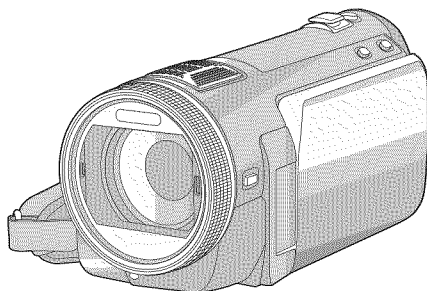


# Panasonic®

## Operating Instructions High Definition Video Camera

Model No. **HDC-SDT750PP**



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

**AVCHD**™

**DOLBY**  
DIGITAL  
5.1 CREATOR

**LEICA**  
DICOMAR

**SD**™  
**XC**

**HDMI**

**VIERA Link**™

**BD**

For USA and Puerto Rico 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](http://www.panasonic.ca)

VQT3B18

# Dubbing with a Blu-ray disc recorder, video, etc.

## Dubbing in high-definition picture quality

VIDEO	PHOTO
-------	-------

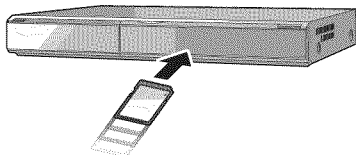
You can dub using a Panasonic Blu-ray disc recorder or high-definition (AVCHD) compatible DVD recorder.

- Depending on the recorders or the media to be copied to, you may not be able to copy in high-definition (AVCHD) picture quality. For further details, see the operating instructions of your recorder.
- Note that the equipment described may not be available in certain countries and regions.

### About dubbing of scenes recorded in 1080/60p

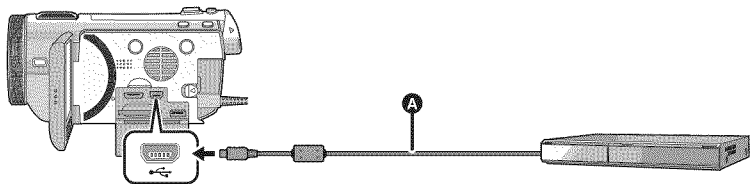
The scenes recorded in 1080/60p cannot be dubbed to a disc with 1080/60p picture quality. They are dubbed after being converted to AVCHD picture quality. (As of Aug. 2010)

### ■ Dubbing directly from inserted SD card



### ■ Dubbing with a USB cable

- Use the AC adaptor to free you from worrying about the battery running down.
- Turn on the unit (This function is available in all modes).



**A** USB cable (supplied)

### 1 Connect the unit to the Blu-ray disc recorder or high-definition (AVCHD) compatible DVD recorder.


- The USB function selection screen will appear on the screen of the unit.

## 2 Touch [RECORDER] on the screen of this unit.

- When you select an option other than [RECORDER], reconnect the USB cable.
- When using the battery, the LCD monitor turns off after about 5 seconds. Touch the screen to turn the LCD monitor on.

## 3 Dubbing through operations on the Blu-ray disc recorder or high-definition (AVCHD) compatible DVD recorder.

### About the screen indication of the unit

- When the unit is accessing the SD card, card access icon (  ) appears on the unit screen or the access lamp is on.
- Be careful not to disconnect the USB cable, AC adaptor or battery while the unit is accessing the SD card, as this may result in the loss of recorded content.

### ■ Dubbing scenes recorded in 3D

When dubbing with high-definition (AVCHD) picture quality, you can store 3D video. The video is recorded unaltered in side-by-side format.

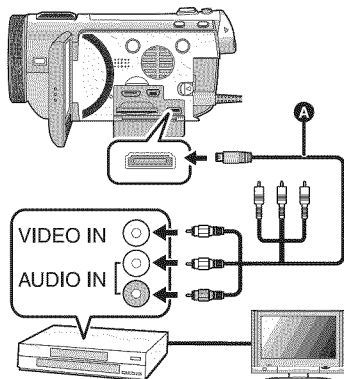
- If the dubbed video does not change to 3D video, make the necessary settings on the TV. (For further details, please read the operating instructions for the TV.)
- 
- Insert the USB cable securely all the way. It will not operate properly if it is not inserted all the way.
  - Do not use any other USB cables except the supplied one. (Operation is not guaranteed with any other USB cables.)
  - For details on dubbing and playback methods, read the operating instructions of the Blu-ray disc recorder or DVD recorder.
  - When you connect the unit to a Blu-ray disc recorder, a dubbing operations screen may appear on the television connected to the Blu-ray disc recorder. In this case as well, perform the operations of steps 1 to 3.
  - You cannot change the mode of the unit or turn off the unit while it is connected to a Blu-ray disc recorder or DVD recorder. Disconnect the USB cable before performing either of these operations.
  - If the battery runs down during dubbing, a message will appear. Operate the Blu-ray disc recorder to cancel the dubbing.

## Dubbing in standard picture quality

VIDEO


Images played back on this unit can be dubbed onto a DVD recorder or video device.

- Images are dubbed in standard quality.
- Use the AC adaptor to free you from worrying about the battery running down.



### Change the video input on the video device and TV that this unit is connected to.


- The channel set will differ depending on the terminal to which the unit is connected.
  - See the operating instructions of the video device for details.
  - Insert the plugs as far as they will go.
  - Do not use any other AV multi cables except the supplied one.
- Ⓐ AV multi cable (supplied)

- 1** Connect this unit to a video device and then change the mode to .
- 2** Start playback on this unit.
- 3** Start recording on the connected device.
  - To stop recording (dubbing), stop playback on this unit after stopping recording on the recorder.

## ■ Dubbing scenes recorded in 3D

### Copying unaltered as 3D video


When [3D PLAYBACK] is [3D], the 3D video is recorded in side-by-side format.

 : [SETUP] → [3D PLAYBACK] → [3D]

- If the dubbed video does not change to 3D video, make the necessary settings on the TV.  
(For further details, please read the operating instructions for the TV.)

### Copying after conversion to 2D video

Set [3D PLAYBACK] to [2D].

 : [SETUP] → [3D PLAYBACK] → [2D]

- If the date and time display and function indication are not wanted, cancel them before dubbing. (→ 43, 106)

If the dubbed images are played back on a wide-screen TV, the images may be stretched vertically.

In this case, refer to the operating instruction for the device you are connecting to or read the operating instructions of the wide-screen TV and set the aspect ratio to 16:9.

## 1

# What you can do with a PC

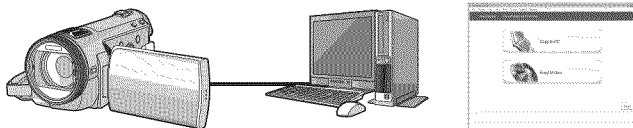
## HD Writer AE 2.6T

You can copy the motion/still picture data to the HDD of PCs or write to media like Blu-ray discs (BD), DVD discs or SD cards using HD Writer AE 2.6T, the software installed in the supplied CD-ROM.

Refer to the operating instructions of HD Writer AE 2.6T (PDF file) for details on how to use it.

### ■ Smart wizard

The Smart wizard screen is automatically displayed when you connect this unit to a PC with HD Writer AE 2.6T installed. (→ 133)



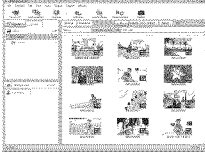
#### Copy to PC:

You can copy motion/still picture data to the HDD of PCs.

#### Copy to disc:

You can copy to disc in high definition picture quality or conventional standard picture quality (MPEG2 format).

- Select the function you wish to use and follow the on-screen instructions for easy copying.

Available function	Data type	Software required
<p><b>Copying data to a PC</b></p> <ul style="list-style-type: none"> <li>Scenes recorded in 3D will be copied unaltered as 3D video.</li> </ul>	<p>Motion picture and still picture</p>	<p><b>CD-ROM (supplied):</b> HD Writer AE 2.6T</p> 
<p><b>Copying in BD/AVCHD format</b></p> <ul style="list-style-type: none"> <li>Scenes recorded in 3D will be copied unaltered as 3D video.</li> </ul>		
<p><b>Copying in DVD-Video format:</b></p> <ul style="list-style-type: none"> <li>Converted to conventional standard quality (MPEG2 format).</li> <li>Scenes recorded in 3D will be converted to 2D video when copied.</li> </ul>	<p>Motion picture</p>	<p>When writing scenes recorded in 3D to a Blu-ray disc, DVD or SD card, a black frame is displayed around the thumbnail.</p>
<p><b>Editing:</b> Editing motion picture data copied on an HDD of a PC</p> <ul style="list-style-type: none"> <li>Title, Transition, Delete partially, Divide Scene (The only types of editing possible on scenes recorded in 3D are Delete partially and Divide Scene.)</li> <li>Converting the motion picture data to MPEG2</li> <li>Converting part of motion picture into still picture</li> </ul>		
<p><b>Online sharing:</b> You can upload motion pictures on the Internet and share them with your family and friends.</p> <ul style="list-style-type: none"> <li>Convert the scenes recorded in 3D to 2D video when uploading.</li> </ul>		
<p><b>Playing back on a PC:</b> Play back the motion picture data in high definition picture quality on a PC.</p> <ul style="list-style-type: none"> <li>3D video is played back as 2D video.</li> </ul>		
<p><b>Formatting discs:</b> Depending on the type of disc that you use, formatting is necessary.</p>		

Available function	Data type	Software required
Playing back on a PC	Still picture	HD Writer AE 2.6T or Standard Windows picture viewer or a commercially available picture viewer
Copying still pictures to a PC (→ 135)		Windows Explorer
Refer to page 137 if using a Mac.		

### Important Notice

- When using an SDXC Memory Card, check the following support site.  
<http://panasonic.net/avc/sdcard/information/SDXC.html>
- Do not insert a disc recorded in AVCHD format with HD Writer AE 2.6T in a device that does not support the AVCHD format. In some cases the disc may get stuck in the device. The disc will not play back on devices that do not support the AVCHD format.
- When inserting a disc containing recorded motion pictures into other devices, a message prompting you to format the disc may be displayed. Do not format the disc, since deleted data cannot be restored later.

- Motion pictures that have been recorded on another device cannot be written to the software supplied with this unit. To write motion picture data recorded with the Panasonic High Definition Video Camera sold previously, use the HD Writer supplied with the unit.
- We cannot guarantee operation if you use software other than that supplied to read/write motion picture.
- Do not start the software supplied with this unit and other software at the same time. Close any other software if you start the software supplied with this unit and close the software supplied with this unit if you start any other software.

### ■ About Conversion Assist Function

When you want to convert the recording quality and write to media, the “Conversion Assist Function”, which is a linking function between this unit and the HD Writer AE 2.6T, is activated by connecting this unit to the PC with the USB cable. When the “Conversion Assist Function” is used, it is possible to write to media faster than when operating only on PC.

- Please refer to page 133 for details about the connection of this unit and a PC.
- Refer to the operating instructions of the software for details. (→ 136)



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## 2

## Operating environment

- Even if the system requirements mentioned in these operating instructions are fulfilled, some PCs cannot be used.
- A CD-ROM drive is necessary to install the supplied software applications. (A compatible BD/DVD writer drive and media are necessary for writing to a BD/DVD.)
- Operation is not guaranteed in the following cases.
  - When 2 or more USB devices are connected to a PC, or when devices are connected through USB hubs or by using extension cables.
  - Operation on an upgraded OS.
  - Operation on an OS other than the one pre-installed.
- This software is not compatible with Microsoft Windows 3.1, Windows 95, Windows 98, Windows 98SE, Windows Me, Windows NT and Windows 2000.

### ■ Operating environment for HD Writer AE 2.6T

<b>PC</b>	IBM PC/AT compatible PC
<b>OS</b>	Microsoft Windows XP (32 bit) Home Edition Service Pack 2/Service Pack 3 Microsoft Windows XP (32 bit) Professional Service Pack 2/Service Pack 3 Microsoft Windows Vista (32 bit) Home Basic Service Pack 1/Service Pack 2 Microsoft Windows Vista (32 bit) Home Premium Service Pack 1/Service Pack 2 Microsoft Windows Vista (32 bit) Business Service Pack 1/Service Pack 2 Microsoft Windows Vista (32 bit) Ultimate Service Pack 1/Service Pack 2 Microsoft Windows 7 (32 bit) Starter Microsoft Windows 7 (32 bit/64 bit) Home Basic Microsoft Windows 7 (32 bit/64 bit) Home Premium Microsoft Windows 7 (32 bit/64 bit) Professional Microsoft Windows 7 (32 bit/64 bit) Ultimate
<b>CPU</b>	Intel Pentium 4 2.8 GHz or higher (including compatible CPU) <ul style="list-style-type: none"> <li>• Intel Core 2 Duo 2.16 GHz or higher or AMD Athlon 64 X2 Dual-Core 5200+ or higher is recommended when using playback function or MPEG2 output function.</li> <li>• Intel Core 2 Quad 2.6 GHz or higher is recommended when using editing or Continuous Photo Playback function.</li> <li>• Intel Core i7 2.8 GHz or higher is recommended when playing back or using the editing function for 1080/60p</li> </ul>
<b>RAM</b>	Windows 7: 1 GB or more (32 bit)/2 GB or more (64 bit) Windows Vista: 1 GB or more Windows XP: 512 MB or more (1 GB or more recommended)

<b>Display</b>	High Color (16 bit) or more (32 bit or more recommended) Desktop resolution of 1024×768 pixels or more (1280×1024 pixels or more recommended) Windows Vista/Windows 7: DirectX 9.0c compatible video card (DirectX 10 recommended) Windows XP: DirectX 9.0c compatible video card Compatible with DirectDraw overlay PCI Express™ ×16 compatible recommended
<b>Free hard disk drive space</b>	Ultra DMA — 100 or more 450 MB or more (for installing the software) ● When writing to a DVD/BD/SD, more than double the amount of free space as the disc being created is necessary.
<b>Sound</b>	DirectSound Support
<b>Interface</b>	USB port [Hi-Speed USB (USB 2.0)]
<b>Other requirements</b>	Mouse or equivalent pointing device Internet connection

- Supplied CD-ROM is available for Windows only.
- Input is not supported in languages other than English, German, French and Simplified Chinese.
- Operation cannot be guaranteed on all BD/DVD drives.
- Operation is not guaranteed on Microsoft Windows Vista Enterprise, Windows XP Media Center Edition, Tablet PC Edition and Windows 7 Enterprise.
- This software is not compatible with a multi-boot environment.
- This software is not compatible with a multi-monitor environment.
- If using Windows XP, an administrative account user only can use this software. If using Windows Vista/Windows 7, administrative account and standard account users only can use this software. (An administrative account user should install and uninstall this software.)

## ■ To use the HD Writer AE 2.6T

You will need a high performance PC depending on the functions to be used. It may not properly play back or properly operate depending on the environment of the PC used. Refer to the operating environment and notes.

- Operation during the playback may become slow if the CPU or memory is not fulfilling the requirements of the operating environment.
- Always use the most current driver for the video card.
- Always make sure there is enough capacity on the HDD in the PC. It may become inoperable or the operation may stop suddenly if the capacity gets low.

## ■ Operating environment for the card reader function (mass storage)

<b>PC</b>	IBM PC/AT compatible PC
<b>OS</b>	<p>Microsoft Windows XP (32 bit) Home Edition Service Pack 2/Service Pack 3</p> <p>Microsoft Windows XP (32 bit) Professional Service Pack 2/Service Pack 3</p> <p>Microsoft Windows Vista (32 bit) Home Basic Service Pack 1/Service Pack 2</p> <p>Microsoft Windows Vista (32 bit) Home Premium Service Pack 1/Service Pack 2</p> <p>Microsoft Windows Vista (32 bit) Business Service Pack 1/Service Pack 2</p> <p>Microsoft Windows Vista (32 bit) Ultimate Service Pack 1/Service Pack 2</p> <p>Microsoft Windows Vista (32 bit) Enterprise Service Pack 1/Service Pack 2</p> <p>Microsoft Windows 7 (32 bit) Starter</p> <p>Microsoft Windows 7 (32 bit/64 bit) Home Basic</p> <p>Microsoft Windows 7 (32 bit/64 bit) Home Premium</p> <p>Microsoft Windows 7 (32 bit/64 bit) Professional</p> <p>Microsoft Windows 7 (32 bit/64 bit) Ultimate</p>
<b>CPU</b>	<p>Windows Vista/Windows 7: 1.0 GHz or higher</p> <p>Windows XP: Intel Pentium III 450 MHz or higher or Intel Celeron 400 MHz or higher</p>
<b>RAM</b>	<p>Windows 7: 1 GB or more (32 bit)/2 GB or more (64 bit)</p> <p>Windows Vista Home Basic: 512 MB or more</p> <p>Windows Vista Home Premium/Business/Ultimate/Enterprise: 1 GB or more</p> <p>Windows XP: 128 MB or more (256 MB or more recommended)</p>
<b>Interface</b>	USB port
<b>Other requirements</b>	Mouse or equivalent pointing device

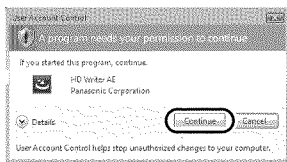
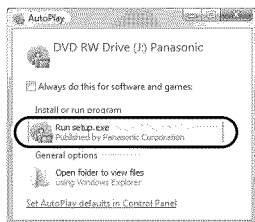
- The USB equipment operates with the driver installed as standard in the OS.

When installing the software, log on to your computer as the Administrator or with a user name with equivalent authorization. (If you do not have authorization to do this, consult your manager.)

- Before starting the installation, close all applications that are running.
- Do not perform any other operations on your PC while the software is being installed.
- Explanation of operations and screens is based on Windows Vista.

## 1 Insert the CD-ROM into the PC.

- The following screen is displayed automatically. Click [Run setup.exe] → [Continue].
- If Windows 7 is in use, or the following screen is not displayed automatically, select [Start] → [Computer] (or double-click on [Computer] on the desktop), and then double-click [Panasonic].



## 2 Click [Next].

## 3 Read the [End User License Agreement], then place a check beside [I accept the terms of the license agreement] if you agree to them and click [Next].

## 4 Select the country or region where you live, then click [Next].

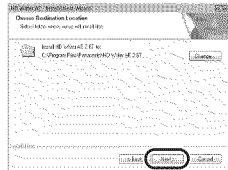
- If the country or region cannot be selected, select [NTSC Area].
- When the confirmation message appears, click [Yes].



**5** Select where the application is to be installed, then click [Next].

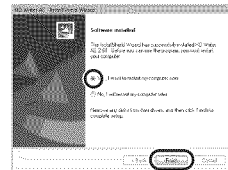
**6** Select [Yes] or [No] to create shortcut.

- A message regarding the playback in the environment used may be displayed depending on the performance of the PC used. Click [OK] after confirming.



**7** When installation is complete, some notes will appear. Check the contents, then close the window.

**8** Select [Yes, I want to restart my computer now.], then click [Finish].

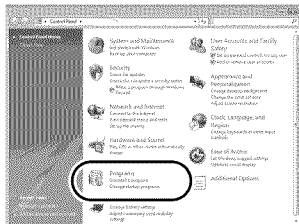


The PC must be rebooted for the application to work.

## ■ Uninstalling HD Writer AE 2.6T

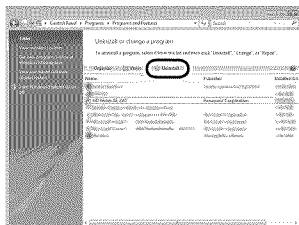
Follow the steps below to uninstall any software applications that you no longer require.

**1** Select [Start] → [Control Panel] → [Uninstall a Program].



**2** Select [HD Writer AE 2.6T], then click [Uninstall].

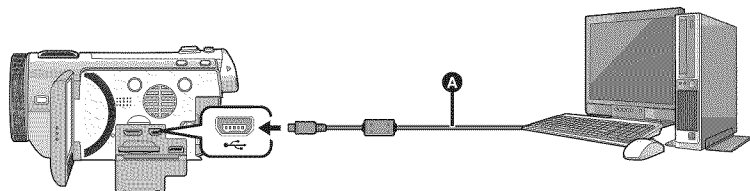
- Proceed with the uninstallation by following the on-screen instructions.
- After uninstalling the software, be sure to reboot the PC.



## 2

## Connecting to a PC

- Connect this unit to the PC after the software applications are installed.
- Remove the supplied CD-ROM from your PC.



- A** USB cable (supplied)

### 1 Connect this unit to the AC adaptor.

- It is possible to use the unit connected to the PC with the batteries only, but you will not be able to write data into the unit. Use the AC adaptor to free you from worrying about the battery running down.
- Connect with the AC adaptor when using the Conversion Assist Function.

### 2 Turn on the unit.


- This function is available in all modes.

### 3 Connect this unit to a PC.


- The USB function selection screen will appear.

### 4 Touch [PC] on the screen of this unit.

- The Smart wizard screen is automatically displayed when HD Writer AE 2.6T is installed.
- This unit is automatically recognized as an external drive of the PC. (→ 135)
- When you select an option other than [PC], reconnect the USB cable.
- When using the battery, the LCD monitor turns off after about 5 seconds. Touch the screen to turn the LCD monitor on.

- 
- Do not use any other USB cables except the supplied one. (Operation is not guaranteed with any other USB cables.)
  - **When the unit is connected to a PC, it cannot be turned off.**  
**Disconnect the USB cable, before turning this unit off.**
  - Do not disconnect the USB cable or the AC adaptor while the access lamp is on or card access icon (  ) appears on the unit screen.
  - When performing reading/writing between a PC and an SD card, be aware that some SD card slots built into PCs and some SD card readers are not compatible with the SDHC Memory Card or SDXC Memory Card.
  - When using an SDXC Memory Card, check the following support site.  
<http://panasonic.net/avc/sdcard/information/SDXC.html>


### ■ To disconnect USB cable safely

- 1 Double click the  icon in task tray displayed on the PC.
- Depending on your PC's settings, this icon may not be displayed.
- 2 Select [USB Mass Storage Device] and click [Stop].
- 3 Verify [MATSHITA HDC-SDT750/SD USB Device] is selected and click [OK].



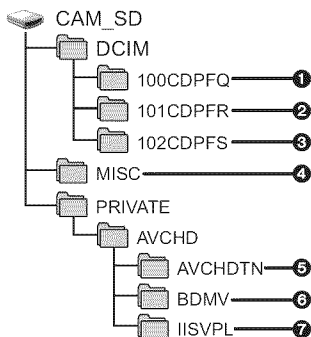
## About the PC display

When the unit is connected to a PC, it is recognized as an external drive.

- Removable disk (Example:  CAM\_SD (G:) ) is displayed in [Computer].

We recommend using HD Writer AE 2.6T to copy or write back motion picture data. Using Windows Explorer or other programs on the PC to copy, move or rename files and folders recorded with this unit will result in them being unusable with HD Writer AE 2.6T.

Example folder structure of an SD card:



The following data will be recorded.

- ① Up to 999 still pictures in JPEG format ([S1000001.JPG] etc.)
- ② JPEG format still pictures recorded in Hi-speed Burst Shooting Mode
- ③ JPEG format still pictures created from the motion picture
- ④ The DPOF setting files
- ⑤ The motion picture thumbnails
- ⑥ AVCHD format motion picture files ([00000.MTS] etc.)
- ⑦ Files for Intelligent Scene Selection playback

### ■ Copying your still pictures to your PC

#### Card reader function (mass storage)

Still pictures recorded with this unit can be copied to the PC with Explorer or other programs.

- 1 Double click the folder that contains the still pictures. ([DCIM] → [100CDPFQ] etc.)
- 2 Drag and drop the still pictures onto the destination folder (on the PC's HDD).

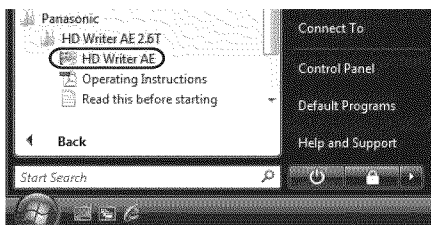
- Do not delete the SD card's folders. Doing so may make the SD card unusable in this unit.
- When data not supported by this unit has been recorded on a PC, it will not be recognized by this unit.
- Always use this unit to format SD cards.

# Starting HD Writer AE 2.6T

- When using HD Writer AE 2.6T on Windows XP, log on to your computer as Administrator (or with a login name equally authorized). If you log on with a login name other than Administrator, you cannot use the applications.
- When using HD Writer AE 2.6T on Windows Vista/Windows 7, log on to your computer as Administrator (or with a login name equally authorized) or with the user name for a standard user account. If you log on with a user name for a guest user account, the software cannot be used.

(On the PC)

**Select [Start] → [All Programs] → [Panasonic] → [HD Writer AE 2.6T] → [HD Writer AE].**



- For details on how to use the software applications, read the PDF operating instructions of the software.

## Reading the operating instructions of the software applications

- You will need Adobe Acrobat Reader 5.0 or later or Adobe Reader 7.0 or later to read the PDF operating instructions.

**Select [Start] → [All Programs] → [Panasonic] → [HD Writer AE 2.6T] → [Operating Instructions].**

- HD Writer AE 2.6T is not available for Mac.
- iMovie'09 supported. For details about iMovie'09, please contact Apple Inc.
- 1080/60p scenes cannot be imported to a Mac.
- Since iMovie'09 is not compatible with 1080/60p, it cannot acquire the scenes recorded in 1080/60p. Record in normal recording mode when importing to Mac.
- Scenes recorded in 3D are not supported by iMovie'09.

### ■ Operating environment

<b>PC</b>	Mac
<b>OS</b>	Mac OS X 10.5.8 Mac OS X 10.6
<b>CPU</b>	Intel Core Duo Intel Core 2 Duo
<b>RAM</b>	1 GB or more
<b>Interface</b>	USB port

- Even if the system requirements mentioned in these operating instructions are fulfilled, some PCs cannot be used.
- The USB equipment operates with the driver installed as standard in the OS.
- Supplied CD-ROM is available for Windows only.

### ■ Copying still pictures on PC

#### 1 Connect this unit to a PC via the supplied USB cable.

- The USB function selection screen will appear.

#### 2 Touch [PC] on the screen of this unit.

- This unit is automatically recognized as an external drive of Mac.
- When you select an option other than [PC], reconnect the USB cable.
- When using the battery, the LCD monitor turns off after about 5 seconds. Touch the screen to turn the LCD monitor on.

#### 3 Double-click [CAM\_SD] displayed on the desktop.

- Files are stored in [100CDPFQ] or [101CDPFR] folder etc. in the [DCIM] folder.

#### 4 Using a drag-and-drop operation, move the pictures you want to acquire or the folder storing those pictures to any different folder on the PC.

### ■ To disconnect USB cable safely

Drag [CAM\_SD] disk icon to the [Trash], and then disconnect the USB cable.

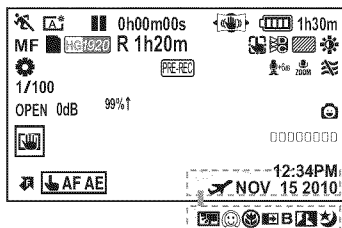
- Do not remove the SD card from this unit when this unit is connected to the PC using a USB cable.

## 1

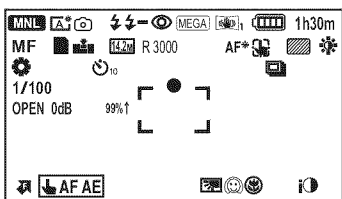
## Indications

## ■ Recording indications

### Motion Picture Recording Mode



### Still Picture Recording Mode



Remaining battery power  
(→ 22)

1h30m

Remaining battery time  
(→ 22)

R 1h20m

Remaining time for motion  
picture recording (→ 32)

0h00m00s

Elapsed recording time  
(→ 32)

("h" is an abbreviation for hour, "m" for  
minute and "s" for second.)

NOV 15 2010 Date indication (→ 29)

12:34PM Time indication (→ 29)

World time setting (→ 42)

HA/1920 / HB/1920 / HX/1920 / HE/1920

Motion picture recording mode (→ 69)

1080/60p 1080/60p recording (→ 55)

(White) Card recording possible  
status

(Green) Recognizing the card

(Red) Recording

(Green) Recording pause

PRE-REC (→ 63)

Interval Recording (→ 70)

Manual Mode (→ 86)

Intelligent Auto Mode (→ 35)

Intelligent Auto Mode (→ 35)

Operation icon is displayed/  
not displayed. (→ 62)

MF Manual Focus (→ 89)

AWB

White Balance (→ 87)

1/100 Shutter Speed (→ 88)

OPEN/F2.0 Iris value (→ 88)

0dB Gain value (→ 88)

Scene Mode (→ 68)

Scene Mode (→ 68)

Power LCD (→ 45)

Power LCD (→ 45)

Image Stabilizer (→ 52,61)/Optical Image  
Stabilizer Lock (→ 53,61)

AF/AE tracking (→ 54)



Zebra (→ 80)

Picture adjustment (→ 79)

Digital Cinema (→ 71)

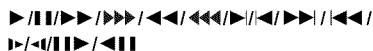
Hi-Speed Burst Shooting  
(→ 84)

Digital cinema color (→ 76)

AF*	AF assist lamp (→ 85)
ZOOM	Zoom Microphone (→ 77)
	Focus Microphone (→ 77)
2 ch	Stereo Microphone (→ 77)
	Wind Noise Canceler (→ 77)
+3dB / +6dB / LOW CUT	Bass Setting (→ 79)
	Smile Shot (→ 64)
□□□□□□□□	Microphone Level (→ 78)
	Backlight Compensation (→ 66)
	Soft Skin Mode (→ 66)
	Tele Macro (→ 66)
W / B	Fade (White), Fade (Black) (→ 63)
	Color Night Rec function (→ 67)
	Intelligent Contrast Control (→ 63)
	Intelligent Exposure (→ 66)
99%↑	Luminance Level (→ 80)
○ (White) / ● (Green) /  /  /  /  /	Focus indication (→ 33)
10 /  2	Self-Timer Recording (→ 66)
A /	Flash (→ 65)
+ /  -	Flash Level (→ 65)
	Red-Eye Reduction (→ 65)
	Picture Quality (→ 83)
Number of recording pixels for still pictures (→ 34, 82, 84, 91)	
In Playback Mode, the picture size is not displayed for still pictures recorded with other products that have different picture sizes from the sizes shown above.	
R3000	Remaining number of still pictures (→ 34)

(White)	Still picture recording icon
(Red)	Recording still picture
MEGA	MEGA OIS (→ 33)
3D	3D recording (→ 59)

## ■ Playback indications



Display during playback (→ 37, 90)

Operation icon is displayed/  
not displayed. (→ 37)

**0h00m00s** Playback Time (→ 37)

**No.10** Scene Number

Repeat Playback (→ 92)

Resume Playback (→ 93)

**100-0001** Still picture folder/file name

1 DPOF already set  
(to more than 1) (→ 103)

Protected motion pictures/  
still pictures (→ 102)

1080/60p recorded scene  
(→ 37)

AVCHD recorded scene  
(→ 37)

Interval-recorded scene  
(→ 70)

Still picture recorded using  
Smile Shot (→ 64)

Scenes recorded in 3D  
(→ 108)

## ■ Indication of connection to other devices

Accessing the card (→ 134)

## ■ Confirmatory indications

-- (Time display) The built-in battery is low.  
(→ 29)

Warning for face-to-face  
recording (→ 28)

SD card is not inserted or is  
non-compatible.

## ■ Confirmatory indications when a DVD burner is connected

Disc Playback (→ 118)

Scene copied in [Standard]([XP])

Scene copied in [Standard]([SP])

/ / / / / /

Disc type (→ 112)

Unusable disc

Major confirmation/error messages to be indicated on the screen in text.

**CHECK CARD.**

This card is not compatible or it cannot be recognized by the unit.

If this message appears even though motion pictures and still pictures are recorded on an SD card, the card may be unstable. Reinsert the SD card, then turn the unit off and then on again.

**THIS BATTERY CANNOT BE USED.**

- Use a battery that is compatible with this unit. (→ 19)  
If using a Panasonic battery compatible with this unit, remove the battery and then insert it again. If the message appears even after repeating this several times, this unit needs repair. Detach the power and contact consumer support. (→ 170, 171, 172) Do not attempt to repair it by yourself.
- You are attempting to connect an AC adaptor not compatible with this unit. Use the supplied AC adaptor. (→ 22)



**PLEASE CHECK EXTERNAL DRIVE OR DISC.**

A disc that cannot be used when connecting the unit to the DVD burner has been inserted, or the DVD burner is not recognized properly. Connect the Mini AB USB Connection Cable again and insert a disc to copy the data. (→ 112)

## About recovery

If faulty management information is found, the messages may appear and a repair is performed. (Repairing may take time depending on the error.)

**SOME SCENES NEED REPAIRING. PLAY SCENES TO BE REPAIRED.  
(IRREPARABLE SCENES WILL BE DELETED.)**



- The above message is displayed when abnormal management information is detected when the scenes are displayed in thumbnail. To perform the repair, touch the scene with  in the thumbnail, and start the playback. **Please be aware that if the repair fails, scenes with  will be deleted.**

---

- Use a sufficiently charged battery or the AC adaptor.
- Depending on the condition of the data, it may not be possible to completely repair the data.
- If recovery fails, it will not be possible to play back scenes recorded before the unit turned off.
- When data recorded on another device is recovered, it may not be possible to play back the data on this unit or the other device.
- If recovery fails, turn the unit off and on again after waiting a while. If recovery fails repeatedly, format a media on the unit. Please be aware that if a media is formatted, then all the data recorded on the media will be erased.
- If the thumbnail information is recovered, displaying the thumbnails may become slower.



# Troubleshooting

Problem	Check points
<p>This unit cannot be turned on.</p> <p>This unit does not stay on long enough.</p> <p>Battery runs down quickly.</p>	<ul style="list-style-type: none"> <li>● Charge the battery again to ensure it is sufficiently charged. (→ 19)</li> <li>● In cold places, the battery using time becomes shorter.</li> <li>● The battery has a limited life. If the operating time is still too short even after the battery is fully charged, the battery has worn out and needs to be replaced.</li> </ul>
<p>This unit is turned off automatically.</p>	<ul style="list-style-type: none"> <li>● If the unit turns off when you turn off the power to the TV using the TV remote control, the VIERA Link is at work. If you are not using the VIERA Link, set [VIERA Link] to [OFF]. (→ 110)</li> <li>● When this unit is connected to a DVD burner to copy or play back images (a disc is being accessed), the unit turns off automatically if the Mini AB USB Connection Cable is removed.</li> </ul>
<p>A clicking sound is heard when the unit is shaken.</p>	<ul style="list-style-type: none"> <li>● This is the sound of the lens moving and is not a defect. This sound will no longer be heard when the unit is turned on and change the mode to  or .</li> </ul>
<p>Remaining battery indication is not displayed properly.</p>	<ul style="list-style-type: none"> <li>● The remaining battery capacity indication is an approximation. If the remaining battery capacity indication is not displayed correctly, fully charge the battery, discharge it and then charge it again.</li> </ul>

**Problem****Check points**

This unit cannot be operated though it is turned on.

This unit does not operate normally.



- Remove the battery or AC adaptor, wait about 1 minute and then reconnect the battery or AC adaptor. Then about 1 minute later, turn on the unit again. (Conducting the above operation while the media is being accessed may damage the data on the media.)
- If normal operation is still not restored, detach the power connected, and contact consumer support. (→ 170, 171, 172)

Item other than the touched one is selected.



- Calibrate the touch screen. (→ 47)

The remote control does not function.



- [REMOTE CONTROL] of the [SETUP] is [OFF]. (→ 49)
- The button-type battery of the remote control may have run out. Replace it with a new button-type battery. (→ 49)

The remaining time indication or the elapsed time indication is not shown.



- [DISPLAY] of the [SETUP] is [OFF]. (→ 42)

The unit arbitrarily stops recording.



- Use an SD card that can be used for motion picture recording. (→ 23)
- The recordable time may have shortened due to the deterioration of the data writing speed or repeated recording and deletion. Using the unit, format the SD card. (→ 47)
- If [AGS] is [ON], record in the normal horizontal position or set [AGS] to [OFF]. (→ 75)

Auto focus function does not work.






- Switch to Intelligent Auto Mode.
- If you are trying to record a scene which is hard to bring into focus in Auto Focus Mode, use the Manual Focus Mode to adjust the focus. (→ 36, 89)

## Problem

## Check points


Color balance of images is strange when recording in a place such as a gymnasium.



- In a place with multiple light sources, such as a gymnasium or a hall, set the white balance setting to  (Indoor mode 2). If you cannot record clearly with the  (Indoor mode 2), set it to  (Manual adjustment mode). (→ 87)

Scenes/still pictures cannot be played back.



- Any scenes/still pictures where the thumbnails are displayed as  cannot be played back.

Although this unit is correctly connected to a TV, images cannot be seen.




- Please read the operating instructions of your TV and select the channel that matches the input used for the connection.
- Change the [TV ASPECT] setting to match the aspect ratio of the TV. (→ 106)
- Change the setting of the unit depending on the cable connecting to the TV. (→ 107)

The images are squeezed horizontally.

Scenes cannot be deleted.



- Release the protect setting. (→ 102)
- Any scenes/still pictures where the thumbnails are displayed as  cannot be deleted. If the scenes/still pictures are unnecessary, format the media to erase the data. (→ 47) Please be aware that if a media is formatted then all the data recorded on the media is erased and cannot be recovered. Back up important data on a PC, disc etc.

If the SD card is inserted in this unit, it is not recognized.



- If the SD card is formatted on a PC, it may not be recognized by this unit. Use this unit to format SD cards. (→ 47)

If the SD card is inserted in another device, it is not recognized.



- Check that the device is compatible with the capacity or type of SD card (SD Memory Card/SDHC Memory Card/SDXC Memory Card) that you inserted. Refer to the operating instructions of the device for details.

## Problem

Color or brightness of the image changes, or you may see horizontal bars in the image.

The LCD monitor flickers indoors.



- Color or brightness of the image may change, or you may see horizontal bars in the image when the object is recorded under fluorescent light, mercury light or sodium light, etc., but this is not a malfunction.
- In Motion Picture Recording Mode, record in Intelligent Auto Mode or set the shutter speed to 1/60 in areas where the power supply frequency is 60 Hz, or 1/100 in areas of 50 Hz.
- In Still Picture Recording Mode, this will not affect the recorded image.

Object seems to be warped.



- Object seems to be warped slightly when the object moves across the image very fast, but this is because the unit is using MOS for the image sensor. This is not a malfunction.

White round spots like soap bubbles appear on the recorded picture.



- If you take a picture with the flash in a dark place or indoors, white round spots may appear on the picture caused by the flash reflecting of particles of dust in the air. This is not a malfunction.  
A characteristic of this is that the number of round spots and their position differ in every picture.



"ERROR OCCURRED. PLEASE TURN UNIT OFF, THEN TURN ON AGAIN." is displayed.



- The unit has automatically detected an error. Restart the unit by turning the unit off and on.
- The unit will be turned off in about 1 minute if the unit is not turned off and on.
- Repair is needed if it is repeatedly displayed even if it is restarted. Detach the power connected, contact consumer support. (→ 170, 171, 172) Do not attempt to repair the unit by yourself.

## Problem

VIERA Link does not work.

## Check points

[Setting on this unit]

- Connect with a HDMI mini cable. (→ 110)
- Press the MENU button, then touch [SETUP] → [VIERA Link] → [ON]. (→ 110)
- Turn the unit off and then back on again.



[Setting on other devices]

- If the TV input does not switch automatically, switch the input using the TV remote control.
- Check the VIERA Link setting on the connected device.
- Please refer to the operating instructions of the connected device.


When connected by the USB cable, this unit is not detected by the PC.



- After re-inserting the SD card into the unit, reconnect the supplied USB cable.
- Select another USB terminal on the PC.
- Check the operating environment. (→ 128,137)
- Connect the supplied USB cable again after restarting the PC and turning on this unit again.

When the USB cable is disconnected, an error message will appear on the PC.



- To disconnect the USB cable safely, double-click the  icon in the task tray and follow the instructions on the screen.

The power of the DVD burner cannot be turned on.



- When the unit is connected to the DVD burner, use the respective AC adaptors for both this unit and the DVD burner.

Cannot see the PDF operating instructions for HD Writer AE 2.6T.



- You will need Adobe Acrobat Reader 5.0 or later or Adobe Reader 7.0 or later to read the PDF operating instructions for HD Writer AE 2.6T.

Cannot copy scenes on the SD card by connecting to other equipment with the USB cable.



- Other equipment might have not recognized the SD card. Unplug the USB cable once, and reconnect it.

## ■ If scenes do not change smoothly when played back on another device

The images may be still for several seconds at the joins between the scenes if the following operations are performed when multiple scenes have been continuously played back using another unit.

- Just how smoothly the scenes will be played back depends on the playback unit. Depending on the unit used, the images may stop moving and become still for a moment even when none of the following conditions are applicable.
- A continuous recording of motion picture data that exceeds 4 GB may momentarily stop at every 4 GB of data when played back with another device.
- It may not play back smoothly when the editing of scenes was done with the HD Writer AE 2.6T, but it will play back smoothly if you set the seamless settings in the HD Writer AE 2.6T. Refer to the operating instructions for the HD Writer AE 2.6T.

<b>Principal reasons for not playing back smoothly</b>
● When the scenes were recorded on different dates
● When scenes lasting under 3 seconds have been recorded
● When PRE-REC was used for recording
● When the Interval recording is used
● When deleting scenes
● When selected scenes are copied to a disc in a connected DVD burner
● When scenes recorded with more than 99 scenes on the same date

# Cautions for use

## About this unit

The unit and the SD card become warm during use. This is not a malfunction.

**Keep this unit as far away as possible from electromagnetic equipment (such as microwave ovens, TVs, video games etc.).**

- If you use this unit on top of or near a TV, the pictures and/or sound on this unit may be disrupted by electromagnetic wave radiation.
- Do not use this unit near cell phones because doing so may result in noise adversely affecting the pictures and/or sound.
- Recorded data may be damaged, or pictures may be distorted, by strong magnetic fields created by speakers or large motors.
- Electromagnetic wave radiation generated by microprocessors may adversely affect this unit, disturbing the pictures and/or sound.
- If this unit is adversely affected by electromagnetic equipment and stops functioning properly, turn this unit off and remove the battery or disconnect AC adaptor. Then reinsert the battery or reconnect AC adaptor and 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, the recorded pictures and/or sound may be adversely affected.

**Make sure to use the supplied cords and cables. If you use optional accessories, use the cords and the cables supplied with them.**

**Do not extend the cords and the cables.**

**Do not spray insecticides or volatile chemicals onto the unit.**

- If the unit is sprayed with such chemicals, its body may be marred and the surface finish may peel off.
- Do not leave rubber or plastic products in contact with the unit for a long time.

**When you use the unit in a sandy or dusty place such as a beach, do not let sand or fine dust get into the body and terminals of the unit.**

**Also, keep the unit away from sea water.**

- Sand or dust may damage the unit. (Care should be taken when inserting and removing a card.)
- If sea water splashes onto the unit, wipe off the water with a well wrung cloth. Then wipe the unit again with a dry cloth.

**When carrying the unit, do not drop or bump it.**

- A strong impact can break the unit's casing, causing it to malfunction.

## Cleaning

- Before cleaning, detach the battery or pull the AC cable from the AC outlet, and then wipe the unit with a soft, dry cloth.
- If the unit is very dirty, dip a cloth in water and squeeze firmly, and then wipe the unit with the damp cloth. Next, dry the unit with a dry cloth.
- Use of benzine, paint thinner, alcohol, or dishwashing liquid may alter the camera body or peel the surface finish. Do not use these solvents.
- When using a chemical dust cloth, follow the instructions that came with the cloth.

**Do not use the unit for surveillance purposes or other business uses.**

- This unit was designed for consumer intermittent use. It was not intended for continuous use, or for any industrial or commercial application resulting in prolonged use.
- In certain situations, continuous use could cause the unit to overheat and cause a malfunction. Such use is strongly discouraged.

**When you are not going to use the unit for an extended time**

- When storing the unit in a cupboard or cabinet, it is recommended that you place a desiccant (silica gel) in with it.

**About the battery**

The battery used in this unit is a rechargeable lithium-ion battery. It is susceptible to humidity and temperature and the effect increases the more the temperature rises or falls. In cold areas, the full charge indication may not appear or the low battery indication may appear about 5 minutes after starting use. At high temperatures, the protection function may be triggered, making it impossible to use the unit.

**Be sure to detach the battery after use.**

- If the battery is left attached, a minute amount of current continues to flow even if the unit is off. Keeping the unit in this state may result in over discharge of the battery. This may result in you not being able to use the battery even after it is charged.
- The battery should be stored in the vinyl bag so metal does not come into contact with the terminals.
- The battery should be stored in a cool place free from humidity, with as constant temperature as possible. (Recommended temperature: 15 °C to 25 °C (59 °F to 77 °F), Recommended humidity: 40%RH to 60%RH)

- Extremely high temperatures or low temperatures will shorten the life of the battery.
- If the battery is kept in high-temperature, high-humidity, or oily-smoky places, the terminals may rust and cause malfunctions.
- To store the battery for a long period of time, we recommend you charge it once every year and store it again after you have completely used up the charged capacity.
- Dust and other matter attached to the battery terminals should be removed.

**Prepare spare batteries when going out for recording.**

- Prepare batteries enough to last for 3 to 4 times the period you are planning to record for. Cold places such as a ski resort can shorten recording time.

**If you drop the battery accidentally, check to see if the terminals are damaged.**

- Attaching a battery with damaged terminals can damage the unit or AC adaptor.

**Do not throw an old battery into fire.**

- Heating a battery or throwing it into a fire may result in an explosion.

**If the operating time is very short even after the battery has been recharged, the battery has worn out. Please purchase a new battery.**



## About the AC adaptor

- If the temperature of the battery is extremely high or extremely low, charging may take time or the battery may not be charged.
- If the charging lamp keeps flashing, make sure that the terminals of the battery or the AC adaptor are not exposed to dirt, foreign objects or dust, then reconnect them properly.  
Disconnect the AC cable from the AC outlet when you remove dirt, foreign objects or dust on the terminals of the battery or the AC adaptor.  
If the charging lamp is still flashing, the temperature of the battery may be extremely high or extremely low or something may be wrong with the battery or AC adaptor. Contact consumer support. (→ 170, 171, 172)
- If you use the AC adaptor near a radio, radio reception may be disturbed. Keep the AC adaptor 1 m (3.3 feet) or more away from the radio.
- When using the AC adaptor, it may generate whirring sounds. However, this is normal.
- After use, be sure to disconnect the AC adaptor. (If it is left connected, a minute amount of current is consumed.)
- Always keep the electrodes of the AC adaptor and battery clean.

## About the 3D Conversion Lens

- Image may be affected when the surface of the protective glass is contaminated by water, oil, fingerprints, etc. Wipe the surface of the protective glass gently with a dry soft cloth before and after the recording.
- Remove the 3D Conversion Lens from the unit and place it in the lens storage bag when carrying.
- Do not hold the 3D Conversion Lens when the 3D Conversion Lens is attached to the unit.
- Do not use or store the 3D Conversion Lens in the following places since it may cause a failure or malfunction.
  - In direct sunlight or at the beach in summer, etc.
  - Areas with high temperature and/or humidity, or where there is rapid change in temperature and/or humidity
  - Areas with a lot of sand and dust
  - Areas close to fire
  - Close to air-conditioners and/or humidifiers
  - Areas where it may get wet
  - Areas with vibration
  - inside a car
- When the 3D Conversion Lens has not been used for a long period of time, check to see if there is any looseness in the attachment of the 3D Conversion Lens and adjust the attachment position before use.
- When not in use, put the lens caps on, place it inside the lens storing bag, and store in a place with low humidity.
- When requesting a repair of the 3D Conversion Lens, request a repair of the unit as well, as the cause of the problem may be in the unit.

## About 3D

### About 3D recording

Attach the 3D Conversion Lens securely. It must not be used with an insecure attachment.

Do not use the 3D Conversion Lens without adjusting it first.

- It will not be possible to record 3D video correctly, and this may lead to tiredness or discomfort.
- When you re-attach the 3D Conversion Lens after removing it, we recommend making the adjustments again.

With the 3D Conversion Lens attached, do not record a subject at less than the minimum focus distance.

- The 3D effects may be more pronounced, and therefore cause tiredness or discomfort.
- The minimum focus distance is approx. 1.2 m (3.9 feet).

When recording with the 3D Conversion Lens attached, be careful not to shake the unit.

- Tiredness or discomfort may result if the shake is pronounced, due to riding in a vehicle or walking etc.
- When moving the unit as you record, move it slowly.
- We recommend using a tripod.

### About 3D viewing

Anyone who is hyper sensitive to light, suffers from heart disease or is otherwise unwell should avoid viewing 3D video.

- Doing may have an adverse affect on such medical conditions.

If you feel tired, uncomfortable or otherwise strange when viewing 3D video, stop viewing at once.

- Continuing to view may cause illness.
- Please rest appropriately after stopping the viewing.

When viewing 3D video, we recommend taking a break every 30 to 60 minutes.

- Viewing for extended periods may cause eye-fatigue.

Short-sighted or far-sighted persons, those with differences in the sight of their right and left eyes, and those with astigmatism are advised to correct their vision by wearing glasses etc.

Stop viewing if you can clearly see a double image while viewing 3D video.

- There are differences in the way that different people experience 3D video images. Please correct your sight appropriately before viewing 3D video.
- You can change the 3D setting of your television or 3D output setting of the unit to 2D.

When viewing 3D video on a 3D compatible television, position yourself a distance away that is at least 3 times the effective height of the television.

- (Recommended distance):  
For 42"; approx. 1.6 m (5.2 feet),  
for 46"; approx. 1.7 m (5.6 feet),  
for 50"; approx. 1.9 m (6.2 feet),  
for 54"; approx. 2.0 m (6.6 feet).
- Viewing from a distance closer than the recommended distance may lead to eye-fatigue.

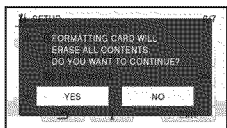
Viewing of 3D video is not recommended for children under 5 to 6 years.

- It is difficult to know how children will react to tiredness or discomfort, and they may become ill suddenly.
- When children are viewing, have a responsible adult ensure that eye-fatigue does not occur.

## About the SD card

When disposing of or giving away the SD card, note that:

- Formatting and deletion of this unit or computer only changes the file management information and does not completely delete the data in the SD card.
- It is recommended that the SD card is physically destroyed or the SD card is physically formatted using this unit when disposing of or giving away the SD card. To physically format the SD card, connect the unit via the AC adaptor, select [SETUP] → [FORMAT CARD] → [YES] from the menu, and then press and hold the delete button on the screen below for about 3 seconds. When the SD card data deletion screen appears, select [YES], and then follow the on-screen instructions.



- The customer is responsible for the management of the data in the SD card.

## LCD monitor/viewfinder

- When the LCD monitor gets dirty, wipe it with a soft cloth such as eye glass cleaner.
- Do not touch the LCD monitor with your finger nails, or rub or press with strong force.
- It may become hard to see or hard to recognize the touch when the LCD protection sheet is affixed.
- In a place with drastic temperature changes, condensation may form on the LCD monitor. Wipe it with a soft cloth such as eye glass cleaner.
- When the unit has become very cold, for example due to storage in a cold area, its LCD monitor will be slightly darker than usual immediately after the unit is turned on. The normal brightness will be restored when the unit's internal temperature rises.

Extremely high precision technology is employed to produce the LCD Monitor screen featuring a total of approximately 230,000 dots. The result is more than 99.99% effective dots with a mere 0.01% of the dots inactive or always lit. However, this is not a malfunction and does not affect the recorded picture.

Extremely high precision technology is employed to produce the viewfinder screen featuring a total of approximately 123,000 dots. The result is more than 99.99% effective dots with a mere 0.01% of the dots inactive or always lit. However, this is not a malfunction and does not affect the recorded picture.

## About personal information

After you have set up the face recognition function, personal information will be held in this unit and included in recorded images.

- When the unit is serviced, or given away/ disposed of, the personal information should be deleted in the interests of protecting personal information. (→ 102)

### Indemnity

- Information, including personal information, may be changed or lost as a result of mistaken operation, static electricity effects, accident, breakage, repair or other handling. It should be noted before use that Panasonic does not accept any responsibility for direct or indirect problems which occur as the result of the change to or loss of the information including personal information.

## About condensation

When condensation forms on the unit, the lens will cloud up and the unit may not work properly. Make every effort to ensure that condensation does not form. If it does form, take the actions described below.

### Causes of condensation

**Condensation takes place when the ambient temperature or humidity is changed as follows.**

- When this unit is brought inside from the cold (e.g. a ski slope) to a warm room.
- When this unit is moved from an air-conditioned car to outside.
- When a cold room has been warmed up quickly.
- When cool wind from an air conditioner is directly blown onto this unit.
- After rain showers.
- When this unit is in a very humid place where the air is thick with steam. (e.g. a heated swimming pool)

### Helpful hint

If, for example, you have used this unit for recording on a ski slope and are taking it into a heated room, place the unit inside a plastic bag, remove as much of the air from inside the bag as possible, then seal the bag. Leave the unit for about an hour in the room so the temperature of the unit is close to the ambient temperature of the room, then use it.

# About copyright

## ■ Carefully observe copyright laws

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.

## ■ Licenses

- SDXC Logo is a trademark of SD-3C, LLC.
- "AVCHD" and the "AVCHD" Logo are trademarks of Panasonic Corporation and Sony Corporation.
- Manufactured under license from Dolby Laboratories.  
Dolby and the double-D symbol are trademarks of Dolby Laboratories.
- HDMI, the HDMI Logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.
- VIERA Link™ is a trademark of Panasonic Corporation.
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- x.v.Color™ is a trademark.
- LEICA is a registered trademark of Leica Microsystems IR GmbH and DICOMAR is a registered trademark of Leica Camera AG.
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- Intel®, Core™, Pentium® and Celeron® are the registered trademarks or trademarks of Intel Corporation in the United States and other countries.
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- iMovie and Mac are trademarks of Apple Inc., registered in the U.S. and other countries.
- PowerPC is a trademark of International Business Machines Corporation.
- Other names of systems and products mentioned in these instructions are usually the registered trademarks or trademarks of the manufacturers who developed the system or product concerned.

This product is licensed under the AVC patent portfolio license for the personal and non-commercial use of a consumer to (i) encode video in compliance with the AVC Standard ("AVC Video") and/or (ii) decode AVC Video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed to provide AVC Video. No license is granted or shall be implied for any other use. Additional information may be obtained from MPEG LA, LLC. See <http://www.mpegla.com>.

## Recording modes/approximate recordable time

- SD cards are only mentioned with their main memory size. The stated times are the approximate recordable times for continuous recording.



Recording mode	1080/60p	HA	HG	HX	HE	
Picture size	1920×1080	1920×1080	1920×1080	1920×1080	1920×1080	
SD card	4 GB	19 min	30 min	40 min	1 h	1 h 30 min
	8 GB	40 min	1 h	1 h 20 min	2 h	3 h 20 min
	16 GB	1 h 20 min	2 h	2 h 40 min	4 h 10 min	6 h 40 min
	32 GB	2 h 40 min	4 h 10 min	5 h 30 min	8 h 20 min	13 h 40 min
	48 GB	4 h	6 h 20 min	8 h 10 min	12 h 30 min	20 h 20 min
	64 GB	5 h 20 min	8 h 30 min	11 h	16 h 50 min	27 h 30 min

**A** Favors image quality





**B** Favors recording time




- If recording for long periods, prepare batteries for 3 or 4 times the period you wish to record for. (→ 21)
- The default setting is [HG] Mode.
- Recordable time of 3D recording mode is the same.  
(During 3D recording mode, 1080/60p recording mode cannot be used.)
- Maximum continuously recordable time for one scene: 12 hours
- The recording is paused once when the recording time for one scene exceeds 12 hours, and the recording will automatically resume after a few seconds.
- If a recording with a lot of action is recorded, the recording time is reduced.
- The recordable time may be reduced if recording of short scene is repeated.
- Use time in the row of 4 GB in above table as a guideline for the time that can be copied onto one DVD disc (4.7 GB).

# Approximate number of recordable pictures

- SD cards are only mentioned with their main memory size. The stated number is the approximate number of recordable pictures.

(In Still Picture Recording Mode)

Aspect ratio		4:3							
Picture size		12M 4032×3024		7.7M 3200×2400		4.9M 2560×1920		0.3M 640×480	
Picture quality									
SD card	512 MB	70	110	110	180	180	290	3600	6100
	1 GB	140	220	220	360	360	580	7400	12000
	2 GB	300	450	450	740	740	1200	15000	25000
	4 GB	610	940	940	1500	1500	2400	30000	50000
	8 GB	1200	1900	1900	3000	3000	4800	60500	102000
	16 GB	2500	3900	3900	6200	6200	9700	122000	205000
	32 GB	5000	7900	7900	12500	12500	19500	246000	414000
	64 GB	10000	15800	15800	25000	25000	39000	492000	829000

Aspect ratio		3:2					
Picture size		14.2M 4608×3072		8.6M 3600×2400		5.5M 2880×1920	
Picture quality							
SD card	512 MB	60	90	100	160	160	250
	1 GB	120	180	200	320	320	500
	2 GB	240	390	400	650	650	1000
	4 GB	500	800	850	1300	1300	2000
	8 GB	1000	1600	1700	2700	2700	4200
	16 GB	2100	3300	3400	5500	5500	8500
	32 GB	4200	6700	7000	11000	11000	17500
	64 GB	8400	13400	14000	22000	22000	35000

Aspect ratio		16:9					
Picture size		10.0M 4864×2736		8.3M 3840×2160		5.3M 3072×1728	
Picture quality							
SD card	512 MB	65	100	100	160	160	270
	1 GB	130	200	200	320	320	540
	2 GB	270	400	400	700	700	1100
	4 GB	550	850	850	1420	1420	2200
	8 GB	1100	1700	1700	2800	2800	4500
	16 GB	2200	3400	3400	5600	5600	9000
	32 GB	4500	7000	7000	11500	11500	18200
	48 GB	6600	10000	10000	17000	17000	26000
64 GB	9000	14000	14000	23000	23000	36400	

(In Motion Picture Recording Mode)

Aspect ratio		16:9					
Picture size		10.0M 4864×2736		8.3M 3840×2160		2.1M 1920×1080	
Picture quality							
SD card	512 MB	65	100	100	160	440	690
	1 GB	130	200	200	320	900	1400
	2 GB	270	400	400	700	1800	2800
	4 GB	550	850	850	1420	3600	5600
	8 GB	1100	1700	1700	2800	7300	11000
	16 GB	2200	3400	3400	5600	14000	23000
	32 GB	4500	7000	7000	11500	29000	46000
	48 GB	6600	10000	10000	17000	44000	69000
64 GB	9000	14000	14000	23000	59000	93000	

- The number of recordable pictures depends on whether and are used together and on the subject being recorded.
- Maximum number of recordable pictures that can be displayed is 99999.  
If the number of recordable pictures exceeds 99999, the number will not change when the picture is taken until the number of recordable pictures gets less than 99999.
- The memory capacity indicated on the label of an SD card is the total of the capacity for copyright protection and management and the capacity which can be used on the unit, a PC etc.



# Specifications

## High Definition Video Camera

Information for your safety

<b>Power source:</b>	DC 9.3 V (When using AC adaptor) DC 7.2 V (When using battery)
<b>Power consumption:</b>	Recording: 6.0 W

### Signal system:

1080/60p, 1080/60i

### Recording format:

1080/60p: Original format  
HA/HG/HX/HE: AVCHD format compliant

### Image sensor:

1/4.1" 3MOS image sensor

Total: 3050 K×3

Effective pixels:

Motion picture: 2530 K×3 (16:9)

Still picture: 2320 K×3 (4:3), 2630 K×3 (3:2), 2530 K×3 (16:9)

### Lens:

Auto Iris, 12× Optical Zoom, F1.5 to F2.8

Focal length: 3.45 mm to 41.4 mm

Macro (Full range AF)

35 mm equivalent:

Motion picture: 35 mm to 420 mm (16:9)

Still picture: 38.8 mm to 466 mm (4:3)

35.7 mm to 428 mm (3:2)

35 mm to 420 mm (16:9)

Minimum focus distance:

Normal: Approx. 4 cm (1.6") (Wide)/Approx. 1.2 m (3.9 feet) (Tele)

Tele macro: Approx. 70 cm (28") (Tele)

Intelligent auto Macro: Approx. 1 cm (0.4") (Wide)/Approx. 70 cm (28") (Tele)

### Filter diameter:

46 mm

**Zoom:**

12× Optical Zoom, 18× i.Zoom, 30×/700× Digital Zoom

---

**Monitor:**

3" wide LCD monitor (Approx. 230 K dots)

---

**Viewfinder:**

0.27" wide EVF (Approx. 123 K dots)

---

**Microphone:**

5.1 channel surround microphone  
(with a zoom microphone/focus microphone function)

---

**Speaker:**

1 round speaker, dynamic type

---

**White balance adjustment:**

Auto tracking white balance system

---

**Standard illumination:**

1,400 lx

---

**Minimum required illumination:**

Approx. 1.6 lx (1/30 with Low light mode in the Scene mode)

Approx. 1 lx with the Color Night Rec function

---

**AV multi connector video output level:**

Component video output level:

Y: 1.0 Vp-p, 75 Ω

Pb: 0.7 Vp-p, 75 Ω

Pr: 0.7 Vp-p, 75 Ω

AV video output level:

1.0 Vp-p, 75 Ω, NTSC system

---

**HDMI mini connector video output level:**

HDMI™ (x.v.Color™) 1080p/1080i/480p

---

**AV multi connector audio output level (Line):**

316 mV, 600 Ω, 2 ch

---

**Headphone output:**

77 mV, 32 Ω (Stereo mini jack)

---

**HDMI mini connector audio output level:**

Dolby Digital/Linear PCM

---

**MIC input:**

-70 dBV (Mic sensitivity -50 dB equivalent, 0 dB=1 V/Pa, 1 kHz)  
(Stereo mini jack)

---

**USB:**

Reader/writer function

SD card: Read/Write (No copyright protection support)  
Hi-Speed USB (USB 2.0), USB terminal Type Mini AB  
USB host function (for DVD burner)

---

**Flash:**

Available range: Approx. 1.0 m to 2.5 m (3.3 feet to 8.2 feet)

---

**Dimensions:**

66 mm (W)×69 mm (H)×138 mm (D)  
[2.59 " (W)×2.71 " (H)×5.43 " (D)] (excluding projecting parts)

---

**Mass (Weight):**

Approx. 375 g (Approx. 0.83 lbs.)  
[without battery (supplied) and an SD card (optional)]

---

**Mass (Weight) in operation:**

Approx. 435 g (Approx. 0.96 lbs.)  
[with battery (supplied) and an SD card (optional)]

---

**Operating temperature:**

0 °C to 40 °C (32 °F to 104 °F)

---

**Operating humidity:**

10%RH to 80%RH

---

**Battery operation time:**

See page 21

---

## ■ 3D Conversion Lens

---

### Dimensions:

78 mm (W)×59 mm (H)×97 mm (D)  
[3.07 " (W)×2.32 " (H)×3.82 " (D)]

---

### Mass (Weight):

Approx. 195 g (Approx. 0.429 lbs.)

---

### Lens (when attached to the unit) :

F3.2 (f = 2.5 mm)  
35 mm equivalent: 58 mm  
Minimum recording distance: Approx. 1.2 m (3.9 feet)

---

**Stereo base:** 12.4 mm (0.49 ")

---

**Minimum illumination:** Approx. 28 lx (1/30 when [AUTO SLOW SHTR (3D)] is set to [ON])

---

## ■ Motion pictures

---

### Recording media:

SD Memory Card (FAT12 and FAT16 system compliant)  
SDHC Memory Card (FAT32 system compliant)  
SDXC Memory Card (exFAT system compliant)  
Refer to page 23 for details on SD cards usable in this unit.

---

### Compression:

MPEG-4 AVC/H.264

---

### Recording mode and transfer rate:

1080/60p: Approx. 28 Mbps (VBR)  
HA: Approx. 17 Mbps (VBR)  
HG: Approx. 13 Mbps (VBR)  
HX: Approx. 9 Mbps (VBR)  
HE: Approx. 5 Mbps (VBR)  
Refer to page 156 for the recordable time.

---

### Picture size:

1080/60p: 1920×1080/60p  
HA/HG/HX/HE: 1920×1080/60i

---

### Audio compression:

Dolby Digital/5.1 ch (built-in microphone), 2 ch (built-in microphone/external microphone)

---

## ■ Still pictures

---

### Recording media:

SD Memory Card (FAT12 and FAT16 system compliant)

SDHC Memory Card (FAT32 system compliant)

SDXC Memory Card (exFAT system compliant)

Refer to page 23 for details on SD cards usable in this unit.

---

### Compression:

JPEG (Design rule for Camera File system, based on Exif 2.2 standard),

DPOF corresponding

---

### Picture size:

Picture aspect [4:3]: 4032×3024/3200×2400/2560×1920/640×480

Picture aspect [3:2]: 4608×3072/3600×2400/2880×1920

Picture aspect [16:9]: 4864×2736/3840×2160/3072×1728/1920×1080

Refer to page 157 for the number of recordable pictures.

---

### AC adaptor

Information for your safety

<b>Power source:</b>	AC 110 V to 240 V, 50/60 Hz
<b>Power consumption:</b>	19 W
<b>DC output:</b>	DC 9.3 V, 1.2 A (Unit operation)
	DC 8.4 V, 0.65 A (Battery charging)

---

### Dimensions:

92 mm (W)×33 mm (H)×61 mm (D) [3.6" (W)×1.3" (H)×2.4" (D)]

---










### Mass (Weight):

Approx. 115 g (Approx. 0.25 lbs.)

---

Specifications may change without prior notice.


## Optional accessories

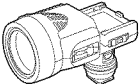





Accessory No.	Figure	Description
VW-AD21PP-K <sup>*1</sup>		AC adaptor with AC Cable and DC Cables
VW-VBG130 <sup>*2</sup>		Rechargeable Lithium Ion Battery Pack
VW-VBG260 <sup>*2</sup>		Rechargeable Lithium Ion Battery Pack
VW-VBG6 <sup>*2</sup>		Rechargeable Lithium Ion Battery Pack <ul style="list-style-type: none"> <li>• The battery pack holder kit/ VW-VH04 (optional) is necessary.</li> </ul>
VW-VH04		Battery pack holder kit
RP-CDHM15 RP-CDHM30		HDMI mini cable
VW-W4607H		Wide conversion lens
VW-WE08H <sup>*3</sup>		Wide end conversion lens
VW-LF46N <sup>*4</sup>		Filter kit

\*1 The supplied DC cables cannot be used on this unit.

\*2 Please refer to page 21, concerning the battery charging time and available recording time.

\*3 When using the VW-WE08H, set the zoom to W (wide) side. The focus will be slightly out when it is set to T (tele) side, so remove the VW-WE08H when recording set to T (tele) side.

\*4 When using the VW-LF46N, remove the lens hood (supplied) and set to the flash setting to  (OFF).

Accessory No.	Figure	Description
VW-LDC103PP		Video DC Light
VZ-LL10PP		Light bulb for video DC light
VW-SK12PP		Shoe adaptor
RP-SDP16GU1K RP-SDP12GU1K RP-SDP08GU1K RP-SDP04GU1K RP-SDP02GU1K		Class 4 16 GB SDHC Memory Card Class 4 12 GB SDHC Memory Card Class 4 8 GB SDHC Memory Card Class 4 4 GB SDHC Memory Card Class 4 2 GB SD Memory Card
RP-SDW64GU1K RP-SDW48GU1K RP-SDW32GU1K RP-SDW16GU1K RP-SDW08GU1K RP-SDW04GU1K RP-SDW02GU1K		Class 10 64 GB SDXC Memory Card Class 10 48 GB SDXC Memory Card Class 10 32 GB SDHC Memory Card Class 10 16 GB SDHC Memory Card Class 10 8 GB SDHC Memory Card Class 10 4 GB SDHC Memory Card Class 6 2 GB SD Memory Card
VW-BN2		DVD burner
VW-BN01		DVD burner

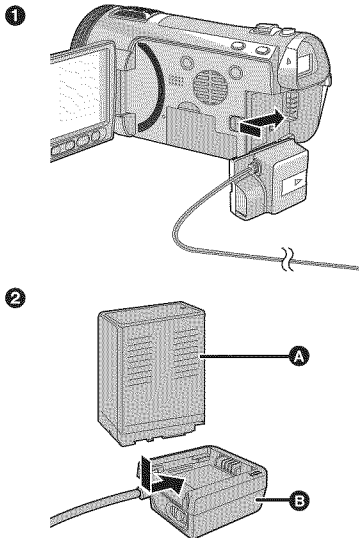
**NOTE:**

Accessories and/or model numbers may vary by country. Please consult your local dealer.

Product numbers correct as of Aug. 2010. These may be subject to change.

## ■ Attaching the battery pack holder kit

To use the VW-VBG6 for this unit, the battery pack holder kit/VW-VH04 (optional) is required.



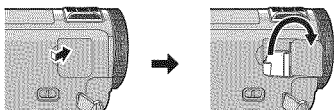
- A VW-VBG6
- B VW-VH04

- 1 Insert the DC cable into this unit.
  - 2 Insert the battery in the battery holder.
- Do not let the DC cable get caught in between the LCD monitor when closed.

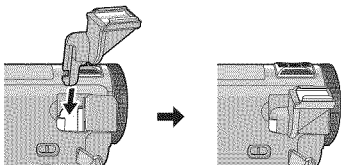
## ■ Attaching the optional accessories on the shoe adaptor

The video DC light/VW-LDC103PP (optional) etc. can be mounted on the shoe adaptor (supplied).

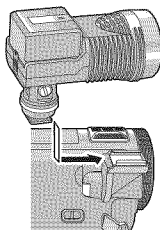
- 1 Open the shoe adaptor cover.



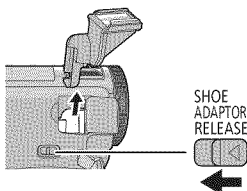
- 2 Attach the shoe adaptor to this unit.



- 3 Attach the video DC light to this unit.




- When removing the shoe adaptor, slide the SHOE ADAPTOR RELEASE lever, and remove the shoe adaptor while sliding the lever.





## ■ Attaching the conversion lens/ filter kit

Attach the wide conversion lens (VW-W4607H; optional), the wide end conversion lens (VW-WE08H; optional), ND filter or MC protector of the Filter kit (VW-LF46N; optional) in front of the lens.

- It is not possible to attach it to the front of the lens hood. (→ 30)
- You will not be able to use the flash. Set the flash setting to  (OFF). (→ 65)

### Be careful about the following.

When 2 lens accessories, such as the ND filter and wide conversion lens, are fitted and the zoom lever is pressed toward the W side, the 4 corners of an image will be darkened. (Vignetting)

### Attaching the lens cap of the Filter Kit (VW-LF46N; optional)

- When the filter kit (VW-LF46N; optional) is used, protect the lens surface while the unit is not used with the lens cap supplied with the filter kit.

# Accessory Order Form (For USA and Puerto Rico Customers)

Please photocopy this form when placing an order.

1. Model # \_\_\_\_\_  
 2. Items Ordered \_\_\_\_\_

Accessory #	Description	Price Each	Quantity	Total Price
Subtotal				
Your State & Local Sales Tax				
Shipping & Handling				6.95
Total Enclosed				

3. Method of payment (check one)

- Check of Money Order enclosed (NO C.O.D.SHIPMENTS)  
 VISA                      Credit Card # \_\_\_\_\_  
 MasterCard              Expiration Date \_\_\_\_\_  
 Discover                      Customer Signature \_\_\_\_\_

Make Check or Money Order Payable to: PANASONIC ACCESSORIES

(Please do not send cash)

4. Shipping information (UPS delivery requires complete street address)

Ship To:

Mr. \_\_\_\_\_

Mrs. \_\_\_\_\_

Ms. \_\_\_\_\_

First                                      Last

Phone#:

Day (    ) \_\_\_\_\_

Street Address \_\_\_\_\_

Night (    ) \_\_\_\_\_

City                                      State                      Zip

TO OBTAIN ANY OF OUR ACCESSORIES YOU CAN DO ANY OF  
 THE FOLLOWING:  
 VISIT YOUR LOCAL PANASONIC DEALER  
 OR  
 CALL PANASONIC'S ACCESSORY ORDER LINE AT 1-800-332-5368  
 [6 AM-6 PM M-F, PACIFIC TIME]  
 OR

MAIL THIS ORDER TO: PANASONIC SERVICE AND TECHNOLOGY COMPANY ACCESSORY ORDER OFFICE  
 20421 84th Avenue South Kent, WA. 98032

In CANADA, please contact your local Panasonic dealer for more information on Accessories.

# Limited Warranty (ONLY FOR U.S.A. AND PUERTO RICO)

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

## Panasonic Camcorder Products Limited Warranty

### Limited Warranty Coverage (For USA and Puerto Rico Only)

If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company (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, (b) replace it with a new or a refurbished equivalent value product, or (c) refund your purchase price. The decision to repair, replace or refund will be made by the warrantor.

Product or Part Name	Parts	Labor
Camcorder	1 year	90 days
Rechargeable Batteries (defective exchange)	10 days	Not Applicable
SD Memory Cards (defective exchange)	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. This Limited Warranty excludes both parts and labor for non-rechargeable batteries, antennas, and cosmetic parts (cabinet). 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".

### Carry-In or Mail-In Service

To find a service center please visit <http://www.panasonic.com/help> or call 1-800-211-PANA (7262).

When shipping the unit, carefully pack, include all accessories, and send it prepaid, adequately insured and preferably in the original carton. If Lithium Ion batteries are shipped by air the package must be labeled "Contains Lithium Ion Battery (No lithium metal)". Damaged batteries are prohibited from shipment by US Mail. Batteries must be securely packed in a manner to prevent short-circuiting and a package cannot contain more than 3 Lithium Ion batteries. Include a letter detailing the complaint, a return address and provide a daytime phone number where you can be reached. A valid registered receipt is required under the Limited Warranty.

**IF REPAIR IS NEEDED DURING THE WARRANTY PERIOD, THE PURCHASER WILL BE REQUIRED TO FURNISH A SALES RECEIPT/PROOF OF PURCHASE INDICATING DATE OF PURCHASE, AMOUNT PAID AND PLACE OF PURCHASE. CUSTOMER WILL BE CHARGED FOR THE REPAIR OF ANY UNIT RECEIVED WITHOUT SUCH PROOF OF PURCHASE.**

### 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, introduction of sand, humidity or liquids, commercial use such as hotel, office, restaurant, or other business or rental use of the product, or service by anyone other than a Factory Service Center 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 or damage to media or images, data or other memory or recorded content. The items listed are not exclusive, but 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 Service Center. 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 (United States and Puerto Rico)***

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

**<http://www.panasonic.com/help>**

**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 9am-9pm, Saturday-Sunday 10am-7pm EST

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

#### ***Accessory Purchases (United States and Puerto Rico)***

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

**<http://www.pstc.panasonic.com>**

Or, send your request by E-mail to:

**[npcparts@us.panasonic.com](mailto:npcparts@us.panasonic.com)**

You may also contact us directly at:

1-800-332-5368 (Phone) 1-800-237-9080 (Fax Only)

(Monday-Friday 9am-9pm EST)

Panasonic Service and Technology 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**

**As of November 2009**

# Warranty (For Canadian Customers)

Panasonic Canada Inc.

5770 Ambler Drive, Mississauga, Ontario L4W 2T3

## PANASONIC PRODUCT – LIMITED WARRANTY

Panasonic Canada Inc. warrants this product to be free from defects in material and workmanship under normal use and for a period as stated below from the date of original purchase agrees to, at its option either (a) repair your product with new or refurbished parts, (b) replace it with a new or a refurbished equivalent value product, or (c) refund your purchase price. The decision to repair, replace or refund will be made by Panasonic Canada Inc.

### Camcorder Products - One (1) year, parts and labour

This warranty is given only to the original purchaser, or the person for whom it was purchased as a gift, of a Panasonic brand product mentioned above sold by an authorized Panasonic dealer in Canada and purchased and used in Canada, which product was not sold "as is", and which product was delivered to you in new condition in the original packaging.

**IN ORDER TO BE ELIGIBLE TO RECEIVE WARRANTY SERVICE HEREUNDER, A PURCHASE RECEIPT OR OTHER PROOF OF DATE OF ORIGINAL PURCHASE, SHOWING AMOUNT PAID AND PLACE OF PURCHASE IS REQUIRED**

#### **LIMITATIONS 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 Panasonic Canada Inc., or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, improper batteries, power line surge, lightning damage, modification, introduction of sand, humidity or liquids, commercial use such as hotel, office, restaurant, or other business or rental use of the product, or service by anyone other than a Authorized Servicer, or damage that is attributable to acts of God.

Dry cell batteries are also excluded from coverage under this warranty. Rechargeable batteries are warranted for ninety (90) days from date of original purchase.

THIS EXPRESS, LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL PANASONIC CANADA INC. BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT OR ARISING OUT OF ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY. (As examples, this warranty excludes damages for lost time, travel to and from the Authorized Servicer, loss of or damage to media or images, data or other memory or recorded content. This list of items is not exhaustive, but for illustration only.)

In certain instances, some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or the exclusion of implied warranties, so the above limitations and exclusions may not be applicable. This warranty gives you specific legal rights and you may have other rights which vary depending on your province or territory.

#### **WARRANTY SERVICE**

For product operation and information assistance, please contact:

Our Customer Care Centre: Telephone: 1-800-995-8649  
Fax #: (905) 238-2360  
Email link: [camcorderconciierge@ca.panasonic.com](mailto:camcorderconciierge@ca.panasonic.com)

For defective product exchange within the warranty period, please contact the original dealer or our Customer Care Centre.

# Useful Information (Only For Latin American Countries)

## Customer Service

### Customer Service Directory

Obtain product information and operative assistant; localize the closer distributor or Service Center; buy spare parts and accessories by our web site to Latin American:

**<http://www.lar.panasonic.com>**

Also you may contact us directly by our Contact Center:

Panama	800-PANA (800-7262)
Colombia	01-8000-94PANA (01-8000-947262)
Ecuador	1800-PANASONIC (1800-726276)
Costa Rica	800-PANA737 (800-7262737)
El Salvador	800-PANA (800-7262)
Guatemala	1-801-811-PANA (1-801-811-7262)
Chile	800-390-602
	From a cell phone: 797-5000
Venezuela	800-PANA-800 (800-7262-800)
Uruguay	0-800-PANA (0-800-7262)
Peru	0800-00726
Argentina	0800-333-PANA (0800-333-7262)
	0810-321-PANA (0810-321-7262)

## Mexico Service

To obtain information in the Republic of Mexico contact us at:

**[email: atencion.clientes@mx.panasonic.com](mailto:atencion.clientes@mx.panasonic.com)**

Or you may contact us in the next following phones numbers:

**01800-VIP-PANA (01800-847-7262) - Interior**  
**(55) 5000-1200 - Mexico D.F. and Metropolitan Area**

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5770 Ambler Drive, Mississauga, Ontario, L4W 2T3



VQT3B18  
F0810MZ0 ( 2000 (A) )



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Printed in Japan