

Overview of the equipment

Front



1	Mode selector switch
2	Lens
3	LC display
4	Self-timer LED
5	LED
6	HDMI/USB connector casing

Rear



7	Display/Help button
8	LC display
9	Shutter release
10	Navigation pad/Up/Down/Right/Left
11	Mode/Recording LED
12	Zoom/OK button
13	Menu button
14	Playback button
15	On/Off switch
16	Strap holder

Upper side/underside



17	Macro switch
18	Speaker
19	Tripod socket
20	SD card compartment cover
21	Strap holder

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Safety instructions

About these instructions



Read the safety instructions carefully before use. Note the warnings on the device and in the operating instructions

Always keep the operating instructions close to hand. If you sell the equipment or give it away, make sure you also hand over these instructions and the guarantee card.

Proper use

- The camera is intended for taking pictures in digital format. If the camera is in the closed underwater casing, you can also take underwater pictures.
- Do not operate the camera either in extreme heat or extreme cold.
- The camera is not suited to operation in extreme conditions.
- The camera is for private use only and not for use in a heavy industrial business.

Warnings

- In order to avoid injury, please heed the following warnings while using the product:
- Do not trigger the flash too close to the eyes. In this case, damage can be caused to the eyes of the person being photographed.
- Keep at least 1m away from children when you are working with the flash.
- Do not place the camera strap round the neck. If the strap is placed inadvertently around the neck there is a risk of choking.
- Do not open or dismantle the camera.
Dismantling the camera constitutes a risk of high-voltage electric shock.

Only expert personnel should undertake internal component tests, modifications and repairs. Take the product to an authorised Service Centre for testing.

- If you are not going to use the camera for a period of time, remove the batteries to prevent leakage
- The camera must not be exposed to either drips or spray, unless it is in the underwater casing. Do not place any objects filled with liquids (e.g., vases) on the camera.

Handling batteries

- Batteries may contain combustible materials. If not properly handled, batteries may leak, heat up intensely, ignite or even explode, which could result in damage to your camera and your health.
- Please follow the following instructions at all costs:
- Keep children away from batteries.
If batteries are swallowed, consult your doctor immediately.
- Never charge batteries (unless it is expressly specified).
- Never empty the batteries by means of high power output.
- Never short-circuit the batteries.
- Never expose the batteries to excessive heat, such as from sunshine, fire or similar.
- Do not dismantle or warp the batteries.
Your hands or fingers could be injured or battery fluid could come into contact with your eyes or skin. If this should happen, rinse the affected parts with a large quantity of clean water and inform your doctor immediately.
- Avoid hard knocks and vibrations.
- Always observe the correct polarity.
- Take care to ensure that the plus (+) and minus (-) poles are correctly inserted.

- Do not mix up new and old batteries or different types of battery. This could cause your camera to malfunction. In addition, the weaker batteries would discharge too much.
- Remove used batteries from the camera immediately.
- Remove the batteries from the appliance if you do not intend to use it for a long period of time.
- Immediately replace all used batteries in a camera with new batteries of the same type.
- Insulate the battery contacts with an adhesive strip, if you wish to store or dispose of the batteries.

Safety precautions

- Take the following safety precautions, in order to avoid damage to your camera and to always keep it in perfect condition.
- Store in dry conditions
The camera itself is not watertight. It may only be immersed in water if it is inside the underwater casing supplied.
- Before immersing the camera in water, ensure that the underwater casing is tightly closed and that there is nothing jammed between the casing cover and the rubber seal.
- Keep away from damp, salt and dust.
Wipe off salt and dust with a light, damp cloth if you have been using the camera on the beach or by the seaside. Carefully dry the camera afterwards.
- Keep away from strong magnetic fields.
Never place the camera too close to appliances which generate strong electromagnetic fields, such as, for example, electric motors. Strong electromagnetic fields may result in camera malfunctions or disturb the data recording.
- Avoid excessive heat
Do not use or store the camera in sunlight or at high temperatures.

Stress of this kind can result in the batteries leakage or in the casing warping.

- **Avoid high variations in temperature**
If you take the camera from a cold environment into a warm one, or vice versa, drops of water can form outside and inside the camera. To prevent condensation, put the camera into the carrying case or into a plastic bag before you subject it to a quick change of temperature.
- **Do not drop camera**
Hard shaking caused from falling or vibrations can cause malfunctions. Loop the carrying strap round your wrist when you carry the camera.
- **Do not remove batteries when data are being processed.**
When image data is being recorded to memory cards or deleted, switching off the power supply can result in data loss or damage the internal circuit or the memory.
- **Treat lens and all moving parts carefully**
Do not touch the lens. Be careful when handling the memory card. These parts are not designed for high stresses.
- **Memory cards**
Switch the power supply off, before you insert or remove the memory card. Otherwise the memory card may become unstable. Memory cards may become hot during use. Always remove the memory cards carefully from the camera.



This symbol on the camera certifies that the device complies with EU guidelines on electromagnetic interference. CE stands for Conformité Européene (European Conformity).

The Camcorder

Equipment description

The camcorder provides the following:

- the functions of a digital camcorder,
- of a digital camera
- and of a digital device -

in one handy piece of equipment. With the enclosed underwater casing, you can also perform the specified functions underwater, to a maximum depth of 5m.

Instead of a viewfinder, the camcorder has a high-resolution LC display, enabling you to monitor your pictures. In addition, the LC-display is used to show the screen menus in which you make your settings.

The Camcorder has four-times digital zoom and can take films to a maximum resolution of HD 1280x720 and photos in 12M pixels (interpolated).

The internal memory has a usable capacity of approx. 8MB. Thus you can also record photos or short films even if you do not have an SD card in the camera.

The camcorder can be easily connected to a computer by USB or to a TV set by HDMI connection.

Using an HDMI cable, connect your camcorder to a TV with a digital connection, to watch your films recorded in HD format.

Package contents

After unpacking, ensure that the following parts have been supplied:

- digital HD camcorder
- USB/AV cable
- 4 x AAA/LR03 batteries
- carrying strap
- carrying case
- software CD
- underwater casing with carrying strap
- operating instructions and guarantee documents

Inserting the batteries

In order to insert the four AAA/LR03 batteries supplied, you must proceed as follows:

1. Open the battery compartment lid.



2. Insert the batteries as illustrated.



3. Close the battery compartment lid.



 Always observe the correct polarity. Take care to ensure that the plus (+) and minus (-) poles are correctly inserted, in order to avoid short circuits.

Inserting the SD/SDHC memory card

Insert the memory card as illustrated, in order to have additional available memory space for your photos, films or audio files.

1. Open the LC-display, as shown below, and open the SD/SDHC card compartment



2. Insert the SD/SDHC card into the card slot, as illustrated.

i Make sure that the contacts are facing towards the batteries.



3. Close the card compartment as shown.



DCF memory standard

The recordings on your camcorder are managed on it according to the DCF standard (DCF= Design Rule for Camera File System). Recordings on memory cards of other DCF camcorders can be played back on your camcorder if the file formats on them are compatible.

Fitting carrying strap

For better handling of the camera and for safety reasons, attach the carrying strap supplied.

While you are attaching the carrying strap, place the camera on a firm surface, so that the camera cannot fall and be damaged.



Do not hang the camera on the carrying strap around your neck as this could be dangerous. This particularly applies to children.

First steps

Switching on the camera

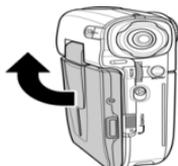
Press the On/Off button, to switch the camcorder on. The ON indicator lights up green and the display switches on.

If the camcorder does not switch on, check if the batteries are inserted correctly.

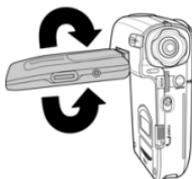
Before you use the camcorder for the first time, you should set the desired menu language, the current date and the current time. Both settings are performed in Settings Mode. The following sections contain everything you need to know regarding these procedures.

Opening the LC-display

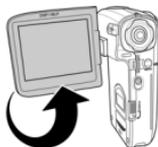
1. Open the LC-display as shown, through 90°.



2. Now turn the display in the desired direction.



 To place the camcorder into the underwater casing, rotate the LC-display as shown:



Switching off the camera

Press the On/Off button to switch the camcorder off.

The ON indicator goes out.



The camcorder has an automatic switch-off time. The standard setting for the switch-off time is two minutes.

If the camcorder is not used for over two minutes, it switches off. You can increase the automatic switch-off time to five minutes or disable it completely.

The automatic switch-off time is not enabled:

- when recording audio/film clips or taking photos,
- during playback,
- or while the camcorder is connected to a computer.

Controls

	On/Off switch	Press the switch to switch the camcorder on and off.
	Menu button	Press menu button to access main menu in photo and film mode.
	Mode selector switch	Turn the mode selector switch, to switch between photo, film or audio recording.
	Navigation pad	With the navigation pad, you can perform the following settings during recording: Set the following in photo mode : <ul style="list-style-type: none">▪ the resolution, by pressing the navigation pad up,▪ the image quality by pressing down, the “flash” by pressing to the left or the automatic release by pressing to the right.

		<p>Set the following in film mode:</p> <ul style="list-style-type: none"> ▪ the resolution, by pressing the navigation pad up, ▪ the image quality by pressing down, ▪ the “flash” by pressing to the left or the white balance by pressing to the right. <p>Select the following in playback mode:</p> <ul style="list-style-type: none"> ▪ the selected file for deletion, by pressing the navigation pad up, ▪ the file for blocking by pressing down ▪ or you browse the saved files by pressing left or right.
	Shutter release	<p>Press the shutter release, to activate photo, film or audio recording.</p> <p>In photo playback mode, you can access the miniature image view by pressing the shutter release.</p>
	Macro switch	<p>To be able to record photos or films in close-up, press the macro switch up  : The macro symbol  appears in the display </p>
	Playback button	<p>To enter the particular playback menu, set the mode selector switch to the desired mode and press the playback button.</p>
	Display/Help button	<p>Press once: all the displays are shown; Press twice: all the displays are hidden; Press three times: the camcorder's button functions are performed in the particular mode.</p>

	Scroll wheel	<p>In the film/photo mode you can “zoom in” by scrolling up or “zoom out” by scrolling down.</p> <p>In film/speech playback mode, you can pause playback by pressing the scroll wheel and continue playback by pressing again.</p> <p>By using “scroll up” you can raise the volume and by using “scroll down”, you can lower the volume.</p> <p>In photo playback mode, you can zoom into the image by using “scroll up” and zoom out of the image by using “scroll down”.</p> <p>In setting mode, you can select the desired menu item by scrolling up or down and confirm by pressing the button.</p>
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Switching the operating mode

Your camcorder gives you three functions in one handy device. You can select the following modes by turning the mode selector switch:



Film mode



Photo mode



Audio mode

SET

System settings



Adjusting the system settings

The following adjustments can be made in the system settings:

- Date/time
- Beep
- Format
- Standard setting
- Memory status
- Language
- TV system
- Auto power on
- Frequency

Date/time

In order to make the desired adjustments to the system settings (such as date or time), proceed as follows:

- ▶ Switch the camcorder on.

- ▶ Turn the mode switch  to Set.

The System Settings menu (setup) appears.



- ▶ Turn the scroll wheel until the “Date/Time” entry is highlighted and confirm by pressing the scroll wheel.

The Date/Time window appears in the top right of the display.



- ▶ Press the Right/Left navigation pad to reach the desired field (year/month/day/hour/minute/second). Set the desired data by pressing the Up/Down navigation pad.
- ▶ Press the scroll wheel to make the changes.

Beep

To enable or disable the key tone, proceed as follows:

- ▶ Turn the scroll wheel until the “Beep” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with On/Off appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

Format

To format the inserted memory card, proceed as follows:

- ▶ Turn the scroll wheel until the “Format” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with OK/Cancel appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.



CAUTION!

If you format the memory, all the data saved in it is deleted.

Make sure that there is no important data left in the memory or on the SD card.

Default settings

To reset your camcorder to the factory settings, proceed as follows:

- ▶ Turn the scroll wheel until the “Standard” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with OK/Cancel appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

Memory status

To see your camcorder's memory status, proceed as follows:

- ▶ Turn the scroll wheel until the “Memory status” entry is highlighted and confirm by pressing the scroll wheel.

The information window appears and shows you the memory space occupied by image, photo or audio files.



- ▶ By pressing the scroll wheel, leave the memory status menu and go back to the system settings.

Language

Proceed as follows to set the desired language:

- ▶ Turn the scroll wheel until the “Language” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with the languages appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

TV system

To set your camcorder to your particular TV system, proceed as follows:

- ▶ Turn the scroll wheel until the “TV system” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with Ntsc/PAL appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

Auto power off

To set your camcorder's switch-off time when it is inactive, proceed as follows:

- ▶ Turn the scroll wheel until the “Auto power” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with off/2minutes/5 minutes appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

Frequency

Proceed as follows to set the desired image frequency:

- ▶ Turn the scroll wheel until the “Frequency” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with 60Hz/50Hz appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

Film mode

Proceed as follows to switch on film mode:

- ▶ Switch the camcorder on.
- ▶ Turn the mode selector switch  to film mode (.

Display in film mode

The following display information is shown in film mode:



- 1 Film mode enabled
- 2 Current resolution; (VGA, D1 or HD)
- 3 Zoom display; (0.0 – 4.0 max. digital zoom)
- 4 Miniature image display
- 5 White balance display
- 6 Memory status; : Memory card inserted; : no memory card, internal memory in use
- 7 Number of films saved
- 8 “Flash” LED enabled.
- 9 Battery status
- 10 Macro mode enabled

Recording films

To record films with your camcorder, proceed as follows:

- ▶ By turning the scroll wheel up/down, select the desired detail.
- ▶ Press the shutter release to start recording.

The operating LED lights up red.

 now lights up in the display and the minutes recorded are displayed.

- ▶ Press the scroll wheel to pause recording.
- ▶ In order to stop recording, press the shutter release again.



The maximum file size per film is 4GB.

The recording length is determined by resolution and image quality.

The higher the film's resolution and quality, the larger the file and the less remaining memory space available.

Macro function

In order to record subjects at a distance of 15-16 cm, proceed as follows:

- ▶ Push the macro switch  to  lights up in the display.

Macro mode is now enabled.

- ▶ To disable the macro switch, push it to .

Quick configuration

Your camcorder provides you with the opportunity of reacting to unforeseen events, using the “quick configuration”.

You can change the following settings during recording:

- ▶ Press the Up navigation pad, in order to switch between the VGA, D1 and HD resolutions.
- ▶ Press the Down navigation pad, to change the image quality.
- ▶ Press the Left navigation pad, to enable the "Flash" LED.
- ▶ Press the Right navigation pad, to change the white balance.
- ▶ Firstly, press the scroll wheel down, then turn the Up/Down scroll wheel, in order to make a correction to the lighting.
- ▶ Turn the Up scroll wheel, to enlarge the detail.
- ▶ Turn the Down scroll wheel, to reduce the detail.

If you wish to underlight your subject artificially, select a setting from the minus range.

If you wish to overlight your subject artificially, select a setting from the plus range.

Film menu

The following settings may be performed in the film menu:

- Size
- Quality
- White balance
- Exposure value
- Colour

To access the film menu, please do the following:

▶ Switch the camcorder on.

▶ Turn the mode selector switch  to film mode (.

▶ Press the “MENU” button .

To perform the desired settings before recording, proceed as follows:

Size

To change the resolution of your films, proceed as follows:



- ▶ Turn the scroll wheel until the “Size” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with VGA/D1 and HD appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

Quality

Proceed as follows to set the desired image frequency:

- ▶ Turn the scroll wheel until the “Quality” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with Fine/Normal appears.



- ▶ By pressing the Up/Down navigation pad, select the desired image quality and confirm the change by pressing the scroll wheel.

White balance

To change the desired white balance, please proceed as follows:

- ▶ Turn the scroll wheel until the “White balance” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with auto/sunny/cloudy/light bulb or fluorescent appears.



- ▶ By pressing the Up/Down navigation pad, select the desired white balance and confirm the change by pressing the scroll wheel.

Lighting value/EV

To change the desired lighting value, please proceed as follows:

- ▶ Turn the scroll wheel until the “EV” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with a scale of +2 EV to – 2 EV appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

If you wish to underlight your subject artificially, select a setting from the minus range.

If you wish to overlight your subject artificially, select a setting from the plus range.

Colour

To change the desired colour effect for the shot, proceed as follows:

- ▶ Turn the scroll wheel until the “Colour” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with the possible colour effects - normal/B/W/sepia - appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.



Normal No image effect

B/W The image is shown in black and white

sepia The image is shown in nostalgic brown tones.



Press the Menu button **MENU** , to quit the Film menu and return to Film mode.

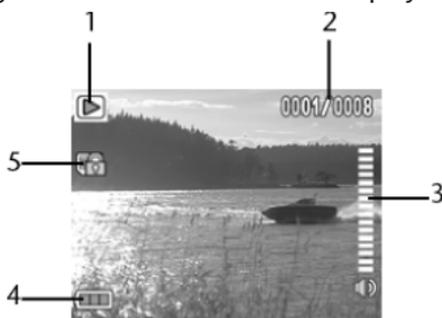
Film playback mode

Proceed as follows to enable the film playback mode:

- ▶ Switch the camcorder on.
- ▶ Turn the mode selector switch  to film mode () .
- ▶ Press the  button.

Display in film playback mode

The following display information is shown in film playback mode:



- 1 Playback mode enabled
- 2 Shows the number of the current shot and the total number of films.
- 3 Volume
- 4 Battery status
- 5 HOLD; file is blocked

Blocking films

To protect films from being deleted accidentally, proceed as follows:

- ▶ By pressing the Right/Left navigation pad, select the film to be blocked.
- ▶ Press the Down navigation pad to block the selected film.



now appears in the display:

Unblock films

Proceed as follows to unblock individual films:

- ▶ By pressing the Right/Left navigation pad, select the blocked film.
- ▶ Press the Down navigation pad to unblock the selected film.

The block is cancelled and the film can now be deleted.

Delete photos

Proceed as follows to delete individual photos:

- ▶ By pressing the Right/Left navigation pad, select the film to be deleted.
- ▶ Press the Up navigation pad to delete the selected film.
- ▶ Answer the confirmation query by going to Delete, by pressing on the Up navigation pad, and then confirming by pressing the scroll wheel.



If the inserted SD card is blocked,  appears in the display. It is not possible for the camcorder to delete files from a protected SD card.

If the photos to be deleted have deletion protection (blocking), you must remove the latter before the deletion process.

Playing back films

To play back films with your camcorder, proceed as follows:

- ▶ With the Right/Left navigation pad, select the film which you want to watch.

- ▶ Press the shutter release to start playback.
- ▶ Turn the Up scroll wheel to increase the volume.
- ▶ Turn the Down scroll wheel, to lower the volume.
- ▶ Press the scroll wheel to pause playback.
- ▶ Press the shutter release to end playback.

Playing back films on an external TV

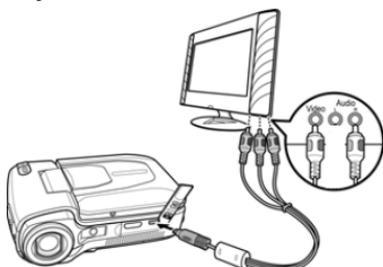
In order to view your films in HD quality on an HD Ready or Full HD TV, proceed as follows:

- ▶ Open the HDMI/Mini-USB cover.
- ▶ Connect the small end of the supplied HDMI cable to the camcorder.
- ▶ Connect the other end of the HDMI cable to an HDMI input socket on your television set.
- ▶ Now switch both devices on.

The camcorder LC-display is disabled and playback is via the connected television set.

To watch your films on a conventional television set, proceed as follows:

- ▶ Open the HDMI/MINI-USB cover.
- ▶ Connect the supplied AV cable to the AV output of your camcorder.
- ▶ Connect the white and yellow plugs of your TV cable, as shown below, to the correct sockets on your TV set.



The camcorder LC-display is disabled and playback is via the connected television set.

Film playback menu

The following settings may be performed in the film playback menu:

- Delete all
- Invert selection

To access the film playback menu, please do the following:

- ▶ Switch the camcorder on.

- ▶ Turn the mode selector switch  to film mode (.

- ▶ Press the Playback  button.

- ▶ Press the “MENU”  MENU key.

Delete all

To delete all the saved films, proceed as follows:



- ▶ Turn the scroll wheel until the “Delete all” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with OK and Cancel appears.



- ▶ By pressing the Up/Down navigation pad, select OK and confirm by pressing on the scroll wheel, to delete all the blocked films.



CAUTION!

If you format the memory, all the data saved in it is deleted.

Make sure that there is no important data left in the memory or on the SD card.

Invert selection

Proceed as follows to unblock all the blocked films simultaneously:

- ▶ Turn the scroll wheel until the “Invert selection” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with OK and Cancel appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.



-  Press the Menu **MENU** button, to quit the Film menu and return to Film playback mode.

Photo mode

Proceed as follows, to enable the photo mode:

- ▶ Switch the camcorder on.
- ▶ Turn the mode selector switch  to photo mode ().

Display in photo mode

The following display information is shown in photo mode:



- 1 Photo mode enabled
- 2 Current resolution; 1M, 3M, 5M and 12M
- 3 Zoom display; (0.0 – 4.0 max. digital zoom)
- 4 Miniature image display
- 5 White balance display
- 6 Memory status; : Memory card inserted,  internal Memory in use
- 7 Number of films saved
- 8 “Flash” LED enabled.
- 9 Battery status
- 10 Macro mode enabled
- 11 Self-timer enabled

Taking photos

To take photos with your camcorder, proceed as follows:

- ▶ By turning the scroll wheel up/down, select the desired detail.
- ▶ Press the shutter release to start recording.

The number of the photos taken now lights up in the display.

Macro function

In order to record subjects at a distance of 15-16 cm, proceed as follows:

- ▶ Push the macro switch  to  .
 lights up in the display. Macro mode is now enabled.
- ▶ To disable the macro switch, push it to  .

Quick configuration

Your camcorder provides you with the opportunity of reacting to unforeseen events, using the “quick configuration”.

You can change the following settings during recording:

- ▶ Press the Up navigation pad, in order to switch between the 1M, 3M, 5M und 12M (interpolated) resolutions.
- ▶ Press the Down navigation pad, to change the image quality.
- ▶ Press the Left navigation pad, to enable the "Flash" LED.
- ▶ Press the Right navigation pad, to switch the automatic release to 10 sec., 20 sec. or to “Off”. Press the shutter release to start the automatic release countdown.
- ▶ Firstly, press the scroll wheel down, then turn the Up/Down scroll wheel, in order to make a correction to the lighting.
- ▶ Turn the Up scroll wheel, to enlarge the detail.
- ▶ Turn the Down scroll wheel, to reduce the detail.

If you wish to underlight your subject artificially, select a setting from the minus range.

If you wish to overlight your subject artificially, select a setting from the plus range.

Photo menu

The following settings may be performed in the photo menu:

- Size
- Quality
- White balance
- Exposure value
- Colour
- Self-timer
- Date stamp

To perform the desired settings before recording, proceed as follows:

Size

To perform the desired settings before recording, proceed as follows:

- ▶ Switch the camcorder on.

- ▶ Turn the mode selector switch  to photo mode ().

- ▶ Press the “MENU”  button.

The photo menu appears.



- ▶ Turn the scroll wheel until the “Size” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with 1 megapixel, 3 megapixels, 5 megapixels and 12 megapixels appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

Quality

Proceed as follows to set the desired image frequency:

- ▶ Turn the scroll wheel until the “Quality” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with Fine/Normal appears.



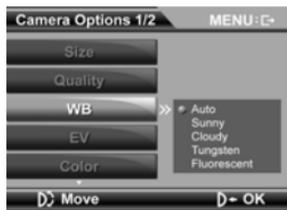
- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

White balance

To change the desired white balance, please proceed as follows:

- ▶ Turn the scroll wheel until the “White balance” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with auto/sunny/cloudy/light bulb or fluorescent appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

Lighting value/EV

To change the desired lighting value, please proceed as follows:

- ▶ Turn the scroll wheel until the “EV” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with a scale of +2 EV to – 2 EV appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

Colour

To change the desired colour effect for the shot, proceed as follows:

- ▶ Turn the scroll wheel until the “Colour” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with the possible colour effects - normal/B/W/sepia - appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.



Normal No image effect

B/W The image is shown in black and white

sepia The image is shown in nostalgic brown tones.

Self-timer

Proceed as follows to set the timer release time:

- ▶ Turn the scroll wheel until the “Self-timer” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with the possible timers - 10 seconds, 20 seconds and “Off” - appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.



To enable automatic release, quit the menu by pressing the Menu **MENU** button.

 appears in the display:

- ▶ Now start the self-timer by pressing the shutter release.

Date stamp

To put a date stamp on the photos during shooting, proceed as follows:

- ▶ Turn the scroll wheel until the “Date stamp” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with OK and Cancel appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

 Press the Menu  button, to quit the photo menu and access photo mode.

Photo playback mode

Proceed as follows to enable photo playback mode:

- ▶ Switch the camcorder on.
- ▶ Turn the mode selector switch  to photo mode () .
- ▶ Press the Playback  button.

Display in photo playback mode

The following display information is shown in photo playback mode:



- 1 Battery status
- 2 HOLD; file is blocked
- 3 Playback mode enabled
- 4 Shows the number of the current shot and the total number of photos.

Blocking photos

To protect individual photos from being deleted accidentally, proceed as follows:

- ▶ By pressing the Right/Left navigation pad, select the photo to be blocked.
- ▶ Press the Down navigation pad to block the selected photo.



now appears in the display:

Unblocking photos

Proceed as follows to unblock individual photos:

- ▶ By pressing the Right/Left navigation pad, select the blocked photo.
- ▶ Press the Down navigation pad to unblock the selected photo.

The block is cancelled and the film can now be deleted.

Delete photos

Proceed as follows to delete individual photos:

- ▶ By pressing the Right/Left navigation pad, select the photo to be deleted.
- ▶ Press the Up navigation pad to unblock the selected photo.
- ▶ Answer the confirmation query by going to Delete, by pressing on the Up navigation pad, and then confirming by pressing the scroll wheel.



If the inserted SD card is blocked,  appears in the display. It is not possible for the camcorder to delete files from a protected SD card.

If the films to be deleted have deletion protection (blocking), you must remove the latter before the deletion process.

Playing back photos

To play back photos with your camcorder, proceed as follows:

- ▶ By pressing the Right/Left navigation pad, select the photo.
- ▶ Turn the Up scroll wheel to enlarge a detail.
- ▶ By pressing the Up/Down/Right/Left navigation pad, you can change the position of the detail.
- ▶ Turn the scroll wheel downwards to reduce the detail.
- ▶ Press the shutter release, to access miniature view.

Playing back photos on an external TV

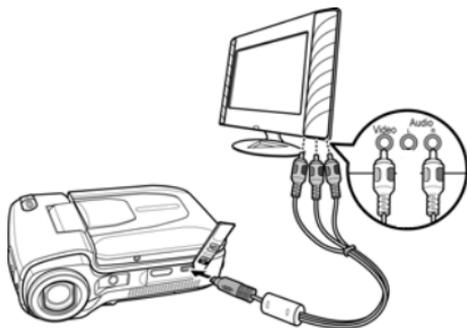
To look at the photos you have taken via HDMI on a television set, proceed as follows

- ▶ Open the HDMI/Mini-USB cover.
- ▶ Connect the small end of the supplied HDMI cable to the camcorder.
- ▶ Connect the other end of the HDMI cable to an HDMI input socket on your television set.
- ▶ Now switch both appliances on.

The camcorder LC-display is disabled and playback is via the connected television set.

To view your photos on a conventional television set, proceed as follows:

- ▶ Open the HDMI/MINI-USB cover.
- ▶ Connect the supplied AV cable to the AV output of your camcorder.
- ▶ Connect the white and yellow plugs of your TV cable, as shown below, to the correct sockets on your TV set.



The camcorder LC-display is disabled and playback is via the connected television set.

Photo playback menu

The following settings may be performed in the photo playback menu:

- Delete all
- Invert selection
- Slideshow
- DPOF one
- DPOF all

To access the photo playback menu, please do the following:

▶ Switch the camcorder on.

▶ Turn the mode selector switch  to photo mode ()

▶ Press the Playback  button.

▶ Press the “MENU”  MENU key.

Delete all

To delete all the saved photos, proceed as follows:



- ▶ Turn the scroll wheel until the “Delete all” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with OK and Cancel appears.



- ▶ By pressing the Up/Down navigation pad, select OK and confirm by pressing the scroll wheel, to delete all the unblocked photos.



CAUTION!

If you format the memory, all the data saved in it is deleted.

Make sure that there is no important data left in the memory or on the SD card.

Invert selection

Proceed as follows to unblock all the blocked photos simultaneously:

- ▶ Turn the scroll wheel until the “Selection” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with OK and Cancel appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm this change by pressing the scroll wheel.

Slideshow

To view all the saved photos in a slideshow, proceed as follows:

- ▶ Turn the scroll wheel until the “Slideshow” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with Start and Cancel appears.



As soon as you have selected Start and confirmed it by pressing the scroll wheel, the camcorder starts the slideshow. Press the scroll wheel, to cancel the slideshow.

DPOF one

In order to have individual photos printed by a photo studio, or on a DPOF-compatible printer, proceed as follows:

- ▶ Turn the scroll wheel until the “DPOF one” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with On and Off appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

The camcorder now goes to Photo Overview.

- ▶ By pressing the Right/Left navigation pad, select the photo to be printed.
- ▶ Press the navigation pad down once, to select the chosen photo once for DPOF printing.



- ▶ Switch the camcorder off and remove the memory card.
- ▶ Insert the memory card in a DPOF-compatible printer or have the photos printed at a photographic dealer's.

-  You may highlight several photos at once. Moreover, you can print individual photos via DPOF up to nine times. To do this, simply keep pressing the Down navigation pad at the desired photo until you have reached the desired number.
-  For the DPOF (Digital Print Order Format) function, a memory card is essential.

DPOF all

In order to have all the photos printed by a photo studio, or on a DPOF-compatible printer, proceed as follows:

- ▶ Turn the scroll wheel until the “DPOF all” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with On and Off appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.



-  Press the Menu **MENU** button, to quit the photo playback menu and return to photo playback mode.

Audio mode

Proceed as follows, to enable the audio mode:

- ▶ Switch the camcorder on.
- ▶ Turn the mode selector switch  to audio mode ()

Display in audio mode

The following display information is shown in audio mode:



- 1 Battery status
- 2 Shows the number of saved speech files
- 3 Recording time display
- 4 Speech mode

Recording audio files

To record audio files with your camcorder, proceed as follows:

- ▶ Press the shutter release to start recording.
The number of the photos taken now lights up in the display .

Audio playback mode

Proceed as follows to enable audio playback mode:

- ▶ Switch the camcorder on.
- ▶ Turn the mode selector switch  to audio mode () .
- ▶ Press the Playback  button.

Display in audio playback mode

The following display information is shown in audio playback mode:



- 1 Battery status
- 2 Playback mode enabled
- 3 Shows the number of the current recording and the total number of recording.
- 4 Volume
- 5 Playback mode

Blocking audio files

To protect audio files from being deleted accidentally, proceed as follows:

- ▶ By pressing the Right/Left navigation pad, select the file to be blocked.
- ▶ Press the Down navigation pad to block the selected file.



now appears in the display:

Unblocking audio files

Proceed as follows to unblock individual files:

- ▶ By pressing the Right/Left navigation pad, select the blocked file.
- ▶ Press the Down navigation pad to unblock the selected file.

The block is cancelled and the file can now be deleted.

Delete audio files

Proceed as follows to delete individual files:

- ▶ By pressing the Right/Left navigation pad, select the file to be deleted.
- ▶ Press the Up navigation pad to delete the selected file.
- ▶ Answer the confirmation query by going to Delete, by pressing on the Up navigation pad, and then confirming by pressing the scroll wheel.

Audio playback menu

The following settings may be performed in the audio playback menu:

- Delete all
- Invert selection

To access the audio playback menu, please do the following:

- ▶ Switch the camcorder on.

- ▶ Turn the mode selector switch  to audio mode ().

- ▶ Press the Playback  button.

- ▶ Press the "MENU"  MENU key.

Delete all

To delete all the saved audio files, proceed as follows:



- ▶ Turn the scroll wheel until the “Delete all” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with OK and Cancel appears.



- ▶ By pressing the Up/Down navigation pad, select OK and confirm by pressing on the scroll wheel, to delete all the audio files.



CAUTION!

If you format the memory, all the data saved in it is deleted.

Make sure that there is no important data left in the memory or on the SD card.

Invert selection

Proceed as follows to unblock all the blocked audio files simultaneously:

- ▶ Turn the scroll wheel until the “Invert selection” entry is highlighted and confirm by pressing the scroll wheel.

The selection window with OK and Cancel appears.



- ▶ By pressing the Up/Down navigation pad, select the desired setting and confirm the change by pressing the scroll wheel.

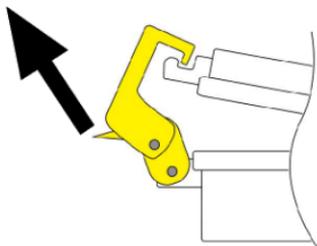


-  Press the Menu **MENU** button, to quit the photo playback menu and return to photo playback mode.

Underwater functions

Insert camcorder in underwater casing

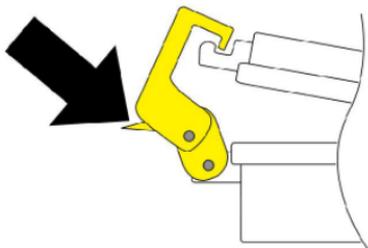
- ▶ Push the catch of the lock upwards, as shown, and snap the lock open.



- ▶ Open the casing and lay the camcorder in the casing in "ON" mode, as shown.



- ▶ Hitch on the lock and flip the catch down to close it.



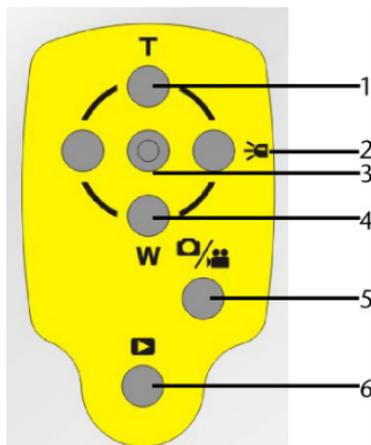


Take care to ensure that the carrying strap does not become jammed between the yellow rubber seal and the casing lid. This results in a leaking casing.



Lay the camcorder ready-configured (i.e. display open, camcorder switched on and film or photo mode selected), as it is impossible to perform any more settings on the camcorder, inside the casing.

Appliance overview in underwater casing



1	Enlarge detail
2	LED On/Off
3	Shutter release
4	Reduce detail
5	Mode switch; switch between film and photo mode
6	Playback

Making films under water

Proceed as follows to make films underwater:

- ▶ Use the “T” and “W” buttons to set the desired zoom factor.



- ▶ Press the shutter release  to start recording.

The operating LED lights up red.

- ▶ In order to stop recording, press the shutter release again.

- ▶ To enable the “Flash” LED, press the LED  button.



Press the Mode Switch  button, to switch smoothly between film and photo mode.

Playing back films under water

Proceed as follows to play back films under water:

- ▶ Press the playback  button.

- ▶ With the Right/Left  navigation pad, select the film which you want to watch.

- ▶ Press the shutter release  to start playback.

- ▶ Press the shutter release  again to stop playback.

Taking photos under water

Proceed as follows to take photos under water:

- ▶ Use the “T” and “W” buttons to set the desired zoom factor. 
- ▶ Press the shutter release  to start recording.
- ▶ To enable the “Flash” LED, press the LED  button.

 Press the Mode Switch  button, to switch smoothly between film and photo mode.

Playing back photos under water

Proceed as follows to play back photos under water:

- ▶ Press the playback  button.
- ▶ With the Left/Right keys , select the image you want to look at or press the shutter release button  to access miniature image mode.

Installing drivers and software

Some application programs are on the CD supplied. Insert the CD in the CD-ROM drive of your computer.

Usually, the CD is automatically recognised and displayed. If not, select the CD drive in Windows Explorer > My Computer and double click on the drive name to start the CD.

On the start page, you will see the contents of the CD.



To install the software, press the INSTALL button.

Follow the other on-screen instructions.

Files or programs on the CD:

- Drivers for the camcorder
- Xvid driver
- QuickTime
- NewSoft Filmworks
- NewSoft Mr. Photo

 For more detailed assistance, press the F1 key while running the program.

Technical Data

Pixels:	5 megapixels
Image sensor:	5 megapixel CMOS sensor
Focal distance:	Normal: 1.5m ~ ∞ Macro: 15cm ~ 16cm
Lens:	Wide-angle: F/3.2; f= 7.62 mm
Films:	Format: H.264 Resolution: VGE, D1, HD(720P/30)
Photos:	Formats: JPG (DPOF) Resolution: 1M, 3M, 5M, 12M (interpolated)
Zoom:	Films: 4 times digital zoom Photo: 4 times digital zoom Photo playback: max. 20 times digital zoom
Power supply	4 x AAA/LR03 batteries

Disposal



Packaging

Your camcorder is packaged to protect it from transportation damage. Packaging is raw material and can be reused or added to the recycling system.



Appliance

At the end of its life, the appliance should not be disposed of in household rubbish. Dispose of it in an environmentally friendly manner via a local collection point for old devices. Ask your local authority for the location of the collection points.



Batteries

Do not dispose of used batteries in household rubbish. Batteries should be taken to a collection point for used batteries.