# JVC

**Digital Camera**

# GC-A70

2.0
Mega-Pixels

## INSTRUCTIONS

Thank you for purchasing this JVC product. Before beginning to operate this unit, please read the instruction manual carefully in order to make sure that the best possible performance is obtained. If you have any question, consult your JVC dealer.

To HomePage of JVC

## " SOME DO'S AND DON'TS ON THE SAFE USE OF EQUIPMENT "

This equipment has been designed and manufactured to meet international safety standards but, like any electrical equipment, care must be taken if you are to obtain the best results and safety is to be assured.

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### Do
read the operating instructions before you attempt to use the equipment.

### Do
ensure that all electrical connections (including the mains plug, extension leads and inter-connections between pieces of equipment) are properly made and in accordance with the manufacturer's instructions. Switch off and withdraw the mains plug when making or changing connections.

### Do
consult your dealer if you are ever in doubt about the installation or operation or safety of your equipment.

### Do
be careful with glass panels or doors on equipment.

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### DON'T
continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way—switch off—withdraw the mains plug and consult your dealer.

### DON'T
remove any fixed cover as this may expose dangerous voltages.

### DON'T
leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a standby mode. Switch off using the switch on the equipment and make sure that your family know how to do this. Special arrangements may need to be made for infirm or handicapped people.

### DON'T
use equipment such as personal stereos or radios so that you are distracted from the requirements of road safety. It is illegal to watch television when driving.

### DON'T
listen to headphones at high volume as such use can permanently damage your hearing.

### DON'T
obstruct the ventilation of the equipment, for example with curtains or on soft furnishings. Overheating will cause damage and shorten the life of the equipment.

### DON'T
use makeshift stands and NEVER fix legs with wood screws. To ensure complete safety always fit the manufacturer's approved stand or legs with the fixing screws supplied according to the instructions.

### DON'T
allow electrical equipment to be exposed to rain or moisture.

### ABOVE ALL
**NEVER** let anyone especially children push anything into holes, slots or any other opening in the case. This could result in a fatal electrical shock.
**NEVER** guess or make changes with electrical equipment of any kind. It is better to be safe than sorry!

## FCC INFORMATION

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1.   This device may not cause harmful interference.
2.   This device must accept any interference received, including interference that may cause undesired operation.

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

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

### CAUTION
Changes or modifications not approved by JVC could void user's authority to operate the equipment.

### Contact

**Address: JVC AMERICAS CORP.,**
**1700 Valley Road, Wayne, New Jersey 07470**
**Telephone: (973) 317-5000**

### INFORMATION (for CANADA)
This Class B digital apparatus complies with Canadian ICES-003.

### RENSEIGNEMENT (Pour le CANADA)
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

> **WARNING:**
> **TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

## SAFETY PRECAUTIONS

```
          ⚠       CAUTION          ⚠
                RISK OF ELECTRIC SHOCK
                    DO NOT OPEN
                  CAUTION:
        TO REDUCE THE RISK OF ELECTRIC SHOCK,
           DO NOT REMOVE COVER (OR BACK).
         NO USER-SERVICEABLE PARTS INSIDE.
         REFER SERVICING TO QUALIFIED SERVICE
                   PERSONNEL.
```

```
          ⚠       ATTENTION        ⚠
              RISQUE D'ÉLECTROCUTION
                  NE PAS OUVRIR
                 ATTENTION:
        POUR ÉVITER TOUT RISQUE D'ÉLECTROCUTION,
              NE PAS OUVRIR LE BOÎTIER.
         AUCUNE PIÈCE INTÉRIEURE N'EST À RÉGLER
         PAR L'UTILISATEUR. SE RÉFÉRER À UN AGENT
              QUALIFIÉ EN CAS DE PROBLÈME.
```

**The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.**

**The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.**

```
            Gebruikte batterijen:
         NL   Niet weggooien,
              maar inleveren      ✗
              als KCA.
            For the Netherlands only.
            Uitsluitend voor Nederland.
```

## CAUTIONS

**About moisture condensation . . .**
You may have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass' outer surface. This same phenomenon occurs on the lens of the camera when it is moved from a cool place to a warm place, after heating a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.

**Serious malfunctioning**
If malfunctioning occurs, immediately stop using the unit and remove the battery, then consult your local JVC dealer.

## MAIN UNIT

**1. For safe use, please do NOT . . .**
  ...open the camera's chassis due to high voltage inside.

  ...disassemble or modify the unit.

  ...allow inflammables, water or metallic objects to enter the unit.

...remove the batteries while the power is on.

...look through the viewfinder directly at the sun or extremely bright light.

...point the lens directly into the sun. This can lead to malfunctioning of the internal circuitry. There is also a risk of fire or electric shock.

...subject it to shock or excessive vibration.

...connect any USB cable to this unit except the one provided.

**2. Avoid using the unit in the following places:**
- Where the camera will be subject to dust, soot, steam, or excessive heat.
- Where the camera will be subject to excessive shock or vibration.
- Where the camera will be subject to extremely low (under 0°C or 32°F) or extremely high (over 40°C or 104°F) temperatures.
- In direct sunlight.
- In a closed car in summer.
- Near a heater.
- Near a television set.
- Near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).

**3. To protect the unit, DO NOT . . .**
...allow it to become wet.

...drop the unit or strike it against hard objects.

...subject it to shock or excessive vibration during transportation.

...keep the lens directed at extremely bright objects for long periods.

...swing it excessively when using the hand strap or neck strap.

## MEMORY CARDS

**1. To properly use and store your memory cards, be sure to read the following cautions:**
- Make sure the memory card bears the SD or Multimedia Card mark.
- Make sure the memory card is positioned properly when inserting.
- While the memory card is being accessed (during recording, playback, deletion, formatting etc.), never unload the memory card or turn off the digital camera.
- Store memory cards...
  ...away from heaters or other heat sources.

  ...out of direct sunlight.

  ...where they will not be subject to unnecessary shock or vibration.

  ...where they will not be exposed to strong magnetic fields (such as those generated by motors, transformers or magnets).

## LCD MONITOR
- To prevent damage to the LCD monitor, do NOT subject it to undue force or shocks.
- To prolong its service life, avoid rubbing it with a coarse cloth.

## ALKALINE BATTERIES

**1. For safe use, do NOT . . .**
...attempt to charge the alkaline batteries.

...reverse the polarities of the batteries.

...carry or store a battery together with objects such as metal pens, necklaces, coins or hairpins. This could short-circuit the positive and negative poles of the battery.

...heat or attempt to disassemble a battery.

...expose the battery to water or fire.

...subject a battery to strong impacts, such as hitting it with a hammer, stepping on it or dropping it.

...forget to remove the batteries from the unit if the camera is not to be used for an extended period of time, so as to prevent leakage.

Any of these may cause the battery to split or leak, causing fire or injury.

**2. Use only the specified batteries with this camera. The use of other power sources may cause a fire.**

**3. When discarding batteries, environmental problems must be considered and the local rules or laws governing the disposal of these batteries must be followed strictly.**

## HOW TO HANDLE A CD-ROM

- Take care not to soil or scratch the mirror surface (opposite to the printed surface). Do not write anything or put a sticker on either the front or back surface. If the CD-ROM gets dirty, gently wipe it with a soft cloth outward from the center hole using a circular motion.
- Do not use conventional disc cleaners or cleaning spray.
- Do not bend the CD-ROM or touch its mirror surface.
- Do not store your CD-ROM in a dusty, hot or humid environment. Keep it away from direct sunlight.

## FLASH

- Do not fire the flash at a person, particularly an infant, at short range for this may cause impairment of eyesight.
- Do not touch light-emitting portion after flash. This may cause burn.

## BEFORE USING THE CAMERA

- We recommend that you take some test shots before you actually start, to accustom yourself to the camera.
- We cannot bear any responsibility for an inability to shoot, record, or play back material normally in the event of a problem with this camera.
- We shall not be liable for any incidental, consequential or exemplary damage, loss of profits or any demand made by any third party due to your use of this product or the provided software.
- Store backups of important images/video clips on a personal computer, etc. We cannot bear any responsibility for pictures stored in memory that are lost or altered.
- It is prohibited to use still images/video clips taken with this camera for commercial purposes without the consent of the copyright owner.
- Please be aware that the shooting subject may appear whitish or halation may occur in following conditions:
  - When a very bright subject is taken in a short distance.
  - When a subject which has a very bright part is taken in strong sunlight.

## Notes:

- Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Other trademarks are the properties of their respective owners.

Digital Camera GC-A70

## FUN THINGS YOU CAN DO

**This camera is an all-in-one compact size digital and USB PC-camera. With it, you can:**

- Take digital pictures/video clips in an instant.
  Easily capture digital images and download them to your computer.
- Videoconference on the Internet.
  Keep in touch with distant family and friends. See and talk with people on the Internet face-to-face.
- Send captured images with your e-mail messages.

## WHAT'S INCLUDED?

Please check to see that the following items are included in the package. If any item is missing, please enquire at your nearest JVC-authorized dealer.



Digital Camera GC-A70



CD-ROM with Driver,
Application & Instructions



USB Cable



Hand Strap



Neck Strap
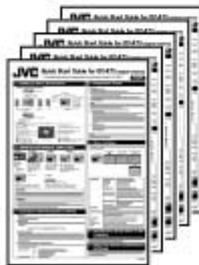


Quick Start Guide
(5 Sheets, 9 Languages)



Caution Sheet

**Notes:**

- Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Other trademarks are the properties of their respective owners.

## SYSTEM REQUIREMENTS (PC)

- Microsoft® Windows® 98/98SE/Me/2000/XP (Pre-installed Model)
- Intel® Pentium® Processor 166 MHz or higher
- Free USB Port
- Minimum RAM: 32 MB (Windows XP: 128 MB)
- 250 MB of available hard disk space
- Color display: 800x600 or better
- CD-ROM drive

### Notes:

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- Other trademarks are the properties of their respective owners.

**Digital Camera GC-A70**

## FEATURES

| | |
|---|---|
| **LCD Monitor** | A 1.5-inch color TFT LCD monitor with high image quality of 2 megapixels that enables monitoring of images while shooting, and immediately after recording. |
| **Design** | Features a compact, posh metallic design. |
| **Digital Zoom** | Digital zooming of x2, x3 and x4 and macro mode (switching by lens) with a 45 cm close-up capability for wide variety of shooting scenes. |
| **Multipurpose** | A Digital Still Camera, usable as a movie camera (Video Clip: AVI w/o Sound) or Webcam as well as a Multi Digital Camera. |
| **Built-in Digital Memory** | Equipped with built-in 8 MB flash memory (that retain images even in the absence of a power supply) and SD/MMC compatible memory slot, the number of images can be increase simply by adding memory card. |
| **Power Supply** | Supplied by easily purchased AA-size alkaline batteries (x2, option).<br>In addition, it operates with USB power source when connected to a PC through a USB port (i.e. when transferring images from the built-in memory to the PC or using as a Webcam). |

## GETTING TO KNOW THE CAMERA

### Controls, Connectors and Indicators

Built-in Flash

Viewfinder window

Self-Timer lamp

Lens

Normal ▲ / Macro ♥ switch dial

Strap holder

USB Port Cover

USB port

Shutter button

[RESOLUTION] & Quality / Left ◀ button

[DISPLAY] /Up ▲ button

[OK/ ZOOM] button

Flash mode ⚡/Right ▶ button

Self-Timer ⟳ /Down ▼ button

Status indicator

Viewfinder

[POWER] button

[MODE] button

LCD monitor

[MENU] button

Battery/Memory Card compartment door

Tripod socket

## GETTING STARTED

Be sure to insert the (AA-size Alkaline) batteries before trying to capture images with your camera.

### Inserting the Batteries

1. Slide the Battery/Memory card compartment door (located on the right side of the camera) in the direction indicated by the arrow to open it.
2. Insert the AA-size batteries as indicated on the inner side of the door.
3. Close back the door and turn on the camera.
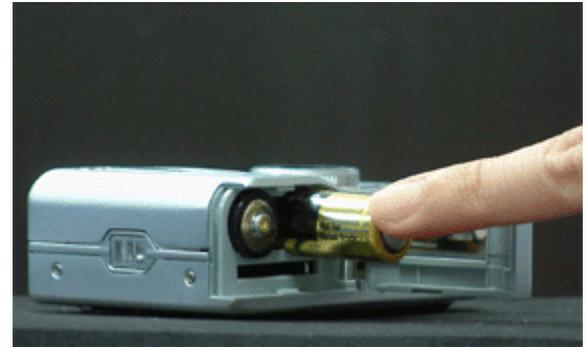
**Checking Batteries( [battery icon] : Full battery power)**

The Battery Indicator will be displayed on the status LCD monitor while the camera is on. Depending on the durability and usage of the batteries, the number of pictures that can be recorded varies. Note that power is consumed by the following operations even when not recording, reducing the number of images that can be recorded.

- Extensive use of the LCD monitor in the Play/Erase mode.
- Performing settings.

Battery Life > 40%

20% < Battery Life < 40%

10% < Battery Life < 20%

Battery Life < 10%.
Status Led flashes for 5 sec and then power off.

### Notes:
- Please ensure that the batteries are inserted in the correct way. Do not reverse the $\oplus$ and $\ominus$ polarities.
- The recommended battery type is AA size ALKALINE.
- Never use manganese batteries.
- Low temperatures (under 0°C or 32°F) will reduce the output efficiency of the batteries, thereby shortening the operation time of the camera.
- The use of Flash is not recommended when the battery level is low.
- Never mix old and new batteries.
- Remove the batteries if the camera is not to be used for an extended period of time, to prevent leaks or corrosion.
- Before discarding batteries, cover the positive $\oplus$ and negative $\ominus$ terminals with adhesive tape.
- The Battery Indicator reflects the level of remaining battery power. When the indicator appears as shown above, the batteries are weak and need to be replaced.

### Attaching the Hand Strap or Neck Strap

Always use the provided hand strap or neck strap when carrying the camera. Please note that the company cannot be held responsible for any accidental drop of the camera due to improper use of the hand strap or neck strap.

**To attach the strap to your camera:**

1. Thread the thinner looped end of the strap through the strap holder.
2. Insert the other end of the strap through the thin loop and pull it all the way out. Ensure that the strap is securely tightened unto the camera.



## Note:
- Be careful not to bump the camera or entangle the strap.

## Inserting and Removing the SD / Multimedia Card
This camera can be used with either an SD card or a Multimedia card (MMC).
When traveling and capturing a lot of images, it is convenient to make use of an SD or a Multimedia card. When a card is inserted into the camera, still images/video clips captured will be stored in the card's memory.
When the card is removed, the camera's internal memory will be used as the storage media.

### Inserting the Memory Card
1. Turn off the camera's power by pressing the [POWER] button.
2. Open the Battery/Memory card compartment door.
3. Firmly insert the memory card into the memory card slot as far as it can go, with the memory card electrodes (metal contacts) end facing the camera. (Refer to the right figure.)
4. Close back the door firmly.



### Removing the Memory Card
1. Turn off the camera's power by pressing the [POWER] button.
2. Open the Battery/Memory card compartment door.
3. Push the memory card in as far as it can go and release. The card will spring back and protrude slightly. Pull it out with your fingers.
4. Close back the door firmly.

## Notes:
- SD and Multimedia cards are purchased separately.
- Pay attention to the card direction when inserting. Wrong direction and forced insert can break it.
- When the memory card is inserted, access to the camera's internal memory is not possible.
- Cards available in the market, and those already formatted for PC and other devices may not be identified by this camera. Therefore, before using them, it is necessary to format them first with this camera.
- While the power of the camera is on, do not open the battery cover to replace the memory card or batteries as this may cause irrecoverable corruption of card data.
- The memory card is a sensitive device so it should not be subject to any shock. Do not touch the metal part of the card with your hand.
- When the memory card is write-protected, it cannot be used (A message "WRITE PROTECT" will appear on the LCD monitor). You have to disable the write-protection first.

## Switching the Power ON / OFF

Press the [POWER] button to toggle ON / OFF.
The Status Indicator will lit up immediately upon power on. The light will go off after a while (the length of time varies with the capacity of the memory card that is inserted in the camera) and the camera will then be ready for use.
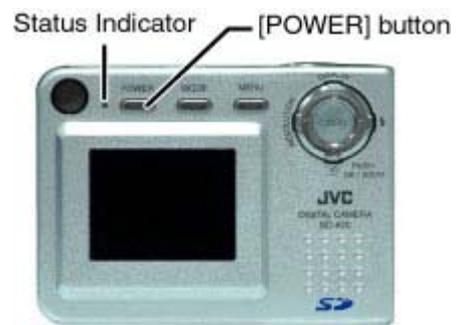
## Switching the LCD Monitor ON / OFF

The LCD monitor is automatically activated when the power is switched on. However, since the LCD monitor consumes battery power fast, we recommend that you turn off the LCD monitor and use the optical viewfinder as far as possible when capturing still images. To switch the LCD monitor ON or OFF, toggle the [DISPLAY]/Up ▲ button. When the LCD Monitor is OFF, the status indicator lights up to indicate Power ON status.

Viewfinder — [POWER] button

[DISPLAY]/ Up ▲button
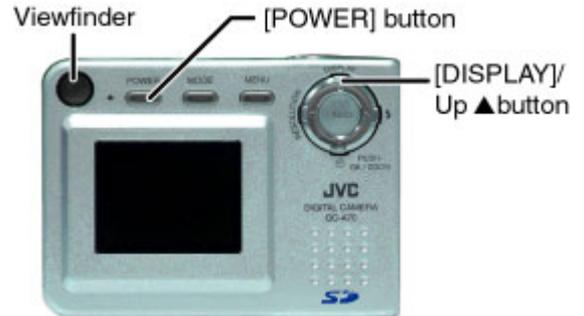
### Notes:

- The "DATE/TIME" setting screen will appear on the LCD monitor upon its activation in the case of a newly purchased camera or if the camera has not been used for a long time.
- When the camera is in the Play/Erase mode, the LCD monitor cannot be turned off. The still image/ video clip taken most recently will be shown on the LCD monitor. Further, in the case that no image/video clip exists in the memory, the message "NO IMAGE" will be shown on the LCD monitor. When the camera is in the Video Clip Mode, the LCD monitor cannot be turned off either.
- When no operation is performed within a certain time interval (user set value: "1min", "3min", "5min", "10min", "Cancel"; Default value: "3min"), the camera will automatically turn off.

OPERATIONS

**■ CAMERA MODE**            **■ VIDEO CLIP MODE**            **▶ PLAY /ERASE MODE**

**Shooting Basics**          **Shooting Basics**              **Play Basics**

**Customized Shooting**
- Zooming
- Using Flash                Customized Shooting is not applicable to the Video Clip and Play/Erase Mode.
- Using Self-Timer
- Setting the Image Resolution &
  Quality

**Menu Settings**

- "SETUP MENU"               - "SETUP MENU"                   - "SETUP MENU"
- "QUICK VIEW"               - "EV&WHITE BALANCE"             - "SLIDE SHOW"
- "EV&WHITE BALANCE"                                          - "ERASE"
                                                             - "COPY TO CARD"
                                                             - "DPOF"

**Setting the various mode:**
1. Press the [POWER] button.
2. Press the [MODE] button until the desired mode is displayed.
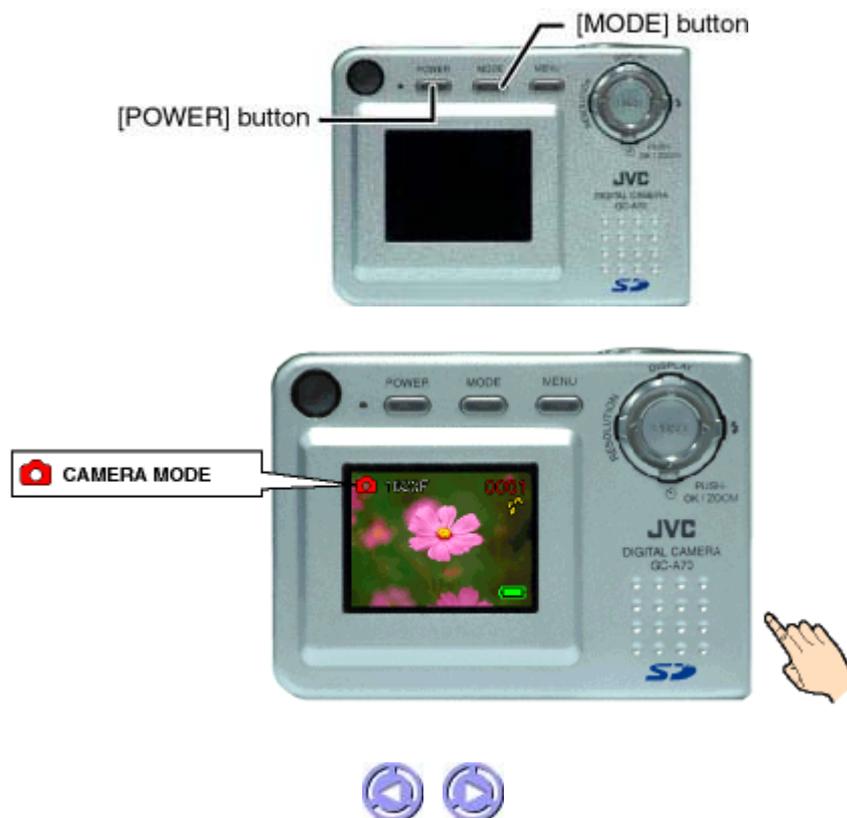
## CAMERA MODE

This mode is used for capturing still images. The images captured will be stored in the camera's internal memory or the memory-card in JPEG file format.

### LCD monitor status display



**Camera mode Indicator**

**Memory Card Indicator**

**Resolution & Quality Indicator**

**Number indicator**

**Built-in Flash Indicator Indicator**

**Self-Timer indicator**

**Zoom Indicator**

**EV Level Indicator**

**White Balance Indicator**

**Battery Indicator**

**Macro Indicator**
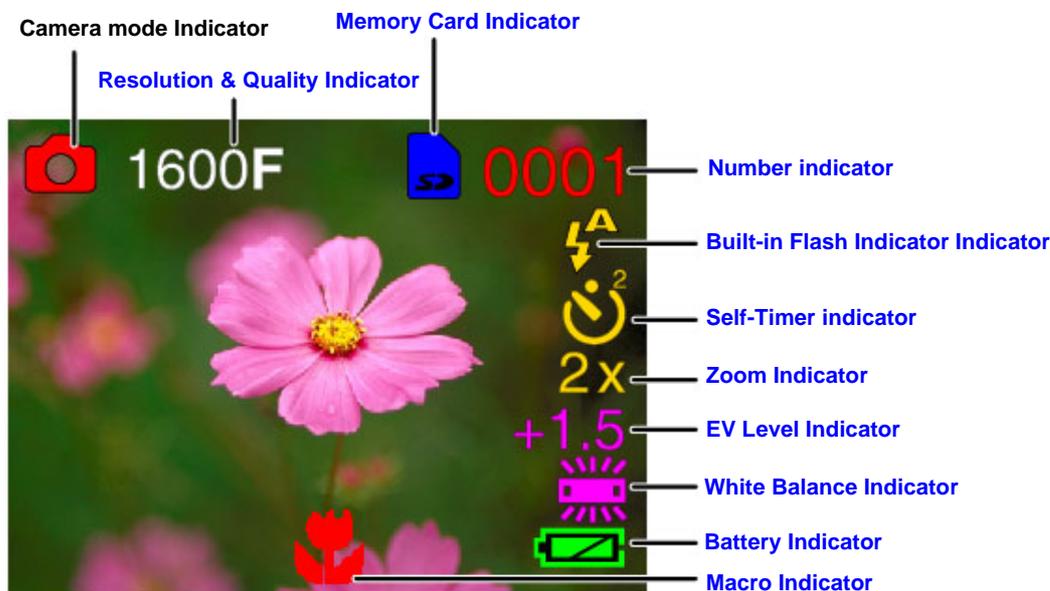
### 1. Resolution & Quality Indicator

| | |
|---|---|
| 1600F | Full resolution (1600x1200 Pixels) & Fine quality |
| 1600N | Full resolution (1600x1200 Pixels) & Normal quality |
| 1280 | Middle resolution (1280x960 Pixels) |
| 640 | Low resolution (640x480 Pixels) |

### 2. Memory Card Indicator

Appears when SD Card is inserted.

Appears when MMC card is inserted.

No Indicate — Will not be displayed when no memory card is being inserted. (Uses internal memory.)

### 3. Number Indicator

Number of images that can be stored.

### 4. Built-in Flash Indicator

The flash fires automatically according to the photography conditions, is suitable for general photography.

Use this mode to avoid the red-eye effect when photographing people in low-light conditions.

Use this mode in the environment where the use of flash is prohibited or under the situation where the distance to the subject is too far away for the flash to have any effect.

### 5. Self-Timer Indicator

2 sec Self-Timer mode. Shooting begins 2 seconds after pressing the shutter button.

10 sec Self-Timer mode.Shooting begins 10 seconds after pressing the shutter button.

No Indicate   Will not be displayed when Self-Timer is not being set.

### 6. Zoom Indicator

**2x**   Appears when Digital Zoom is set to 2 times.

**3x**   Appears when Digital Zoom is set to 3 times.

**4x**   Appears when Digital Zoom is set to 4 times.

No Indicate   Will not be displayed when Digital Zoom is not being set. [1x]

### 7. EV Level Indicator

Adjust the EV Level by EV & White Balance setting, and the adjusted value will be displayed.
[-2.0 - +2.0]
It is not displayed at default value [0].

### 8. White Balance Indicator

Adjust the White Balance by EV & White Balance setting, and the adjusted value will be displayed.
[          ]
It is not displayed at default value "AUTO".

### 9. Battery Indicator

Battery Life > 40%

20% < Battery Life < 40%

10% < Battery Life < 20%

Battery Life < 10%. Status Led flash 5 sec and then power off.

### 10. Macro Indicator

It is displayed when the Normal ▲/ Macro ♣ switch dial is set to Macro ♣.
When set to Macro, it is possible to focus the camera on the subject in the proximity of about 45 cm.

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### Shooting Basics

When the card is inserted into the camera, your captured still images/video clips will be stored in the card's memory. When the ca
is removed, the internal memory of the camera will be used as the storage media.



Viewfinder — [MODE] button — [DISPLAY]/ Up ▲ button

Normal ▲/ Macro ♣ switch dial

Shutter button
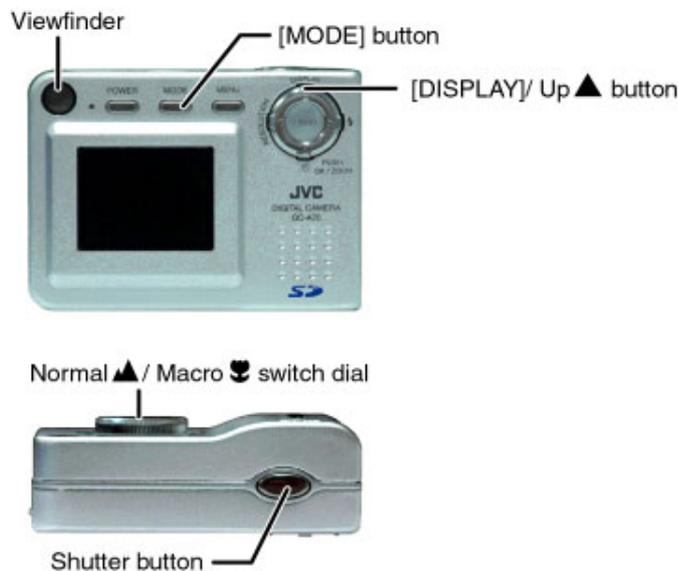
**Procedures:**

1. Get the camera ready. (Refer to "Getting Started")
2. Toggle the [MODE] button to select the Camera mode [📷].
3. Turn the Normal ⛰/ Macro 🌷 switch dial to Normal ⛰.
4. Frame your subject. You may use either the viewfinder or the 1.5" full color TFT LCD monitor (Toggle the [DISPLAY]/ Up ▲ button to activate or deactivate it)
   * We recommend, however, that the viewfinder be used as far as possible to extend battery time since the LCD is highly power consumptive.
5. Press the shutter button fully down.
   If the "QUICK VIEW" function has been set to ON, the image captured will appear on the LCD monitor for a few seconds.
6. To continue capturing, repeat the above steps 4 & 5.

## Notes:
- To adjust the Image Quality and Resolution, please refer to "Setting the Image Resolution and Quality".
- When the storage memory is full, you may either erase the images that are no more required, or insert a new memory card.
- The number of remaining shots shown on the LCD monitor is an approximate value based on the currently set resolution, picture quality and memory size.
- The actual number of remaining shots also differ depending on the shooting conditions. Hence, a single shot may reduce the value by two or not change the value at all. This is not a malfunction of the LCD monitor. Also, upon the camera being turned on, memory adjustments are made and the indicated remaining value may actually be higher than when the camera was last turned off.
- When you take pictures in bright locations or in clear fine weather, lines may appear on the monitor. This is not a malfunction.
- Press the shutter button down steadily.
- When the Status Indicator is lit, shooting/replay is not possible. Wait until the light goes off.
- Never open the Battery/Memory card compartment door when the Status Indicator is lit for this may cause malfunction.
- Please format new Memory cards with this camera before using them.
- We recommend that you take some test shots to get accustomed to the camera before you actually start.
- We cannot bear any responsibility for an inability to record or replay material normally, in the event of a problem with this camera.
- Store backups of important images in eg. your personal computer. We cannot bear any responsibility for any loss or alteration to the images stored in the camera's internal or external memory.
- It is prohibited to use images taken with this camera for commercial purposes without the consent of the copyright owner.

## Customized Shooting (CAMERA MODE)

### (1) Zooming

This mode allows you to zoom up on your subject, making it appear larger (2x, 3x, 4x) and closer.
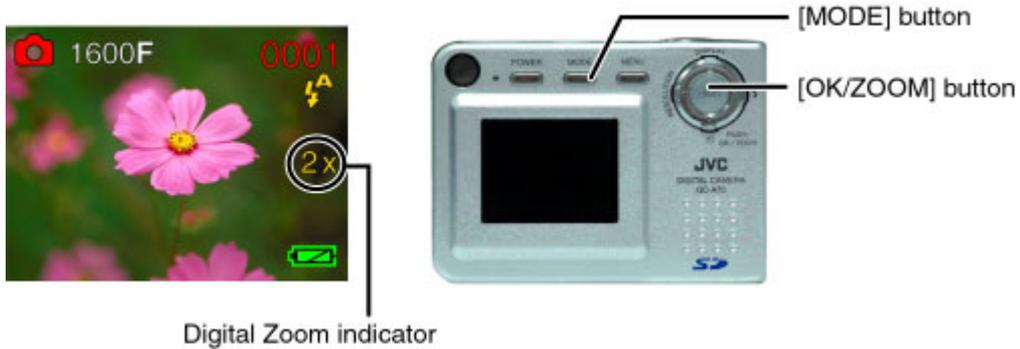


Digital Zoom indicator

**Procedures:**

1.  Ensure that the camera is turned on.
2.  Select the Camera mode with the [MODE] button.
3.  Press the [OK/ZOOM] button to activate the digital zoom function. The image on the LCD monitor will be enlarged. With each press, the image will change in the sequence of 2x, 3x, 4x and zoom off.
4.  Frame your subject. Then, press the shutter button fully down. (For details, see "Shooting Basics")

### (2) Using Flash

The flash is designed to fire automatically when required. (Default setting: Auto ⚡ ). To suit the different conditions, however, you can change the flash mode. Press the Flash mode button until the desired flash mode (Auto ⚡ , Red-Eye Reduction, Off) is indicated.
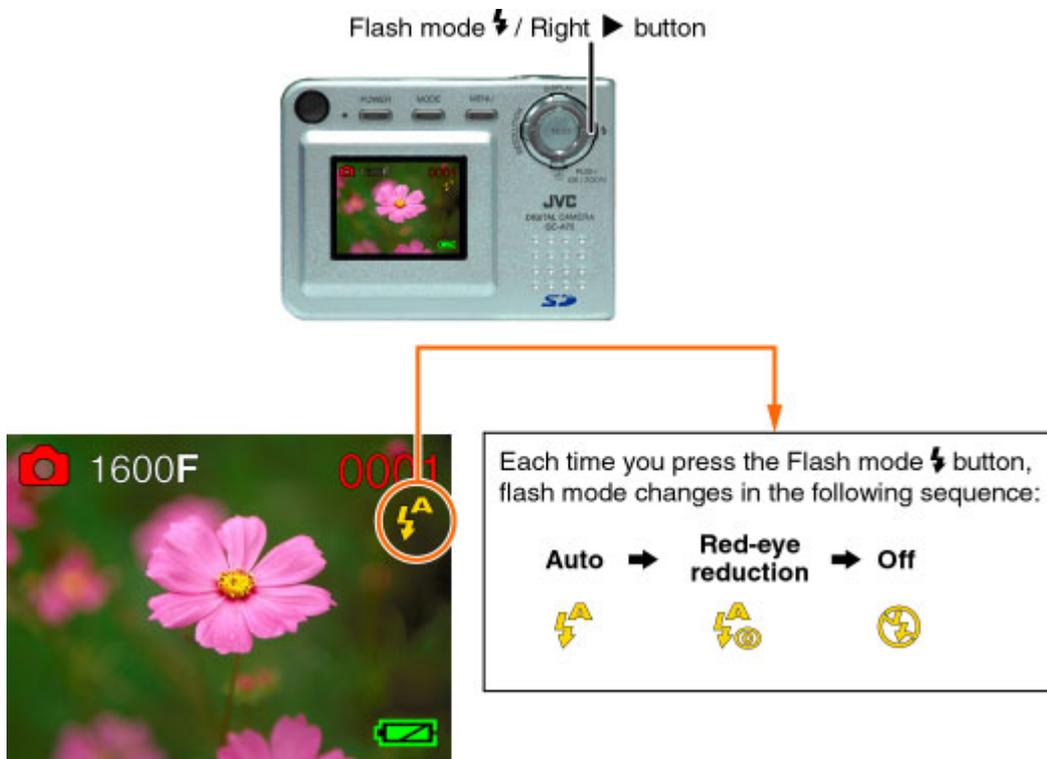


Flash mode / Right ▶ button

Each time you press the Flash mode ⚡ button, flash mode changes in the following sequence:

Auto ➡ Red-eye reduction ➡ Off

**Procedures:**

1.  Ensure that the camera is turned on.
2.  Select the Camera mode with the [MODE] button.
3.  Press the Flash mode ⚡/Right ▶ button until the desired flash mode (Auto ⚡ , Red-Eye Reduction, Off) is indicated.
4.  Frame your subject. Then press the shutter button fully down. (For details, see "Shooting Basics")

| **Auto Flash** | The flash fires automatically according to the photography conditions. It is suitable for general photography. |
| --- | --- |
| **Red-Eye Reduction (RER)** | Use this mode to avoid the red-eye effect when photographing people or animals in low light conditions. |
| **Flash Off** | Used where the use of flash is prohibited or when utilizing the night view/indoor lighting for shooting. The flash mode can also be turned off when the distance to the subject is too far away for the flash to have any effect. |

## Notes:

- When shooting using flash, although the flash fires twice but the actual shoot is at the second flash. The first fire is to determine whether flash is required. The second flash will not be fired if it is not required.
- The red-eye reduction function may have little effect if the subject is not directly facing the pre flash or main flash, or when the distance between the camera and the subject is too far.
- Flash cannot be used during Macro function. It automatically becomes Flash Off.

## (3) Using Self-Timer

This unit includes 2 seconds and 10 seconds Self-Timer function. With the 10 seconds Self-Timer function, the photographer too, can get into the frame when taking group pictures.
Moreover, when you take pictures in dark locations, the shutter speed may become slow, setting the 2 seconds Self-Timer will prevent the picture from blurring due to shaking of the camera while pressing the shutter button.

**Procedures:**

1. Ensure that the camera is turned on.
2. Select the Camera mode with the [MODE] button.
3. To activate the Self-Timer, press the Self-Timer ⟳/Down ▼ button. The 10 seconds Self-Timer indicator will appear on the LCD monitor as shown on the right. Pressing it again will change to 2 seconds Self-Timer.
4. Frame your subject and press the shutter button. The Self-Timer lamp will start blinking for 10 seconds (slowly in the first 7 seconds and rapidly in the remaining 3) or 2 seconds (rapidly blinking only). At the end of the 10 seconds or 2 seconds, the shutter will be released.

## Note:

- When capturing images using the Self-Timer, do stabilize your camera with eg. a camera stand.

## (4) Setting the Image Resolution and Quality

Users can choose from four image resolution & quality setting, namely:

To set the Image quality and resolution, press the [RESOLUTION] & Quality/Left ◀ button until the desired setting is indicated.

[RESOLUTION] & Quality/
Left ◄ button

1600F ⇨ 1600N ⇨ 1280 ⇨ 640
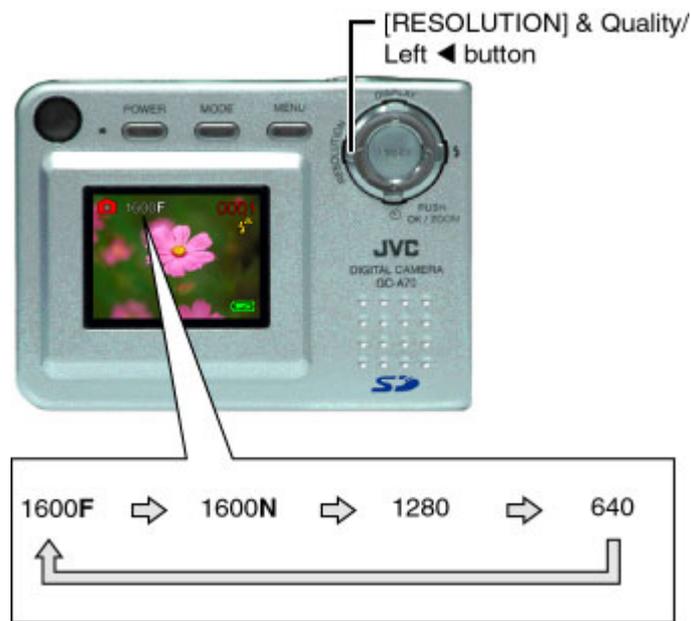
**The number of images that can be stored**

The number of images (approximate) that can be stored in the memory card at the current image quality and resolution is reflected on the LCD monitor. Varying the image quality and resolution settings will affect the number of storable images. The following shows the approximate number of storable images based on 8 MB of available memory (when the camera is first turned on), as the image quality and resolution is varied.

| Resolution | Quality | Indication on LCD monitor | Initial Estimated Storage with 8 MB Memory |
| --- | --- | --- | --- |
| 1600x1200 | Fine | 1600F | 10 |
| 1600x1200 | Normal | 1600N | 20 |
| 1280x960 | - | 1280 | 40 |
| 640x480 | - | 640 | 80 |

## Notes:

- The number of recordable images also varies with the subject and the capacity of the memory card.
- The number of remaining images that can be recorded, shown on the LCD monitor, will decrease by 1 every time you take a new shot. If, however, the file size is too minimal, the number will remain the same after the shot is taken. By the same token, the number will decrease by more than 1 if the file size is too large.



[MODE] button

Normal ▲/ Macro ♣ switch dial

## (5) Using Macro

By using the Macro function, it is possible to shoot at a close range (about 45 cm).

**Procedures:**

1. Ensure that the camera is turned on.
2. Select the Camera mode with the [MODE] button.
3. Turn the Normal ▲/Macro ♣ switch dial to Macro ♣.
4. Frame your subject. Then press the shutter button fully down. (For details, see "Shooting Basics")

▲ Normal Setting — This is usually used when shooting. It is in focus with the subject that is about 1.9 m away.

♥ Macro Setting — For shooting the subject at a close-up range. It focuses in the proximity of about 45 cm.

**Notes:**

- If you use the viewfinder to take a picture in Macro mode, the field visible through the viewfinder does not match the field actually photographed because the viewfinder and lens are in different positions. Accordingly, you should use the LCD monitor to take pictures in Macro mode.
- Flash cannot be used during Macro function. It automatically becomes Flash Off.
- Do not turn the Normal ▲/Macro ♥ switch dial unnecessarily. It may become malfunction.
- Please take note not to touch the lens when turning the dial.

## VIDEO CLIP MODE

This mode is used for shooting video clips. The video clips will be stored in the camera's internal memory or the memory card in AVI File Format.

**Total available recording time**

The total available recording time (approximate) is reflected on the LCD monitor. For video clips, the Resolution is fixed at 320x240 and the Image Quality cannot be changed. The following shows the approx. length of recording time based on 8 MB of available internal memory (when the camera is first turned on):
The actual recording time changes in accordance with the images of the Video Clip taken.

| Resolution | Quality | Indication on LCD monitor | Initial Estimated available recording time |
|---|---|---|---|
| 320x240 | - | 320 | 46 sec |

**LCD monitor status display**
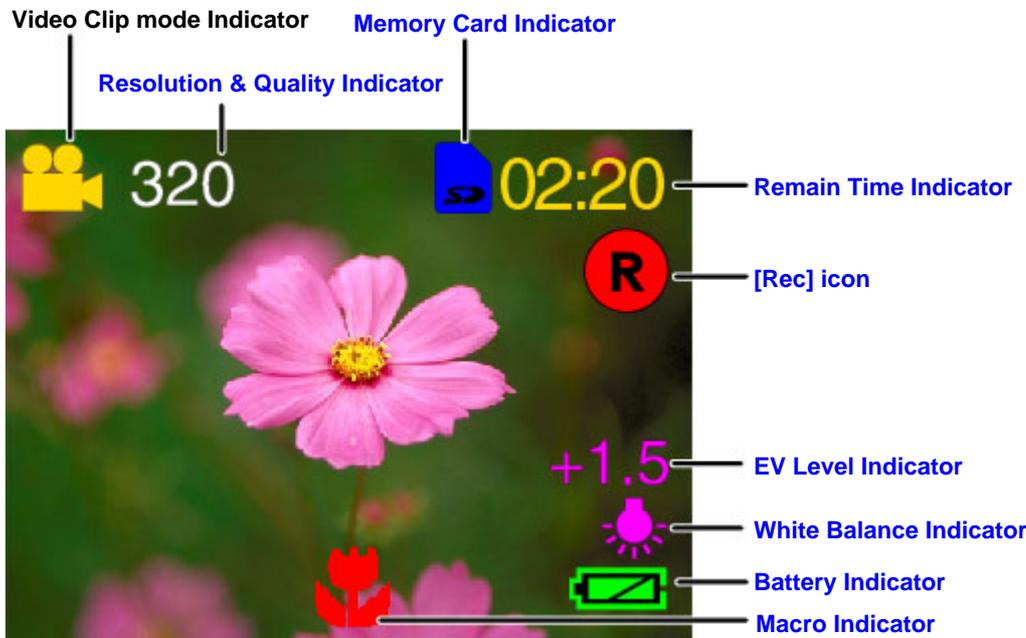


**1. Resolution & Quality Indicator**

320     Video Clip Mode has only one resolution of 320x240.

**2. Memory Card Indicator**

Appears when SD Card is inserted.

Appears when MMC card is inserted.

No Indicate     Will not be displayed when no memory card is being inserted. (Uses internal memory.)

**3. Remain Time Indicator**

Remain movie time which is display by Count down.

### 4. [Rec] icon

Appears when recording Video Clip to indicate that recording is in progress.

### 5. EV Level Indicator

Adjust the EV Level by EV & White Balance setting, and the adjusted value will be displayed.
[-2.0 - +2.0]
It is not displayed at default value [0].

### 6. White Balance Indicator

Adjust the White Balance by EV & White Balance setting, and the adjusted value will be displayed.
[🔆 🏢 ☁ 🔅]
It is not displayed at default value "AUTO".

### 7. Battery Indicator

| | |
|---|---|
| 🔋 | Battery Life > 40% |
| 🔋 | 20% < Battery Life < 40% |
| 🔋 | 10% < Battery Life < 20% |
| 🔋 | Battery Life < 10%. Status Led flash 5 sec and then power off. |

### 8. Macro Indicator

It is displayed when the Normal ▲/Macro ♥ switch dial is set to Macro ♥.
When set to Macro, it is possible to focus the camera on the subject in the proximity of about 45 cm.

---

### Shooting Basics



**Procedures:**
1.  Get the camera ready. (Refer to "Getting Started")
2.  Toggle on the [MODE] button to select the Video Clip Mode [🎬].
3.  Adjust the Normal ▲/Macro ♥ switch dial to either Normal ▲ or Macro ♥ to suit the distance of the subject.
4.  Press the shutter button to start recording.
5.  Press the shutter button again to stop recording.
6.  To continue shooting, repeat the above steps 4 to 5.

Video Clip recording in progress

Remain time for Recording (in sec.)
[Rec] icon
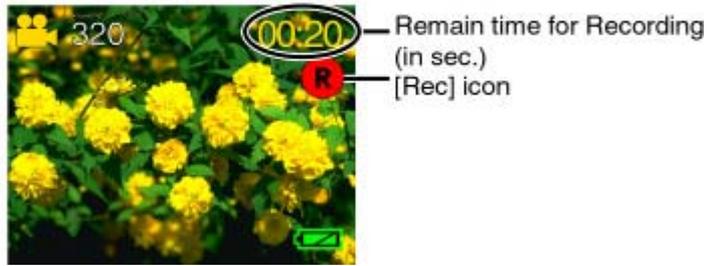
## Notes:

- When the storage memory is full, you may either erase the video clips that are no more required, or insert a new memory card.
- The remaining shooting time shown on the LCD monitor is an approximate value based on the currently accessed memory size.
- The actual number of seconds available for shooting also depends on the shooting conditions. The value does not necessarily decrease by the second. Also, upon turning on the camera, memory adjustment is made and the available time may actually be more than when the camera was last turned off.
- When you take pictures in bright locations or in clear fine weather, lines may appear on the monitor. This is not a malfunction.
- Press the shutter button down steadily.
- When the status indicator is lit, shooting/replay is not possible. Wait until the light goes off. (After shooting a video clip, you would have to wait a little while for the pictures to be stored into memory. A few seconds is also required to load the images from the memory to the LCD monitor for replay).
- Never open the Battery/Memory Card compartment door when the status indicator is lit for this may cause damage.
- Please format new Memory cards with this camera before using them.
- In the Video Clip mode, the following functions are not possible.
  * Voice/sound recording.
  * Use of flash.
  * Self-Timer.
  * Zoom.
  * Image Quality setting. (The Video Clip mode resolution is fixed at 320x240.)
  * Display ON/OFF.
- We recommend that you take some test shots to get accustomed to the camera before you actually start.
- We cannot bear any responsibility for an inability to record or replay material normally, in the event of a problem with this camera.
- Store backups of important video clips in eg. your personal computer. We cannot bear any responsibility for any loss or alteration to the images stored in the camera's internal or external memory.
- It is prohibited to use video clips taken with this camera for commercial purposes without the consent of the copyright owner.
- Do not turn the Normal ▲/Macro ♥ switch dial unnecessarily. It may become malfunction.
- Please take note not to touch the lens when turning the dial.

## PLAY / ERASE MODE

This mode allows you to replay/erase images/video clips stored in the camera's internal or card memory on the LCD monitor.

### Play Basics:

1. Turn on the camera.
2. Select the Play/Erase mode with the [MODE] button.

[MODE] button

[DISPLAY]/ Up ▲ button

3. The latest captured image (or the starting scene of the latest captured video clip) will be displayed on the LCD monitor. As you press the [DISPLAY]/ Up ▲ button, the LCD screen changes as follows:

### Still Image:

| Image Info. OFF | Image Info. ON | Thumbnail |
|---|---|---|
| [DISPLAY]/Up ▲ button pressed | [DISPLAY]/Up ▲ button pressed | display |

Image number

Memory Card indicator

Resolution & Quality indicator

Play mode

[DISPLAY]/ Up ▲ button pressed

Date & Time of image capture

Battery indicator

[DISPLAY]/ Up ▲ button pressed

Any thumbnail selected
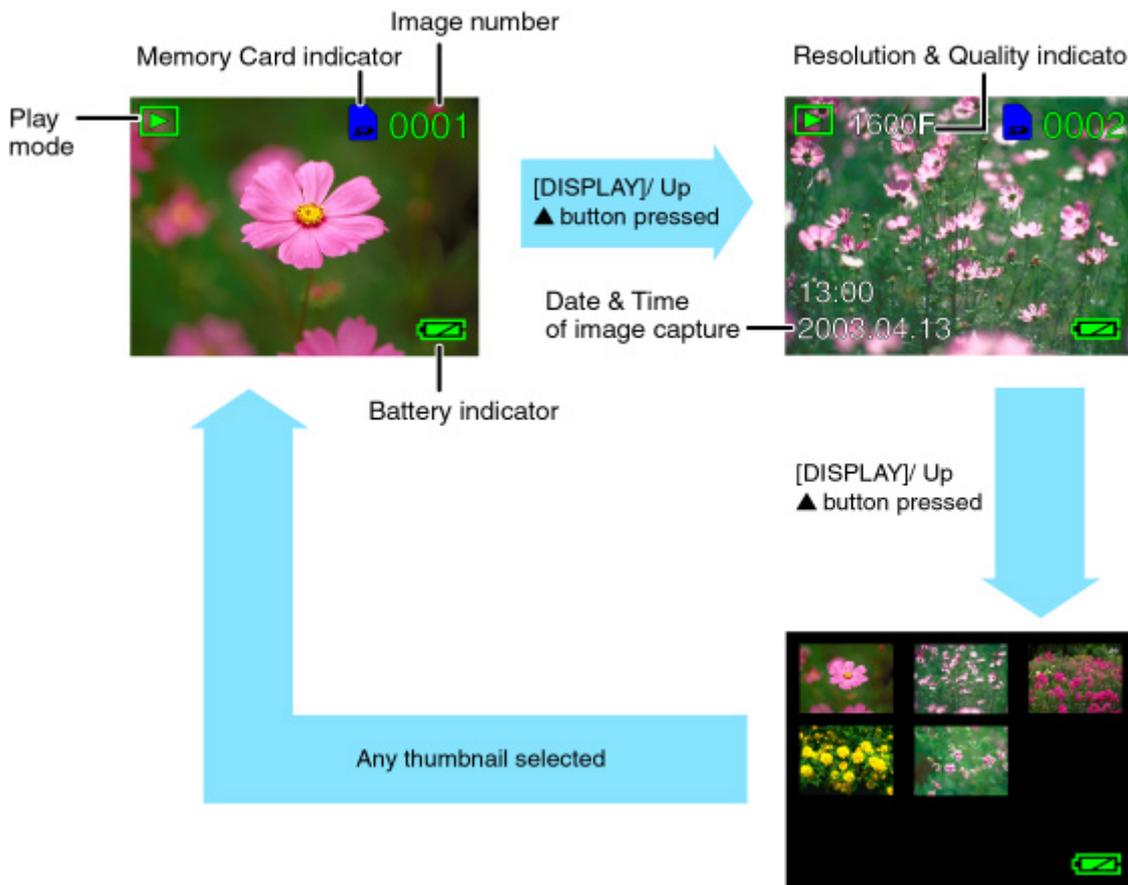
### Video Clip:

Image Info. ON

Thumbnail display
[DISPLAY]/ Up ▲ button pressed

Video Clip indicator

Image number or
Time counter (Playing Video Clip)

Total recording time for
this Video Clip

[DISPLAY]/ Up
▲ button pressed

Any thumbnail selected
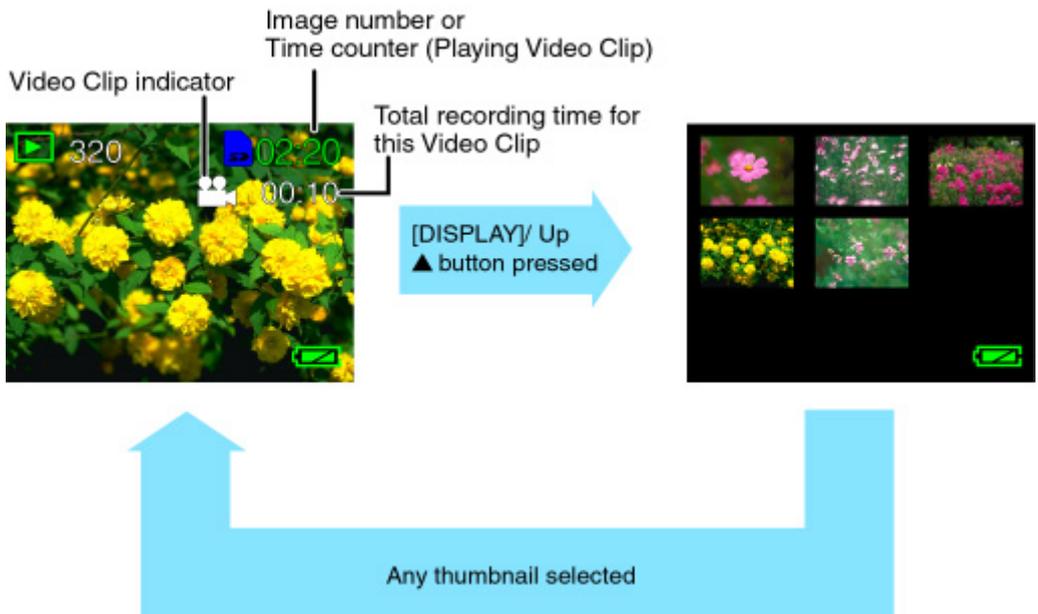
4.  Press the ◄ / ► buttons to go to the next or previous image/video clip.
5.  For video clips only: press the shutter button to play. Press the same button to pause/resume. And press the [OK/ZOOM] button to stop playing.

**Thumbnail display function.**

During the Play/Erase mode, the captured still images/video clips will be displayed on the LCD monitor. Toggle the [DISPLAY]/Up ▲ button until the thumbnail screen appears. The user can select a thumbnail image using the ▲ / ▼ / ◄ / ► buttons. Upon pressing the [OK/ZOOM] button, the chosen image/video clip will be displayed on the LCD screen in full size.

**MENU SETTINGS**

Pressing the [MENU] button in the various mode will display the respective MENU on the LCD monitor:

[MENU] button

**CAMERA MODE**

CAMERA MENU
SETUP MENU
QUICK VIEW
EV&WHITE BALANCE

**VIDEO CLIP MODE**

VIDEO CLIP MENU
SETUP MENU
EV&WHITE BALANCE

**PLAY/ERASE MODE**

PLAY MENU
SETUP MENU
SLIDE SHOW
ERASE
COPY TO CARD ▼

PLAY MENU
DPOF ▲
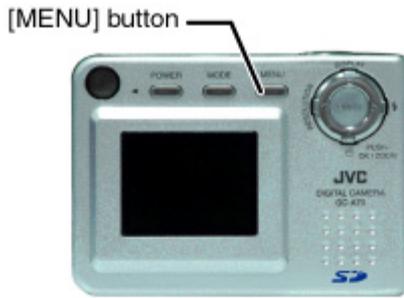
◀ ONE BY ONE ▶
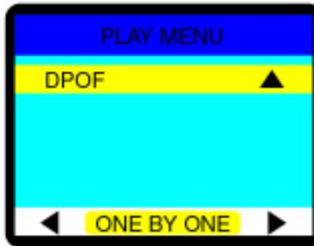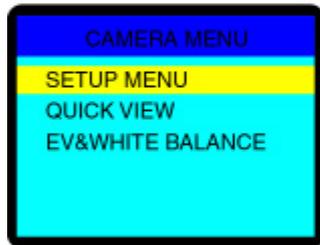
Using the menus, you can perform various settings for your camera.

**Procedures:**
1. Use the ▲/▼ buttons to highlight the desired item.
2. The setting of the item with options displayed at the bottom of the screen can be change by pressing ◀/▶ button. As for setting of the other items, press [OK/ZOOM] button to proceed.
3. Press [MENU] button to return to the previous screen.

# "SETUP MENU" ( 📷 , 🎥 , ▶ )

**SETUP MENU**
LCD BRIGHTNESS
DATE/TIME
LANGUAGE
SOUND ▼
◄ +0 ►

**SETUP MENU**
FORMAT MEDIA ▲
FILE NO. MEMORY
AUTO POWER OFF
LIGHT FREQUENCY ▼
◄ CANCEL ►

**SETUP MENU**
FACTORY SETUP ▲
◄ CANCEL ►
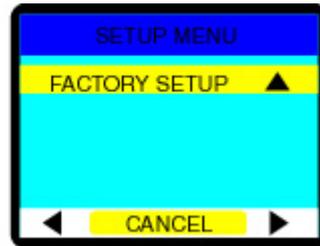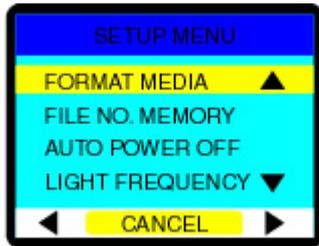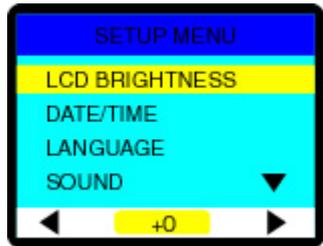
## "LCD BRIGHTNESS"
Adjusts the brightness of the LCD monitor.
Setting value: [-5] to [+5] (Interval = 1)
Default = [0]

## "DATE/TIME"
Sets the Date and Time information. When a shot is taken, the date and time of the shot will be recorded on the image file.

**To set the date and time:**
1.  Go into the "SETUP" menu, select the "DATE/TIME" item and press [OK/ZOOM] button.
2.  The screen shown below will appear on the LCD monitor.

**DATE/TIME**
YEAR       2003
MONTH      05
DAY        01
TIME       08:39
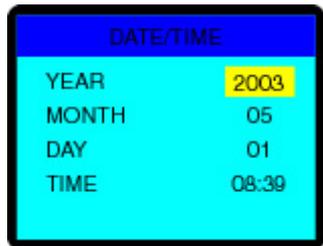
3.  Use the ▲/ ▼ button to select the desired segment and then use the ◄/ ► buttons to correct the setting.
    The time setting can be change in steps of 1 minute by the ◄/ ► button, by pressing and holding the ◄/ ► button for more than 5 seconds it can be change in steps of 30 minutes. This is convenient when there is a significant change in value for time setting.
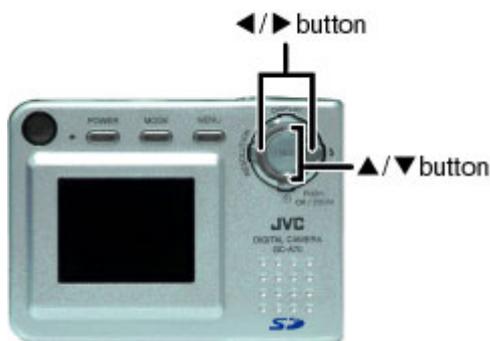
◄/ ► button

▲/ ▼ button

4.  When all settings are complete, return to the MENU screen by pressing the [OK/ZOOM] button.

**Note:**
- Please be sure to correct the date and time setting after battery replacement. To accurately display the date and time information on the LCD monitor, you may need to correct the setting each time you turn on the camera.

## "LANGUAGE"
Sets the display OSD language on the LCD monitor.
The following languages can be selected.

**ENGLISH**              : English

**NEDERLANDS**           : Dutch

| **SVENKA** | : Swedish |
|---|---|
| **FRANÇAIS** | : French |
| **DEUTSCH** | : German |
| **ESPAÑOL** | : Spanish |
| **PORTUGÊS** | : Portuguese |
| **ITALIANO** | : Italian |

## "SOUND"

Enables or disables the sound function.

**"ON"** : Sounds each time the camera is operated.

**"OFF"** : Does not sound when the camera is operated.

## "FORMAT MEDIA"

This function prepares the memory (internal/external) for use by the camera. When a memory card is inserted, the card will be formatted; In the absence of the memory card, the internal memory will be formatted.

**Caution:** Formatting will erase all images currently recorded in the memory card.

**"FORMAT"** : Formats the memory card, erasing all images in the process.

**"CANCEL"** : Cancels the format action.

## "FILE NO. MEMORY"

With this setting set to "ON", the file NO. does not reset even if the file in the memory has been deleted, the number of the next recorded file will run in sequence with the deleted file number. The number runs until DSC_9999, after which it will be set to DSC_0001.

With this setting "ON", the recorded file will not overwrite the previously copied file in the same directory when copying into the PC, thus preventing any accidental deletion.

**"ON"** : Record the lost file number.

**"OFF"** : Reset file number to DSC_0001.

## "AUTO POWER OFF"

This will automatically turn off the camera after the lapse of a certain time interval (set by the user) during which no operation is performed.

**"1 min"** : Power will be turned off after 1 minute.

**"3 min"** : Power will be turned off after 3 minutes. (Default)

**"5 min"** : Power will be turned off after 5 minutes.

**"10 min"** : Power will be turned off after 10 minutes

**"OFF"** : Disables the "AUTO POWER OFF" function.

## "LIGHT FREQUENCY"

Through this setting, you are able to avoid image flicker due to the fluorescent light.

**"50Hz"** : Use this if the light frequency of the fluorescent lamp you are using is 50 Hz.

**"60Hz"** : Use this if the light frequency of the fluorescent lamp you are using is 60 Hz.

## "FACTORY SETUP"

Performing this setting restores all settings except "DATE/TIME" to Default. Moreover, recorded files etc. cannot be deleted.

**"SETUP"** : Restore all parameters to the default setting.

**"CANCEL"** : Cancel the operation.

**Note:**

- The settings for "DATE/TIME", "AUTO POWER OFF", "LANGUAGE", "SOUND", "LIGHT FREQUENCY" and "FILE NO. MEMORY" are retained even after the camera is turned off.

## "QUICK VIEW" ( 📷 )

This feature allows you to view your images on the LCD monitor as soon as they have been taken. After the preview, this camera will return to the Camera mode.

**"ON"**          : Enables "QUICK VIEW"
**"OFF"**         : Disables "QUICK VIEW"

The "QUICK VIEW" setting will be retained even after the camera is turned off.

## Note:

- With "QUICK VIEW" set to "ON", the time interval before the next possible shooting will be prolong after the current shooting.

## "EV & WHITE BALANCE" ( ⬛ , ⬛ )

This screen can be alter by both EV compensation and White Balance.
The altered result reflects the taken images in real time, thereby enabling changing of the setting while confirming the images.
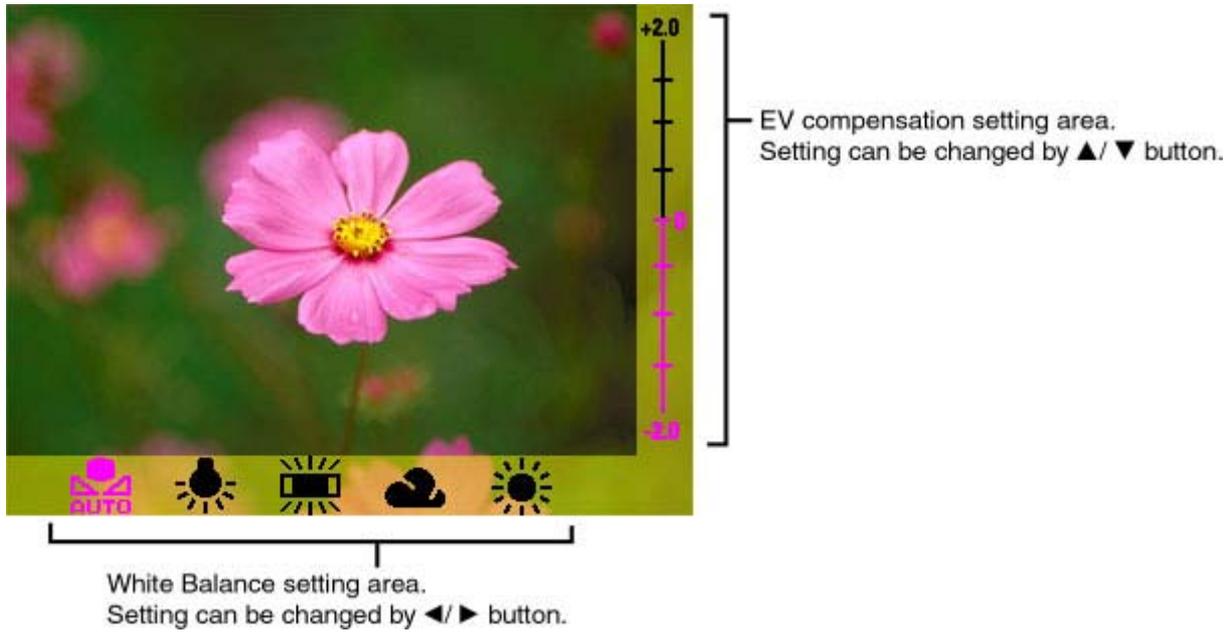


### EV Compensation

When the object is too dark or too bright, the camera adjusts the brightness to make the object look brighter or darker. This is called EV compensation. The range of the exposure compensation that the user can set is from -2.0 EV to +2.0 EV at 0.5 EV steps.

### White Balance

As the intensity of the light changes, our eyes adapt such that white objects will remain white. Digital cameras can also see the white objects as being white by averaging out the light around the object.

You may select from the following settings:

| | | |
|---|---|---|
| **"AUTO"** | 🔲 | : Automatically adjusts the WHITE BALANCE |
| **"TUNGSTEN"** | 💡 | : Tungsten lighting |
| **"FLUORESCENT"** | 🔲 | : Fluorescent lighting |
| **"SHADE"** | ☁ | : Overcast, shaded, twilight or evening skies |
| **"DAYLIGHT"** | ☀ | : Outdoors on a bright day |

After completing the setting, press [OK/ZOOM] button to end the setting.
The changed setting value, except the default value (EV: 0, White Balance: "AUTO"), will be displayed on the LCD monitor as in the following figure.

1600**F**  0001

+1.5 ——— Changed EV value

——— Changed White Balance setting

## "SLIDE SHOW" ( ▶ )

After selecting "SLIDE SHOW" and set the delay time (with the ◀ / ▶ buttons) and pressing the [OK/ZOOM] button will start the slide show. Images hitherto captured will be displayed in sequence, at intervals of the user-set delay time [1, 3, 5, 7, 9 "sec"]. To interrupt the slide show, press the [OK/ZOOM] button.

The delay time setting will be retained even after the camera is turned off.

## "ERASE" ( ▶ )

There are two ways to erase still images/video clips:

### 1. "ERASE ONE"
This will allow you to erase one image/video clip at a time. Use the ◀ / ▶ buttons to choose the desired still image/video clip to be erased.

A confirmation message "ERASE CURRENT?" will appear on the LCD monitor. Pressing the [OK/ZOOM] button will cause the selected still image/video clip to be erased from memory. To abort this action, press the [MENU] button.
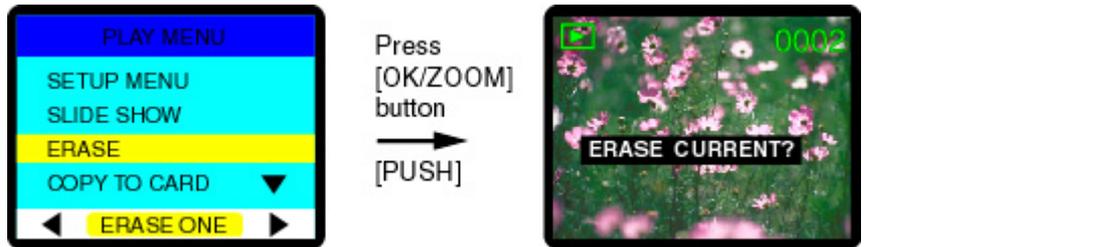


### 2. "ERASE ALL"
This will allow you to erase ALL recorded still images/video clips in the memory at once. Use the ▲ / ▼ buttons to choose the "YES" or "NO" option and then press the [OK/ZOOM] button to confirm.
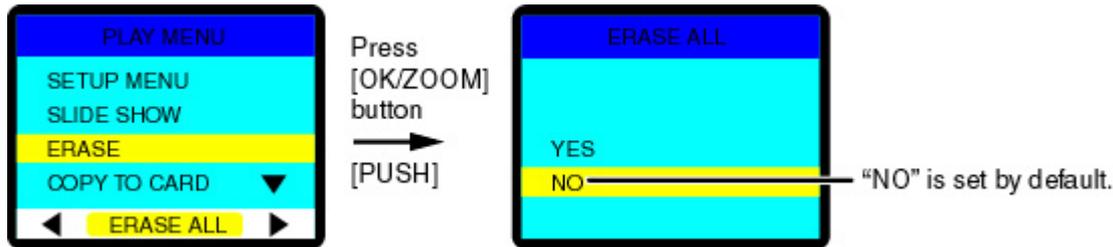


### Note:
If no still image/video clip is stored in the memory, a message "NO IMAGE" appears on the LCD monitor.

## "COPY TO CARD" ( ▶ )

This function allows you to copy all captured still images/video clips from the internal memory to the external memory card.

**"COPY"**   **:** Copies all captured still images/video clips from the internal memory to the external memory card.
If a card has not been inserted in the camera, the message "NO CARD" will be displayed on the LCD monitor.

**"CANCEL":** Cancel the operation.

## "DPOF" (Digital Print Order Format) ( ▶ )

"DPOF" enables you to print the images directly from "DPOF" compatible printers by simply inserting the memory card into the printer after performing the necessary settings.

**"ONE BY ONE"**   : Perform setting to each image one at a time. The following screen will appear, when "ONE BY ONE" is selected and confirmed by pressing the [OK/ZOOM] button.
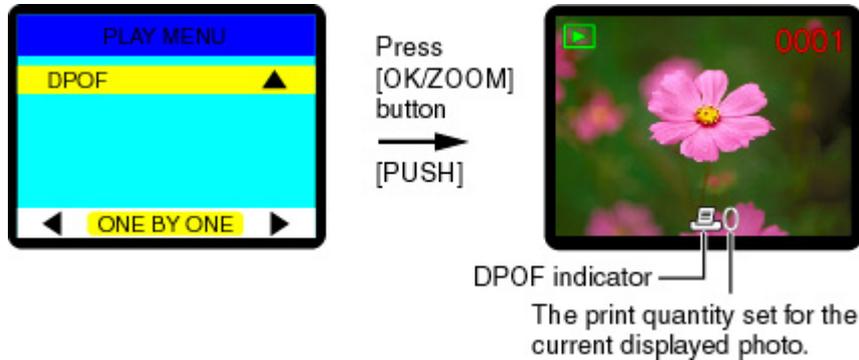
Select the images by ◀/▶ button, and set the print quantity [0 - 9] by ▲/▼ button. Printing cannot be performed if the setting is [0]. The default value is [0]. After completing all image setting, press [OK/ZOOM] button to confirm and return to the Menu screen.

**"ALL 1 PCS"**   : Sets the print quantity of all the images in the memory to 1 PCS, convenient for printing all the captured images one at a time.
Select "ALL 1 PCS" and execute by pressing the [OK/ZOOM] button.

**"DELETE ALL"**   : Deletes all the "DPOF" setting being set.
Select "DELETE ALL" and delete by pressing the [OK/ZOOM] button.

## Note:

- "DPOF" setting is not possible in Video Clip.

The "DPOF" settings are retained even after the camera is turned off.

## TRANSFERRING IMAGE DATA TO THE COMPUTER

Before image data transfer, you need to connect the camera to your computer with the supplied USB cable and Windows 98/98SE users need to install the camera drivers included in the supplied CD-ROM.

**Once the camera is connected to the PC, power will be supplied to the camera through the USB cable.**

### System Requirements
Before installing the Camera Driver and Application software, make sure your system meets the following system requirements:

- Microsoft® Windows® 98/98SE/Me/2000/XP (Pre-installed Model)
- Intel® Pentium® Processor 166 MHz or higher
- Free USB Port
- Minimum RAM: 32 MB (Windows XP: 128 MB)
- 250 MB of available hard disk space
- Color display: 800x600 or better
- CD-ROM drive

### Note:
- Please connect the camera directly to the PC. Camera performance is not guaranteed in the case that the camera is connected to the PC via a USB Hub.

### Connecting the Camera to Your Computer
For Windows 98/98SE users, it is necessary to install the Mass Storage Driver contained in the supplied CD-ROM before connecting the camera to the PC for image data download. For Windows Me/2000/XP users however, this is not necessary. (Proceed to connect the camera to the PC)

**Installation Procedures:**
1. Place the supplied CD-ROM into the CD-ROM drive.
2. A Setup Menu screen will appear on the PC monitor as shown below. Click on "USB Mass Storage Driver install for Windows 98/98SE".



3. Follow the on-screen instructions to complete the installation.
4. Reboot your computer.

**Once you have installed the appropriate Camera Driver(Windows 98/98SE), you are now ready to connect the camera to the PC for download. Follow the procedures below:**
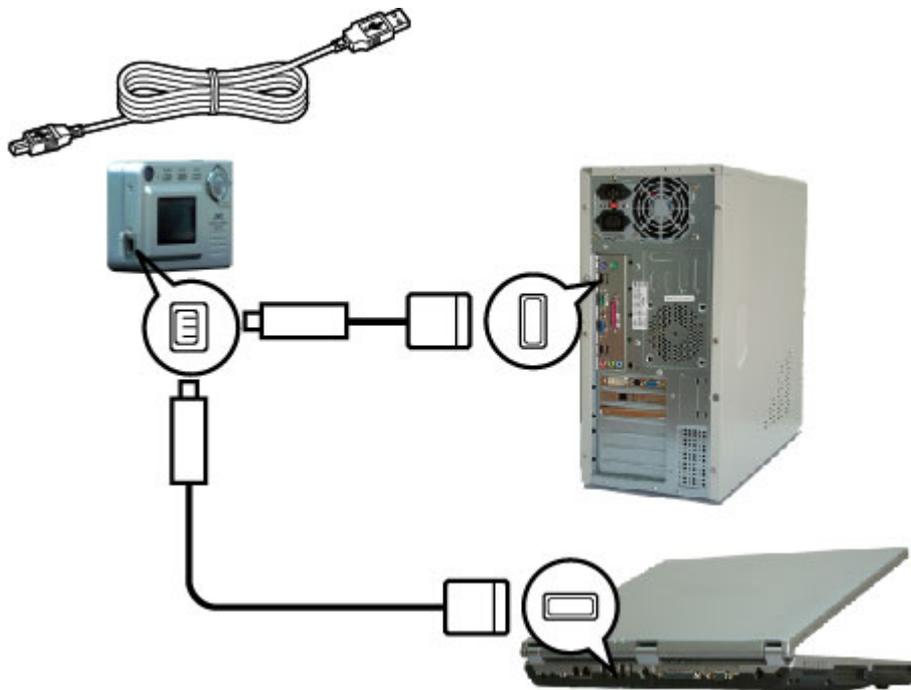
**Procedures:**

1. Turn off the camera.
2. Open the USB port cover. Plug the smaller connector of the USB cable into your camera's USB port.
3. Plug the other end of the USB cable to your computer's USB port.
4. The camera powers ON automatically, and the "USB MODE" screen appears on the LCD monitor as follows:
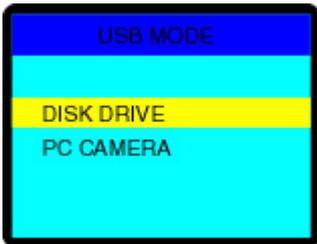


   Select "DISK DRIVE" and press the [OK/ZOOM] button.

5. Your computer will recognize the camera as a newfound hardware. Setup for this new hardware will proceed automatically. This Setup process is performed only once and will not be necessary for subsequent connections. When complete, your camera will be indicated as a "Removable Disk" in your computer's "My Computer" folder.
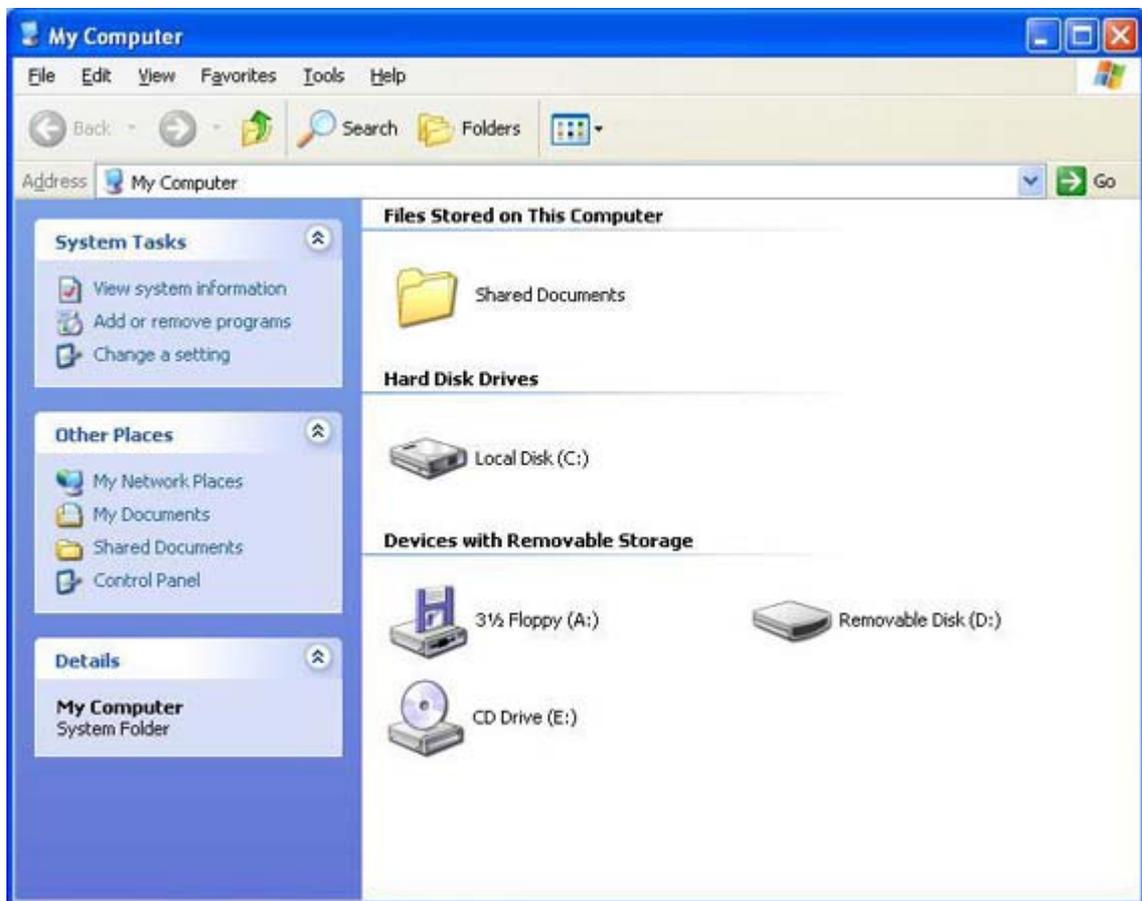
(This screen is from Windows XP)

**Note:**
For Windows XP, the computer will display a message screen as below.
In this case, please click on "Open folder to view files" and proceed by clicking the "OK" button.



(This screen is from Windows XP)

**Downloading Pictures**
1. Click on the "My Computer" icon on your PC screen. You will then see a drive icon labeled "Removable Disk".

2. Double click on "Removable Disk". A new window with a "DCIM" folder icon opens.
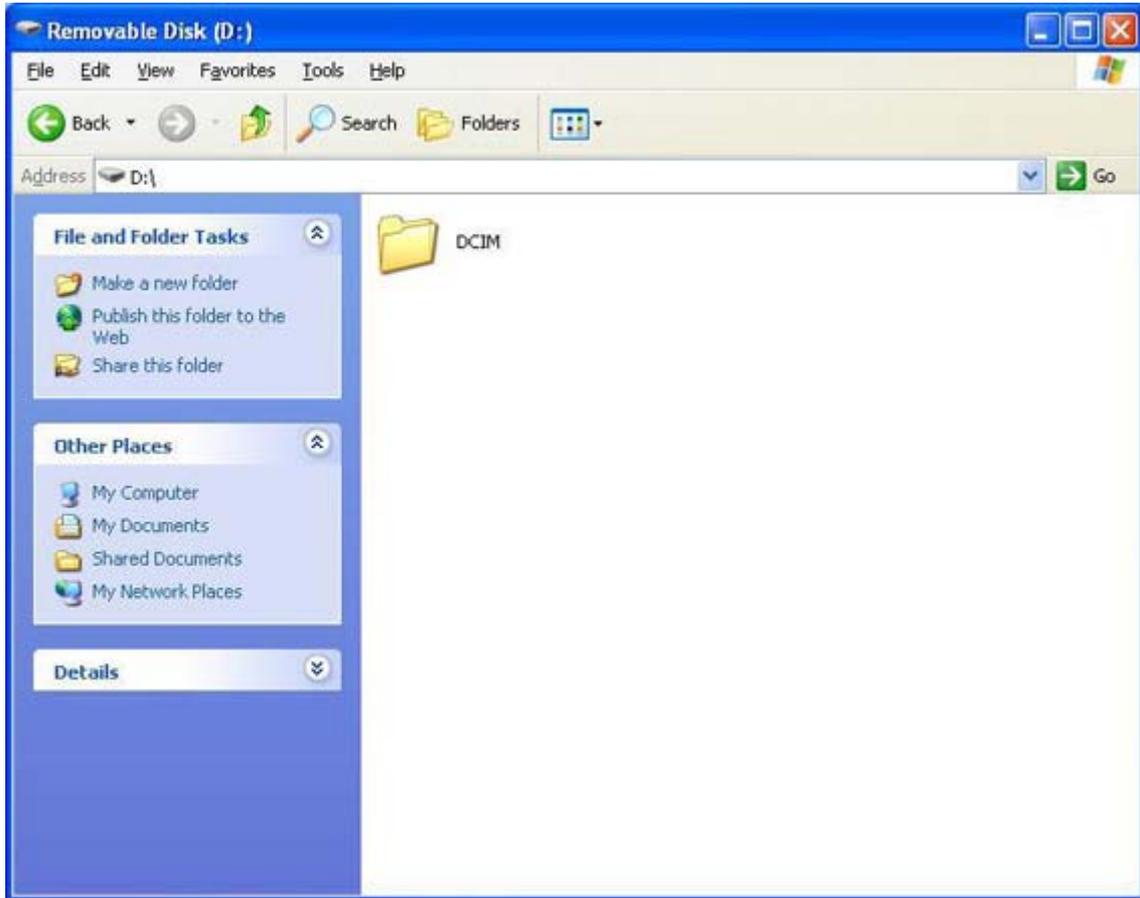


(This screen is from Windows XP)

* If this icon is not displayed, your camera has not been properly connected to the computer. In this case, go to "Connecting the Camera to Your Computer" and repeat the procedures.

3. Double click on the "DCIM" folder icon. A new window with a "***JVCGC" folder icon opens (***represents a number in the range of 100~999). Your recorded images will be in this folder.
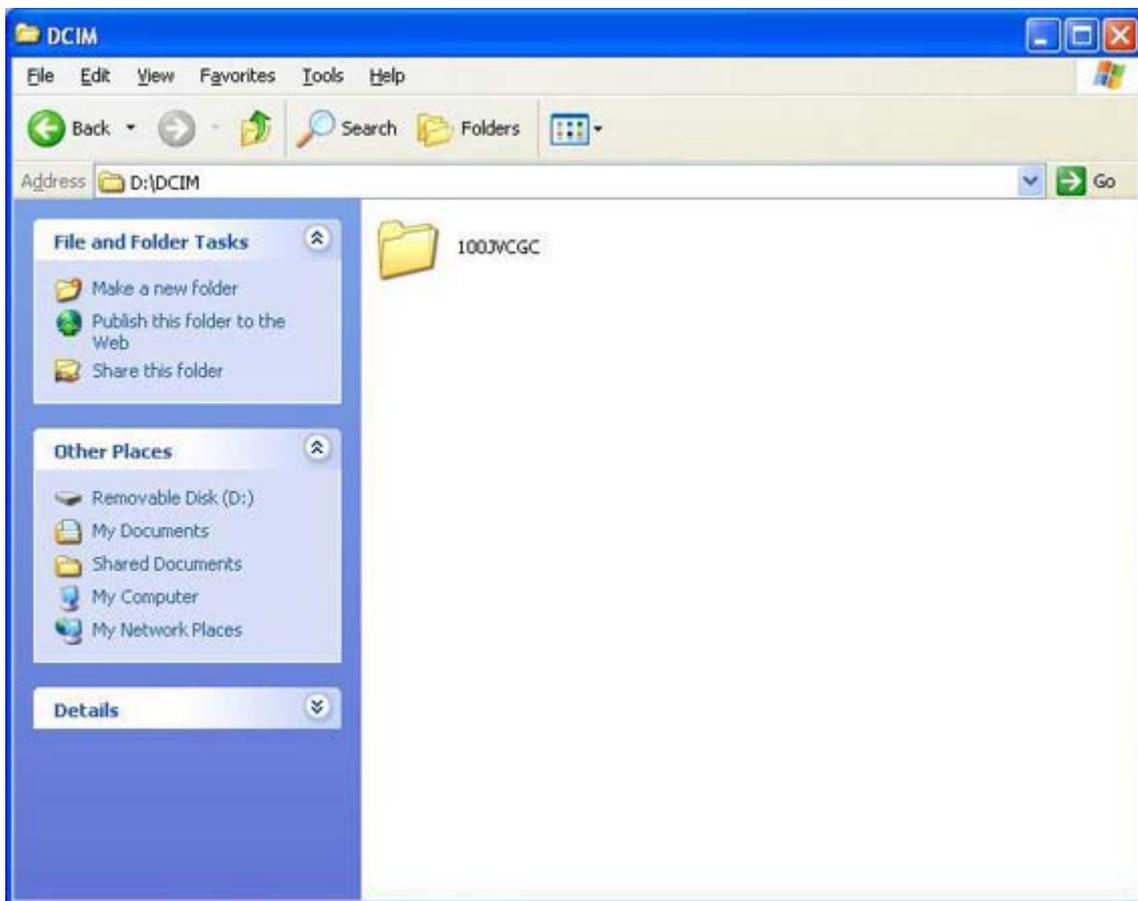
(This screen is from Windows XP)

4. You can then copy the whole folder or specific files in the folder (double click on the icon to reveal the files) into your computer's hard drive, or any other storage media available in your PC system. Just select the folder or files and use the usual "cut" and "paste" functions available in the "Edit" menu.
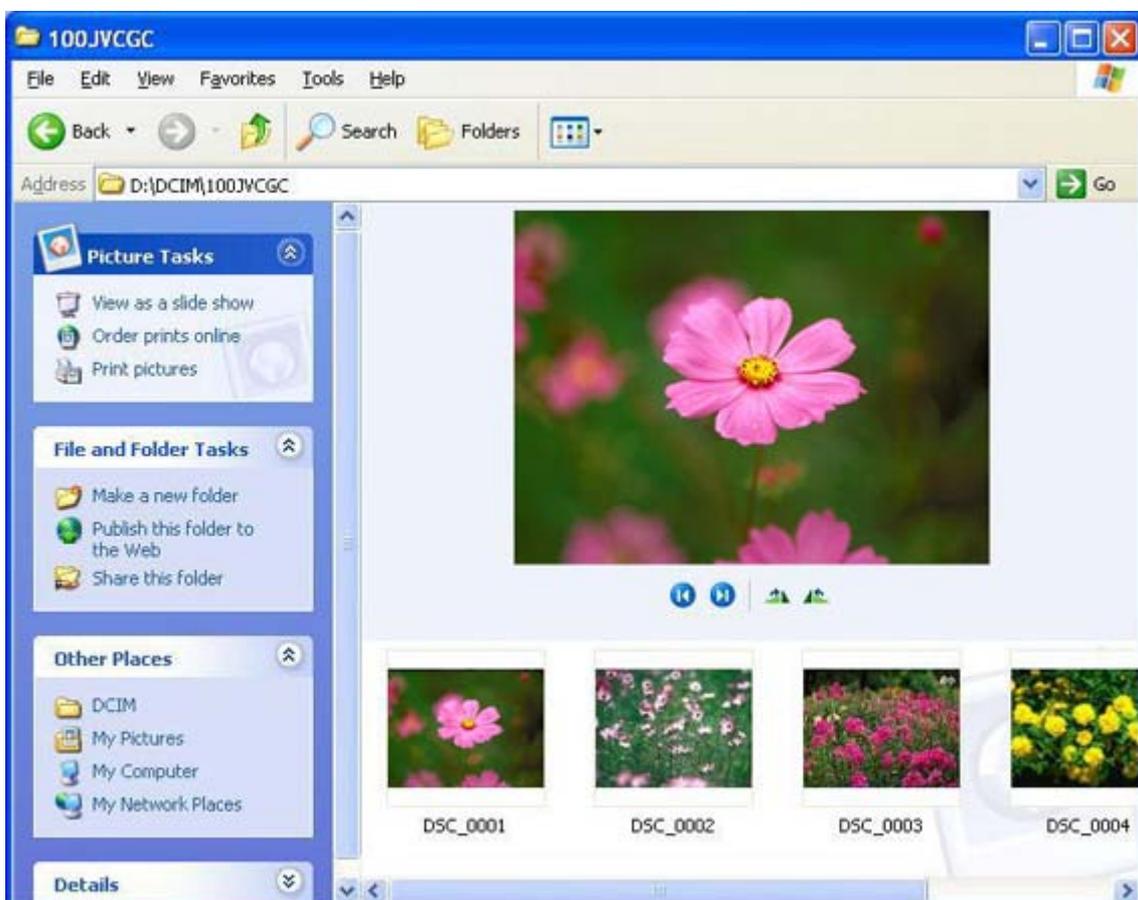


(This screen is from Windows XP)

## Notes:
- While the camera is connected to your computer, the camera will not allow you to capture images. You will also not be able to view the images on the camera's LCD monitor.
- Please refer to your computer's instruction manual to ascertain the procedures for copying and shifting of files.

### Using the Camera as a USB PC Camera
This camera can also act as a video camera for your PC, allowing you to hold videoconferences over the internet or corporate intranet.

Before you start, you will have to install the WebCam Driver into your computer, regardless of your PC's OS version (Windows 98/98SE/Me/2000/XP).

**To install the WebCam Driver:**
1. Place the supplied CD-ROM into the CD-ROM drive.
2. A Setup Menu screen will appear on the PC monitor as shown below. Click on "Webcam Driver Install".



3. Follow the on-screen instructions to complete the installation.
4. Reboot your computer.


**Using your camera as a USB PC camera with Microsoft Netmeeting or Windows Messenger:**
1. Make sure you have installed the WebCam Driver.
2. Make sure that your camera is turned off. Then, connect the USB cable to the camera and your computer's USB port. The camera powers ON automatically.
3. The "USB MODE" screen appears on the LCD monitor as follows:
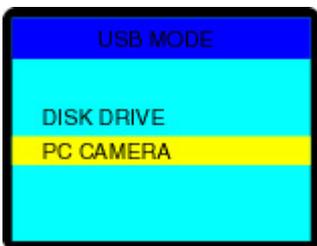


Select "PC CAMERA" and press the [OK/ZOOM] button.

4. Your computer will recognize the camera as a newfound hardware and Setup will proceed automatically. This Setup process is performed only once and will not be necessary for subsequent connections.

   **Note:**
   For Windows XP, the computer will display the warning screen as below several times when recognizing the camera. In this case, please click the "Continue Anyway" button.

**Hardware Installation**

⚠ The software you are installing for this hardware:

JVC GC-A70 WebCam

has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)

**Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.**

[Continue Anyway]  [STOP Installation]

(This screen is from Windows XP)

The setup menu and message used for the explanation are in English. Please be aware that different message will appear if other language is selected during software installation.

5. Launch the PC Camera Application software (Microsoft Netmeeting/Windows Messenger) and follow the instructions displayed on the computer monitor.
6. Start video conferencing.
7. After the video conference, be sure to switch off the computer first before disconnecting the camera from it.

**Notes:**
- The PC camera Application software is not included in the CD-ROM. Use a commercially available videoconferencing software such as the above mentioned Microsoft Netmeeting or Windows Messenger. For more information about video conferencing software, please refer to the respective software's help functions.
- To videoconference over the Internet or LAN, you would also need networking devices such as modems, speakers and microphones.
- The other party you wish to videoconference with must also have Microsoft Netmeeting/Windows Messenger running in order to start the videoconference.

## TROUBLESHOOTING

**When the camera does not work:**

| Possible cause | Rectifications |
|---|---|
| Power unintentionally cut off. | Press the [POWER] button to turn the camera on. |
| Power cut off due to camera's Automatic Power Off feature. | Press the [POWER] button to turn the camera on. |
| Battery direction is wrong. | Rearrange the batteries in the correct position. |
| The batteries are weak. | Replace batteries. |
| Battery performance deterioration due to low temperature. | Warm up the batteries to some extent by, for example, rubbing them against a soft surface before use. |
| Camera is connected to PC. (When connected to PC, the camera will not be able to shoot). | Detach the camera from the PC after image-data download. |
| Condensation inside camera. | Dry the camera before turning on the power. |

**When the flash does not work:**

| Possible cause | Rectifications |
|---|---|
| Camera is set at the Video Clip or Play mode. | Set camera to Camera mode. |
| Flash is set to off. | Set to Auto/Red-eye. |
| Shooting in bright light situation. | The flash does not fire in bright light situation. |

**When the LCD Monitor does not show well:**

| Possible Cause | Rectifications |
|---|---|
| The camera is held under bright sunlight. | Use your hand to cover the monitor from sunlight. Alternatively, use the viewfinder. |
| The LCD monitor is not activated. | Press the [DISPLAY]/Up ▲ button to activate the monitor. |

**When you are unable to shoot:**

| Possible Cause | Rectifications |
|---|---|
| Power is low or off. | Check battery level. Replace if necessary. |
| Flash re-charge after shooting is not yet complete. | Release the shutter button, wait till the Status Indicator is unlit, then shoot again. |
| Internal or card memory full. | Erase the images no longer required, transfer them to your PC or insert a new memory card. |
| The card is write protected. | Use a new card or disable the write protection. (only for SD card) |

**When you are unable to replay the images:**

| Possible Cause | Rectifications |
|---|---|
| Power is low or off. | Check battery level. Replace if necessary. |
| Camera is set to the wrong mode. | Set camera to Play mode. |
| The pictures have not been saved in memory. | Follow the instructions in this manual, shoot again and replay. |

**When you are unable to Format or Erase:**

| Possible Cause | Rectifications |
|---|---|
| The card is write protected. | Disable the write protection. (only for SD card) |

**When photographs turn out too bright:**

| Possible Cause | Rectifications |
| --- | --- |
| The subject was too bright. | Adjust the exposure or change the angle of shot. |

### When photographs turn out too dark:

| Possible Cause | Rectifications |
| --- | --- |
| The flash was obstructed by fingers or other objects. | Adjust the angle of shot and remove obstructive objects. |
| The subject was too far from the camera for the flash to be effective. | Move closer to the subject. Alternatively, turn off the flash and use a tripod stand. |
| Flash is set to off. | Set to Auto/Red-eye. |

### When the color of the Images appear odd:

| Possible Cause | Rectifications |
| --- | --- |
| No white area on the subject. | Introduce a white item or set the White Balance according to the lighting condition. |
| White Balance setting incorrect. | Set the White Balance according to the lighting condition. |

### When parts of the images are missing:

| Possible Cause | Rectifications |
| --- | --- |
| The lens is partially covered by fingers or the strap. | Remove obstructing fingers or strap from lens. |
| Shooting distance too close. | Use the LCD monitor and the zoom function. |

### When the image is out of focus:

| Possible Cause | Rectifications |
| --- | --- |
| Camera movement during still image capture. | Press the shutter button down steadily. |
| The lens is dirty. | Use a lens blower (sold in the market) to rid the lens of dust. Then wipe with lens cleaning paper. |
| Photographer was standing in front of the camera when pressing the shutter button (Self-Timer shots). | Do not stand in front of the camera. Press the shutter button while looking through the viewfinder. |
| Flash is off even when the lighting condition is poor. As exposure time is prolonged, camera movement will cause the image to be off focus. | Either use a tripod stand, or use the flash. |
| The subject is too near. | Shoot at a distance of more than 1.9 m. |

## CAMERA SPECIFICATIONS

| | |
|---|---|
| **Image Sensor** | 2.0 Megapixels CMOS |
| **Color** | 10-bit Color (RGB) |
| **Image Resolution & Quality** | Camera mode:<br>1600x1200 pixels Fine quality<br>1600x1200 pixels Normal quality<br>1280x960 pixels<br>640x480 pixels<br>Video Clip mode:<br>320x240 pixels |
| **Memory** | Internal: 8 MB<br>External: SD or Multimedia Card |
| **File Format** | JPEG (EXIF 2.1), DPOF, AVI (Motion-JPEG) |

**Number of storage (Initial Estimated Storage with 8MB internal memory)**

Camera mode:

| | |
|---|---|
| 1600x1200 pixels Fine quality | (Approx. 10 pcs) |
| 1600x1200 pixels Normal quality | (Approx. 20 pcs) |
| 1280x960 pixels | (Approx. 40 pcs) |
| 640x480 pixels | (Approx. 80 pcs) |

Video Clip mode:

| | |
|---|---|
| 320x240 pixels | (Approx. 46 sec) |

- The number of recordable images also varies with the subject and the capacity of the memory card.
- The number of remaining images that can be recorded, shown on the LCD monitor, will decrease by 1 every time you take a new shot. If, however, the file size is too minimal, the number will remain the same after the shot is taken. By the same token, the number will decrease by more than 1 if the file size is too large.

| | |
|---|---|
| **USB Frame Rate (WebCam)** | 320x240 (USB1.1) |
| **Recording Media** | SD or Multimedia card |
| **Lens** | Fixed focus (2x, 3x, 4x digital zoom), F 2.8<br>f = 9.96 mm (equivalent to 51.3 mm on a 35-mm still camera) |
| **Focus Range** | Normal: 1.9 m ~ infinity, Macro: 40 cm ~ 50 cm |
| **Shutter Speed** | 1/15 ~ 1/1000 seconds |
| **Exposure Control** | Auto<br>Manual: 0.5 EV step, -2.0 ~ +2.0 |
| **White Balance** | Auto / Sun / Shade / Fluorescent / Tungsten |
| **Flash** | Built-In: Auto, Flash Off, Red-eye reduction |
| **Self-Timer** | 10 seconds delay, 2 seconds delay |
| **Software** | MGI Photo Suite IV SE and Photo Vista 2.02 |
| **Language** | English, French, Spanish, Traditional Chinese, German, Dutch, Swedish, Portuguese, Italian |
| **LCD monitor** | 1.5" color TFT LCD |
| **Connectors** | USB port (Mini B type) |
| **Weight** | About 110 g (without battery and SD card) |

**Dimension**                    Approx. 82 mm x 60 mm x 30.5 mm
                                 [3.2 inches (W) x 2.4 inches (H) x 1.2 inches (D)]


* Design and Specifications are subject to change without notice.