi Burst]. • When using the built-in flash, [Flash] is set to [Ext.] in the SET UP settings.
Fuzzy specks appear in images shot using the flash.	• Dust in the air reflected the flash light and appeared in the image. This is not a malfunction.
The close-ups (Macro) function does not work.	• When shooting still images, select the other mode than ☽ (Twilight mode), ▲ (Landscape mode) or ♔ (Candle mode) for the Scene Selection function (page 41).
You cannot shoot continuously.	• The capacity of the recording medium is full. Delete unnecessary images saved in the recording medium (pages 46 and 99) or change the recording medium. • The battery pack is discharged, so you can shoot only one image. Install a charged battery pack (page 13).
The eyes of the subject come out red.	• Set [Red Eye Reduction] to [On] in the SET UP settings (pages 70 and 140). • Approach the subject and shoot from within the recommended shooting distance using the flash (page 69). • Increase the indoor brightness and shoot the image.
The date and time are recorded incorrectly.	• Set the correct date and time (pages 37 and 142).
The F value and shutter speed flash when you press and hold the shutter button halfway down.	• Adjust the correct exposure (page 61).

Symptom	Cause/Solution
Unknown pattern appears on the finder.	• This is due to the structure of the finder. This is not a malfunction.

Viewing images

Symptom	Cause/Solution
Your camera cannot play back images.	• Set the mode dial to ▶ (page 42). • The folder/file name has been changed on your computer (page 109). • Playback of image files that have been modified by a computer or images shot using other cameras on your camera is not guaranteed. • The camera is in USB mode. Cancel USB communication (pages 105 and 116).
The image appears rough right after playback starts.	• The image may appear rough right after playback starts due to the image processing. This condition is not a malfunction.
The image does not appear on the TV screen.	• The video output signal setting of your camera in the SET UP settings is incorrect. Change the setting (pages 51 and 142). • The connection is not correct. Check the connection (page 44). • The USB jack is connected. Follow the procedure of the note ⓘ on page 105 (Windows) or 🔟 on page 116 (Macintosh) and disconnect the USB cable.
The image cannot be played back on a computer.	• See page 125.

Deleting/Editing Images

Symptom	Cause/Solution
Your camera cannot delete an image.	• The image is protected. Cancel the protection (page 87). • The write-protect switch on the "Memory Stick" is set to the LOCK position. Set the switch to the recording position (page 144).
You have deleted an image by mistake.	• Marking ⚠ (protect) will prevent you from deleting images by mistake (page 87). • Set the write protect switch of the "Memory Stick" to the LOCK position to prevent accidental erasure (page 144).
The resizing function does not work.	• You cannot resize movies, Multi Burst images, RAW data files, and compressed (TIFF) images.

Symptom	Cause/Solution
You cannot display a print (DPOF) mark.	• You cannot display print (DPOF) marks on movies or images recorded in RAW mode.
You cannot cut a movie.	• The movie is not long enough to cut. • Protected movie cannot be cut. Cancel the protection (page 87). • Still images cannot be cut.

Computers

Symptom	Cause/Solution
You do not know if the OS of your computer is compatible.	• Check "Recommended computer environment" (pages 102 and 115).
You cannot install the USB driver.	• In Windows 2000, log on as Administrator (authorized Administrators) (page 102).
Your computer does not recognize your camera.	• Turn on the camera (page 17). • The battery level is low. Use the AC Adaptor (page 16). • Use the supplied USB cable (pages 104 and 116). • Disconnect the USB cable from both the computer and the camera, and connect it again firmly. Make sure that "USB Mode" is displayed on the LCD screen (page 104). • Set [USB Connect] to [Normal] in the SET UP settings (pages 51 and 142) • The USB connectors on your computer are connected to other equipment besides the keyboard, the mouse, and your camera. Disconnect all equipment other than the keybord and the mouse from the USB connectors (page 102). • The camera is not connected directly to your computer. Connect the camera directly to your computer without passing through a USB hub or other device (page 102). • Install the USB driver (page 103). • Your computer does not properly recognize the device because you connected the camera and your computer with the USB cable before you installed the "USB Driver" from the supplied CD-ROM. Delete the erroneously recognized device from your computer (page 106), then install the USB driver (page 103).
You cannot copy images.	• Connect the camera and your computer correctly using the supplied USB cable (page 104). • Follow the designated copy procedure for your OS (pages 105, 106, 111 and 116). • You attempted to shoot using a recording medium formatted by a computer. Shoot using a recording medium formatted by your camera.

Symptom	Cause/Solution
After making a USB connection, "Picture Package" does not automatically start.	• Start up the "Picture Package Menu" and check [Settings]. • Make a USB connection when the computer is turned on (page 104).
The image cannot be played back on a computer.	• You try to play back the image recorded in the RAW mode. Install software from the supplied CD-ROM (page 79). • If you are using the "Picture Package" application software, click on help at the upper-right corner of each screen. • Consult the computer or software manufacturer.
The image and sound are interrupted by noise when you view a movie on a computer.	• You are playing back the movie directly from the recording medium. Copy the movie to the hard disk of your computer and then play back the movie from the hard disk (pages 105, 106, 111 and 116).
You cannot print an image.	• Check the printer settings.
Images once copied to a computer cannot be viewed on the camera.	• Copied to a wrong folder. Copy them to an available folders, such as "101MSDCF" (page 108). • The folder/file name has been changed on your computer (page 109).

"Memory Stick"

Symptom	Cause/Solution
You cannot insert a "Memory Stick."	• You are inserting the "Memory Stick" backwards. Insert the "Memory Stick" from the correct side (page 22).
You cannot record on a "Memory Stick."	• The write-protect switch on the "Memory Stick" is set to the LOCK position. Set the switch to the recording position (page 144). • The capacity of the "Memory Stick" is full. Delete unnecessary images (pages 46 and 99). • The ⚏/CF switch is set to CF. Set the switch to ⚏ (page 21). • The image size is set to [640(Fine)] when recording movies. Insert a "Memory Stick PRO" (pages 97 and 144) or set the image size to other than [640(Fine)].
You cannot format a "Memory Stick."	• The write-protect switch on the "Memory Stick" is set to the LOCK position. Set the switch to the recording position (page 144).
You have formatted a "Memory Stick" by mistake.	• All the data on the "Memory Stick" are deleted by formatting. You cannot restore them. Set the write protect switch of the "Memory Stick" to the LOCK position to prevent accidental erasure (page 144).

CF card

Symptom	Cause/Solution
You cannot insert a CF card.	• You try to insert an unusable CF card (page 21). • You are inserting it backwards. Insert it from the right side (page 23).
You cannot record on a CF card.	• The CF card is full. Delete unnecessary images (pages 46 and 99). • An unusable CF card is inserted. • The ⏏/CF switch is set to ⏏ . Set the switch to CF (page 21). • The image size is set to [640(Fine)] when recording movies. Insert a "Memory Stick PRO" (pages 97 and 144) or set the image size to other than [640(Fine)].
You have formatted a CF card by mistake.	• All the data on the CF card are erased by formatting. You cannot restore them.

PictBridge compliant printer

Symptom	Cause/Solution
The connection cannot be established.	• Consult with the printer manufacturer whether the printer is compliant with the PictBridge or not. • Check that the printer is turned on and can connect with the camera. • Set [USB Connect] to [PictBridge] in the SET UP settings (page 142). • Depending on the circumstances, the connection may not be established. Disconnect and connect the USB cable again. If an error message is indicated on the printer, refer to the operating instructions supplied with the printer.
You cannot print images.	• The camera is not connected to the printer. Check that the camera and the printer are properly connected using the USB cable. • Turn on the printer. For further information, refer to the operating instructions supplied with it. • If you select [Exit] during printing, you may not print again depending on your printer. Disconnect and connect the USB cable again. If you cannot print still, disconnect the USB cable, turn off and on the printer, then connect the USB cable again. • Movies and images recorded in RAW mode cannot be printed. • Images modified with a computer or images shot using other than this camera may not be able to be printed.
Printing is canceled.	• You disconnected the USB cable before the 🚫 (Not disconnect USB cable) mark disappears. • You switched the ⏏/CF switch while printing.

Symptom	Cause/Solution
You cannot insert the date or print images in the index mode.	• Consult with the printer manufacturer whether the printer provides date function or index print function or not. • The date may not be inserted in the index mode depending on the printer. Consult with the printer manufacturer.
The paper size you want to print on does not appear.	• Check with the printer manufacturer whether the printer supports the paper size you want to print on.
"---- -- --" is printed on the date-inserted part.	• The images that do not have the recording date data cannot be printed with the date inserted. Set [Date] to [Off] and print the image.
You cannot print with the current paper size setting of the printer.	• If the printer paper was changed to paper of a different size after the camera was connected to the printer, disconnect and connect the USB cable again. • The printing setting of the camera differs from the printer setting. Change the paper size setting of the camera (pages 92 and 94) or change the printer setting.
You cannot perform other operations when printing is stopped.	• The printer is performing the printing stop processing, so wait for this processing to finish. (This processing may take some time depending on the printer.)

Others

Symptom	Cause/Solution
Your camera does not work.	• You are not using an "InfoLITHIUM" battery pack. Use an "InfoLITHIUM" battery pack (page 146). • The battery level is low. (The ⟂ indicator appears.) Charge the battery pack (page 13). • Connect the AC Adaptor securely to the DC IN jack of your camera and to a wall outlet (wall socket) (page 16).
The power is on, but the camera does not work.	• The built-in microcomputer is not working properly. Disconnect, and then, after one minute, reconnect all power sources and turn on the camera. If this does not work, press the RESET button inside the battery/"Memory Stick"/CF card cover with a fine-tipped object, then turn the power on again. (This will clear the date and time settings, etc.) (page 119)
You cannot identify an indicator on the screen.	• Check the indicator (pages 149 to 153).
The lens gets fogged.	• Moisture condensation has occurred. Turn off the camera and leave for about an hour at room temperature for the moisture to evaporate before use (page 143).
The camera becomes warm when you use it for the long time.	• This is not a malfunction.
The lens does not move when you turn off the camera.	• The battery pack is discharged. Replace the battery pack with a charged battery pack (page 13) or use the AC Adaptor (page 16).

Warnings and messages

The following messages may appear on the screen.

| Message	Meaning/Corrective Action
No Memory Stick	• Insert a "Memory Stick" (page 22). • Set the ▲/CF switch to CF and record the image using the CF card.
System error	• Turn the power off and on again (page 17).
Memory Stick error	• The inserted "Memory Stick" cannot be used in your camera (page 144). • The "Memory Stick" is damaged. • The terminal section of the "Memory Stick" is dirty. • Insert the "Memory Stick" correctly (page 22).
Memory Stick type error	• The inserted "Memory Stick" cannot be used in your camera (page 144).
Read only memory	• Your camera cannot record or delete images to this "Memory Stick".
Memory Stick locked	• The write-protect switch on the "Memory Stick" is set to the LOCK position. Set it to the recording position (page 144).
No memory space	• The capacity of the "Memory Stick" is insufficient. You cannot record images. Delete unnecessary images (pages 46 and 99).
No CF card	• Insert the CF card (page 23). • Set the ▲/CF switch to ▲ and record the image using the "Memory Stick".
CF card error	• An unusable CF card is inserted (page 21). • The CF card is damaged, or the terminal section of the CF card is dirty. • Insert the CF card correctly (page 23).
CF card type error	• The inserted CF card cannot be used with your camera (page 21).
CF card locked	• The CF card is set to be unrecordable. Consult with the CF card manufacturer.
No CF card space	• The capacity of the CF card is insufficient. You cannot record images. Delete unnecessary images or data (pages 46 and 99).

Troubleshooting

Message	Meaning/Corrective Action
Format error	• The recording medium format failed. Format the recording medium again (page 48). • When using a Memory Stick Duo Adaptor that is compliant with the CompactFlash slot, the write-protect switch on the "Memory Stick Duo" is set to LOCK position. Set it to the recording position.
For "InfoLITHIUM" battery only	• The battery pack is not the "InfoLITHIUM" type.
Image size over	• You are playing back an image of a size that cannot be played back on your camera.
◁▭	• The battery level is low or zero. Charge the battery pack (page 13). Depending on the conditions of use or the type of battery pack, the indicator may flash even though there are still 5 to 10 minutes of remaining battery time left.
No file in this folder	• No images have been recorded in this folder.
Folder error	• A folder with the same first three digits number already exists in the recording medium. (For example: 123MSDCF and 123ABCDE) Select other folders, or create a new folder.
Cannot create more folders	• The folder whose first three digits of the name is "999" exists in the recording medium. You cannot create any folders.
Cannot record	• The camera cannot record images in the selected folder. Select a different folder (page 53).
﹁ᵂ﹂	• Camera shake may occur due to insufficient light. Use the flash, mount the camera on a tripod, or otherwise secure the camera in place.
Turn the power off and on again	• A problem with the lens caused an error.
"Night Shot"	• An operation that is not valid while NIGHTSHOT is set was attempted.
"Night Framing"	• An operation that is not valid while NIGHTFRAMING is set is attempted.
640(Fine) is not available	• 640(Fine) size movies can be recorded only using "Memory Stick PRO". Insert a "Memory Stick PRO" or set the image size to other than [640(Fine)].
File error	• An error occurred while playing back the image.
File protect	• The image is protected against erasure. Release the protection (page 87).
Cannot divide	• The movie is not long enough to be divided (about more than two seconds). • The file is not a movie.
Invalid operation	• You are playing back a file that was created on equipment other than this camera.

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Message	Meaning/Corrective Action
Enable printer to connect	• [USB Connect] is set to [PictBridge], however the camera is connected to a non-PictBridge compliant device. Check the device. • Depending on the circumstances, the connection may not be established. Disconnect and connect the USB cable again. If an error message is indicated on the printer, refer to the operating instructions supplied with the printer.
Connect to 📷 device	• You tried to print images before the printer connection was established. Connect to a PictBridge compliant printer.
No printable image	• You tried to execute [DPOF image] without checking the 🖃 mark. • You tried to execute [All In This Folder] while selecting the folder that stores only movies or images recorded in RAW mode. You cannot print movies or image recorded in RAW mode.
Printer busy	• Since the printer is busy, it cannot receive print requests. Check the printer.
Paper error	• A paper error occurred, such as paper-out, paper-jam, etc. Check the printer.
Ink error	• An ink error has occurred in the connected printer, or the ink is low. Check the printer.
Printer error	• The camera received an error from the printer. Check the printer, or check if the image you want to print is corrupted.
⊏※	• The data transmission to the printer may not be completed yet. Do not disconnect the USB cable.
Processing	• The printer is performing the printing stop processing. Printing is not possible until this processing is completed. This processing may take some time depending on the printer.

Self-diagnosis display

– If a code starting with an alphabet letter appears

Your camera has a self-diagnosis display. This function displays the camera condition on the LCD screen with a combination of a letter and four numerical digits. If this occurs, check the following code chart and attempt the corresponding corrective actions. The last two digits (indicated by □□) will differ depending on the state of the camera.

C:32:□□
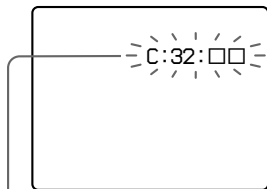
Self-diagnosis display

Code	Cause	Countermeasure
C:32: □□	There is trouble with your camera's hardware.	• Turn the power off and on again (page 17).
C:13: □□	The camera cannot read or write data on the recording medium.	• Re-insert the recording medium several times.
	An unformatted recording medium is inserted.	• Format the recording medium (page 48).
	The inserted recording medium cannot be used with your camera, or the data is damaged.	• Insert a new recording medium (page 21).
E:61: □□ E:91: □□	A camera malfunction that you cannot reverse has occurred.	• Press the RESET button located inside the battery/"Memory Stick"/CF card cover, then turn the power on again. (page 119)

If you are unable to solve the problem even after trying the corrective actions a few times, contact your Sony dealer or local authorized Sony service facility.

Number of images that can be saved or shooting time

The number of images that can be saved and the shooting time differ, depending on the capacity of the recording medium, the image size, and the image quality. Refer to the following charts when you choose a recording medium.

- The number of images is listed in Fine (Standard) order.
- The values for the number of images that can be saved and the shooting time may vary, depending on the shooting conditions.
- For normal shooting times and numbers of images that can be saved, see page 25.
- When the number of remaining shooting images is greater than 9,999, the ">9999" indicator appears on the LCD screen.
- The table below shows the approximate number of images and recording time that can be recorded on a recording medium that has been formatted by this camera.

"Memory Stick"

RAW (Units: images)

	16MB	32MB	64MB	128MB	256MB	512MB	1GB
7M	0 (0)	1 (1)	3 (3)	6 (7)	12 (13)	25 (27)	51 (56)
3:2	–	–	–	–	–	–	–
5M	0 (0)	1 (1)	3 (3)	7 (7)	12 (13)	26 (28)	53 (57)
3M	0 (0)	1 (1)	3 (3)	7 (7)	13 (14)	27 (28)	56 (59)
1M	0 (1)	1 (2)	3 (4)	8 (8)	14 (14)	29 (29)	60 (61)
VGA(E-Mail)	1 (1)	2 (2)	4 (4)	8 (8)	14 (15)	30 (30)	61 (62)

TIFF (Units: images)

	16MB	32MB	64MB	128MB	256MB	512MB	1GB
7M	0 (0)	1 (1)	2 (2)	5 (5)	9 (10)	19 (20)	39 (42)
3:2	0 (0)	1 (1)	2 (3)	5 (6)	10 (11)	21 (23)	43 (46)
5M	0 (0)	1 (1)	2 (2)	5 (5)	9 (10)	20 (21)	40 (42)
3M	0 (0)	1 (1)	2 (2)	5 (5)	10 (10)	20 (21)	42 (43)
1M	0 (0)	1 (1)	2 (2)	5 (5)	10 (10)	21 (22)	44 (44)
VGA(E-Mail)	0 (0)	1 (1)	3 (3)	6 (6)	10 (10)	22 (22)	45 (45)

Multi Burst (Units: images)

	16MB	**32MB**	**64MB**	**128MB**	**256MB**	**512MB**	**1GB**
1M	24 (46)	50 (93)	101 (187)	202 (376)	357 (649)	726 (1320)	1482 (2694)

Movie

	16MB	**32MB**	**64MB**	**128MB**	**256MB**	**512MB**	**1GB**
640(Fine)	—	—	—	—	0:02:57	0:06:02	0:12:20
640(Standard)	0:00:42	0:01:27	0:02:56	0:05:54	0:10:42	0:21:47	0:44:27
160	0:11:12	0:22:42	0:45:39	1:31:33	2:51:21	5:47:05	11:44:22

The numbers indicate the recording time. For example: "1:31:45" indicates "1 hour, 31 minutes, 45 seconds."

• The image size is as follows:
  640(Fine): 640×480
  640(Standard): 640×480
  160: 160×112

CF card

RAW (Units: images)

	1GB
7M	53 (59)
3:2	–
5M	56 (60)
3M	59 (62)
1M	63 (64)
VGA(E-Mail)	65 (65)

TIFF (Units: images)

	1GB
7M	41 (44)
3:2	45 (49)
5M	43 (45)
3M	44 (46)
1M	46 (47)
VGA(E-Mail)	47 (48)

Multi Burst (Units: images)

	1GB
1M	1563 (2842)

Movie

	1GB
640(Fine)	–
640(Standard)	0:46:53
160	12:30:14

The numbers indicate the recording time. For example: "12:30:14" indicates "12 hour, 30 minutes, 14 seconds."

• The image size is as follows:
  640(Fine): 640×480
  640(Standard): 640×480
  160: 160×112
• Even when you use a recording medium with a capacity greater than 2 GB, the maximum recordable file size per one continuous shooting is 2 GB.

Menu items

Menu items that can be modified differ depending on the position of the mode dial or the setting.

Menu items are maintained even when the power is turned off or the mode dial is changed to other position (except [PFX] (P.Effect)).

Factory settings are indicated with ■.

When the mode dial is set to ▣

Item	Setting	Description
Mode (REC Mode)	RAW TIFF Multi Burst Speed Burst Burst ■Normal	– Records RAW data file in addition to the JPEG file (page 79). – Records uncompressed (TIFF) file in addition to the JPEG file (page 80). – Records a continuous burst of 16 frames within a single still image (page 76). – Records continuously with a short shooting interval (page 75). – Continuously shoots even more images (page 75). – Records an image using the normal recording mode

When the mode switch is set to P, S, A, M, SCN

Item	Setting	Description
SCN (Scene)	♀ / 🏔 / 🍴 / 👤 / 🏞 / 🌙 / 🌃	Sets the Scene Selection mode (page 39). (This setting can be made only in SCN mode.)
▣ (Metering Mode)	Spot / Center / ■Multi	Matches the exposure to the subject you want to shoot (page 60). Set the metering region.
WB (White Bal)	●SET/ ●⊿ / ⚡WB / ☼ / ☶ / ☁ / ☀ / ■Auto	Sets the white balance (page 73).
ISO[1)]	800 / 400 / 200 / 100 / ■Auto	Selects the ISO sensitivity. Select a large number when shooting in dark locations or shooting a subject moving at high speed, or select a small number to obtain high image quality. • Note that the image tends to become noisier as the ISO sensitivity number increases.
◀ (P.Quality)	■Fine / Standard	Records images with fine/standard quality (page 52).

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| Item	Setting	Description
Mode (REC Mode)[1]	RAW TIFF Multi Burst Exp Brktg Speed Burst Burst ■Normal	– Records RAW data file in addition to the JPEG file (page 79). – Records uncompressed (TIFF) file in addition to the JPEG file (page 80). – Records a continuous burst of 16 frames within a single still image (page 76). – Records three images with the exposure value of each image slightly shifted (page 64). – Records continuously with a short shooting interval (page 75). – Continuously shoots even more images (page 75). – Records an image using the normal recording mode
BRK (Bracket Step)[2]	±1.0EV / ■±0.7EV / ±0.3EV	Sets the exposure compensation value when recording three images with each exposure adjustment value (page 64). (This setting cannot be made when [Mode] (REC Mode) in the menu is set to other than [Exp Brktg].)
🔲 **(Interval)**[2]	1/7.5 / 1/15 / ■1/30	Selects the Multi Burst shutter interval (page 76). (This setting cannot be made when [Mode] (REC Mode) in the menu is set to other than [Multi Burst].)
⚡± **(Flash Level)**[3]	+ / ■Normal / –	Selects the amount of flash light (page 71).
PFX (P.Effect)	B&W / Sepia / ■Off	Sets the image special effects (page 78).
🔆 **(Saturation)**[4]	+ / ■Normal / –	Adjusts the saturation of the image. The 🔆 indicator appears (except when the setting is Normal).
◑ **(Contrast)**[4]	+ / ■Normal / –	Adjusts the contrast of the image. The ◑ indicator appears (except when the setting is Normal).
▯ **(Sharpness)**[4]	+ / ■Normal / –	Adjusts the sharpness of the image. The ▯ indicator appears (except when the setting is Normal).

[1] The available settings are limited when the mode dial is set to SCN.
[2] This does not appear when SCN is set to ◡ (Twilight mode), ▲◡ (Twilight portrait mode) or ♦ (Candle mode).
[3] This does not appear when SCN is set to ◡ (Twilight mode) or ♦ (Candle mode).
[4] This does not appear when the mode dial is set to SCN.

Additional information

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When the mode switch is set to 🎞

Item	Setting	Description
◉ (Metering Mode)	Spot / Center / ■Multi	Matches the exposure to the subject you want to shoot (page 60). Set the metering region.
WB (White Bal)	●SET / ☒ / ☼ / ☵ / ☁ / ☀ / ■Auto	Sets the white balance (page 73).
PFX (P.Effect)	B&W / Sepia / ■Off	Sets the image special effects (page 78).

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When the mode switch is set to ▶

Item	Setting	Description
📁 **(Folder)**	OK / Cancel	Selects the folder containing the image you want to play back (page 82).
⊶ **(Protect)**	—	Protects and unprotects images against accidental erasure (page 87).
DPOF **(DPOF)**	—	Marks and unmarks the print (DPOF) mark on still images you want to print (page 95).
📐 **(Print)**	—	Prints images using a PictBridge compliant printer (page 90).
📷 **(Slide)**	Interval Image Repeat Start Cancel	– Sets the slide show interval (page 84). (Only in single-image mode) ■3 sec / 5 sec / 10 sec / 30 sec / 1 min – Sets the range of the playback images. ■Folder / All – Plays back images repeatedly. ■On / Off – Starts the slide show. – Cancels the slide show.
🖼 **(Resize)**	7M / 5M / 3M / 1M / VGA / Cancel	Changes the recorded still image size (page 88). (Only in single-image mode)
🔄 **(Rotate)**	↺ (counter clockwise) / ↻ (clockwise) / OK / Cancel	Rotates the still image (page 85). (Only in single-image mode)
✂ **(Divide)**	OK / Cancel	Divides a moving image (page 100). (Only in single-image mode)

SET UP items

Set the mode dial to SET UP. The SET UP screen appears.

Factory settings are indicated with ■.

◘ (Camera 1)

Item	Setting	Description
AF Mode	■Single / Monitor / Cont	Selects the focus operation mode (page 68).
Digital Zoom	■Smart / Precision / Off	Selects the digital zoom mode (page 31).
Date/time	Day&Time / Date / ■Off	Selects whether to superimpose the date or time onto the image (page 37). The date and time are not inserted in movie or Multi Burst mode. Also, the date and time appear only during playback, and do not appear during recording.
Red Eye Reduction	On / ■Off	Reduces the red-eye phenomenon when using a flash (page 70).
Hologram AF	■Auto / Off	Selects whether to emit hologram AF light. Used when it is difficult to focus on the subject in dark conditions (page 35).
Auto Review	■On / Off	Selects whether to automatically display the recorded image on the LCD screen immediately after shooting a still image. When set to [On], the recorded image is displayed for approximately two seconds. If you press the shutter button halfway down during this period, the recorded image display disappears and you can immediately shoot the next image.

◘ (Camera 2)

Item	Setting	Description
Enlarged Icon	■On / Off	Selects whether to temporarily enlarge the setting indication when you press ↯ (Flash mode), ♡ (Self-timer) or ♥ (Macro).
Flash	Ext. / ■Int.	Selects whether to use a commercially available external flash (page 72).

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⬚ (Memory Stick Tool) (When the ⬚/CF switch is set to ⬚)

Item	Setting	Description
Format	OK / Cancel	Formats the "Memory Stick". Note that formatting irrevocably erases all data on a "Memory Stick", including even protected images (page 48).
Create REC. Folder	OK / Cancel	Creates a folder for recording images (page 52).
Change REC. Folder	OK / Cancel	Changes a folder for recording images (page 52).

⬚ (CF Card Tool) (When the ⬚/CF switch is set to CF)

Item	Setting	Description
Format	OK / Cancel	Formats the CF card. Note that formatting irrevocably erases all data on a CF card, including even protected images (page 48).
Create REC. Folder	OK / Cancel	Creates a folder for recording images (page 52).
Change REC. Folder	OK / Cancel	Changes a folder for recording images (page 52).

⬚ (Setup 1)

Item	Setting	Description
LCD Backlight	Bright / ■Normal / Dark	Selects the brightness of the LCD backlight. Selecting [Bright] makes the screen bright and easy to see when using the camera outdoors or in other bright locations, but also uses up the battery charge faster. Displayed only when you are using the camera with the battery pack.
Beep	Shutter ■On Off	– Turns on the shutter sound when you press the shutter button. – Turns on the beep/shutter sound when you press the control button/press the shutter button. – Turns off the beep/shutter sound.
🅐 Language	—	Displays the menu items, warnings and messages in selected language.

Additional Information

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📇 (Setup 2)

Item	Setting	Description
File Number	■Series Reset	– Assigns numbers to files in sequence even if the recording medium is changed or the recording folder is changed. – Resets the file numbering and starts from 0001 each time the folder is changed. (When the recording folder contains a file, a number one higher than the largest number is assigned.)
USB Connect	PictBridge PTP ■Normal	– Connects the camera with a PictBridge compatible printer (page 90). – When a PTP connection is made, the Copy Wizard automatically starts up and copies the images in the recording folder (page 106) set in the camera to the computer. (This supports Windows XP and Mac OS X.) – Makes a USB connection between the camera and a computer (pages 104 and 114).
Video Out	NTSC PAL	– Sets the video output signal to NTSC mode (e.g., USA, Japan). – Sets the video output signal to PAL mode (e.g., Europe).
Clock Set	OK / Cancel	Sets the date and time (pages 18 and 51).

Precautions

Do not leave the camera in the following places
- In extremely hot place, such as in a car parked in the sun. The camera body may become deformed or this may cause a malfunction.
- Under direct sunlight or near a heater. The camera body may become discolored or deformed, or this may cause a malfunction.
- On rocking vibration
- Near strong magnetic place
- In sandy or dusty places, be careful not to let sand or dust get into the camera. This may cause the camera to malfunction, and in some cases this malfunction cannot be repaired.

On cleaning
Cleaning the LCD screen
Wipe the screen surface with an LCD cleaning kit (not supplied) to remove fingerprints, dust, etc.

Cleaning the lens
Wipe the lens with a soft cloth to remove fingerprints, dust, etc.

Cleaning the DC plug
Clean the DC plug of the AC Adaptor with a dry cotton bud. Do not use the dirty plug. Use of the dirty plug may not properly charge the battery pack.

Cleaning the camera surface
Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface with a dry cloth. Do not use the following as this may damage the finish or the casing.
- Chemical products such as thinner, benzine, alcohol, disposable cloth, insect repellent or insecticide, etc.
- Touch the camera with the above on your hand
- Contact with rubber or vinyl for a long time

On operating temperature
Your camera is designed for use between the temperatures of 0°C and 40°C (32°F and 104°F). Shooting in extremely cold or hot places that exceed this range is not recommended.

On moisture condensation
If the camera is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside or outside the camera. This moisture condensation may cause a malfunction of the camera.

Moisture condensation occurs easily when:
- The camera is brought from a cold location such as a ski slope into a warmly heated room
- The camera is taken from an air-conditioned room or car interior to the hot outdoors, etc.

How to prevent moisture condensation
When bringing the camera from a cold place to a warm place, seal the camera in a plastic bag and allow it to adapt to conditions at the new location over a period of time (about an hour).

If moisture condensation occurs
Turn off the camera and wait about an hour for the moisture to evaporate. Note that if you attempt to shoot with moisture remaining inside the lens, you will be unable to record clear images.

Additional Information

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On internal rechargeable button battery

This camera has an internal rechargeable button battery for maintaining the date and time and other settings regardless of whether the power is on or off.
This rechargeable button battery is continually charged as long as you are using the camera. However, if you use the camera for only short periods it discharges gradually, and if you do not use the camera at all for about one month it becomes completely discharged. In this case, be sure to charge this rechargeable button battery before using the camera.
However, even if this rechargeable button battery is not charged, you can still use the camera as long as you do not record the date and time.

Charging method

Connect the camera to a wall outlet (wall socket) using the AC Adaptor, or install a charged battery pack, and leave the camera for 24 hours or more with the power off.

• The rechargeable button battery is located inside the battery insertion slot of the camera. Never remove the rechargeable button battery.

On "Memory Stick"

"Memory Stick" is a compact, portable IC recording medium.
The types of "Memory Stick" that can be used with this camera are listed in the following table. However, proper operation cannot be guaranteed for all "Memory Stick" functions.

"Memory Stick" type	Recording/ playback [4]
Memory Stick	○
Memory Stick (MagicGate/ high-speed data transfer)	○
Memory Stick Duo [1]	○
Memory Stick Duo (MagicGate/high-speed data transfer) [1]	○ [2)3)]
MagicGate Memory Stick	○ [2)]
MagicGate Memory Stick Duo [1]	○ [2)]
Memory Stick PRO	○ [2)3)]
Memory Stick PRO Duo [1]	○ [2)3)]

[1] When using it with this camera, be sure to insert into the Memory Stick Duo Adaptor.

[2] "MagicGate Memory Stick" is equipped with the MagicGate copyright protection technology. MagicGate is copyright protection technology that uses encryption technology. However, because your camera does not support the MagicGate standards, data recorded with your camera is not subject to MagicGate copyright protection.

[3] Supports high-speed data transmission using the parallel interface.

[4] [640 (Fine)] size movies can be recorded or played back only using a "Memory Stick PRO" or "Memory Stick PRO Duo."

• The "Memory Stick" formatted with a computer is not guaranteed to operate with this camera.

• The data read/write time differs depending on the combination of the "Memory Stick" and a device.

Notes on use of the "Memory Stick"

• You cannot record, edit, or delete images when the write-protect switch is set to LOCK. The position or the shape of the write-protect switch may differ depending on the "Memory Stick" you use.

Terminal

Write-protect switch

Labeling position
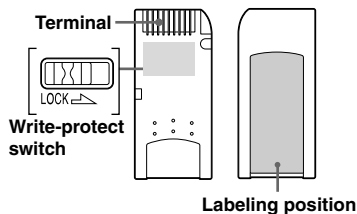
• Do not remove the "Memory Stick" while reading or writing data.

• Data may be damaged in the following cases:
  – Removing the "Memory Stick" or turning off the camera while reading or writing data.
  – Using the camera in a location subject to the effects of static electricity or noise.

• We recommend you back up any important data.

• Do not attach any other material than the supplied label on the labeling position.

• When you attach the supplied label, be sure to attach it to the labeling position. Be careful that the label does not stick out.

• When you carry or store the "Memory Stick," put it in the case supplied with it.

• Do not touch the terminals of a "Memory Stick" with your hand or a metal object.

• Do not strike, bend or drop a "Memory Stick."

• Do not disassemble or modify a "Memory Stick."

• Do not expose the "Memory Stick" to water.

• Avoid using or storing the "Memory Stick" in the following places:
  – In a car parked in the sun, or at a high temperature.
  – Under direct sunlight.
  – In a humid place or near corrosive material.

Notes on use of the "Memory Stick Duo"

• Be sure to insert the "Memory Stick Duo" into the Memory Stick Duo Adaptor when using the "Memory Stick Duo" with the camera. If you insert the "Memory Stick Duo" into the camera without attaching the Memory Stick Duo Adaptor, you may not be able to remove the "Memory Stick Duo."

• Verify that you are inserting the "Memory Stick Duo" in the proper direction when inserting it into the Memory Stick Duo Adaptor.

• Verify that you are inserting the Memory Stick Duo Adaptor in the proper direction when inserting it into the camera. Inserting it in the wrong direction may cause a malfunction.

• Do not insert a "Memory Stick Duo" that is not inserted into a Memory Stick Duo Adaptor into a "Memory Stick"-compatible unit. This may cause a malfunction of the unit.

• When formatting the "Memory Stick Duo," insert the "Memory Stick Duo" into the Memory Stick Duo Adaptor.

• When the "Memory Stick Duo" is equipped with the write protect switch, release its lock.

Note on use of the "Memory Stick PRO"

"Memory Stick PRO" with a capacity of up to 1 GB is verified for this camera.

On "InfoLITHIUM" battery pack

InfoLITHIUM ™ **R** TYPE

What is the "InfoLITHIUM" battery pack?

The "InfoLITHIUM" battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between your camera and the AC Adaptor.
The "InfoLITHIUM" battery pack calculates the power consumption according to the operating conditions of your camera, and displays the remaining battery time in minutes.

Charging the battery pack

We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F). You may not be able to efficiently charge the battery pack outside of this temperature range.

Effective use of the battery pack

• Battery performance decreases in low-temperature surroundings. So, the time that the battery pack can be used is shorter in cold places. We recommend the following to ensure longer battery pack use:
– Put the battery pack in a pocket close to your body to warm it up, and insert it in your camera immediately before you start shooting.
• Frequently operating the zoom or flash wears out the battery charge faster.
• We recommend having spare battery packs handy for two or three times the expected shooting time, and making trial shots before taking the actual shots.
• Do not expose the battery pack to water. The battery pack is not water-resistant.
• Do not leave the camera in a hot location such as inside a hot car or exposed to direct sunlight.

Remaining battery time indicator

The power may go off although the battery remaining indicator shows there is enough power to operate. Use the battery pack up and charge the battery pack fully again so that the indication on the battery remaining indicator is correct. Note, however, that the correct battery indication sometimes will not be restored if the camera is used in high temperatures for a long time or left in a fully charged state, or the battery pack is frequently used.

How to store the battery pack

• Even if the battery pack will not be used for a long time, fully charge it and use it up once per year. Remove the battery pack from your camera, then store it in a dry, cool place. This is to maintain the battery pack's functions.
• To use the battery pack up on your camera, leave the POWER button to on in slide show playback mode (page 84) until the power goes off.
• Always carry and store the battery pack in the battery case to prevent the battery terminals from becoming dirty or short circuited.

Battery life

- The battery life is limited. Battery capacity decreases little by little as you use it more and more, and as time passes. When the battery operating time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Buy a new battery pack.
- The battery life varies according to how it is stored and the operating conditions and environment for each battery pack.

Specifications

■ Camera
[System]

Image device
> 9.04 mm (1/1.8 type) color CCD
> Primary color filter

Total pixels number of camera
> Approx. 7 410 000 pixels

Effective pixels number of camera
> Approx. 7 201 000 pixels

Lens Carl Zeiss Vario-Sonnar
> 4× zoom lens
> f = 7 – 28 mm (34 – 136 mm when converted to a 35 mm still camera)
> F2.8 – 4.0

Exposure control
> Automatic exposure, Shutter speed priority, Aperture priority, Manual exposure, Scene selection (7 modes)

White balance
> Automatic, Daylight, Cloudy, Fluorescent, Incandescent, Flash, One-push

File format (DCF compliant)
> Still images: Exif Ver. 2.2 JPEG compliant, RAW, TIFF, DPOF compatible
> Movies: MPEG1 compliant (Monaural)

Recording media
> "Memory Stick"
> CompactFlash card (Type I)

Flash Recommended distance (ISO set to Auto):
> 0.4 to 3.0 m (15 3/4 inches to 118 1/8 inches) (W)
> 0.4 to 2.5 m (15 3/4 inches to 98 1/2 inches) (T)

[Input and Output connectors]

A/V OUT (MONO) jack (Monaural)
> Minijack
> Video: 1 Vp-p, 75 Ω, unbalanced, sync negative
> Audio: 327 mV (at a 47 kΩ load)
> Output impedance 2.2 kΩ

Accessory jack
> Mini-minijack (ø 2.5 mm)

USB jack mini-B

USB communication
> Hi-Speed USB (USB 2.0 compliant)

[LCD screen]

LCD panel
> 6.2 cm (2.5 type) TFT drive

Total number of dots
> 123 000 dots

[Power, general]

Used battery pack
> NP-FR1

Power requirements
> 3.6 V

Power consumption (during shooting with LCD screen on)
> 1.53 W

Operating temperature
> 0°C to +40°C (+32°F to +104°F)

Storage temperature
> –20°C to +60°C (–4°F to +140°F)

Dimensions
> 119.8×72.0×63.0 mm (4 3/4×2 7/8× 2 1/2 inches) (W/H/D, excluding maximum protrusions)

Mass 410 g (14.5 oz) (including battery pack NP-FR1, "Memory Stick" and shoulder strap)

Microphone
> Electret condenser microphone

Additional Information

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Speaker Dynamic speaker

Exif Print Compatible

PRINT Image Matching II
Compatible

PictBridge
Compatible

■ AC-LS5/LS5B AC Adaptor

Input rating
100 V to 240 V AC, 50/60 Hz, 11 W, 0.16 A to 0.09 A

Output rating
4.2 V DC, 1.5 A

Operating temperature
0°C to +40°C (+32°F to +104°F)

Storage temperature
–20°C to +60°C (–4°F to +140°F)

Dimensions
Approx. 48×29×81 mm (1 15/16×1 3/16×3 1/4 inches) (W/H/D, excluding projecting parts)

Mass Approx. 130 g (5 oz) excluding power cord (mains lead)

■ NP-FR1 battery pack

Used battery
Lithium-ion battery

Maximum voltage
DC 4.2 V

Nominal voltage
DC 3.6 V

Capacity 4.4 Wh (1220 mAh)

■ Accessories

• AC-LS5/LS5B AC Adaptor (1)
• Power cord (mains lead) (1)
• NP-FR1 battery pack (1)
• Battery case (1)
• USB cable (1)
• A/V connecting cable (1)
• Shoulder strap (1)
• CD-ROM (USB driver SPVD-012) (1)
• CD-ROM (Image Data Converter Ver.2.0) (1)
• Operating instructions (1)

Design and specifications are subject to change without notice.

The LCD screen

Page numbers in parentheses indicate the location of additional important information.

When shooting still images

1
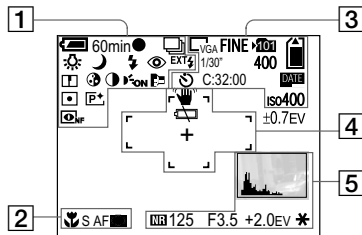
60min
Battery remaining (14)

●
AE/AF lock (30)

📷 / 🄢 / 🄤 / RAW / TIFF / BRK
Recording mode (64, 75, 76, 79, 80)

🄢 / ♭WB / ☼ / ⛅ / ▲ / ☀
White balance (73)

♀ / 🏔 / 😃 / 👤 / ▲ / 🌄 / ☾ / P / M / A / S
Mode dial/Scene selection (12, 39)

🟒 / 🟒SL / 🚫
Flash mode (69)

👁
Red-eye reduction (70)

W ⬜ T / ✕1.3 / 🄟Q✕ / 🅂Q✕
Zoom scaling (31)

🄣
Sharpness (137)

🄤
Saturation (137)

🄞
Contrast (137)

🄗ON
Hologram AF (35, 140)

🄡
Conversion lens (80)

🄞 / 🄧
Metering mode (60)

🄟⁺
Picture effect (78)

🄞NF / 🄞
NightFraming/NightShot (77)

EXT🟒
External flash (72)

2

🌷
Macro (33)

S AF / M AF / C AF
AF mode (68)

🄵 / 🄸 / 🄴
AF range finder frame (66)

0.5m
Focus preset value (69)

3

🄇7M / 🄓.² / 🄇5M / 🄇3M / 🄇1M / 🄇VGA
Image size (24)

FINE / STD
Image quality (52)

🄡
Recording folder (52)

🄡 / 🄡
Remaining recording medium capacity

1/30"
Multi Burst interval (76)

400
Remaining number of recordable images (28)

🖑
Self-timer (34)

Additional Information

149

C:32:00
Self-diagnosis display (132)

DATE
Date/time (37)

ISO**400**
ISO number (65)

±0.7EV
Bracket step value (64)

4

"⊎"
Vibration warning (130)

⟷
Low battery warning (130)
AF range finder frame (66)

+
Spot metering cross hair (60)

5

Histogram (62)

NR
NR slow shutter (58)

125
Shutter speed (57)

F3.5
Aperture value (58)

150

+2.0EV
EV level value (61)
Menu/Guide menu (50)

✱
AE LOCK (63)

• Pressing MENU switches the menu/guide menu on/off.

When shooting movies

1 `60min` `STBY 00:00:00 [00:28:25] C:32:00` 3

2 `+2.0EV ✱` 5

4

1
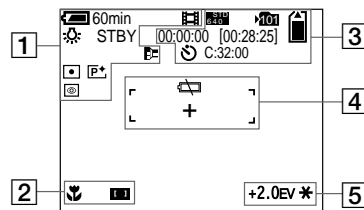
◁— **60min**
Battery remaining (14)

▥
Recording mode (97)

▨ / ☼ / ▦ / ▲ / ☀
White balance (73)

STBY / REC
Movie shooting (97)

×1.3
Zoom scaling (31)

• / ⊚
Metering mode (60)

▱
Conversion lens (80)

P⁺
Picture effect (78)

[image icon]
NightShot (78)

---

②

[Macro icon]
Macro (33)

[AF range finder frame icons] / [] / []
AF range finder frame (66)

0.5m
Focus preset value (69)

---

③

[icons] / [icons] / [160]
Image size (97)

[folder icon]
Recording folder (52)

[medium icons] / []
Remaining recording medium capacity

00:00:00 [00:28:05]
Recording time [maximum recordable time] (133)

[self-timer icon]
Self-timer (34)

C:32:00
Self-diagnosis display (132)

---

④

[low battery icon]
Low battery warning (130)
AF range finder frame (66)

+
Spot metering cross hair (60)

---

⑤

+2.0EV
EV level value (61)
Menu/Guide menu (50)

[AE lock icon]
AE LOCK (63)

• Pressing MENU switches the menu/guide menu on/off.

When playing back still images

```
┌───────────────────────────────┐
│ 🔋 60min   Ⓜ▯VGA 🏃         📦  │──③
│①─ ⊶ 🖨       📁101·12/12       │
│      Q×1.3   C:32:00           │
│              ⊘  +2.0EV iso400  │──④
│                   ▣ ⚡ ☀       │
│                   500  F3.5    │
│                        [graph] │──⑤
│②─ 101-0012  2005 1 1  9:30AM  │
│   ◄► BACK/NEXT  ♦ VOLUME       │
└───────────────────────────────┘
```

---

①
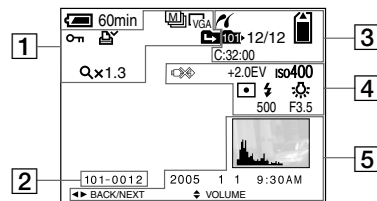
[Ⓜ icon]
Recording mode (76)

[7M] / [3:2] / [5M] / [3M] / [1M] / [VGA]
Image size (24)

⊶
Protect (87)

🖨
Print (DPOF) mark (95)

[folder icons] / [] / []
Change folder (82)

Q×1.3
Playback zoom scaling (83)

Step 12/16
Frame by frame playback (86)

151

②

101-0012
Folder-file number (107)

③

ʃ
PictBridge connecting (91)

⬆ / ⬛
Remaining recording medium capacity

⬛
Playback folder (82)

12/12
Image number/Number of images recorded in selected folder

C:32:00
Self-diagnosis display (132)

④

⬙
Not disconnect USB cable (92, 131)

+2.0EV
EV level value (61)

ɪsᴏ400
ISO number (65)

▣ / ⬚
Metering mode (60)

⚡ / ⚡̶
Flash
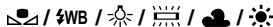
☁̲ / ⚡WB / ☼ / ▦ / ☁ / ☀
White balance (73)

500
Shutter speed (57)

F3.5
Aperture value (58)

⑤

Histogram (62)
Recording date/time of the playback image (37)
Menu/Guide menu (50)

• Pressing MENU switches the menu/guide menu on/off.

When playing back moving images
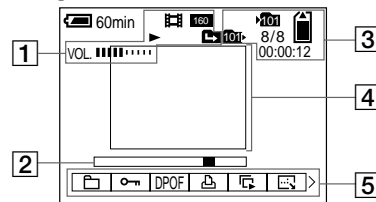
①

▦
Recording mode (98)

▦ / ▦ / ▦
Image size (98)

▶ / ⬛
Playback / Stop (98)

⤶ / ⤷ / ⤵
Change folder (82)

VOL. ▮▮▮▮▯▯▯
Volume (98)

②

Playback bar (98)

152

[3]

▶▣
Recording folder (52)

▮ / ▮
Remaining recording medium capacity

▣▶
Playback folder (82)

8/8
Image number/Number of images recorded in selected folder

00:00:12
Counter (98)

[4]

Playback image (98)

[5]

Menu/Guide menu (50)

• Pressing MENU switches the menu/guide menu on/off.

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