

Panasonic®

Operating Instructions

Memory Card Camera-Recorder



Mini DV NTSC

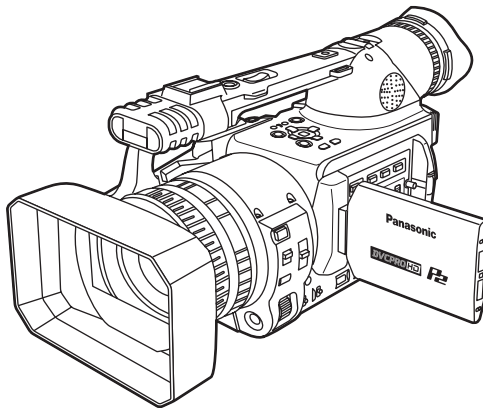
Model No. AG-**HVX200**P

DVCPRO HD

DVCPRO 50

DVCPRO

DV



Before operating this product, please read the instructions carefully and save this manual for future use.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER TO SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:

- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.
- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, KEEP THIS EQUIPMENT AWAY FROM ALL LIQUIDS. USE AND STORE ONLY IN LOCATIONS WHICH ARE NOT EXPOSED TO THE RISK OF DRIPPING OR SPLASHING LIQUIDS, AND DO NOT PLACE ANY LIQUID CONTAINERS ON TOP OF THE EQUIPMENT.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

CAUTION:

THE AC RECEPTACLE (MAINS SOCKET OUTLET) SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE.

TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER CORD PLUG FROM THE AC RECEPTACLE.

CAUTION:

Danger of explosion or fire if battery is mis-treated.

- Replace only with same or specified type.
- Do not disassemble or dispose of in fire.
- Do not store in temperatures over 140°F (60°C).
- Use specified charger for rechargeable batteries.
- Do not recharge the battery if it is not a rechargeable type.

For Remote Controller

- Replace battery with part No. CR2025 only.
- Do not recharge the battery.

Camera-Recorder

The rating plate is on the underside of the Camera-Recorder

AC Adapter

The rating plate is on the underside of the AC Adapter.

Disconnect the AC mains plug from the AC mains socket when not in use.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

 indicates safety information.

IMPORTANT

"Unauthorized recording of copyrighted television programs, video tapes and other materials may infringe the right of copyright owners and be contrary to copyright laws."

FCC NOTICE (USA)

Declaration of Conformity

Model Number: AG-HVX200P

Trade Name: PANASONIC

Responsible Party: Panasonic Corporation of North America One Panasonic Way, Secaucus, NJ 07094

Support contact: Panasonic Broadcast & Television Systems Company 1-800-524-1448

This device complies with Part 15 of 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.

To assure continued compliance, follow the attached installation instructions and do not make any unauthorized modifications.

CAUTION:

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 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.

The user may find the booklet "Something About Interference" available from FCC local regional offices helpful.

FCC Warning:

To assure continued FCC emission limit compliance, the user must use only shielded interface cables when connecting to host computer or peripheral devices. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate this device.

NOTIFICATION (Canada)

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

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

 indicates safety information.

Software information for this product

1. Customer advisory: This product includes software licensed under the GNU General Public License (GPL) and GNU Lesser General Public License (LGPL); customers have the right to download, modify, and redistribute source code for this software.
Descriptions of the GPL and LGPL are stored on the installation CD included with this camera-recorder. See the folder named \LDOC. (The description is the original (written in English)). To download the relevant source code, visit <https://www.pavc.panasonic.co.jp/pro-av/>
Please note that we cannot answer any questions you may have about the content, etc. of any source code you may obtain from the above Web site.
2. This product includes software licensed under the MIT License. A description of the MIT is stored on the installation CD included with this camera-recorder. See the folder named \LDOC. (The description is the original (written in English)).

- LEICA is a trademark of Leica Microsystems IRGmbH.
- DICOMAR is a trademark of Leica Camera AG.
- SD logo is a trademark. 

All other explanations, company names, and product names are the registered trademarks of the respective companies.

IMPORTANT SAFETY INSTRUCTIONS

- 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.



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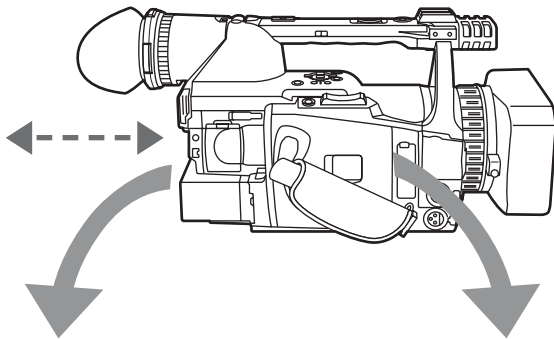
Outline of operations

This unit is compatible with P2 (Professional Plug-in) cards or DV cassette tapes.

The P2 card has a large capacity with a high transfer rate, and allows you sophisticated movie-making on this handy camera, including HD (High Definition) recording and smooth editing/dubbing.

Flow of shooting, playing and saving

The setting values such as the user file are saved to and read from the SD memory card.



1 P2 mode shooting and playback (Pages 25 and 73)

P2 card

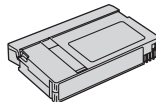


You can use the following features:

- HD (High Definition) recording
- Multi format recording
- Variable frame rates
- Slow & quick motion recording
- Maximum 4 channel uncompressed digital audio recording
- DV recording (480i)

2 Cassette tape shooting and playback (Pages 29 and 73)

DV cassette tape



- DV recording (480i)
- Dubbing mode recording from a P2 card is possible.

3 Dubbing mode (Page 86)

Dubbing mode is a function for down-converting contents recorded in HD (1080i, 720P) on the P2 card to an DV format (480i) and recording it to tape. You can record onto DV tape contents that have a slow & quick motion effect.

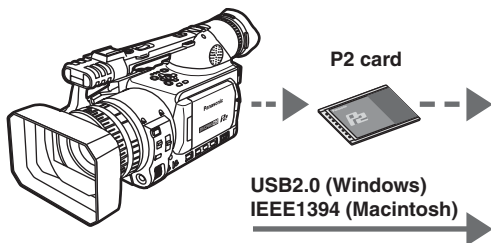
This is useful when backing up images and checking images on AV equipment.

- You cannot simultaneously shoot on both the P2 card and the DV cassette tape.
- High-definition (HD) recording to a DV tape is not possible.

Saving and editing on external devices

4 PC mode (Page 82)

The data (file) is transferred for nonlinear editing on your computer or other unit.

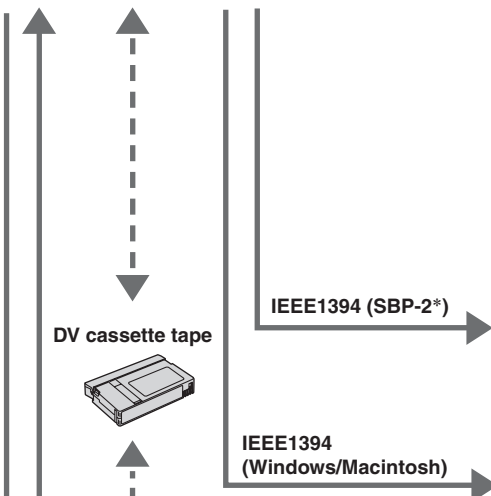


Computer



5 1394 host mode (Page 84)

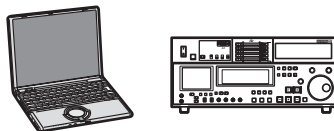
The unit directly controls the external hard disk drive, and transfers the data (file) to it.



External hard disk



Computer Memory card recorder



The contents can be transferred as a data stream (digital dubbing).

*Serial Bus Protocol-2

Read this first!

Always take some trial shots before actual shooting.

- When shooting important events (such as weddings), always take some trial shots and check that the sound and images have been recorded properly before actual shooting.

Be sure to check and set the calendar and time zone.

- These settings affect the control and playback sequence of the recorded contents. Before making a recording, set and check the calendar and time zone. (Page 24)

Panasonic makes no guarantees for your recordings.

- Please understand that Panasonic makes no guarantees for your recordings in cases where images and/or sound were not recorded as you intended due to problems with the camera-recorder or cassette.

Respect copyrights

- Copyright laws forbid the use of video and audio material you have recorded for any purpose other than your own personal enjoyment. Remember that restrictions apply to the shooting of certain material even if it is intended for private use.

Caution regarding laser beams

- The CCD may be damaged if it is subjected to light from a laser beam. When using the camera-recorder in locations where laser irradiation equipment is used, be careful not to allow the laser beam to shine directly on the lens.

Notes when connecting a DV (IEEE1394) cable

- Windows:
Before connecting, turn off the main unit power, and check the shape and orientation of the terminal.
- Macintosh:
After turning on the power of the Apple Macintosh computer, check the shape and orientation of the terminal, and then connect the cable.

(Pages 77, 78)

Media that can be used in this unit

The following media can be used in this unit. For details, refer to the respective pages.

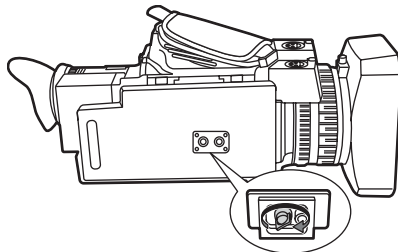
- P2 card (Page 27)
- Digital video cassette tape (Page 30)
- SD memory card (Page 32)

Mounting the camera-recorder on a tripod

The tripod mounting hole is 5.5 mm deep. Do not force the tripod screw beyond this depth.

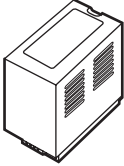
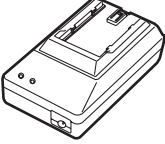



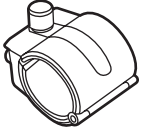


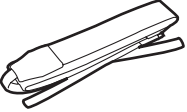

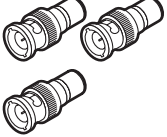

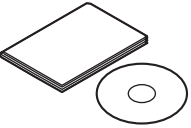
You can damage the camera-recorder if you use any screw other than 1/4-20UNC.

For other usage notes, see page 123.



Attach the tripod to the tripod hole

Accessories

Battery *1 	AC Adapter 	AC power supply cord /DC cord 	Wireless remote control and button battery (CR2025) 
Eye cup 	Microphone holder 	6-mm screws (2) 12-mm screws (2) 	Microphone holder adapter 
Shoulder belt 	Component video cable 	PIN-BNC conversion cable (3) 	Ferrite core *2 
Documents and CDs  <p style="text-align: center;">A lens hood cap (page 18) and INPUT 1/2 terminal (page 14) cover are attached to the camera-recorder.</p>			

Before use

*1 For part numbers for the battery, see "OPTIONAL UNITS". (Page 132)

*2 When using 1394 cable (sold separately), install a ferrite core on the end nearest the PC. (Page 78)

About this manual

Note concerning illustrations in these instructions

- Illustrations (camera-recorder, menu screens, etc.) in these operating instructions differ slightly from the actual camera-recorder.

References

- References are shown as (Page 10).

Icons

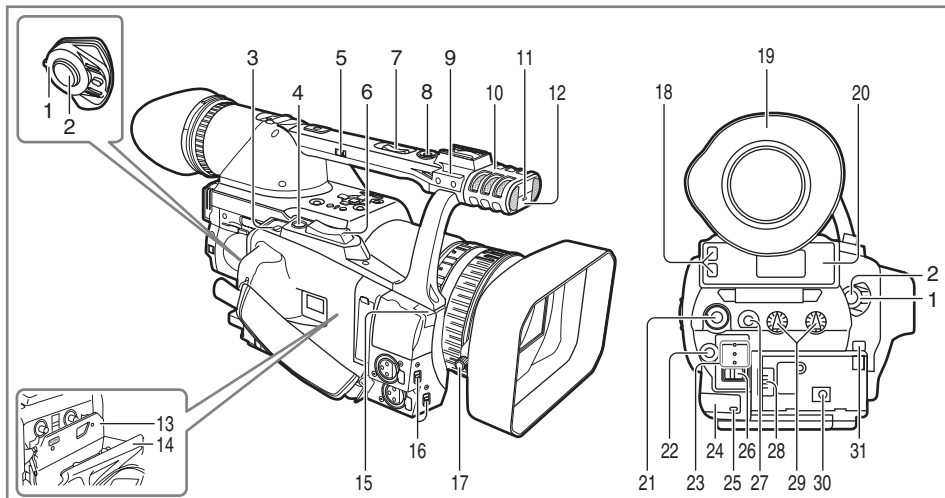
Explanations specific to the media used are identified by the icons below.

P2 : Explanations for P2 card usage only.

TAPE : Explanations for tape usage only.

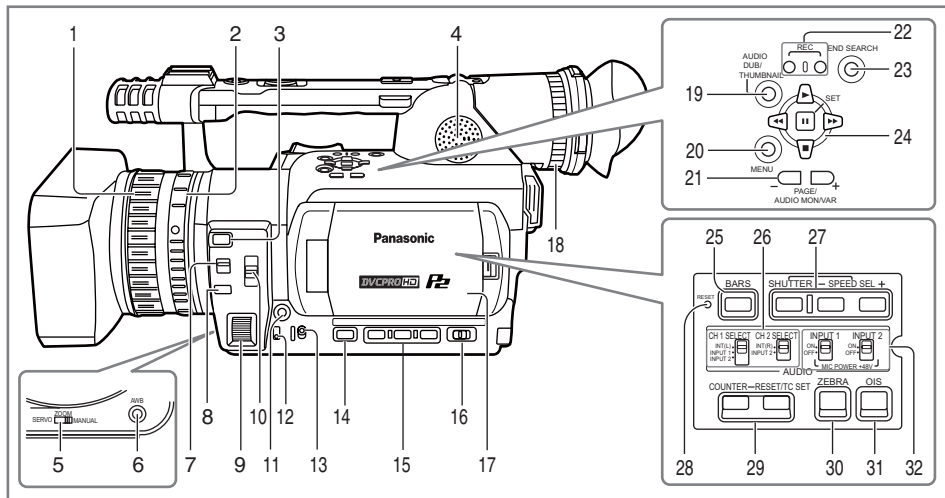
Description of parts

Right side and rear side



- 1 POWER switch (Page 20)
- 2 START/STOP button (Pages 25 and 29)
- 3 OPEN/EJECT switch (Page 29)
- 4 REC CHECK button (Pages 25 and 30)
- 5 HANDLE ZOOM switch (Page 33)
- 6 Zoom button (Page 33)
- 7 Handle zoom button (Page 33)
- 8 Handle START/STOP button (Pages 25 and 29)
- 9 Pin hole (for zoom ring) (Page 13)
- 10 Built-in stereo microphone (Page 52)
- 11 Tally lamp (Front) (Page 20)
- 12 Remote control sensor (Front)
- 13 Cassette holder (Pages 29 and 30)
- 14 Cassette cover (Pages 29 and 30)
- 15 White balance sensor (Page 40)
- 16 INPUT 1/2 (audio input) switch (Page 52)
- 17 Lens hood screw (Page 18)
- 18 P2 card access lamp (x 2) (Page 26)
- 19 Viewfinder (Page 21)
- 20 P2 card slot (x 2) (Page 25)
- 21 SCENE FILE dial (Page 54)
- 22 Mode button (Page 25 and 29)
- 23 Mode lamp (Page 25 and 29)
- 24 Remote control sensor (Rear)
- 25 Tally lamp (Rear) (Page 20)
- 26 MEDIA (P2/TAPE) switch (Pages 25 and 29)
- 27 EVF DTL button (Page 22)
- 28 Power terminal (Page 17)
- 29 AUDIO control (Page 53)
- 30 DC INPUT terminal (7.9 V)
- 31 Battery release button (Page 17)

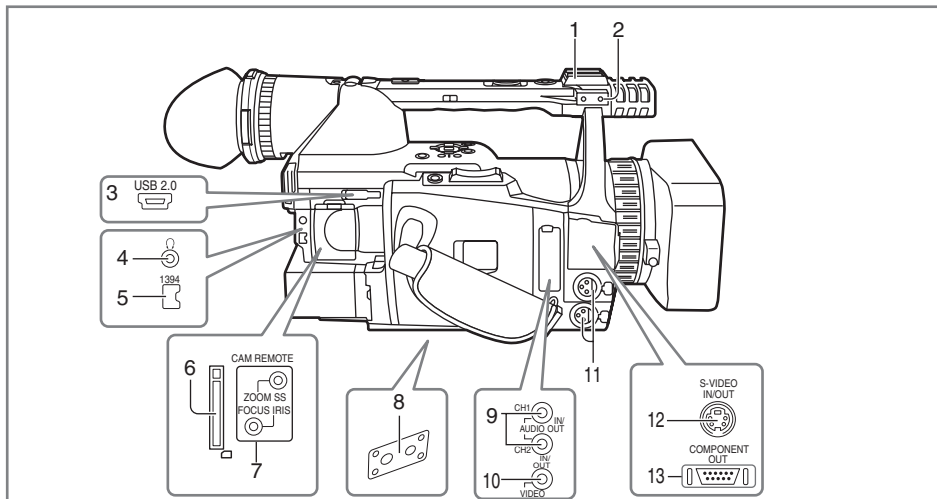
Left side



- | | |
|--|---|
| <p>1 Focus ring (Page 38)</p> <p>2 Zoom ring (Page 33)
If you don't need the zoom ring pin, fit it into the provided pin hole (Page 12) so that you don't lose it.</p> <p>3 FOCUS ASSIST button (Page 38)</p> <p>4 Built-in speaker (Page 75)</p> <p>5 ZOOM switch (Page 33)</p> <p>6 AWB button (Page 40)</p> <p>7 FOCUS switch (Page 38)</p> <p>8 PUSH AUTO button (Page 38)</p> <p>9 IRIS dial (Page 39)</p> <p>10 ND FILTER switch (Page 39)</p> <p>11 IRIS button (Page 39)</p> <p>12 GAIN switch (Page 39)</p> <p>13 WHITE BAL switch (Page 40)</p> <p>14 DISP/MODE CHK button (Page 44)</p> <p>15 USER button (Page 45)</p> <p>16 AUTO/MANUAL switch (Pages 25 and 29)</p> <p>17 LCD monitor (Page 22)</p> <p>18 Diopter adjustment dial (Page 21)</p> <p>19 AUDIO DUB/THUMBNAIL button (Pages 65 and 80)</p> <p>20 MENU button (Page 96)</p> | <p>21 PAGE, AUDIO MON/VAR button (Pages 46 and 73)</p> <p>22 REC button (Page 87)</p> <p>23 END SEARCH button (Page 74)</p> <p>24 Operation button (Page 96)</p> <p>25 BARS button (Page 45)</p> <p>26 CH1, CH2 SELECT switch (Page 52)</p> <p>27 SHUTTER - SPEED SEL button (Page 50)</p> <p>28 RESET button (Page 126)</p> <p>29 COUNTER - RESET/TC SET button (Page 58)</p> <p>30 ZEBRA button (Page 43)</p> <p>31 OIS button (Page 45)</p> <p>32 INPUT1, 2 switch (MIC POWER +48 V) (Page 52)</p> |
|--|---|

Description of parts (continued)

Terminals and mounting parts



- 1 **Light shoe**
- 2 **Microphone shoe (Page 76)**
- 3 **USB terminal (Mini-B) (Pages 77 and 82)**
- 4 **PHONES jack (3.5 mm stereo mini jack) (Page 76)**
- 5 **1394 terminal (Page 77)**
- 6 **SD memory card slot (Pages 32 and 56)**
- 7 **CAM REMOTE jack***
 - FOCUS/IRIS** (3.5 mm mini jack)
You can connect a remote control unit to control the FOCUS and IRIS (aperture).
 - ZOOM S/S** (2.5 mm super mini jack)
You can connect a remote control unit to control zoom and start/stop of recording.
- 8 **Tripod hole (Page 10)**
- 9 **AUDIO IN/OUT CH1/CH2 terminal (Page 79)**
- 10 **VIDEO IN/OUT terminal (Page 79)**
- 11 **INPUT 1/2 terminal (XLR, 3 pin) (Pages 52 and 80)**
- 12 **S-VIDEO IN/OUT terminal (Page 79)**
- 13 **COMPONENT OUTPUT terminal (Page 79)**

* Do not connect any equipment except the remote controller to the remote control jack. If any equipment except the remote controller is connected, the pictures will be affected e.g. appear bright or out of focus.

Remote control

The following buttons are for functions that cannot be executed on the camera-recorder.

- PHOTO SHOT
- MULTI/P-IN-P
- STORE
- PB. ZOOM
- TITLE
- SELECT
- OFF/ON

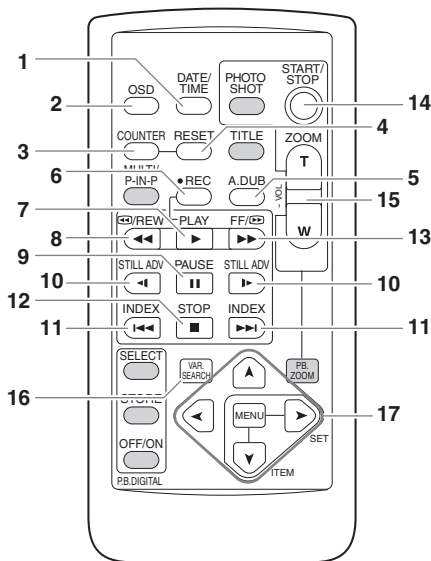
- 1 **DATE/TIME button (Page 75)**
- 2 **OSD button (Page 75)**
- 3 **COUNTER button (Page 58)**
Same function as the COUNTER button on the main unit.
- 4 **COUNTER RESET button (Page 58)**
Same function as the COUNTER RESET button on the main unit.
- 5 **A.DUB button (Page 80)**
Same function as the AUDIO DUB button on the main unit.
- 6 **REC button (Page 87)**

Used during VCR mode

- 7 **PLAY button (▶) (Page 62)**
- 8 **REW button (◀◀) (Page 62)**
- 9 **PAUSE button (||) (Page 62)**
Like the operation buttons of the camera, MENU operations are performed using SET button.
- 10 **STILL ADV button (◀|, |▶) (Page 73)**
- 11 **INDEX buttons (◀◀, ▶▶) (Page 75)**
- 12 **STOP button (■) (Page 62)**
- 13 **FF/ button (▶▶) (Page 62)**

Buttons for shooting and volume control

- 14 **START/STOP button**
Same function as the START/STOP button on the main unit.
- 15 **ZOOM/VOL buttons (Pages 33 and 75)**



- 16 **VAR. SEARCH button (Page 73)**
 - 17 **MENU button**
Functions the same as the MENU button on the camera.
- [◀], [▶], [▲], [▼] buttons**
Function the same as the ◀, ▶, ▲, ▼ buttons on the camera.

The battery

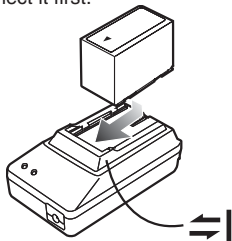
Charging

Before using the battery, fully charge it with the AC adapter.

Keep a spare battery with you.

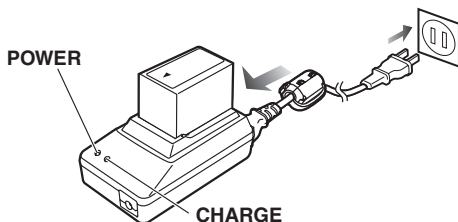
1 Align the battery with the “=|” marking on the AC adapter, place it flat, and slide it in the direction shown below.

- You cannot charge the battery if the DC cord is connected to the DC OUT connector, so disconnect it first.



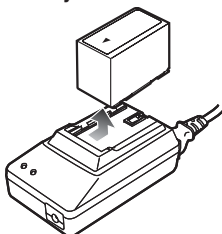
2 Plug the AC cord into the power outlet.

- The POWER lamp and CHARGE lamp on the AC adapter light, and charging begins.
- If the CHARGE lamp does not light when attached, detach the battery and then attach it again.



3 When the battery is charged, the CHARGE lamp on the AC adapter goes out.

4 Slide the battery and remove it.



Recording time of included battery

Recharging time	Continuous recording time
Approx. 330 min.	Approx. 140 min.

- The times given above are approximate for when scenes are shot in the DVCPRO HD mode on a P2 card while using the viewfinder.
- The times apply when the ambient operating temperature is 68°F (20°C) and humidity is 60%. Charging may take longer at other temperatures and humidity levels.

• Keep metal objects (such as necklaces and hairpins) away from the battery. Short-circuiting may occur across the terminals, causing the battery to heat up, and you may seriously burn yourself if you touch the battery in this state.

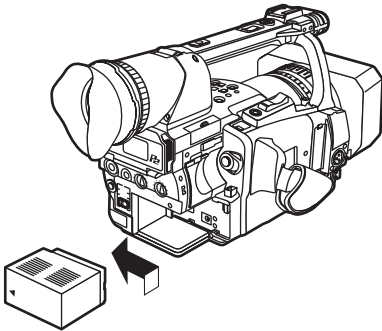
- The battery becomes hot while it is being used or charged. The camera-recorder itself also becomes hot during use.
 - The recordable time reduces if you repeatedly start and stop recording.
 - Discharge the battery before storing it. When storing it for an extended time, charge it at least once a year, use up its charge in the camera-recorder, and then store it again.
 - If the battery is extremely hot or cold, the CHARGE lamp will blink several times before charging starts.
 - If the CHARGE lamp continues to blink even when the battery temperature is normal, there may be something wrong with the battery or AC adapter. Contact your dealer.
 - The battery takes longer to charge when it is warm.
 - The AC adapter can interfere with radio reception so keep radios at least 1 meter away from it.
 - The AC adapter may make some noise when you are using it, but this is normal.
 - You cannot charge the battery when supplying power to the camera-recorder from the AC adapter.
 - Operation of battery pack CGR-D16 (1600mAh) (sold separately) is not guaranteed.
-

Installing and removing the power supply

Installing and removing the battery

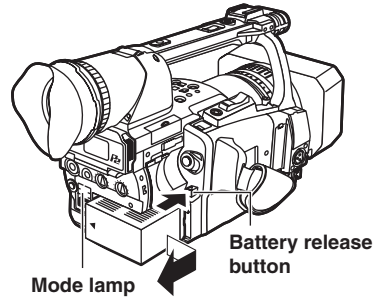
Installation

Insert the battery until it clicks into place.



Removal

- 1 Set the **POWER** switch to **OFF**, and check that the **mode lamp** is off.
- 2 Remove the battery while pressing the **battery release button**.
 - Support the battery with your hand to ensure that it will not fall.

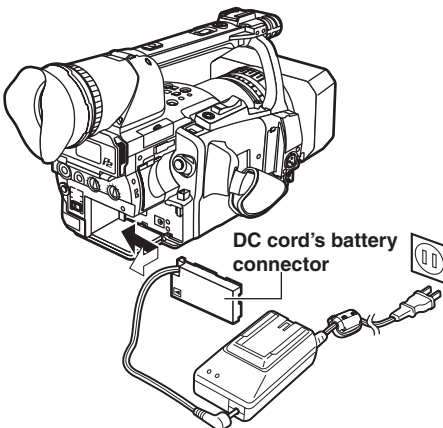


Preparation

Connecting and disconnecting the power cord

Installation

- 1 Connect the **DC cord** to the **AC adapter**.
- 2 Plug the **AC power supply** into the power outlet.
- 3 Insert the **DC cord's battery connector** until it clicks into place.



Removal

- 1 Set the **POWER** switch to **OFF**, and check that the **mode lamp** is off.
- 2 Remove the **DC cord's battery connector** while pressing the **battery release button**.
- 3 Disconnect the **AC power supply cord** from the power outlet.

- You cannot charge the battery when supplying power to the camera-recorder from the AC adapter.

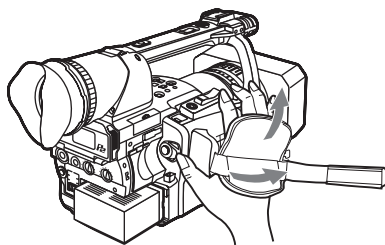
CAUTION:

- This unit can be operated at a voltage in the range of 100-240V AC. An AC plug adapter may be required for voltages other than 120 V AC. If a conversion plug is required, consult with your dealer as to which one is to be purchased.
- Disconnect the AC power supply cord from the power outlet when the unit is not going to be used.

Adjusting the hand strap

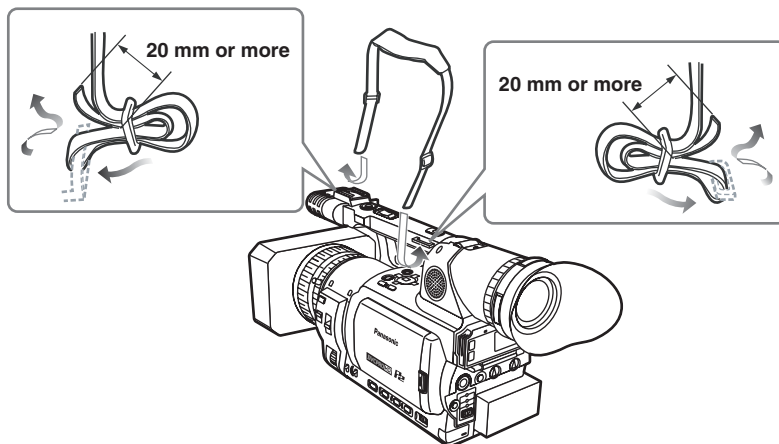
Adjust the hand strap to suit your hand.

- 1 Open the cover and adjust the length.
- 2 Close the cover.
 - Make sure the cover is fully closed.



Attaching the shoulder strap

Attach the shoulder strap and use it as a precaution against dropping the camera.



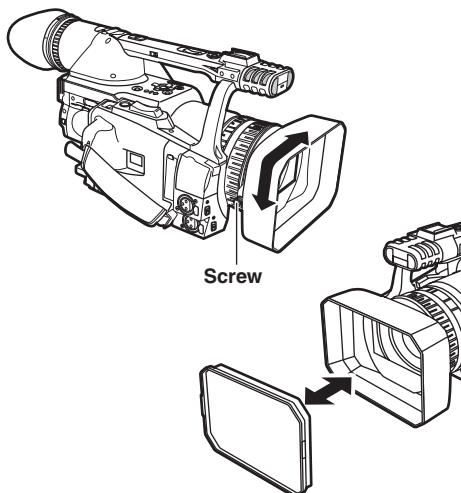
Detaching and attaching the lens hood

Detaching the lens hood

- Loosen the screw and turn the lens hood counterclockwise to detach it.

Attaching the lens hood

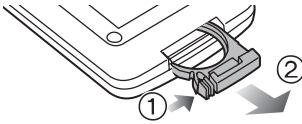
- Turn the lens hood clockwise and fix in position with the screw.
- Be sure to attach the lens hood cap to protect the lens when not in use.



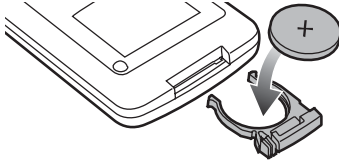
The remote control

Insert the battery

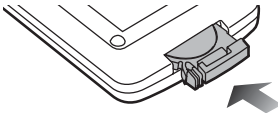
- 1 Push the catch in the direction shown by arrow (1) to remove the holder.



- 2 Insert the battery with the “+” marked side facing up.



- 3 Return the holder to its original position.



- When the battery (CR2025) has run out, replace it with a new one. (The battery lasts about one year, depending on the frequency of use.)
If the remote control unit fails to work even when it is operated near the camera-recorder's remote control sensor, the battery has run out.
- Keep the battery out of the reach of children.

Remote control setup

When using two camera-recorders simultaneously, set this camera-recorder and the remote control to either [VCR1] or [VCR2] so the remote control does not operate the wrong camera-recorder by mistake.

Setting

• Wireless remote control

Press the STOP (■) and STILL ADV (▶) buttons at the same time to set the remote control unit for use with VCR1.

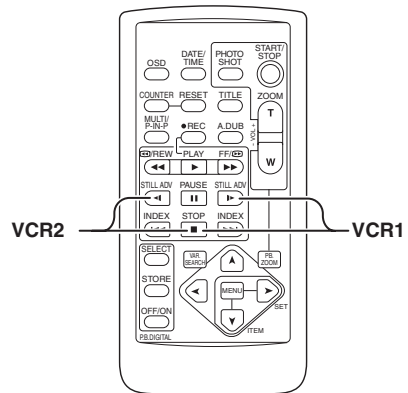
Alternatively, press the STOP (■) and STILL ADV (◀) buttons at the same time to set the remote control unit for use with VCR2.

When the battery in the remote control unit is replaced, the remote control unit is set for use with VCR1.

• Camera

In the setup menu, OTHER FUNCTIONS screen, REMOTE, set to VCR1 or VCR2. (Page 114)

If different settings are used for the camera-recorder and remote control unit, “REMOTE” lights in red on the viewfinder and LCD monitor.



Turn on/off the camera

While pressing the lock release, move the POWER switch to ON or OFF.

Turn on the camera:

The mode lamp (CAMERA) lights red (CAMERA mode) and the camera is now in the shooting standby mode.

Turn off the camera:

The red mode lamp goes out.

• Power saving mode

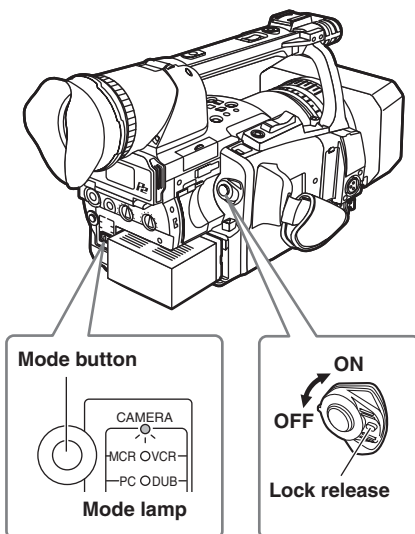
The camera-recorder performs as follows when you pause or leave it in standby mode for about 5 minutes, and do not perform any specified operations.

ON: The camera recorder turns off automatically

OFF: Do not switch OFF the camera. In the TAPE mode, however, put the cylinder head alone in a stopped (standby) status.

See the setup menus, OTHER FUNCTIONS screen, POWER SAVE (page 117) for details.

- When the operation mode buttons flash in sequence starting with the top one and the power then goes off, it means that there is no charge left in the battery. Recharge the battery.

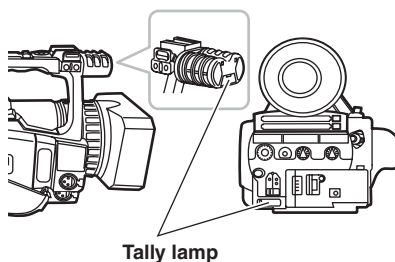


Tally lamp

The tally lamp can be made to light up during shooting by selecting "ON" as the REC LAMP set-ting in the OTHER FUNCTIONS screen. (Page 115)

When the camera-recorder is in any of the following states, the tally lamp blinks.

- When an operation initiated by the remote control unit has been received (8 blinks/sec.)
- When shooting starts in the TAPE mode (8 blinks/sec.)
- When the end of the tape is reached (4 blinks/sec.)
- When trouble occurs regarding tape running systems (4 blinks/sec.)
- When the remaining battery capacity runs out (4 blinks/sec.)
- When the available recording space on the P2 card or tape or the battery power is low (1 blinks/sec.)
- When removing the P2 card during access (4 blinks/sec.)
- When there is no recording space left on the P2 card (4 blinks/sec.)



Viewfinder

This camera has two viewfinders; one is a miniature LCD in the viewfinder and the other is a retractable 3.5-inch LCD.

Use the viewfinder that best suits the application and shooting conditions.

- The brightness and hue may differ between the images appearing on the viewfinder and LCD monitor and those displayed on a TV monitor. To see how the final images will appear, check them on a TV monitor.

Using the viewfinder

- 1** Set the POWER switch to ON and check that images appear in the viewfinder.

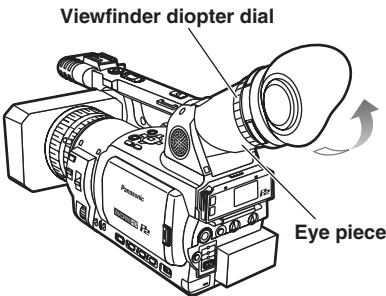
- Keep the LCD monitor closed.



- 2** Adjust the viewfinder's angle so that the screen is positioned where it is easiest to see.

- You can move the viewfinder out to about 90° perpendicular to the camera.

- 3** Adjust the diopter adjustment lever so that you can see the characters on the viewfinder screen clearly.



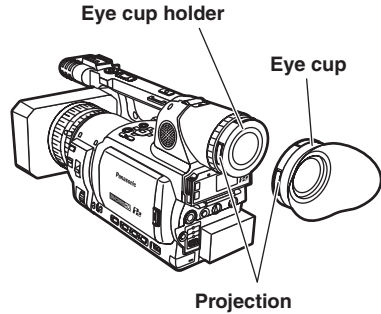
Do not point the eye piece at the sun.

Doing so may damage the parts inside.

Fitting the eye cup

Attach the eye cup by aligning the projections on the eye cup holder and eye cup and fitting them together.

- Turning the eye cup after attaching it may cause the eye cup holder to come off. If the eyecup holder does come off, see "Cleaning the Viewfinder" (page 126) for details on how to refit it.

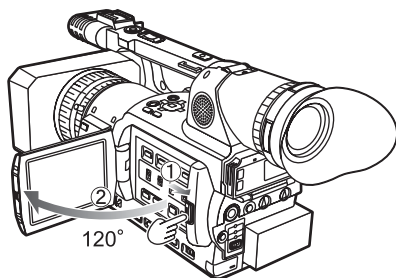


Viewfinder (continued)

Using the LCD

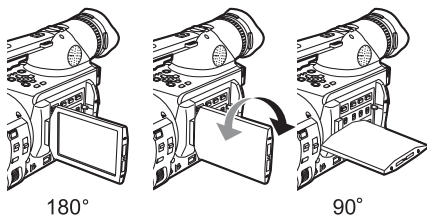
- 1 Set the POWER switch to ON.
- 2 Press the OPEN button in the direction shown by arrow (1) to open the LCD.

It can open out to 120 degrees. Do not try to open it further as this will damage the camera.



- 3 Position the LCD monitor where it is easiest to see.

- The monitor can be rotated 180° toward the lens and 90° toward you.
- Do not apply unnecessary force to the open LCD. This can damage the camera.



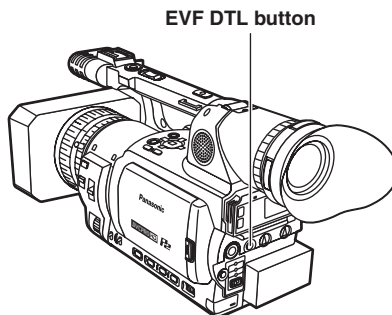
-
- Ensure the LCD is fully closed.
 - Both the LCD and viewfinder come on when you have rotated the LCD to face in the same direction as the lens for self-portrait shooting.
-

Emphasizing outlines

Emphasizing the outlines of the images you see in the viewfinder or on the LCD makes it easier to focus.

Emphasizing the outlines does not effect the images you shoot.

- 1 In CAMERA mode, press EVF DTL.
 - “EVF DTL ON” appears on the screen for about 2 seconds.



Press EVF DTL again to return to the original display. “EVF DTL OFF” appears on the screen for about 2 seconds.

Adjusting the screen display

1 Set the POWER switch to ON. (Page 20)

2 Press the MENU button.



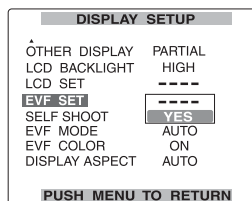
- For menu operation (Page 96)
- You can also use the menu buttons on the remote control. (Page 15)

3 Viewfinder adjustments

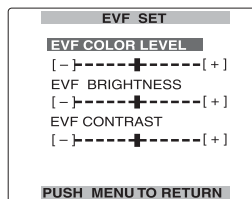
Set YES under EVF SET on the setting menu DISPLAY SETUP screen.

LCD monitor adjustments

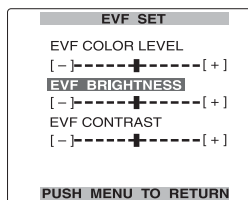
Set YES under LCD SET on the setting menu DISPLAY SETUP screen.



4 Select the item to be set using the Δ or ∇ operation button.



5 Adjust the selected item using the \triangleleft or \triangleright operation button.



6 Press MENU three times to exit the menus.

- You can return the settings for EVF SET and LCD SET to the factory settings by selecting the item and pressing COUNTER RESET (if it is possible to change the item at that time).
- The viewfinder remains on when you open the LCD if you have set the EVF MODE in the DISPLAY SETUP screen to ON.
- The viewfinder display can be in color or black and white. (See the setup menus, DISPLAY SETUP screen, EVF COLOR.) The resolution is the same for both of them.



Setting the calendar

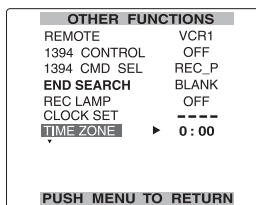
The CLOCK SET value is recorded in the contents (clip), and affects the sequence of playback of the thumbnails. Before carrying out recording, be sure to check and set CLOCK SET and TIME ZONE.

This shows you how to adjust the calendar to 5:20 PM on December 25, 2005.

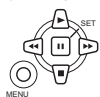
1 Set the POWER switch to ON. (Page 20)

2 Press the MENU button.

3 In the setup menus, OTHER FUNCTIONS screen, TIME ZONE, set the time difference from Greenwich mean time using the  or  operation button. (Page 116)



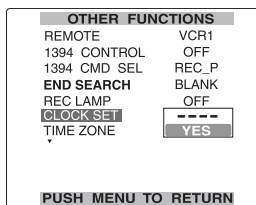
(Example of MENU in the TAPE mode)



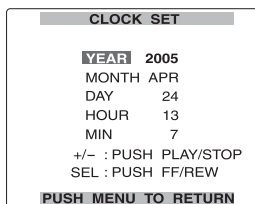
Operation button

- For menu operation (Page 96)
- You can also use the menu buttons on the remote control. (Page 15)

4 In the setup menus, OTHER FUNCTIONS screen, CLOCK SET, select YES.

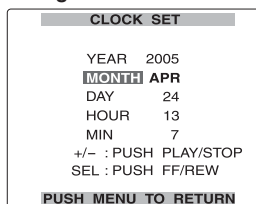


5 Press the  or  operation button to set YEAR to 2005.

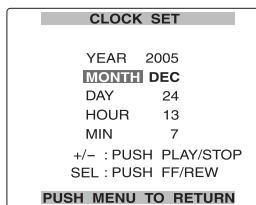


Choose a year between 2000 and 2030.

6 Press the  operation button to move the setting item to MONTH.

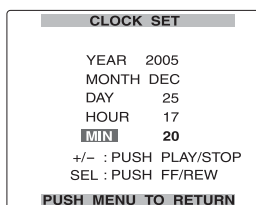


7 Press the  or  operation button to set MONTH to DEC.



8 Set DAY, HOUR, and MIN using the method shown in steps 4 and 5.

- This is a 24-hour clock.

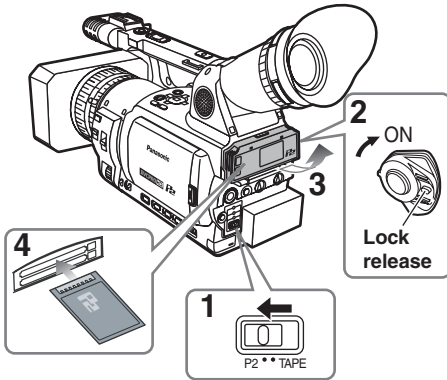


9 Press MENU three times to exit the menus.

- The clock can vary in accuracy so check that the time is correct before shooting.
- When using the camera overseas, do not set the CLOCK option to the current time, but instead enter the time difference from Greenwich mean time according to TIME ZONE.

Preparing to shoot using a P2 card

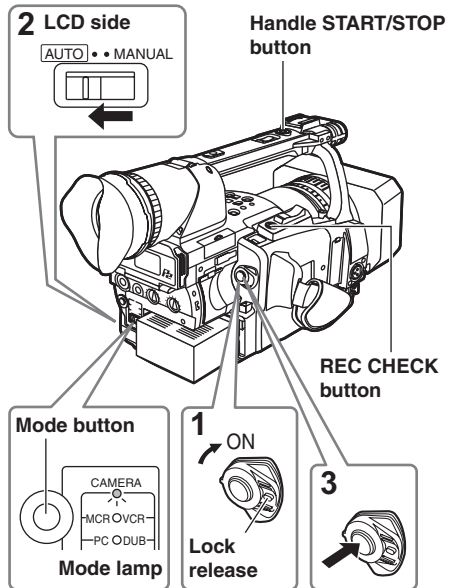
- 1 Switch the MEDIA switch to "P2".
- 2 Set the POWER switch to ON. (Page 20)
- 3 Lift up the viewfinder and open the card slot cover.
- 4 Insert the P2 card securely in the card slot.
 - There are two card slots.
 - Be absolutely sure to close the card slot covers to keep the dust out.



Do not operate the MEDIA switch when the power is switched ON.
 If you attempt to operate the MEDIA switch, the message "TURN POWER OFF" will be displayed.
 In this case, switch OFF the power, and then switch it ON again.

Shooting in auto mode

- 1 Turn the POWER switch to ON. (Page 20)
 - Check that the mode lamp (CAMERA) is lighted red. If not, press the mode button.
- 2 Switch the AUTO/MANUAL switch to AUTO to select auto mode.
 - "A" appears on the viewfinder and LCD screens.
 - The focus, gain, iris and white balance are adjusted automatically.
- 3 Press the START/STOP button (Red) on the POWER switch to start shooting.
 - Press again to return to the camera to the shooting standby mode.
 - Use the handle START/STOP button to make it easier to shoot from low angles.

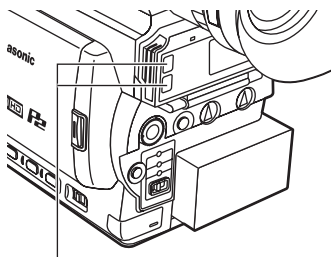


Checking photos taken (REC CHECK)

In the shooting pause mode, **press the REC CHECK button.**

A few seconds of the last thing you shot play.

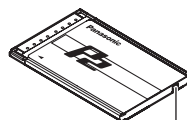
- Note that this REC CHECK portion will also be recorded to any equipment you have set up to make backup recordings.
- Only the POWER and START/STOP buttons are operable during REC CHECK.
- The REC CHECK function does not work when PC, MCR or DUB has been selected as the operation mode.



P2 card access lamp

Protecting against a possible erasure

Switch the write-protect switch of the P2 card to [PROTECT].



Write-protect switch



P2 card access lamps

CAMERA mode (MCR)

Lights green: Data can be saved onto the cards or loaded from them.

Blinks green (slow): No available space on card, card is write-protected

Lights orange: Slot that is the object of recording

Blinks orange : Data is now being accessed.

Blinks orange (fast): A card is now being recognized.

Both lamps blink orange: Ejection of card during access

Off: Cards have not been inserted or formatted. Insertion of incompatible card.

PC mode (USB DEVICE)

Blinks orange: Data is now being accessed.

Off: A status other than access underway.

PC mode (1394 DEVICE)

Blinks orange: Connected

Off: Not connected

PC mode (1394 HOST)

Lights green: Access standby.

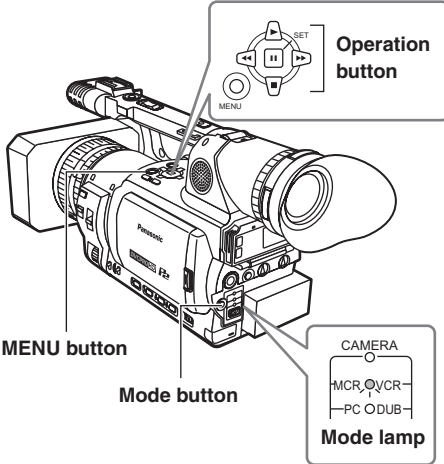
Blinks orange: Data is now being accessed.

Off: Cards have not been inserted or formatted. Insertion of incompatible card.

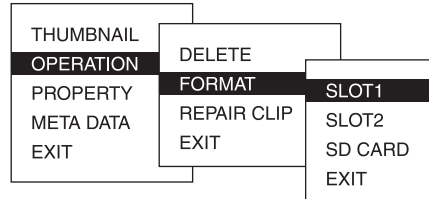
Formatting P2 cards

- 1 Press the mode button and set it to MCR mode (the MCR/VCR lamp lights).
 - Thumbnails are displayed.

- 2 Press the MENU button.



- 3 On the menu, select OPERATION and then FORMAT.
 - A screen such as the one shown below appears. Select the number of the slot into which you inserted the P2 card to be formatted. Select EXIT to cancel the formatting.
 - When you press the MENU button, the menu display disappears.



- 4 Select YES on the confirmation screen.
 - The selected P2 card is formatted.

Recording times

Card model	Capacity	DVCPRO 2-channel audio	DVCPRO50 4-channel audio	DVCPRO HD*1	DVCPRO HD 720P/24PN	DVCPRO HD 720P/30PN
AJ-P2C004HG	4 GB	approx. 16 min.	approx. 8 min.	approx. 4 min.	approx. 10 min.	approx. 8 min.
AJ-P2C008HG	8 GB	approx. 32 min.	approx. 16 min.	approx. 8 min.	approx. 20 min.	approx. 16 min.

- The AJ-P2C002SG (2 GB) card cannot be used.
- The displayed available space includes the management area, and so the space available for recording is smaller than this.
- Concerning the division of clips recorded on P2 cards
 When using a P2 card of at least 8 GB in this camera, if the continuous recording time for a single session exceeds the time shown in the following table, recording will be automatically resumed as a different clip. When performing a thumbnail operation (display, delete, restore, copy, etc.) on clips using P2 cards, you can operate them as a single clip. When you are using non-linear editing software and a PC, for example, the clips are displayed individually.

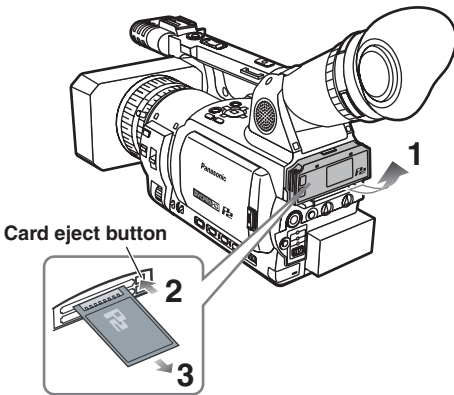
Recording Format	Recording times
DVPRO HD*1	approx. 5 min.
DVPRO50	approx. 10 min.
DVPRO/DV	approx. 20 min.

*1 The 720P/30PN and 720P/24PN formats are not included in the DVCPRO HD recording format.

- When using any other types of cards, the driver installed in the camera-recorder may need to be updated. (Page 125)
- For the latest information not available in the Operating Instructions, visit the P2 Support Desk at the following Web sites.
<https://www.pavc.panasonic.co.jp/pro-av/>

Remove the P2 card

- 1 Lift up the viewfinder and open the card slot cover.
 - Check that the P2 card access lamp is not blinking orange.
- 2 Press the card eject button once, and when the button has popped back up, press it again.
- 3 Remove the P2 card.



- Do not eject a P2 card while its data is being accessed or while it is being recognized after insertion (the P2 card access lamp is blinking orange).
- If a P2 card is ejected during formatting or while its data is being accessed, "TURN POWER OFF" appears in the viewfinder, and a warning is indicated by an alarm or tally lamp. If this happens, turn the power off and back on again.

When a card is ejected during formatting:
Format the card again.

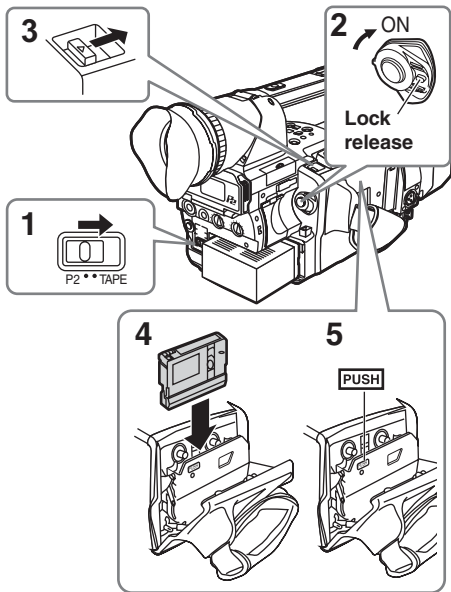
When a card is ejected while its data is being accessed:

The data on the card will not be destroyed, but the clips may be thrown out of order. Check the clips and repair them. (For details on repairing clips, see page 69.)

- During playback, a P2 card inserted into the empty slot will not be recognized and the P2 card access lamp will not light. When playback is completed, the P2 card recognition will begin.
- You can use ACCESS LED on the OTHER FUNCTIONS screen to set the P2 card access lamps so that they will always be off. In this case, either turn off the power or wait until enough time has passed after inserting the cards or stopping operation before ejecting the cards.
- If a P2 card is ejected while thumbnails are displayed, the thumbnail screen is released.

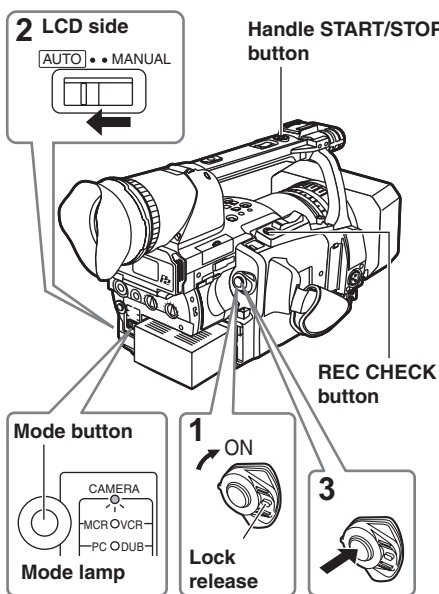
Preparing to shoot using a tape

- 1 Switch the MEDIA switch to "TAPE".
- 2 Set the POWER switch to ON. (Page 20)
- 3 Slide the OPEN/EJECT switch in the direction shown by the arrow to open the cassette cover.
 - The cassette holder opens automatically.
 - The cassette holder will not open if the camera is not supplied with power (AC adapter or a battery).
- 4 Insert the cassette tape.
- 5 Press PUSH to close the cassette holder.
 - Close the cassette cover only after the cassette holder is completely in position.



Shooting in auto mode

- 1 Turn the POWER switch to ON. (Page 20)
 - Check that the mode lamp (CAMERA) is lighted red. If not, press the mode button.
- 2 Switch the AUTO/MANUAL switch to AUTO to select auto mode.
 - "A" appears on the viewfinder and LCD screens.
 - The focus, gain, iris and white balance are adjusted automatically.
- 3 Press the START/STOP button (Red) on the POWER switch to start shooting.
 - Press again to return to the camera to the shooting standby mode.
 - Use the handle START/STOP button to make it easier to shoot from low angles.



Do not operate the MEDIA switch when the power is switched ON.

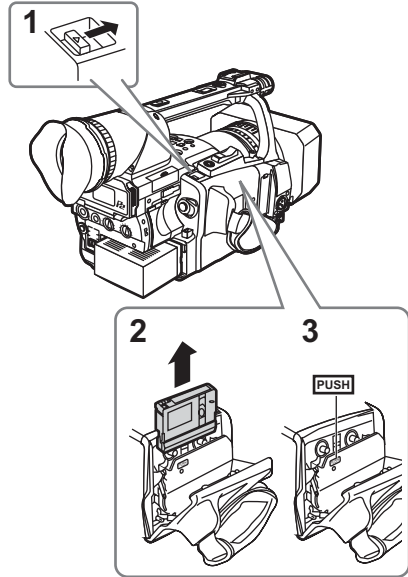
If you attempt to operate the MEDIA switch, the message "TURN POWER OFF" will be displayed. In this case, switch OFF the power, and then switch it ON again.

Checking scenes taken (REC CHECK)

In the shooting pause mode, **press the REC CHECK button.**

A few seconds of the last thing you shot play, and then the camera returns to the shooting pause mode.

- The REC CHECK function cannot be used unless the recording is at least one second long.
- When recording backup images by connecting the equipments using a 1394 cable, the images will not appear during REC CHECK.
- The REC CHECK function does not work when VCR or DUB has been selected as the operation mode.



Remove the cassette tape

1 Slide the OPEN/EJECT switch in the direction shown by the arrow to open the cassette cover.

- The cassette holder opens automatically.
- The cassette holder will not open if the camera is not supplied with power (AC adapter or battery).
- A tape cannot be ejected in P2 mode or during recording in TAPE mode.

2 Remove the cassette.

3 Press PUSH to close the cassette holder.

- Close the cassette cover only after the cassette holder is completely in position.

Cassette tapes

- You can use tapes with this mark ^{Mini} DV.

Use the following mini DV cassette tapes with this camera-recorder.

AY-DVM63PQ Professional series tape

(60 minutes in SP mode)

AY-DVM63MQ Master series tape

(60 minutes in SP mode)

Do not use 80-minute miniDV cassette tapes.

- Picture quality does not worsen if you shoot in LP mode, but you may notice some block noise and there may be other limitations.

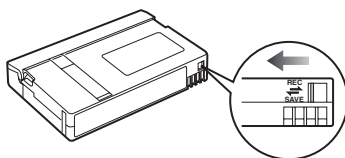
Block noise and feature limitations occur in the following situations.

- When you play a tape on other digital video equipment that you have shot in LP mode on this camera.
- When you play a tape in this camera that you have shot in LP mode on other digital video equipment.
- When you have shot in LP mode and try to play it on other digital video equipment that doesn't have an LP mode.
- During slow motion or still-picture playback
- When using the camera's search functions

- Audio dubbing cannot be performed in the LP mode as the tracks on the tape are narrower than the heads.

Preventing accidental erasure

To prevent erasing the recordings on a tape by accident, set the tab on the cassette to SAVE.



Tape loading and unloading

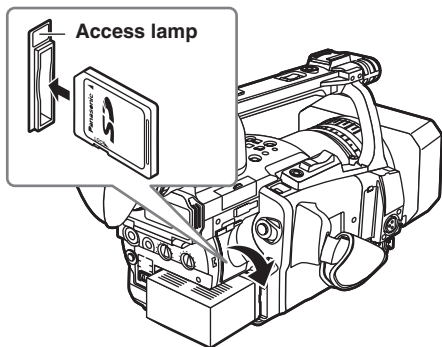
- Tapes cannot be loaded or unloaded when the MEDIA switch is set to P2.
- Do not try to insert or eject the tape by just holding the cassette cover.
- Insert and remove cassette tapes after putting the camera-recorder down on a stable, flat surface or hold it to keep it stable.
- Do not force the cassette holder while it is moving. Trying to do so could damage the camera.
- Close the cassette cover only after the cassette holder is completely in position. Trying to close the cover while the cassette holder is moving could damage the camera.
- Close the cassette holder again if you are not going to insert another tape.
- Do not open the cassette cover while you are recording. Recording continues, and the open cover allows outside light and dust to adversely affect the tape.

You can use SD memory cards to save and load SCENE files and USER files. (Page 56)

Installing and removing the SD memory card

Installation

- 1 Open the cover, and insert the card while making sure it is oriented in the proper direction.



- 2 Close the cover.

Removal

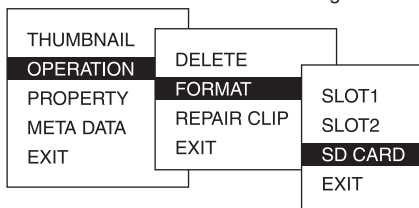
- 1 Open the cover, and check that the access lamp is not lit.
- 2 Press the card further into the unit, grasp the card, and then remove.
- 3 Close the cover.

Formatting SD memory card

- 1 Switch the MEDIA switch to "P2".
- 2 Set the POWER switch to ON. (Page 20)
- 3 Press the mode button and set it to MCR mode (the MCR/VCR lamp lights).
- 4 Press the MENU button.

- 5 On the menu, select OPERATION, FORMAT and then SD CARD.

- Select EXIT to cancel the formatting.



- 6 Select YES on the confirmation screen.

- The selected SD memory card is formatted.

You can also format from the SD CARD FORMAT option on the CARD FUNCTIONS screen. (Page 114)

Cautions in using SD memory cards

- SD memory cards used with the AG-HVX200 should conform to SD standards. Be sure to format cards using the AG-HVX200. To format SD memory cards using a personal computer, download the dedicated software from the support site. SD memory cards with the following capacity (8MB - 1GB) can be used for the AG-HVX200:

8 MB	16 MB	32 MB	64 MB
128 MB	256 MB	512 MB	1 GB

For the latest information not available in the Operating Instructions, visit the P2 Support Desk at the following Web sites.

<https://eww.pavc.panasonic.co.jp/pro-av/>

- SD memory cards must not be used or stored in an environment where they may be Exposed to high temperatures/humidities; Exposed to water droplets; or Electrically charged.
- Be sure always close the cover when using an SD memory card.
- You cannot use the SD memory card in the TAPE mode.

Using the zoom function

This camera has a 13 x optical zoom function.
Zoom with the zoom button or the zoom ring.

Zoom button

Set the ZOOM switch to SERVO so that you can use the motor-driven zoom.

- T** : Zoom in
- W** : Zoom out

Gently press the zoom button on the viewfinder to zoom slowly, firmly press to zoom faster.

You can change the zoom speed on the handle zoom button by selecting one of three speeds with the HANDLE ZOOM switch.

Set the HANDLE ZOOM switch speeds by going to the setup menus, SW MODE screen HANDLE ZOOM (Page 103)

Zoom ring

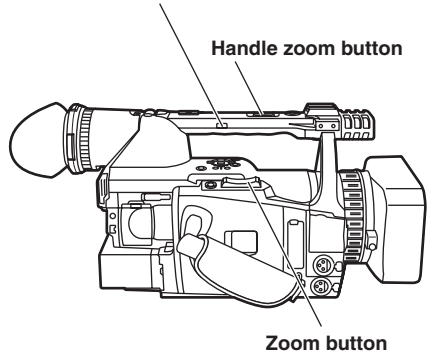
Set the ZOOM switch to MANUAL so that you can use the zoom ring.

- You cannot use the zoom ring if the ZOOM switch is set to SERVO. Trying to use it could damage the camera.

On the remote control

- Press ZOOM/VOL to zoom with the motor drive.
- Zoom speed is fixed at medium.

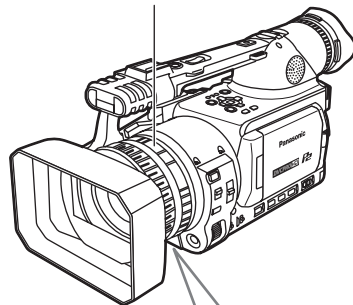
HANDLE ZOOM switch



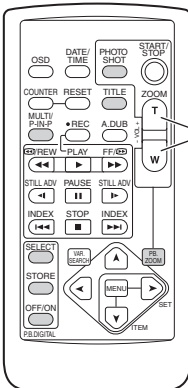
Handle zoom button

Zoom button

Zoom ring



ZOOM
SERVO MANU



ZOOM/VOL button

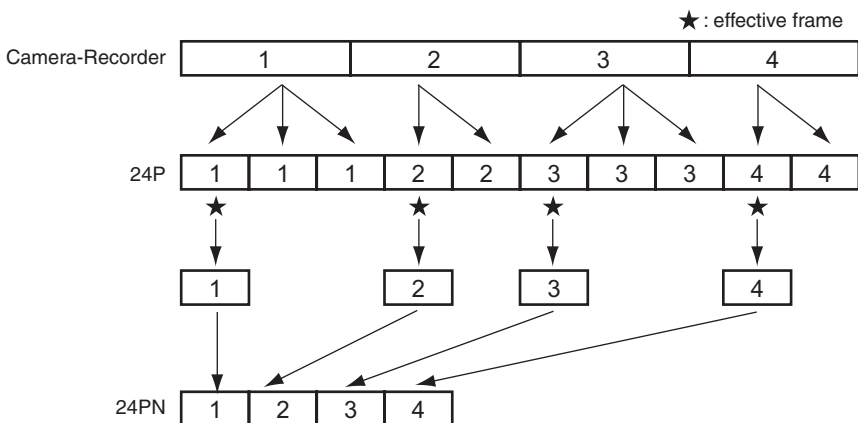
By taking full advantage of the special characteristics of P2 cards, this unit provides frame skipping (undercranking) recording and highspeed (overcranking) recording, which are actually movie techniques, without the use of a frame rate converter. (Either the 30PN or 24PN mode must be set for this.)

Since the camera-recorder records only the effective frames (native recording), recording is possible for between 2 times and 2.5 times as long compared with recording in the 24P, 30P or 60P mode (standard recording).

As with Panasonic's Varicam model (AJ-HDC27 series), this unit also provides a recording format that allows frame rate conversion using nonlinear editing. (Either the 30P or 24P mode must be set for this.)

24PN mode:

The camera-recorder shoots in the 24 fps native mode. The video signals delivering images at a rate of 24 fps are recorded in 24 frames. The signals are recorded only in the effective frames so recording is possible for 2.5 times as long.



- Before VFR shooting, you must set the recording frame rate and recording format ahead of time.
- You cannot change the frame rates while recording.
- VFR shooting is possible only in progressive-shooting P2 mode with 720 vertical lines.

You can select any of 11 recording frame rates ranging from 12 frames per second (fps) to 60 fps. The list of formats that allow recording by the camera-recorder (Page 129)

Native recording

- 1** Using the REC FORMAT (P2) function (page 106) on the RECORDING SETUP screen, select 720/30PN or 720/24PN as the recording format
- 2** Select the appropriate scene file using the SCENE FILE dial.
If necessary, before doing this, perform the camera settings from the setting menu, and register the scene file. (page 54)
- 3** Using the OPERATION TYPE function (page 100) on the SCENE FILE screen, select FILM CAM, and set the desired recording frame rate using the FRAME RATE function (page 100).
- 4** Press the START/STOP button to start or stop native recording in VFR mode.
 - No signals are output from the 1394 terminal during recording or recording standby in the native mode.
 - Sound is not recorded. However, sound will be recorded when the same frame rate is used for both recording and playback.
 - When a recorded clip lasting a long time is to be played back and imported using a nonlinear editing system that supports Varicams, the UB MODE option on the RECORDING SETUP screen must be set to FRM.RATE.
 - If the effective frame information is to be carried over when recording onto this camera-recorder from a nonlinear editing system that supports Varicams, the 1394 UB REGEN option on the RECORDING SETUP screen must be set to ON.
 - After editing, materials are output from the nonlinear editing system in 1080i/24P or 720P/60P (24P over 60P) format.

Standard recording

- 1** Using the REC FORMAT (P2) function (page 106) on the RECORDING SETUP screen, select 720P/60P, 720P/30P or 720P/24P as the recording format
- 2** Select the appropriate scene file using the SCENE FILE dial.
If necessary, before doing this, perform the camera settings from the setting menu, and register the scene file. (page 54)
- 3** Using the OPERATION TYPE function (page 100) on the SCENE FILE screen, select FILM CAM, and set the desired recording frame rate using the FRAME RATE function (page 100).
- 4** Press the START/STOP button to start or stop standard recording in VFR mode.
 - Sound is recorded.
 - In the case of a nonlinear editing system that supports Varicams equipped with an effective frame extraction function, you can upload even undercrank or overcrank shooting materials as is. (The UB MODE option on the RECORDING SETUP screen must be set to FRM.RATE.)
 - After editing, materials are output from the nonlinear editing system in 1080i/24P or 720P/60P (24P over 60P) format.
 - The 24P format is used for 2:3 pull-down recording; the 30P format is used for 2:2 pull-down recording.

There may be slight discrepancies between the recording frame rate displayed and the frame rate at which the images are actually recorded. Refer to the table below.

Recording frame rate displayed	60	48	36	32	30	26	24	22	20	18	12
Frame rate at which images are actually recorded	59.94	48.17	35.68	32.11	29.97	26.44	23.98	22.48	19.55	17.98	12.26

Using variable frame rates (VFR)

Standard speed shooting for movie production

When making movies to show on a screen, a frame rate of 24 fps (frames per second), which is the same as for films, is the norm (1x speed). If you use the settings below, the same kind of playback as with screenings can be obtained. By using the 720P progressive mode and cine-like gamma, high-quality film-like images can be achieved.

Recording format (REC FORMAT)	720P/24P (2:3 pull-down)	720P/24PN (native recording)
Recording frame rate (FRAME RATE)	24 fps*	

Standard speed shooting for making commercials and dramas

When producing commercials and dramas to be shown on a TV screen, as in the case of HDTV/SDTV and other broadcasts, a frame rate of 30 fps (frames per second) is the norm (1x speed). If you use the settings below, the same kind of playback as when the programs are broadcast can be obtained. Commercials and music clips will be recorded with a high film-like picture quality while the number of frames is also ideally suited to TV broadcasts.

Recording format (REC FORMAT)	720P/30P (2:2 pull-down)	720P/30PN (native recording)
Recording frame rate (FRAME RATE)	30 fps*	

Undercrank shooting

This way of shooting provides quick motion effects used to present such scenes as the movement of clouds, someone standing among crowd of people, and moves made by martial artists. If, for instance, you have shot scenes using the 24P recording format for specifying the playback frames, you can double the speed of the quick motion effects by setting the VFR recording frame rate to 12 fps.

Recording format (REC FORMAT)	720P/24P, 720P/24PN	720P/30P, 720P/30PN
Recording frame rate (FRAME RATE)	Set to 22 fps or lower.*	Set to 26 fps or lower.*

- In the case of the 720P/24P and 720P/30P formats, the quick motion effect can be obtained by using a nonlinear editing system to process what has been recorded.

Overcrank shooting

This way of shooting provides slow motion effects used to show car chases as well as action scenes, climax scenes and other dramatic presentations. If, for instance, you have shot scenes using the 30P recording format for specifying the playback frames, you can obtain slow motion effects with the speed halved by setting the recording frame rate to 60 fps. Images in the 720P progressive format will create smoothly flowing slow motion sequences with a high picture quality.

Recording format (REC FORMAT)	720P/24P, 720P/24PN	720P/30P, 720P/30PN
Recording frame rate (FRAME RATE)	Set to 26 fps or higher.*	Set to 32 fps or higher.*

- In the case of the 720P/24P and 720P/30P formats, the slow motion effect can be obtained by using a nonlinear editing system to process what has been recorded.

* You can select any of 11 recording frame rates ranging from 12 frames per second (fps) to 60 fps. (Page 100)

Shooting in 1080i/480i progressive mode

Selecting 1080i/30P, 1080i/24P, 1080i/24PA, 480i/30P, 480i/24P or 480i/24PA in the REC FORMAT option (page 106) of the setting menu RECORDING SETUP screen enables shooting in progressive mode.

30P mode:

Shoot 30 frames a second in the progressive mode.

For output and recording, the 30-frame-per-second signal is converted to 60-field-per-second interlace.

This mode gives you high quality images.



24P mode:

Shoot 24 frames a second in the progressive mode.

For output and recording, the 24-frame-per-second signal is converted to 60-field-per-second interlace using the widely used “2:3” ratio.

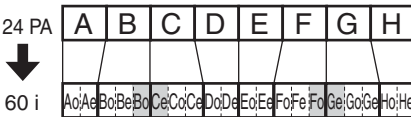
This gives you images similar to a movie shot with film.



24P advanced mode:

Shoot 24 frames a second in the progressive mode.

For output and recording, the 24-frame-per-second signal is converted to 60-field-per-second interlace using “advanced” conversion.



With the “2:3” method, frames [BoCe], [CoDe], [FoGe], and [GoHe] shown in the illustration would be extended over different frames which can cause a drop in picture quality.

With the 24P advanced method, however, frames [BoCe] and [FoGe] are cut out, leading to a reduction in image quality loss.

If you also use a system compatible with the advanced method, editing will also yield better quality images than those shot in the normal 24P mode.

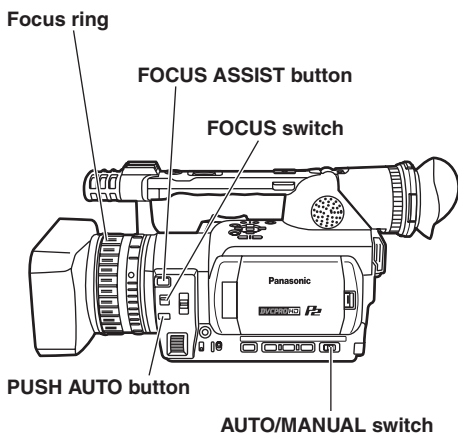
- If you are not going to do your editing on such a system, use the normal 24P method for shooting.

Note the following when shooting in progressive mode.

- You cannot have a gain of 18dB.
- Set the shutter speed to 1/50 (OFF) or 1/60 for best results.
- There may be a slight delay to the start of recording when you use the 24P or 24P advanced modes because 5 frames are recorded at a time. When using a tape, the shortest possible recording time is three seconds.

Shooting in manual mode

Set the unit to manual mode when manually adjusting the focus, iris, gain and white balance.



Switching to manual mode

If the camera is in auto mode, use the AUTO/MANUAL switch to switch to manual mode (**A** on the viewfinder and LCD goes out).

Manual focusing

1 Use the AUTO/MANUAL switch to switch to manual mode.

2 Use the FOCUS switch to choose how to control focusing.

A (AUTO):

Auto focus mode

M (MANUAL):

Manual focus mode

Turn the focus ring by hand.

∞ :

The camera first focuses on infinity, then it switches to manual focus.

The FOCUS switch automatically moves back to M (MANUAL) after you move it to ∞.

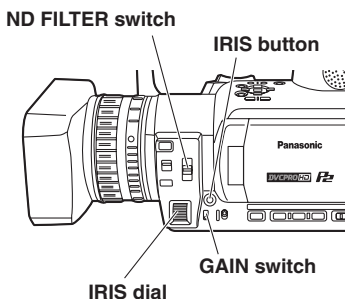
Temporarily switching to auto focus

Even if you have switched FOCUS to M (MANUAL) the camera will focus automatically while you press down PUSH AUTO.

- Auto focus may not work properly if there is flickering.
Select a shutter speed suited to the ambient light. (Page 50)
- If the auto focus mode is set with any format except 60i and 60P, controlling the focus will take slightly longer than in the normal focus mode.
- If you have set ON for the AF item on the setting menu AUTO SW screen, auto focusing will occur regardless of the position of the FOCUS switch when the auto mode has been established. (Page 105)
- During macro shooting “AF” and “MF” will be displayed in a frame on the screen.

Using focus assist

When you press the FOCUS ASSIST button, the area at the center of the screen will be enlarged, making it easier for you to bring the subjects into focus. The normal display is restored about 10 seconds after the focus ring has been operated. This is useful when focusing manually. This function is enabled only during recording or recording standby in the HD modes of 1080i and 720P, and it does not work in external input mode.



Iris adjustments

- 1** If the camera is in auto mode, use the **AUTO/MANUAL** switch to switch to manual mode. (Page 38)
- 2** Press the **IRIS** button to switch how to adjust the aperture of lens.
AUTO IRIS: Adjust the iris automatically.
MANUAL IRIS: Adjust the iris manually.
- 3** Turn the **IRIS** dial to adjust the aperture of lens when in the manual iris mode.
 In the auto iris mode, the lens iris can be corrected using this dial.

Set the direction of the IRIS DIAL and aperture control in the setup menus, SW MODE screen, IRIS DIAL. (Page 103)
 If you have set ON under A.IRIS on the setting menu AUTO SW screen, auto iris will be forcibly selected when auto mode has been established. (Page 105)

This unit's iris F number when it is open is F1.6 at full WIDE and F2.8 at full TELEPHOTO.
 The iris display in the viewfinder or on the LCD when the iris is open is OPEN at full WIDE and F2.8 or OPEN at full telephoto.

Adjusting the gain

When the display is dark, increase the gain to brighten the display.

- 1** If the camera is in auto mode, use the **AUTO/MANUAL** switch to switch to manual mode (**A** goes out). (Page 38)
- 2** Switch the gain with the **GAIN** switch.
 - L:** Set here under normal conditions. (0 dB)
 - M:** Increase the gain of the image amplifier. (The default value is 6 dB.)
 - H:** Increase the gain of the image amplifier. (The default value is 12 dB.)

You can change the M and H gain values using the MID GAIN and HIGH GAIN items on the setting menu SW MODE screen. (Page 103)

If ON is set for the setting menu AUTO SW and you have selected a setting other than OFF under AGC, auto gain will be provided when auto mode has been established regardless of the GAIN switch position. (Page 105)

When the recording frame rate is less than 22 fps and when a slow shutter speed (1/15) has been set, the gain is fixed at 0 dB regardless of the GAIN switch setting. (Pages 34 and 50)

Light intensity adjustments

Use the ND FILTER Switch to change the ND Filter used (filter to change light intensity).

- OFF:** ND filter is not used.
- 1/8:** Cuts light intensity by up to about 1/8.
- 1/64:** Cuts light intensity by up to about 1/64.

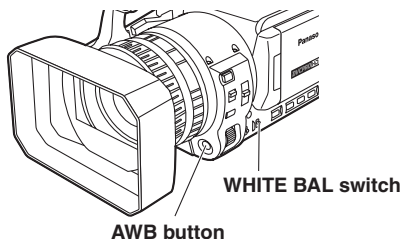
Adjusting the white balance

In order to reproduce the white accurately, adjust the ratio between the three RGB primary colors. If the white balance is not adjusted properly, not only will the white be reproduced poorly but the color tones of the entire screen will also be downgraded. When you are shooting in manual mode, readjust the white balance whenever lighting conditions change.

You can save adjustments and reselect them by setting the WHITE BAL switch to A or B.

You can also use the preset values.

Use the settings to suit the shooting conditions.



White balance adjustments

1 If the camera is in auto mode, use the **AUTO/MANUAL** switch to switch to manual mode. (Page 38)

2 Set the shutter speed. (Page 50)

3 Place a white pattern in a location with the same lighting conditions and light source as the subject, then zoom in and fill the whole screen with white.

Something white (a white cloth or wall) near the subject can be used instead.

- Do not include bright spotlights in your shot.

4 Set the **WHITE BAL** switch to **A** or **B** (whichever one you want to save the adjustment in).

5 Press the **AWB** button.

- Adjustment takes a few seconds. (The following messages appear on the screen.)

Message during adjustment

AWB Ach ACTIVE

Message after adjustment

AWB Ach OK

An error message appears on the screen when white balance adjustment is not possible.

Message when adjustment cannot be done

AWB Ach NG

- White balance cannot be adjusted if the Auto Tracking White (ATW) function is working. If you have set ON under ATW (Auto Tracking White) on the setting menu AUTO SW screen, ATW will be selected when auto mode has been established regardless of the WHITE BAL switch position. (Page 105)

Error messages	Adjustments
LOW LIGHT	Increase light or increase the gain.
LEVEL OVER	Reduce light or decrease the gain.

Make the necessary adjustments if one of the above error messages appears, then try adjusting the white balance again.

- If the messages repeatedly appear even after trying a number of times, consult your dealer.

Adjusting the white balance (continued)

Using presets

Use this feature when you have no time to make white balance adjustments.

1 If the camera is in auto mode, use the **AUTO/MANUAL** switch to switch to manual mode (A on the viewfinder and LCD goes out).

2 Set the **WHITE BAL** switch to **PRST**.

The current white balance value appears.

- White balance values 3200 K and 5600 K are preset in the PRST position.

Guide to the preset values

P3.2K (3200 K): halogen light

P5.6K (5600 K): outdoors

3 Press the **AWB** button.

White balance switches between 3200 K and 5600 K.

Black balance adjustments

In order to reproduce the black accurately, adjust the zero level of all three RGB primary colors. If the black balance is not adjusted properly, not only will the black be reproduced poorly but the color tones of the entire screen will also be downgraded.

It is not normally necessary to adjust the black balance. Adjust it when:

- You use the camera for the first time
- You use the camera after not using it for a long time
- The ambient temperature changes greatly
- You switch to the normal (OFF) shutter speed or to slow shutter
- You switch between the progressive and normal (60i) modes

Press the **AWB** button to automatically adjust the white balance.

Press and hold the **AWB** button to adjust the black balance.

- As the white balance is adjusted first when you press the **AWB** button, make the necessary preparations for this.
- You cannot adjust the black balance while you are shooting.

Message during adjustment

ABB ACTIVE

Message after adjustment

ABB END

Auto Tracking White (ATW)

You can allocate the ATW feature to one of the positions on the **WHITE BAL** switch (A, B, or PRST). Allocate it by going to the setup menus, **SW MODE** screen, **ATW**. (Page 103)

The ATW feature is set to work in the auto mode at the time of shipping. (Page 105)

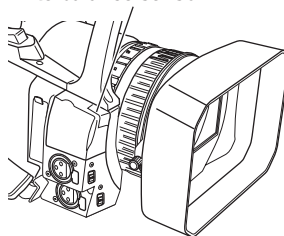
If you use the ATW feature whenever you are shooting, the camera automatically adjusts the white balance as you shoot.

- The ATW feature automatically determines the current shooting environment and adjusts the white balance accordingly. Depending on the environment, there may be some error in the adjustment.

Use the procedure described on the preceding page whenever you need more precise white balance.

Do not block the white balance sensor when using the ATW feature. ATW will not work if you do.

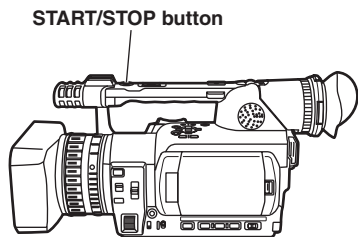
White balance sensor



Shooting techniques for different targets

Low-angle shooting

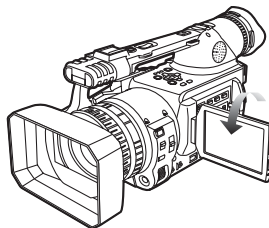
Use the START/STOP button on the handle to make it easier to shoot from low angles.



Self-portrait shooting

Images in the LCD when it is turned 180 degrees for self-portrait shooting may appear unusual. You can make them appear better by reversing left and right. Go to the setup menus, DISPLAY SETUP screen, SELF SHOOT, and select MIRROR.

Shooting in mirror mode has no effect on what you actually shoot and record.

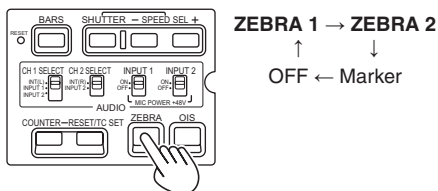


Zebra pattern

Press the ZEBRA button in the camera mode to show the zebra pattern or marker on the screen so you can check the brightness of the subject. Parts that may be whited out through over exposure are shown as a zebra pattern.

- Very bright
- Reflecting parts

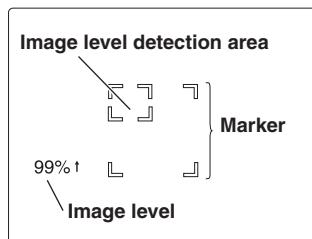
You can remove most overexposed parts by adjusting the iris and shutter speed in the manual mode to remove the areas with zebra patterns. The display changes as follows each time you press the ZEBRA button.



In the setup menus, DISPLAY SETUP screen, ZEBRA DETECT 1 and ZEBRA DETECT 2, set the brightness for the zebra patterns. (Page 112)
The zebra pattern you have set appears as a percentage on the display for about 2 seconds.

Marker

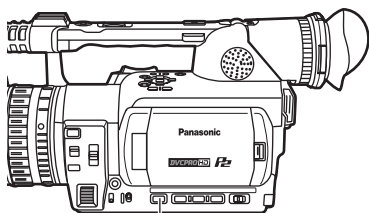
If you press the ZEBRA button again while the zebra pattern is being displayed, a marker appears in the center of the display (if you have set the setup menu, DISPLAY SETUP, MARKER to ON). The brightness of the areas near the screen center can be checked as a percentage (0% to 99%). "99%↑" appears if the percentage is over 99.



The normal display reappears if you press the ZEBRA button again.

Shooting techniques for different targets (continued)

Checking and displaying shooting status



DISP/MODE CHK button

When you hold down the DISP/MODE CHK button during recording standby or recording, all the information including the setting status of the shooting functions and a list of functions allocated to the USER buttons, will be displayed. When you release the button, the normal display will be restored.

When you push the DISP/MODE CHK button during recording standby or recording, all the information will be unshown. When you press the button again, the normal display will be restored. The information is retained even if you turn off the unit's power or switch to another media or operation mode.

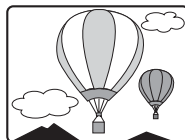
Changing the image size

When recording in 480i mode, you can change the size (aspect ratio) of the images that you record. Select the aspect ratio in the setup menus, CAMERA SETUP screen, ASPECT CONV. (Page 102)

- For menu operation (Page 96)

NORMAL:

Recorded in the regular 4:3 aspect ratio



LETTER BOX:

Recorded in the 16:9 aspect ratio.

Black bands are recorded at the top and bottom of the image.



SQUEEZE:

The recorded images are squeezed horizontally so that they are shown as 16:9 images on a compatible wide-screen television.

If you have selected SQUEEZE, "SQU" appears on the screen.




To change the aspect ratio display of the viewfinder and LCD

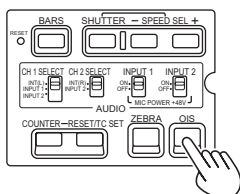
Select the aspect ratio in the setup menus, DISPLAY/SETUP screen, DISPLAY ASPECT. (Page 113)

Optical Image Stabilizer

Use the Optical Image Stabilizer (OIS) to reduce the effects of camera shake when shooting by hand.

Press the OIS button to turn the function on and off.

 appears on the screen when this function is on. Turn the function off when using a tripod for more natural images.



- This function will not be as effective when the vibration is severe or when tracking a moving subject.

Adding effects to images

Press the USER button you have allocated to the BLACKFADE or WHITEFADE feature to add fading effects to your images. The button's function is forcibly canceled during playback or REC CHECK and also when thumbnails are displayed.

BLACKFADE:

Press and hold to fade out to black. Audio also fades out. Fade-in starts when the button is released.

WHITEFADE:

Press and hold to fade out to white. Audio also fades out. Fade-in starts when the button is released.

Using the USER buttons

You can allocate one of twelve features to each of the three USER buttons.

Use these buttons to change shooting settings quickly or add effects to the images you are shooting.

The following features are allocated to the buttons at the time of shipping.

USER1: WHITEFADE

USER2: BACKLIGHT

USER3: INDEX/MEMO

For details, see the setup menus, SW MODE screen, USER1 to 3. (Page 104)

If you press a USER button to which one of the following functions has been allocated and then turn off the power, that button will revert to the previous setting:

SPOTLIGHT, BACKLIGHT, ATW, ATW LOCK, GAIN: 18dB, FOCUS RING

Backlight compensation

Press the USER button you have allocated to the BACKLIGHT feature when shooting subjects lit from the back.

BACK appears on the screen.

Backlight compensation adjusts the iris so the subject doesn't come out dark.

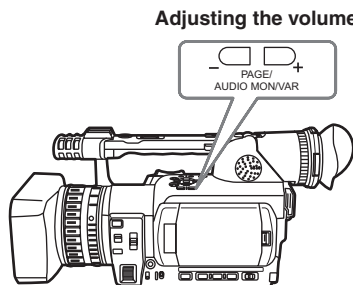
Press the same USER button to turn the feature off. (In the manual iris mode, the backlight compensation status is retained even if the backlight compensation is released.)

Color bars

Press the BARS button to output a color bar screen to a television or monitor so you can adjust them. Press the button again to turn the feature off.

Shooting techniques for different targets (continued)

Adjusting the volume while shooting



If you are monitoring the sound through headphones while shooting, you can adjust the volume with the PAGE, AUDIO MON/VAR button.

- To adjust the recording level (Page 53)

Backup recording

If you have connected equipment to the 1394 terminal (pages 77 and 78), you can make automatic backup recordings of whatever you are shooting.

- In the setup menus, OTHER FUNCTIONS screen, 1394 CONTROL and 1394 CMD SEL, select how to control the equipment you have connected. (Page 114)
- Select the settings below for the following items on the DISPLAY SETUP screen (page 112) for backup recording when using a tape.
 - OFF for VIDEO OUT OSD
 - OFF for DATE/TIME

Note the following when backup recording.

- When performing backup recording while a tape is used:
 - If either of the following settings have been selected, **the OSD will be output to the 1394 output at all times except when the unit is in the recording mode.**
 - When ON has been set for the VIDEO OUT OSD option on the DISPLAY SETUP screen (page 112)
 - When a setting other than OFF has been selected for the DATE/TIME option on the DISPLAY SETUP screen (page 112)
- Bear in mind that the OSD may be recorded inadvertently if backup recording is performed when a setting other than OFF is selected for the 1394 CONTROL option (page 114) on the OTHER FUNCTIONS screen.

- If the DATE/TIME button on the remote control is pressed, **the date and time will be output to the 1394 output regardless of whether recording is underway or the recording standby status is established.**
- Menu settings are retained even if you turn the power off. So if you use the camera-recorder with the settings for backup recording still in effect, images on media in any unit that connected may be overwritten. After backup recording, check the menu item settings before you operate the camera-recorder.
- If you use another AG-HVX200 as the external unit for backup recording, select "OFF" for 1394 CONTROL on the external unit and set it to MCR/VCR mode.
- Backup recording may not work properly if you connect two or more external units.
- Use a DV (IEEE1394) cable of 4.5 m or less for connection.
- Set the external unit up to receive 1394 signals before backup recording.
- You can have a media in the external unit start recording automatically when the media in this unit is almost finished. Set 1394 CONTROL (page 114) to "CHAIN".
- Note that images are recorded even when you perform a rec check if a P2 card is being used: When a tape is used, no images are output during rec check.
- You cannot perform backup recording when the unit is set up for native recording.
- Backup recording does not work in three of the special recording modes of the P2 card: Interval recording, One-shot recording and Loop recording. (Pages 47 and 48)
- Backup recording does not work during direct shooting (page 66) in MCR mode.

When recording to a P2 card, making the settings in the RECORDING SETUP screen (page 106) enables special recording functions such as Pre-recording, Interval Recording, One Shot Recording, and Loop Recording.

This can be used only when the OPERATION TYPE option in the SCENE FILE screen (page 100) is set to VIDEO CAM with the 1080i/60i, 720P/60P, and 480i/60i and 30P recording formats.

Pre-recording (PRE REC)

This function is used to start recording a certain number of seconds (approx. 3 seconds for HD recordings or approx. 7 seconds for 480i recordings) before actual recording starts.

1 Select ON under PREREC MODE. (Page 106)

- For menu operations (Page 96)

2 Press the START/STOP button.

Pre-recording starts.

- This function does not work during IEEE1394 input recording, transitions from playback to recording, loop recording, interval recording, or one-shot recording.
- Immediately after switching from the MCR mode to CAMERA mode, immediately after turning on the camera-recorder's power or immediately after changing the PRE-REC option setting, it may not be possible to record the images and sound before the time mentioned above has elapsed even if the recording has been started straight away.

Interval recording (INTERVAL REC)

This function is used to repeat a cycle of recording one frame and then going on standby for a set time.

1 Select INTERVAL under REC FUNCTION. (Page 106)

- For menu operations (Page 96)

2 Set the time INTERVAL TIME. (Page 106)

3 Press the START/STOP button.

The operation of recording one frame and then going on standby for the time that was set under INTERVAL TIME is repeated.

To stop operation, press the \square among the operation buttons.

To release the function, either turn off the unit's power or select NORMAL under REC FUNCTION.

- The following displays will appear on the left of the operation status display.
While recording is underway: I-REC lights up.

In temporary standby: I-PAUSE lights up.

While recording is stopped: The "I-" of I-PAUSE flashes.

However, if the duration selected in step 3 is less than 2 seconds, I-REC will flash while recording is underway in accordance with the set time.

- The pre-recording function does not work.
- No sound is recorded.
- All data recorded while this mode is active will be contained in one file.
- No guarantees are made for the 1394 output images.

One-shot recording (ONE-SHOT REC)

This function records a single shot at each unit of time which has been set.

1 Select ONE SHOT under REC FUNCTION. (Page 106)

- For menu operations (Page 96)

2 Set the recording time using ONE-SHOT TIME. (Page 106)

3 Press the START/STOP button.

Recording continues for the duration set in step 2 and then goes on standby.

To stop operation, press the \square among the operation buttons.

To release standby, either turn off the unit's power or select NORMAL under REC FUNCTION.

- The following displays will appear on the left of the operation status display.
While recording is underway: I-REC lights up.
In temporary standby: I-PAUSE lights up.
While recording is stopped: The "I-" of I-PAUSE flashes.
- No other operations are acknowledged during operation.
- The pre-recording function does not work.
- No sound is recorded.
- All data recorded while this mode is active will be contained in one file.
- No guarantees are made for the 1394 output images.

Loop recording (LOOP REC)

This function is used to record first on one card and then on the next when you have inserted two P2 cards into the card slots. If there is not enough free memory remaining on the second card, recording returns to the first card whose data will then be overwritten. When data is overwritten, the saved clips are deleted, and then the new clips are recorded in their place.

1 Select LOOP under REC FUNCTION. (Page 106)


- For menu operations (Page 96)

2 Press the START/STOP button.

Recording starts.

To stop operation, press the START/STOP button.

To release the function, either turn off the unit's power or select NORMAL under REC FUNCTION.

- The following displays will appear on the left of the operation status display.
While recording is underway: L-REC lights up.
While recording is stopped: L-PAUSE flashes.
When there is not much free memory:
 LACK L- flashes.
- Use two P2 cards each with a recording capacity of more than one minute. Recording stops when either card is ejected.
- This function does not work during IEEE1394 input recording.
- The pre-recording function does not work.

2-slot continuous recording

If you insert two P2 cards into the two card slots, this function allows you to record continuously on the two cards.

You can also record continuously on three or more cards by replacing one card while data is being recorded on the other. (Hot swap recording)

If you allocate SLOT SEL to a USER button under USER (page 104) on the SW MODE screen, you can switch the slot with the card on which data is to be written using a one-touch operation.

- You cannot change slots while recording so do this during recording standby.
- Does not support hot swap playback.

Shot mark function

The marks attached to the thumbnails of clips are called shot marks. On the thumbnail screen monitor you can select only those clips with a shot mark and display them or play them back.

During recording, when you press the USER button to which the SHOT MARK function has been allocated, MARK ON appears in the LCD monitor or the viewfinder, and a shot mark is set for the thumbnail of the clip being recorded. If you press the button again, the shot mark is released.

You can also set or release the shot marks by performing the thumbnail operations for clips. (Page 66)

Text memo recording

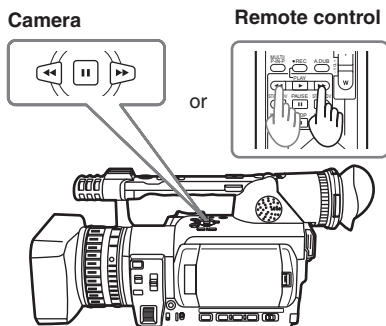
This function adds text memos at the video points on the clip now being recorded or played back. When you press the USER button to which the INDEX or MEMO function has been allocated, the text memo signal will be recorded at that point. (Page 57)

On the thumbnail screen you can select only those clips where text memos have been added, and then either display those clips or play them back. You can record up to a hundred text memos per clip.

You will need the latest updated version of P2 Viewer to edit the text memos. (Page 57)

- You cannot record text memos during interval recording or one-shot recording.

Finding specific scenes (image search)



While in the shooting standby mode, you can search through any images you have shot. This is useful when you want to find a point from which to continue shooting so two scenes come one after the other.

1 Press ►► or ◀◀ in the shooting standby mode.

The tape plays forward or backward while you are pressing the button.

2 Release the button when you find the point you are looking for.

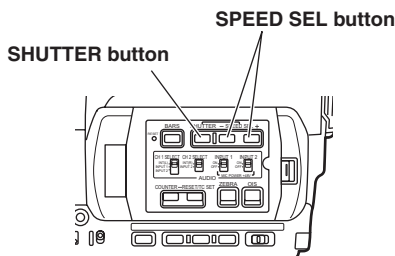
The camera returns to shooting standby mode.

- The scenes may not connect smoothly for certain recording states.

Index recording

When you press the USER button to which the INDEX/MEMO function has been allocated at any point during shooting or recording, the index signals are recorded if a tape is being used. When the same USER button is pressed in shooting or recording pause mode, recording standby status is established for the index signals. The index signals are recorded when shooting or recording is started. You can conduct searches (index searches) during playback by recording these signals. (Page 75)

Adjusting the shutter speed



- Remember that the faster the shutter speed, the lower the sensitivity.
- If iris is set to auto, then it will open wider with higher shutter speeds and thereby reduce focal depth.
- It will take longer to focus when the shutter speed has been reduced so it is recommended that the unit be secured to a tripod, etc. for use.

1 Press the SHUTTER button.

Each time you press the SHUTTER button, the shutter speed switches between normal (OFF) and the speed you selected with the SPEED SEL button.

2 After you have pressed the SHUTTER button, press SPEED SEL to select the shutter speed.

The shutter speed changes as follows each time you press SPEED SEL + (The order is reversed for the SHUTTER SEL - button.)



The current shutter speed appears on the viewfinder and LCD screens unless you have selected OFF in OTHER DISPLAY in the DISPLAY SETUP screen of the setup menus. It is not displayed if you have set the shutter speed to normal (OFF).

When FILM CAM is selected as the OPERATION TYPE option setting (Page 100)

With the 1080i/60i, 720/60P and 480/60i formats	
Standard (OFF) 1/60	SYNCRO SCAN ↔ 1/100 ↔ 1/120 ↔ 1/250 ↔ 1/500 ↔ 1/1000 ↔ 1/2000
All other formats (30P, 24P, 24PA)	
Standard (OFF) 1/50	SYNCRO SCAN ↔ 1/30(1/24) ↔ 1/60 ↔ 1/120 ↔ 1/250 ↔ 1/500 ↔ 1/1000

When VIDEO CAM is selected as the OPERATION TYPE option setting (Page 100) (slow shutter speeds are underlined)

With the 1080i/60i, 720/60P and 480/60i formats	
Standard (OFF) 1/60	SYNCRO SCAN ↔ 1/15 ↔ <u>1/30</u> ↔ 1/100 ↔ 1/120 ↔ 1/250 ↔ 1/500 ↔ 1/1000 ↔ 1/2000
With the 30P formats	
Standard (OFF) 1/50	SYNCRO SCAN ↔ <u>1/15</u> ↔ 1/30 ↔ 1/60 ↔ 1/120 ↔ 1/250 ↔ 1/500 ↔ 1/1000
With the 24P, 24PA and 24PN formats	
Standard (OFF) 1/50	SYNCRO SCAN ↔ 1/24 ↔ 1/60 ↔ 1/120 ↔ 1/250 ↔ 1/500 ↔ 1/1000

With artificial lighting and especially fluorescent lights and mercury-vapor lamps, the luminance changes in synchronization with the power line frequency. When this frequency is 50 Hz, mutual interference will occur between the camera-recorder's vertical sync frequency (approx. 60 Hz) and the lighting frequency (50 Hz). This means that the white balance may change periodically. Before shooting in areas with artificial lighting or adjusting the white balance, set the shutter speed as follows.

Progressive mode	Shutter speed	
	50 Hz	60 Hz
OFF (60i)	1/100	OFF (1/60)
30P	OFF (1/50)	1/60
24P/24PA/24PN	OFF (1/50)	1/60

- The gain is fixed at 0 dB with a shutter speed of 1/15.

Synchro scan

Set the shutter speed of the synchro scan (used when shooting a television or computer monitor) in the setup menus, SCENE FILE screen, SYNCRO SCAN. (Page 100)

- Adjust the shutter speed to match the frequency of the television or computer monitor to minimize the horizontal noise that appears when shooting such subjects.
- By switching to progressive mode you can also shoot PAL system television screens.
- When the OPERATION TYPE option in the SCENE FILE screen (page 100) is set to FILM CAM, the shutter opening angle can be adjusted from 10° to 350° in 0.5° steps.

Example: When the recording frame rate is set to 24 fps and the exposure time is halved, $1/24 \div 2 = 1/48 = 180^\circ$ ($1/24 = 360^\circ$)

In the default setting (180°), this becomes 1/2 of the exposure time. If it were 90°, it would be 1/4, and if it were 45°, it would be 1/8 of the exposure time.

(Shutter opening angle: This is equivalent to the shutter speed of a film camera, and a wider angle results in a longer exposure to light.)

- If the shutter speed is displayed in blue characters followed by (1/60), you cannot change the shutter speed in the blue characters while the current recording format is used. The speed is fixed at (1/60).

You can change the progressive mode in the setup menu with REC FORMAT in the RECORDING SETUP screen. (Page 106)

Switching Audio Input

During shooting, you can record up to four channels of sound. You can also switch the input sound to be recorded on each of the channels to the built-in microphones, external microphones or audio equipment connected to camera. (See table below)

CH1*	CH2**	CH3	CH4
INT(L): Built-in microphone L	INT(R): Built-in microphone R	INPUT1	INPUT2
INT(L): Built-in microphone L	INPUT2	INPUT1	INT(R): Built-in microphone R
INPUT1	INT(R): Built-in microphone R	INT(L): Built-in microphone L	INPUT2
INPUT1	INPUT2	INT(L): Built-in microphone L	INT(R): Built-in microphone R
INPUT2	INPUT2	INT(L): Built-in microphone L	INT(R): Built-in microphone R
INPUT2	INT(R): Built-in microphone R	INT(L): Built-in microphone L	INPUT1

* The input sound to be recorded onto CH1 can be switched using the CH1 SELECT switch.

** The input sound to be recorded onto CH2 can be switched using the CH2 SELECT switch.

- The CH3 and CH4 input sound is determined automatically by what was selected using the CH1 SELECT switch and CH2 SELECT switch.

However, the following restrictions apply depending on the media and format used. (Page 129, Recording format)

When tapes are used:

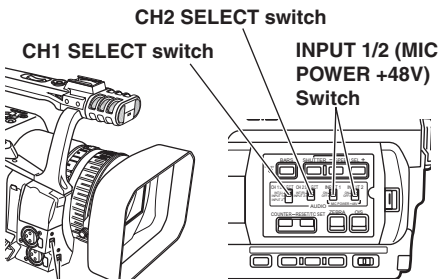
During shooting, it is possible to record sound onto CH1 and CH2 only.

When P2 cards and the DVCPRO HD or DVCPRO50 format are used:

The recording mode is fixed at 4-channel recording.

When P2 cards and the DVCPRO25 or DV format are used:

Either 2 or 4 channels can be selected using REC CH SEL on the setting menu RECORDING SETUP screen.



INPUT 1/2 switches

Using the built-in microphone

1 Switch the CH1 SELECT switch to INT (L).

- Audio from the built-in microphone Lch is recorded to audio channel 1.

2 Switch the CH2 SELECT switch to INT (R).

- Audio from the built-in microphone Rch is recorded to audio channel 2.

Using another microphone and audio equipment

1 Connect an external microphone or audio equipment to the INPUT 1/2 (XLR 3-pin) terminal. (Page 76)

2 Use the INPUT 1/2 switch to switch the audio input.

LINE: (audio equipment is connected)

Input level is 0 dBu.

MIC: (another microphone is connected)

Input level is -50 dBu.

You can change the input level to -60 dBu in the setup menus, RECORDING SETUP screen MIC GAIN 1 and MIC GAIN 2 (page 106). Be aware that sensitivity will be higher if you choose -60 dBu so you will record more noise.

3 When using the phantom microphone, set the INPUT 1/2 (MIC POWER +48V) switch to ON.

ON: (When using the phantom microphone)
+48V power supply to INPUT 1/2 terminal.

OFF: (When a phantom microphone is not connected)

No power supply for INPUT 1/2 terminal.

- The battery will discharge faster if you use a phantom microphone.
- Set to OFF if you connect equipment not compatible with +48V. You can damage such equipment if you leave the setting at ON.

4 Use the CH1 SELECT switch to select the input signal to be recorded to audio channel 1.

INT (L):

Audio from the built-in microphone Lch is recorded to audio channel 1.

INPUT 1:

Audio from a device connected to INPUT 1 terminal is recorded to channel 1.

INPUT 2:

Audio from a device connected to INPUT 2 terminal is recorded to channel 1.

5 Use the CH2 SELECT switch to select the input signal to be recorded to audio channel 2.

INT (R):

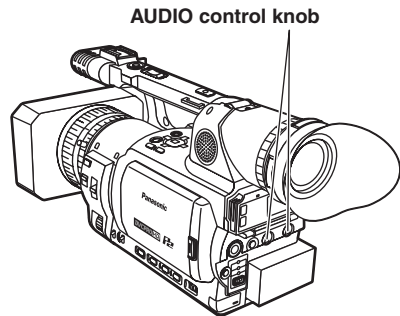
Audio from the built-in microphone Rch is recorded to audio channel 2.

INPUT 2:

Audio from a device connected to INPUT 2 terminal is recorded to channel 2.

-
-
- When inputting the microphone signal to channels 1 and 2, connect the microphone to INPUT 2 and switch both CH1 SELECT and CH2 SELECT to INPUT 2.
-
-

Adjusting the recording level

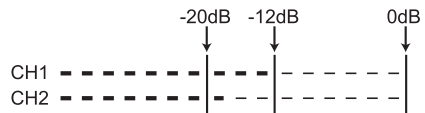


Use the AUDIO control knob to adjust the recording level of the built-in microphone or of audio signals input through the INPUT 1/2 (XLR 3-pin) terminal.

To adjust the volume of the sound for monitoring. (Page 46)

To adjust the recording level of the audio signals, turn the AUDIO control knob while referring to the audio level meter at the bottom left of the viewfinder and LCD monitor, regardless of the MIC ALC option setting (page 106) on the RECORDING SETUP screen of the setting menu.

- There may be a slight difference in the volume level between the P2 mode and TAPE mode.



The audio signals input into AUDIO IN/OUT CH1/CH2 (pin jack) terminals can not be adjusted.

Check the recording volume level prior to shooting.

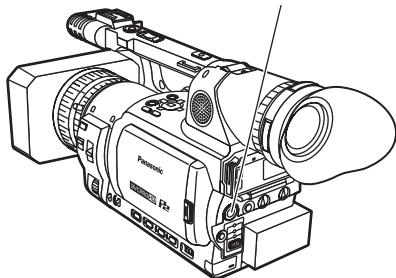
- For P2 mode recording, the recording level is set higher than for Panasonic's broadcast-use camera recorders (AJ series).
-
-

Using scene files

The settings according to the variety of shooting circumstances are stored in each position of scene file dial.

When shooting, you can retrieve the necessary file instantly using scene file dial.

Scene file dial



- During recording, the OPERATION TYPE and FRAME RATE (page 100) settings remain unchanged even when the scene file is changed. To change these settings, set the camera-recorder to recording standby state.

When the camera-recorder is shipped from the factory, the following files are stored.

F1: SCENE

File suitable for normal shooting.

F2: SCENE FLUO.

File suitable for shooting under fluorescent lights, ie. indoors.

F3: SCENE SPARK

File suitable for making subjects sharper, such as at weddings.

F4: SCENE B-STR

File for broadening the contrast of dark parts, such as when shooting sunsets.

F5: SCENE CINE V

File suitable for shooting movie-like scenes where the contrast is to be emphasized. (The recording format remains unchanged even when the scene file is changed. It must be set using the REC FORMAT option on the RECORDING SETUP screen. (Page 106))



F6: SCENE CINE D

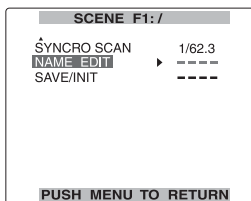
File suitable for shooting movie-like scenes where the dynamic range is to be emphasized. (The recording format remains unchanged even when the scene file is changed. It must be set using the REC FORMAT option on the RECORDING SETUP screen. (Page 106))

Changing scene file settings

The setting value of the scene file can be changed. Also you can save the changed scene file to each position of the scene file dial.

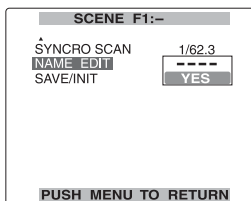
Example: Change the name of the scene file.

- 1 Set the POWER switch to ON.
- 2 Turn the scene file dial, then select the scene file to be changed.
- 3 In the setup menus, select the SCENE FILE screen.
 - For menu operation (Page 96)
 - You can also use the menu buttons on the remote control. (Page 15)
- 4 Press  and  button to select NAME EDIT.



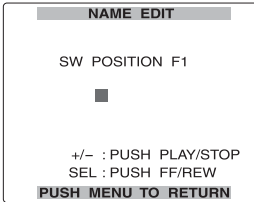
- 5 Press  (or ) button, and use  button to select YES.

Press  button.



6 The screen below is displayed, so set the file name of six letters using **[Δ]**, **[▽]**, **[◀]** or **[▶]** button. Set the same as user information. (Page 60)

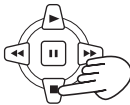
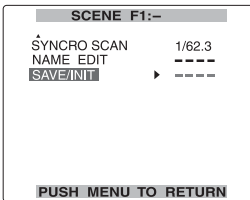
- Characters that can be set
Space, A to Z, 0 to 9, ; : < = > ? @ [\] ^ _ - /
If the COUNTER RESET button is pressed when the filename has been set, the characters are cleared.



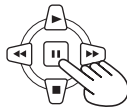
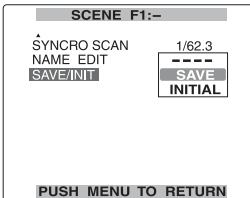
7 After you finish setting the filename, press the **MENU** button.

- The name change will not be completed unless you have finished step 10.

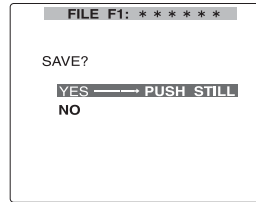
8 Press **[▽]** button to select **SAVE/INIT**.



9 Press **[■]** button, and use **[▽]** button to select **YES**. Press **[■]** button.



10 The following screen appears, select **YES**, then press **[■]** button. (To return to the menu level above, press the **MENU** button.)



The message below appears, and the changes to the scene file are complete.





11 Press **MENU** twice to exit the menus.

- The original scene file settings will be restored when the power is turned off if **SAVE** has not been selected.
- To return the scene file settings to the factory settings, select **INITIAL** in step 9, then do steps 10 to 11.

You can save up to four scene file settings or other settings as files on an SD memory card, and you can also load them from the card.

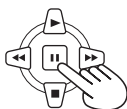
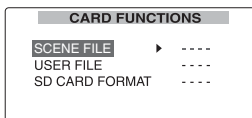
- In the case of the scene files, the current settings are automatically saved in the unit, and the saved data is written on an SD memory card. When data has been read from an SD memory card, the current settings are rewritten at the same time as the data saved inside the unit.
- The data in all the scene files, F1 to F6, is rewritten.
- Insert the SD memory card into the unit. Set the MEDIA switch to the P2 position. (Pages 25 and 32)



If you have saved a scene file

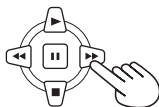
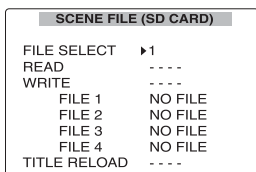
- 1 Set the unit's POWER switch to ON.**
- 2 Select SCENE FILE on the setting menu CARD FUNCTIONS screen, select YES, and press the  (or ) button.**



For all other settings, select USER FILE.

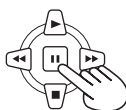
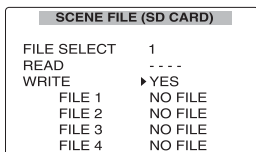
- For menu operations (Page 96)
- You can also use the menu buttons on the remote control. (Page 15)



- 3 Select the file number (1 to 4) using the  and  buttons.**

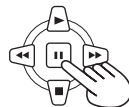
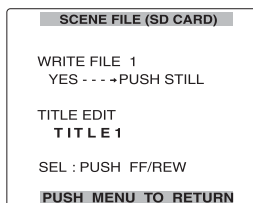


- 4 Select WRITE using the  and  buttons, and press the  button.**




- 5 Select YES using the  button, and press the  button.**

- In the following example, TITLE 1 is the filename. (To change the filename, see the description below.)
- When writing is completed, WRITE OK appears.









- 6 Press the MENU button four times to cancel the menu mode.**

To load a file

- 1) Perform steps 1 to 3, select READ in step 4, and press the  button. When reading is completed, READ OK appears.

To title a file

- 1) Perform steps 1 to 4.
- 2) Select the first character in the title using the  and  buttons, and press the  button. (The next character can now be selected.)
 - You can input any of the following characters: (space), letters A to Z, numerals 0 to 9, and symbols and punctuation marks : ; < = > ? @ [¥] ^ and _ . and /
 - You can erase all characters using the RESET button on the camera or the remote control.
- 3) After entering all the characters, press the  button at the left end (or the  button at the right end) of the characters, and then press the  button.

- If WRITE NG FORMAT ERROR appears, format the SD memory card. (Page 32)
- If WRITE NG WRITE PROTECT appears, release the protected status of the SD memory card.
- If WRITE NG CANNOT ACCESS appears, quit all other operations (such as playback) before proceeding.
- If WRITE NG ERROR appears, the SD memory card may be defective. Replace it.

You can add the video and audio systems, name of the videographer, shooting location, text memos and other information to the video data you have recorded on the P2 card. This data is called the clip metadata. (Display method: Page 70)

There are two kinds of clip metadata: the data that is recorded automatically during shooting, and the data in the metadata upload file created on the SD memory card which is loaded in the unit. (Loading method: Page 72)

Creating the metadata upload file on the SD memory card

You will need the latest updated version of P2 Viewer. Download it from the URL address given below, and install it in the computer.

<https://eww.pavc.panasonic.co.jp/pro-av/>

What the clip metadata consists of

You can set the items underlined below by loading the metadata upload file on the SD memory card. All other items are set automatically during shooting.

GLOBAL CLIP ID:

This indicates the global clip ID that shows the shooting status of the clip.

USER CLIP NAME :

This indicates the name of the clip that the user has set.*1

VIDEO:

This indicates the recorded image's FRAME RATE, PULL DOWN system and ASPECT RATIO.

AUDIO:

This indicates the recorded sound's SAMPLING RATE (sampling frequency) and BITS PER SAMPLE (number of quantizing bits).

ACCESS:

This indicates the CREATOR (name of the person recording), CREATION DATE (recording date), LAST UPDATE PERSON (the person who last updated the data) and LAST UPDATE DATE (date on which the data was last updated).

DEVICE:

This indicates the MANUFACTURER (manufacturer of the equipment), SERIAL NO. (serial number of the equipment) and MODEL NAME (equipment model name).

SHOOT:

This indicates the SHOOTER (name of the videographer), START DATE (date and time at which shooting started), END DATE (date and time at which shooting ended) and LOCATION-ALTITUDE/LONGITUDE/LATITUDE/SOURCE/PLACE NAME (shooting location, altitude, longitude, latitude, information source, name of location).

SCENARIO:*2

This indicates the PROGRAM NAME, SCENE NO. and TAKE NO.

NEWS:

This indicates the REPORTER (name of the reporter), PURPOSE (purpose of data collection) and OBJECT (target of data collection).

MEMO :*3

This indicates the No. (memo No.), OFFSET (frame position from the beginning of the clip), PERSON (name of the person who recorded the text memo), and TEXT (contents of memo).

- *1 If there is no information in the metadata upload file, the global clip ID serves as the USER CLIP NAME.
- *2 When SCENARIO is to be input, you must input the PROGRAM NAME. You cannot input the SCENE NO. and TAKE NO. only.
- *3 When MEMO is to be input, you must input TEXT. You cannot input PERSON only.

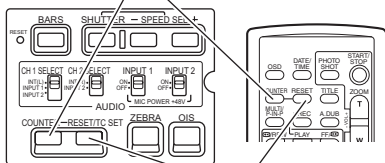
-
- It may not be possible to load files which have been edited using a viewer other than the P2 Viewer. (In this case, UNKNOWN DATA will be displayed.)
 - Only printable ASCII characters can be displayed by this unit.
-

Using the Counter

Counter display (P2 card / Tape)

You can display a counter that indicates how much time has elapsed during shooting or playback.

COUNTER button
Camera or Remote control



COUNTER RESET/TC SET button

1 Press the COUNTER button.

Each time you press the button, the display changes as follows. (Page 90)

0 : 00.00

Counter value

In the P2 mode, the counter is not displayed during playback.

M 0 : 00.00 (Tape only)

Counter value in memory stop mode

TC XX : XX : XX : XX

Time code value

UB XX XX XX XX

User information

FR --- -

Frame rate (30P/24P/24PA) and frame sequence in progressive mode shooting.

No display:

Data is not displayed.

Resetting the counter

Press the COUNTER RESET button while the counter is displayed.

Memory stop mode (Tape)

After shooting or playback, the tape can first be returned to near the pre-programmed position, and then stopped automatically.

1 Press the COUNTER button to display the counter in memory stop mode.

2 At the desired position on the tape, press the COUNTER RESET button to reset the counter.

3 Proceed with playback or shooting.

4 Press the mode button to switch to the VCR mode. (Page 63)

5 When rewind or fast-forward the tape, it stops automatically near where you reset the counter.

During dubbing, reset the counter value at the OUT point to stop dubbing with memory stop mode. (Page 81)

1394TC preset mode

When shooting using a multi-camera, you can synchronously set the initial values of TC.

The camera used for synchronization is the MASTER and the camera being synchronized is the SLAVE.

1 Connect a second camera with a 1394 cable and turn both cameras on.

- For connection (Page 78)

2 Put the MASTER camera in CAMERA mode and output a video signal from the 1394 terminal.

- Set both cameras to the same recording format.

Do the remaining steps on the SLAVE camera.

3 Set the SLAVE camera to MCR/VCR mode and in the setup menus, RECORDING SETUP screen, set FIRST REC TC to PRESET mode so the counter shows the TCG.

- You cannot do this if you have selected REGEN.

4 In the setup menus, RECORDING SETUP screen, set 1394 IN PRESET to ON. (Page 108)

- 1394TC appears on the screen.

5 Stop or eject the cassette tape.

6 Press the COUNTER RESET/TC SET button. The TCG value is preset with the TC value from the input 1394 signal.

7 Reset the SLAVE camera to CAMERA mode.

Charging the built-in battery/Setting the time data

Recharging the built-in battery

The camera's internal battery saves the date and time. "🔋" appears on the screen of the viewfinder or LCD when the internal battery is running low on charge.

Do the following to recharge it.

Reset the date and time when fully recharged.

1 Connect the AC adapter. (Page 17)

- Leave the POWER switch at OFF.

2 Leave the camera-recorder like this for about 4 hours.

- The internal battery charges during this time.
- Recharge the battery regularly to ensure correct TC and menu operations.

Setting the time code

In the setup menus, RECORDING SETUP screen, set the following time code related items. (Page 107)

- TC MODE
 - TCG
 - FIRST REC TC (Tape only)
 - TC PRESET
 - 1394 TC REGEN (appears when in MCR/VCR mode)
- In MCR/VCR mode and 1394 TC REGEN is ON, you cannot change the items shown above.

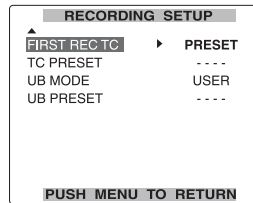
Specifying the time code (TC PRESET)

Set TC PRESET so you can record a value of your choice as the initial setting for the time code to be used at the start of recording.

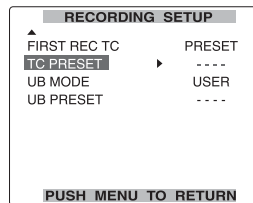
1 Set the POWER switch to ON.

2 (Tape only) In the setup menus, RECORDING SETUP screen FIRST REC TC, select PRESET.

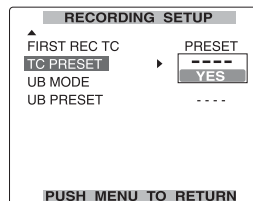
- For menu operation (Page 96)
- You can also use the menu buttons on the remote control. (Page 15)



3 Press the Δ and ∇ buttons to select TC PRESET, and press the \square button.



4 Press the ∇ button to select YES, and press the \square button.

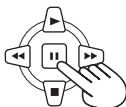
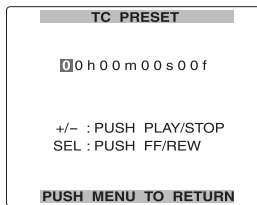


(Continued on the next page)

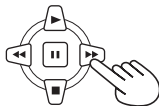
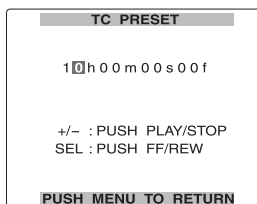
Setting the time data (continued)

5 When the screen below appears, set the time code value.

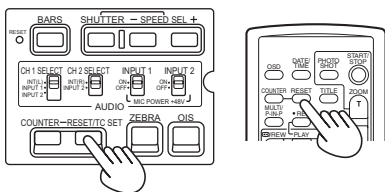
Press the and buttons to select the time code value.



Press the button to move to the next digit, and press the and buttons again to select the value.



You can reset the time code to zero by pressing COUNTER RESET.

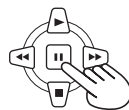
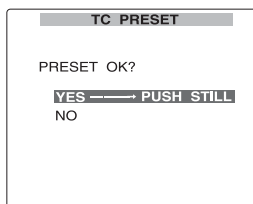


Camera or Remote control

6 Press the MENU button when you have finished setting the time code.



7 Press the button to select YES, and press the button.



8 Press MENU twice to exit the menus.

Setting user information

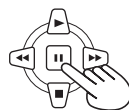
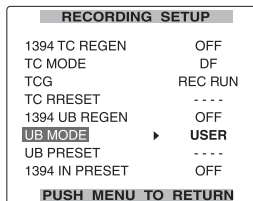
Setting user information allows you to store 8-digit information (such as the date and time) in the hexadecimal format on the tape's sub code track. User information is automatically saved in the memory and retained after you turn off the power.

1 Set the POWER switch to ON.

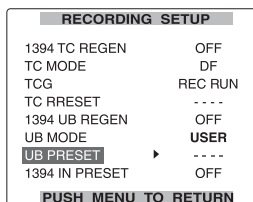
2 In the setup menus, RECORDING SETUP screen UB MODE, select USER.

- For menu operation (Page 96)
- You can also use the menu buttons on the remote control. (Page 15)

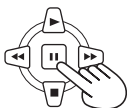
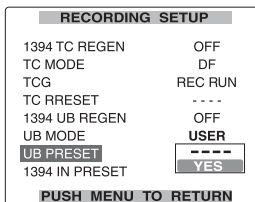
Example: In the MCR mode



3 Press the and buttons to select UB PRESET, and press the button.



4 Press the button to select YES, and press the button.



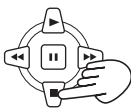
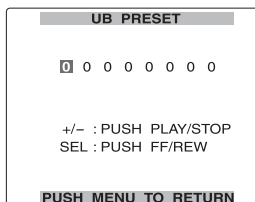
6 Press the MENU button when you have finished setting the user information.



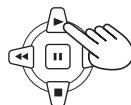
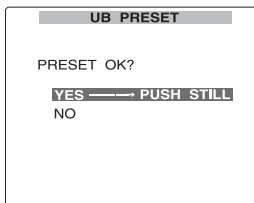
5 Set the user information.

Press the and buttons to select the user information characters.

- You can use numbers from 0 to 9 and letters from A to F.

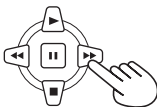
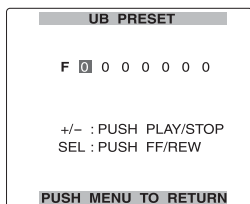


7 Press the button to select YES, and press the button.

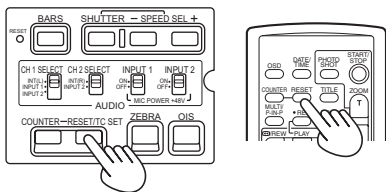


8 Press MENU twice to exit the menus.

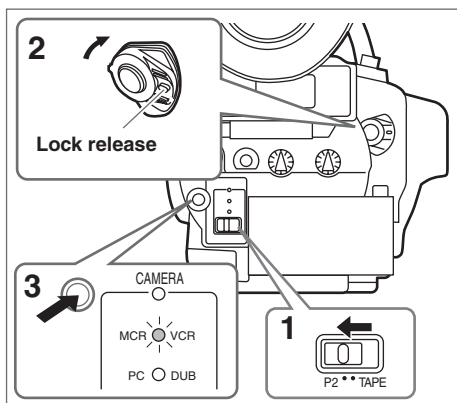
Press the button to move to the next digit, and press the and buttons again to select the characters.



You can reset the user information to nothing by pressing COUNTER RESET.



Camera or Remote control



1 Before turning the POWER switch to ON
Set the MEDIA switch to the P2 position.

2 Turn the POWER switch to ON.
While pressing the lock release, turn the POWER switch to ON.

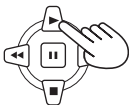

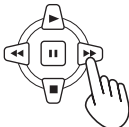


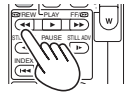
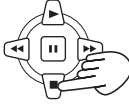


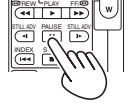
3 Press the mode button so the MCR lamp turns on.

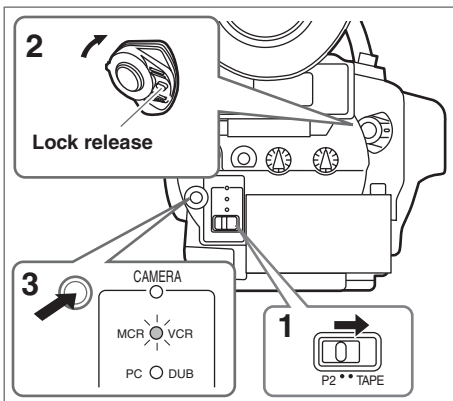
The camera is now in the MCR mode.

- Each time you press the button, the mode changes as below.
MCR ↔ CAMERA

When you press the mode button while MCR is selected, the unit enters the PC (PC connection) mode. (Page 82)

For details on playing back clips using thumbnails, see page 64.

Operations using the OPERATION button	Remote Control
 <p>Play (▶) When this button is pressed in stop mode, playback will start from the first clip selected. During playback, the unit enters the variable speed search mode and starts 1x playback. (Page 73)</p>	
 <p>Fast-forward (▶▶) When this button is pressed during playback, the clips are advanced from a point in the clip already selected (at four times normal speed). When the thumbnail screen is cancelled, you can also perform this operation while the camera is stopped. When this button is held down, the playback speed becomes faster (32x speed). When pressed during a pause, playback advances one clip.</p>	
 <p>Rewind (◀◀) When this button is pressed during playback, the clips are rewound from a point in the clip already selected (at four times normal speed). When the thumbnail screen is cancelled, you can also perform this operation while the camera is stopped. When this button is held down, the playback speed becomes faster (32x speed). When pressed during a pause, playback goes back one clip.</p>	
 <p>Stop (■)</p>	
 <p>Pause () Press again to return to playback.</p>	



1 Before turning the POWER switch to ON
Set the MEDIA switch to the TAPE position.

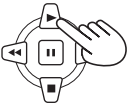

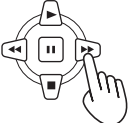


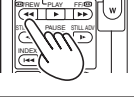

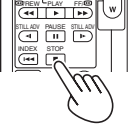

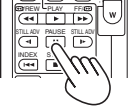
2 Turn the POWER switch to ON.
While pressing the lock release, turn the POWER switch to ON.

3 Press the mode button so the VCR lamp lights.

The camera is now in the VCR mode.

- Each time you press the button, the mode changes as below.
VCR ↔ CAMERA

When you press the mode button while VCR is selected, the unit enters the DUB (dubbing) mode. (Page 86)

Operations using the OPERATION button	Remote Control
 <p>Playback (▶) While the tape is <u>in the stop mode</u>, the playback starts from where you stopped. <u>During playback</u>, the unit enters the variable speed search mode and starts x1-speed playback. (Page 73) No sound is heard during the playback.</p>	
 <p>Fast-forward (▶▶) <u>During playback</u>, the fast-forward playback starts (at ten times normal speed). While the tape is <u>in the stop mode</u>, the unit starts fast-forwarding of tape.</p>	
 <p>Rewind (◀◀) <u>During playback</u>, the rewind playback starts (at ten times normal speed). While the tape is <u>in the stop mode</u>, the unit starts rewinding of tape.</p>	
 <p>Stop (■)</p>	
 <p>Pause () Press again to return to playback.</p>	

Playback

Tape protection mode

To protect the tape, this unit automatically switches to stop mode when five minutes elapse in the playback pause state or recording pause state. However, the time until stopping is shorter when in a playback pause state at low temperatures.

Video data created on the P2 card in one shooting session is called a clip. When the MCR mode has been established by the MEDIA switch set to the P2 status, the clips will be displayed on the LCD screen as thumbnails. (When there is a large number of clips, it will take some time for them to be displayed on the screen.)

You can perform the following operations using the thumbnail screen.

- Play, repair and delete clips as well as add and delete shot marks.
- Format P2 cards and SD memory cards.
- Load the metadata (shooting information, etc.) from SD memory cards to the unit.

Basic thumbnail screen operations

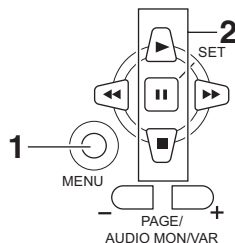
To use the thumbnail menu:

1 On the thumbnail screen, press the MENU button to display the menu.

2 Select the item using the Δ and ∇ buttons, and press the \square (or \triangleright) button.

If another menu appears, repeat this step.

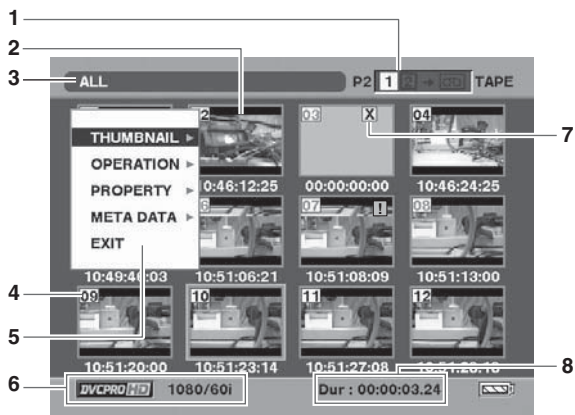
- To return to the previous screen, select EXIT and press \square or press the \triangleleft button.
- To release the menu mode, press MENU.



To select thumbnails: Select the thumbnails (the yellow frame moves) using the \triangleleft and \triangleright buttons, and press the \square button (the color of the frame changes to blue-green). To scroll the pages, press the PAGE (- or +) button.

To play back clips: Select the thumbnail, and press the \triangleright button. (For details on playback, see page 62.)

- Only clips whose format is the same as recording format 6 shown in the figure below can be played back.



THUMBNAIL	OPERATION	PROPERTY	META DATA
— ALL CLIP	— DELETE	— CLIP PROPERTY	— LOAD
— SAME FORMAT CLIPS	— FORMAT	— CARD STATUS	— RECORD
— SELECTED CLIPS	— REPAIR CLIP	— DEVICES	— INITIALIZE
— MARKED CLIPS	— EXIT	— PROPERTY SETUP	— PROPERTY
— TEXT MEMO CLIPS		— SYSTEM INFO	— EXIT
— SLOT CLIPS		— EXIT	
— SETUP			
— EXIT			

- Thumbnail screens are not output from the COMPONENT OUT terminal.

1 Slot number/dubbing mode display

The number of the slot with the P2 card containing the selected clip is indicated here.

(The number appears in yellow.) If a clip extends over the P2 cards in two slots, both numbers will appear in yellow.

In the dubbing mode, the arrow and tape mark light up.

2 Thumbnails

This is where the initial images of the clips are displayed.

3 Thumbnail display status (Page 67)

The types of clips displayed as thumbnails appear in this area.

4 Clip numbers


The clips are displayed in the order in which they were shot. (up to 2000)

Clips in the wrong recording format or clips which cannot be played back for other reasons are shown in red.

To play clips indicated by the red numbers, set the format for the REC FORMAT option on the RECORDING SETUP setting menu to the format 6 below. (Page 106)

5 Menu display

This is where the menu items are displayed.

When EXIT is selected and the  button is pressed, the menu display is cleared, and the original screen is restored.

6 Recording mode/format display

This is where the recording mode and format of the recorded images are displayed.

7 Indicators** : Shot mark**

This indicates that a clip has a shot mark.

 : Wide

This indicates that a clip has been recorded in the 16:9 aspect ratio (wide screen). (480i recording)

 : Incomplete clip


This indicator appears when the recording of a clip extends over two P2 cards and one of the cards is not found in the slot.

 : Defective clip

This indicator appears for a clip whose recording was defective because the power was cut off during the recording process, for instance.

Clips indicated by the yellow defective clip indicator can be repaired.

Clips indicated by the red defective clip

indicator cannot be repaired so delete them. If a clip cannot be deleted, first back up its data, and then format the P2 card. Clips in the wrong format are indicated by  instead.

 : Voice memo

This indicates that a clip has a voice memo. (You cannot perform recording/playback with this camera.)

 : Text memo

This indicates that a clip has a text memo.

 : Edit copy

This indicates that this is an edit copy clip. (You cannot perform editing with this camera.)

 : Proxy

This indicates that a proxy has been added and recorded.

(You cannot perform recording with this camera.)

8 Duration display

This displays the duration of the selected clip.

Adding shot marks to clips

Adding shot marks (M) will make it easier to find the clips you are looking for.

- 1 Press the ◀ and ▶ buttons to move the yellow frame to the clip to which you will add a shot mark.**
- 2 Press the USER button to which the shot mark function has been allocated. (Page 104)**

To release a shot mark, repeat the above steps.

Clearing the thumbnail screen

Before performing setting menu operations (Page 96), you must clear the thumbnail screen.

Release this in the same way when the camera-recorder is to be controlled from a nonlinear editor.

- 1 Press the AUDIO DUB/THUMBNAIL button.**

AUDIO DUB
/THUMBNAIL



The normal playback standby screen (1394 input mode) appears.

Direct shooting functions

If you press the START/STOP button (red) in MCR mode, the camera mode will be automatically activated, and shooting will start.

Selecting the thumbnail display method (THUMBNAIL)

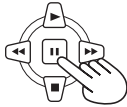
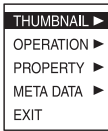
You can display the kind of clips you want to see as thumbnails.

You can also set more precisely how you want the thumbnails to appear on the screen.

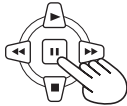
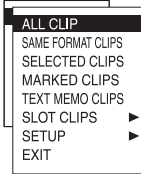
1 On the thumbnail screen, press the MENU button.

A menu now appears. (Page 64)

2 Select THUMBNAIL using the Δ and ∇ buttons, and press the \square (or \triangleright) button.



3 Select the desired item using the Δ and ∇ buttons, and press the \square button.



ALL CLIP:

All the clips are displayed.

SAME FORMAT CLIPS:

The clips in the same recording format are displayed.

SELECTED CLIPS:

The clips you have selected are displayed.

MARKED CLIPS:

The clips with shot marks are displayed.

TEXT MEMO CLIPS:

The clips with text memos are displayed. The thumbnails at text memo positions, time codes (TC), total number of memos and the current order of the clips are displayed.

To delete a text memo:

- 1) Press the \square button to display the editing screen, and select the thumbnail.
- 2) Press the MENU button to display the menu, and select OPERATION-DELETE.

SLOT CLIPS:

The clips on the P2 card in the specified slot are displayed.

SETUP:

Various setup operations are performed.

EXIT:

Select this to return to the last screen.

Proceed to step 4 only when you have selected SETUP.

(Continued on the next page)