

## Connecting your camcorder to your computer using the USB cable – For Windows users

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- ⑥ Turn the POWER switch to OFF (CHG) on your camcorder, and then disconnect the USB cable.
- ⑦ Restart your computer.

### Step 2: Install the USB driver on the supplied CD-ROM

Perform the entire procedure described in “Installing the USB driver” on page 188.

### Viewing images recorded on a “Memory Stick”

#### Step1: Uninstall the incorrect USB driver

- ① Turn on your computer and allow Windows to load.
- ② Insert a “Memory Stick” into your camcorder.
- ③ Connect the AC power adaptor, and set the POWER switch to MEMORY/ NETWORK (DCR-TRV950 only).
- ④ Connect the USB connector on your computer to the  $\Psi$  (USB) jack on your camcorder using the USB cable supplied with your camcorder.
- ⑤ Open your computer’s “Device Manager.”

#### Windows 2000 Professional:

Select “My Computer” → “Control Panel” → “System” → “Hardware,” and click the “Device Manager” button.

#### Other OS:

Select “My Computer” → “Control Panel” → “System,” and click “Device Manager.”

- ⑥ Select “Other devices.”  
Select the device prefixed with the “?” mark and delete.  
Ex: (?)Sony Handycam
- ⑦ Turn the POWER switch to OFF (CHG) on your camcorder, and then disconnect the USB cable.
- ⑧ Restart your computer.

### Step2: Install the USB driver on the supplied CD-ROM

Perform the entire procedure described in “Installing the USB driver” on page 188.

# Viewing images recorded on a tape on your computer



## - For Windows users

### Capturing images with "PIXELA ImageMixer Ver.1.0 for Sony"

You need to install the USB driver and "PIXELA ImageMixer" to view taped images on your computer (p. 188).

To install and use the software in Windows 2000 Professional, you must be authorized as Power Users or Administrators. For Windows XP Home Edition/Professional, you must be authorized as Administrators.

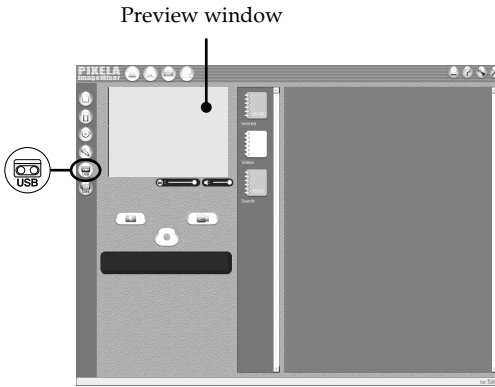
#### Viewing images recorded on a tape


- (1) Turn on your computer and allow Windows to load.
- (2) Connect the AC power adaptor, and insert a tape into your camcorder.
- (3) Set the POWER switch to VCR.  
Select USB STREAM in  to ON in the menu settings (p. 215).
- (4) Select "Start" → "Programs" → "PIXELA" → "ImageMixer" → "PIXELA ImageMixer Ver.1.0 for Sony."  
The "PIXELA ImageMixer Ver.1.0 for Sony" startup screen appears on your computer. The title screen appears.
- (5) Click  on the screen.

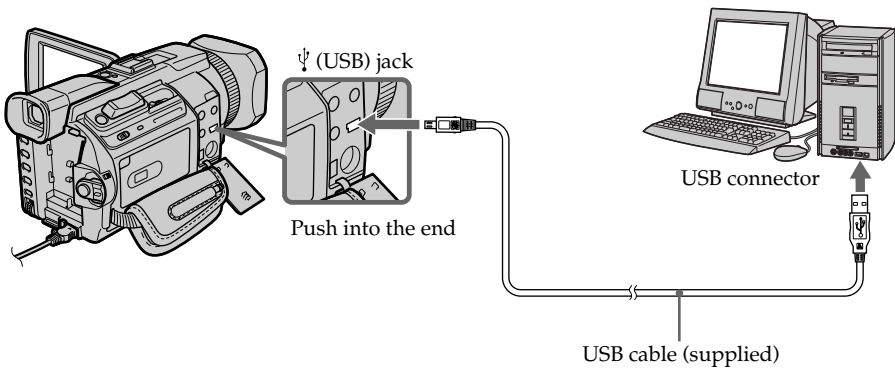



## Viewing images recorded on a tape on your computer - For Windows users

- (6) Select .



- (7) Connect the  (USB) jack on your camcorder to the USB connector on your computer using the supplied USB cable.



- (8) Press  to start playback.  
The picture from the tape appears on your computer.

## Viewing images recorded on a tape on your computer - For Windows users

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Viewing pictures live from your camcorder

(1) Follow the steps 1, 2 on page 194.

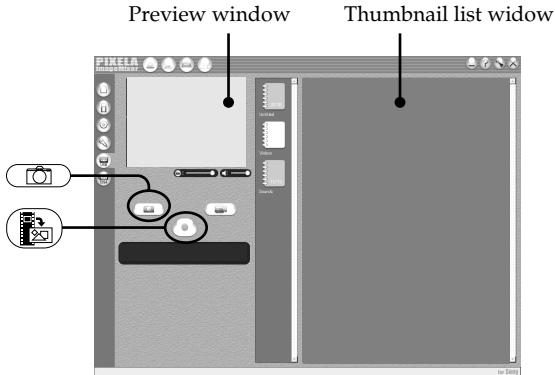
(2) Set the POWER switch to CAMERA.


Select USB STREAM in  to ON in the menu settings (p. 215).


(3) Follow the steps 4 to 7 on page 194, 195.

The picture from your camcorder appears on the preview window on your computer.

### Capturing still images



(1) Select  .

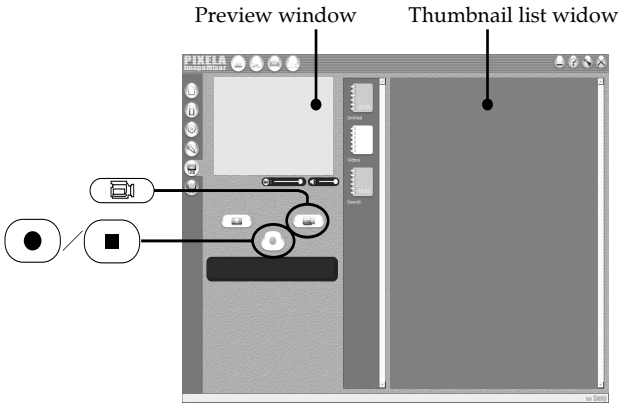
(2) Looking at the preview window, move the cursor to  and press it at the point you want to capture.






The still image on the screen is captured.

Captured images are displayed in the thumbnail list window.

# Viewing images recorded on a tape on your computer – For Windows users

## Capturing moving pictures



- (1) Select .
- (2) Look at the preview window and click on  at the first scene of the movie you want to capture.  changes to .
- (3) Look at the preview window and click on  at the last scene you want to capture. The captured images appear in the thumbnail list window.

### Notes

- The followings may occur while using your camcorder, and are not due to any malfunction.
  - The image shakes up and down.
  - Some images are not displayed correctly due to noise, etc.
  - Images of different color systems to that of the camcorder are not displayed correctly.
- When your camcorder is in the standby mode with a cassette inserted, it turns off automatically after five minutes.
- We recommend setting DEMO MODE to OFF in the menu settings when your camcorder is in the standby mode, and no cassette is inserted.
- Indicators in the camcorder LCD screen do not appear on images that are captured into your computer.

## Viewing images recorded on a tape on your computer – For Windows users

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### If image data cannot be transferred by the USB connection

The USB driver has been registered incorrectly as your computer was connected to your camcorder before installation of the USB driver was completed. Reinstall the USB driver following the procedure on page 191.

### If any trouble occurs

Close all running applications, then restart your computer.

### Carry out the following operations after quitting the application:

- Disconnect the USB cable.
- Change the POWER switch to the other position or set the POWER switch to OFF (CHG) on your camcorder.

## Seeing the on-line help (operating instructions) of “PIXELA ImageMixer Ver.1.0 for Sony”


A “PIXELA ImageMixer Ver.1.0 for Sony” on-line help site is available where you can find the detailed operating method of “PIXELA ImageMixer Ver.1.0 for Sony.”

(1) Click  located in the upper-right corner of the screen.

The ImageMixer’s Manual screen appears.

(2) You can find the information you need from the list of contents.

### To close on-line help

Click  at the top right of the screen.

### If you have any questions about “PIXELA ImageMixer Ver.1.0 for Sony”

“PIXELA ImageMixer Ver.1.0 for Sony” is a software product produced by PIXELA corporation. For more information, refer to the instruction manual of the CD-ROM supplied with your camcorder.

## Notes on using your computer


### Communications with your computer


Communications between your camcorder and your computer may not recover after recovering from Suspend, Resume, or Sleep.

# Viewing images recorded on a “Memory Stick” on your computer – For Windows users

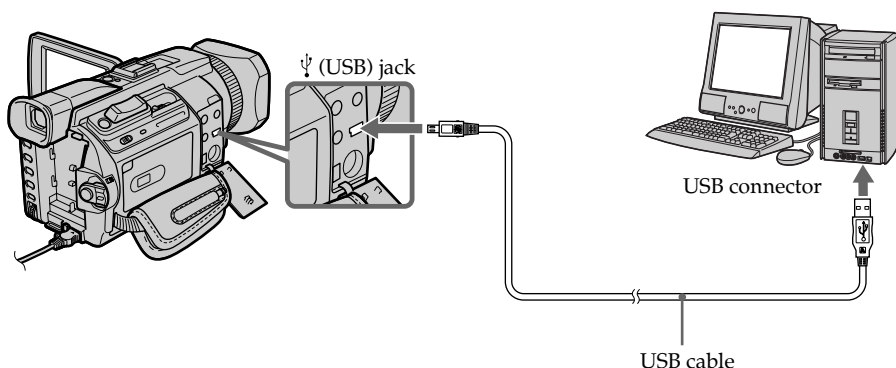
## Viewing images

### Before operation

- You need to install the USB driver to view “Memory Stick” images on your computer (p. 188).  
An application such as Windows Media Player must be installed to play back moving pictures in Windows environment.
- Set USBCONNECT in  to NORMAL in the menu settings. (The default setting is set to NORMAL.)

- (1) Turn on your computer and allow Windows to load.
- (2) Insert a “Memory Stick” into your camcorder, and connect the AC power adaptor to your camcorder.
- (3) Set the POWER switch to MEMORY/NETWORK (DCR-TRV950 only).
- (4) Connect the  (USB) jack on your camcorder to the USB connector on your computer using the supplied USB cable.

USB MODE appears on the LCD screen of your camcorder.



- (5) Open “My Computer” on Windows and double-click the newly recognized drive (Example: “Removable Disk (E:)”).  
The folders inside the “Memory Stick” are displayed.
- (6) Select and double-click the desired image file from the folder.  
For the detailed folder and file name, see “Image file storage destinations and image files” (p. 200).

Desired file type	Double-click in this order
Still image	“Dcim” folder → “100msdcf” folder → Image file
Moving picture*	“Mssony” folder → “Moml0001” folder → Image file*

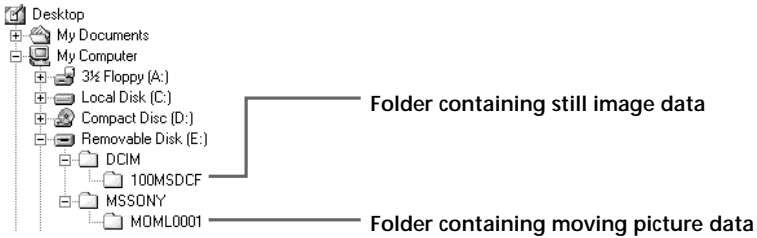
\* Copying a file to the hard disk of your computer before viewing it is recommended. If you play back the file directly from the “Memory Stick,” the image and sound may break off.

# Viewing images recorded on a “Memory Stick” on your computer – For Windows users

## Image file storage destinations and image files

Image files recorded with your camcorder are grouped in folders by recording mode. The meanings of the file names are as follows. □□□□ stands for any number within the range from 0001 to 9999.

### For Windows Me users (When your camcorder is recongnized as the drive [E:])



Folder	File	Meaning
100MSDCF	DSC0□□□□.JPG	Still image file
MDML0001	MOV0□□□□.MPG	Moving picture file

## Disconnect the USB cable and eject the “Memory Stick” or set the POWER switch to OFF (CHG)

– For Windows 2000 Professional/Me, Windows XP Home Edition/Professional users

To disconnect the USB cable, eject the “Memory Stick” or set the POWER switch to OFF (CHG) following the procedure below.

- (1) Move the cursor to the “Unplug or Eject Hardware” icon on the Task Tray and click to cancel the applicable drive.
- (2) After the “Safe to remove” message appears, disconnect the USB cable and eject the “Memory Stick” or set the POWER switch to OFF(CHG).



# Connecting your camcorder to your computer using the USB cable – For Macintosh users

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## When connecting to a computer using the USB jack

Before connecting your camcorder to your computer, **install the USB driver** on the computer. The USB driver is packaged together with application software for viewing images on the CD-ROM supplied with your camcorder.

## Recommended computer usage environment when connecting via USB cable and viewing “Memory Stick” images on your computer

Mac OS 8.5.1/8.6/9.0/9.1/9.2 or Mac OS X (v10.0/v10.1)

Standard installation is required.

However, note that the update to Mac OS 9.0/9.1 should be used for the following models.

- iMac with the Mac OS 8.6 standard installation and a slot loading type CD-ROM drive
- iBook or Power Mac G4 with the Mac OS 8.6 standard installation

The USB connector must be provided as standard.

QuickTime 3.0 or newer must be installed (to play back moving pictures).

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### Notes

- Operations are not guaranteed for the Macintosh environment if you connect two or more USB equipment to a single computer at the same time, or when using a hub.
- Some equipment may not operate depending on the type of USB equipment that is used simultaneously.
- Operations are not guaranteed for all the recommended computer environments mentioned above.
- Macintosh and Mac OS, QuickTime are trademarks of Apple Computer Inc.
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# Connecting your camcorder to your computer using the USB cable – For Macintosh users

## Installing the USB driver

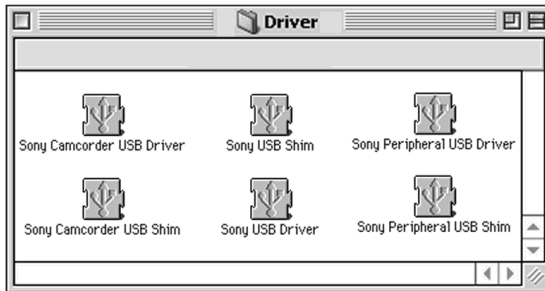
Do not connect the USB cable to your computer before installation of the USB driver is completed.

For Mac OS 8.5.1/8.6/9.0 users

- (1) Turn on your computer and allow the Mac OS to load.
- (2) Insert the supplied CD-ROM into the CD-ROM drive of your computer.  
The application software screen appears.



- (3) Click the “USB Driver” to open the folder containing the six files related to “Driver.”



- (4) Select the following two files, and drag and drop them into the System Folder.
  - Sony Camcorder USB Driver
  - Sony Camcorder USB Shim
- (5) When the message appears, click “OK.”  
The USB driver is installed on your computer.
- (6) Remove the CD-ROM from the computer.
- (7) Restart your computer.

For Mac OS 9.1/9.2/Mac OS X (v10.0/v10.1)

The USB driver need not be installed. Your Mac automatically recognizes the “Memory Stick” as a drive just by connecting your Mac using the USB cable.

# Viewing images recorded on a “Memory Stick” on your computer – For Macintosh users

## Viewing images

### Before operation

You need to install the USB driver to view “Memory Stick” images on your computer (p. 202).

QuickTime 3.0 or newer must be installed to play back moving pictures.

- (1) Turn on your computer and allow Mac OS to load.
- (2) Insert a “Memory Stick” into your camcorder, and connect the AC power adaptor to your camcorder.
- (3) Set the POWER switch to MEMORY/NETWORK (DCR-TRV950 only).
- (4) Connect the  $\Psi$  (USB) jack on the camcorder to the USB connector on your computer using the supplied USB cable.  
USB MODE appears on the LCD screen of your camcorder.
- (5) Double-click the “Memory Stick” icon on the desktop.  
The folders inside the “Memory Stick” are displayed.
- (6) Select and double-click the desired image file from the folder.

Desired file type	Double-click in this order
Still image	“Dcim” folder → “100msdcf” folder → Image file
Moving picture*	“Mssonny” folder → “Moml0001” folder → Image file*

\* Copying a file to the hard disk of your computer before viewing it is recommended. If you play back the file directly from the “Memory Stick,” the image and sound may break off.

## Disconnect the USB cable and eject the “Memory Stick” or set the POWER switch to OFF(CHG)

Follow the procedure below.

- (1) Close all running applications.  
Make sure that the access lamp of the hard disk is not lit.
- (2) Drag the “Memory Stick” icon into the “Trash.” Alternatively, select the “Memory Stick” icon by clicking on it, and then select “Eject disk” from the “Special” menu at the top left of the screen.
- (3) Disconnect the USB cable or eject the “Memory Stick” or set the POWER switch of your camcorder to OFF (CHG).


### For Mac OS X (v10.0) users


Shutting down your computer, then disconnect the USB cable and eject the “Memory Stick” or set the POWER switch to OFF (CHG).

# Capturing images from an analog video unit on your computer – Signal convert function

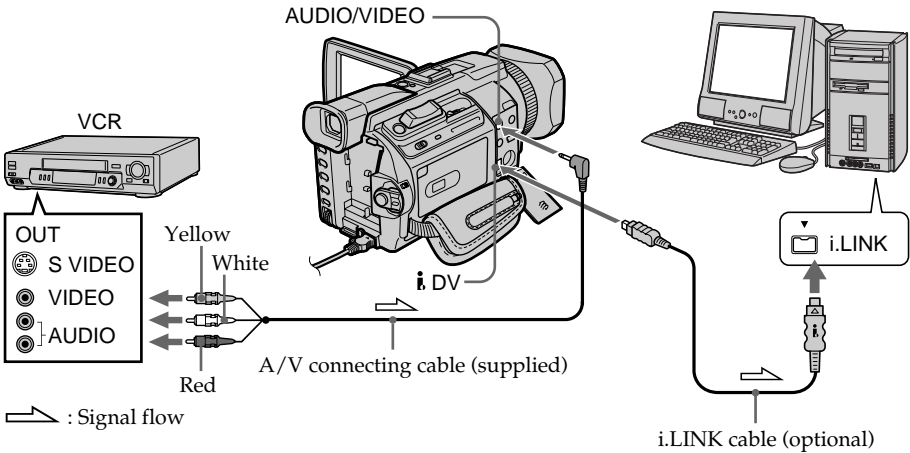
You can capture images and sound from an analog video unit connected to your computer which has the i.LINK jack connected to your camcorder.

## Before operation

Set DISPLAY in  to LCD in the menu settings. (The default setting is LCD.)

- (1) Set the POWER switch to VCR.
- (2) Press MENU, then select A/V → DV OUT in  to ON with the SEL/PUSH EXEC dial (p. 210).
- (3) Start playback on the analog video unit.
- (4) Start procedures for capturing images and sound on your computer. The operation procedures depend on your computer and the software you are using.

For details on how to capture images, refer to the instruction manual of your computer and software you are using.



## After capturing images and sound

Stop capturing procedures on your computer, and stop the playback on the analog video unit.

## Notes

- You need to install software that supports the video signal exchange.
- Depending on the state of the video signals, the computer may not be able to output the images correctly when you convert video signals into digital video signals via your camcorder.
- You cannot record or capture the video output via your camcorder when the video tapes include copyright protection signals such as the ID-2 system.
- You can capture images and sound with an S video cable (optional) instead of the A/V connecting cable (supplied).

## If your computer has a USB connector

You can connect using a USB cable, but images may not be transferred smoothly.

# Accessing the network

## – DCR-TRV950 only

You can access the Internet via a Bluetooth compliant device from your camcorder. Once the access is made, you can view a Web page, send/receive your e-mail, etc. This section described only how to open the Network Menu.

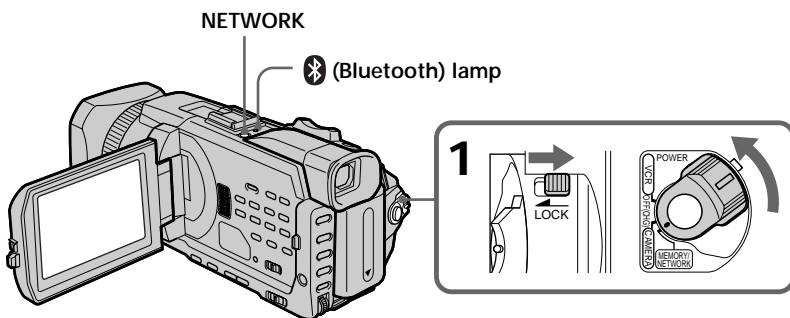
- (1) Set the POWER switch to MEMORY/NETWORK.

Make sure that the LOCK switch is set to the further side (unlock position).

- (2) Press NETWORK.

Ⓜ (Bluetooth) lamp lights up and Network Menu appears.

For the details, refer to the Network Function Operating Instructions supplied with your camcorder.

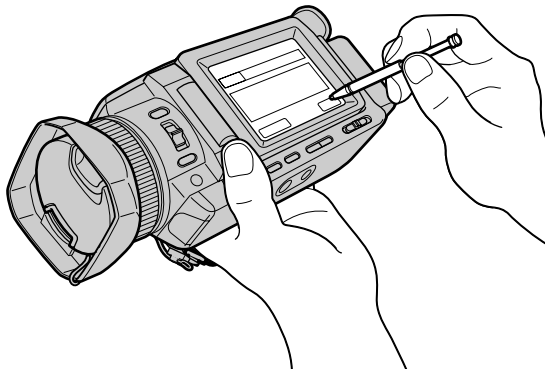


## Accessing the network

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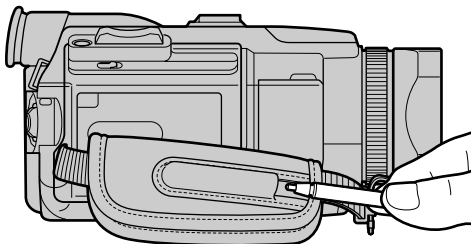
### How to hold your camcorder when operating in NETWORK mode

Hold your camcorder with your hand through the grip belt to keep from dropping it. The operation buttons needed in NETWORK mode are displayed on the LCD screen. Press the buttons with the supplied stylus.



### After using the stylus

Put it back in the holder. Hold the stylus correctly as shown in the illustration and insert it until it clicks.



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### On trademarks

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### Note

Make sure that your camcorder is in the standby with the POWER switch set to MEMORY/NETWORK.

### During using the network function

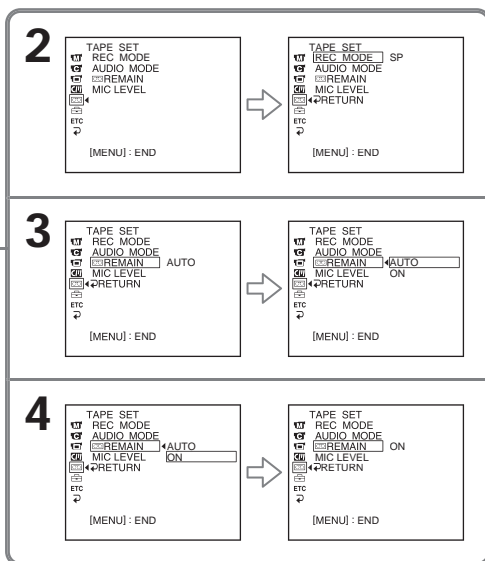
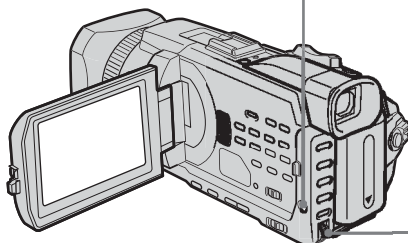
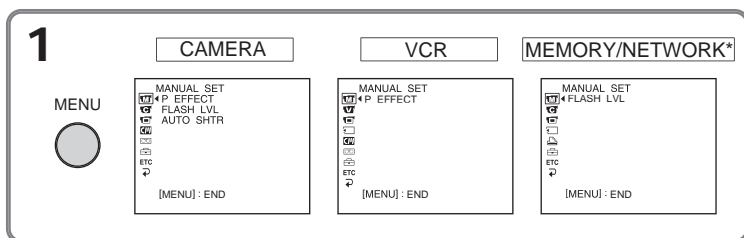
You cannot use the optional printer.

# Changing the default settings with the menu

To change the mode settings in the menu settings, select the menu items with the SEL/PUSH EXEC dial. The default settings can be partially changed. First, select the icon, then the menu item and then the mode.

- (1) Set the POWER switch to CAMERA, VCR or MEMORY/NETWORK (DCR-TRV950 only), then press MENU.
- (2) Turn the SEL/PUSH EXEC dial to select the desired icon, then press the dial to set.
- (3) Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial to set.
- (4) Turn the SEL/PUSH EXEC dial to select the desired mode, then press the dial to set.
- (5) If you want to change other items, select  $\leftarrow$  RETURN and press the dial, then repeat steps 2 to 4.

For details, see "Selecting the mode setting of each item" (p. 208).




\* DCR-TRV950 only

## Changing the default settings with the menu

### To make the menu display disappear

Press MENU.


Menu items are displayed as the following icons:

-  MANUAL SET
-  CAMERA SET
-  VCR SET
-  LCD/VF SET
-  MEMORY SET
-  PRINT SET
-  CM SET
-  TAPE SET
-  SETUP MENU
-  OTHERS

### Selecting the mode setting of each item ● is the default setting.

Menu items differ depending on the position of the POWER switch. The screen shows only the items you can operate at the moment.

MEMORY / NETWORK is one of the positions of the POWER switch on the DCR-TRV950. It is referred to as MEMORY on the DCR-TRV940.


Icon/item	Mode	Meaning	POWER switch
 MANUAL SET			
P EFFECT	—	To add special effects like those in films or on the TV to images (p. 58, 84)	VCR CAMERA
FLASH LVL	HIGH	Makes the flash level higher than normal.	CAMERA
	● NORMAL	Normal setting	MEMORY / NETWORK
	LOW	Makes the flash level lower than normal.	
AUTO SHTR	● ON	To automatically activate the electronic shutter when shooting in bright conditions	CAMERA
	OFF	To not automatically activate the electronic shutter even when shooting in bright conditions	

#### Note on FLASH LVL

You cannot adjust FLASH LVL if the external flash (optional) is not compatible with the flash level.




## Changing the default settings with the menu

Icon/item	Mode	Meaning	POWER switch
 CAMERA SET			
D ZOOM	● OFF	To deactivate the digital zoom. Up to 12× zoom is performed.	CAMERA
	24×	To activate the digital zoom. More than 12× to 24× zoom is performed digitally (p. 31)	
	150×	To activate the digital zoom. More than 12× to 150× zoom is performed digitally	
PHOTO REC	● MEMORY	To record still images on a “Memory Stick” when you press PHOTO in the tape recording or recording standby (p. 46)	CAMERA
	TAPE	To record still images on a tape when you press PHOTO in the tape recording or recording standby (p. 51)	
16:9WIDE	● OFF	—	CAMERA
	ON	To record a 16:9 wide picture (p. 53)	
STEADYSHOT	● ON	To compensate for camera-shake	CAMERA MEMORY/ NETWORK
	OFF	To cancel the SteadyShot. Natural pictures are produced when shooting a stationary object with a tripod.	
FRAME REC	● OFF	To deactivate Frame recording	CAMERA
	ON	To activate Frame recording (p. 83)	
INT. REC	ON	To activate interval recording (p. 81)	CAMERA
	● OFF	To deactivate interval recording	
	SET	To set the INTERVAL and REC TIME for interval recording	
HOLOGRAM F	● AUTO	The HOLOGRAM AF emits when focusing on subjects is difficult in dark places (p. 141)	MEMORY/ NETWORK
	OFF	The HOLOGRAM AF does not emit.	

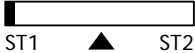
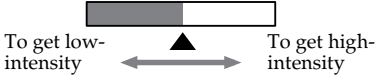
### Notes on the SteadyShot

- The SteadyShot will not correct excessive camera-shake.
- Attachment of a conversion lens (optional) may influence the SteadyShot.

### If you cancel the SteadyShot

The SteadyShot off indicator  appears. Your camcorder prevents excessive compensation for camera-shake.

## Changing the default settings with the menu

Icon/item	Mode	Meaning	POWER switch
<b>VCR SET</b>			
HiFi SOUND	<input checked="" type="radio"/> STEREO	To play back a stereo tape or dual sound track tape with main and sub sound (p. 229)	VCR
	1	To play back a stereo tape with the left sound or a dual sound tape with main sound	
	2	To play back a stereo tape with the right sound or a dual sound track tape with sub sound	
AUDIO MIX	—	To adjust the balance between the stereo 1 and stereo 2 (p. 118)	VCR
			
A/V→DV OUT	<input checked="" type="radio"/> OFF	To output digital images and sound in analog format using your camcorder	VCR
	ON	To output analog images and sound in digital format using your camcorder (p. 204)	
<b>LCD/VF SET</b>			
LCD B. L.	<input checked="" type="radio"/> BRT NORMAL	To set the brightness on the LCD screen to normal	VCR CAMERA MEMORY/ NETWORK
	BRIGHT	To brighten the LCD screen	
LCD COLOR	—	To adjust the color on the LCD screen, turn the SEL/PUSH EXE dial.	VCR CAMERA MEMORY/ NETWORK
			
VF B.L.	<input checked="" type="radio"/> BRT NORMAL	To set the brightness on the viewfinder screen to normal	VCR CAMERA MEMORY/ NETWORK
	BRIGHT	To brighten the viewfinder screen	
GUIDEFAME	<input checked="" type="radio"/> OFF	Does not display the guide frame.	CAMERA MEMORY/ NETWORK
	ON	Displays the guide frame (p. 64).	



### Notes on LCD B.L. and VF B.L.

- When you select BRIGHT, battery life is reduced by about 10 percent during recording.
- When you use power supplies other than the battery pack, BRIGHT is automatically selected.

### Even if you adjust LCD B.L., LCD COLOR and/or VF B.L.

The recorded picture will not be affected.


## Changing the default settings with the menu

Icon/item	Mode	Meaning	POWER switch
 MEMORY SET			
STILL SET			
BURST	● OFF	To not record continuously	MEMORY/ NETWORK
	NORMAL	To record from four to 13 images continuously (p. 137)	
	EXP BRKTG	To record three images continuously with different exposure	
	MULTI SCRN	To record nine images continuously, display the images on a single page divided into nine boxes	
QUALITY	● SUPER FINE	To record still images in the finest image quality mode (p. 131)	VCR MEMORY/ NETWORK
	FINE	To record still images in the fine image quality mode	
	STANDARD	To record still images in the standard image quality mode	
IMAGESIZE	● 1152 × 864	To record still images at 1152 × 864 size (p. 133)	MEMORY/ NETWORK
	640 × 480	To record still images at 640 × 480 size	
MOVIE SET			
IMAGESIZE	● 320 × 240	To record moving pictures at 320 × 240 size (p. 133).	VCR MEMORY/ NETWORK
	160 × 112	To record moving pictures at 160 × 112 size.	
 REMAIN	● AUTO	To display the remaining capacity of the “Memory Stick” in the following cases: <ul style="list-style-type: none"> <li>• For five seconds after setting the POWER switch to MEMORY/NETWORK (DCR-TRV950 only) or VCR</li> <li>• For five seconds after setting the POWER switch to MEMORY/NETWORK (DCR-TRV950 only) or VCR and inserting a “Memory Stick”</li> <li>• When the remaining capacity of the “Memory Stick” is less than two minutes after setting the POWER switch to MEMORY/NETWORK (DCR-TRV950 only)</li> <li>• For five seconds from the start of moving picture recording</li> <li>• For five seconds after completing a moving picture recording</li> </ul>	VCR MEMORY/ NETWORK
	ON	To always display the remaining capacity of the “Memory Stick”	


### When you select QUALITY

The number of the recording pictures is displayed.



## Changing the default settings with the menu

Icon/item	Mode	Meaning	POWER switch
 MEMORY SET			
PHOTO SAVE	—	To copy still images on the tape onto the “Memory Stick” (p. 163)	VCR
FILE NO.	● SERIES	To assign numbers to file in sequence even if the “Memory Stick” is changed	VCR MEMORY/ NETWORK
	RESET	To reset the file numbering each time the “Memory Stick” is changed	
DELETE ALL	—	To delete all unprotected images (p. 179)	MEMORY/ NETWORK
FORMAT	● RETURN	To cancel formatting	MEMORY/ NETWORK
	OK	To format an inserted “Memory Stick” Formatting erases all information on the “Memory Stick” Check the contents of the “Memory Stick” before formatting. 1. Select FORMAT. 2. Select OK with the SEL/PUSH EXE dial, then press the dial. 3. After EXECUTE appears, press SEL/PUSH EXE dial. FORMATTING flashes during formatting. COMPLETE appears when formatting is finished.	

### Notes on formatting

- Do not do any of the following while FORMATTING is displayed:
  - Switch the POWER switch.
  - Operate buttons.
  - Eject the “Memory Stick.”
- The supplied or optional “Memory Stick” has been formatted at factory. Formatting the “Memory Stick” on your camcorder is not required.
- You cannot format the “Memory Stick” if the write-protect switch on the “Memory Stick” is set to LOCK.
- Format the “Memory Stick” when “ FORMAT ERROR” is displayed.
- Formatting erases protected image data on the “Memory Stick.”




## Changing the default settings with the menu

Icon/item	Mode	Meaning	POWER switch
 PRINT SET			
DATE/TIME	● OFF	To make prints without the recording date and time	MEMORY/ NETWORK
	DATE	To make prints with the recording date (p. 181)	
	DAY&TIME	To make prints with the recording date and time	
 CM SET			
TITLE	—	To superimpose a title or make your own title (p. 119, 122)	VCR CAMERA
TITLEERASE	—	To erase the title you have superimposed (p. 121)	VCR CAMERA
TITLE DSPL	● ON	To display the title you have superimposed	VCR
	OFF	To not display the title	
CM SEARCH	● ON	To search using cassette memory (p. 89, 90, 92)	VCR
	OFF	To search without using cassette memory	
TAPE TITLE	—	To label a cassette (p. 124)	VCR CAMERA
ERASE ALL	—	To erase all the data in cassette memory (p. 125)	VCR CAMERA

### Note on PRINT SET

DATE/TIME is displayed only when an external printer (optional) is connected to the intelligent accessory shoe.

## Changing the default settings with the menu

Icon/item	Mode	Meaning	POWER switch
 TAPE SET			
REC MODE	● SP	To record in the SP (Standard Play) mode	VCR CAMERA
	LP	To increase the recording time to 1.5 times the SP mode	
AUDIO MODE	● 12BIT	To record in the 12-bit mode (two stereo sounds)	VCR CAMERA
	16BIT	To record in the 16-bit mode (one stereo sound with high quality)	
 REMAIN	● AUTO	To display the remaining tape bar: <ul style="list-style-type: none"> <li>• For about eight seconds after a cassette is inserted and your camcorder calculates the remaining amount of tape</li> <li>• For about eight seconds after  or DISPLAY/TOUCH PANEL is pressed</li> </ul>	VCR CAMERA
	ON	To always display the remaining tape indicator	
MIC LEVEL	● AUTO	Adjusts audio recording level automatically	VCR CAMERA
	MANUAL	Adjusts audio recording level manually	


### Notes on the LP mode

- When you record a tape in the LP mode on your camcorder, we recommend playing the tape on your camcorder. When you play back the tape on other camcorders or VCRs, noise may occur in pictures or sound.
- When you record in the LP mode, we recommend using a Sony Excellence/Master cassette so that you can get the most out of your camcorder.
- You cannot dub audio on a tape recorded in the LP mode. Use the SP mode for the tape to be audio dubbed.
- When you record in the SP and LP modes on one tape or you record some scenes in the LP mode, the playback picture may be distorted or the time code may not be written properly between scenes.

### Notes on AUDIO MODE

- You cannot dub audio on a tape recorded in the 16-bit mode.
- When playing back a tape recorded in the 16-bit mode, you cannot adjust the balance in AUDIO MIX.

## Changing the default settings with the menu

Icon/item	Mode	Meaning	POWER switch
 <b>SETUP MENU</b>			
<b>CLOCK SET</b>	—	To set the date or time (p. 20).	CAMERA MEMORY/ NETWORK
<b>USB STREAM</b>	● OFF	To deactivate the USB streaming	VCR CAMERA
	ON	To activate the USB streaming	
<b>USBCONNECT</b>	● NORMAL	To connect and recognize the “Memory Stick” drive.	MEMORY/ NETWORK
	PTP	To connect and only copy a “Memory Stick” image from your camcorder to a computer (only with Windows XP or Mac OS X) 1. Turn the SEL/PUSH EXEC dial to select “USB CONNECT” followed by “PTP”, then press the dial to set. 2. Insert the “Memory Stick” into the camcorder, and connect the camcorder to the computer using a USB cable. Copy Wizard will automatically start up.	
<b>LTR SIZE</b>	● NORMAL	To display selected menu items in normal size	VCR CAMERA MEMORY/ NETWORK
	2×	To display selected menu items at twice the normal size	
<b>LANGUAGE</b>	● ENGLISH	To display the following information indicators in English: min, REC, STBY and START	VCR CAMERA
	FRANÇAIS	To display the information indicators in French	MEMORY/ NETWORK
	ESPAÑOL	To display the information indicators in Spanish	
	PORTUGUÊS	To display the information indicators in Portuguese	
	中文	To display the information indicators in Chinese	
	한국어	To display the information indicators in Korean	
<b>DEMO MODE</b>	● ON	To make the demonstration appear	CAMERA
	OFF	To cancel the demonstration	

### Notes on DEMO MODE

- You cannot select DEMO MODE when a cassette or a “Memory Stick” is inserted in your camcorder.
- You cannot select DEMO MODE when the color bar is displayed. When you press the COLOR BAR button during demonstration, DEMO MODE is canceled.
- The DEMO MODE default setting is STBY (Standby) and the demonstration starts about 10 minutes after you have set the POWER switch to CAMERA without a cassette or a “Memory Stick” inserted.

To cancel the demonstration, insert a cassette or a “Memory Stick,” set the POWER switch to other than CAMERA, or set DEMO MODE to OFF. To set to STBY (Standby) again, leave the DEMO MODE at ON in the menu settings, turn the POWER switch to OFF (CHG), and return the POWER switch to CAMERA.

(continued on the following page)

## Changing the default settings with the menu

Icon/item	Mode	Meaning	POWER switch
<b>ETC OTHERS</b>			
<b>DATA CODE</b>	● DATE/CAM	To display date, time and various settings during playback when pressing the DATA CODE button (p. 41)	VCR MEMORY/ NETWORK
	DATE	To display date and time during playback when pressing the DATA CODE button	
<b>AREA SET</b>	—	Temporarily change the area where you are using your camcorder	CAMERA MEMORY/ NETWORK
<b>DST SET*</b>	● OFF	Not during daylight saving time	CAMERA MEMORY/ NETWORK
	ON	During daylight saving time	
<b>BEEP</b>	● MELODY	To output the melody when you start/stop recording or when an unusual condition occurs on your camcorder	VCR CAMERA MEMORY/ NETWORK
	NORMAL	To output the beep instead of the melody	
	OFF	To cancel all sound including shutter sound	
<b>COMMANDER</b>	● ON	To activate the Remote Commander supplied with your camcorder	VCR CAMERA MEMORY/ NETWORK
	OFF	To deactivate the Remote Commander to avoid remote control operation caused by other VCR's remote control	

\* Instead of DST, SUMMERTIME is displayed on the screen for some models.



## Changing the default settings with the menu

Icon/item	Mode	Meaning	POWER switch
<b>ETC OTHERS</b>			
<b>DISPLAY</b>	● LCD	To show the display on the LCD screen and in the viewfinder	VCR CAMERA MEMORY/ NETWORK
	V-OUT/LCD	To show the display on the TV screen, LCD screen and in the viewfinder	
<b>REC LAMP</b>	● ON	To light up the camera recording lamp at the front of your camcorder	CAMERA MEMORY/ NETWORK
	OFF	To turn the camera recording lamp off so that the person is not aware of the recording	
<b>VIDEO EDIT</b>	● RETURN	To cancel video editing.	VCR
	TAPE	To make program and dub on the tape in the other VCR (p. 98)	
	MEMORY	To make program and dub on a "Memory Stick" (p. 160)	

### Note

If you press DISPLAY/TOUCH PANEL with DISPLAY set to V-OUT/LCD in the menu settings, the picture from a TV or VCR will not appear on the LCD screen even when your camcorder is connected to outputs on the TV or VCR.

### When recording a close subject

When REC LAMP is set to ON, the red camera recording lamp on the front of the camcorder may reflect on the subject if it is close. In this case, we recommend that you set REC LAMP to OFF.

### In more than five minutes after removing the power supply

The FLASH LVL, HiFi SOUND, AUDIO MIX, MIC LEVEL and COMMANDER settings are returned to their default settings.

Other menu settings are held in memory even after removing the power supply.


# Types of trouble and how to correct trouble

If you run into any problem using your camcorder, use the following table to troubleshoot the problem. If the problem persists, remove the power supply and contact your Sony dealer or local authorized Sony service facility. If “C:□□:□□” appears on the screen, the self-diagnosis display function has worked. See page 225.

## In the recording

Symptom	Cause and/or Corrective Actions
START/STOP does not operate.	<ul style="list-style-type: none"> <li>• The POWER switch is not set to CAMERA. → Set it to CAMERA (p. 26).</li> <li>• The tape has run out. → Rewind the cassette or insert a new one (p. 23, 43).</li> <li>• The write-protect tab is set to expose the red mark. → Use a new tape or slide the tab (p. 23).</li> <li>• The tape is stuck to the drum (moisture condensation). → Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 236).</li> </ul>
The power goes off.	<ul style="list-style-type: none"> <li>• While being operated when the POWER switch is set to CAMERA, your camcorder has been in the standby for more than five minutes. → Set the POWER switch to OFF (CHG) and then to CAMERA.</li> <li>• The battery pack is dead or nearly dead. → Install a charged battery pack.</li> </ul>
You cannot record still images on a “Memory Stick” in the recording or recording standby.	<ul style="list-style-type: none"> <li>• PHOTO REC is set to TAPE in menu settings. → Set it to MEMORY (p. 209).</li> </ul>
You cannot record still images on a tape.	<ul style="list-style-type: none"> <li>• PHOTO REC is set to MEMORY in menu settings. → Set it to TAPE (p. 209).</li> </ul>
The image on the viewfinder screen is not clear.	<ul style="list-style-type: none"> <li>• The viewfinder lens is not adjusted. → Adjust the viewfinder lens (p. 30).</li> </ul>
The SteadyShot does not work.	<ul style="list-style-type: none"> <li>• STEADYSHOT is set to OFF in the menu settings. → Set it to ON (p. 209).</li> </ul>
The autofocusing does not work.	<ul style="list-style-type: none"> <li>• The setting is the manual focus. → Set FOCUS to AUTO (p. 76).</li> <li>• Shooting conditions are not suitable for autofocus. → Adjust for manual focusing (p. 76).</li> </ul>

## Types of trouble and how to correct trouble

Symptom	Cause and/or Corrective Actions
The picture does not appear in the viewfinder.	<ul style="list-style-type: none"> <li>• The LCD panel is open. → Close the LCD panel (p. 28).</li> </ul>
A vertical band appears when you shoot a subject such as lights or a candle flame against a dark background.	<ul style="list-style-type: none"> <li>• The contrast between the subject and background is too high. This is not a malfunction.</li> </ul>
A vertical band appears when you shoot a very bright subject.	<ul style="list-style-type: none"> <li>• This is not a malfunction.</li> </ul>
Some tiny white, red, blue or green spots appear on the screen.	<ul style="list-style-type: none"> <li>• The shutter speed is reduced. This is not a malfunction.</li> </ul>
An unknown picture is displayed on the screen.	<ul style="list-style-type: none"> <li>• If 10 minutes elapse after you set the POWER switch to CAMERA or DEMO MODE is set to ON in the menu settings when neither a cassette nor a “Memory Stick” is inserted, your camcorder automatically starts the demonstration. → Insert a cassette or a “Memory Stick” and the demonstration stops. You can also cancel DEMO MODE (p. 215).</li> </ul>
The picture appears too bright, and the subject does not appear on the screen.	<ul style="list-style-type: none"> <li>• The backlight is active. → Set it off (p. 34).</li> </ul>
The click of the shutter does not sound.	<ul style="list-style-type: none"> <li>• BEEP is set to OFF in the menu settings. → Set it to MELODY or NORMAL (p. 216).</li> </ul>
Black bands appear when you record TV or computer screen.	<ul style="list-style-type: none"> <li>• Set the STEADYSHOT in the menu settings to OFF (p. 209).</li> </ul>
An external flash (optional) does not work.	<ul style="list-style-type: none"> <li>• The power of the external flash is off or the power supply is not installed. → Turn on the external flash or install the power supply.</li> <li>• Two or more external flashes (optional) are attached. → Only one external flash (optional) can be attached.</li> </ul>
The image is not bright with video flash light (optional).	<ul style="list-style-type: none"> <li>• The manual adjustment is not suitable for the situations (The  indicator flashes). → Set the AUTO LOCK selector to AUTO LOCK, or cancel the manual adjustment (p. 67).</li> </ul>





## Types of trouble and how to correct trouble

### In the playback

Symptom	Cause and/or Corrective Actions
The tape does not move when a video control button is pressed.	<ul style="list-style-type: none"><li>• The POWER switch is not set to VCR. → Set it to VCR (p. 39).</li></ul>
The playback button does not work.	<ul style="list-style-type: none"><li>• The cassette has run out of the tape. → Rewind the tape (p. 39).</li></ul>
There are horizontal lines on the picture, or the playback picture is not clear or does not appear.	<ul style="list-style-type: none"><li>• The video heads may be dirty. → Clean the heads using the cleaning cassette (optional) (p. 237).</li></ul>
No sound or only a low sound is heard when playing back a tape.	<ul style="list-style-type: none"><li>• The stereo tape is played back with HiFi SOUND set to 2 in the menu settings. → Set it to STEREO (p. 210).</li><li>• The volume is turned to minimum. → Turn up the volume (p. 39).</li><li>• AUDIO MIX is set to ST2 in the menu settings. → Adjust AUDIO MIX (p. 210).</li></ul>
Displaying the recorded date, DATE SEARCH does not work.	<ul style="list-style-type: none"><li>• The cassette has no cassette memory. → Use a cassette with cassette memory (p. 90).</li><li>• CM SEARCH is set to OFF in the menu settings. → Set it to ON (p. 213).</li><li>• The tape has a blank portion between recorded portions (p. 91).</li></ul>
TITLE SEARCH does not work.	<ul style="list-style-type: none"><li>• The cassette has no cassette memory. → Use a cassette with cassette memory (p. 89).</li><li>• CM SEARCH is set to OFF in the menu settings. → Set it to ON (p. 213).</li><li>• There is no title in the tape. → Superimpose the titles (p. 119).</li><li>• The tape has a blank portion between recorded portions (p. 89).</li></ul>
The new sound added to the recorded tape is not heard.	<ul style="list-style-type: none"><li>• AUDIO MIX is set to the ST1 side in the menu settings. → Adjust AUDIO MIX (p. 118).</li></ul>
The title is not displayed.	<ul style="list-style-type: none"><li>• TITLE DSPL is set to OFF in the menu settings. → Set it to ON (p. 213).</li></ul>

## Types of trouble and how to correct trouble

### In the recording and playback

Symptom	Cause and/or Corrective Actions
The power does not turn on.	<ul style="list-style-type: none"> <li>The battery pack is not installed, or is dead or nearly dead. → Install a charged battery pack (p. 15, 16).</li> <li>The AC power adaptor is not connected to a wall outlet. → Connect the AC power adaptor to a wall outlet (p. 19).</li> </ul>
The end search does not work.	<ul style="list-style-type: none"> <li>The tape was ejected after recording when using a cassette without cassette memory (p. 37).</li> <li>You have not recorded on the new cassette yet (p. 37).</li> </ul>
The end search does not work correctly.	<ul style="list-style-type: none"> <li>The tape has a blank portion at the beginning or midway (p. 37).</li> </ul>
The battery pack is quickly discharged.	<ul style="list-style-type: none"> <li>The operating temperature is too low.</li> <li>The battery pack is not fully charged. → Charge the battery pack fully again (p. 16).</li> <li>The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack (p. 15).</li> </ul>
The battery remaining time indicator does not indicate the correct time.	<ul style="list-style-type: none"> <li>You have used the battery pack in an extremely hot or cold environment for a long time.</li> <li>The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack (p. 15).</li> <li>The battery is not fully charged. → Install a charged battery pack (p. 15, 16).</li> <li>A deviation has occurred in the remaining battery time. → Charge the battery pack fully again so that the indication on the battery remaining indicator is correct (p. 16).</li> </ul>
The power goes off although the battery remaining time indicator indicates that the battery pack has enough power to operate.	<ul style="list-style-type: none"> <li>A deviation has occurred in the remaining battery time. → Charge the battery pack fully again so that the indication on the battery remaining battery time indicator is correct (p. 16).</li> </ul>
The cassette cannot be removed from the holder.	<ul style="list-style-type: none"> <li>The power supply is disconnected. → Connect it firmly (p. 15, 19).</li> <li>The battery is dead. → Use a charged battery pack (p. 15, 16).</li> </ul>
The  and  indicators flash and no functions except for cassette ejection work.	<ul style="list-style-type: none"> <li>Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 236).</li> </ul>
 indicator does not appear when using a cassette with cassette memory.	<ul style="list-style-type: none"> <li>The gold-plated connector of the tape is dirty or dusty. → Clean the gold-plated connector (p. 230).</li> </ul>
Remaining tape indicator is not displayed.	<ul style="list-style-type: none"> <li>The  REMAIN is set to AUTO in the menu settings. → Set it to ON to always display the remaining tape indicator (p. 214).</li> </ul>

## Types of trouble and how to correct trouble

### When operating using the “Memory Stick”

Symptom	Cause and/or Corrective Actions
The “Memory Stick” does not function.	<ul style="list-style-type: none"><li>• The POWER switch is not set to MEMORY/NETWORK (DCR-TRV950 only). → Set it to MEMORY/NETWORK (DCR-TRV950 only) (p. 129).</li><li>• The “Memory Stick” is not inserted. → Insert a “Memory Stick” (p. 128).</li></ul>
Recording does not function.	<ul style="list-style-type: none"><li>• The “Memory Stick” has already been full. → Delete unnecessary images and record again (p. 177).</li><li>• The “Memory Stick” formatted incorrectly is inserted. → Format the “Memory Stick” or use another “Memory Stick” (p. 128, 212).</li><li>• The write-protect switch on the “Memory Stick” is set to LOCK. → Release the lock (p. 126).</li></ul>
The image cannot be deleted.	<ul style="list-style-type: none"><li>• The image is protected. → Cancel image protection (p. 176).</li><li>• The write-protect switch on the “Memory Stick” is set to LOCK. → Release the lock (p. 126).</li></ul>
You cannot format the “Memory Stick.”	<ul style="list-style-type: none"><li>• The write-protect switch on the “Memory Stick” is set to LOCK. → Release the lock (p. 126).</li></ul>
Deleting all the images cannot be carried out.	<ul style="list-style-type: none"><li>• The write-protect switch on the “Memory Stick” is set to LOCK. → Release the lock (p. 126).</li></ul>
You cannot protect the image.	<ul style="list-style-type: none"><li>• The write-protect switch on the “Memory Stick” is set to LOCK. → Release the lock (p. 126).</li><li>• INDEX screen is not displayed. → Press INDEX to display the INDEX screen and protect the image (p. 176).</li></ul>
You cannot write a print mark on the still image.	<ul style="list-style-type: none"><li>• The write-protect switch on the “Memory Stick” is set to LOCK. → Release the lock (p. 126).</li><li>• INDEX screen is not displayed. → Press INDEX to display the INDEX screen and write the print marks on the screen (p. 180).</li><li>• You are trying to write a print mark on a moving picture. → Print marks cannot be written on a moving picture (p. 180).</li></ul>
PHOTO SAVE does not work.	<ul style="list-style-type: none"><li>• The write-protect switch on the “Memory Stick” is set to LOCK. → Release the lock (p. 126).</li></ul>
You cannot play back images in actual size.	<ul style="list-style-type: none"><li>• You may not be able to play back images in actual size when you try to play back images recorded by other equipment. This is not a malfunction.</li></ul>
You cannot play back image data.	<ul style="list-style-type: none"><li>• Your camcorder cannot play back some images processed with a computer (The file name will blink).</li><li>• If you record images with any other equipment, the images may not play back normally on your camcorder.</li></ul>

## Types of trouble and how to correct trouble

### Others

Symptom	Cause and/or Corrective Actions
The title is not recorded.	<ul style="list-style-type: none"><li>• The cassette has no cassette memory. → Use a cassette with cassette memory (p. 119).</li><li>• The cassette memory is full. → Erase unwanted titles (p. 121).</li><li>• The cassette is set to prevent accidental erasure. → Slide the write-protect tab so that red portion is not visible (p. 23).</li><li>• The tape has a blank portion between recorded portions. → Superimpose the title to recorded positions (p. 120).</li></ul>
The cassette label is not recorded.	<ul style="list-style-type: none"><li>• The cassette has no cassette memory. → Use a cassette with cassette memory (p. 124).</li><li>• The cassette memory is full. → Erase unwanted data (p. 121,125).</li><li>• The tape is set to prevent accidental erasure. → Slide the write-protect tab so that red mark is not visible (p. 23).</li></ul>
Digital program editing to a tape does not function.	<ul style="list-style-type: none"><li>• The input selector on the VCR is not set correctly. → Check the connection and set the input selector on the VCR again (p. 98)</li><li>• The camcorder is connected to DV equipment of other than Sony using the i.LINK cable. → Set it to IR (p. 99).</li><li>• You have attempted to set a program on a blank portion of the tape. → Set the program again on a recorded portion (p. 106).</li><li>• The camcorder and the VCR are not synchronized. → Adjust the synchronization (p. 104).</li><li>• The IR SETUP code is incorrect. → Set the correct code (p. 100).</li></ul>
Digital program editing to a "Memory Stick" does not function.	<ul style="list-style-type: none"><li>• Setting program on a blank portion of the tape is attempted. → Set the program again on a recorded portion (p. 160).</li></ul>
The Remote Commander supplied with your camcorder does not work.	<ul style="list-style-type: none"><li>• COMMANDER is set to OFF in the menu settings. → Set it to ON (p. 216).</li><li>• Something is blocking the infrared rays. → Remove the obstacle.</li><li>• The batteries are inserted with + and – incorrectly matching + and – inside the battery compartment. → Insert the batteries correctly (p. 251).</li><li>• The batteries are dead. → Insert new ones (p. 251).</li></ul>
The picture from a TV or VCR does not appear even when your camcorder is connected to output on the TV or VCR.	<ul style="list-style-type: none"><li>• DISPLAY is set to V-OUT/LCD in the menu settings. → Set it to LCD (p. 217).</li></ul>

## Types of trouble and how to correct trouble

Symptom	Cause and/or Corrective Actions
The cassette cannot be removed even if the cassette lid is open.	<ul style="list-style-type: none"> <li>Moisture has started to condense in your camcorder (p. 236).</li> </ul>
The melody or beep sounds for five seconds.	<ul style="list-style-type: none"> <li>Moisture condensation has occurred.                             <ul style="list-style-type: none"> <li>→ Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 236).</li> </ul> </li> <li>Some troubles have occurred in your camcorder.                             <ul style="list-style-type: none"> <li>→ Remove the cassette and insert it again, then operate your camcorder.</li> </ul> </li> </ul>
When you set the POWER switch to VCR or OFF (CHG), if you move your camcorder, you may hear a clattering sound from inside your camcorder.	<ul style="list-style-type: none"> <li>This is because some functions use a linear mechanism. Your camcorder is not malfunctioning.</li> </ul>
You cannot charge the battery pack.	<ul style="list-style-type: none"> <li>The POWER switch is not set to OFF (CHG).                             <ul style="list-style-type: none"> <li>→ Set it to OFF (CHG) (p. 16).</li> </ul> </li> </ul>
While charging the battery pack, no indicator appears, the indicator flashes in the display window.	<ul style="list-style-type: none"> <li>The battery pack is not properly installed.                             <ul style="list-style-type: none"> <li>→ Install it properly (p. 15).</li> </ul> </li> <li>Something is wrong with the battery pack.                             <ul style="list-style-type: none"> <li>→ Please contact your Sony dealer or local authorized Sony service facility.</li> </ul> </li> </ul>
No function works though the power is on.	<ul style="list-style-type: none"> <li>Disconnect the power cord of the AC power adaptor or remove the battery, then reconnect it in about one minute. Turn the power on. If the functions still do not work, press the RESET button using a sharp-pointed object (If you press the RESET button, all the settings including the date and time return to their defaults.) (p. 15, 19, 245).</li> </ul>
The buttons do not appear on the touch panel.	<ul style="list-style-type: none"> <li>The DISPLAY/TOUCH PANEL button is pressed.                             <ul style="list-style-type: none"> <li>→ Press the LCD screen lightly.</li> <li>→ Press the DISPLAY/TOUCH PANEL button on your camcorder or the DISPLAY button on the Remote Commander (p. 41).</li> </ul> </li> </ul>
The buttons on the LCD screen do not work.	<ul style="list-style-type: none"> <li>Adjust the screen (CALIBRATION) (p. 238).</li> </ul>
The indicators appear mirror-reversed in the viewfinder or on the TV screen.	<ul style="list-style-type: none"> <li>The mirror mode is activated. This is not a malfunction (p. 32).</li> </ul>
Image data cannot be transferred by the USB connection.	<ul style="list-style-type: none"> <li>The USB cable was connected before installation of the USB driver was completed.                             <ul style="list-style-type: none"> <li>→ Uninstall the incorrect USB driver and re-install the USB driver (p. 188, 191, 202).</li> </ul> </li> <li>USBCONNECT is set to PTP in the menu settings when the POWER switch is set to MEMORY/NETWORK (DCR-TRV950 only).                             <ul style="list-style-type: none"> <li>→ Set it to NORMAL (p. 215).</li> </ul> </li> </ul>

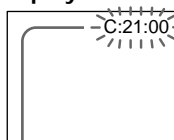


# Self-diagnosis display

Your camcorder has a self-diagnosis display function.

This function displays the current state of your camcorder as a 5-digit code (a combination of a letter and figures) on the screen. If a 5-digit code is displayed, check the following list of codes. The last two digits (indicated by □□) differ depending on the state of your camcorder.

## LCD screen, Viewfinder or Display window



### Self-diagnosis display

- C:□□:□□  
You can service your camcorder yourself.
- E:□□:□□  
Contact your Sony dealer or local authorized Sony service facility.

Five-digit display	Cause and/or Corrective Actions
C:04:□□	<ul style="list-style-type: none"> <li>• You are using a battery pack that is not an "InfoLITHIUM" battery pack. → Use an "InfoLITHIUM" battery pack (p. 18, 231).</li> </ul>
C:21:□□	<ul style="list-style-type: none"> <li>• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 236).</li> </ul>
C:22:□□	<ul style="list-style-type: none"> <li>• The video heads are dirty. → Clean the heads using the cleaning cassette (optional) (p. 237).</li> </ul>
C:31:□□ C:32:□□	<ul style="list-style-type: none"> <li>• A malfunction other than the above that you can service has occurred. → Remove the cassette and insert it again, then operate your camcorder. → Disconnect the power cord of the AC power adaptor or remove the battery pack. After reconnecting the power supply, operate your camcorder.</li> </ul>
E:20:□□ E:61:□□ E:62:□□ E:91:□□	<ul style="list-style-type: none"> <li>• A malfunction that you cannot service has occurred. → Contact your Sony dealer or local authorized Sony service facility and inform them of the 5-digit code (example: E:61:10).</li> </ul>

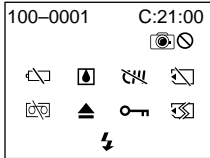
If you are unable to rectify the problem even if you try corrective actions a few times, contact your Sony dealer or local authorized Sony service facility.

# Warning indicators and messages

If indicators and messages appear on the screen or in the display window, check the following:

See the page in parentheses “( )” for more information.

## Warning indicators



### 100-0001 Warning indicator pertaining to files


Slow flashing:

- The file is corrupted.
- The file is unreadable.
- You are trying to use the MEMORY MIX on a moving picture (p. 148).

### C:21:00 Self-diagnosis display (p. 225).

#### The battery is dead or nearly dead

Slow flashing:

- The battery is nearly dead.  
Depending on the operating conditions, environment and battery condition, the  indicator may flash even if there are approximately five to 10 minutes remaining.

Fast flashing:

- The battery is dead (p. 16).

#### Moisture condensation has occurred\*

Fast flashing:

- Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette compartment open (p. 236).

#### Warning indicator pertaining to cassette memory\*

Slow flashing:

- No cassette with cassette memory is inserted (p. 228).

#### Warning indicator pertaining to the “Memory Stick”\*

Slow flashing:

- No “Memory Stick” is inserted.

Fast flashing:

- The “Memory Stick” is not readable on your camcorder (p. 126).
- The image cannot be recorded on the “Memory Stick.”

#### Warning indicator pertaining to “Memory Stick” formatting\*

Fast flashing:

- The “Memory Stick” is not formatted correctly (p. 212).
- The “Memory Stick” data is corrupted (p. 126).

#### Warning indicator pertaining to the tape

Slow flashing:

- The tape is near the end.
- No cassette is inserted.\*
- The write-protect tab on the cassette is exposed (red) (p. 23).\*

Fast flashing:

- The cassette has run out of the tape.\*

#### You need to eject the cassette\*

Slow flashing:

- The write-protect tab on the cassette is exposed (red) (p. 23).

Fast flashing:

- Moisture condensation has occurred (p. 236).
- The cassette has run out of the tape.
- The self-diagnosis display function is activated (p. 225).

#### The image is protected\*

Slow flashing:

- The image is protected (p. 176).

#### Warning indicator pertaining to the flash

Slow flashing:

- During charging

Fast flashing:

- The self-diagnosis display function is activated (p. 225).\*
- There is something wrong with the built-in flash or the external flash (optional).

#### Warning indicator pertaining to recording






















Slow flashing:

- The still image cannot be recorded on a tape or the “Memory Stick” (p. 46, 52)

\* You hear the melody or beep.

## Warning indicators and messages

### Warning messages

- CLOCK SET Set the date and time (p. 20).
- FOR "InfoLITHIUM"  
BATTERY ONLY Use an "InfoLITHIUM" battery pack (p. 18).
-  CLEANING CASSETTE\*\* The video heads are dirty (p. 237).
-  FULL The cassette memory is full.\*
-  16BIT AUDIO MODE is set to 16BIT (p. 214).\* You cannot dub new audio.
-  REC MODE REC MODE is set to LP (p. 214).\* You cannot dub new audio.
-  TAPE There is no recorded portion on the tape.\* You cannot dub new audio.
-  "i.LINK" CABLE The i.LINK cable is connected (p. 118).\* You cannot dub new audio.
-  FULL The "Memory Stick" is full (p. 139).\*
-  The write-protect switch on the "Memory Stick" is set to LOCK (p. 126).\*
-  NO FILE No still image is recorded on the "Memory Stick" (p. 166, 182).\*
-  NO MEMORY STICK No "Memory Stick" is inserted.\*
-  AUDIO ERROR You are trying to record an image with sound that cannot be recorded by your camcorder on the "Memory Stick" (p. 157).\*
-  MEMORY STICK ERROR The "Memory Stick" data is corrupted (p. 128).\*
-  FORMAT ERROR The "Memory Stick" is not recognized. Check the format (p. 145, 212).\*
-  DIRECTORY ERROR There are more than two of the same directories (p. 166).\*
-  PLAY ERROR The image cannot be played back. Reinsert the "Memory Stick," then play back the image again.
-  REC ERROR Check the input signals before retrying recording.
- COPY INHIBIT The tape contains copyright control signals for copyright protection of software (p. 229).\*
-  TAPE END The tape has reached its end.\*
-  NO TAPE Insert a cassette.\*
-  NO PRINT MARK You selected MARKED in 9PIC PRINT on the touch panel using a "Memory Stick" containing no image with a print mark. (p. 182)\*
-  NO STILL IMAGE FILE You selected MULTI in 9PIC PRINT on the touch panel using a "Memory Stick" containing no still image. (p. 182)\*
- DELETING You have pressed PHOTO during deleting all images on the "Memory Stick."\*\*
- FORMATTING You have pressed PHOTO during formatting a "Memory Stick."\*\*
-  NOW CHARGING Charging an external flash (optional) does not work correctly.\*

\* You hear the melody or beep.

\*\*The  indicator and "  CLEANING CASSETTE" message appear one after another on the screen.

# Usable cassettes

## Selecting cassette types

You can use **Mini DV** mini DV cassettes only\*. You cannot use any other **8** 8 mm, **Hi8** Hi8, **Digital8**, **VHS** VHS, **VHSC** VHSC, **S-VHS** S-VHS, **S-VHSC** S-VHSC, **B** Betamax, **ED Beta** ED Betamax, **DV** DV or **MICRO MV** MICRO MV cassette.

\* There are two types of mini DV cassettes: with cassette memory and without cassette memory. Cassettes with cassette memory have the **CM** (Cassette Memory) mark. We recommend that you use cassette with cassette memory.

IC memory is mounted on this type of cassette. Your camcorder can read and write data such as dates of recording or titles, etc. to this memory. The functions using the cassette memory require successive signals recorded on the tape. If the tape has a blank portion at the beginning or between recorded portions, titles may not be displayed properly or the search functions may not work properly. Perform the following to prevent a blank portion from being made on the tape. Press END SCH to go to the end of the recorded portion before you begin the next recording if you operate the following:

- You have ejected the cassette while recording.
- You have played back the tape.
- You have used the edit search.

If there is a blank portion or discontinuous signal on your tape, re-record from the beginning to the end of the tape as described above. The same result may occur when you record using a digital video camera recorder without a cassette memory on a tape recorded by one with the cassette memory.

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### **CM**4K mark on the cassette

The memory capacity of cassettes marked with **CM**4K is 4Kbit. Your camcorder can accommodate tapes having a memory capacity of up to 16Kbit. 16Kbit cassettes are marked with **CM**16K.

**Mini DV** Digital Video Cassette This is the mini DV mark.

**CM** Cassette Memory This is the Cassette Memory mark.

These are trademarks.

## Usable cassettes

### Copyright signal

#### When you play back

Using any other video camera recorder, you cannot record on tape that has recorded copyright control signals for copyright protection of software which is played back on your camcorder.

#### When you record

You cannot record software on your camcorder that contains copyright control signals for copyright protection of software.

“COPY INHIBIT” appears on the screen or on the TV screen if you try to record such software.

Your camcorder does not record copyright control signals on the tape when it records.

### Audio mode

**12-bit mode:** The original sound can be recorded in stereo 1, and the new sound in stereo 2 in 32 kHz. The balance between stereo 1 and stereo 2 can be adjusted by selecting AUDIO MIX in the menu settings during playback. Both sounds can be played back.

**16-bit mode:** New audio cannot be recorded but the original sound can be recorded in high quality. Moreover, your camcorder can also play back sound recorded in 32 kHz, 44.1 kHz or 48 kHz. When playing back a tape recorded in the 16-bit mode, the 16BIT indicator appears on screen.

### When you play back a dual sound track tape

When you play back a dual sound track tape recorded in a stereo system, set HiFi SOUND to the desired mode in the menu settings (p. 210).

#### Sound from speaker

HiFi Sound mode	Playing back a stereo tape	Playing back a dual sound track tape
STEREO	Stereo	Main sound and sub sound
1	Left sound	Main sound
2	Right sound	Sub sound

You cannot record dual sound programs on your camcorder.

## Usable cassettes

### Notes on the cassette

#### When affixing a label on the cassette

Be sure to affix a label only at the locations illustrated below [a] to prevent malfunction of your camcorder.

#### After using the cassette

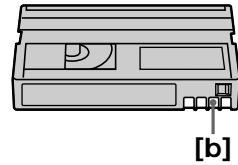
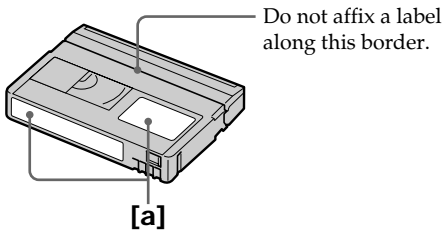
Rewind the tape to the beginning, put the cassette in its case, and store it upright.

#### When the cassette memory does not work

Reinsert a cassette. The gold-plated connector of the cassette may be dirty or dusty.

#### Cleaning the gold-plated connector

If the gold-plated connector on the cassette is dirty or dusty, the remaining tape indicator is sometimes not displayed correctly, and you may not be able to operate functions using cassette memory. Clean the gold-plated connector with a cotton-wool swab, about every 10 times that the cassette is ejected. [b]



# About the “InfoLITHIUM” battery pack

## What is the “InfoLITHIUM” battery pack?

The “InfoLITHIUM” battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between the battery pack and an optional AC adaptor/charger.

The “InfoLITHIUM” battery pack calculates the power consumption according to the operating conditions of your camcorder, and displays the remaining battery time in minutes.

With an AC adaptor/charger (optional), the remaining battery time and charging time are displayed.


## Charging the battery pack

- Be sure to charge the battery pack before you start using your camcorder.
- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F) until FULL appears in the display window, indicating that the battery pack is fully charged. If you charge the battery outside of this temperature range, you may not be able to efficiently charge the battery pack.
- After charging is completed, either disconnect the cable from the DC IN jack on your camcorder or remove the battery pack.

## Effective use of the battery pack

- Battery pack performance decreases in low-temperature surroundings. So, the time that the battery pack can be used becomes shorter. We recommend the following to ensure longer battery pack use:
  - Put the battery pack in a pocket to warm it up, and insert it in your camcorder immediately before you start taking shots.
  - Use the large-capacity battery pack (NP-FM70/QM71/FM90/FM91/QM91, optional).
- Frequently using the LCD panel or frequently operating playback, fast forward or rewind wears out the battery pack faster. We recommend using the large-capacity battery pack (NP-FM70/QM71/FM90/FM91/QM91, optional).
- Be sure to turn the POWER switch to OFF (CHG) when not taking shots or playing back on your camcorder. The battery pack is also consumed when your camcorder is in the standby or playback pause.
- Have spare battery packs handy for two or three times the expected recording time, and make trial recordings before taking the actual recording.
- Do not expose the battery pack to water. The battery pack is not water-resistant.

## Remaining battery time indicator

- If the power goes off although the remaining battery time indicator indicates that the battery pack has enough power to operate, fully charge the battery pack again so that the indication on the remaining battery time indicator is correct. Note, however, that the correct battery indication sometimes will not be restored if it is used in high temperatures for a long time or left in a fully charged state, or the battery pack is frequently used. Regard the remaining battery time indication as the approximate recording time.
- The  mark indicating that there is little remaining battery time sometimes flashes depending on the operating conditions or ambient temperature and environment even if the remaining battery time is about five to ten minutes.

## About the “InfoLITHIUM” battery pack

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### How to store the battery pack

- If the battery pack is not used for a long time, do the following procedure once per year to maintain proper function.
  1. Fully charge the battery.
  2. Discharge on your electronic equipment.
  3. Remove the battery from the equipment and store it in a dry, cool place.
- To use the battery pack up on your camcorder, leave your camcorder in the recording standby until the power goes off without a cassette inserted.

### Battery life

- The battery life is limited. Battery capacity drops little by little as you use it more and more, and as time passes. When the available battery time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Buy a new battery pack.
- The battery life varies according to how it is stored and operating conditions and environment for each battery pack.



# About i.LINK

The DV Interface on this unit is an i.LINK-compliant DV input/output Interface. This section describes the i.LINK standard and its features.

## What is i.LINK?

i.LINK is a digital serial interface for handling digital video, digital audio and other data in two directions between equipment having the i.LINK jack, and for controlling other equipment.

i.LINK-compatible equipment can be connected by a single i.LINK cable. Possible applications are operations and data transactions with various digital AV equipment. When two or more i.LINK-compatible equipment are connected to this unit in a daisy chain, operations and data transactions are possible with not only the equipment that this unit is connected to but also with other devices via the directly connected equipment.

Note, however, that the method of operation sometimes varies according to the characteristics and specifications of the equipment to be connected, and that operations and data transactions are sometimes not possible on some connected equipment.

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### Note

Normally, only one piece of equipment can be connected to this unit by the i.LINK cable. When connecting this unit to i.LINK-compatible equipment having two or more i.LINK jacks (DV jacks), refer to the operating instructions of the equipment to be connected.

## About the name “i.LINK”

i.LINK is a more familiar term for IEEE 1394 data transport bus proposed by SONY, and is a trademark approved by many corporations. IEEE 1394 is an international standard standardized by the Institute of Electrical and Electronic Engineers.

## i.LINK baud rate

i.LINK's maximum baud rate varies according to the equipment. Three maximum baud rates are defined:

- S100 (approx. 100Mbps\*)
- S200 (approx. 200Mbps)
- S400 (approx. 400Mbps)

The baud rate is listed under “Specifications” in the operating instructions of each equipment. It is also indicated near the i.LINK jack on some equipment. The maximum baud rate of equipment on which it is not indicated such as this unit is “S100”.

When units are connected to equipment having a different maximum baud rate, the baud rate sometimes differs from the indicated baud rate.

### \*What is Mbps?

Mbps stands for megabits per second, or the amount of data that can be sent or received in one second. For example, a baud rate of 100Mbps means that 100 megabits of data can be sent in one second.

## About i.LINK

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### i.LINK functions on this unit


For details on how to dub when this unit is connected to other video equipment having DV Interface, see page 97 and 111.

This unit can also be connected to other i.LINK (DV Interface) compatible equipment made by SONY (e.g. VAIO series personal computer) other than video equipment. Before connecting this unit to a personal computer, make sure that application software supported by this unit is already installed on the personal computer.

For details on precautions when connecting this unit, also refer to the operating instructions of the equipment to be connected.

### Required i.LINK cable

Use the Sony i.LINK 4-pin-to-4-pin cable (during DV dubbing).

i.LINK and  are trademarks.

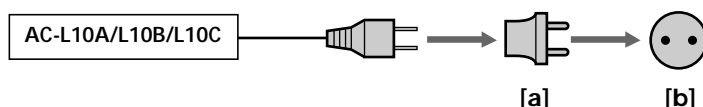
# Using your camcorder abroad

## Using your camcorder abroad

Countries and areas where you can use network functions are restricted. For details, refer to the separate Network Operating Instructions. (DCR-TRV950 only)

You can use your camcorder in any country or area with the AC power adaptor supplied with your camcorder within 100 V to 240 V AC, 50/60 Hz.

When charging the battery pack, use a commercially available AC plug adaptor [a], if necessary, depending on the design of the wall outlet [b].



Your camcorder is an NTSC system based camcorder. If you want to view the playback picture on a TV, it must be an NTSC system based TV with the AUDIO/VIDEO input jack.

The following shows TV color systems used overseas.

### NTSC system

Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Guyana, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

### PAL system

Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Holland, Hong Kong, Hungary, Italy, Kuwait, Malaysia, New Zealand, Norway, Poland, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, United Kingdom etc.

### PAL-M system

Brazil

### PAL-N system

Argentina, Paraguay, Uruguay



### SECAM system

Bulgaria, France, Guiana, Iran, Iraq, Monaco, Russia, Ukraine, etc.


# Maintenance information and precautions

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## Moisture condensation

If your camcorder is brought directly from a cold place to a warm place, moisture may condense inside your camcorder, on the surface of the tape, or on the lens. In this state, the tape may stick to the head drum and be damaged or your camcorder may not operate correctly. If there is moisture inside your camcorder, the beep and the  indicator flashes. When the  indicator flashes at the same time, the cassette is inserted in your camcorder. If moisture condenses on the lens, the indicator will not appear.

### If moisture condensation has occurred

None of the functions except cassette ejection will work. Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette lid open. Your camcorder can be used again if the  indicator does not appear when the power is turned on again.

If moisture starts to condense, your camcorder sometimes cannot detect condensation. If this happens, the cassette is sometimes not ejected for 10 seconds after the cassette lid is opened. This is not a malfunction. Do not close the cassette lid until the cassette is ejected.

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### Note on moisture condensation

Moisture may condense when you bring your camcorder from a cold place into a warm place (or vice versa) or when you use your camcorder in a hot place as follows:

- You bring your camcorder from a ski slope into a place warmed up by heating device.
- You bring your camcorder from an air-conditioned car or room into a hot place outside.
- You use your camcorder after a squall or a shower.
- You use your camcorder in a high temperature and humidity place.

### How to prevent moisture condensation




When you bring your camcorder from a cold place into a warm place, put your camcorder in a plastic bag and tightly seal it. Remove the bag when the air temperature inside the plastic bag has reached the surrounding temperature (after about one hour).

## Maintenance information and precautions

### Maintenance information

#### Cleaning the video heads

To ensure normal recording and clear pictures, clean the video heads. The video heads may be dirty when:

- Mosaic-pattern noise appears on the playback picture.
- Playback pictures do not move.
- Playback pictures do not appear.
- The  indicator and “ CLEANING CASSETTE” message appear one after another, or the  indicator flashes on the screen during recording.

If the above problem [a], [b] or [c] occurs, clean the video heads for 10 seconds with the Sony DVM-12CLD cleaning cassette (optional). Check the picture and if the above problem persists, repeat cleaning.

[a]



[b]



[c]



If the video heads get dirtier, the entire screen becomes blue [c].

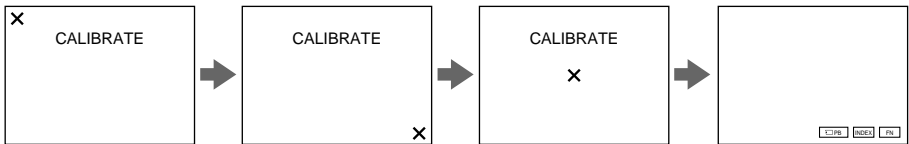
#### Cleaning the LCD screen

If fingerprints or dust make the LCD screen dirty, we recommend using the Cleaning cloth (supplied) to clean the LCD screen. When you use the LCD Cleaning Kit (optional), do not apply the cleaning liquid directly to the LCD screen. Clean the LCD screen with cleaning paper moistened with the liquid.

### Adjusting the LCD screen (CALIBRATION)

The buttons on the touch panel may not work correctly. If this happens, follow the procedure below.

- (1) Set the POWER switch to OFF (CHG).
- (2) Eject the cassette from your camcorder, then disconnect any connecting cable from your camcorder.
- (3) Set the POWER switch to VCR while pressing DISPLAY/TOUCH PANEL on your camcorder, then keep pressing DISPLAY/TOUCH PANEL for about five seconds.
- (4) Follow the procedure below using an object such as the corner of a "Memory Stick" supplied with your camcorder.  
You can use the supplied stylus for this operation (DCR-TRV950 only).
  - ① Touch ✕ at the upper left corner.
  - ② Touch ✕ at the lower right corner.
  - ③ Touch ✕ in the middle of the screen.



#### Note

If you do not press the right spot, ✕ always returns to the position at the upper left corner. In this case, start from step 4 again.

### Charging the built-in rechargeable battery

Your camcorder has a built-in rechargeable battery so that the date, time and other settings are retained even when the POWER switch is turned off. The built-in rechargeable battery is always charged as long as you are using your camcorder. The battery, however, will become discharged gradually if you do not use your camcorder. It will be completely discharged in **about four months** if you do not use your camcorder at all. Even if the built-in rechargeable battery is not charged, it will not affect camcorder operation. To retain the date, time, and other information, charge the battery if the battery is discharged.

#### Charging the built-in rechargeable battery:

- Connect your camcorder to house current using the AC power adaptor supplied with your camcorder, and leave your camcorder with the POWER switch turned off for more than 24 hours.
- Or, install a charged battery pack in your camcorder, and leave your camcorder with the POWER switch set to OFF (CHG) for more than 24 hours.

### Precautions

#### Camcorder operation

- Operate your camcorder on 7.2 V (battery pack) or 8.4 V (AC power adaptor).
- For DC or AC operation, use the accessories recommended in these operating instructions.
- If any solid object or liquid gets inside the casing, unplug your camcorder and have it checked by a Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF (CHG) when you are not using your camcorder.
- Do not wrap your camcorder with a towel, for example, and operate it. Doing so might cause heat to build up inside.
- Keep your camcorder away from strong magnetic fields or mechanical vibration.
- Do not press the LCD screen with a sharp-pointed object other than the supplied stylus (DCR-TRV950 only).
- If your camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a malfunction.
- While using your camcorder, the back of the LCD screen may heat up. This is not a malfunction.

#### On handling tapes

- Do not insert anything into the small holes on the rear of the cassette. These holes are used to sense the type and thickness of the tape and if the recording tab is in or out.
- Do not open the cassette protect cover or touch the tape.
- Avoid touching or damaging the terminals. To remove dust, clean the terminals with a soft cloth.

### Camcorder care

- Remove the cassette, and periodically turn on the power, operate the CAMERA and VCR sections and play back a tape for about three minutes when your camcorder is not to be used for a long time.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Do not let sand get into your camcorder. When you use your camcorder on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause your camcorder to malfunction, and sometimes this malfunction cannot be repaired.

### AC power adaptor

- Unplug the unit from the wall outlet when you are not using it for a long time. To disconnect the power cord, pull it out by the plug. Never pull the power cord itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the power cord forcibly, or place a heavy object on it. This will damage the cord and may cause fire or electric shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.
- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM receivers and video equipment disturb AM reception and video operation.
- The unit becomes warm during use. This is not a malfunction.
- Do not place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

### About care and storage of the lens

- Wipe the surface of the lens clean with a soft cloth in the following instances:
  - When there are fingerprints on the lens surface.
  - In hot or humid locations.
  - When the lens is used in environments such as the seaside.
- Store the lens in a well-ventilated location subject to little dirt or dust.

To prevent mold from growing, periodically perform the above.

We recommend turning on and operating the video camera recorder about once per month to keep the video camera recorder in an optimum state for a long time.



### Battery pack

- Use only the specified charger or video equipment with the charging function.
- To prevent accident from a short circuit, do not allow metal objects to come into contact with the battery terminals.
- Keep the battery pack away from fire.
- Never expose the battery pack to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.
- Keep the battery pack dry.
- Do not expose the battery pack to any mechanical shock.
- Do not disassemble nor modify the battery pack.
- Attach the battery pack to the video equipment securely.
- Charging while some capacity remains does not affect the original battery capacity.

### Notes on dry batteries

- To avoid possible damage from battery leakage or corrosion, observe the following:
- Be sure to insert the batteries with the + and – correctly matching the + and – inside the battery compartment.
  - Dry batteries are not rechargeable.
  - Do not use a combination of new and old batteries.
  - Do not use different types of batteries.
  - Current flows from batteries when you are not using them for a long time.
  - Do not use leaking batteries.

### If batteries are leaking

- Wipe off the liquid in the battery compartment carefully before replacing the batteries.
- If you touch the liquid, wash it off with water.
- If the liquid gets into your eyes, wash your eyes with a lot of water and then consult a doctor.

If any problem occurs, unplug your camcorder and contact your nearest Sony dealer.

# Specifications

## Video camera recorder

### System

#### Video recording system

2 rotary heads

Helical scanning system

#### Audio recording system

Rotary heads, PCM system

Quantization: 12 bits (Fs 32 kHz,


stereo 1, stereo 2), 16 bits

(Fs 48 kHz, stereo)

#### Video signal

NTSC color, EIA standards

#### Usable cassette

Mini DV cassette with the  mark printed

#### Tape speed

SP: Approx. 18.81 mm/s

LP: Approx. 12.56 mm/s

#### Recording/playback time (using cassette DVM60)

SP: 1 hour

LP: 1.5 hours

#### Fastforward/rewind time (using cassette DVM60)

When using the battery pack:

Approx. 2 min. and 30 seconds

When using the AC power adaptor:

Approx. 1 min. and 45 seconds

#### Viewfinder

Electric viewfinder (color)

#### Image device

3.8 mm (1/4.7 type) 3 CCD

(Charge Coupled Device)

Gross: Approx. 1 070 000 pixels

Effective (still):

Approx. 1 000 000 pixels

Effective (moving):

Approx. 690 000 pixels

#### Lens

Combined power zoom lens

Filter diameter: 37 mm

(1 1/2 in.)

12× (Optical), 150× (Digital)

F 1.6 – 2.8

#### Focal length

3.6 – 43.2 mm (5/32 – 1 3/4 in.)

When converted to a 35 mm still camera


In CAMERA



49 – 588 mm (1 15/16 – 23 1/4 in.)

In MEMORY

41 – 492 mm (1 5/8 – 19 3/8 in.)

#### Color temperature

Auto,  Indoor (3 200 K),

 Outdoor (5 800 K), 

#### Minimum illumination

7 lx (lux) (F 1.6)

### Input/Output connectors

#### S video input/output

4-pin mini DIN

Luminance signal: 1 Vp-p,

75 Ω (ohms), unbalanced

Chrominance signal: 0.286 Vp-p,

75 Ω (ohms), unbalanced

#### Audio/Video input/output

AV MINI JACK, 1 Vp-p,

75 Ω (ohms), unbalanced, sync

negative

327 mV, (at output impedance

more than 47 kΩ (kilohms))

Output impedance with less than

2.2 kΩ (kilohms)/Stereo minijack

(ø 3.5 mm)

Input impedance more than

47 kΩ (kilohms)

#### DV input/output

4-pin connector

#### Headphone jack

Stereo minijack (ø 3.5 mm)

#### LANC jack

Stereo mini-minijack (ø 2.5 mm)

#### USB jack

mini-B

#### MIC jack

Minijack, 0.388 mV low impedance

with 2.5 to 3.0 V DC, output

impedance 6.8 kΩ (kilohms) (ø 3.5

mm)

Stereo type

### LCD screen

#### Picture

8.8 cm (3.5 type)

72.2 × 50.4 mm (2 7/8 × 2 in.)

#### Total dot number

246 400 (1 120 × 220)

### Wireless communications

#### (DCR-TRV950 only)

#### Communications system

Bluetooth standard Ver.1.1

**Max. baud rate**<sup>1)2)</sup>

Approx. 723 kbps

#### Output

Bluetooth standard Power Class 2

#### Communications distance<sup>2)</sup>

Max. wireless distance

Approx. 10 m (393 3/4 in.) (When

connecting to BTA-NW1/NW1A)

#### Compatible Bluetooth profile<sup>3)</sup>

Generic Access Profile

Dial-up Networking Profile

#### Operating frequency band

2.4 GHz band (2.400 GHz –

2.483 5 GHz)

- 1) Max. baud rate of Bluetooth standard Ver.1.1
- 2) Varies according to the distance between communicating devices, presence of obstacles, radiowave conditions, and other factors.
- 3) This is a specification matched to specific usage requirements between Bluetooth compatible devices. It is laid down in the Bluetooth standards.

# Specifications

## General

### Power requirements

7.2 V (battery pack)

8.4 V (AC power adaptor)

### Average power consumption (when using the battery pack)

During camera recording using LCD

6.3 W

Viewfinder

4.9 W

### Operating temperature

0°C to 40°C (32°F to 104°F)

### Storage temperature

-20°C to +60°C

(-4°F to +140°F)

### Dimensions (Approx.)

93 × 99 × 202 mm

(3 3/4 × 4 × 8 in.) (w/h/d)

### Mass (Approx.)

DCR-TRV950: 970 g (2 lb 2 oz)

DCR-TRV940: 960 g (2 lb 1 oz)

main unit only

DCR-TRV950: 1.1kg (2 lb 6 oz)

DCR-TRV940: 1.1kg (2 lb 6 oz)

including the battery pack

NP-FM50, cassette DVM60 and

lens cap, Shoulder strap

### Supplied accessories

See page 14.

## AC power adaptor

### Power requirements

100 – 240 V AC, 50/60 Hz

### Power consumption

23 W

### Output voltage

DC OUT: 8.4 V, 1.5 A in the operating mode

### Operating temperature

0°C to 40°C (32°F to 104°F)

### Storage temperature

-20°C to +60°C

(-4°F to +140°F)

### Dimensions (approx.)

125 × 39 × 62 mm

(5 × 1 9/16 × 2 1/2 in.) (w/h/d)

excluding projecting parts

### Mass (approx.)

280 g (9.8 oz)

excluding power cord

## Battery pack

### Maximum output voltage

DC 8.4 V

### Output voltage

DC 7.2 V

### Capacity

8.5 Wh (1 180 mAh)

### Dimensions (approx.)

38.2 × 20.5 × 55.6 mm

(1 9/16 × 13/16 × 2 1/4 in.)

(w/h/d)

### Mass (approx.)

76 g (2.7 oz)

### Type

Lithium ion

## “Memory Stick”

### Memory

Flash memory

8MB: MSA-8A

### Operating voltage

2.7 – 3.6 V

### Power consumption

Approx. 45 mA in the operating mode

Approx. 130 µA in the standby mode

### Dimensions (approx.)

50 × 2.8 × 21.5 mm

(2 × 1/8 × 7/8 in.) (w/h/d)

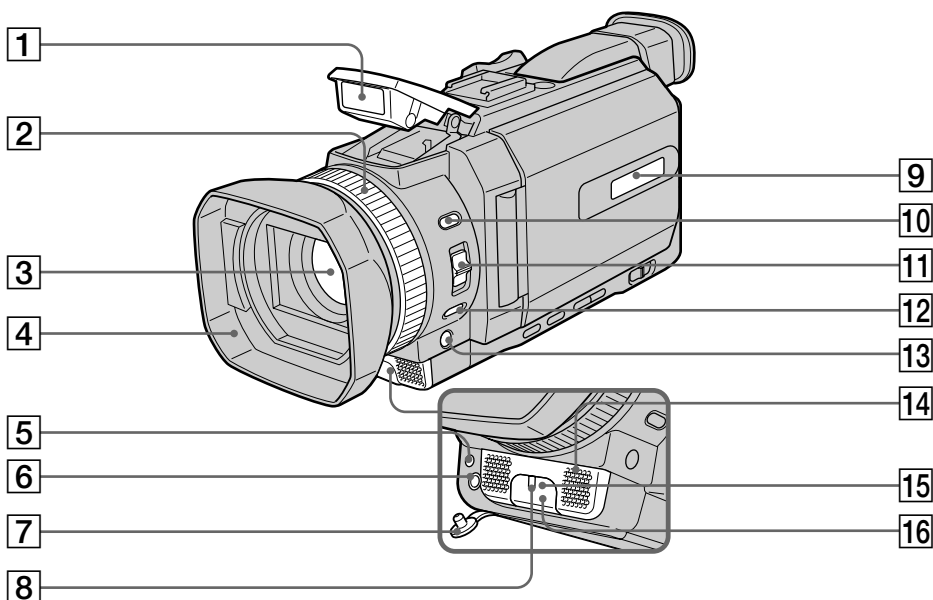
### Mass (approx.)

4 g (0.14 oz)

Design and specifications are subject to change without notice.

# Identifying parts and controls

## Camcorder



- |   |  |
|---|--|
| <b>1</b> Flash (p. 48, 139)   | <b>8</b> Camera recording lamp (p. 26)         |
| <b>2</b> Focus ring (p. 76)   | <b>9</b> Display window (p. 16)                |
| <b>3</b> Lens   | <b>10</b> <b>⚡</b> (flash) button (p. 48, 139) |
| <b>4</b> Lens hood  | <b>11</b> FOCUS switch (p. 76)                 |
| <b>5</b> HOLOGRAM AF emitter (p. 141)   | <b>12</b> PUSH AUTO button (p. 76)             |
| <b>6</b> MIC jack (PLUG IN POWER) (red)   | <b>13</b> FADER button * (p. 56)               |
| Connect an external microphone (optional). This jack also accepts a “plug-in-power” microphone. | <b>14</b> Microphone                           |
| <b>7</b> MIC jack cover   | <b>15</b> Infrared rays emitter (p. 101)       |
|   | <b>16</b> Remote sensor                        |

\* The FADER button has a tactile dot for easy operation.

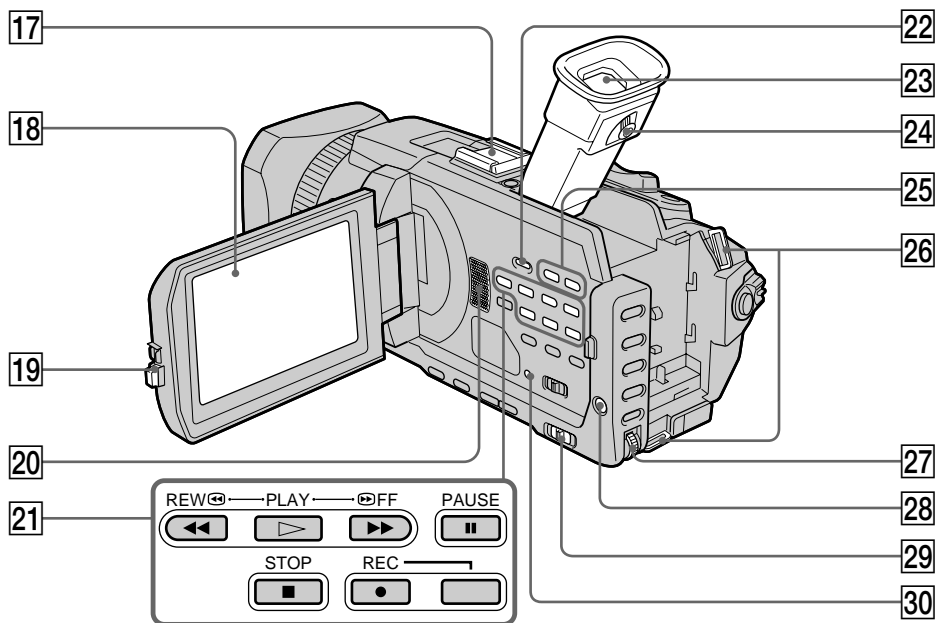
### Removing the lens hood

To remove the lens hood to attach the optional wide teleconversion lens filter, etc., unscrew the lens hood counterclockwise. To attach the lens hood again, fit the protrusions on the lens hood into the holes of the lens and screw the lens hood clockwise.

### When using additional filters

Shading may occur on the recorded image due to the lens hood.

## Identifying parts and controls



- |  |  |
|--|--|
| <b>17</b> Intelligent accessory shoe (p. 115, 181) | <b>24</b> Viewfinder lens adjustment lever (p. 30) |
| <b>18</b> LCD/Touch panel screen (p. 24, 129)      | <b>25</b> VOLUME buttons (p. 39)                   |
| <b>19</b> OPEN button                              | <b>26</b> Hooks for shoulder strap                 |
| <b>20</b> Speaker                                  | <b>27</b> SEL/PUSH EXEC dial                       |
| <b>21</b> Video control buttons *                  | <b>28</b> MENU button (p. 207)                     |
| <b>22</b> DISPLAY/TOUCH PANEL button (p. 41)       | <b>29</b> AUTO LOCK selector (p. 67)               |
| <b>23</b> Viewfinder (p. 30)                       | <b>30</b> RESET button (p. 224)                    |

\* The PLAY button of the Video control buttons has a raised tactile dot for easy operation.

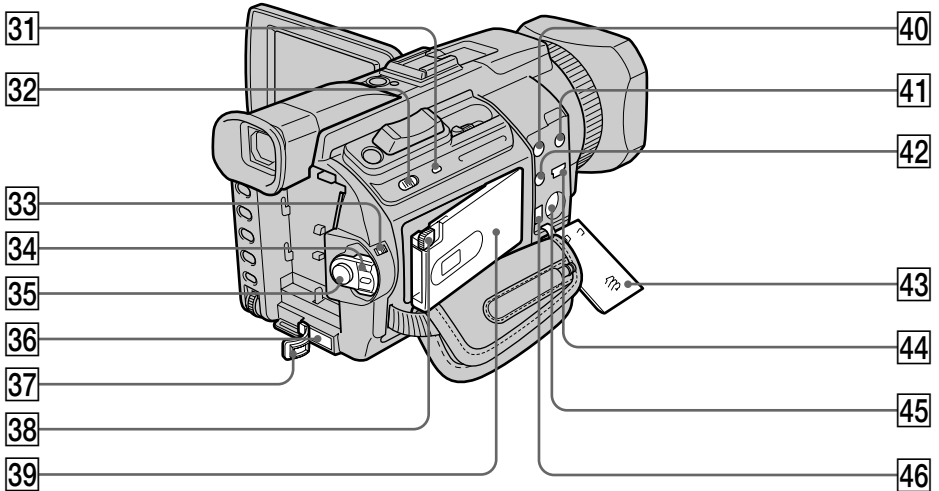
### Intelligent Accessory Shoe

#### Notes on the intelligent accessory shoe

- The intelligent accessory shoe supplies power to optional accessories such as a video light or microphone.
- The intelligent accessory shoe is linked to the POWER switch, allowing you to turn the power supplied by the shoe on and off. Refer to the operating instructions of the accessory for further information.
- The intelligent accessory shoe has a safety device for fixing the installed accessory securely. To connect an accessory, press down and push it to the end, and then tighten the screw.
- To remove an accessory, loosen the screw, and then press down and pull out the accessory.

## Identifying parts and controls

---



- |   |  |
|---|--|
| <b>31</b> Access lamp                         | <b>40</b> <b>AUDIO/VIDEO ID-2 jack (yellow)</b> (p. 45, 95, 146, 158, 204) |
| <b>32</b> <b>MEMORY OPEN button</b> (p. 128)  | <b>41</b> <b>(headphones) jack (green)</b>                                 |
| <b>33</b> <b>LOCK switch</b> (p. 26)          | When you use headphones, the speaker on your camcorder is silent.          |
| <b>34</b> <b>POWER switch</b>                 | <b>42</b> <b>(LANC) jack (blue)</b>  |
| <b>35</b> <b>START/STOP button</b> (p. 26)    | <b>43</b> <b>Jack cover</b> (p. 45)  |
| <b>36</b> <b>DC IN jack</b> (p. 19)           | <b>44</b> <b>(USB) jack</b> (p. 183)                                       |
| <b>37</b> <b>DC IN jack cover</b>             | <b>45</b> <b>S VIDEO ID-2 jack</b> (p. 45, 95, 146, 158)                   |
| <b>38</b> <b>MEMORY EJECT button</b> (p. 128) | <b>46</b> <b>DV Interface</b> (p. 97, 111, 147, 159, 204)                  |
| <b>39</b> <b>"Memory Stick" slot</b> (p. 128) |  |

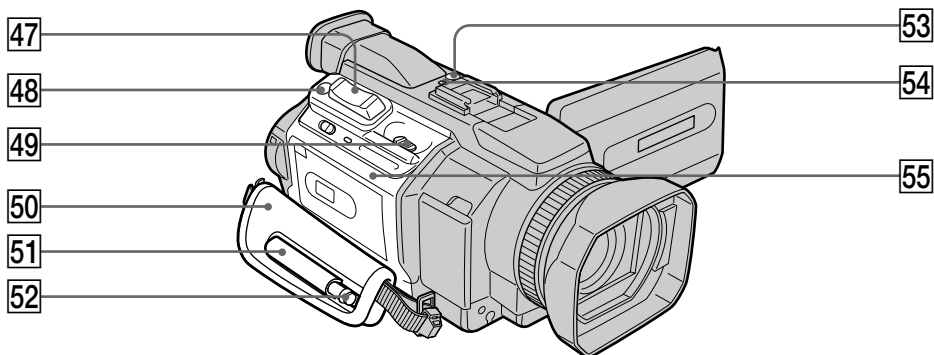
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### **(LANC)** LANC

The **(LANC)** LANC stands for Local Application Control Bus System. The **(LANC)** LANC control jack is used for controlling the tape transport of video equipment and peripherals connected to it. This jack has the same function as the jack indicated as CONTROL L or REMOTE.

## Identifying parts and controls

---



**47** Power zoom lever (p. 31, 86, 173)

**48** PHOTO button (p. 46, 51, 135)

**49**  $\square$  OPEN/  $\blacktriangle$  EJECT lever (p. 23)

**50** Grip strap

**51** Holder (DCR-TRV950 only)

**52** Stylus (p. 206) (DCR-TRV950 only)

**53** NETWORK button (p. 205)  
(DCR-TRV950 only)

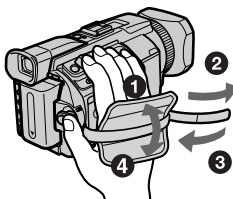
**54**  $\text{Ⓜ}$  (Bluetooth) lamp (p. 205)  
(DCR-TRV950 only)

**55** Cassette lid

---

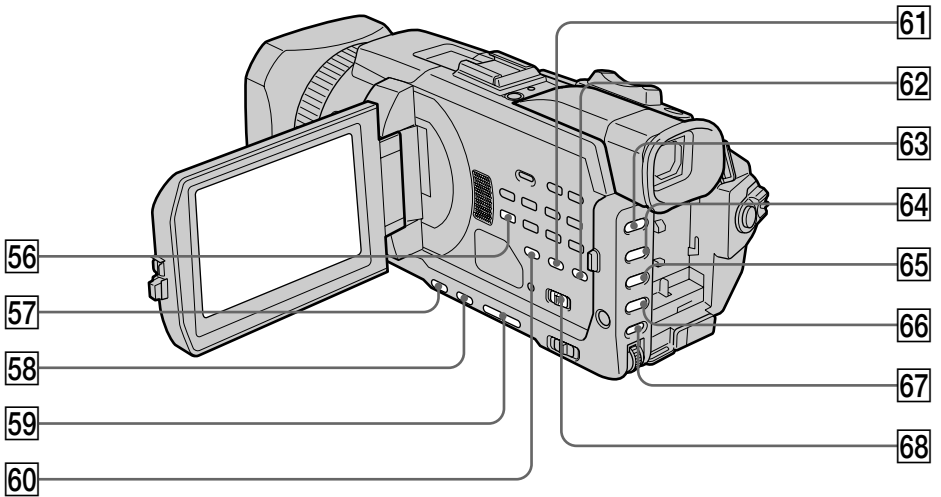
### Fastening the grip strap

Fasten the grip strap firmly.



## Identifying parts and controls

---



**56** AUDIO DUB button (p. 117)

**57** BACK LIGHT button (p. 34)

**58** SPOT LIGHT button \* (p. 35)

**59** EDITSEARCH button \* (p. 37)

**60** DATA CODE button (p. 41)

**61** COLOR BAR button (p. 66)

**62** CUSTOM PRESET button (p. 62)

**63** PROGRAM AE button (p. 68)


**64** SHUTTER SPEED button \* (p. 70)

**65** WHT BAL button (p. 72)

**66** EXPOSURE button (p. 74)

**67** AUDIO LEVEL button (p. 79)

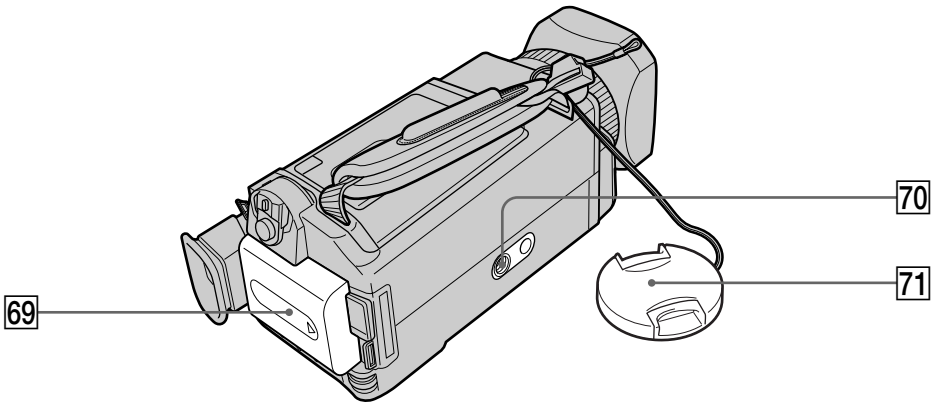
**68** ZEBRA selector (p. 65)

\* Each of the buttons has a raised tactile dot. (The EDIT SEARCH button has it on the –  side.)  
Use it for easy operation.



## Identifying parts and controls

---



**69** Battery Pack (p. 15)

**70** Tripod receptacle

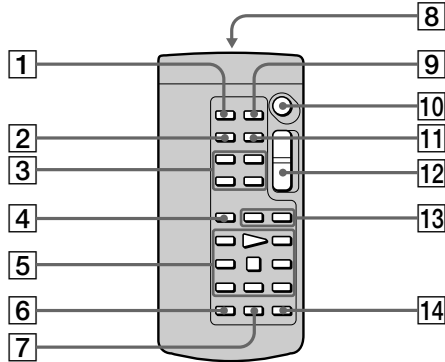
Make sure that the length of the tripod screw is less than 5.5 mm (7/32 inch). Otherwise, you cannot attach the tripod securely, and the screw may damage your camcorder.

**71** Lens cap (p. 26)

## Identifying parts and controls

### Remote Commander

The buttons that have the same name on the Remote Commander as on your camcorder function identically to the buttons on your camcorder.



- 1 PHOTO button (p. 46, 51, 135)
- 2 DISPLAY button (p. 41)
- 3 Memory control buttons
- 4 SEARCH MODE button (p. 89, 90, 92)
- 5 Video control buttons (p. 43)
- 6 REC button
- 7 MARK button (p. 106, 160)

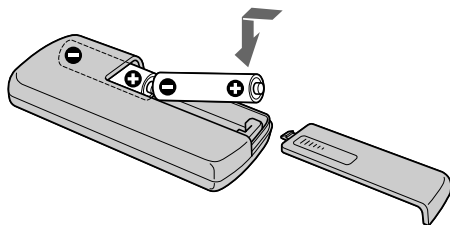
- 8 Transmitter  
Point toward the remote sensor to control your camcorder after turning on your camcorder.
- 9 ZERO SET MEMORY button (p. 88)
- 10 START/STOP button (p. 26)
- 11 DATA CODE button (p. 41)
- 12 Power zoom button (p. 31)
- 13 ◀◀/▶▶ buttons (p. 89, 90, 92)
- 14 AUDIO DUB button (p. 117)

## Identifying parts and controls

---

### To prepare the Remote Commander

Insert two size AA (R6) batteries by matching the + and – on the batteries to the + and – in the battery compartment.



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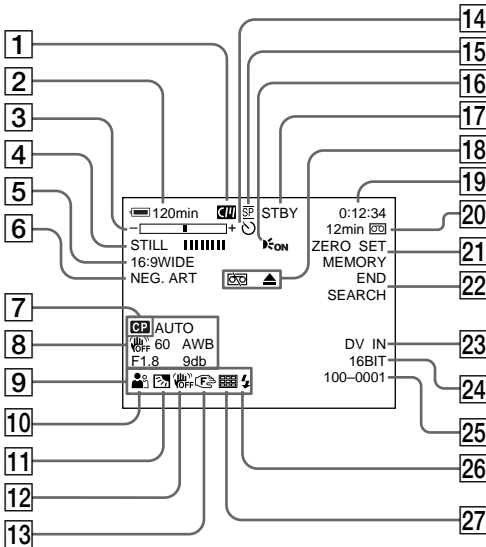
### Notes on the Remote Commander

- Point the remote sensor away from strong light sources such as direct sunlight or overhead lighting. Otherwise, the Remote Commander may not function properly.
- Your camcorder works in the commander mode VTR 2. Commander modes 1, 2 and 3 are used to distinguish your camcorder from other Sony VCRs to avoid erroneous remote control operation. If you use another Sony VCR in the commander mode VTR 2, we recommend changing the commander mode or covering the sensor of the VCR with black paper.

## Identifying parts and controls

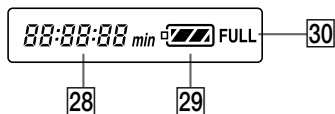
### Operation indicators

#### LCD screen and Viewfinder



- 1 Cassette memory (p. 12, 228)
- 2 Remaining battery time (p. 33)
- 3 Zoom (p. 31)/  
Exposure (p. 74)/  
Data file name (p. 126)
- 4 Digital effect (p. 59, 85)/  
MEMORY MIX (p. 148)/  
FADER (p. 55)
- 5 16:9WIDE (p. 53)
- 6 Picture effect (p. 58, 84)
- 7 Custom preset (p. 62)
- 8 Data code (p. 41)
- 9 Volume (p. 39)/  
Date (p. 33)
- 10 PROGRAM AE (p. 67)
- 11 Backlight (p. 34)/  
Spot light (p. 35)
- 12 SteadyShot off (p. 209)
- 13 Manual focus/Infinity (p. 76)
- 14 Self-timer (p. 36, 50, 143, 155)
- 15 Recording mode (p. 27)
- 16 HOLOGRAM AF (p. 141)
- 17 STBY/REC (p. 26)/  
Video control mode (p. 43)/  
Image size (p. 133)/  
Image quality (p. 131)
- 18 Warning (p. 226)
- 19 Tape counter (p. 33)/  
Time code (p. 33)/  
Self-diagnosis (p. 225)/  
Tape photo (p. 51)/  
Memory photo (p. 46, 135)/  
Image number (p. 166)
- 20 Remaining tape (p. 33)/  
Memory playback (p. 166)
- 21 ZERO SET MEMORY (p. 88)
- 22 END SEARCH (p. 37)
- 23 A/V → DV (p. 204)/  
DV IN (p. 112)
- 24 Audio mode (p. 214)
- 25 Data file name (p. 126)/  
Time (p. 33)/  
Audio input level (p. 79)
- 26 Flash (p. 48, 139)
- 27 Continuous photo recording (p. 137)

### Display window



- 28 Remaining battery time indicator (p. 16)/  
Tape counter (p. 33)/  
Time code indicator (p. 33)/  
Image number (p. 166)/  
Self-diagnosis indicator (p. 225)
- 29 Remaining battery time (p. 16)
- 30 FULL charge indicator (p. 16)

# Index

---

## A, B

AC power adaptor .....	16
Adjusting viewfinder .....	30
Audio dubbing .....	115
AUDIO LEVEL .....	79
AUDIO MIX .....	210
Audio mode .....	214
AUTO LOCK selector .....	67
Auto red-eye reduction .....	48, 139
AUTO SHTR .....	208
A/V connecting cable .....	45, 95, 109, 146, 158, 204
BACK LIGHT .....	34
Battery pack .....	15
BEEP .....	216
BOUNCE .....	55

---

## C, D

CALIBRATION .....	238
Camera chromakey .....	148
Cassette memory .....	12, 228
Charging battery .....	16
Charging built-in rechargeable battery .....	239
Clock set .....	20
Color bar .....	66
Continuous photo recording .....	137
Custom preset .....	62
Data code .....	41
Date search .....	90
DEMO MODE .....	215
DIGITAL EFFECT .....	59, 85
Digital program editing .....	98, 160
Digital zoom .....	31
DISPLAY .....	41
DOT .....	55
Dual sound track tape .....	229

---

## E

EDITSEARCH .....	37
END SEARCH .....	37, 43
Exposure .....	74

---

## F, G, H

FADER .....	55
Fade in/out .....	55
Flash .....	48, 139
FLASH MOTION .....	59
Flexible Spot Meter .....	75
FOCUS .....	76
Format .....	126, 212
Frame recording .....	83
Full charge .....	16

Grip strap .....	247
Guide frame .....	64
Ⓜ (Headphone) jack .....	246
Heads .....	237
HiFi SOUND .....	210
HOLOGRAM AF .....	141

---

## I, J, K, L

i.LINK .....	233
i.LINK cable .....	97, 111, 147, 159, 204
Image protection .....	176
Image quality .....	131
Image size .....	133
Index screen .....	167
"InfoLITHIUM" battery .....	231
Infrared rays emitter .....	101
Insert editing .....	113
Intelligent accessory shoe ...	245
Interval recording .....	81
JPEG .....	126
Labeling a cassette .....	124
LANC jack .....	246
LUMINANCEKEY .....	59

---

## M, N

Main sound .....	229
Manual focus .....	76
Memory chromakey .....	148
Memory luminancekey .....	148
MEMORY MIX .....	148
Memory overlap .....	148
Memory PB ZOOM .....	173
Memory photo recording ...	135
"Memory Stick" .....	126
Menu settings .....	207
M. FADER .....	55
Mirror mode .....	32
Moisture condensation .....	236
MONOTONE .....	55
MPEG .....	126
MPEG movie recording .....	153
NETWORK .....	205
NTSC system .....	235

---

## O, P, Q

OLD MOVIE .....	59
Operation indicators .....	252
OVERLAP .....	55
Photo save .....	163
Photo scan .....	94
Photo search .....	92
PICTURE EFFECT .....	58, 84
Picture search .....	43
Playback pause .....	43
Playing time .....	18
Power zoom .....	31
Print mark .....	180
PROGRAM AE .....	67

---

## R

Recording level .....	79
Recording time .....	17
Rec Review .....	38
Remaining battery time indicator .....	33
Remaining tape indicator .....	33
Remote Commander .....	250
Remote sensor .....	244
RESET .....	224

---

## S

Self-diagnosis display .....	225
Self-timer recording .....	36, 50, 143, 155
Shutter speed .....	70
Signal convert function .....	204
Skip scan .....	43
Slide show .....	175
Slow playback .....	43
SPOT FOCUS .....	78
Spot light .....	35
STEADYSHOT .....	209
Stereo tape .....	229
STILL .....	59
Stylus .....	206
Sub sound .....	229
S VIDEO jack .....	45, 95, 109, 146, 158

---

## T, U, V

Tape counter .....	33
Tape PB ZOOM .....	86
Tape photo recording .....	51
Telephoto .....	31
Time code .....	33
Title .....	119, 122
Title search .....	89
Touch panel .....	24, 129
TRAIL .....	59
Transition .....	27
TV color systems .....	235
USB jack .....	183
USB Streaming .....	186
Volume .....	39

---

## W, X, Y, Z

Warning indicators .....	226
White balance .....	72
Wide-angle .....	31
Wide mode .....	53
WIPE .....	55
Write-protect switch .....	126
Write-protect tab .....	23
Zebra pattern .....	65
Zero set memory .....	88
Zoom .....	31



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