Welcome:

Dear user, thanks for purchasing this product.
Much investment in time and effort has gone into its development, and it is our hope that it will give you many years of trouble-free service.

Safety Notice:

1. Do not drop, puncture or disassemble the device; otherwise the warranty will be voided.
2. Avoid all contact with water, and dry hands before using.
3. Do not expose the device to high temperature or leave it in direct sunlight. Doing so may damage the device.
4. Use the device with care. Avoid pressing hard on the device.
5. For your own safety, avoid using the device when there is a storm or lightning.
6. Do not use batteries of different specifications. Doing so may lead to the potential for serious damage.
7. Remove the battery during long periods between usage, as a deteriorated battery may affect the functionality of the device.
8. Remove the battery if it shows signs of leaking or distortion.
9. Use only the accessories supplied by the manufacturer.
10. Keep the device out of the reach of infants.
11. Risk of explosion if battery is replaced by an incorrect type.
12. Dispose of used batteries according to the instructions.

FCC Compliance Statement:

This device complies with Part 15 of the FCC Rules. Operation is subjected to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with 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 residential installations. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television equipment 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.
-Move the equipment away from the receiver.
-Plug the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/television technician for additional suggestions.

You are cautioned that any change or modifications to the equipment not expressly approved by the party responsible for compliance could void Your authority to operate such equipment.
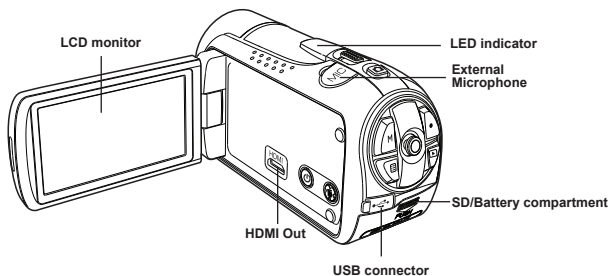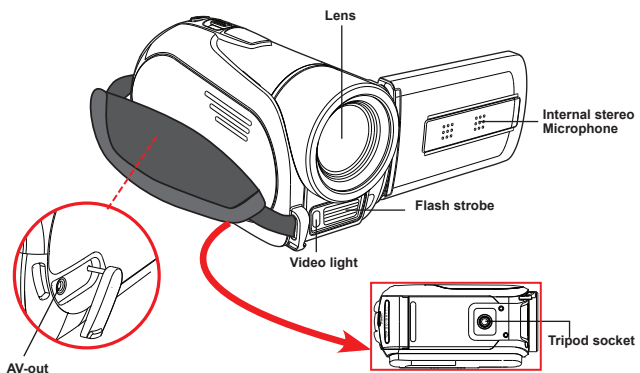
If the time arises to throw away your product, please recycle all the components possible.

Batteries and rechargeable batteries are not to be disposed in your domestic waste! Please recycle them at your local recycling point.
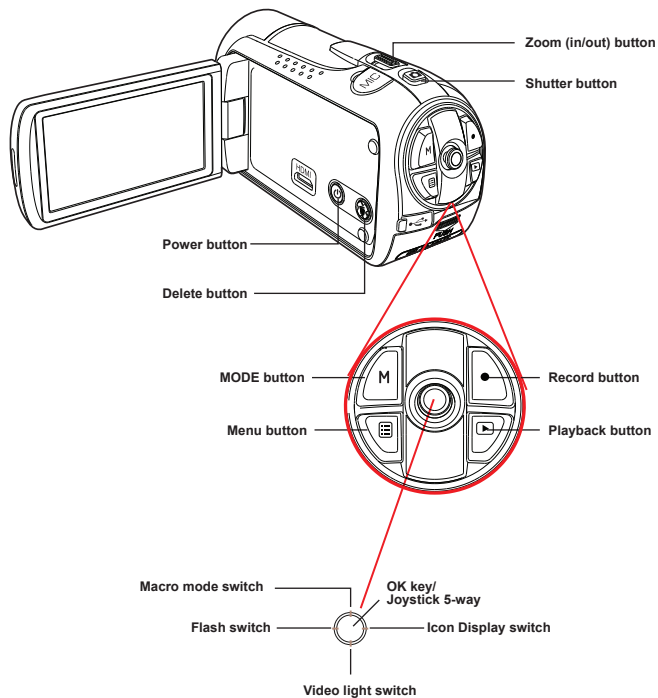
Together we can help to protect the environment.

Getting Started

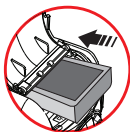## ● Knowing your camcorder parts

Lens

Internal stereo Microphone

Flash strobe

Video light

AV-out

Tripod socket

LCD monitor

LED indicator

External Microphone

SD/Battery compartment

HDMI Out

USB connector

● Buttons Introduction

Zoom (in/out) button

Shutter button

Power button

Delete button

MODE button — Record button

Menu button — Playback button

Macro mode switch — OK key/
Joystick 5-way

Flash switch — Icon Display switch

Video light switch

Installing the battery

1. Press the **Push** button first and slide the battery compartment cover down.

2. Place the accessory Li-Ion battery into the compartment until it is locked by the latch. Note that the metallic contacts must be aligned with the contacts in the compartment.

3. After the battery is properly installed, close the battery compartment cover.

Charging the battery

Please charge the battery for at least 8 hours prior to its first use. Afterwards, it will take approximately 3 hours to fully charge the battery by AC adapter.

1. Connect the cable.
   Connect one end of the supplied AC adapter to the USB port of the camcorder and the other end to a wall outlet.
   OR
   Connect one end of the supplied USB cable to the USB port of the camcorder and the other end to a powered PC. Make sure the camcorder is powered off.

2. The charging LED turns red and the charge starts.

3. When the battery pack is fully charged, the charging LED will turn green.
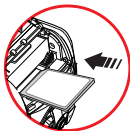
> ❶ When using a PC to charge the battery, do not power on the camcorder, or the charge will stop.

Inserting a memory card (optional)

To insert a memory card, do the following:
(1) Press the **Push** button first and slide the battery compartment cover down.
(2) Gently push the card with the connectors (golden fingers) to the top until the card reaches the bottom of the slot.
To remove the memory card, gently push the card and it will pop up. Then pull the card out of the slot.

Turning on/off your camcorder

Open the LCD monitor or press and hold down the **Power** button for 1 second to turn on the camcorder.

To turn off the camcorder, press and hold down the **Power** button for 1 ~ 3 seconds or close the LCD monitor.

> ❶ If the camcorder stays inactive for a long period of time, it may automatically shut down due to the Auto-Off setting.

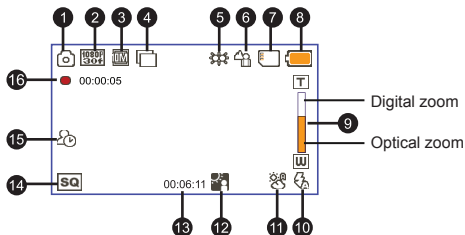# ● Setting language

1. Power on the camcorder.
2. Press the **MODE** button to enter the **MODE** menu.
3. Use the **Joystick** switch to select the **Settings** mode and press **OK** to enter the menu screen.
4. Use the **Joystick** to select the **Language** item, and then Press **OK** to confirm.
5. Move the **Joystick** up/down to select a language.
6. When done, press **OK** to confirm the setting.

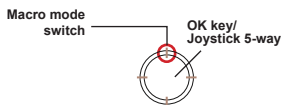**OK key /
Joystick 5-way**

● Reading LCD indicators

Digital zoom

Optical zoom

1	Mode icon	9	Zoom ratio indicator
2	Video resolution	10	Flash
3	Picture resolution	11	White balance
4	Continuous shot	12	Backlight compensation mode
5	Video light mode	13	Remaining recordable time
6	Focus	14	Video quality mode
7	Internal memory/SD card inserted	15	Selftimer
8	Battery life	16	Recording time

Basic Operations

● **Recording a video clip**

1. Adjust the focus:
   Normally the camcorder can auto focus without adjusting focus. If you want to take close-up pictures, you can press **Up** on the Joystick to switch into Macro mode. (🌷).

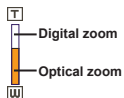   **Macro mode switch**

   OK key/ Joystick 5-way

2. Adjust the zoom:

   Move the **Zoom** button left or right to zoom in or zoom out.
   As you zoom in all the way, the zoom bar may hesitate at the line.
   If you push **Zoom in** (T) again you will enter Digital zoom.

   Zoom (in/out) button
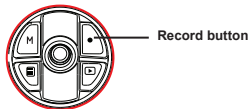
   The camcorder has a built-in 120X Zoom (12X optical zoom and 10X digital zoom), allowing you to capture great quality images, even at a distance.

   T

   Digital zoom

   Optical zoom

   W

3. Press the **Record** button to start recording.

4. Press the **Record** button again to stop recording.

5. While recording, press the ▷ button to pause recording, and press the ▷ button again to resume recording.

   Record button

6. **Picture in Video (PIV)**

   During recording, you can capture images by pressing the **Joystick** switch. The image you capture will be at the resolution you have set for still pictures.

7. **Electronic Image Stabilization (E.I.S.) / Gyroscopic Video Stabilization (G.V.S.)**

   The camcorder has built-in electronic stabilization to help prevent shaky video footage.

You may select the appropriate video resolution for your situation by pressing the **Menu** button, then use the Joystick to select **Video Resolution** and then click **OK.**

The following recommendations highlight suitable situations for each different Video Resolution setting:

**OK key /
Joystick 5-way**

1) 1080i 60f (1920x1080): allows you capture high-speed motion at 60f per second with crystal-clear quality, while minimizing delay and instability.

2) 1080P 30f (1920x1080): allows you to capture crystal-clear video that you plan to playback later on your HDTV.

3) 720P 60f (1280x720): allows you to capture high speed motion at 60 frames per second with standard 720P HD quality.

4) 720P 30f (1280x720): for recording standard HD videos.

5) WQVGA 60fps (432x240): allows you to capture extreme high-speed motion at 240 frames per second that you can later playback in slow motion to analyze each individual frame.

> ❶ The zoom function is not available in macro mode.
>
> ❶ The digital zoom function is not available in WQVGA 240f.
>
> ❶ It's normal that the camcorder will feel slightly warm with continuous use / recording due to its high performance.
>
> ❶ 1080i is interlaced scan, which typically produces 60 fields per second. 60 fields automatically converts to 30 frames when viewed on PC player. So the PC player information will indicate that your video is 30 frames per second instead of 60 fields per second.

● **Recording a voice clip**

1. Power on the camcorder.

2. Press the **MODE** button to enter the **MODE** menu.

3. Use the **Joystick** switch to select **Voice Recorder** mode and press **OK** to enter the menu screen.

4. Press the **Record** button to start recording

5. Press the **Record** button again to stop recording.
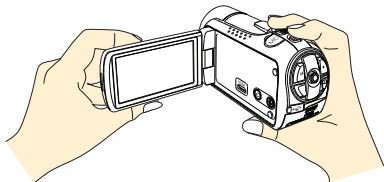
● **Taking a still picture**

1. Adjust the focus:
   Normally the camcorder can auto focus without adjusting focus. If you want to take close-up pictures, you can push the Joystick button up to switch to Macro mode (🌼).
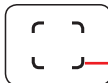
2. Zooming:
   Move the **Zoom** button up or down to zoom in or zoom out.

3. For better image quality, it is recommended that you hold the LCD panel steadily to avoid the image from blurring due to hand-shake.

4. Press the **Shutter** button half way down and hold so that the camcorder can auto-focus. When the focus frame turns green, press the button fully down to take a still picture.

focus frame

> ❶ The still picture aspect ratio is 16:9.

5. When taking long distance pictures with the digital zoom function, the use of a tripod is recommended to minimize the slight blurring that can occur as a result of subtle hand-shake.

▶ **Continuous shots**

While in preview mode you can capture continuous images (at video resolution) by "clicking" the Joystick down (**OK** key). The camcorder will continuously capture approximately ten images per second until you release the **Joystick**, or the memory becomes full.

> ❶ Still picture and continuous shot function are not available in WQVGA 240f.

**OK key /
Joystick 5-way**

● **Playing back your recordings**

1. Press the **MODE** button and use the **Joystick** to switch to "**My Works**" mode.

2. There are two folders below **My works: Video, Picture**. Select Video, or Picture, and then press the **OK** key to enter the index mode.

3. Operations in playback mode:

File type	How to...	Action
Index mode Full-screen mode 	Shift between Index mode and Full-screen mode	In Index mode, press the **OK** key to switch to Full-screen mode. In Full-screen mode, press the **MODE** button to switch to Index mode.
	Shift between files	1. In Index mode: Use the **Joystick** to move the highlight box. 2. In Full-screen mode: Use the **Joystick** to move left or right.
Video	Start playing	When selected (in full-screen mode), the file automatically starts playing.
	Pause/Resume playback	During playback/While paused, press the **OK** key.
	Adjust the volume level	During playback, move the **Joystick** up or down.
	Stop playing	During playback, press the **MODE** button.
	Return to the preview screen	Press the **Shutter** button.
	Fast forward	During playback, move the **Joystick** to the right. To stop, press the **MODE** button.
	Fast backward	During playback, move the **Joystick** to the left. To stop, press the **MODE** button.
	Zoom	During playback, use the Zoom button to zoom in/out.
	Adjust playback speed	Press **OK** key to pause, then use the **Joystick** to move up/down to adjust the playback speed to x1, x2, x1/2, x1/4, x1/8, or x1/16 speed. Press **OK** key again to resume playback.
Picture	Zoom in/out	Move the **Joystick** move up or down to Zoom in/out.
	Lock/Release zoom ratio	When the zoom ratio is greater than 1.0x, press the **OK** key.
	Browse the enlarged picture	When the zoom ratio is locked, use the **Joystick** to browse the picture.

❶ If you want to preview the videos/pictures that you have just recorded, press the ▶ button to initiate full screen instant playback. If you want to exit, press the ▶ button or MODE button.

● **Playing back your recordings on PC**

▣ **Installing software**

Please note that your recorded videos are .mov format. You may need a special program such as QuickTime 8.x (or above) to view the recordings on your PC. Installing the Total Media Extreme software that is included on the bundled CD is another alternative.

▣ **Connecting to PC and Saving files**

After the software is properly installed on your PC, please turn on the camcorder and connect the camcorder (with SD card inserted) to your computer with the USB cable.

> ❶ If recorded with 720P 30f (or above) mode, an additional file in smaller size (WQVGA 30f) named filexxxx_SMALL.mov will be generated automatically, which allows users to share files via email or easily upload to the internet. In addition, the smaller size file is also iPod compatible.
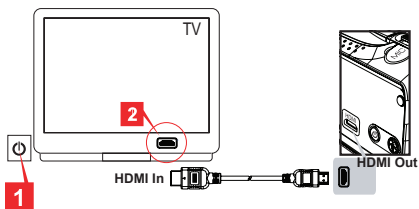
● **System Requirements**

System requirements are different in different video resolution settings:

Video Resolution	PC system requirements
1080i 60f (1920x1080) @60fps	OS = Windows XP SP2, Vista or above
1080P 30f (1920x1080) @30fps	CPU = Pentium 4 3.2GHz Core 2 Dual or above
720P 60f (1280x720) @60fps	System RAM = 1GB (2GB recommended)
	Graphic card = 256MB of RAM
720P 30f (1280x720) @30fps	OS = Windows XP SP2, Vista or above
	CPU = Pentium 4 3.2GHz or above
WQVGA 240f (432x240) @30fps	System RAM = 512MB (1GB recommended)
	Graphic card = 256MB of RAM

● Connecting the camcorder to TV

⬙ Connecting the camcorder to HDTV

TV: HDTV with HDMI input port

1. Turn on your HDTV.
2. Connect the HDMI-in connector (the bigger end) of the HDMI cable to the HDTV.
3. Turn on the camcorder.
4. Connect the other end of the HDMI cable to your camcorder.
5. Switch the HDTV to the "HDMI input" mode.

> ❶ The HDTV will display your video clips in 1080i (60 fields) resolution mode even though when it has been recorded in the 1080P (30 frames) setting.

● **Specifications**

Item	Description
Model	10 Mega-pixel camera
Image sensor	10 Mega (4224x2376 pixels)
Resolution	Still image: 3M, 5M, 10M, 12M, 16M Video: HD 1080i 60f (1920x1080) HD 1080P 30f (1920x1080) 720P 60f (1280x720) 720P 30f (1280x720) WQVGA 240f (432x240)
Lens	12X Optical zoom lens
Focus range	Normal: 90cm ~ ∞, Macro focus: 10 ~90 cm
Aperture Range	F1.9 ~ F3.2, f=6.4~73.5mm
Digital zoom	10X (N/A in WQVGA 240f mode)
File format	MOV, JPEG, WAV
Video frame rate	HD 1080i 60f , up to 60fps (1920x1080) HD 1080P 30f , up to 30fps (1920x1080) 720P 60f, up to 60fps (1280x720) 720P 30f, up to 30fps (1280x720) WQVGA 240f, up to 30fps (432x240)
Internal memory	Yes (30MB for storage)
External memory	SD/MMC card (up to 32GB SDHC)
LCD display	3" WIDE LCD (16:9)
TV out	HDMI out (HDTV) Composite out (NTSC/PAL system supported)
Interface	USB 2.0
Voice recorder	Yes
Microphone	Yes; internal (stereo); external mic jack
Speaker	Yes
Nightshot	Yes (both in still image and video modes)
E.I.S.*	Yes, not available in WQVGA 240f *Electronic Image Stabilization.
Battery	NP120 compatible Li-ion rechargeable battery
External Power Supply	AC-input: 100~240V, 50~60Hz, 5V, 2A; DC-output: 5V, 2A

Note: Specifications are subject to change without notification.

For more information on camcorder details and more advanced operations, please refer to the electronic manual included in the accessory CD.