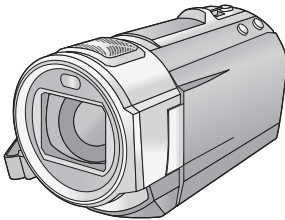


Panasonic®

Basic Owner's Manual High Definition Video Camera

Model No.

HC-V720P/PC HC-V720MP/PC HC-V710P/PC



Please read these instructions carefully before using this product, and save this manual for future use.

This document explains basic operations of the unit. For more detailed explanation, please refer to "Owner's Manual (PDF format)" which is recorded in the enclosed CD-ROM.



AVCHD™
Progressive

HDMI



DOLBY
DIGITAL

DLNA
CERTIFIED™

WiFi
CERTIFIED



Register online at www.panasonic.com/register (U.S. customers only)

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

VQT4Q73

Dear Customer,

Thank you for choosing Panasonic!

You have purchased one of the most sophisticated and reliable products on the market today. Used properly, we're sure it will bring you and your family years of enjoyment. Please take time to fill in the information on the right.

The serial number is on the tag located on the back of your camera. Be sure to **retain this manual** as your convenient camera information source.

Date of Purchase _____

Dealer Purchased From _____

Dealer Address _____

Dealer Phone No. _____

Model No. _____

Serial No. _____

Safety Precautions

WARNING:

To reduce the risk of fire, electric shock or product damage,

- Do not expose this unit to rain, moisture, dripping or splashing.
- Do not place objects filled with liquids, such as vases, on this unit.
- Use only the recommended accessories.
- Do not remove covers.
- Do not repair this unit by yourself. Refer servicing to qualified service personnel.

CAUTION!

To reduce the risk of fire, electric shock or product damage,

- Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure this unit is well ventilated.
- Do not obstruct this unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.
- Do not place sources of naked flames, such as lighted candles, on this unit.

THE FOLLOWING APPLIES ONLY IN THE U.S.A.

FCC Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, 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.

Declaration of Conformity

Trade Name:	Panasonic
Model No.:	HC-V720P
Responsible Party:	Panasonic Corporation of North America One Panasonic Way, Secaucus, NJ 07094
Support Contact:	Panasonic Consumer Marketing Company of North America 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.



THE FOLLOWING APPLIES ONLY IN CANADA.

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

AC adaptor

This AC adaptor operates on AC between 100 V and 240 V.

But

- In the U.S.A. and Canada, the AC adaptor must be connected to a 120 V AC power supply only.
- When connecting to an AC supply outside of the U.S.A. or Canada, use a plug adaptor to suit the AC outlet configuration.
- When connecting to a supply of greater than AC 125 V, ensure the cord you use is suited to the voltage of the AC supply and the rated current of the AC adaptor.
- Contact an electrical parts distributor for assistance in selecting a suitable AC plug adaptor or AC cord set.

The power plug is the disconnecting device. Install this unit so that the power plug can be unplugged from the socket outlet immediately.

■ Concerning the battery

Battery pack (Lithium ion battery pack)

- Use the specified unit to recharge the battery pack.
- Do not use the battery pack with equipment other than the specified unit.
- Do not get dirt, sand, liquids, or other foreign matter on the terminals.
- Do not touch the plug terminals (+ and -) with metal objects.
- Do not disassemble, remodel, heat or throw into fire.

If any electrolyte should come into contact with your hands or clothes, wash it off thoroughly with water.

If any electrolyte should come into contact with your eyes, never rub the eyes. Rinse eyes thoroughly with water, and then consult a doctor.

Warning

Risk of fire, explosion and burns. Do not disassemble, heat above 60 °C (140 °F) or incinerate.

CAUTION

- Danger of explosion if battery is incorrectly replaced. Replace only with the type recommended by the manufacturer.
- When disposing the batteries, please contact your local authorities or dealer and ask for the correct method of disposal.

■ Product Identification Marking

Product	Location
High Definition Video Camera	Battery holder
AC adaptor	Bottom

U.S.A./CANADA CONSUMERS: ATTENTION:



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

Conforms to UL STD 60065

Certified to CAN/CSA STD C22.2 No.60065

Conforme à la norme CAN/CSA C22.2 No.60065

THE FOLLOWING APPLIES ONLY IN THE U.S.A.

Contains FCC ID: VPYLBVX532

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65.

This equipment has very low levels of RF energy that are deemed to comply without testing of specific absorption ratio (SAR).

THE FOLLOWING APPLIES ONLY IN CANADA.

Contains IC: 772C-LBVX604

This device complies with RSS-210 of the IC Rules.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference,
- (2) This device must accept any interference received, including interference that may cause undesired operation of the device.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment and meets RSS-102 of the IC radio frequency (RF) Exposure rules.

This equipment has very low levels of RF energy that are deemed to comply without testing of specific absorption ratio (SAR).

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



-If you see this symbol-

Information on Disposal in other Countries outside the European Union



This symbol is only valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

■ Cautions for use

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.

About connecting to a PC

- Do not use any other USB cables except the supplied one.

About connecting to a TV

- Always use the supplied HDMI mini cable or a genuine Panasonic HDMI mini cable (RP-CDHM15, RP-CDHM30: optional).

■ About the recording format for recording motion pictures

You can record motion pictures in either AVCHD^{*1} or iFrame recording formats using this unit.

*1 It is compatible with the AVCHD Progressive (1080/60p).

AVCHD:

It is suitable for viewing on a high-definition TV or for saving to disc².

*2 To save an image recorded in 1080/60p, it is required to copy to a disc using the supplied software HD Writer AE 5.0.

iFrame:

This is a recording format suitable for viewing and editing on a Mac (iMovie[®]11).

- It is not compatible with motion pictures recorded in AVCHD format.

■ Indemnity about recorded content

Panasonic does not accept any responsibility for damages directly or indirectly due to any type of problems that result in loss of recording or edited content, and does not guarantee any content if recording or editing does not work properly. Likewise, the above also applies in a case where any type of repair is made to the unit (including any other non-built-in memory related component).

■ About Condensation (When the lens or the LCD monitor is fogged up)

Condensation occurs when there is a change in temperature or humidity, such as when the unit is taken from outside or a cold room to a warm room. Please be careful, as it may cause the lens or LCD monitor to become soiled, moldy, or damaged.






When taking the unit to a place which has a different temperature, if the unit is accustomed to the room temperature of the destination for about one hour, condensation can be prevented. (When the difference in temperature is severe, place the unit in a plastic bag or the like, remove air from the bag, and seal the bag.) When condensation has occurred, remove the battery and/or the AC adapter and leave the unit like that for about one hour. When the unit becomes accustomed to the surrounding temperature, fogging will disappear naturally.

■ Cards that you can use with this unit

SD Memory Card, SDHC Memory Card and SDXC Memory Card

- 4 GB or more Memory Cards that do not have the SDHC logo or 48 GB or more Memory Cards that do not have the SDXC logo are not based on SD Memory Card Specifications.
- Refer to page 14 for more details on SD cards.

■ For the purposes of this owner's manual

- SD Memory Card, SDHC Memory Card and SDXC Memory Card are referred to as the "SD card".
- Function that can be used for Motion Picture Recording Mode: 
Function that can be used for Still Picture Recording Mode: 
- Function that can be used for the Playback Mode: 
Function that can be used for the Playback Mode (motion pictures only): 
Function that can be used for the Playback Mode (still pictures only): 
- Scene(s) recorded in 1080/60p or 1080/60i: "AVCHD scene(s)"
- Pages for reference are indicated by an arrow, for example: → 00

This owner's manual is designed for use with models **HC-V720**, **HC-V720M** and **HC-V710**. Pictures may be slightly different from the original.

- The illustrations used in this owner's manual show model **HC-V720**, however, parts of the explanation refer to different models.
- Depending on the model, some functions are not available.
- **HC-V720** and **HC-V720M** are equipped with the Wi-Fi® function.
- Features may vary, so please read carefully.
- Not all models may be available depending on the region of purchase.

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■ How to open the owner's manual (PDF format)

When you insert the CD-ROM and open the [INDEX.pdf] in the CD-ROM, the Owner's Manual list will be displayed. Click the document name of the Owner's Manual you would like to open.

- Adobe Reader is required to view the PDF file. Please download it from the homepage of Adobe Systems Incorporated.

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Accessories

Check the accessories before using this unit.

Keep the accessories out of reach of children to prevent swallowing.

Product numbers correct as of Dec. 2012. These may be subject to change.

Battery pack

VW-VBT190



AC adaptor

VSK0780



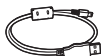
AC cable

K2CA2YY00259



USB cable

K2KYYYY00201



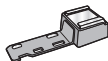
HDMI mini cable

K1HY19YY0021



Shoe adaptor

VYC1055



CD-ROM

Software



CD-ROM

Owner's Manual

VFF1122



Power supply

■ About batteries that you can use with this unit

The battery that can be used with this unit is VW-VBT190/VW-VBT380.

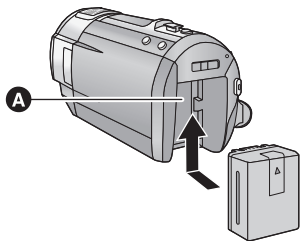
- The unit has a function for distinguishing batteries which can be used safely. The dedicated battery (VW-VBT190/VW-VBT380) supports this function. The only batteries suitable for use with this unit are genuine Panasonic products and batteries manufactured by other companies and certified by Panasonic. Panasonic cannot in any way guarantee the quality, performance or safety of batteries which have been manufactured by other companies and are not genuine Panasonic products.

It has been found that counterfeit battery packs which look very similar to the genuine product are made available to purchase in some markets. Some of these battery packs are not adequately protected with internal protection to meet the requirements of appropriate safety standards. There is a possibility that these battery packs may lead to fire or explosion. Please be advised that we are not liable for any accident or failure occurring as a result of use of a counterfeit battery pack. To ensure that safe products are used we would recommend that a genuine Panasonic battery pack is used.

Inserting/removing the battery

- Press the power button to turn off the unit. (→ 15)

Install the battery by inserting it in the direction shown in the figure.



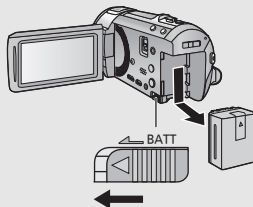
A Battery holder

Insert the battery until it clicks and locks.

Removing the battery

Be sure to hold down the power button until the status indicator goes off. Then remove the battery while supporting the unit to prevent it from dropping.

Move the battery release lever in the direction indicated by the arrow and remove the battery when unlocked.



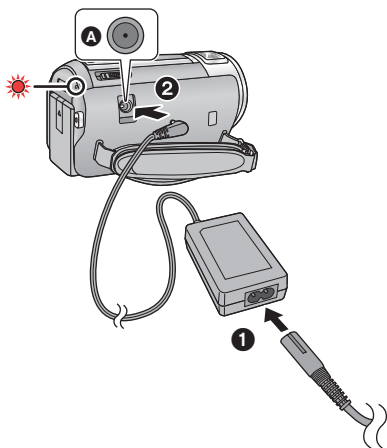
Charging the battery

When this unit is purchased, the battery is not charged. Charge the battery fully before using this unit for the first time.

The unit is in the standby condition when the AC adaptor is connected. The primary circuit is always "live" as long as the AC adaptor is connected to an electrical outlet.

Important:

- Do not use the AC cable with any other equipment as it is designed only for this unit. Also, do not use the AC cable from other equipment with this unit.
- The battery will not be charged if the unit is turned on.
- It is recommended to charge the battery in a temperature between 10 °C and 30 °C (50 °F and 86 °F). (The battery temperature should also be the same.)



A DC input terminal

1 Connect the AC cable to the AC adaptor, then the AC outlet.

2 Connect the AC adaptor to the DC input terminal.

- The status indicator will flash red at an interval of 2 seconds (approximately 1 second on, 1 second off), indicating that charging has begun. It will turn off when the charging is completed.

■ Connecting to the AC outlet

It is possible to use this unit with power supplied from the AC outlet by turning on the unit with the AC adaptor connected. When recording for a long time, keep the AC adaptor connected and use it together with the battery.

■ To charge by connecting to other device

It is possible to charge by connecting to other device with the USB cable (supplied).

- Do not use any other AC adaptors except the supplied one.
- We recommend using Panasonic batteries. (→ 10, 29)
- If you use other batteries, we cannot guarantee the quality of this product.
- Do not heat or expose to flame.
- Do not leave the battery(ies) in a car exposed to direct sunlight for a long period of time with doors and windows closed.

Charging and recording time

■ Charging/Recording time

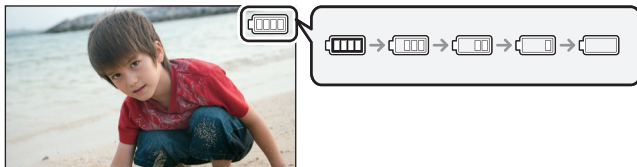
- Temperature: 25 °C (77 °F)/humidity: 60%RH
- Charging times in parentheses are when charging from the USB terminal.



Battery model number [Voltage/Capacity (minimum)]	Charging time	Recording mode	Maximum continuous recordable time	Actual recordable time
Supplied battery/ VW-VBT190 (optional) [3.6 V/1940 mAh]	2 h 20 min (5 h 20 min)	[1080/60p]	1 h 25 min	45 min
		[PH], [HA], [HG], [HE]	1 h 30 min	
		[iFrame]	1 h 40 min	50 min

- These times are approximations.
- **The indicated charging time is for when the battery has been discharged completely. Charging time and recordable time vary depending on the usage conditions such as high/low temperature.**
- The actual recordable time refers to the recordable time when repeatedly starting/stopping recording, turning the unit on/off, moving the zoom lever etc.

■ Battery capacity indication

The battery capacity indication is displayed on the LCD monitor.



- If there is less than 3 minutes remaining, then  will become red. If the battery discharges, then  will flash. Recharge the battery or replace it with a fully charged battery.

Recording to a card

The unit can record still pictures or motion pictures to an SD card or built-in memory. To record to an SD card, read the following.

Cards that you can use with this unit

Use SD cards conforming to Class 4 or higher of the SD Speed Class Rating for motion picture recording.

Please confirm the latest information about SD Memory Cards/SDHC Memory Cards/SDXC Memory Cards that can be used for motion picture recording on the following website.

http://panasonic.jp/support/global/cs/e_cam

(This website is in English only.)

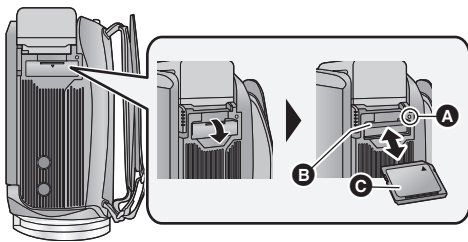
- Keep the Memory Card out of reach of children to prevent swallowing.

Inserting/removing an SD card

When using an SD card not from Panasonic, or one previously used on other equipment, for the first time on this unit, format the SD card. (→ 22) When the SD card is formatted, all of the recorded data is deleted. Once the data is deleted, it cannot be restored.

Caution:

Check that the access lamp has gone off.



Access lamp [ACCESS] **A**

- When this unit is accessing the SD card or built-in memory, the access lamp lights up.

1 Open the SD card cover and insert (remove) the SD card into (from) the card slot **B**.

- Face the label side **C** in the direction shown in the illustration and press it straight in as far as it will go.
- Press the center of the SD card and then pull it straight out.

2 Securely close the SD card cover.

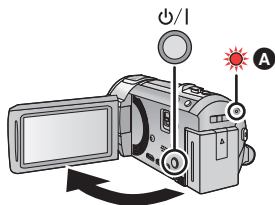
- Securely close it until it clicks.

Turning the unit on/off

You can turn the unit on and off using the power button or by opening and closing the LCD monitor.

Turning the unit on and off with the power button

Open the LCD monitor and press the power button to turn on the unit.



- A** The status indicator lights on.

The unit is turned on when the LCD monitor is opened, and unit is turned off when it is closed.

To turn off the unit

Hold down the power button until the status indicator goes off.

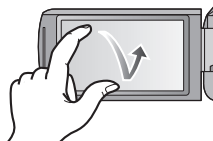
How to use the touch screen

You can operate by directly touching the LCD monitor (touch screen) with your finger.

■ Touch

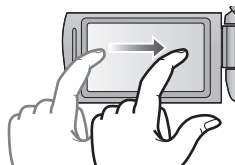
Touch and release the touch screen to select icon or picture.

- Touch the center of the icon.
- Touching the touch screen will not operate while you are touching another part of the touch screen.



■ Slide while touching

Move your finger while pressing on the touch screen.



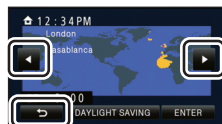
■ About the operation icons




Touch when changing a page or performing settings.



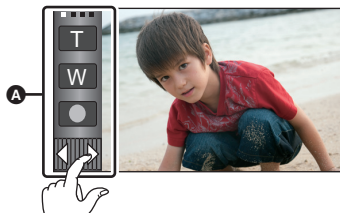
Touch to return to the previous screen.



About the Touch Menu

Touch ◀ (left side)/▶ (right side) of  on the Touch Menu to switch the operation icons.


- It is also possible to switch the operation icons by sliding the Touch Menu right or left while touching it.



A Touch Menu

■ To display the Touch Menu



Display of the Touch Menu will disappear when no touch operation is performed for a specific period of time during recording of motion picture/still picture. To display it again, touch .

Setting date and time

The clock is not set at the time of purchase. Make sure to set the clock.

1 Select the menu. (→ 22)

MENU : [SETUP] → [CLOCK SET]

2 Touch the date or time to be set, then set the desired value using ▲/▼.

A Displaying the World Time setting:

 [HOME] /  [DESTINATION]

- The year can be set between 2000 and 2039.

3 Touch [ENTER].

- A message prompting for World Time setting may be displayed. Perform the World Time setting by touching the screen.

- Touch [EXIT] to complete the setting.

[HC-V720] / [HC-V720M]

At the time of purchase, the confirmation screen for the Wi-Fi setup is displayed after setting the world time.

Exit the screen if the setup is not necessary.

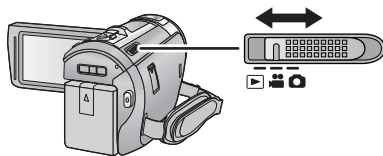


- When the unit is turned on for the first time, a message asking you to set the date and time will appear. Select [YES] and perform Steps 2 to 3 to set the date and time.

Selecting a media to record [HC-V720M]

The card and built-in memory can be selected separately to record motion pictures or still pictures.

1 Change the mode to or .



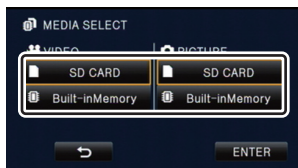
2 Select the menu. (→ 22)

MENU : [MEDIA SELECT]

3 Touch the media to record motion pictures or still pictures.

- The media is selected separately to motion pictures or still pictures is highlighted in yellow.

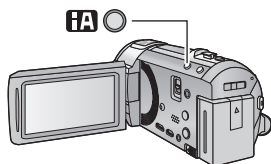
4 Touch [ENTER].



Changing the Recording Mode

■ Intelligent Auto Mode

The modes (appropriate for the condition) are set just by pointing the unit to what you want to record.



Intelligent auto button

Pressing the Intelligent auto button can change the Recording Mode.

- Pressing the Intelligent auto button when other Recording Modes are set will change to Intelligent Auto Mode.






■ To change to the other Recording Modes

1 Touch the Recording Mode button icon.



2 Touch the desired Recording Mode button icon.




	Mode	Effect
	Intelligent Auto	You can switch the mode to the Intelligent Auto Mode, which optimizes settings to the recording environment you are in.
	Intelligent Auto Plus	You can add manually-adjusted brightness and color balance settings to the Intelligent Auto Mode, and record.
	Creative Control*	You can record motion pictures with added effects.
	Scene Mode	This option allows this unit to automatically adjust the shutter speed and aperture according to the scene you want to record.
	Manual	You can set the shutter speed, focus, White Balance, and brightness (iris/gain).

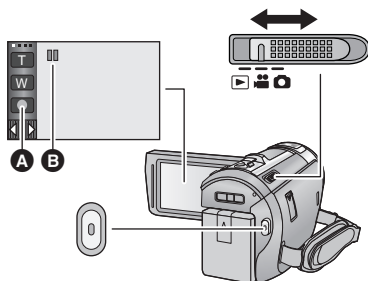
* In Motion Picture Recording Mode only



- Pressing the Intelligent auto button while in Intelligent Auto Mode can also change the Recording Mode.



Recording motion pictures

- 1 Change the mode to .
- 2 Open the LCD monitor.
- 3 Press the recording start/stop button to start recording.





- A** Recording button icon
B When you begin recording,  changes to .

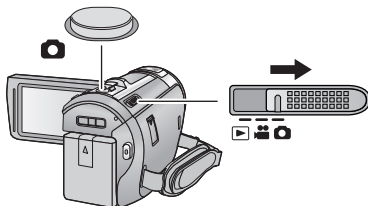
- 4 Press the recording start/stop button again to pause recording.

- Recording can also be started/stopped by touching the recording button icon.



Recording still pictures

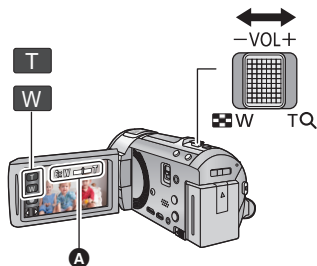
- 1 Change the mode to .
- 2 Open the LCD monitor.
- 3 Press the  button halfway. (For Auto Focus only)



- 4 Press the  button fully.



Using the zoom



Zoom lever/Zoom button icons

T side:

Close-up recording (zoom in)

W side:

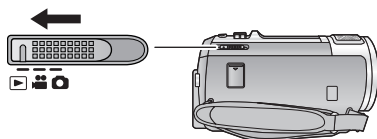
Wide-angle recording (zoom out)

- The zoom speed varies depending on the range over which the zoom lever is moved.

A Zoom bar

The zoom bar is displayed during the zoom operation.

Motion picture/Still picture playback



1 Change the mode to .

2 Touch the play mode select icon **A**.

- You can also set by touching **MENU**, selecting [VIDEO SETUP] or [PICT. SETUP] → [MEDIA, VIDEO/PICTURE]. (→ 22)

3 **HC-V720** / **HC-V710**

Select the still picture **B** or the recording format of the motion picture **C** you wish to play back.



HC-V720M

Select the media type **D** and then select the still picture **B** or the recording format of the motion picture **C** you wish to play back.



- Touch [ENTER].

- The icon is displayed in the thumbnail display when the item for motion picture is touched.
(AVCHD, 1080/60p, 1080/60i, iFrame and MP4)
- 60p is displayed in the 1080/60p scene when [ALL AVCHD] is touched.

4 Touch the scene or the still picture to be played back.

- To display the next (previous) page:
 - Slide the thumbnail display upward (downward) while touching it.
 - Switch the touch menu, and then touch ▲ (up) / ▼ (down) on the thumbnail scroll lever.



5 Select the playback operation by touching the operation icon.



E

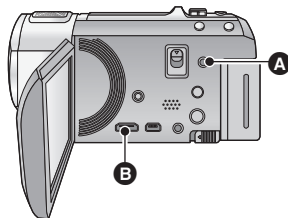
E Operation icon

- Operation icons and screen display will disappear when no touch operation is performed for a specific period of time. To display them again, touch the screen.
- Touch ►/|| to start/pause playback of motion pictures.

Watching Video/Pictures on your TV



Connect this unit to a TV using an HDMI mini cable (supplied) or a Composite video cable (commercially-available).



- A A/V connector [A/V]
- B HDMI mini connector [HDMI]

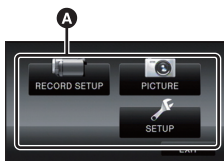
Using the menu screen

- Touch ◀ (left side)/▶ (right side) of  on the Touch Menu to display . (→ 16)

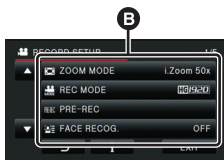
1 Touch .





2 Touch the top menu .



3 Touch the submenu .




- Next (previous) page is displayed by touching  / .

4 Touch the desired item to enter the setting.

5 Touch [EXIT] to exit the menu setting.

■ About guide display

After touching , touching the submenus and items will cause function descriptions and settings confirmation messages to appear.

- After the messages have been displayed, the guide display is canceled.


Language selection

You can select the language on the screen display and the menu screen.

 : [SETUP] → [LANGUAGE] → desired language

Formatting


Please be aware that if a medium is formatted, then all the data recorded on the medium will be erased and cannot be restored. Back up important data on a PC, DVD disc etc.

 : [SETUP] → [FORMAT MEDIA] → desired media

[Built-inMemory]^{*1}/[SD CARD]/[HDD]^{*2}

*1  only.

*2 Displayed when connecting a USB HDD. (Refer to the Owner's Manual (PDF format))

-  / 

Media selection screen is not displayed when the USB HDD is not connected. Touch [YES].





What you can do with the Wi-Fi[®] function

By linking with Wi-Fi compatible devices, you can use the Wi-Fi functions of **[Link to Cell]**, **[DLNA Play]**, **[Live Cast]** and **[Home Cam]**.

Before using the respective Wi-Fi functions, check and prepare your device.

To use the Wi-Fi function, connect this unit to a wireless access point or smartphone via Wi-Fi.

- Please refer to the Owner's Manual (PDF format) for details about the Wi-Fi connection.
- **For the operations and settings of your device such as the smartphone, please read the operating instructions of the device.**

Feature	Description of functions
 <p data-bbox="189 594 308 615">[Link to Cell]</p>	<p data-bbox="433 477 916 575">Using a smartphone, you can perform record/playback operations from a remote location or upload motion pictures and still pictures recorded in this unit on SNS (Social Networking Service).</p>
 <p data-bbox="189 754 308 776">[DLNA Play]</p>	<p data-bbox="433 628 930 677">Connecting this unit to a DLNA-compatible TV via Wi-Fi, you can play back scenes and still pictures on the TV.</p>
 <p data-bbox="189 904 308 926">[Live Cast]</p>	<p data-bbox="433 780 899 856">You can broadcast motion pictures of this unit live by setting up a link between the "LUMIX CLUB" and USTREAM.</p>
 <p data-bbox="189 1059 308 1081">[Home Cam]</p>	<p data-bbox="433 931 906 979">You can confirm the recording screen of this unit from outside using a smartphone.</p>

If the Wi-Fi connection cannot be established

Problem	Check points
<p data-bbox="91 164 277 234">It cannot connect to the wireless access point.</p> <p data-bbox="91 266 277 336">The wireless access point is not detected.</p>	<p data-bbox="303 164 394 183">(General)</p> <ul data-bbox="303 190 938 441" style="list-style-type: none">• Turn ON the wireless access point.• Approach the wireless access point and reconnect.• If it takes time to complete the connection, the Wi-Fi connection will be aborted. Reset the connection settings.• Check how to connect to the wireless access point and how to set the security settings.• Make sure the wireless access point is registered in this unit.• The device may be unable to locate the wireless access point due to problems with the signal. Use [Manual Connection]. <p data-bbox="303 455 480 474">(Easy Connection)</p> <ul data-bbox="303 481 912 554" style="list-style-type: none">• Make sure the wireless access point is in the correct WPS standby mode.• Make sure the PIN code has been correctly input. <p data-bbox="303 569 501 588">(Manual Connection)</p> <ul data-bbox="303 595 912 668" style="list-style-type: none">• Make sure the SSID and password have been correctly input.• Check the Authentication method, Encryption type, and Encryption key (Password).
<p data-bbox="91 678 277 777">Radio waves of the wireless access point get disconnected.</p>	<ul data-bbox="303 678 938 800" style="list-style-type: none">• The condition may improved by moving the location or changing the angle of the wireless access point.• If you use another 2.4 GHz band device such as a microwave oven or cordless telephone nearby, you may interrupt the signal. Keep a sufficient distance from these types of devices.

Problem	Check points
<p>The Wi-Fi connection is not possible between this unit and a smartphone.</p>	<p>(Wireless Access Point Connection)</p> <ul style="list-style-type: none"> ● Make sure the smartphone is properly connected to the wireless access point by checking the Wi-Fi settings of the smartphone. ● Make sure this unit and the smartphone are connected to the same wireless access point. ● Make sure the wireless access point is registered in this unit. <p>(Direct Connection)</p> <ul style="list-style-type: none"> ● Make sure the smartphone is properly connected to this unit by checking the Wi-Fi settings of the smartphone. ● Make sure the SSID and password have been correctly input. ● Make sure the smartphone is not connected to the wireless access point. If it is connected to the wireless access point, change the Wi-Fi access point using the smartphone's Wi-Fi set up.
<p>It takes long time every time to connect to a smartphone.</p>	<ul style="list-style-type: none"> ● It may take longer time to connect depending on the Wi-Fi connection setting of the smartphone, but it is not a malfunction.
<p>This unit is not displayed in the Wi-Fi setting screen of the smartphone.</p>	<ul style="list-style-type: none"> ● Try switching the ON/OFF of the Wi-Fi function in the Wi-Fi settings of the smartphone.
<p>The Wi-Fi connection is disconnected immediately.</p>	<ul style="list-style-type: none"> ● If there is a setting for avoiding poor connections in the Wi-Fi setting menu of the Android™ device 4.0 or later version, turn it off.
<p>Cannot be connected using NFC.</p>	<ul style="list-style-type: none"> ● Make sure your smartphone is compatible with NFC. This unit can be used with NFC-compatible terminals via Android (OS version 2.3.3 or later). ● Make sure the NFC function of your smartphone is ON. ● Make sure this unit is not turned off with the power button. ● Some smartphones cannot be easily checked simply by touching. If this unit is not recognized even after touching, change positions and try again by touching slowly. ● Touch again if it does not connect after touch.

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", "AVCHD Progressive" and the "AVCHD Progressive" 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.
- x.v.Color™ is a trademark.
- iMovie, Mac and Mac OS are trademarks of Apple Inc. registered in the U.S. and other countries.
- Android and Google Play are trademarks or registered trademarks of Google Inc.
- The Wi-Fi CERTIFIED Logo is a certification mark of the Wi-Fi Alliance.
- The Wi-Fi Protected Setup Mark is a mark of the Wi-Fi Alliance.
- "Wi-Fi", "Wi-Fi Protected Setup", "WPA" and "WPA2" are marks or registered marks of the Wi-Fi Alliance.
- DLNA, the DLNA Logo and DLNA CERTIFIED are trademarks, service marks, or certification marks of the Digital Living Network Alliance.
- 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>.

This product incorporates the software licensed under the GNU General Public License Version 2.0 (GPL V2.0), the GNU LESSER General Public License Version 2.1 (LGPL V2.1) or the other open source software licenses. A copy of the corresponding source code licensed under GPL V2.0 or LGPL V2.1 is available to you in response to your request. For the detailed terms and conditions thereof and the contact information, please refer to the Owner's Manual shown in the attached Owner's Manual CD-ROM.

Specifications

High Definition Video Camera

Information for your safety

Power source:

DC 5.0 V (When using AC adaptor)

DC 3.6 V (When using battery)

Power consumption:

Recording; 6.7 W

Charging; 7.7 W

Motion picture recording format:

[AVCHD]; AVCHD format version 2.0 compliant (AVCHD Progressive)

[iFrame]; MPEG-4 AVC file format compliant (.MP4)

Motion picture compression:

MPEG-4 AVC/H.264

Audio compression:

[AVCHD]; Dolby® Digital/5.1 ch (built-in microphone), 2 ch (built-in microphone/external microphone)

[iFrame], [MP4]; AAC/2 ch

Recording mode and transfer rate:

[1080/60p]; Maximum 28 Mbps (VBR)

[PH]; Maximum 24 Mbps (VBR)

[HA]; Average 17 Mbps (VBR)

[HG]; Average 13 Mbps (VBR)

[HE]; Average 5 Mbps (VBR)

[iFrame]; Maximum 28 Mbps (VBR)

Refer to the owner's manual (PDF format) for the picture size and recordable time of a motion picture.

Still picture recording format:

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

Refer to the owner's manual (PDF format) for picture size of a still picture and number of recordable pictures.

Recording media:

SD Memory Card

SDHC Memory Card

SDXC Memory Card

Refer to the owner's manual (PDF format) for details on SD cards usable in this unit.

HC-V720M

Built-in memory; 16 GB

Image sensor:

1/2.33" 1MOS image sensor

Total; 17520 K

Effective pixels;

Motion picture; 4140 K (16:9)*

Still picture; 3240 K (4:3), 3240 K (3:2),

4140 K (16:9)

* When Level shot is set to off

Lens:

Auto Iris, 21× optical zoom, F1.8 to F3.5

Focal length;

2.82 mm to 59.2 mm

Macro (Full range AF)

35 mm equivalent;

Motion picture;

28 mm to 729.6 mm (16:9)

Still picture;

33.9 mm to 712.6 mm (4:3),

33.2 mm to 697.6 mm (3:2),

28 mm to 729.6 mm (16:9)

Minimum focus distance;

Normal; Approx. 3.0 cm (1.2") (Wide)/

Approx. 1.5 m (4.9 feet) (Tele)

Tele Macro; Approx. 60 cm (24") (Tele)

Intelligent Auto Macro;

Approx. 1 cm (0.4") (Wide)/

Approx. 60 cm (24") (Tele)

Filter diameter:

46 mm

Zoom:

i.Zoom OFF 26×, 50× i.Zoom, 60×/1500× digital zoom

(Using image sensor effective area)

Image stabilizer function:

Optical (Hybrid Optical Image Stabilizer, Active Mode (Rotation correction), Optical Image Stabilizer Lock, Tilt correction function)

Creative Control:

[Miniature Effect]/[Silent movie]/[8mm movie]/[Time Lapse Rec]

Monitor:

3.0" wide LCD monitor (Approx. 460 K dots)

Microphone:

5.1 channel surround microphone/
Zoom microphone/Focus microphone/
Stereo microphone

Minimum required illumination:

Approx. 3 lx (1/30 with Low Light Mode in the Scene Mode)

Approx. 1 lx with the Color Night Rec function

AV connector 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 connector audio output level (Line):

316 mV, 600 Ω, 2 ch

HDMI mini connector audio output level:

[AVCHD]; Dolby Digital/Linear PCM
[iFrame], [MP4]; Linear PCM

MIC input:

-60 dBV (Mic sensitivity -40 dB equivalent,
0 dB=1 V/Pa, 1 kHz)
(Stereo mini jack)

USB:

Reader function

SD card; Read only (No copyright protection support)

HC-V720M

Built-in memory; Read only

Hi-Speed USB (USB 2.0), USB terminal Type Mini AB

USB host function (for USB HDD)

Battery charging function (Charges from USB terminal when the main unit is off)

Flash:

Available range; Approx. 1.5 m (4.9 feet) or less

Dimensions:

60.1 mm (W)×69.3 mm (H)×124.4 mm (D)
[2.366 " (W)×2.728 " (H)×4.898 " (D)]
(including projecting parts)

Mass (Weight):**HC-V720**

Approx. 277 g (Approx. 0.611 lbs.)
[without battery (supplied) and an SD card (optional)]

HC-V720M

Approx. 278 g (Approx. 0.613 lbs.)
[without battery (supplied)]

HC-V710

Approx. 273 g (Approx. 0.602 lbs.)
[without battery (supplied) and an SD card (optional)]

Mass (Weight) in operation:**HC-V720**

Approx. 322 g (Approx. 0.710 lbs.)
[with battery (supplied) and an SD card (optional)]

HC-V720M

Approx. 321 g (Approx. 0.708 lbs.)
[with battery (supplied)]

HC-V710

Approx. 318 g (Approx. 0.701 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 13

HC-V720 / HC-V720M**Wireless transmitter:**

Compliance standard; IEEE802.11b/g/n

Frequency range used;

Central frequency 2412 MHz to 2462 MHz [11ch]

Encryption method; Wi-Fi compliant WPA™/

WPA2™/WEP

Access method; Infrastructure mode

AC adaptor

Information for your safety

Power source:

AC 100 V to 240 V, 50/60 Hz

Power consumption:

12 W

DC output:

DC 5.0 V, 1.6 A

Dimensions:







49 mm (W)×24 mm (H)×79 mm (D)

[1.93 " (W)×0.94 " (H)×3.11 " (D)]



Mass (Weight):




Approx. 91 g (Approx. 0.20 lbs.)

Optional accessories

Accessory No.	Figure	Description
VW-BC10PP		Battery charger
VW-VBT190*1		Rechargeable Lithium Ion Battery Pack
VW-VBT380		Rechargeable Lithium Ion Battery Pack
RP-CDHM15 RP-CDHM30		HDMI mini cable
VW-W4907H*2		Wide conversion lens
VW-LF46N*2		Filter kit

*1 Please refer to page 13, concerning the battery charging time and available recording time.

*2 Set the flash setting to  ([OFF]). Set the video light setting to  ([OFF]).

Accessory No.	Figure	Description
VW-VMS10PP		Stereo microphone
VW-SK12PP		Shoe adaptor
VW-ACT190PP		Accessory kit

NOTE:

Accessories and/or model numbers may vary by country. Please consult your local dealer. Product numbers correct as of Dec. 2012. These may be subject to change.

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

Shipping & Handling \$6.95

Subtotal

Your State & Local Sales Tax

Total

3. Method of payment (check one)

- American Express
- VISA Credit Card # _____
- MasterCard Expiration Date _____
- Discover Customer Signature _____

(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 NATIONAL PARTS CENTER
20421 84th Ave. S., 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 Marketing Company of North America,
Division of Panasonic Corporation of North America**
One Panasonic Way, Secaucus, New Jersey 07094

Panasonic 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 Marketing Company of North America (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
High Definition Video Camera	1 Year	90 Days
All included Accessories (Except Non-Rechargeable Batteries)	90 Days	Not Applicable
Only Non-Rechargeable Batteries	10 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".

Mail-In Service

For assistance in the U.S.A. and Puerto Rico in obtaining repairs, please ship the product prepaid to:

Panasonic Exchange Center
4900 George McVay Drive Suite B McAllen, TX 78503
panacare@us.panasonic.com

Online Repair Request

To submit a new repair request and for quick repair status visit our Web Site at www.panasonic.com/repair.

When shipping the unit, carefully pack, include all supplied accessories listed in the Owner's Manual, and send it prepaid, adequately insured and packed well in a carton box. When shipping Lithium Ion batteries please visit our Web Site at www.panasonic.com/BatteryHandling as Panasonic is committed to providing the most up to date information. 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

You may also contact us directly at:

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

(Monday-Friday 9am-9pm EST)

Panasonic National Parts Center

20421 84th Ave. S., Kent, WA 98032

(We accept Visa, MasterCard, Discover Card, American Express)

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

As of October 2012

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 an 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

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

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