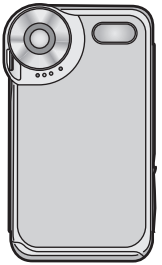

Panasonic®

Operating Instructions

SD Multi Camera

D-snap

Model No. **SV-AS3**

SD™

PictBridge

Before connecting, operating or adjusting this product, please read the instructions completely.

For USA assistance, please call: 1-800-211-PANA (7262) or, contact us via the web at: http://www.panasonic.com/contactinfo

For Canadian assistance, please call: 1-800-561-5505 or visit us at www.panasonic.ca

PP

VQT0P18

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Preparation

Information for Your Safety

WARNING
TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE ONLY THE RECOMMENDED ACCESSORIES AND DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE. DO NOT REMOVE THE COVER (OR BACK); THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

THE SOCKET OUTLET SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE.

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Extremely high precision technology is employed to produce the LCD Monitor screen featuring a total of approximately 61,600 pixels. The result is more than 99.99% effective pixels with a mere 0.01% of the pixels inactive or always lit. However, this is not a malfunction and does not affect the recorded picture.

IMPORTANT

Please respect all copyrights.

Whatever you have recorded and created can be used for your personal entertainment only. Under copyright laws, other materials cannot be used without obtaining permission from the holders of the copyrights.

- **Injury or material damage resulting from any kind of use that is not in accordance with the operating instructions are the sole responsibility of the user.**
- If the SD Multi Camera is used continuously for a long time or used at a high ambient temperature, red, blue, green or white dots may appear on the screen and be recorded on a still picture. This is due to the temperature of the SD Multi Camera increasing. This is not a malfunction. Under this condition, turn the SD Multi Camera off and leave it for a while.
- The manufacturer shall in no event be liable for the loss of recordings due to malfunction or defect of this SD Multi Camera, its accessories or Memory Card.
- Please note that the actual controls and components, menu items, etc. of your SD Multi Camera may look somewhat different from those shown in the illustrations in these Operating Instructions.
- In this Operating Instructions, “Memory Card” and “Card” mean “SD Memory Card”.
- Note that the SD Multi Camera may not play the data recorded or created on another product and another product may not play the data recorded on the SD Multi Camera.
- The nameplate of the SD Multi Camera is fixed on the bottom of the battery compartment.

FCC Note: (U.S. only)

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, 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.

FCC Caution:To assure continued compliance, follow the attached installation instructions and use only shielded interface cables with ferrite core when connecting to computer or peripheral devices.
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Trade Name: Panasonic
Model No.: SV-AS3
Responsible party:
Panasonic Corporation of North America
One Panasonic Way, Secaucus, NJ 07094
Support Contact:
Panasonic Consumer Electronics Company
1-800-211-PANA (7262) 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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class B digital apparatus complies with Canadian ICES-003.

Panasonic
SV-AS3

A lithium ion/polymer battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

Introduction

Dear Customer,

We would like to take this opportunity to thank you for purchasing this Panasonic SD Multi Camera. Please read these Operating Instructions carefully and keep them handy for future reference.

- SD logo is a trademark.
- MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.
- This product is licensed under the MPEG-4 Visual patent portfolio license for the personal and non-commercial use of a consumer for (i) encoding video in compliance with the MPEG-4 Visual Standard ("MPEG-4 Video") and/or (ii) decoding MPEG-4 Video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed by MPEG LA to provide MPEG-4 Video. No license is granted or shall be implied for any other use. Additional information including that relating to promotional, internal and commercial uses and licensing may be obtained from MPEG LA, LLC. See http://www.mpegla.com.
- Microsoft, Windows and Windows Media are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

- Adobe, Adobe Acrobat and Acrobat Reader are trademarks or registered trademarks of Adobe Systems Incorporated in the United States and/or other countries.
- WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.
- This unit is not compatible with Multiple Bit Rate (MBR: a file that contains the same content encoded at several different bit rates).

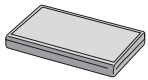
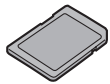
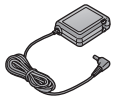
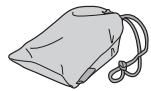
- Music recognition technology and related data are provided by Gracenote and the Gracenote CDDB music recognition service. Gracenote is the industry standard in music recognition technology and related content delivery. For more information visit www.gracenote.com.

- CD and music-related data from Gracenote, Inc., copyright © 2000–2003 Gracenote. Gracenote CDDB® Client Software, copyright 2000–2003 Gracenote. This product and service may practice one or more of the following U.S. Patents: #5,987,523, #6,061,680, #6,154,773, #6,161,132, #6,230,192, #6,230,207, #6,240,459, #6,330,593, and other patents issued or pending.
- Gracenote® and CDDB® are registered trademarks of Gracenote. The Gracenote logo and logotype, the Gracenote CDDB logo and logotype and the “Powered by Gracenote” logo are trademarks of Gracenote.
- Portions of this product are protected under copyright law and are provided under license by ARIS/SOLANA/4C.
- Other names of systems and products mentioned in these Operating Instructions are usually the registered trademarks or trademarks of the manufacturers who developed the system or product concerned.
- The ™ and ® marks are not used to identify registered trademarks and trademarks in these instructions.
- The contents or complete reproduction or copy of these Operating Instructions could be changed without notice.
- Licensed AAC Patents (U.S. patent numbers);

08/937,950	5,357,594	5 297 236	98/03037	5,481,614	08/557,046	5,490,170	5,548,574
5848391	5,752,225	4,914,701	97/02875	5,592,584	08/894,844	5,264,846	08/506,729
5,291,557	5,394,473	5,235,671	97/02874	5,781,888	5,299,238	5,268,685	08/576,495
5,451,954	5,583,962	07/640,550	98/03036	08/039,478	5,299,239	5,375,189	5,717,821
5 400 433	5,274,740	5,579,430	5,227,788	08/211,547	5,299,240	5,581,654	08/392,756
5,222,189	5,633,981	08/678,666	5,285,498	5,703,999	5,197,087	05-183,988	

Accessories

Check the accessories before using this unit.

Battery Pack 	**Stereo earphones** L0BAB0000180
SD Memory Card RP-SDH256VE1  ● Useable capacity will be less.	**Hand strap** VFC4012
AC adaptor VSK0668 	**Carrying case** VFC4081 
USB cable K2KZ4CB00008	**Cleaning Cloth** VFC1792
CD-ROM	**Remote controller** N2QCBD000045

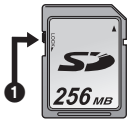
■ Optional Accessory

- Battery Pack (CGA-S302A/1B)

Suitable Card

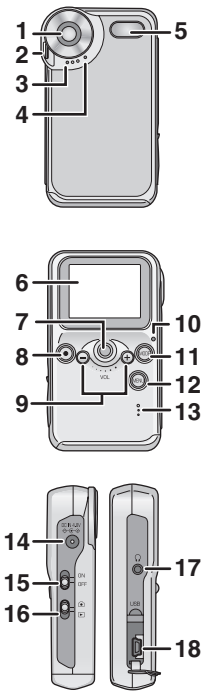
- The card suitable for this unit is SD Memory Card. (MultiMediaCard is not suitable.)
- We recommend using Panasonic SD Memory Card.

■ About SD Memory Card (supplied)



- The SD Memory Card is a small, lightweight and removable external card. The SD Memory Card is equipped with a write-protect switch ❶ that can inhibit writing and formatting. (When the switch is moved towards the LOCK side, it is not possible to write or delete data on the card and format it. When the switch is unlocked, these functions become available.)
- Pictures recorded onto the SD Memory Card can be played on Panasonic DVD Video Recorder with a SD Memory Card slot, etc. (Depending on the file, pictures cannot be played in some cases.)
- Motion images (MPEG4 format) recorded with DVD Video Recorder can be played on this unit.
  - [MPEG4] files (ASF format) recorded by this unit may not be played on a Panasonic MPEG4 motion image player. In this case, the files may be played by installing SD Viewer 3.4E for D-snap in the CD-ROM (supplied) and converting the files using [MPEG4 Converter].
  - The available recording methods (file formats) vary depending on the model. For details on the available models, recording methods, etc., carefully check the catalogue, the website or the operating instructions of the equipment.

Controls Layout



■ Body

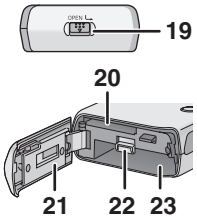
1 **Lens**
2 **Strap Attachment**
3 **Microphone (P30)**
4 **Self-timer Lamp (P38)**
5 **Flash**
6 **LCD Monitor (P93)**
7 **Jog Ball (P20)**
- It is used for setting the menu, playing files, zooming, etc.
- It blinks (lights) in red (Recording Mode) or green (Playback Mode) when you switch the mode, operate the menu or turn this unit on.

8 **Shutter Button [●] (P29)**
9 **Volume Button [−/+] (P46)**
10 **Power/Charge/Card Access Lamp (P18)**
11 **MODE Button [MODE] (P20)**
- It is also used to prevent operation mistakes during playback in [Voice] or [Audio] mode. (P64)

12 **MENU Button [MENU] (P20)**
- It is also used to display the shortcut Menu. (P26)

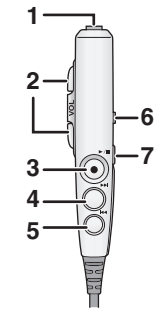
13 **Buzzer**
- The operational sounds emerge from the speaker.

14 **DC Input Terminal [DC IN 4.8V] (P16)**
15 **Power Switch (P18)**
16 **Record/Playback Mode Switch [/] (P19, 28, 43)**
17 **Terminal (remote controller) [ ]**
18 **USB Terminal [USB] (P55, 73)**



19 Battery Lock [OPEN] (P14)
20 Card Slot (P15)
21 Card/Battery Door (P14)
22 Lock Release Lever (P15)
23 Battery Slot (P15)

■ Remote Controller (P29, 63)

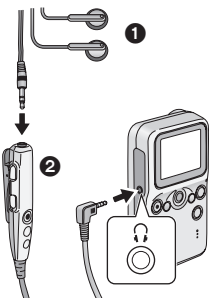


1 Stereo Earphone Socket
2 Volume Button [− VOL +]
3 Playback/Stop Button [▶/■]
Shutter Button [●]
4 Fast-forward Button [▶▶|]
5 Fast-rewind Button [|◀◀]
6 Hold Switch [▶HOLD]
- It locks buttons on the remote controller.

7 Equaliser Button [EQ]

■ Stereo Earphones (P62)

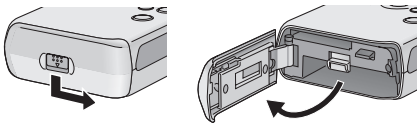
- When you use earphone, be sure to connect to the remote controller (supplied).
- If you use earphones other than the stereo earphones (supplied), use 6.6 ft. (2 m) or less length of earphones (10 ft. (3 m) or less including the remote controller).



❶ Stereo Earphones (supplied)
❷ Remote Controller (supplied)

Inserting/Removing the Battery or the Card

Be sure to turn this unit off before the following operations.

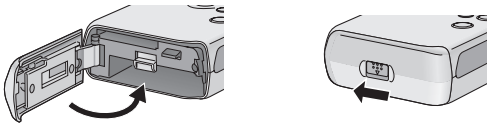


1 Open the Card/Battery Door at the bottom of this unit.

- Release the lock and then open the Door while sliding it.

2 Insert/remove the battery or the card.

- Read the next page carefully.

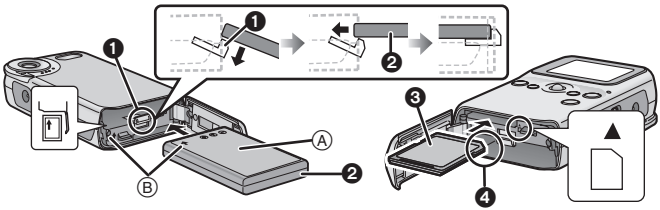


3 Close the Card/Battery Door.

- Close the Door and then lock it while sliding.

- Never open the Card/Battery Door during the access. (P18) Otherwise, the data on the card may be damaged.
- When the Card/Battery Door cannot be completely closed, remove the card or battery once and then insert it again.
- When you are not going to use the SD Multi Camera for a long time, remove the battery.
- Do not use the supplied battery for other equipment.
- Please be sure to use genuine Panasonic batteries (CGA-S302A/1B).

■ When inserting the card/battery



Confirm the direction of the battery and the card.

Insert the battery fully into the slot with the Battery Lock ❶ lowered.

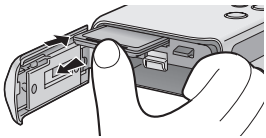
Make sure if the Battery Lock is hooked on the Battery ❷.

- Place the battery with the label side upward. Ⓐ
- Insert the battery in the direction indicated by the arrow. Ⓑ

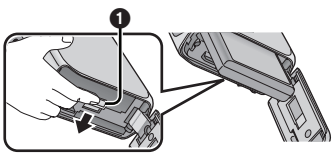
❸ Label ❹ Notch

- Insert the card/battery fully and firmly.
  (The card clicks if it is fully inserted.)
- Do not touch the connecting terminal on the rear of the card.
- If the Battery Lock is not hooked on the battery or you have difficulty in closing the Card/Battery Door, the battery may be inserted in the wrong direction. Pull the battery out with the Battery Lock unlocked and check the direction of the battery.

■ When removing the card/battery



Press the card until it clicks and then pull out the card.

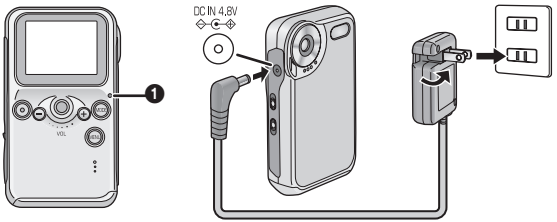


Point the bottom of the unit downwards with the Door open. Lift the Battery Lock ❶, then remove the battery.

Charging the Battery

Be sure to turn this unit off before charging the battery. (When this unit is turned on, the battery cannot be charged.) Use the AC adaptor supplied for this unit.

- When the SD Multi Camera is shipped, the battery is not charged. Charge the battery before use.



1 Connect the power plug of the AC adaptor to the electrical outlet and connect the DC plug to this unit.

- The Charge Lamp ❶ blinks and the charging starts.
- When charging is completed (the battery is fully charged in about 160 minutes), the charge lamp turns off.

■ Charging time and the number of recordable pictures/ time (per battery)

Charging time		Approx. 160 minutes	
The number of recordable pictures	**[Picture]**	Approx. 260 pictures (Recording conditions by CIPA standards)	
Continuous recording time	**[MPEG4]**	Approx. 140 minutes	When the supplied stereo earphones are used
Continuous playback time	**[MPEG4]**	Approx. 300 minutes	
	[Audio]	Approx. 40 hours	

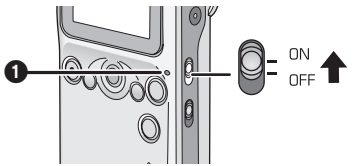
- Temperature: 73°F (23°C)/Humidity: 50%
- Using the supplied battery and SD Memory Card (256 MB/ RP-SDH256VE1)
- CIPA is an abbreviation of “Camera & Imaging Products Association”.
- The times (numbers) shown above may vary depending on the condition.
- The optional battery pack CGA-S302A/1B is also available.

■ Environment for charging

- Charge the battery under temperature of 50–95°F (10–35°C). (The temperature of the battery should be the same.)
- When the battery is normally charged, the charge lamp blinks about once every 2 seconds. (It turns on about 1 second and turns off about 1 second.) If the charge lamp blinks faster than above, this is a malfunction. Refer to P88 for countermeasures for this case.

- The battery becomes warm during and after charging. The SD Multi Camera also becomes warm during the operation, however, it is not a malfunction.
- When you do not use this unit, disconnect the DC plug from this unit and disconnect the AC adaptor from the electrical outlet.

Turning This Unit On



1 Slide the Power Switch to [ON].

- This unit is turned off when you slide the Power Switch to [OFF].

■ Power/Charge/Card Access Lamp ❶

Lighting	This unit is turned on. (The Power/Charge/Card Access Lamp is turned off when this unit is turned off.)
Blinking	This unit is accessing the card. (For recognizing/recording/reading/deleting, etc.)

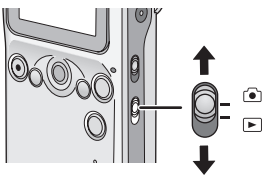
- When the Power/Charge/Card Access Lamp is blinking, do not turn the power off or remove the battery or card. Otherwise, the card or its contents may be damaged, or the SD Multi Camera may not work properly.
- The Power/Charge/Card Access Lamp also blinks when charging the battery (P16).

■ Battery indicator

- It is displayed on the LCD Monitor (P93) when this unit is turned on.
- As the remaining battery power is decreased, the indicator is changed as → → (blinking). When the indicator is shown as (blinking), the battery will be exhausted in a few minutes. Charge the battery.
- The indication of the remaining battery power may be increased or decreased depending on each mode. Check the indicator every time you switch the mode.

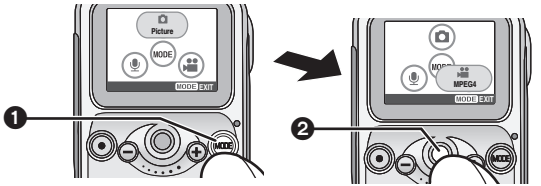
- If the battery is excessively discharged, the message “INSERT BATTERY” may appear even if the battery is inserted in this unit or the USB connection with the PC may not be possible. Charge the battery before use.

Switching the Mode



1 Slide the Record/Playback Mode Switch to the desired mode.

- [ ]: When recording
- [ ]: When playing files recorded on the card



2 Press the [MODE] button ❶, and then roll the Jog Ball ❷ to select the mode.

– The selected icon is enlarged.

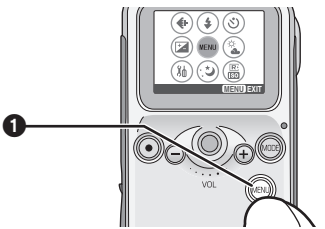
• When the [MODE] button is tapped without a card in this unit, the demonstration mode (P92) is activated.

3 Press the Jog Ball to set.

• Refer to P28 for the modes in the recording mode and refer to P43 for the modes in the playback mode.

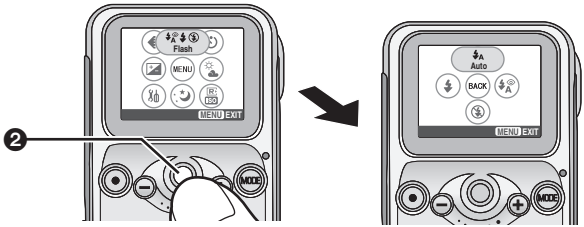
How to Set the Menu

Turn this unit on and select the desired mode beforehand. (P18–19)
The available items depends on the mode.



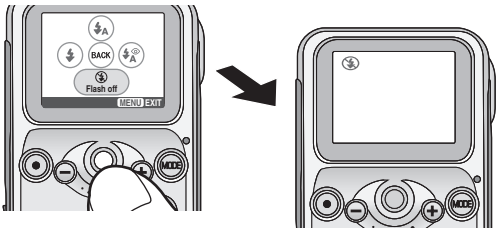
1 Press the [MENU] button ❶.

– The menu screen appears.



2 Roll the Jog Ball ❷ to select the sub-menu, and then press the Jog Ball to set.

– The sub-menu screen appears.



3 Roll the Jog Ball to select the desired item, and then press the Jog Ball to set.

– The setting is changed and the menu screen disappears.

• If you have other items to select, repeat Step 3.

- To stop the operation, press the [MENU] button.
- If the Jog Ball is left without any operation for about 30 seconds, the unit exits the menu automatically.
- When you press the [MENU] button for about 1 second, the shortcut menu appears. (P26)

Setup Menu

You can change the settings on this unit in the menu.

1 Press the [MENU] button and then set the desired items with the Jog Ball. (P20)

Setup ➜ Select the following items for the settings.

■ Setting the operation sound

Volume ➜

Beep ON	Turns on the operation sound.
Beep OFF	Turns off the operation sound.
Main volume	Adjusts the volume of the stereo earphones.

■ Setting the Jog Ball

Sensitivity (Jog Ball) ➜

Normal	This is normal response speed of the Jog Ball.
Fast	The response of the Jog Ball becomes fast.
Slow	The response of the Jog Ball becomes slow.

- The response speed of the Jog Ball is not changed when you select pictures and move between thumbnails or list display in the playback mode.

■ Setting the USB connection

USB	**Connection (USB)**	➜	**Connection (PC)** Connects to the PC. (P73)
			PictBridge Connects to the printer. (P55)

■ Setting the LCD Monitor

	Display setup	➜	**Icon display** Displays or hides the icon display.
			Brightness Adjusts the brightness of the LCD Monitor.

■ Setting the power

AUTO	**Auto power off**	➜	**5min power off** Turns off this unit automatically without any operation for about 5 minutes.
			Cancel Will not turn this unit off automatically.

- When this unit is automatically turned off and you want to turn it on again, slide the Power Switch to [OFF] and slide it to [ON].
- [Auto power off] does not work when connecting in USB connection mode, recording/playing MPEG4 images, playing the slide show or music, or recording/playing the [Voice] files.

■ Setting the clock

Clock set	Sets the date and time.

■ Formatting (initializing) the card

Format	If the card is formatted, all the data (including protected files) cannot be recovered. Check the data before formatting.

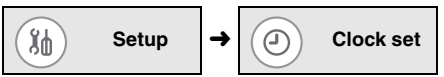
■ Restoring the settings

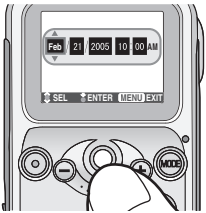
Reset settings	Resets to the initial settings except the clock setting.

Setting the Clock

The clock is not set at the time of purchase. Set the clock on the clock setting screen which appears at the time you turn this unit on. (If you do not set the clock here, the clock is automatically set to January 1st, 2000 12:00AM.)

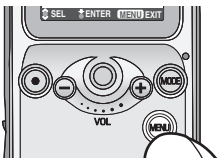
1 Press the [MENU] button and then set the item with the Jog Ball. (P20)





2 Adjust the date and time with the Jog Ball.

- The highlight moves between the items (Month, Day, Year, Hour, Minute) every time you press the Jog Ball. When you roll the Jog Ball up or down, the value is changed. (You can set the year from 2000 to 2099.)
- The time is displayed in 12 hour system.



3 Press the [MENU] button after adjusting the date and time.

– The setup screen disappears.

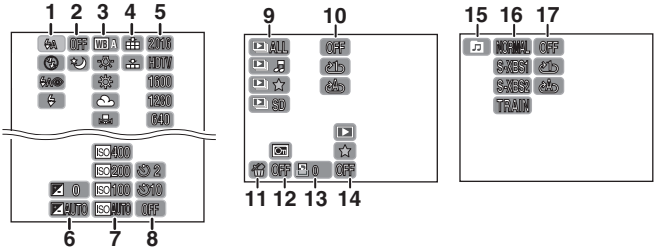
- **When the fully charged battery is inserted in the SD Multi Camera for 1 hour or more, the clock setting is stored in the SD Multi Camera for about 10 hours even after the battery is removed.** (The time to keep the clock setting depends on how long the battery is inserted. It is stored for about 3 months at a maximum. If a battery which is not fully charged is inserted, the time may become shorter.) The clock setting is canceled if more time has passed without the battery inserted. In this case, set the clock again.

Shortcut Menu

1 Press the [MENU] button for 1 or more seconds and then set the item with the Jog Ball.

- Roll the Jog Ball up/down/left/right to select the item and then press the Jog Ball to set the item.
- Press the [MENU] button to exit the shortcut menu.

<Recording Mode> **<Playback Mode>**



1 **Flash (P36)**
2 **Night mode (P40)**
3 **White balance (P39)**
4 **Picture quality (P33)**
5 **Picture size (P33)**
6 **Exposure compensation (P41)**
7 **ISO sensitivity (P42)**
8 **Self-timer (P38)**
9 **Slide show (P54)**
10 **Repeat playback (P47)**
11 **File delete (P47)**
12 **Lock setting (P49)**
13 **DPOF print (P58)**
14 **Mark setting (P51)**
15 **Playlist (P65)**
16 **Sound quality (P64)**
17 **Repeat playback (P65)**

Recording

Before Recording

■ How to hold the SD Multi Camera

- Put your arm on the side of your body.
- Fix the SD Multi Camera with your right hand and put your left hand on the SD Multi Camera.
- The shutter speed can be automatically adjusted. The shutter speed becomes slow in dark places such as shaded areas or in a room. Therefore, be careful not to shake the SD Multi Camera and press the shutter button gently. When you take pictures of the subjects in quick motion, the picture may be blurred or the image of the subject may persist.
- You can reduce camera shakes by taking pictures with the self-timer or the remote controller.
- If the SD Memory Card has been formatted by a PC or other equipment, it may not record properly. Format the card with this unit before use.

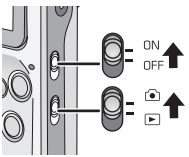
Recording (continued)

Recording

This unit can focus on a subject at a distance of about 2.0 ft. (60 cm) or more.

■ Selecting the desired recording mode

1



Slide the Power Switch to [ON].

– The Power Lamp lights in red.

Slide the Record/Playback Mode Switch to the recording mode [ ].

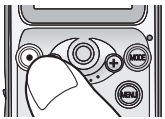
2

Press the [MODE] button and then select the desired mode with the Jog Ball.

- Refer to the table below to select the mode.

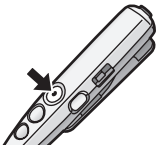
Recording mode	Recommendable situation	Audio
Picture (Still picture recording)	When you want to capture still images	Cannot be recorded
MPEG4 (Motion image recording)	When you want to record and watch motion images	Recorded from the microphone on this unit
Voice (Audio recording)	When you want to listen to sounds for studying languages or rehearsing a speech	

■ **When selecting [Picture]**

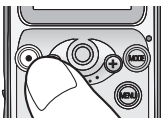
1 

Tap the Shutter button for recording.

- You can also use the Shutter button on the remote controller.
- Recorded pictures are displayed for a few seconds after capture.



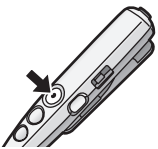
■ **When selecting [MPEG4] or [Voice]**

1 

Tap the Shutter button for recording.

– [●] appears during recording.

- You can also use the Shutter button on the remote controller.



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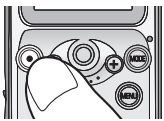
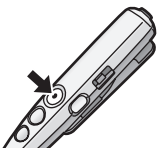
2 

Press the Shutter button to stop recording.

– [□] appears while recording is stopped.

- If the memory of the card becomes full during the recording, the recording is stopped automatically.



- Do not cover the microphone with your finger or other objects during recording. Be careful not to touch the Jog Ball or any other buttons. Noises may be recorded.

■ When recording in [Picture] mode

- If you select [Advanced setup] → [Reset file No.] on the menu setting, you can reset the file number in recording to a card to 0001. (The folder number is increased by 1.)

■ When recording in [MPEG4] mode

- If the remaining recording time becomes less than 1 minute, “R 0h00m” is displayed in red.
- You cannot use the flash, night mode and self-timer.
- The ISO sensitivity cannot be adjusted.
- The audio is recorded in monaural.
- If you use a card with a low writing speed, recording in [MPEG4] mode may be stopped. (We recommend using Panasonic SD Memory Card.)
- Before and after the recording, the click sound may occur around the Lens or the brightness of the screen may change depending on the ambient lighting. However, it is not a malfunction.

■ When recording in [Voice] mode

- The LCD Monitor turns off in about 10 seconds after the recording has started. It turns on again when you press the [MENU] button. (It also turns on when the recording is stopped.)
- The audio is recorded in monaural.
- The files that are recorded are automatically protected. (P49)

Approximate Number of Recordable Pictures and Time

	Picture (Unit: piece)				
	2016×1512	HDTV (1920×1080)	1600×1200	1280×960	640×480
8 MB	5 (11)	8 (17)	7 (17)	13 (27)	33 (68)
16 MB	13 (26)	20 (40)	19 (40)	31 (64)	77 (150)
32 MB	29 (58)	44 (87)	42 (87)	68 (130)	160 (330)
64 MB	61 (120)	92 (180)	89 (180)	140 (280)	340 (690)
128 MB	120 (240)	180 (360)	180 (360)	290 (580)	700 (1400)
256 MB	240 (480)	360 (720)	350 (720)	560 (1100)	1300 (2700)
512 MB	490 (960)	730 (1400)	710 (1400)	1100 (2200)	2700 (5400)
1 GB	980 (1900)	1400 (2800)	1400 (2800)	2200 (4500)	5400 (10000)

	MPEG4				
	XF (Extra fine)	SF (Super fine)	F (Fine)	N (Normal)	E (Economy)
16 MB	1 min.	2 min.	5 min.	7 min.	18 min.
32 MB	3 min.	4 min.	11 min.	16 min.	38 min.
64 MB	7 min.	9 min.	23 min.	34 min.	1 h. 10 min.
128 MB	14 min.	18 min.	47 min.	1 h. 10 min.	2 h. 40 min.
256 MB	28 min.	36 min.	1 h. 30 min.	2 h. 10 min.	5 h. 10 min.
512 MB	55 min.	1 h. 10 min.	3 h.	4 h. 30 min.	10 h.
1 GB	1 h. 50 min.	2 h. 20 min.	6 h.	9 h.	20 h.

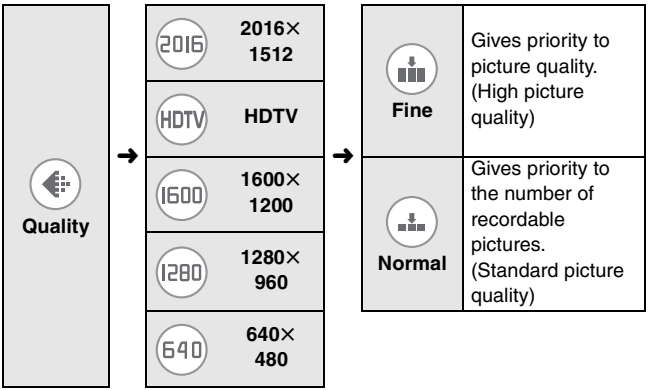
Voice			
8 MB	25 min.	**128 MB**	8 h. 30 min.
16 MB	58 min.	**256 MB**	16 h.
32 MB	2 h.	**512 MB**	33 h.
64 MB	4 h.	**1 GB**	66 h.

- The times listed in the above tables are approximate.
- The numbers of recordable pictures described in the above [Picture] table are applicable when the picture quality is set to [Fine]. The numbers in brackets are applicable in the case of [Normal].
- The remaining number of recordable pictures and time depends on the subjects being recorded. (In [MPEG4] mode, the remaining time may reach double the time listed above depending on the recording condition.)
- Even if the remaining number of recordable pictures for [Picture] files is actually 10,000 or more, it is displayed as [9999] on the screen.
- The remaining number of recordable pictures and time displayed on the LCD Monitor are approximations.
  The remaining number of recordable pictures and time vary when pictures with different picture quality or picture size are mixed or the data recorded in [Picture], [MPEG4] and [Voice] modes are mixed in a card.
- You can continue to record files as a file up to about 10 hours in [MPEG4] mode and up to about 24 hours in [Voice] mode. (When the AC adaptor is used as the power source and files are recorded on a card having 512 MB or 1 GB storage capacity.)

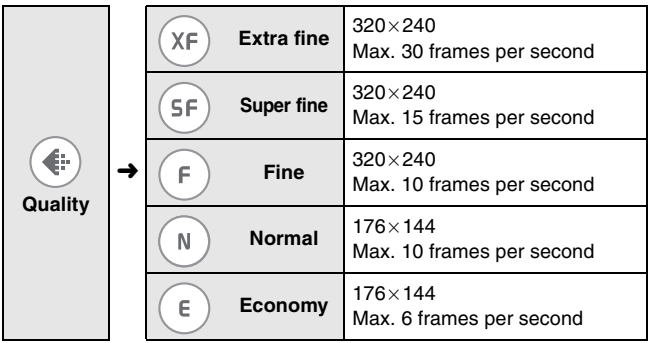
Changing the Picture Size and Quality

1 **Press the [MENU] button and then set the item with the Jog Ball. (P20)**

■ **Size and quality of the picture recorded in [Picture]**



■ **Size and quality of the image recorded in [MPEG4]**



- When [HDTV] (picture size: 1920×1080) is selected, the pictures are recorded with the aspect ratio equal to the High-Definition TV (16:9).
- The larger the picture size (values such as [640×480]), the larger the file size will become.
- If you select a larger picture size in the [Picture] mode, the printed picture will be clearer.
- If the file size of the picture is large, the time required to capture the picture onto the card becomes longer.
- The smaller the picture size, the more pictures you can store on a card. In addition, it is easier to attach the picture to an e-mail or post it on a website.
- When you set [Quality] in [Picture] mode to [Normal], the recorded pictures may be shown in a mosaic-like pattern depending on the subject.
- When you set [Quality] in [MPEG4] mode to [N] or [E], the picture quality of the recorded pictures is deteriorated. (The sound quality will not be changed.)
- [MPEG4] files recorded with this unit cannot be played on Panasonic SD Multi Camera SV-AS10.
- [MPEG4] files recorded with [Quality] set to [XF]
  - May not be played properly on other equipments.
  - May not be recognized on Panasonic DVD Video Recorders or digital video cameras which are equipped with functions to play MPEG4 videos.
  - Cannot be played on Macintosh PC.

Enlarging Pictures (Digital Zoom)

1

Press the Jog Ball.

– The zoom magnification appears.

2

Roll the Jog Ball up or down to set the zoom magnification.

- You can enlarge the picture up to 4×.
- The magnification is restored to 1× by pressing the Jog Ball.

- The more the picture is enlarged, the more the picture quality is deteriorated.
- You cannot enlarge pictures recorded in [MPEG4] mode.

Setting the Flash

The available flash range is about 2.6–3.9 ft. (80 cm–120 cm).

1 **Press the [MENU] button and then set the item with the Jog Ball. (P20)**

Flash →		**Auto**	The flash is automatically activated according to the recording situation.
		Reduced red eye	The flash is automatically activated according to the recording situation before actual recording. It reduces the red-eye phenomenon (eyes of the subject appear red in flash light).
			Use it when you take pictures of people in dark places, etc.
		Flash off	Even in dark places, the flash is not activated.
			Use it when you take pictures in places where using flash is not allowed.
		Flash on	The flash is activated every time a picture is recorded.
			Use it when the subject is back-lit or under fluorescent light, etc.

■ The flash is not activated

- The flash cannot be activated in the following cases.
  - – When you set the flash to [Auto] or [Reduced red eye] in bright places
  - – When recording in [MPEG4] mode

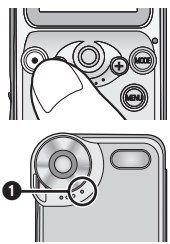
- When you record pictures without using the flash, set the ISO sensitivity to adjust the brightness. (P42)
- If the subject is too close to the SD Multi Camera when taking a picture, the exposure may not be set properly and the picture may appear washed out.
- You cannot record pictures even if you press the Shutter button while the flash mark turns red and blinks (while the flash is charging).
- Do not use the flash if taking a picture in close proximity to the subject. The amount of light may overexpose the image causing color or image degradation.

Recording with the Self-timer

1 Press the [MENU] button and then set the item with the Jog Ball. (P20)

Self timer →	10s 2s	**10 s** **2 s** **(s: second)**	You can select the time between when the shutter button is pressed and when the picture is actually recorded.
	OFF	**OFF**	The self-timer is turned off.

2



Press the Shutter button to take a picture.

- If you press the [MENU] button while the self-timer is activated (while the Self-timer Lamp ❶ is blinking), the self-timer is canceled.

- Set the self-timer every time you record pictures.
- If you set the self-timer to [2 s], it is convenient to prevent camera shake when pressing the Shutter button.
- You cannot use the self-timer when you record pictures in [MPEG4] and [Voice] mode.

Adjusting the Color to Natural Tone (White Balance)

This mode allows you to reproduce a white color closer to the tone in real life on the pictures recorded under sunlight, halogen lighting, etc. where the white color may appear reddish or bluish.

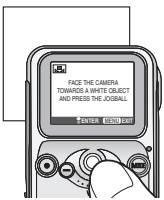
1 Press the [MENU] button and then set the item with the Jog Ball. (P20)

White balance	→	Auto	You can automatically record pictures with natural tones.
		Incandescent	For recording under incandescent lighting
		Daylight	For recording outdoors on a bright day
		Cloudy	For recording under a cloudy and shady sky
		Manual	For manual setting

■ Setting in the set mode

After setting to [Manual] on Step 1,

2



Aim this unit at a sheet of white paper or similar object so that it completely makes a white frame on the LCD Monitor and press the Jog Ball.

– The white balance is set.

• Do not move this unit until the indication on the display is changed.

- The white balance may not be set depending on the condition of the scene or the light source (e.g. in dark places, etc.).
- It is effective to set the white balance in [Manual] in the following scenes.
  - When recording under reddish lighting (halogen light bulb, sodium vapor lamp, etc.)
  - When recording under multiple light sources
  - When recording a picture of mono-tone color
- The white balance may not be set to [Manual] in extremely bright or dark places. In this case, set to the other mode.
- **The setting of the white balance is reflected to other recording modes and it is retained even if this unit is turned off. When turning this unit on again in different recording conditions, set the white balance again, or reset to [Auto].**

Recording in Dark Places (Night Mode)

1 Press the [MENU] button and then set the item with the Jog Ball. (P20)

Night mode	→	ON **ON**	The subject becomes visible and vivid.
		OFF **OFF**	Cancels the night mode.

- When you use the flash, you can record people against a night landscape.
- When you aim this unit from bright places to dark places, it takes time for the screen to be brightened.
- You cannot use this mode when you record pictures in [MPEG4] mode.

Compensating the Exposure

Use this function when you cannot achieve appropriate exposure due to the difference of brightness between the subject and the background, etc.

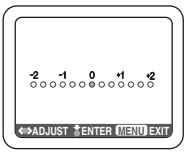
1 Press the [MENU] button and then set the item with the Jog Ball. (P20)

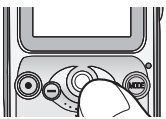
Exposure	→	EV auto	The exposure is automatically determined.
		EV manual	The exposure can be adjusted manually.

■ Manual adjustment

After setting to [EV manual] in Step 1,

2





Roll the Jog Ball left or right to compensate the exposure.

- You can compensate it from −2 EV to +2 EV in steps of 1/3 EV.
- When the exposure is compensated toward positive, the picture will be recorded brighter. When the exposure is compensated toward negative, the picture will be recorded darker.

Press the Jog Ball to set the exposure.

- When the exposure is compensated, the brightness of the picture on the LCD Monitor may differ from that of the picture actually recorded. Check the brightness by playing the picture.
- EV is an abbreviation of Exposure Value, and it is the amount of light given to the CCD.

Setting the ISO Sensitivity

ISO sensitivity represents the sensitivity to light in values. It is useful when taking pictures without the flash.

1 **Press the [MENU] button and then set the item with the Jog Ball. (P20)**

	Auto	The ISO setting is automatically adjusted according to the brightness.
ISO 100 / ISO 200 / ISO 400	**100 200 400**	The more the ISO sensitivity is adjusted, the more this unit becomes suitable for recording in dark places.

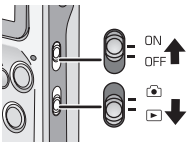
- When you take a picture in high ISO sensitivity, picture noise appears and the picture quality is deteriorated.
- When the picture is still dim even if the ISO sensitivity is increased, set [Sensitivity] to [Auto] and use the flash. (The available flash range is about 2.6–3.9 ft. (80 cm–120 cm).)
- You cannot use this function when you record pictures in [MPEG4] mode.

Playback

Playback

■ Selecting the desired playback mode

1

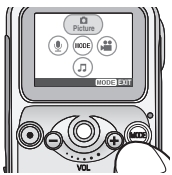


Slide the Power Switch to [ON].

– The Power Lamp lights in red.

Slide the Record/Playback Mode Switch to the playback mode [▶].

2

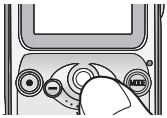


Press the [MODE] button and then select the desired mode with the Jog Ball.

- Refer to the table below to select the mode.

Playback modes	Playable files	Audio
Picture (Still picture playback)	[Picture] files and still picture files (JPEG format) recorded with this unit	Cannot be played.
MPEG4 (Motion image playback)	[MPEG4] files and motion image files (ASF format) recorded with this unit	Played from the stereo earphones (supplied). (The audio cannot be played from this unit.)
Voice (Audio playback)	[Voice] files recorded with this unit	
Audio (Music playback)	Audio files recorded onto a card with SD-Jukebox	Refer to P61 for details about playing music.

3



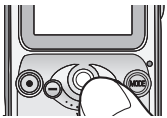
Roll the Jog Ball right or left to select the file you want to play.

- Roll the Jog Ball to the right to display the next file.
- Roll the Jog Ball to the left to display the previous file.

■ When selecting [MPEG4] or [Voice]

After you select the file in Step 3,

4



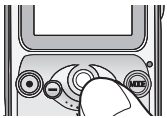
Press the Jog Ball to start playback.

– [▶] appears during playback.

- If there are multiple files, the files will be played continuously.

- You can fast-forward or fast-rewind the file with the remote controller. When you keep pressing [▶▶|] ([|◀◀]) button, the file is fast-forwarded (fast-rewound). When you tap them, you can move to the beginning of the next (current) file.

5



Press the Jog Ball to pause playback.

– [□] appears while playing is stopped.

- When you stop playback halfway and start playback again, the file will be started from the position where you previously stopped. (Resume playback)

- When playing a still picture, the [🖻] icon appears for a moment and the resolution of the picture may look deteriorated a little. However, the picture is played with normal quality later.
- When starting the resume playback, the file preceeding the position where you stopped will be played.
- Some files may not be played on this unit even if the files are in JPEG or ASF (MPEG4) format.
- [Voice] files cannot be played on Panasonic IC recorders.
- MPEG4 and Voice files recorded on Panasonic SD Multi Camera SV-AS10 cannot be played on this unit.
- When a still picture recorded with other equipment is played on this unit, the following may occur.
  - The picture cannot be played.
  - The resume playback cannot be operated.
  - The quality of pictures may be deteriorated.
  - The file size may not be displayed.
  - The date/time indication is different from the date/time when the picture is created.
- If you change the folder name or the file name of a picture on your PC, the picture may not be played.
- The date/time indication is stopped while [MPEG4] files are played.

■ When playing in [Voice] mode

- If you do not operate this unit for 10 seconds after you start playback, the LCD Monitor will turn off to save power. (The Card Access Lamp blinks during playback.) If you turn the LCD Monitor on again, press the [MENU] button on this unit.
- You can avoid operational mistakes on this unit by pressing down the [MODE] button (for more than about 2 seconds). (P64)
- [Voice] files are fast-forwarded (fast-rewound) at a speed of 10× for the first 6 seconds. After that, the files will be fast-forwarded (fast-rewound) at a speed of 60×.

Playback (continued)

Adjusting Volume

1

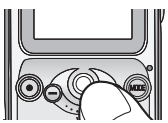
Press the Volume button.

- The volume turns up with [+].
  The volume turns down with [−].
- If the volume adjustment screen is not operated for a while after adjustment, it will automatically disappear.

- When you want to listen to the audio being played, connect the remote controller and the stereo earphones (supplied). (The unit is not equipped with a speaker.)
- You can also adjust the volume on the remote controller. (P13)

6 Pictures Multi Playback (Thumbnail Display)

1



Roll the Jog Ball down while the playback is stopped.

- In [Voice] mode, the list of files which have no thumbnails are displayed.

■ To select a file and play 1 picture

After you display 6 files in Step 1,

2

Roll the Jog Ball to select the file.

- If 7 or more files are recorded, the files will be displayed on the subsequent pages.

Press the Jog Ball.

– The selected file starts playback.

Playing Motion Images Repeatedly (Repeat Playback)

1 Set the mode to [MPEG4] mode. (P43)

2 Press the [MENU] button and then set the item with the Jog Ball. (P20)

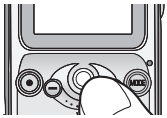
Repeat	→	OFF	**OFF**	Stops playback after the last file is played.
		1	**Repeat one**	Repeats playing a file.
		ALL	**Repeat all**	Repeats playing all files.

Deleting Files

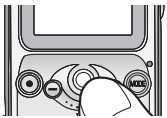
Once deleted, files cannot be recovered. Check the files before deleting.

1 Press the [MENU] button and then set the item with the Jog Ball. (P20)

Erase file	→	**Erase one**	Erases files one by one.
		Erase all	Erases all files in the mode where you are playing files.

2 

Select the files to be deleted and then press the Jog Ball.
(Only when [Erase one] is selected)

3 

Select [Yes] on the confirmation screen and then press the Jog Ball.

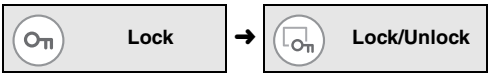
- Press the [MENU] button to exit this setting.

- You cannot delete protected files (P49), music files and files that do not conform to DCF standard on this unit.
- Be sure to delete [Voice] files on this unit.
- When you delete files on this unit, the DPOF information set on other equipment can also be deleted.
- Image files which cannot be played on this unit (other than JPEG) can be deleted.
- Do not turn this unit off or remove the card when deleting.
- It takes some time to delete many files at the same time. Use a fully charged battery.

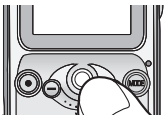
Preventing Accidental Deletion of Files (Lock Setting)

This function prevents deleting or altering precious files by mistake.

1 Press the [MENU] button and then set the item with the Jog Ball. (P20)



2



Select the files to be protected and then press the Jog Ball.

– [ ] appears on the bottom of the LCD Monitor.

- You can select the desired files until you press the [MENU] button.

■ When you release protection

Select protected files in Step 2 and then press the Jog Ball.

■ When you release protection on all files

Select [Unlock all] in Step 1, select [Yes] on the confirmation screen and then press the Jog Ball. Protection on all files in the playback mode currently selected can be released.

- If you format the card, protected files will also be deleted.
- The lock setting may not be effective in other equipment.
- Sliding the SD Memory Card Write-Protect switch (P11) to “LOCK” prevents the file from deletion even if the protection is not set.
- [Voice] files can be automatically protected when they are recorded.
- It takes some time to set many files at the same time. Use a fully charged battery.

Enlarging Pictures (Target Zoom)

You can enlarge the picture up to 10×.

1 Select a picture in [Picture] mode. (P43)

2

Roll the Jog Ball upwards.

– The target frame appears on the LCD Monitor.

3

Roll the Jog Ball up or down to select the zoom magnification and then press the Jog Ball.

- The more you roll the Jog Ball upwards, the more the zoom magnification is increased (up to 10×).

4

Roll the Jog Ball to move the target frame to the position you want to enlarge and then press the Jog Ball.

– The picture in the target frame is enlarged.

- After enlarging the picture, the magnification is restored to 1× by pressing the Jog Ball or rolling it right or left.

- Repeat Steps 2–4 if you want to enlarge the picture more.

- You can cancel the zoom by opening the menu screen.
- The more the picture is enlarged, the more the picture quality is deteriorated.
- The zoom may not be done on a picture recorded with other equipment.

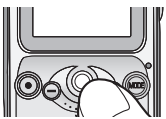
Registering Still Pictures as “Favorite”

Only pictures registered as a “Favorite” can be displayed or watched on the slide show (P54).

1 Set the mode to [Picture] mode. (P43)

2 Press the [MENU] button and then set the item with the Jog Ball. (P20)

3



Select the desired picture and then press the Jog Ball.

– [★] appears on the LCD Monitor and the picture is registered.

- Press the Jog Ball again to cancel.
- Press the [MENU] button to close the menu.

■ When you play files registered as “Favorite” only

Select [Play] in Step 2 and then press the Jog Ball.

- Roll the Jog Ball right or left to select the picture.
- Press the [MENU] button to stop the Mark play function.

■ When you cancel registration

Select a registered file in Step 3 and then press the Jog Ball.

■ When you cancel registration on all files

Select [Unselect all] in Step 2, select [Yes] on the confirmation screen and then press the Jog Ball. All pictures registered are canceled.

- Up to 999 pictures can be registered as a “Favorite”.

Creating a Slide Show with Audio

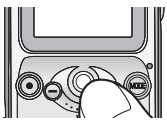
You can create a slide show with the audio file in the card added as a BGM (Background Music).

1 Set the mode to [Picture] mode. (P43)

2 Press the [MENU] button and then set the item with the Jog Ball. (P20)

- If you have created a slide show already, a confirmation message appears. If you select [Yes], you can delete a slide show previously created and then create a new one. If you select [No], you can change an existing slide show.

3



Roll the Jog Ball left or right to select the pictures to create a slide show and then press the Jog Ball.

– [♫] appears on the LCD Monitor.

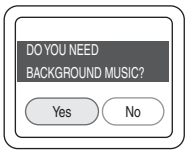
- Press the Jog Ball again to cancel.
- You can also set other pictures by repeating this operation.

4

Press the [MENU] button.

- If no audio file is recorded in the card, a slide show without audio is created.

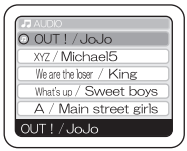
5



(When there are audio files in the card)
Select [Yes] or [No] on the confirmation screen and then press the Jog Ball.

- If you select [No], a slide show without audio is created.

6



(When you select [Yes] in Step 5)
Select the audio file you want to play during the slide show and then press the Jog Ball.

- A slide show with audio is created.

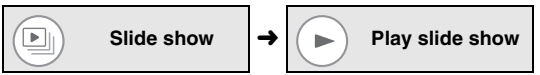
- The only files attachable as BGM (Background Music) is audio files that can be played on this unit. (P61)
- Up to 36 pictures can be set in a slide show.
- During the playback in a slide show with audio, the picture quality is deteriorated.

Playing Still Pictures on the Slide Show

Still pictures are automatically played in sequence. This function is suitable for making a story with still pictures.

1 Set the mode to [Picture] mode. (P43)

2 Press the [MENU] button and then set the item with the Jog Ball. (P20)



Slide show (with audio)	Plays slide shows with audio (P52) created on this unit.
Slide show (all pictures)	Plays all pictures (in the order of the file number).
SD Slide show	Plays slide shows set on the supplied software SD Viewer.
Slide show (★ mark)	Plays slide show pictures registered as “Favorite” (P51).

– A slide show starts.

• Press the Jog Ball to stop the playback halfway.

- You can set the pictures which will be played as a slide show in SD Viewer. On this unit, pictures cannot be played in the interval set in SD Viewer.
- You can adjust the volume with the Volume button on the remote controller during the slide show (with audio). (The volume control screen does not appear.)
- It may take time to display the slide show (with audio) since the opening screen appears during a preparation for playback. However, this is not a malfunction.

- When you want to listen to the audio being played, connect the remote controller and the stereo earphones (supplied). (This unit is not equipped with a speaker.)

Printing Pictures Directly by Connecting to a Printer (PictBridge)

You can print still pictures played on this unit from a printer supporting PictBridge connected to this unit with the USB cable (supplied). (Turn the printer on beforehand.)

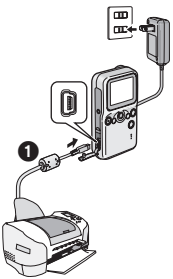
1 Set the mode to [Picture] mode. (P43)

2 Press the [MENU] button and then set the item with the Jog Ball. (P20)

Setup ➜ Connection (USB) ➜ PictBridge

- Be sure to set the item above before connecting this unit with the printer.

3



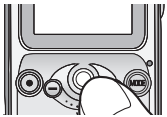
Connect this unit to the power plug with the AC adaptor.

- Be sure to insert the charged battery and the card into this unit.

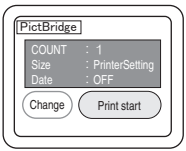
Connect this unit and the printer with the supplied USB cable ❶.

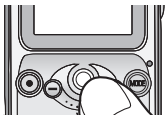
– [ACCESSING PICTBRIDGE/PTP] indication appears.

- If the message [ACCESSING PC] is displayed, disconnect the USB cable once and confirm the setting in Step 2.

4 

Select a picture and then press the Jog Ball.

5 



Check the setting, select [Print start] and then press the Jog Ball.

Start	**Print start**	Print starts.
Change	**Change settings**	Changes the print setting.

– When printing is finished, the message [PRINTING COMPLETED] appears.

- To cancel printing, press the [MENU] button.

■ To change the print setting

When you select [Change settings] in Step 5, you can change 3 items described in the table below. Select and set the desired item with the Jog Ball.

COUNT	Size		Date
1–99	L (3.5×5″)	Post Card	OFF
	2L (5×7″)	A4	ON
	PrinterSetting		

- The items which are not supported by the printer will not be displayed.
- When [PrinterSetting] is selected, pictures are printed out in the paper size set on the printer.
- If you press the [MENU] button during the setting, the screen returns to the picture selection screen (Step 4).

- Do not use any other USB cables except the supplied one.
- While printing or canceling the print, do not disconnect the USB cable.
- Do not replace the card while connecting with the printer. (Ensure that the printer is not printing anything and then disconnect the USB cable before replacing the card.)
- Pictures recorded on other devices or altered on a PC may not be printed.
- If you unplug the AC adaptor while connecting with the printer, operations of buttons on this unit will be disabled.
- If the following messages appear during printing, check the printer and then select [Print resume] to restart printing or select [Print cancel] to stop printing. (If an irretrievable error takes place, only [Print cancel] will appear.) (Refer to the operating instructions of the printer you use.)

Messages displayed		
NO PAPER CHECK PRINTER	**JAMMED PAPER CHECK PRINTER**	**PRINTER ERROR CHECK PRINTER**
NO INK CHECK PRINTER	**PRINTER BUSY CHECK PRINTER**	

- When the error message of the printer is displayed before printing begins, you cannot operate this unit until you turn this unit off and the printer recovers.

Playback (continued)

- Error messages also appear in the following cases. Check the message before connecting.

Messages displayed	Conditions
USE BOTH AC ADAPTOR AND BATTERY	When the battery is not inserted When the AC adaptor is not connected When the AC adaptor is unplugged during connection
SET TO PLAY MODE	When connecting in the recording mode
NO CARD	When the card is not inserted
CHECK CARD	When MultiMediaCard is inserted
TARGET FILE DOES NOT EXIST	When there is no picture to be selected in the card

Setting Still Pictures to be Printed and the Number of Prints (DPOF Print)

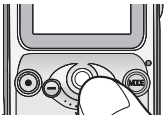
DPOF is a system that allows the user to select which pictures are to be printed on compatible photo printers.

1 **Set the mode to [Picture] mode. (P43)**

2 **Press the [MENU] button and then set the item with the Jog Ball. (P20)**

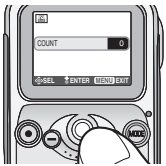
DPOF print	→	**Single print**	Sets the number of prints for each file independently.
		All prints	Sets the same number of prints for all files.

3



Roll the Jog Ball left or right to select the desired file.
(Only when [Single print] is selected)

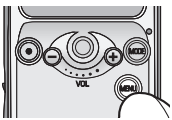
4



Roll the Jog Ball up or down to select the number of prints and then press the Jog Ball.

- The number of prints can be set from 1 to 99.
- If you want to set DPOF setting on other pictures when [Single print] is selected, repeat Steps 3–4.

5



Press the [MENU] button.

– The setting is completed.

■ When you confirm pictures with DPOF setting

Select [Check DPOF] in Step 2 and then press the Jog Ball.

- Roll the Jog Ball right or left to confirm the picture. Press the [MENU] button to stop the confirmation.

■ When you print the date in DPOF printing

Select [Print date]→[ON] in Step 2, select [Yes] on the confirmation screen and then press the Jog Ball.

- Date printing is set to all the pictures that DPOF setting is set. (You cannot set date printing for each picture.)
- You cannot print the date on the pictures if the recording date is not recorded.
- The date may be cut or not be displayed depending on the printer.

■ When you cancel DPOF setting

Set the number of prints to [0] in Step 4.

- If the DPOF setting is set, you do not need to indicate which or how many pictures are to be printed. It is also convenient when you print pictures with a printer supporting SD Memory Card because you do not need settings on the printer.
- If a file does not conform to the DCF standard (P91), the DPOF setting cannot be set on the file.
- When using the DPOF feature, this unit will overwrite any previous DPOF settings made by other equipment.
- When the message [CARD FULL] is displayed, delete unnecessary files and set DPOF setting again.
- It takes some time to set DPOF setting on many files at the same time. Use a fully charged battery.
- DPOF setting may not be set on a picture recorded with other equipment.
- DPOF is the abbreviation for “Digital Print Order Format”.

Playing Music

Playing Music

Files recorded onto a card with SD-Jukebox can be played on this unit. (You may not be able to play music depending on the file.)

- Audio file formats playable on this unit
  - MPEG2-AAC
  - WMA
  - MP3

Install SD-Jukebox from the supplied CD-ROM to the PC.

Audio file

Record audio files from a music CD to the PC.

Connect this unit to the PC.

❶ USB cable (supplied)

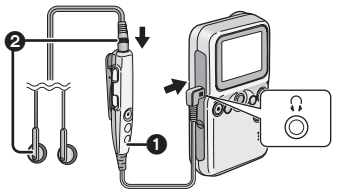
- Be sure to insert a card into this unit and connect this unit with the PC to record audio files. If you record audio files onto a card inserted in the card slot of the PC or use an USB Reader Writer etc. for recording, the recorded audio files may not be played back on this unit.

Record the audio files onto the card by using SD-Jukebox.

For details of the method to record music, refer to the operating instructions of SD-Jukebox (PDF file).

Playing Music (continued)

1 Insert a card which includes audio files.

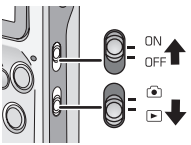


❶ Remote Controller (supplied)
❷ Stereo Earphones (supplied)

2 Connect the remote controller and the stereo earphones.

- You cannot listen to the audio on this unit without the use of earphones.

3

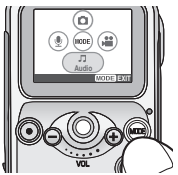


Slide the Power Switch to [ON].

– The Power Lamp lights in red.

Slide the Record/Playback Mode Switch to the playback mode [▶].

4



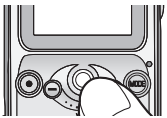
Press the [MODE] button and then select ♫ [Audio] with the Jog Ball.

5

Press the [MENU] button and then select [List] with the Jog Ball.

- When you did not select music from [List], the music will be selected and played from the files displayed.

6



Roll the Jog Ball up or down to select the desired music file.

7 Play music.

	Remote Controller	This Unit
Playback/Stop	Press ▶/■.	Press the Jog Ball.
Index	Tap ⏮ or ⏭.	Roll the Jog Ball right or left. (This operation is disabled during playback.)
Fast-forward/ Fast-rewind	Hold ⏮ or ⏭.	—
Volume	+: Turns up the volume. −: Turns down the volume.	Press the Volume button.

- If you do not operate this unit for about 10 seconds after you start playback, the LCD Monitor will turn off to save power. (The Card Access Lamp blinks during playback.) If you want to turn the LCD Monitor on again, press the [MENU] button on this unit.
- The title and the artist name may not be displayed on this unit.

Playing Music (continued)

■ When you switch the sound quality

Press the [EQ] button on the remote controller.

- The sound quality is switched every time you press the [EQ] button as below.

NORMAL (Normal sound)	➜	**S-XBS1** (Heavy and low sound)	➜	**S-XBS2** (Sound heavier and lower than S-XBS1)	➜	**TRAIN** (Prevents leakage of sound)

- The sound quality cannot be switched when the menu screen or the 6 pictures multi playback screen is displayed.

■ To prevent operation mistakes on this unit

Hold the [MODE] button on this unit for about 2 or more seconds.

- The operations with the buttons on this unit are disabled (except the Power Switch and Record/Playback Mode Switch) while [HOLD] is displayed.
- When you hold the [MODE] button for 2 or more seconds, the button operations are enabled.
- When you operate the Power Switch or the Record/Playback Mode Switch, the button operations are enabled.

- Music files cannot be recorded or deleted on this unit.
- When multiple pictures are associated with a music file by SD-Jukebox, only the picture associated as the first picture will be displayed. (The picture may not be displayed depending on the picture.)
- If the playback of an audio file with associated pictures is started while the LCD Monitor is turned off, the associated pictures will not be displayed even if you turn the LCD Monitor on during playback. These pictures will be displayed when you stop playback.
- When you format a card, all the data (files) in the card including music files will be deleted.

Selecting Playlists

You can select and play the playlist set in SD-Jukebox.

1

Press the [MENU] button and then select [Playlist] with the Jog Ball.

– When you select the item listed on the top, all of the recorded files are played.

Playing Repeatedly (Repeat Playback)

1 **Press the [MENU] button and then set the item with the Jog Ball. (P20)**

Repeat	➜	OFF **OFF**	Stops playback after the last file is played.
		1 **Repeat one**	Repeats the file being played.
		ALL **Repeat all**	Repeats playing all files (or all files in the playlist).

Connecting to PC

Operating Environment of the Software

	Windows				Macintosh	
	98SE	Me	2000	XP	Mac OS 9	Mac OS X
Is the installation of the USB driver needed?	Needed		Not needed		OS standard driver is available.	
Is SD Viewer available?	Available				Not available	
Is SD-Jukebox available?	Not available		Available		Not available	

- SD Viewer and SD-Jukebox are not compatible with Macintosh.

■ Operating environment for USB connection

PC	IBM PC/AT compatible personal computer preinstalled with Microsoft Windows 98 Second Edition/Millennium Edition/ 2000 Professional/XP Home Edition/XP Professional
	Macintosh (Mac OS 9/Mac OS X)

■ Operating environment of the software

		SD Viewer Version 3.4E for D-snap (SD Viewer)	SD-Jukebox Version 5.0 Light Edition (SD-Jukebox)
PC		IBM PC/AT compatible personal computer	
OS		PC preinstalled with Microsoft Windows 98 Second Edition/Millennium Edition/2000 Professional/ XP Home Edition/XP Professional	PC preinstalled with Microsoft Windows 2000 (Professional Service Pack 2, 3 or 4)/XP (Home Edition/Professional or Service Pack 1, 2 supported)
CPU	**98SE Me**	Intel Pentium III 450 MHz or higher/Celeron 400 MHz or higher (including compatible CPU)	—
	2000 XP		Intel Pentium III 500 MHz or higher

		SD Viewer Version 3.4E for D-snap (SD Viewer)	SD-Jukebox Version 5.0 Light Edition (SD-Jukebox)
RAM	**98SE Me**	64 MB (recommended: 128 MB) or more	—
	2000 XP	128 MB (recommended: 256 MB) or more	256 MB or more
Free hard disk space		400 MB or more	100 MB or more
Display		High Color (16 bit) or more (True Color (24 bit) or more recommended.) Desktop resolution of 800×600 or more (1024×768 pixels or more recommended.)	
		VRAM 8 MB or more (16 MB or more recommended.)	—
Sound		Windows compatible sound device	
Drive		CD-ROM drive— Used for installation	CD-ROM drive—A CD-ROM drive capable of digital recording is required. Four-speed or higher is recommended. (Recording cannot work properly with CD-ROM drives connected through an IEEE1394 connection.)
Interface		USB port	
Necessary software		DirectX 8.1 or later	
		Windows Media Player 6.4 or later Internet Explorer 5.5 or later	Internet Explorer 5.01 or later
Other requirements		—	If you are using the CDDB function, then an Internet connection is also required.

- Macintosh, Power Macintosh and Mac OS are trademarks of Apple Computer, Inc. of the U.S.
- IBM and PC/AT are registered trademarks of International Business Machines Corporation of the U.S.
- Intel, Pentium and Celeron are trademarks or registered trademarks of Intel Corporation in the United States and/or other countries.

- Even if the system requirements are fulfilled, some personal computers can not be used.
- Operation is not guaranteed when used on Windows OSs except Operating environment in the chart on P66.
- Operation on an upgraded OS is not guaranteed.
- Multi-boot environment is not supported.
- This software cannot be used on 64-bit OS.
- When your OS is Windows 2000/XP, install the USB driver after logging in with the user name authorized as the system administrator (Administrator).
- This system requirements guarantee if the application run alone. It is not guaranteed in the case that any other application or resident application runs.
- This software may not run properly on user-built computers.
- When 2 or more USB devices are connected to one PC, or when devices are connected through an USB hub or by using an USB extension cable, the operation is not guaranteed.

■ Cautions for USB driver

- This software is not compatible with a multi-CPU environment.

■ Cautions for SD-Jukebox

- This software cannot play and record music CDs that does not have a "COMPACT disc DIGITAL AUDIO" mark on the disk label.

- Depending on your computer system, you may experience problems such as being unable to record or use recorded music data. Please note that Panasonic is in no way liable for any music data you lose, or for any other direct or indirect damages.
- When you use the CDDB function, the environment for the Internet access is needed.

Before Connecting to a PC for the First Time (Installation)

When your OS is Windows 98SE or Me, the installation of the USB driver is required before connecting this unit to a PC.

- Do not connect this unit to the PC until the installation is completed.
- Exit all the other application software before inserting the CD-ROM.

1 Start the PC and insert the CD-ROM (supplied).

– The setup menu is automatically started. (When it does not start, double-click [autorun.exe] in the CD-ROM.)

2 Click the name of the software you want to install in the setup menu.

- If you stop the installation by pressing [Cancel], the software may not be properly operated.

■ When you install SD Viewer

- When the message that informs the absence of DirectX 8.1 or later appears, install DirectX from the setup menu prior to the installation of the software.

Connecting to PC (continued)

Installing the USB Driver

When your OS is Windows 2000 or XP, the installation of the USB driver is not required because the OS standard driver is used.

1

Click [USB Driver].

2

Click [Finish].

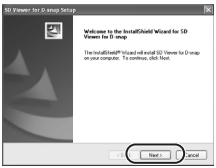
- To enable the driver, restart the PC.

Installing SD Viewer

1

Click [SD Viewer 3.4E].

2



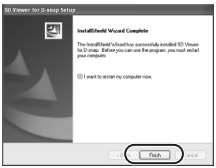
Click [Next].

3

Click [I agree].

4 **Follow the message on the screen to continue the installation.**

5



Click [Finish].

- SD Viewer can be used after restarting the PC.

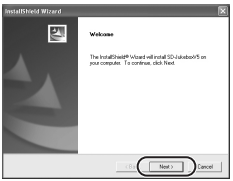
- When the message that informs the absence of Windows Media Player 6.4 or later appears, update Windows Media Player after the installation is completed.
- If Internet Explorer 5.5 or later is not installed, install it first and then install SD Viewer.
- If Microsoft Data Access Components 2.6 or earlier has been already installed while Windows 98SE is in use, Microsoft Data Access Components 2.8 is installed before SD Viewer. Follow the message on the screen to complete the installation.

Connecting to PC (continued)

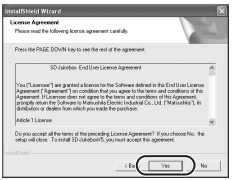
Installing SD-Jukebox

1

Click [SD-Jukebox 5].

2 

Click [Next].

3 

Click [Yes].

4

Enter [Serial No.] (on the backside of the package of the CD-ROM) and [Name], and then click [Next].

5 **Follow the message on the screen to continue the installation.**

6

Click [Finish].

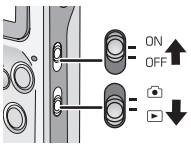
- SD-Jukebox can be used after restarting the PC.

Connecting to a PC

When your OS is Windows 98SE or Me, the USB driver is required for connecting this unit to the PC. (Do not connect this unit to the PC until the USB driver is installed. (P70))

- Turn the PC on beforehand.

1



Turn this unit on and set to the playback mode.

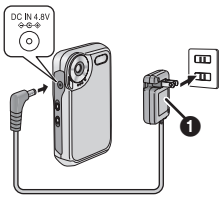
- Be sure to insert the charged battery and the card into this unit.

2 Press the [MENU] button and then set the item with the Jog Ball. (P20)

Setup ➜ Connection (USB) ➜ Connection (PC)

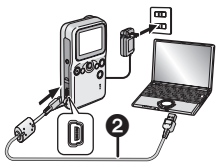
- Be sure to set the item above before connecting this unit with the PC.

3



Connect this unit to the power plug with the AC adaptor ❶.

4



Connect this unit to the PC with the supplied USB cable ❷.

– [ACCESSING PC] indication appears.

• If the [ACCESSING PICTBRIDGE/PTP] indication is displayed, disconnect the USB cable and then confirm the setting in Step 2.

- Do not disconnect the USB cable or the AC adaptor from this unit or remove the card while the Card Access Lamp on this unit is blinking. The software may not operate properly or the data being transferred may be damaged.
- Do not use any other USB cables except the supplied one.
- Do not disconnect the AC adaptor while connecting to the PC.
- When the PC connection mode on this unit (displayed as [ACCESSING PC]) is not canceled, even if you turn the PC off, disconnect the USB cable.
- If the PC is in the power saving mode while connecting to this unit, the PC may not recognize this unit when recovering from the power saving mode. In this case, restart the PC after you disconnect this unit. (When you connect this unit to the PC and use it for a long time, cancel the setting in the power saving mode beforehand.)

Checking that This Unit is Properly Recognized by the PC

If this unit is not properly recognized, check the connection again.

■ In the case of Windows

1

Check that [Removable Disk] is added to [My Computer].

- The drive name (E: etc.) varies depending on the PC used.

■ In the case of Macintosh

1

Check that the icon of [untitled] or [NO_NAME] disk is displayed on the desktop.

- If the icon of [untitled] disk does not appear when your OS is Mac OS 9, select Mac OS Base in the Extensions Manager and then restart the PC. When the message to require formatting [untitled] disk appears, open File Exchange on the Control Panel and then enable PC Exchange.

Connecting to PC (continued)

Disconnecting the USB Cable Safely

1

Double-click the [ ] icon on the task tray.

2

Select [USB Mass Storage Device] and then click [Stop].

3

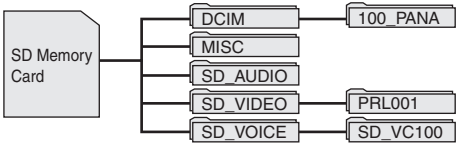
Check that [MATSHITA SD Multi Camera USB Device] is selected and then click [OK].

4 Click [Close] to close the dialogue.

- You can disconnect the USB cable safely.

- Depending on the OS (Windows 98SE or Me, etc.), the icon for safe removal may not be displayed in the task tray. (There will be no display depending on the setting on the OS.) Make sure that the Card Access Lamp of this unit is turned off and then remove the USB cable.
- If you disconnect the USB cable or the AC adaptor from this unit, or this unit is turned off while the PC is working, an error dialog box may appear. In such cases, click [OK] to close the dialog box.
- When your OS is Macintosh, discard the icon of [untitled] or [NO_NAME] disk in [Trash] and then disconnect the USB cable.

Folder Structure of the Card Used for This Unit



- Files recorded with this unit are saved in the following folders.

	Folder name	File name (example)
Picture	100_PANA	P1000001.JPG
MPEG4	PRL001	MOL001.ASF
Voice	SD_VC100	MOB001.VM1
Audio	SD_AUDIO	AOB001.SA1

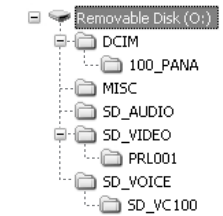
- Do not delete the folders in the card on the PC. You may not be able to read the card with this unit.
- When you want to format the card, format it with this unit or SD-Jukebox.
- If you recorded data not compatible with this unit on the PC, this unit cannot recognize the data.
- You can record up to 9999 files in the folders such as [100_PANA] folder.
- The files with DPOF setting are recorded in [MISC] folder.
- [SD_VOICE] folder and [SD_AUDIO] folder are set as hidden files. Therefore, these folders and the files in the folders may not be displayed on the Explorer or [My Computer] depending on the setting on the PC.

Connecting to PC (continued)

Accessing Files on a Card with a PC ([Picture] • [MPEG4])

1 **Connect this unit to the PC. (P73)**

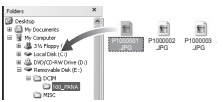
2



Open [My Computer] and double-click the folder in the [Removable Disk] which includes files.

- When your OS is Macintosh, double-click the folder in the [untitled] or [NO_NAME] icon.

3



Drag and drop files to the destination folder (the hard disk of the PC).

- Do not copy [Voice] and [Audio] files onto a PC with Explorer or other.

Playing Copied Files ([Picture] • [MPEG4])

1

Double-click the file copied to the PC.

- The software which is used for playback depends on the type of the file.

- You can also browse [Picture] files and [MPEG4] files with SD Viewer (supplied).

File type	Software used for playing files	
	Windows	Macintosh
Picture	Depends on the setting on the PC.	
MPEG4	Windows Media Player 6.4 or later	Windows Media Player for Macintosh

- When you use Windows PC to play [MPEG4] files (ASF format) recorded with the [Quality] set to [XF] on a PC, you need to install [MPEG4 Decoder Plug-in] from the Setup menu. If you cannot listen to the audio when you play [MPEG4] files, install SD Viewer from the supplied CD-ROM. ([MPEG4 Decoder Plug-in] and the appropriate software are installed at the same time.)
- [MPEG4] files (ASF format) recorded with [Quality] set to [XF] cannot be played on Macintosh PC.
- If you play [MPEG4] files (ASF format) in the card on the PC while this unit is connected with the PC, frame drop may occur on the picture. In this case, copy the files which you want to play into the PC before playback.
- When you play [MPEG4] files (ASF format) recorded with this unit for 3 or more minutes on Windows Media Player, the files may be stopped halfway through. In this case, click [Windows Media Update] on the setup menu (or double-click [WMP9QFEInst.exe] in [WMP9QFE] folder) and follow the message on the screen to update Windows Media Player. (It can be installed when you install SD Viewer from the supplied CD-ROM.)
- When you play [Voice] and [Audio] files in a card by using SD-Jukebox (supplied), keep this unit connected to a PC. Also use SD-Jukebox (supplied) when you copy these files to a PC (or when you return [Audio] files to the PC from the card). (Files copied onto a PC with Explorer or other cannot be played.)

Connecting to PC (continued)

Using SD Viewer

■ Starting SD Viewer

1

Select [start]→ [All Programs]→ [Panasonic]→ [SD Viewer for D-snap]→ [SD Viewer for D-snap].

- The indications on the screen may vary depending on OS and settings in your PC. Accordingly, the operation may be different from the one described above.

■ Capturing files with SD Viewer in PC

1

Connect this unit to the PC (P73) and then click [Acquire].

2

Check the target and then click [OK].

- For details such as classifications, refer to the operating instructions of SD Viewer (PDF file).

3

Click [OK].

■ Reading the operating instructions of SD Viewer

1

Select [Help]→[Manual].

- Adobe Acrobat Reader is required. (P83)

■ Closing SD Viewer

1

Select [File]→[Exit].

- You can also close SD Viewer by clicking [×] on the upper right corner of the screen.

● Using SD Viewer

- You can capture [Picture] files and [MPEG4] files in the card into the PC.
- You can classify pictures by recording date or keywords.
- You can print recorded pictures with date.
- You can create data for a home page.
- You can create a slide show with captured images.

- For details of the operation procedures, refer to the operating instructions of SD Viewer (PDF file).

● Do not disconnect the USB cable while SD Viewer is used.

Connecting to PC (continued)

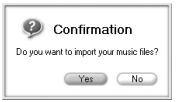
Using SD-Jukebox

■ Starting SD-Jukebox

1

Select [start]→ [All Programs]→ [Panasonic]→ [SD-JukeboxV5]→ [SD-JukeboxV5].

- The indications on the screen may vary depending on OS and settings in your PC. Accordingly, the operation may be different from the one described above.
- When SD-Jukebox is started for the first time, the file import screen (the screen to import audio files from the hard disk to SD-Jukebox) appears. If you want to start importing files immediately, click [Yes]. If you want to import files later, click [No].



- For details of the operation procedures such as the way to import files, refer to the operating instructions of SD-Jukebox (PDF file).

■ Reading the operating instructions of SD-Jukebox

1

Click [Help] on the upper right corner of the screen of SD-Jukebox.

- Adobe Acrobat Reader is required. (P83)

■ Closing SD-Jukebox

1

Click [×] on the upper right corner of the screen of SD-Jukebox.

- Using SD-Jukebox

• You can save your favorite titles on the PC from a music CD or create a playlist of audio files. • You can save audio files or playlists saved on the PC to the card.

- For details of the operation procedures, refer to the operating instructions of SD-Jukebox (PDF file).

- Do not disconnect the USB cable while SD-Jukebox is used.

Reading Operating Instructions of the Software

To read the operating instructions of the software (PDF file), Acrobat Reader 5.0 or later is needed.

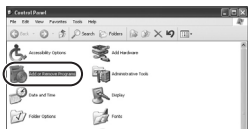
- If Adobe Acrobat Reader is not installed in the PC used, click the desired language in the setup screen (or open a folder of which name is the name of the desired language in [Adobe] folder and then double-click [AR505XXX.exe] or [AR500XXX.exe] file. "XXX" (the last 3 characters in the name of the file) varies depending on the language folder you selected) and follow the message on the screen to install Adobe Acrobat Reader.

Connecting to PC (continued)

Uninstalling the Software

If you do not need the software installed any more, uninstall (delete) it from the PC.

1



Select [start]→[Control Panel] and then click [Add or Remove Programs].

2

Select the software you want to delete and then click [Change/Remove].

- Depending on the OS, the uninstallation procedure may vary. For details, refer to operating instructions of the OS used.

Cautions for Use

This Unit

Keep this unit away from magnetised equipment (such as a microwave oven, TV, video game equipment, etc.).

- If you use this unit on or near a TV, images and sounds may be disturbed due to electromagnetic wave radiation.
- Do not use near cell phone because doing so may cause noise to adversely affect the picture and sound.
- Recorded data may be damaged, or images may be distorted by strong magnetic fields created by speakers or large motors.
- Electromagnetic wave radiation generated by a digital circuit (including a microprocessor) may adversely affect this unit, causing the disturbance of images and sounds.
- If this unit is affected by magnetically charged equipment and does not function properly, turn this unit off and remove the battery and then connect it again. Thereafter, turn this unit on.

Do not use this unit near radio transmitters or high-voltage lines.

- If you record near radio transmitters or high-voltage lines, recorded images or sounds may be adversely affected.

Do not spray insecticides or volatile chemicals onto this unit.

- If this unit is sprayed with such chemicals, the SD Multi Camera body may be damaged and the surface finish may peel off.
- Do not keep rubber or plastic products in contact with this unit for a long period of time.

When you use this unit on a beach or similar place, do not let sand or fine dust get into this unit.

Do not wet this unit with seawater or other liquids.

- Sand or dust may cause a malfunction of this unit such as scratches or fog on the Lens.
- If seawater splashes onto this unit, wet a soft cloth with tap water, wring it well, and use it to wipe this unit carefully. Then, wipe it again with a dry cloth.
  The same applies when rain water or drops of water splash onto this unit.

Cautions for Use (continued)

When carrying this unit, take care not to drop or hit it.
Do not carry this unit in a pocket.

- The SD Multi Camera body may be destroyed by a strong shock, and it may cause a malfunction of this unit. Store this unit in the carrying case (supplied).

Do not use benzine, thinner or alcohol for cleaning this unit.

- Remove the battery before cleaning this unit.
- The SD Multi Camera body may be deformed and the surface finish may peel off.
- Wipe the dust on this unit with a soft, dry cloth. To remove stubborn stains, soak a cloth in a detergent diluted with water, wring it well, wipe the stain with it and then finish with a soft, dry cloth.
- When you use a chemical cloth, read the instructions of the cloth.
- Wipe the stains on the Lens and the LCD Monitor with the cleaning cloth (supplied). Do not wipe them with pointed materials such as a cotton swab. The Lens may be scratched or broken, and it may cause a malfunction of this unit.

The AC Adaptor

- Be sure to use the supplied AC adaptor.
- If you use the AC adaptor near a radio, radio reception may be disturbed. Keep the AC adaptor 3.3 ft. (1 m) or more away from the radio.
- When the AC adaptor is in use, it may generate whirring sounds. However, this is normal.
- After use, be sure to disconnect the AC adaptor. (If it is left connected, about 0.1 W of current is consumed at most.)
- Keep the electrodes of the AC adaptor clean at all times.

Put this unit near the outlet to make it easy for the interrupting device (plug) to reach it.

The Battery

Lithium ion battery is a compact and high-capacity battery. However, when the battery is cooled under low temperature (50°F (10°C) or less) such as outside in winter, the available time of the battery becomes shorter and this unit may not work. In this case, warm the battery and insert it into this unit just before you use this unit. (If you use a pocket warmer, do not let the pocket warmer touch the battery.)

Be sure to detach the battery after use.

- If it is left attached to this unit, a minute amount of current is consumed even when this unit is turned off. If it is left for a long time, over discharge takes place. The battery may become unusable even after it is charged.
- If it is left attached to this unit for a long period of time, self-discharge may take place. Charge the battery before use.

Bring spare batteries when you use this unit outdoors.

- The operating time of the battery may become shorter under low temperature conditions such as outside on a ski hill.
- When you travel, be sure to prepare the AC adaptor (supplied) to charge the battery on the spot.

If the battery is dropped, check that the terminal is not deformed.

- If the battery attached to this unit with a deformed terminal, it may damage this unit.

Cautions for using battery

- Charge only with specified AC adaptor.
- Do not dispose of in fire.
- Do not disassemble.

Cautions for Use (continued)

Cautions to store the battery

- Store the battery in a cool and dry place with a relatively stable temperature. (Recommendable temperature: 59°F–77°F (15°C–25°C) Recommendable humidity: 40%–60%)
- Extremely high or low temperatures will shorten the life of the battery.
- If the battery is kept in hot, humid, smoky or dusty places, the terminals may rust and cause malfunctions.
- To store the battery for a long period of time, we recommend charging it once every year and storing it again after you completely use up the charged capacity.
- Remove dusts from the terminal of the battery.

Do not throw unnecessary (expired) batteries into a fire.

- If you heat or burn the battery, it may cause an explosion.
- The battery has a limited life. When the operating time of the SD Multi Camera becomes extremely short even if the battery is properly charged, the life of the battery may have expired. Buy a new battery.

Charging Error

When the charge lamp blinks quicker or slower, the following conditions are possible.

When the charge lamp blinks approx. every 6 seconds (lighting approx. 3 seconds, turning off approx. 3 seconds):

- The battery is excessively discharged. You can charge the battery, however, it may take several hours to start charging the battery normally.

When the charge lamp blinks approx. every 0.5 second (lighting approx. 0.25 second, turning off approx. 0.25 second):

- The room or the battery temperature is extremely high or low. Wait until the room or the battery temperature becomes adequate and then recharge the battery. If you still cannot charge the battery, there may be a defect with this unit, the battery or the AC adaptor. Consult the dealer.

When the charge lamp turns off:

- Charging is completed.
- If the charge lamp turns off though the battery is not completely charged, the AC adaptor or the battery may be defective. Consult the dealer.
- For details about the battery, refer to P87.

Condensation

- If moisture forms on the outside of the unit, it is called “condensation”.
- When condensation takes place, the Lens may be fogged or this unit may not operate normally. Be careful to avoid condensation and take proper measures when condensation occurs.

Causes of condensation

- Condensation takes place when the ambient temperature or humidity is changed as follows:
  - When this unit is moved from cold weather outside to a warm room
  - When this unit is brought out of an air-conditioned car
  - When a cold room is suddenly warmed
  - When cool wind from an air conditioner or other is directly blown onto this unit
  - In humid places

When condensation has taken place

- Turn this unit off and leave this unit in this condition for about 1 hour. When this unit becomes close to the ambient temperature, the condensation disappears naturally.
- When you move this unit from a cold place to a hot place, put the camera into a plastic bag and then take it out after the temperature of this unit becomes close to the ambient temperature to avoid condensation.

LCD Monitor

- In a place with drastic temperature changes, condensation may form on the LCD Monitor. Wipe it with a soft, dry cloth.
- Do not press the LCD Monitor strongly. It may cause uneven colors on the LCD Monitor or a malfunction of the LCD Monitor. Do not touch the LCD Monitor with a hard object. It causes scratches on the surface of the LCD Monitor.
- When the Lens is aimed at a high contrast subject, the picture may look uneven or after images may appear on the LCD Monitor. This is not a malfunction.
- If the SD Multi Camera is extremely cold when you turn it on, the image on the LCD Monitor is slightly darker than usual. However, as the internal temperature increases, it goes back to the normal brightness.

Extremely high precision technology is employed to produce the LCD Monitor screen featuring a total of approximately 61,600 pixels. The result is more than 99.99% effective pixels with a mere 0.01% of the pixels inactive or always lit. However, this is not a malfunction and does not affect the recorded picture.

Card

When the Card Access Lamp is blinking (or when the message [ACCESSING CARD] appears), do not open the Card/Battery Door to remove the card, turn this unit off, or subject it to vibration or impact.

Do not leave the card in places where there is high temperature or direct sunlight, or where electromagnetic waves or static electricity are easily generated. Do not bend, drop, or subject it to strong vibration.

- If the above precautions are not taken, the card or the recorded content may be damaged.

Be sure to remove and store the card after use.

- Keep the card in the storage bag after use and when you store or carry the card around.
- Do not allow dirt, dust or water to enter the terminals on the back of the card. Do not touch it with your fingers.
- Keep the Memory Card out of reach of children to prevent swallowing.

Recorded Files

This unit complies with DCF standards (Design rule for Camera File system) established by the Japan Electronics and Information Technology Industries Association (JEITA).

- If files conforming to DCF standard are deleted, all the data related to the files will be deleted.
- If you delete [Picture] or [MPEG4] files, all the data related to the files will be deleted.
- As a result of improper operations, recorded data may be damaged or erased. We are not responsible for the loss caused by the deletion of the recorded data. Please note it beforehand.

Cautions for Use (continued)

Format

- If the SD Memory Card is formatted on other equipment, the time spent for recording may become longer or the SD Memory Card may not be recognized. (Do not format it by Explorer on the PC.) Format the SD Memory Card on this unit or by the application software “SD-Jukebox”, in this case. Particularly for the card containing audio files, check in the card using SD-Jukebox with which the audio files were recorded, then format it. (For details, read the operating instructions of SD-Jukebox.)
- This unit supports SD Memory Cards formatted in FAT12 system and FAT16 system based on SD Memory Card Specification.
- You may not be able to use a card formatted with this unit on other equipment. In this case, format the card on the equipment to be used.
- If a card cannot be used even if it is formatted, this unit or the card may be defective. Consult the dealer.

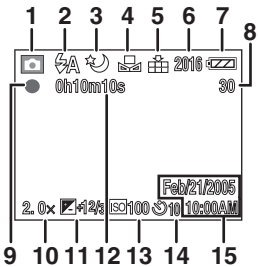
Demonstration Mode

- If you turn this unit on and press the [MODE] button when a card is not inserted, the demonstration mode (screen saver) starts.
- If you press any button while the screen saver is displayed, the mode is set to the virtual still picture recording mode.
- You can simulate recording of still pictures in the virtual still picture recording mode. (If you do not press any button for about 1 minute, the screen saver starts.)
- If you do not press any button in the screen saver for about 5 minutes when the AC adaptor is not used, this unit automatically turns off.
- When canceling the demonstration mode, insert a card after turning off this unit.

Others

Screen Display

■ Screen Display in Recording



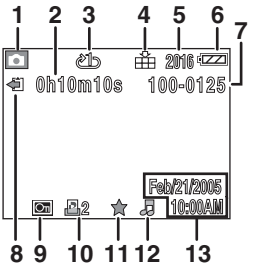
1 **Recording mode (P28)**
2 **Flash mode (P36)**
3 **Night mode (P40)**
4 **White balance (P39)**
5 **Picture quality (P33)**
6 **Picture size (P33)**
7 **Battery remaining (P19)**
8 **Remaining pictures/time**
9 **Recording/Stop display**
10 **Digital zoom (P35)**
11 **Exposure compensation (P41)**
12 **Counter display**
13 **ISO sensitivity (P42)**
14 **Self-timer (P38)**
15 **Date/time** (It is displayed for about 5 seconds after turning this unit on or setting the clock.)

■ Screen Display on the Thumbnail Screen

1 **Folder/File number**
2 **Lock setting (P49)**
3 **DPOF printing (P58)**
4 **★ mark setting (P51)**
5 **Slide show (P54)**

Others (continued)

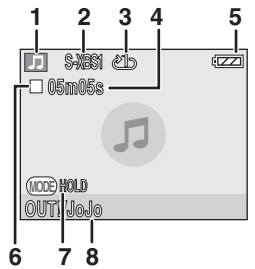
■ Screen Display in Playback



1 Playback mode (P43)
2 Counter display
3 Repeat playback (P47)
4 Picture quality (P33)
5 Picture size (P33)
6 Battery remaining (P19)
7 Folder/File number
8 Stop/Play/Reading display
9 Lock setting (P49)
10 No. of DPOF printing (P58)
11 ★ mark setting (P51)
12 Slide show (P54)
13 Recording date/time

- When pictures for HDTV (16:9) are played, black bands appear on the top and bottom of the screen.

■ Screen Display in Playing Music



1 Audio player mode (P62)
2 Audio quality (EQ) (P64)
3 Repeat playback (P65)
4 Playback time
5 Battery remaining (P19)
6 Stop/Play/Fast-forward/Fast-rewind (P63)
7 [HOLD] setting (P64)
8 Title/Artist name

Messages

The confirmation/error message will be displayed on the LCD Monitor.

Messages	Countermeasures
EMPTY BATTERY	The battery remaining is insufficient. Recharge the battery. (P16)
INSERT BATTERY	Insert the battery into this unit correctly. (P14, 15)
	This message also appears when the battery is excessively discharged. Charge the battery.
NO CARD	Insert the card correctly. (P14, 15)
CHECK CARD	MultiMediaCard is not available.
	Re-insert the Memory Card. If [CHECK CARD] is still displayed, format it. (P24) (If you format a card, all of the data in the card will be deleted.)
CARD FULL	Change the card or delete unnecessary data. (P47)
CARD LOCKED	Release the lock of the write-protect switch on the card.
ACCESSING CARD	Processing the data. Please wait for a while.
NO PICTURE FILE	Insert the card which includes [Picture] files.
NO MPEG4 FILE	Insert the card which includes [MPEG4] files.
NO VOICE FILE	Insert the card which includes [Voice] files.
NO TRACK	Insert the card which includes [Audio] files.
UNPLAYABLE FILE	Cannot play files of incorrect formats. Record audio files onto the card with SD-Jukebox.
FILE LOCKED	Operate after releasing the protection. (P49)
TARGET FILE DOES NOT EXIST	There is no file which can be played as a slide show or there is no file which can be set in DPOF setting.
OVER LIMIT	The number of pictures to play in a slide show or the number of prints set in DPOF setting exceeds the limit.

Others (continued)

Messages	Countermeasures
CANNOT SET FILE	Select a still picture recorded by this unit.
SET TO PLAY MODE	Switch the Record/Playback Mode Switch to the playback mode [▶] when connecting this unit to PC or printer. (P55, 73)
USE BOTH AC ADAPTOR AND BATTERY	Connect the AC adaptor when connecting this unit to a PC or printer. (P55, 73)
TURN POWER OFF AND ON	Turn this unit on again.
ERROR	After turning this unit off, remove and insert the battery. If the error persists, consult the dealer.

Trouble Shooting

Question	Answer
This unit will not turn on.	Turn this unit on again. Is the battery inserted correctly? Is the battery exhausted? Recharge the battery (P16) or insert a fully charged battery.
This unit is immediately turned off.	Is the battery exhausted? Recharge the battery (P16) or insert a fully charged battery.
Cannot operate the Jog Ball or other buttons.	Is [HOLD] setting displayed? The Jog Ball and other buttons are enabled when the [MODE] button is pressed for about 2 or more seconds and the indication disappears.
The mode cannot be switched even if the [MODE] button is pressed.	Is the card inserted? If you press the [MODE] button when the card is not inserted, the mode is set to the demonstration mode (P92). Turn this unit off and then insert the card.

Question	Answer
The color or the brightness of the LCD Monitor changes.	The color or the brightness of the screen may look different under fluorescent light.
The LCD Monitor is too bright or dark.	Adjust the brightness of the LCD Monitor properly. (P23)
Cannot record.	Is the card inserted? You cannot record pictures when the write-protect switch on the card is slid toward [LOCK]. Is the memory of the card full? Delete unnecessary files before recording. (P47)
It takes time to record onto a card.	When you record pictures in [MPEG4] mode, it may take time to record onto a card depending on the type of card. However, this is not a malfunction.
Recording stops halfway.	Recording in [Voice] mode may be stopped halfway depending on the type of card.
Recorded pictures appear in mosaic-like pattern.	Pictures may appear in a mosaic-like pattern depending on the subject or recording conditions.
The pictures recorded are too bright or dark.	The brightness of a picture on the LCD Monitor may be different from that of a picture actually recorded. Especially when you record a picture in dark places with long exposure, the picture looks dark on the LCD Monitor. However, the picture is recorded brightly.
A vertical red spectrum appears on the LCD Monitor.	This is called “smear”. It is specific to CCD, not a malfunction. It appears when the subject has a bright part. It is recorded on MPEG4 images, but not recorded on still pictures.

Others (continued)

Question	Answer
The flash cannot be activated.	Is the flash set to [Flash off]? Check the flash mode. (P36)
The pictures recorded with a flash are dark.	Is the flash covered with your finger? Is this unit too far away from the subject?
The colors of the picture recorded with the flash are not similar to the subject in real life.	When you record pictures with the flash, the white balance may not be properly adjusted even if the white balance is set in [Manual]. When you use the flash, we recommend setting the white balance to [Auto]. When you record pictures with the flash, the white balance is automatically adjusted according to the flash light. However, the white balance may not be properly adjusted when the flash light does not adequately illuminate the subject.
Cannot play.	Is the card inserted? Are there playable pictures on the card? Is the mode set to the playback mode?
Some pictures cannot be played as a slide show.	Pictures recorded with other equipment may not be displayed as a slide show or may take time to be displayed.
Cannot play music.	Is there an effective music file on the card?
[×] Indication is displayed during playback or in the list screen.	The data was either recorded in a different format or damaged. Such data cannot be played.
Cannot play when the card is inserted into other equipment.	If [MPEG4] files recorded with this unit are played on other equipment, the picture quality or the sound quality may be deteriorated or the files may not be readable.

Question	Answer
When connecting to a PC, images cannot be transferred.	Is this unit connected to the PC correctly? (P73) Does the PC recognize this unit properly? (P75)
The pictures cannot be printed with printers supporting PictBridge.	Set this unit to the playback mode and then check if [Setup]→[Connection (USB)]→[PictBridge] is selected in the menu. (P55)
Black belts appear on the top and bottom of the printed pictures.	Did you print [Picture] files recorded with the picture size set to [HDTV]? Check the picture size. (P33)
Playing or recording do not function and the screen has frozen. The LCD Monitor stays dark when recording in [Picture] mode or [MPEG4] mode.	Slide the Power Switch to [OFF]. If this unit does not turn off, remove and insert the battery, and then turn this unit on. If the error persists, remove the battery and consult the dealer.
While playing a [Voice] file or a [Audio] file, the LCD Monitor is suddenly turned off.	If this unit is left without operation for about 10 seconds when playing or recording in [Voice] mode or playing in [Audio] mode, the LCD Monitor is automatically turned off. Pressing the [MENU] button turns on the LCD Monitor. However, in the case of not conducting any operation for about 10 seconds, the LCD Monitor is turned off again.

Others (continued)

Question	Answer
The clock is not set correctly.	If you do not use this unit for a long period of time, the clock may be reset. When the clock setting screen appears, set the clock again. If you record pictures without the clock setting, the date is recorded as [Jan/1/2000 12:00AM].
The retouch software does not start even if retouch files (extension ".ped") are clicked on Windows Explorer etc.	If both the SD Viewer supplied with this unit and SD Viewer Ver. 2.1E supplied with SD Multi Camera SV-AS10 are installed in the PC and you uninstall either of them, the association of retouch files with SD Viewer will be disabled. In this case, uninstall both versions of SD Viewer and then install the one you want to use again.
When this unit is connected to the PC, the Card Access Lamp keeps blinking.	Did you insert an NTFS-formatted Memory Card into this unit? In this case, log on with [Administrator (computer administrator)] (or any other user name having equivalent rights), right-click the Removable Disk icon in [My Computer], and select [Remove]. Check that the Card Access Lamp is lit and then cancel the connection between this unit and the PC.
[Found New Hardware Wizard] appears though this unit is connected to the PC after the USB driver is properly installed.	① Click [Next]. ② Confirm whether your device is configured to the optimal driver detection setting and click [Next]. ③ Insert the supplied CD-ROM into the CD-ROM drive. ④ Enter the path as "D:\USB Driver\files" (example of D drive assigned as CD-ROM drive). ⑤ Click [Next]. ⑥ Click [Next]. ⑦ Click [Finish]. After the procedure above, follow the wizard to install the hardware.

Specifications

■ SD Multi Camera

Power source	DC 4.8 V (AC adaptor)
	DC 3.7 V (Battery)
Power consumption	MPEG4 Recording
	1.7 W (AC adaptor)
	1.5 W (Battery)
	MPEG4 Playback
	1.0 W (AC adaptor)
	0.8 W (Battery)
	Audio Playback
	0.1 W (Battery)

Image sensor
1/3.2″ CCD Interline type
RGB primary color filter
Number of effective pixels
Approx. 3,100,000 pixels
Scanning
Interlace scanning
Standard illumination
3000 lx
Minimum required illumination
80 lx
Focal length
4.5 mm
35 mm equivalent
34.8 mm
Digital zoom
4×
F value
4.0
Shortest image distance
Approx. 2.0 ft (60 cm) from Lens
Microphone
Monaural microphone (built-in)

Monitor
3.8 cm (1.5″ type)
LCD Monitor
(Approx. 61,600 pixels)
Flash
GN 3.7 (built-in)
Image compression
JPEG-compliant
Video compression
MPEG4 SD-Video compliant
Voice compression
MPEG4: G.726-compliant
Voice: G.726-compliant
Music expansion
AAC/MP3/WMA
(Sampling frequency 32 kHz, 44.1 kHz, 48 kHz compatible)

Specifications (continued)

Audio input
Monaural microphone (built-in)
Audio output
Earphone output:
3.5 mW+3.5 mW
Load impedance 16 Ω
Recording media
SD Memory Card
8 MB, 16 MB, 32 MB, 64 MB, 128 MB, 256 MB, 512 MB, 1 GB (Maximum)

Please confirm the latest information on the following website.
http://panasonic.co.jp/pavc/global/cs
(This Site is English only.)

Dimensions
Approx. 2 5/64 inch (W)×
3 1/2 inch (H)×27/32 inch (D)
(Thinnest part 3/4 inch)
Approx. 52.5 mm (W)×88.7 mm (H)×
21.2 mm (D) (Thinnest part 18.9 mm)
Body weight
Approx. 2.65 oz (75 g) (without battery pack and SD Memory Card)
Body weight in operation
Approx. 3.66 oz (104 g) (with battery pack and SD Memory Card)
Operating temperature
32–104°F (0–40°C)
Operating humidity
10–80%

■ AC adaptor

Input	AC 110–240 V 50/60 Hz 0.13 A
Output	DC 4.8 V 1.0 A

■ Battery pack

Maximum voltage	DC 4.2 V
Nominal voltage	DC 3.7 V
Rated capacitance	1050 mAh

Limited Warranty (For U.S.A. Only)

Panasonic Consumer Electronics Company, Division of Panasonic Corporation of North America
One Panasonic Way, Secaucus, New Jersey 07094

Panasonic Puerto Rico, Inc.
Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park, Carolina, Puerto Rico 00985

PANASONIC SD Products
Limited Warranty

Limited Warranty Coverage

If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company or Panasonic Puerto Rico, Inc. (collectively referred to as "the warrantor") will, for the length of the period indicated on the chart below, which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

Product or Part Name	Parts	Labor
SD Multi AV Device, SD Mobile Printer (except items listed below)	One (1) year	Ninety (90) days
CCD Image Sensor	Six (6) months	Ninety (90) days
Rechargeable Battery Pack, SD Memory Card, AC Adaptor, USB Reader-Writer (in exchange for defective item)	Ninety (90) days	Not Applicable

During the "Labor" warranty period there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must carry-in or mail-in your product during the warranty period. If non-rechargeable batteries are included, they are not warranted. This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold "as is".

A purchase receipt or other proof of the original purchase date is required for warranty service.

Carry-In or Mail-In Service

For Carry-In or Mail-In Service in the United States call 1-800-211-PANA (1-800-211-7262).

For assistance in Puerto Rico call Panasonic Puerto Rico, Inc. (787)-750-4300 or fax (787)-768-2910.

Limited Warranty (For U.S.A. Only) (continued)

Limited Warranty Limits And Exclusions

This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or commercial use (such as in a hotel, office, restaurant, or other business), rental use of the product, service by anyone other than a Factory Servicenter or other Authorized Servicer, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, travel to and from the servicer, loss of media or images, data or other memory content. The items listed are not exclusive, but are for illustration only.) **ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.**

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the warrantor's Consumer Affairs Department at the addresses listed for the warrantor.

PARTS AND SERVICE WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY ARE YOUR RESPONSIBILITY.

Customer Services Directory (For U.S.A. Only)

Obtain Product Information and Operating Assistance; locate your nearest Dealer or Servicenter; purchase Parts and Accessories; or make Customer Service and Literature requests by visiting our Web Site at:

http://www.panasonic.com/consumersupport

or, contact us via the web at:

http://www.panasonic.com/contactinfo

You may also contact us directly at:
1-800-211-PANA (7262),
Monday–Friday 9 am–9 pm; Saturday-Sunday 10 am–7 pm, EST.

For hearing or speech impaired TTY users, TTY: 1-877-833-8855

Accessory Purchases

Purchase Parts, Accessories and Instruction Books online for all Panasonic Products by visiting our Web Site at:

http://www.pasc.panasonic.com

or, send your request by E-mail to:

npcparts@us.panasonic.com

You may also contact us directly at:
1-800-332-5368 (Phone) 1-800-237-9080 (Fax Only)
(Monday–Friday 9 am to 8 pm, EST.)
Panasonic Services Company
20421 84th Avenue South,
Kent, WA 98032
(We Accept Visa, MasterCard, Discover Card, American Express, and Personal Checks)

For hearing or speech impaired TTY users, TTY: 1-866-605-1277

Service in Puerto Rico

Panasonic Puerto Rico, Inc.
Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park,
Carolina, Puerto Rico 00985
Phone (787)750-4300, Fax (787)768-2910

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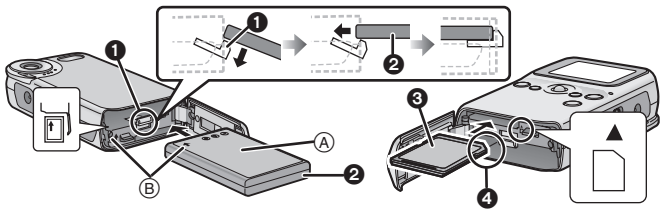
Spanish Quick Use Guide/ Guía rápida para el usuario en español

■ Para insertar la tarjeta/batería

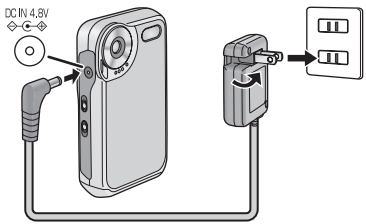


Confirme el sentido de la batería y de la tarjeta.

- Inserte totalmente la batería con el bloqueo de la batería ❶ bajado. Compruebe si el bloqueo de la batería queda enganchado en la batería ❷.
  - – Coloque la batería con el lado de la etiqueta hacia arriba. Ⓐ
  - – Inserte la batería en el sentido indicado por la flecha. Ⓑ

❸ Muesca
❹ Etiqueta

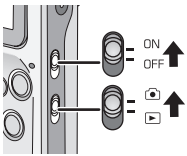
■ Carga de la batería

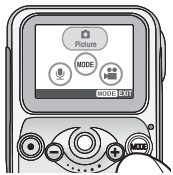


Conecte el cable principal AC al adaptador AC y a la toma principal AC. Luego conecte el enchufe DC a esta unidad.

Spanish Quick Use Guide/Guía rápida para el usuario en español (continuación)

■ Selección del modo de grabación deseado



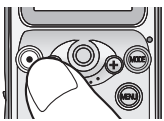


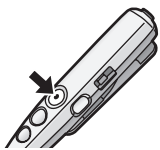
1 **Ponga el interruptor de encendido en [ON].**

2 **Ponga el interruptor del modo grabación/reproducción en el modo grabación [📷].**

3 **Pulse el botón [MODE] y luego seleccione el modo deseado con la bola de ajuste por avances rápidos.**

■ Grabación



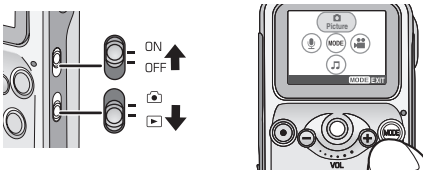


1 **Apriete el botón del disparador para grabar.**

- Puede utilizar también el botón del disparador situado en el mando a distancia.

2 **Pulse el botón del disparador para detener la grabación. (Si se selecciona [MPEG4] o [Voice])**

■ Selección del modo de reproducción deseado

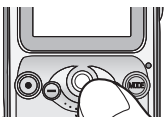


1 **Ponga el interruptor de encendido en [ON].**

2 **Ponga el interruptor del modo grabación/reproducción en el modo reproducción [▶].**

3 **Pulse el botón [MODE] y luego seleccione el modo deseado con la bola de ajuste por avances rápidos.**

■ Reproducción



1 **Gire la bola de ajuste por avances rápidos hacia la derecha o hacia la izquierda para seleccionar el archivo que desea reproducir.**

Cuando se selecciona [MPEG4] o [Voice]

2 **Pulse la bola de ajuste por avances rápidos para empezar la reproducción.**

3 **Pulse la bola de ajuste por avances rápidos para interrumpir la reproducción.**

MEMO

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