

Digital Video Camera Recorder^{Mini DV} Digital Video Cassette

Operating Instructions

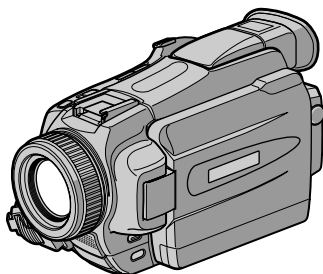
Before operating the unit, please read this manual thoroughly, and retain it for future reference.

Owner's Record

The model and serial numbers are located on the bottom. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. **DCR-TRV** _____ Model No. **AC-** _____

Serial No. _____ Serial No. _____



DCR-TRV27

Digital Handycam



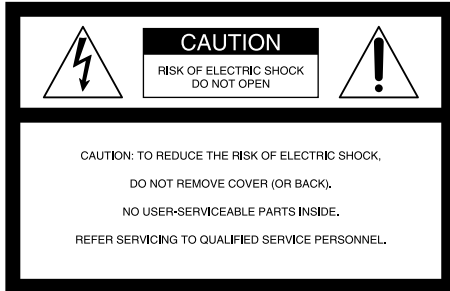
**DCR-TRV16/TRV18/
TRV25/TRV27**

Welcome!

Congratulations on your purchase of this Sony Handycam. With your Handycam, you can capture life's precious moments with superior picture and sound quality. Your Handycam is loaded with advanced features, but at the same time it is very easy to use. You will soon be producing home video that you can enjoy for years to come.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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.

Notice

If static electricity or electromagnetism causes data transfer to discontinue midway (fail), restart the application or disconnect and connect the USB cable again.

For customers in the U.S.A. and CANADA

RECYCLING LITHIUM-ION BATTERIES

Lithium-Ion batteries are recyclable. You can help preserve our environment by returning your used rechargeable batteries to the collection and recycling location nearest you.



For more information regarding recycling of rechargeable batteries, call toll free 1-800-822-8837, or visit <http://www.rbrc.org/>

Caution: Do not handle damaged or leaking Lithium-Ion batteries.

CAUTION

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

For customers in the U.S.A.

If you have any questions about this product, you may call :
Sony Customer Information Center 1-800-222-SONY (7669)
The number below is for the FCC related matters only.
Regulatory Information

Declaration of Conformity

Trade Name: SONY
Model No.: DCR-TRV18
Responsible Party: Sony Electronics Inc.
Address: 680 Kinderkamack Road,
Oradell, NJ07649 U.S.A.
Telephone No.: 201-930-6972

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Declaration of Conformity

Trade Name: SONY
 Model No.: DCR-TRV25, DCR-TRV27
 Responsible Party: Sony Electronics Inc.
 Address: 680 Kinderkamack Road,
 Oradell, NJ 07649 U.S.A.
 Telephone No.: 201-930-6972

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For customers in CANADA

“Memory Stick”

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

“Memory Stick”

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Main Features

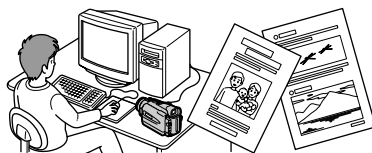
Recording moving pictures or still images, and playing them back



- Recording moving pictures on a tape (p. 26)
- Recording still images on a tape (p. 46)
- Playing back a tape (p. 38)
- Recording still images on a “Memory Stick”* (p. 43, 112)
- Recording moving pictures on a “Memory Stick”* (p. 125)
- Viewing still images recorded on a “Memory Stick”* (p. 137)
- Viewing moving pictures on a “Memory Stick”* (p. 140)

- Viewing images recorded on a “Memory Stick” using the USB cable* (p. 169, 173)
- Viewing images recorded on a tape using the USB cable (p. 165)
- Capturing images on your computer from your camcorder using the USB cable (p. 166)
- Converting an analog signal into digital to capture images onto your computer (p. 174)

Capturing images on your computer



Other uses

Functions for adjusting exposure in the recording mode

- BACK LIGHT (p. 33)
- NightShot / Super NightShot / Color Slow Shutter (p. 34)
- PROGRAM AE (p. 58)
- Adjusting the exposure manually (p. 60)

Functions for giving images more impact

- Digital zoom (p. 30)
The default setting is **OFF**. (To zoom greater than 10×, select the digital zoom power in **D ZOOM** in the menu settings.)
- Fader (p. 51)
- Picture effect (p. 54)
- Digital effect (p. 55)
- Titles (p. 98)
- MEMORY MIX* (p. 120)

Functions for giving a natural appearance to your recordings

- Landscape (p. 58)
- Sports lesson (p. 58)
- Manual focus (p. 61)

Functions for using after recording

- END SEARCH / EDITSEARCH / Rec Review (p. 37)
- DATA CODE (p. 39)
- Tape PB ZOOM (p. 67) / Memory PB ZOOM* (p. 145)
- ZERO SET MEMORY (p. 69)
- TITLE SEARCH (p. 70)
- Digital program editing (p. 78, 132*)

* Except DCR-TRV16

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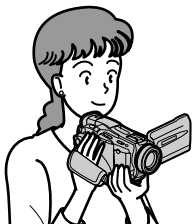
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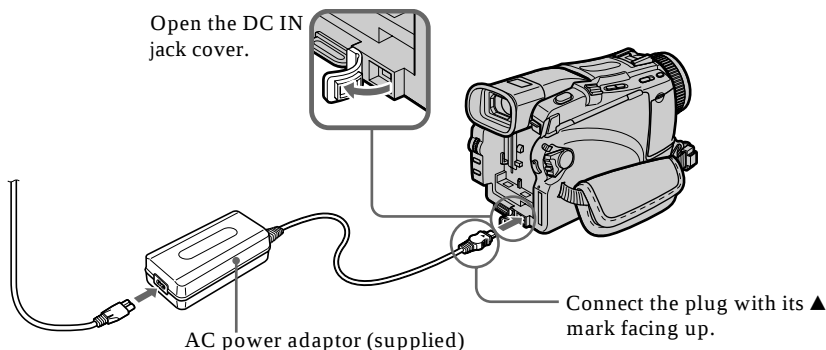
Quick Start Guide – Recording on a tape



This chapter introduces you to the basic features to record on a tape of your camcorder. See the page in parentheses “()” for more information.

1 Connecting the power cord (p. 22)

Use the battery pack when using your camcorder outdoors (p. 16).



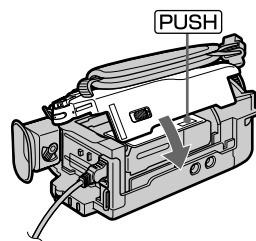
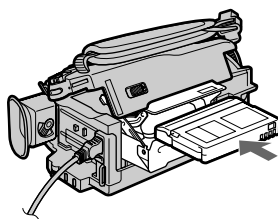
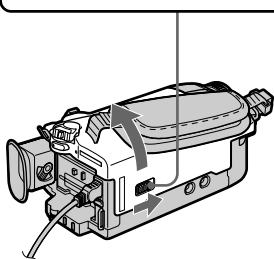
2 Inserting a cassette (p. 25)

- 1** Slide **OPEN / EJECT** in the direction of the arrow and open the lid.



- 2** Push the center of the cassette back to insert the cassette. Insert the cassette straight as far as possible into the cassette compartment with the window facing up.

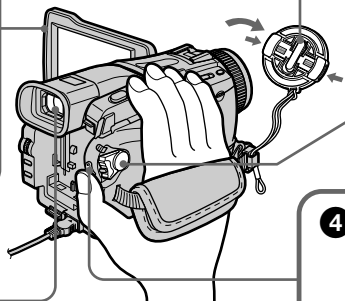
- 3** Close the cassette compartment by pressing **PUSH** on the cassette compartment. After the cassette compartment goes down completely, close the lid until it clicks.



3 Recording a picture (p. 26)

- 1 Remove the lens cap.

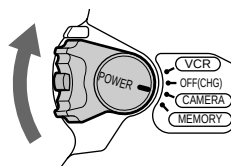
- 3 Open the LCD panel while pressing OPEN. The picture appears on the screen.



Viewfinder

When the LCD panel is closed, use the viewfinder with your eye against the eyecup. Adjust the viewfinder lens to your eyesight (p. 29).

- 2 Set the POWER switch to CAMERA while pressing the small green button.



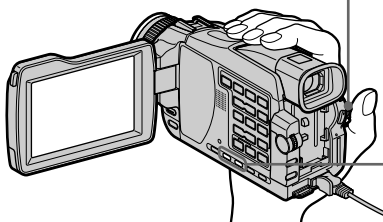
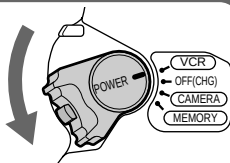
- 4 Press START/STOP. Your camcorder starts recording. To stop recording, press START/STOP again.



When you purchase your camcorder, the clock setting is set to off. If you want to record the date and time for a picture, set the clock before recording (p. 23).

4 Monitoring the playback picture on the LCD screen (p. 38)

- 1 Set the POWER switch to VCR while pressing the small green button.



- 2 Press ◀◀ to rewind the tape.

REW



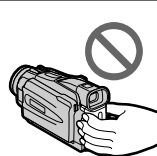
- 3 Press ▶ to start playback.

PLAY



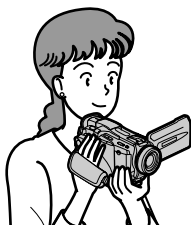
NOTE

Do not pick up your camcorder by holding the viewfinder, the LCD panel, or the battery pack.



Quick Start Guide – Recording on a “Memory Stick”

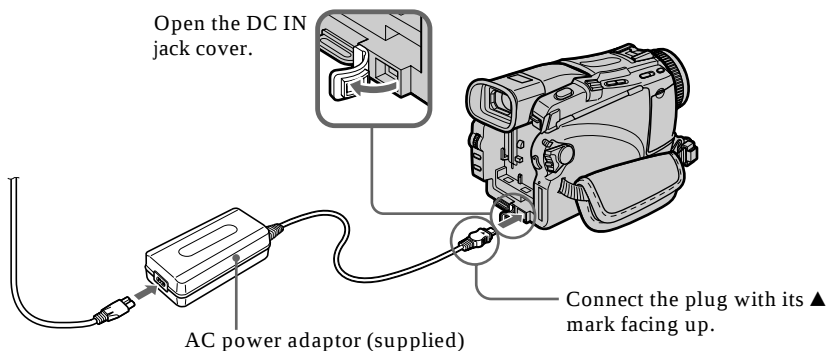
– Except DCR-TRV16



This chapter introduces you to the basic features to record on a “Memory Stick” of your camcorder. See the page in parentheses “()” for more information.

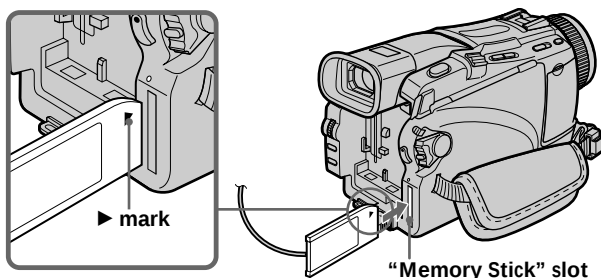
1 Connecting the power cord (p. 22)

Use the battery pack when using your camcorder outdoors (p. 16).



2 Inserting a “Memory Stick” (p. 106)

Insert a “Memory Stick” in the “Memory Stick” slot as far as it can go with the ► mark facing up as illustrated.



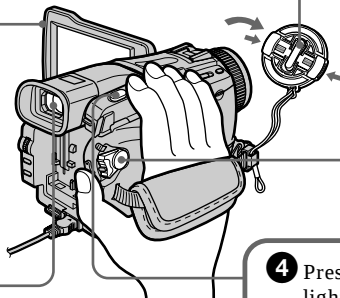
When ejecting the “Memory Stick”, press the “Memory Stick” once lightly.

3

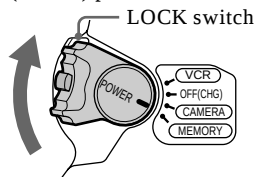
Recording a still image on a "Memory Stick" (p. 112)

1 Remove the lens cap.

3 Open the LCD panel while pressing OPEN. The picture appears on the screen.



2 Set the POWER switch to MEMORY while pressing the small green button. Make sure that the LOCK switch is set to the left (unlock) position.



Viewfinder

When the LCD panel is closed, use the viewfinder with your eye against the eyecup. Adjust the viewfinder lens to your eyesight (p. 29).

4 Press PHOTO lightly.



5 Press PHOTO deeper.

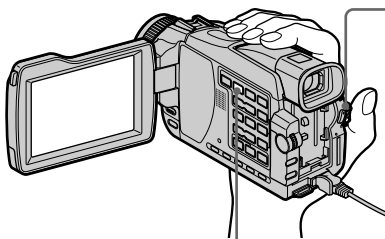
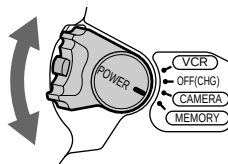


When you purchase your camcorder, the clock setting is set to off. If you want to record the date and time for a picture, set the clock before recording (p. 23).

4

Monitoring the playback still images on the LCD screen (p. 137)

1 Set the POWER switch to MEMORY or VCR while pressing the small green button.



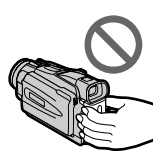
2 Press MEMORY PLAY. The last recorded image is displayed.

PLAY

Press MEMORY -/+ to select the desired image.

NOTE

Do not pick up your camcorder by holding the viewfinder, the LCD panel or the battery pack.



Using this manual

The instructions in this manual are for the four models listed in the table below. Before you start reading this manual and operating your camcorder, check the model number by looking at the bottom of your camcorder. The DCR-TRV27 is the model used for illustration purposes. Otherwise, the model name is indicated in the illustrations. Any differences in operation are clearly indicated in the text, for example, “DCR-TRV27 only”.

As you read through this manual, buttons and settings on your camcorder are shown in capital letters.

e.g. Set the POWER switch to CAMERA.

When you carry out an operation, you can hear a beep to indicate that the operation is being carried out.

Types of differences

DCR-	TRV16	TRV18	TRV25	TRV27
MEMORY mark* ¹⁾ (on the POWER switch)	—	●	●	●
Intelligent accessory shoe	8 pin	15 pin* ²⁾	15 pin* ²⁾	15 pin* ²⁾
LCD screen	6.2 cm (2.5 type)	6.2 cm (2.5 type)	6.2 cm (2.5 type)	8.8 cm (3.5 type)

- Provided
- Not provided

*¹⁾ The model with MEMORY marked on the POWER switch is provided with memory functions.
See page 105 for details.

*²⁾ This intelligent accessory shoe is designed to use a printer (optional) (p. 152).

Note on Cassette Memory

Your camcorder is based on the DV format. You can use only mini DV cassettes with your camcorder. We recommend that you use a tape with cassette memory **CM**.

Functions that require different operations depending on whether or not the tape has a cassette memory are:

- END SEARCH (p. 37)
- DATE SEARCH (p. 71)
- PHOTO SEARCH (p. 73)

Functions that you can operate only with the cassette memory are:

- TITLE SEARCH (p. 70)
- Superimposing a title (p. 98)
- Labeling a cassette (p. 103)

For details of cassette types, see page 194.



You see this mark in the introduction of features that are operated only with cassette memory.

Cassettes with cassette memory are marked by **CM** (Cassette Memory).

Note on TV color systems

TV color systems differ depending on the country or region. To view your recordings on a TV, you need an NTSC system-based TV.

Copyright precautions

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to copyright laws.

Precautions on camcorder care

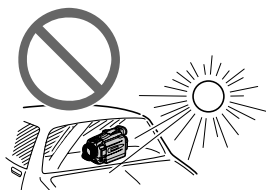
Lens and LCD screen/finder (on mounted models only)

- The LCD screen and the finder are manufactured using extremely high-precision technology, so over 99.99 % of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue or green in color) that constantly appear on the LCD screen and the finder. These points are normal in the manufacturing process and do not affect the recording in any way.
- Do not let your camcorder become wet. Keep your camcorder away from rain and sea water. Letting your camcorder become wet may cause your camcorder to malfunction. Sometimes this malfunction cannot be repaired **[a]**.
- Never leave your camcorder exposed to temperatures above 60 °C (140 °F), such as in a car parked in the sun or under direct sunlight **[b]**.
- Be careful when placing the camera near a window or outdoors. Exposing the LCD screen, the finder or the lens to direct sunlight for long periods may cause malfunctions **[c]**.
- Do not directly shoot the sun. Doing so might cause your camcorder to malfunction. Take pictures of the sun in low light conditions such as dusk **[d]**.

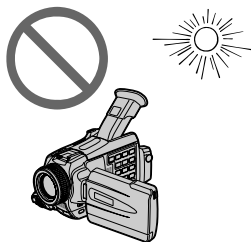
[a]



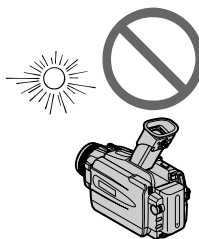
[b]



[c]

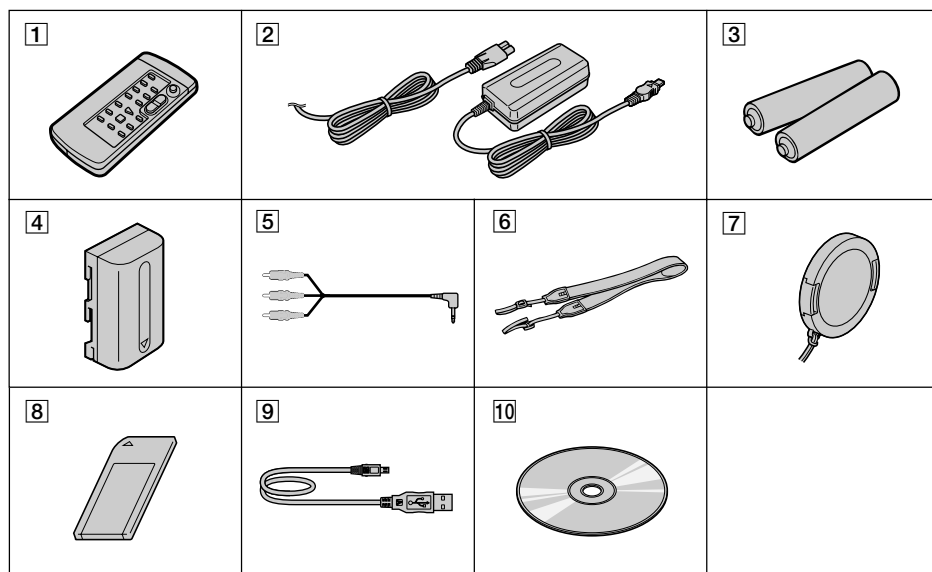


[d]



Checking supplied accessories

Make sure that the following accessories are supplied with your camcorder.



Getting Started

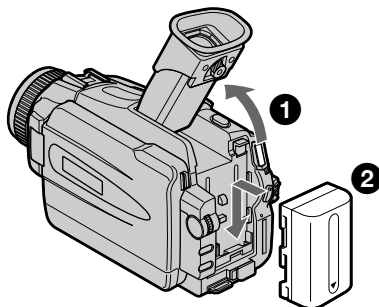
- | | |
|--|--|
| <p>1 Wireless Remote Commander (1)
(p. 216)</p> <p>2 AC-L10A/L10B/L10C AC power adaptor (1), Power cord (1) (p. 22)</p> <p>3 Size AA (R6) battery for Remote Commander (2) (p. 216)</p> <p>4 Battery pack (1) (p. 16, 17)
NP-FM30: DCR-TRV16/TRV18
NP-FM50: DCR-TRV25/TRV27</p> | <p>5 A/V connecting cable (1) (p. 42)</p> <p>6 Shoulder strap (1) (p. 213)</p> <p>7 Lens cap (1) (p. 26)</p> <p>8 "Memory Stick" (1) (p. 105)
(except DCR-TRV16)</p> <p>9 USB cable (1) (p. 154)</p> <p>10 CD-ROM (SPVD-008 USB Driver) (1)
(p. 159)</p> |
|--|--|

Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, storage media, etc.

Step 1 Preparing the power supply

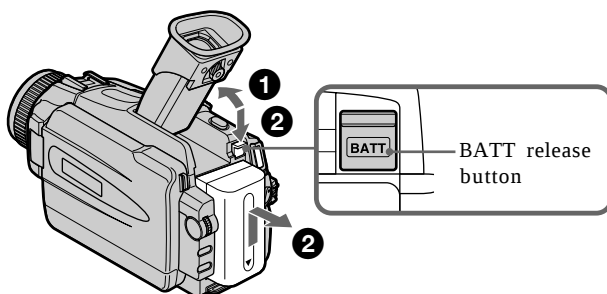
Installing the battery pack

- (1) Lift up the viewfinder.
- (2) Slide the battery pack down until it clicks.



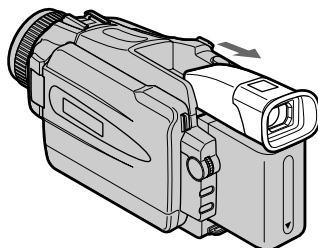
To remove the battery pack

- (1) Lift up the viewfinder.
- (2) Slide the battery pack out in the direction of the arrow while pressing BATT down.



If you use the large capacity battery pack

If you install the NP-FM70/QM71/FM90/FM91/QM91 battery pack on your camcorder, extend its viewfinder.



Step 1 Preparing the power supply

Charging the battery pack

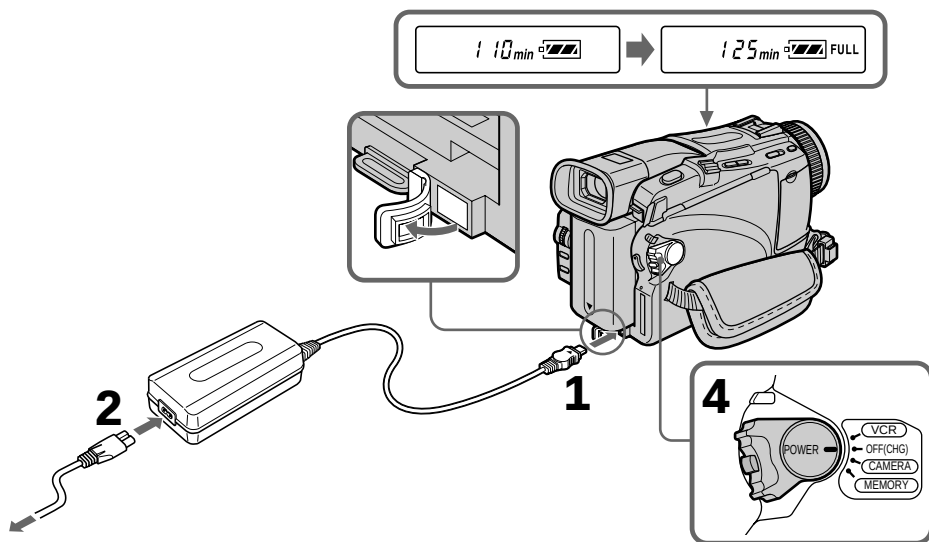
Use the battery pack after charging it for your camcorder.

Your camcorder operates only with the “InfoLITHIUM” battery pack (M series).

See page 197 for details of “InfoLITHIUM” battery pack.

- (1) Open the DC IN jack cover. Connect the AC power adaptor supplied with your camcorder to the DC IN jack on your camcorder with the plug's ▲ mark facing up.
- (2) Connect the power cord to the AC power adaptor.
- (3) Connect the power cord to the wall outlet.
- (4) Set the POWER switch to OFF (CHG). Charging begins. The remaining battery time is indicated in minutes on the display window.

When the remaining battery indicator changes to , **normal charge** is completed. To fully charge the battery (**full charge**), leave the battery pack attached for about one hour after normal charge is completed until FULL appears in the display window. Fully charging the battery allows you to use the battery longer than usual.



The number in the illustration of the display window may differ from that on your camcorder.

After charging the battery pack

Disconnect the AC power adaptor from the DC IN jack on your camcorder.

Note

Prevent metallic objects from coming into contact with the metal parts of the DC plug of the AC power adaptor. This may cause a short-circuit, damaging the AC power adaptor.

Step 1 Preparing the power supply

Remaining battery time indicator

The remaining battery time indicator in the display window indicates the approximate recording time when recording using the viewfinder.

Until your camcorder calculates the actual remaining battery time

“--- min” appears in the display window.

When you use the AC power adaptor

Place the AC power adaptor near a wall outlet.

While using the AC power adaptor, if any trouble occurs with this unit, disconnect the plug from the wall outlet as soon as possible to cut off the power.

Charging time

Battery pack	Full charge (Normal charge)
NP-FM30* ¹⁾	145 (85)
NP-FM50* ²⁾	150 (90)
NP-FM70	240 (180)
NP-QM71	260 (200)
NP-FM90	330 (270)
NP-FM91 / QM91	360 (300)

Approximate minutes at 25°C (77°F) to charge an empty battery pack.

The charging time may increase if the battery's temperature is extremely high or low because of the ambient temperature.

*¹⁾ DCR-TRV16 / TRV18 supplied

*²⁾ DCR-TRV25 / TRV27 supplied

Step 1 Preparing the power supply

Recording time

DCR-TRV16/TRV18

Battery pack	Recording with the viewfinder		Recording with the LCD screen	
	Continuous	Typical*	Continuous	Typical*
NP-FM30 (supplied)	125	65	90	45
NP-FM50	200	105	150	75
NP-FM70	415	220	310	165
NP-QM71	485	255	365	190
NP-FM90	630	340	475	255
NP-FM91/ QM91	725	390	550	290

DCR-TRV25

Battery pack	Recording with the viewfinder		Recording with the LCD screen	
	Continuous	Typical*	Continuous	Typical*
NP-FM50 (supplied)	145	75	115	60
NP-FM70	305	170	245	135
NP-QM71	355	195	285	160
NP-FM90	460	255	370	210
NP-FM91/ QM91	535	295	430	240

DCR-TRV27

Battery pack	Recording with the viewfinder		Recording with the LCD screen	
	Continuous	Typical*	Continuous	Typical*
NP-FM50 (supplied)	145	75	105	55
NP-FM70	305	170	220	125
NP-QM71	355	195	255	140
NP-FM90	460	255	340	190
NP-FM91/ QM91	535	295	390	220

Approximate minutes when you use a fully charged battery

* Approximate number of minutes when recording while you repeat recording start / stop, zooming and turning the power on / off. The actual battery life may be shorter.

Step 1 Preparing the power supply

Playing time

DCR-TRV16/TRV18

Battery pack	Playing time on LCD screen	Playing time with LCD closed
NP-FM30 (supplied)	100	135
NP-FM50	160	220
NP-FM70	335	450
NP-QM71	390	530
NP-FM90	505	685
NP-FM91 / QM91	585	785

DCR-TRV25

Battery pack	Playing time on LCD screen	Playing time with LCD closed
NP-FM50 (supplied)	150	200
NP-FM70	310	415
NP-QM71	365	485
NP-FM90	475	630
NP-FM91 / QM91	550	725

DCR-TRV27

Battery pack	Playing time on LCD screen	Playing time with LCD closed
NP-FM50 (supplied)	135	200
NP-FM70	275	415
NP-QM71	325	485
NP-FM90	425	630
NP-FM91 / QM91	490	725

Approximate minutes when you use a fully charged battery

Step 1 Preparing the power supply

Note

Approximate recording time and continuous playing time at 25 °C (77 °F). The battery life will be shorter if you use your camcorder in a cold environment.

If the power goes off although the remaining battery time indicator indicates that the battery pack has enough power to operate

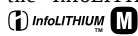
Charge the battery pack fully again so that the indication on the remaining battery time indicator is correct.

Recommended charging temperature

We recommend charging the battery pack in an ambient temperature of between 10 °C to 30 °C (50 °F to 86 °F).

What is "InfoLITHIUM"?

The "InfoLITHIUM" is a lithium ion battery pack that can exchange data such as battery consumption with compatible electronic equipment. This unit is compatible with the "InfoLITHIUM" battery pack (M series). Your camcorder operates only with the "InfoLITHIUM" battery. "InfoLITHIUM" M series battery packs have the

 mark.

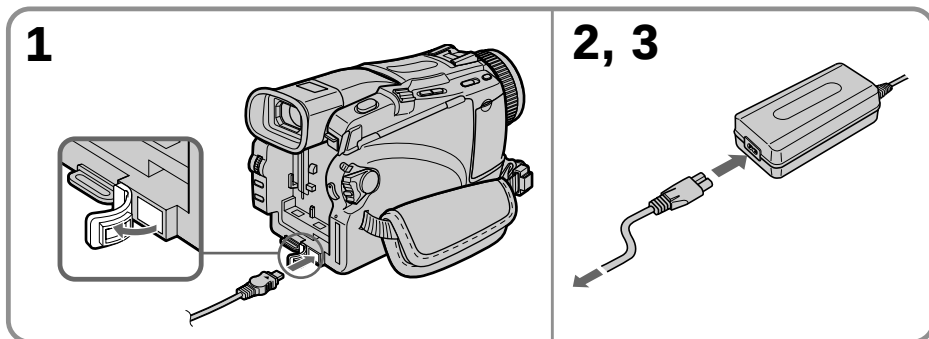
"InfoLITHIUM" is a trademark of Sony Corporation.

Step 1 Preparing the power supply

Connecting to a wall outlet

When you use your camcorder for a long time, we recommend that you power it from a wall outlet using the AC power adaptor.

- (1) Open the DC IN jack cover. Connect the AC power adaptor supplied with your camcorder to the DC IN jack on your camcorder with the plug's ▲ mark facing up.
- (2) Connect the power cord to the AC power adaptor.
- (3) Connect the power cord to a wall outlet.



PRECAUTION

The set is not disconnected from the AC power source (wall outlet) as long as it is connected to the wall outlet, even if the set itself has been turned off.

Notes

- The AC power adaptor can supply power even if the battery pack is attached to your camcorder.
- The DC IN jack has “source priority.” This means that the battery pack cannot supply any power if the AC power adaptor is connected to the DC IN jack, even when the power cord is not plugged into a wall outlet.

Using a car battery

Use a Sony Car Battery Adaptor (optional). Refer to the operating instructions of the Car Battery Adaptor for further information.

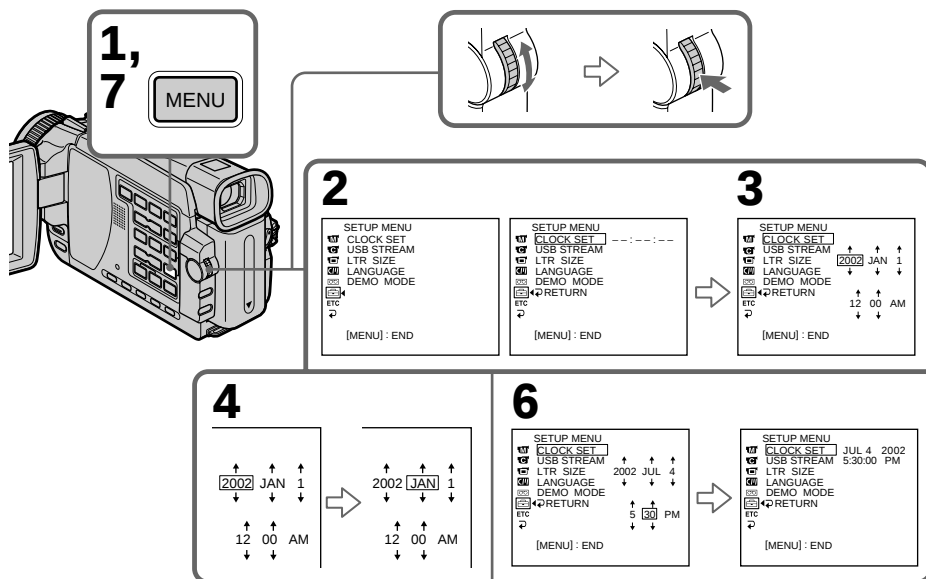
Step 2 Setting the date and time

Set the date and time when you use your camcorder for the first time. "CLOCK SET" will be displayed each time that you set the POWER switch to CAMERA or MEMORY (except DCR-TRV16) unless you set the date and time.

If you do not use your camcorder for **about four months**, the date and time settings may be cleared from memory (bars may appear) because the built-in rechargeable battery in your camcorder will have been discharged (p. 203).

Set the year, then the month, the day, the hour and then the minute, in that order.

- (1) Set the POWER switch to CAMERA or MEMORY (except DCR-TRV16), then press MENU to display the menu settings.
- (2) Turn the SEL / PUSH EXEC dial to select , then press the dial.
- (3) Turn the SEL / PUSH EXEC dial to select CLOCK SET, then press the dial.
- (4) Turn the SEL / PUSH EXEC dial to adjust the desired year, then press the dial.
- (5) Set the month, day and hour by turning the SEL / PUSH EXEC dial and pressing the dial.
- (6) Set the minute by turning the SEL / PUSH EXEC dial and pressing the dial by the time signal. The clock starts to move.
- (7) Press MENU to make the menu settings disappear.



Step 2 Setting the date and time

The year changes as follows:



If you do not set the date and time

“-- -- -- --” and “--:--:--” are recorded on the data code of the tape and the “Memory Stick” (except DCR-TRV16).

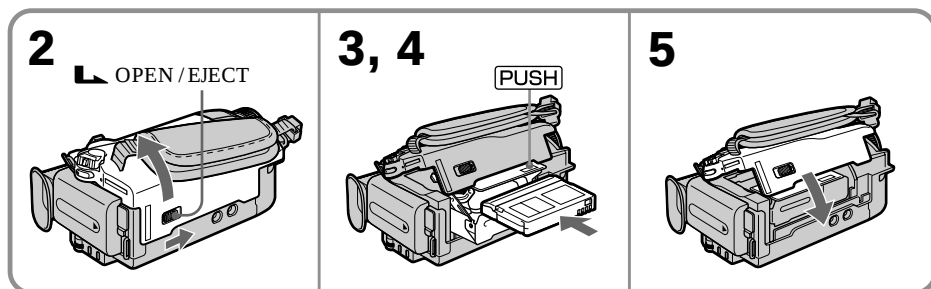
Note on the time indicator

The internal clock of your camcorder operates on a 12-hour cycle.

- 12:00 AM stands for midnight.
- 12:00 PM stands for noon.

Step 3 Inserting a cassette

- (1) Prepare the power supply.
- (2) Slide **OPEN / EJECT** in the direction of the arrow and open the lid. The cassette compartment automatically lifts up and opens.
- (3) Push the center of the cassette back to insert the cassette.
Insert the cassette straight as far as possible into the cassette compartment with the window facing up.
- (4) Close the cassette compartment by pressing **PUSH** on the cassette compartment. The cassette compartment automatically goes down.
- (5) After the cassette compartment going down completely, close the lid until it clicks.



To eject a cassette

Follow the procedure above, and take out the cassette in step 3.

Notes

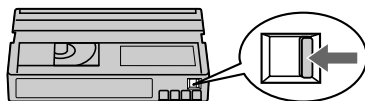
- Do not press the cassette compartment down forcibly. Doing so may cause a malfunction.
- The cassette compartment may not be closed when you press any part of the cassette compartment other than the **PUSH** mark.

When you use a cassette with cassette memory

Read the instruction about cassette memory to use this function properly (p. 194).

To prevent accidental erasure

Slide the write-protect tab on the cassette to expose the red mark.



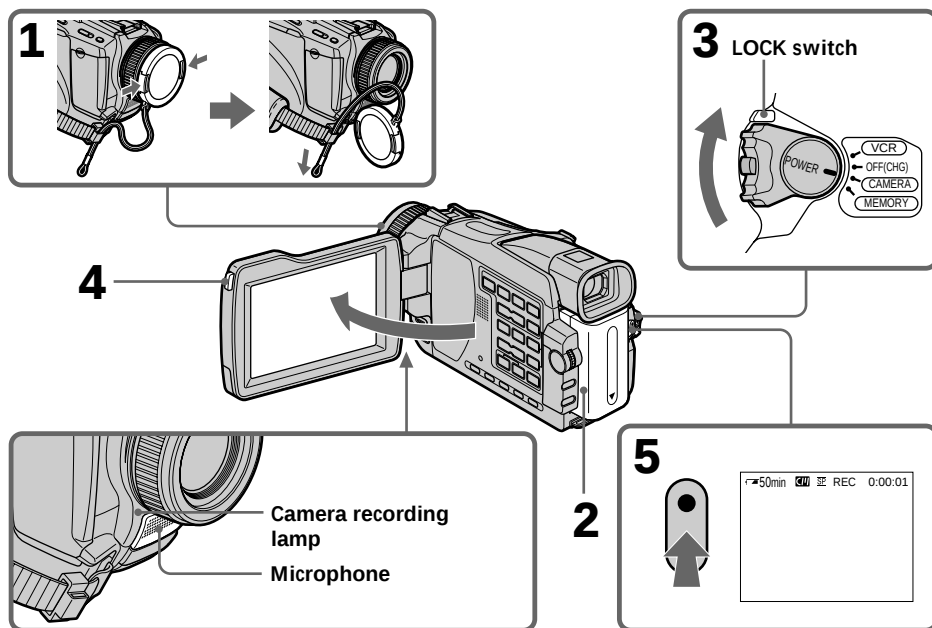
When ejecting a cassette

Do not press EDIT/SEARCH.

Recording a picture

Your camcorder automatically focuses for you.

- (1) Remove the lens cap by pressing both knobs on its sides and pull the lens cap string to fix it.
- (2) Prepare the power supply and insert a cassette. See “Step 1” to “Step 3” for more information (p. 16 to p. 25).
- (3) Set the POWER switch to CAMERA while pressing the small green button. This sets your camcorder to the standby mode.
- (4) To open the LCD panel, press OPEN. The viewfinder automatically turns off.
- (5) Press START/STOP. Your camcorder starts recording. The REC indicator appears. The camera recording lamp located on the front of your camcorder lights up. To stop recording, press START/STOP again.



Notes

- Fasten the grip strap firmly.
- The recording data (date/time or various settings when recorded) are not displayed while recording. However, they are recorded automatically onto tape. To display the recording data, press DATA CODE on the Remote Commander during playback (p. 39).

Note on recording mode

Your camcorder records and plays back in the SP (standard play) mode and in the LP (long play) mode. Select SP or LP in the menu settings (p. 182). In the LP mode, you can record **1.5 times** as long as in the SP mode.

When you record a tape in the LP mode on your camcorder, we recommend playing back the tape on your camcorder.

Recording a picture

Note on the LOCK switch (except DCR-TRV16)

When you slide the LOCK switch to the right, the POWER switch can no longer be set to MEMORY accidentally. LOCK switch is set to the left as the default setting.

To enable smooth transition

Transition between the last scene you recorded and the next scene is smooth as long as you do not eject the cassette even if you turn off your camcorder.

However, check the following:

- Do not mix recordings in the SP mode and in the LP mode on one tape.
- When you change the battery pack, set the POWER switch to OFF (CHG).
- When you use a cassette with cassette memory, however, you can make the transition smooth even after ejecting the cassette if you use the END SEARCH function (p. 37).

If you leave your camcorder in the standby mode for five minutes while the cassette is inserted

Your camcorder automatically turns off. This is to save battery power and to prevent battery and tape wear. To return to the standby mode, set the POWER switch to OFF (CHG) and then back to CAMERA. To start recording, press the START/STOP button again without switching the POWER switch. However, your camcorder does not turn off automatically while the cassette is not inserted.

When you record in the SP and LP modes on one tape or you record in the LP mode

- The transition between scenes may not be smooth.
- The playback picture may be distorted or the time code may not be written properly between scenes.

The battery use time when you record using the LCD screen

The battery time is slightly shorter than the shooting time using the viewfinder.

After recording

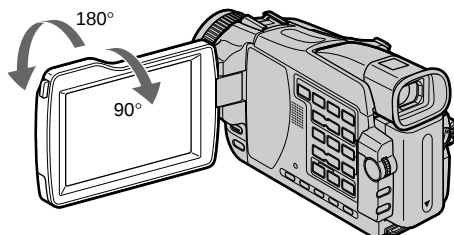
- (1) Set the POWER switch to OFF (CHG).
- (2) Close the LCD panel.
- (3) Eject the cassette.
- (4) Remove the battery pack.

Recording a picture

Adjusting the LCD screen

The LCD panel can be opened up to 90 degrees.

The LCD panel moves about 90 degrees to the viewfinder side and about 180 degrees to the lens side.



When closing the LCD panel, set it vertically until it clicks, and swing it into the camcorder body.

Note

The viewfinder automatically turns off when using the LCD screen except in the mirror mode (p. 31).

When you use the LCD screen outdoors in direct sunlight

The LCD screen may be difficult to see. If this happens, we recommend that you use the viewfinder.

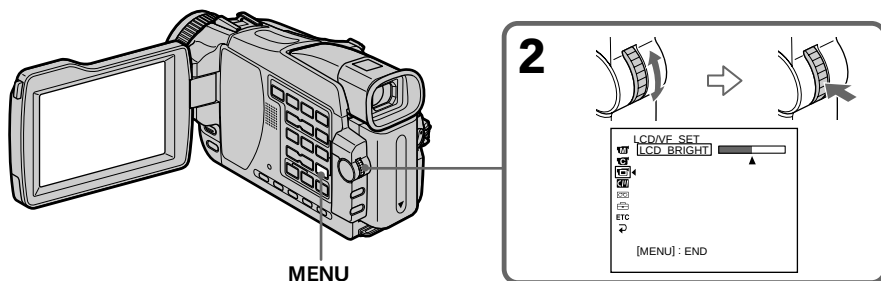
When you adjust the angle of the LCD panel

Make sure if the LCD panel is opened up to 90 degrees.

Recording a picture

Adjusting the brightness of the LCD screen

- (1) Set the POWER switch to CAMERA, VCR or MEMORY (except DCR-TRV16). Turn the SEL / PUSH EXEC dial to select LCD BRIGHT in  in the menu settings (p. 178), then press the dial.
- (2) Turn the SEL / PUSH EXEC dial to adjust the brightness of the LCD screen with LCD BRIGHT, then press the dial.
- (3) Press MENU to make the menu settings disappear.



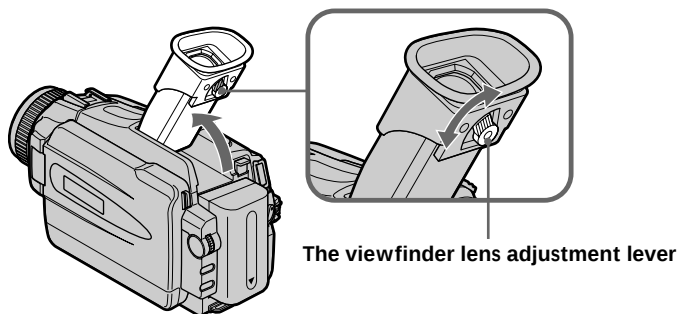
LCD screen backlight

You can change the brightness of the backlight. Select LCD B.L. in the menu settings when using the battery pack (p. 178).

Adjusting the viewfinder

If you record pictures with the LCD panel closed, check the picture with the viewfinder. Adjust the viewfinder lens to your eyesight so that the image in the viewfinder come into sharp focus.

Set the POWER switch to CAMERA, VCR or MEMORY (except DCR-TRV16). Lift up the viewfinder and move the viewfinder lens adjustment lever.



Viewfinder backlight

You can change the brightness of the backlight. Select VF B.L. in the menu settings when using the battery pack (p. 178).

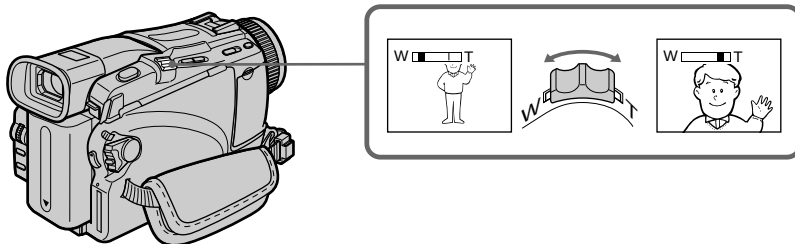
Recording a picture

Using the zoom feature

Move the power zoom lever a little for a slower zoom. Move it further for a faster zoom. Using the zoom function sparingly results in better-looking recordings.

W: For wide-angle (subject appears farther away)

T: For telephoto (subject appears closer)

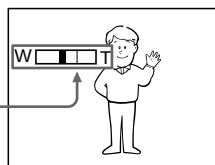


To use zoom greater than 10×

Zoom greater than 10× is performed digitally. Digital zoom can be set to 20× or 120×.

To activate digital zoom, select the digital zoom power in D ZOOM in the menu settings (p. 177). The digital zoom function is set to OFF as a default setting.

The right side of the bar shows the digital zooming zone. The digital zooming zone appears when you select the digital zoom power in the menu settings.



When you shoot close to a subject

If you cannot get a sharp focus, move the power zoom lever to the “W” side until the focus is sharp. You can shoot a subject that is at least about 80 cm (about 2 feet 5/8 inch) away from the lens surface in the telephoto position, or about 1 cm (about 1/2 inch) away in the wide-angle position.

Note on digital zoom

The picture quality deteriorates as you move the power zoom lever towards the “T” side.

When the POWER switch is set to MEMORY (except DCR-TRV16)

You cannot use the digital zoom.

Shooting with the Mirror Mode

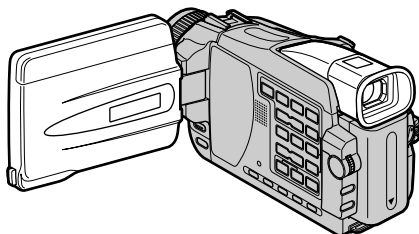
This feature allows the camera subject to view him-or herself on the LCD screen. The subject uses this feature to check his or her own image on the LCD screen while you look at the subject in the viewfinder.

Set the POWER switch to CAMERA or MEMORY (except DCR-TRV16).

Rotate the LCD screen 180 degrees.

The ☺ indicator appears in the viewfinder and on the LCD screen.

II● appears in the standby mode, and ● appears in the recording mode. Some of other indicators appear mirror-reversed and others are not displayed.



Picture in the mirror mode

The picture on the LCD screen is a mirror-image. However, the picture will be normal when recorded.

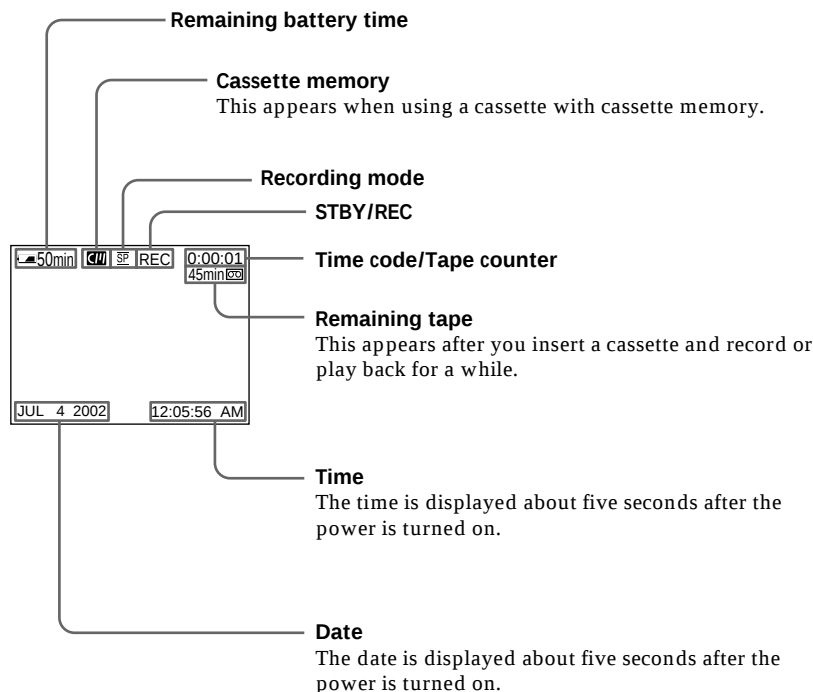
During recording in the mirror mode

ZERO SET MEMORY on the Remote Commander does not work.

Recording a picture

Indicators displayed in the recording mode

Indicators are not recorded on tapes.



Remaining battery time indicator during recording

The indicator shows the approximate continuous recording time. The indicator may not be correct, depending on the conditions in which you are recording. When you close the LCD panel and open it again, it takes about one minute for the correct remaining battery time in minutes to be displayed.

Time code

The time code indicates the recording or playback time, "0:00:00" (hours : minutes : seconds) in CAMERA and "0:00:00:00" (hours : minutes : seconds : frames) in VCR. You cannot rewrite only the time code.

Remaining tape indicator

The indicator may not be displayed accurately depending on the tape.

Recording data

The recording data (date/time or various settings when recorded) are not displayed while recording. However, they are recorded automatically onto tape. To display the recording data, press DATA CODE on the Remote Commander during playback (p. 39).

Recording a picture

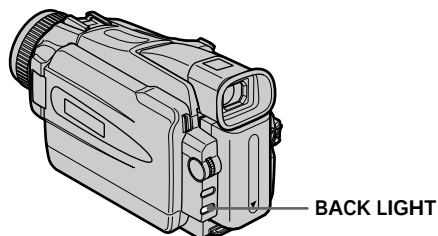
Shooting backlit subjects – BACK LIGHT

When you shoot a subject with the light source behind the subject or a subject with a light background, use the backlight function.

Set the POWER switch to CAMERA or MEMORY (except DCR-TRV16), press BACK LIGHT.

The  indicator appears on the screen.

To cancel, press BACK LIGHT again.

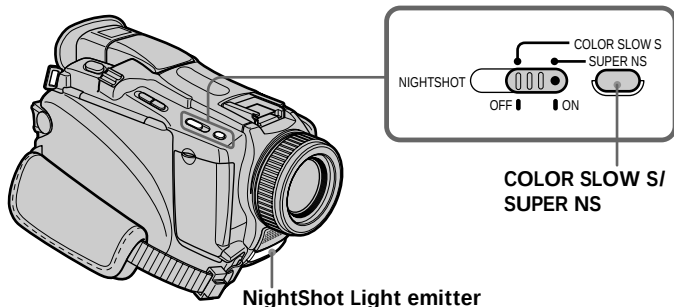


If you press EXPOSURE when shooting backlit subjects

The backlight function will be canceled.

Shooting in the dark – NightShot/Super NightShot/Color Slow Shutter

You can shoot a subject in a dark place. For example, you can satisfactorily record the environment of nocturnal animals for observation when you use this function.



Using NightShot

Set the POWER switch to CAMERA or MEMORY (except DCR-TRV16), slide NIGHTSHOT to ON.

The and "NIGHTSHOT" indicators flash on the screen.

To cancel the NightShot mode, slide NIGHTSHOT to OFF.

Using Super NightShot

The Super NightShot mode makes subjects more than 16 times brighter than those recorded in the NightShot mode.

- (1) Set the POWER switch to CAMERA, slide NIGHTSHOT to ON. The and "NIGHTSHOT" indicators flash on the screen.
- (2) Press SUPER NS. The and "SUPER NIGHTSHOT" indicators flash on the screen. To return the NightShot mode, press SUPER NS again.

Using NightShot Light

The picture will be clearer with the NightShot Light on. To enable the NightShot Light, set N.S.LIGHT in to ON in the menu settings. The default setting is ON.

Using Color Slow Shutter

The Color Slow Shutter function enables you to record color images in a dark place.

- (1) Set the POWER switch to CAMERA, slide NIGHTSHOT to OFF.
- (2) Press COLOR SLOW S.
The and "COLOR SLOW SHUTTER" indicators flash on the screen.
To cancel the Color Slow Shutter function, press COLOR SLOW S again.

Notes

- Do not use the NightShot mode in bright places (e.g. the outdoors in the daytime). This may cause your camcorder to malfunction.
- When you keep NIGHTSHOT set to ON in normal recording, the picture may be recorded in incorrect or unnatural colors.
- If focusing is difficult with the autofocus mode when using the NightShot mode, focus manually.

While using NightShot, you cannot use the following functions:

- Exposure
- PROGRAM AE
- White balance

While using Super NightShot, you cannot use the following functions:

- Exposure
- PROGRAM AE
- Fader
- Digital effect
- White balance
- Recording still images on a “Memory Stick” in the tape recording or standby mode (except DCR-TRV16).

While using Color Slow Shutter, you cannot use the following functions:

- Exposure
- PROGRAM AE
- Fader
- Digital effect
- Recording still images on a “Memory Stick” in the tape recording or standby mode (except DCR-TRV16).

While using Super NightShot or Color Slow Shutter

The shutter speed is automatically adjusted depending on the brightness. At this time, the motion of the picture may slow down.

When the POWER switch is set to MEMORY (except DCR-TRV16), you cannot use the following functions:

- Super NightShot
- Color Slow Shutter

NightShot Light

NightShot Light rays are infrared and so are invisible. The maximum shooting distance using the NightShot Light is about 3 m (10 feet).

In total darkness

The Color Slow Shutter may not work normally.

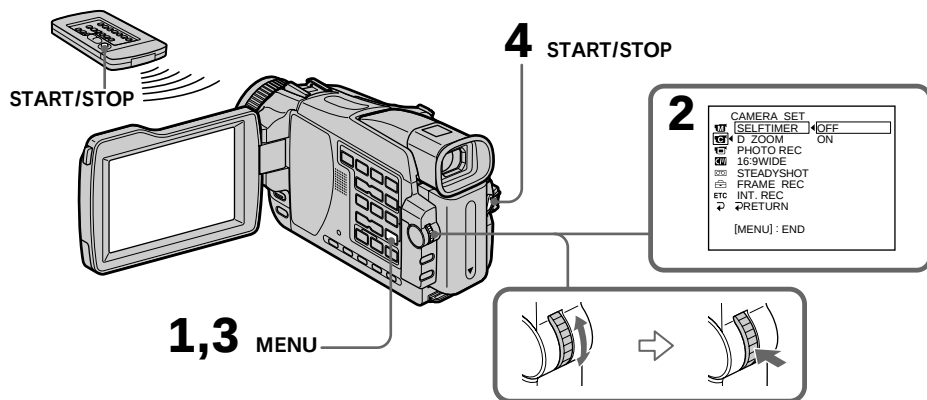
Recording a picture

Self-timer recording

– Except DCR-TRV16

Recording with the self-timer starts in 10 seconds automatically. You can also use the Remote Commander for this operation.

- (1) In the standby mode, press MENU, then select SELFTIMER in  with the SEL / PUSH EXEC dial (p. 177).
- (2) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (3) Press MENU to make the menu settings disappear.
The  (self-timer) indicator appears on the screen.
- (4) Press START/STOP.
Self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.



To stop the countdown

Press START/STOP.

To restart the countdown, press START/STOP again.

To cancel self-timer

Set SELFTIMER to OFF in the menu settings in the standby mode.

You cannot cancel self-timer using the Remote Commander.

Note

The self-timer is automatically canceled when:

- Self-timer recording is finished.
- The POWER switch is set to OFF (CHG) or VCR.

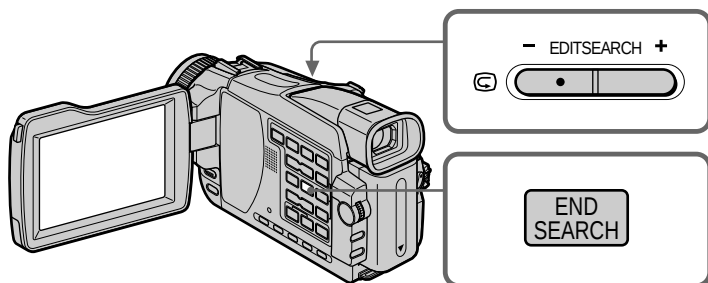
When the POWER switch is set to MEMORY

You can also record still images on “Memory Stick”s with the self-timer (p. 116).

Checking recordings

– END SEARCH/EDITSEARCH/Rec Review

You can use these buttons to check the recorded picture or shoot so that the transition between the last recorded scene and the next scene you record is smooth.



END SEARCH

You can go to the end of the recorded section after you record.

Press END SEARCH in the standby mode.

The last five seconds of the recorded section are played back and your camcorder returns to the standby mode. You can monitor the sound from the speaker or headphones.

EDITSEARCH

You can search for the next recording start point.

Hold down the –/+ side of EDITSEARCH in the standby mode. The recorded portion is played back.

- : To go backward
- + : To go forward

Release EDITSEARCH to stop playback. If you press START/STOP, recording begins from the point you released EDITSEARCH. You cannot monitor the sound.

Rec Review

You can check the last recorded section.

Press the – side of EDITSEARCH momentarily in the standby mode.

The section you have stopped most recently will be played back for a few seconds, and then your camcorder will return to the standby mode. You can monitor the sound from the speaker or headphones.

End search function

When you use a cassette without cassette memory, the end search function does not work once you eject the cassette after you have recorded on the tape. If you use a cassette with cassette memory, the end search function works even once you eject the cassette.

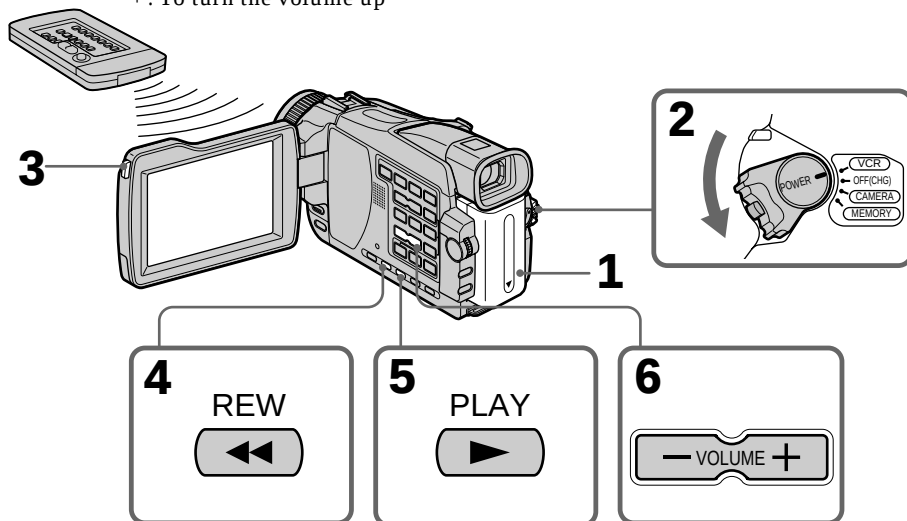
If a tape has a blank portion between recorded portions

The end search function may not work correctly.

Playing back a tape

You can monitor the playback picture on the screen. If you close the LCD panel, you can monitor the playback picture in the viewfinder. You can control playback using the Remote Commander supplied with your camcorder.

- (1) Prepare the power supply and insert the recorded tape.
- (2) Set the POWER switch to VCR while pressing the small green button.
- (3) Open the LCD panel while pressing OPEN.
- (4) Press ◀◀ to rewind the tape.
- (5) Press ▶▶ to start playback.
- (6) To adjust the volume, press either of the two buttons on VOLUME. Sound is muted when the LCD panel is closed.
 - : To turn the volume down
 - + : To turn the volume up

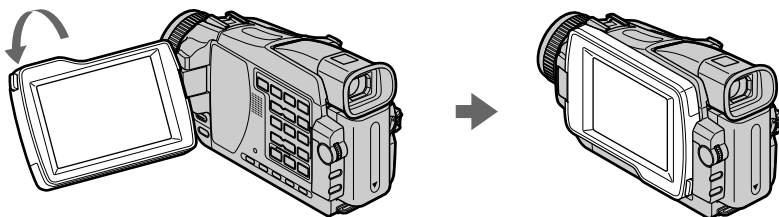


To stop playback

Press ■.

When monitoring on the LCD screen

You can turn the LCD panel over and move it back to the camcorder body with the LCD screen facing out.



If you leave the power on for a long time

Your camcorder gets warm. This is not a malfunction.

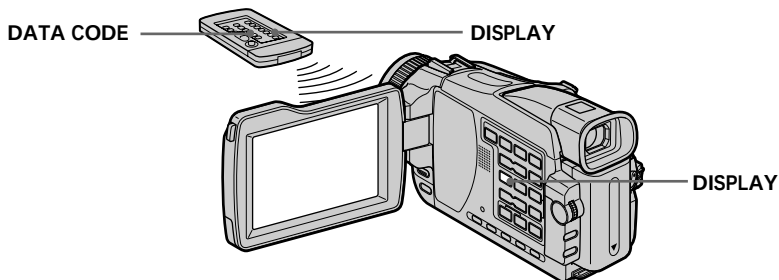
When you open or close the LCD panel

Make sure that the LCD panel is set vertically.

To display the screen indicators – Display function

Press **DISPLAY** on your camcorder or the Remote Commander. The indicators appear on the screen.

To make the indicators disappear, press **DISPLAY** again.



About date/time and various settings

Use the Remote Commander for this operation.

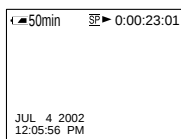
In addition to images, your camcorder automatically records the recording data, including date/time and various settings on the tape (**data code**).

- ① Set the **POWER** switch to **VCR**, then play back a tape.
- ② Press **DATA CODE** on the Remote Commander.

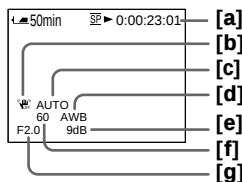
The display changes as follows:

date/time → various settings (SteadyShot, white balance, gain, shutter speed, aperture value, exposure mode) → no indicator

Date/time



Various settings



- [a] Tape counter
- [b] SteadyShot OFF
- [c] Exposure mode
- [d] White balance
- [e] Gain
- [f] Shutter speed
- [g] Aperture value

To not display various settings

Set **DATA CODE** to **DATE** in the menu settings (p. 184).

The display changes as follows when you press **DATA CODE** on the Remote Commander:

date/time ↔ no indicator

Playing back a tape

Various settings

Various settings are your camcorder's information when you have recorded. In the recording mode, the various settings will not be displayed.

When you use the data code function, bars (--- -- ----) appear if:

- A blank portion of the tape is being played back.
- The tape is unreadable due to tape damage or noise.
- The tape was recorded by a camcorder without the date and time set.

Data code

The data code is displayed on the TV screen if you connect your camcorder to the TV.

Remaining battery time indicator during playback

The indicator shows the approximate continuous playback time. The indicator may not be correct, depending on the conditions in which you are playing back. When you close the LCD panel and open it again, it takes about one minute for the correct remaining battery time to be displayed.

Various playback modes

To operate video control buttons, set the POWER switch to VCR.

To play back pause (view a still image)

Press **II** during playback. To resume normal playback, press **▶** or **II**.

To advance the tape

Press **▶▶** in the stop mode. To resume normal playback, press **▶**.

To rewind the tape

Press **◀◀** in the stop mode. To resume normal playback, press **▶**.

To change the playback direction

Press **<** on the Remote Commander during playback to reverse the playback direction. To resume normal playback, press **▶**.

To locate a scene monitoring the picture (picture search)

Keep pressing **◀◀** or **▶▶** during playback. To resume normal playback, release the button.

To monitor high-speed pictures while advancing or rewinding the tape (skip scan)

Keep pressing **◀◀** while rewinding or **▶▶** while advancing the tape. To resume rewinding or advancing, release the button.

To view the picture at slow speed (slow playback)

Press **▶** on the Remote Commander during playback. For slow playback in the reverse direction, press **<**, then press **▶** on the Remote Commander. To resume normal playback, press **▶**.

Playing back a tape

To view pictures at double speed

Press $\times 2$ on the Remote Commander during playback. For double speed playback in the reverse direction, press $\triangleleft$, then press $\times 2$ on the Remote Commander. To resume normal playback, press $\blacktriangleright$.

To view pictures frame-by-frame

Press $\text{II} \blacktriangleright$ on the Remote Commander in the playback pause mode. For frame-by-frame playback in the reverse direction, press $\triangleleft \text{II}$. To resume normal playback, press $\blacktriangleright$.

To search the last scene recorded (END SEARCH)

Press END SEARCH in the stop mode. The last five seconds of the recorded portion plays back and stops.

In the various playback modes

- Sound is muted.
- The previous picture may remain as a mosaic image during playback.

When the playback pause mode lasts for five minutes

Your camcorder automatically enters the stop mode. To resume playback, press $\blacktriangleright$.

Slow playback

The slow playback can be performed smoothly on your camcorder. However, this function does not work for an output signal through the DV IN/OUT jack.

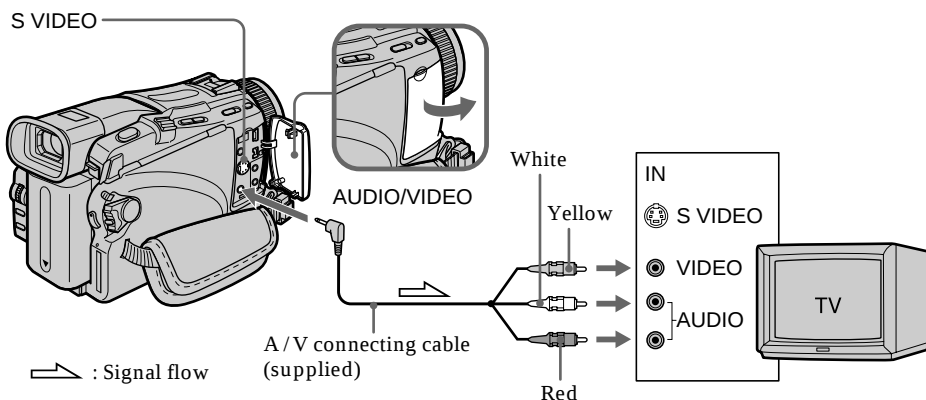
When you play back a tape in reverse

Horizontal noise may appear at the center, or the top and bottom of the screen. This is not a malfunction.

Viewing the recording on TV

Connect your camcorder to your TV with the A/V connecting cable supplied with your camcorder to watch playback pictures on the TV screen. You can operate the video control buttons in the same way as when you monitor playback pictures on the screen. When monitoring playback pictures on the TV screen, we recommend that you power your camcorder from a wall outlet using the AC power adaptor (p. 22). Refer to the operating instructions of your TV.

Open the jack cover. Connect your camcorder to the TV using the A/V connecting cable supplied with your camcorder. Then, set the TV/VCR selector on the TV to VCR.



If your TV is already connected to a VCR

Connect your camcorder to the LINE IN input on the VCR by using the A/V connecting cable supplied with your camcorder. Set the input selector on the VCR to LINE.

If your TV or VCR is a monaural type

Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. If you connect the white plug, the sound is L (left) signal. If you connect the red plug, the sound is R (right) signal.

If your TV or VCR has an S video jack

Pictures can be reproduced more faithfully by using an S video cable (optional). With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.

Connect the S video cable (optional) to the S video jacks on both your camcorder and the TV or the VCR.

This connection produces higher quality DV format pictures.

To display the screen indicators on TV

Set DISPLAY to V-OUT/LCD in the menu settings (p. 184).

Then press DISPLAY on your camcorder. To turn off the screen indicators, press DISPLAY on your camcorder again.

Recording still images on a “Memory Stick” during recording on a tape

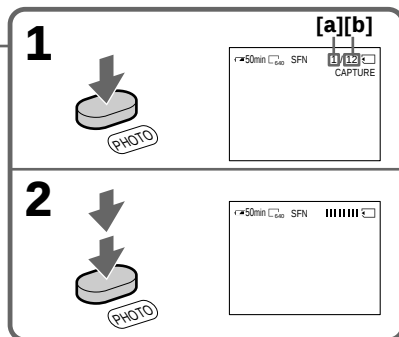
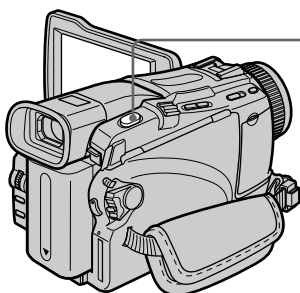
– Except DCR-TRV16

You can record still images on a “Memory Stick” in the tape recording or standby mode. You can also record still images on a tape (p. 46).

Before operation

- Insert a “Memory Stick” into your camcorder (p. 106).
- Set PHOTO REC in  to MEMORY in the menu settings. (The default setting is MEMORY.)

- (1) In the standby mode, keep pressing PHOTO lightly until a still image appears. The CAPTURE indicator appears. Recording does not start yet. To change the still image, release PHOTO, select a still image again, and then press and hold PHOTO lightly.
- (2) Press PHOTO deeper. Recording is complete when the bar scroll indicator disappears. The image when you pressed PHOTO deeper will be recorded on the “Memory Stick.”



[a]: Number of recorded images

[b]: Approximate number of images that can be recorded on the “Memory Stick”

Recording still images on a “Memory Stick” during recording on a tape

“Memory Stick”

For more information, see page 105.

Notes

- Do not shake or strike your camcorder when you record still images. The image may fluctuate.
- You cannot record still images on a “Memory Stick” during following operations. The  indicator flashes:
 - Fader
 - Picture effect
 - Digital effect
 - Super NightShot
 - Color Slow Shutter
 - Wide mode
 - MEMORY MIX

Image size of still images (DCR-TRV25/TRV27 only)

Image size is automatically set to 640 × 480.

When you want to record still images in different size, use the Memory Photo recording function (p. 112).

When the POWER switch is set to CAMERA

You cannot change image quality mode.

The image quality mode you selected when the POWER switch was set to MEMORY is used.

To record still images using the Remote Commander

Press PHOTO on the Remote Commander. Your camcorder immediately records the image on the screen.

To record still images on a “Memory Stick” during tape recording

You cannot check an image on the screen by pressing PHOTO lightly. The image when you press PHOTO will be recorded on the “Memory Stick.”

During and after recording still images on a “Memory Stick”

Your camcorder continues recording on tape.

To record images with higher quality

We recommend you use the Memory Photo recording function (p. 112).

Title

The title cannot be recorded.

Recording still images on a “Memory Stick” during recording on a tape

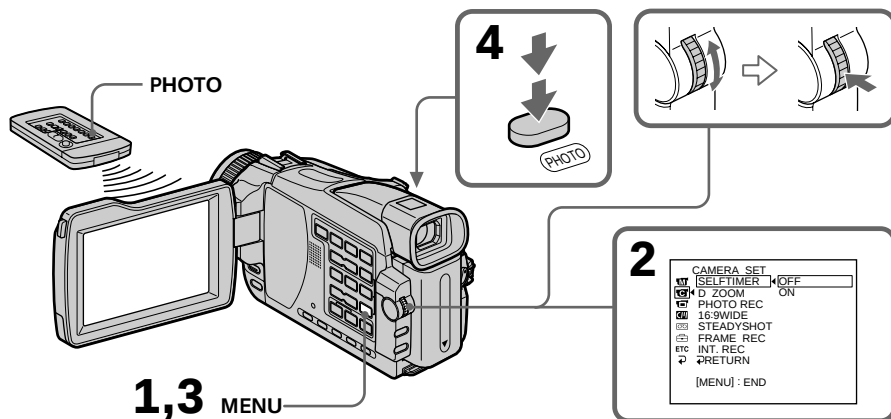
Self-timer recording

You can record still images on a “Memory Stick” with the self-timer. You can also use the Remote Commander for this operation.

Before operation

- Insert a “Memory Stick” into your camcorder (p. 106).
- Set PHOTO REC in  to MEMORY in the menu settings. (The default setting is MEMORY.)

- (1) In the standby mode, press MENU, then select SELFTIMER in  with the SEL / PUSH EXEC dial (p. 177).
- (2) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (3) Press MENU to make the menu settings disappear.
The  (self-timer) indicator appears on the screen.
- (4) Press PHOTO deeper.
Self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.



To cancel self-timer

Set SELFTIMER to OFF in the menu settings in the standby mode.
You cannot cancel self-timer using the Remote Commander.

Note

The self-timer is automatically canceled when:

- self-timer recording is finished.
- the POWER switch is set to OFF (CHG) or VCR.

Taking photos with the self-timer

The self-timer can only be operated when in the standby mode.

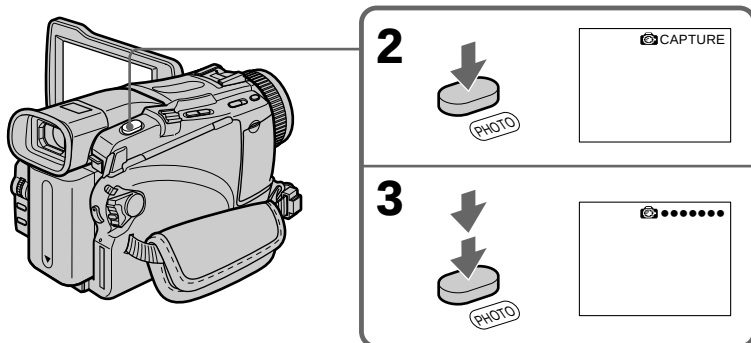
Recording still images on a tape

– Tape Photo recording

You can record still images such as photographs on tapes.

You can record about 510 images in the SP mode and about 765 images in the LP mode on a 60-minute tape.

- (1) In the recording standby, set PHOTO REC in  to TAPE in the menu settings (p. 177). (except DCR-TRV16)
- (2) Keep pressing PHOTO lightly until a still image appears.
The picture becomes still image and the CAPTURE indicator appears.
Recording does not start yet.
To change the still image, release PHOTO, and then press and hold PHOTO lightly.
- (3) Press PHOTO deeper.
The still image on the screen is recorded for about seven seconds. The sound during those seven seconds is also recorded. The still image is displayed on the screen until recording is completed.



Recording images with self-timer (except DCR-TRV16)

- (1) Set PHOTO REC in  to TAPE in the menu settings (p. 177).
- (2) Follow steps 1 and 4 on page 45.

Notes

- During tape photo recording, you cannot change the mode or setting.
- When recording a still image, do not shake your camcorder. The image may fluctuate.
- The tape photo recording does not work while using the following functions. The  indicator flashes.:
 - Fader
 - Digital effect

Recording still images on a tape – Tape Photo recording

If you record a moving subject with the tape photo recording

The picture may fluctuate when you play back the still images on other equipment. This is not a malfunction.

To use tape photo recording using the Remote Commander

Press PHOTO on the Remote Commander. Your camcorder records a picture on the screen immediately.

To use the tape photo recording during normal recording on a tape

You cannot check the image on the screen by pressing PHOTO lightly. Press PHOTO deeper. The still image is then recorded for about seven seconds and your camcorder returns to the standby mode.

To record still images with higher quality (except DCR-TRV16)

We recommend that you record on “Memory Stick”s using the memory photo recording (p. 112).

Adjusting the white balance manually

You can manually adjust and set the white balance. This adjustment makes white subjects look white and allows more natural color balance. Normally white balance is automatically adjusted.

- (1) Set the POWER switch to CAMERA or MEMORY (except DCR-TRV16). Press MENU, then select WHT BAL in  with the SEL/PUSH EXEC dial (p. 176).
- (2) Turn the SEL/PUSH EXEC dial to select the desired white balance, then press dial.

HOLD :

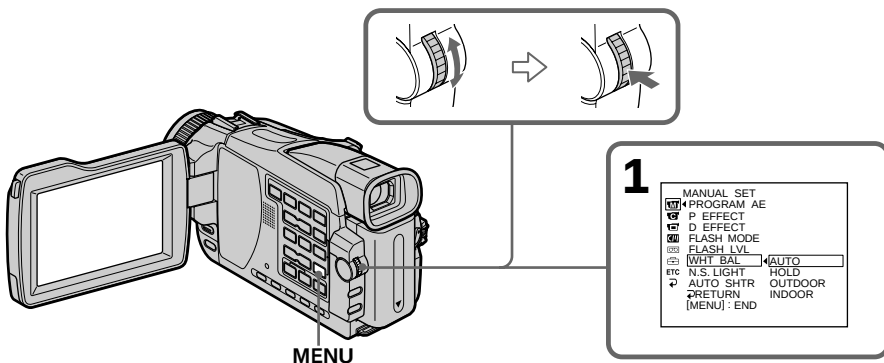
When recording a single-colored subject or background

(OUTDOOR) :

- When recording a sunset / sunrise, just after sunset, just before sunrise, neon signs, or fireworks
- Under a color-matching fluorescent lamp

(INDOOR) :

- Where lighting condition changes quickly
- When recording in TV lighting in a studio
- Under sodium lamps or mercury lamps



To return to the automatic white balance mode

Set WHT BAL to AUTO in the menu settings.

If the picture is being taken in a studio lit by TV lighting

We recommend that you record in the INDOOR mode.

When you record under fluorescent lighting

Use the AUTO or HOLD mode.

Your camcorder may not adjust the white balance correctly in the INDOOR mode.

In the automatic white balance mode

Point your camcorder at a white subject for about 10 seconds after setting the POWER switch to CAMERA to get a better adjustment when:

- you detach the battery for replacement.
- you take your camcorder outdoors from inside a house holding the exposure, or vice versa.

In the HOLD white balance mode

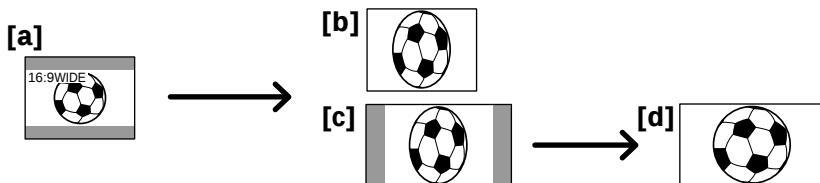
Set the white balance to AUTO and reset to HOLD after a few seconds when:

- you change the PROGRAM AE mode.
- you take your camcorder outdoors from inside a house, or vice versa.

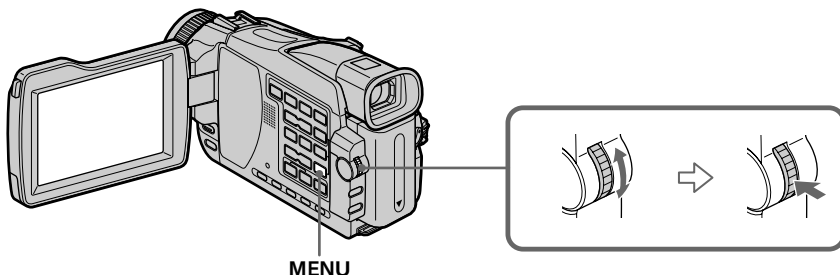
Using the wide mode

You can record a 16:9 wide picture to watch on a 16:9 wide-screen TV (16:9WIDE). Black bands appear on the screen during recording in 16:9WIDE mode [a]. The picture during playback on a normal TV [b] or on a wide-screen TV [c] is compressed in the longwise direction. If you set the screen mode of the wide-screen TV to the full mode, you can watch pictures of normal images [d].

If you connect a TV compatible with the ID-1 / ID-2 system, the screen size is automatically selected.



- (1) In the standby mode, turn the SEL / PUSH EXEC dial to select 16:9WIDE in  in the menu settings, then press the dial (p. 177).
- (2) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.



To cancel the wide mode

Set 16:9WIDE to OFF in the menu settings.

In the wide mode

You cannot select the following functions:

- OLD MOVIE
- BOUNCE
- Recording still images on a “Memory Stick” in the tape recording or standby mode (except DCR-TRV16)

During recording

You cannot select or cancel the wide mode. When you cancel the wide mode, set your camcorder to the standby mode and then set 16:9WIDE to OFF in the menu settings.

Connection for a TV

Pictures recorded in the 16:9WIDE mode automatically appear on the TV screen at full size when:

- You connect your camcorder to a TV that is compatible with the video ID (ID-1 / ID-2) system.
- You connect your camcorder to the S video jack on the TV.

Using the wide mode

ID-1 system

The ID-1 system sends aspect ratio (screen horizontal / vertical ratio) information (16:9, 4:3, or letter box) with video signals.

ID-2 system

The ID-2 system sends a copyright protection signal with ID-1 signals inserted between video signals when you connect your camcorder to other equipment using the A / V connecting cable.

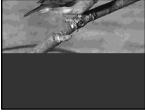
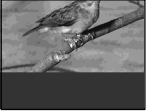
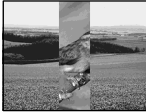
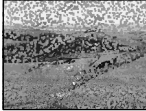
Using the fader function

You can fade in or out to give your recording a more professional appearance.

[a]

STBY

REC

FADER				
M. FADER (mosaic)				
BOUNCE*				
OVERLAP*				
WIPE*				
DOT*				

[b]

STBY

REC

Advanced Recording Operations

MONOTONE

When fading in, the picture gradually changes from black-and-white to color.
When fading out, the picture gradually changes from color to black-and-white.

* Fade in only

Using the fader function

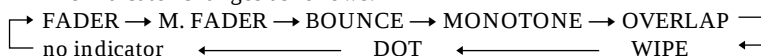
(1) When fading in [a]

In the standby mode, press FADER until the desired fader indicator flashes.

When fading out [b]

In the recording mode, press FADER until the desired fader indicator flashes.

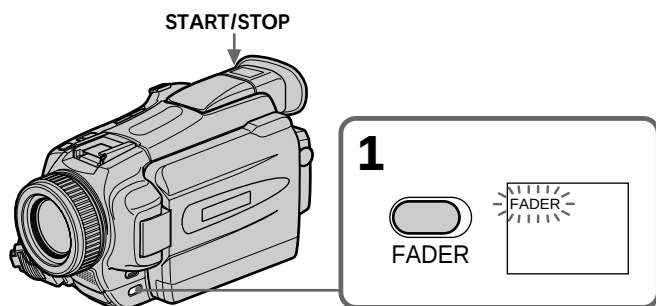
The indicator changes as follows:



The last selected fader mode is indicated first of all.

(2) Press START/STOP. The fader indicator stops flashing, then light up.

After fade in/out ends, your camcorder automatically returns to the normal mode.



To cancel the fader function

Before pressing START/STOP, press FADER until the indicator disappears.

Note

You cannot use the following functions while using the fader function. Also, you cannot use the fader function while using the following functions:

- Digital effect
- Super NightShot
- Color Slow Shutter
- Recording still images on a “Memory Stick” in the tape recording or standby mode (except DCR-TRV16)
- Tape Photo recording
- Interval recording
- Frame recording

When you set the POWER switch to MEMORY (except DCR-TRV16)

You cannot use the fader function.

When the OVERLAP, WIPE, or DOT indicator appear in the standby mode

Your camcorder automatically stores the image recorded on a tape. While the image is being stored, the indicators flash fast, and the playback picture disappears. At this stage, the picture may not be recorded clearly, depending on the tape condition.

Using the fader function

While using the bounce function, you cannot use the following functions:

- Focus
- Zoom
- Picture effect
- Exposure

Note on the bounce function

The BOUNCE indicator does not appear in the following mode or functions:

- When D ZOOM is activated in the menu settings
- Wide mode
- Picture effect
- PROGRAM AE

Using special effects – Picture effect

You can digitally process images to obtain special effects like those in films or on TV.

NEG. ART [a] : The color and brightness of the picture are reversed.

SEPIA : The picture appears in sepia.

B&W : The picture appears in monochrome (black-and-white).

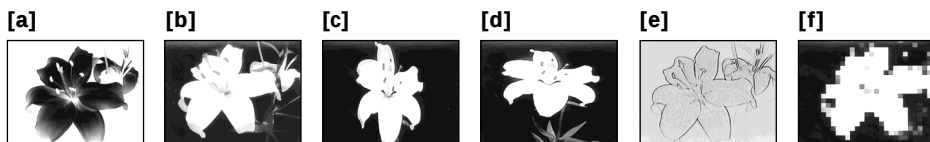
SOLARIZE [b] : The light intensity becomes clearer to make the picture look more like an illustration.

SLIM [c] : The picture expands vertically.

STRETCH [d] : The picture expands horizontally.

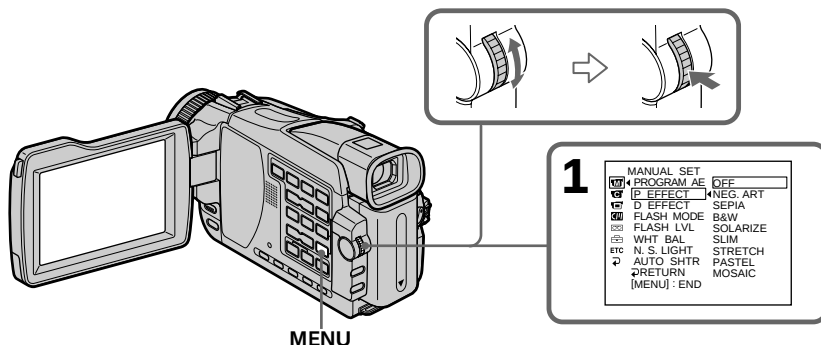
PASTEL [e] : The contrast of the picture is emphasized to make the picture look more like an animated cartoon.

MOSAIC [f] : The picture appears mosaic-patterned.



(1) Set the POWER switch to CAMERA. Press MENU, then select P EFFECT in with the SEL / PUSH EXEC dial (p. 176).

(2) Select the desired picture effect mode with the SEL / PUSH EXEC dial.



To cancel the picture effect function

Set P EFFECT to OFF in the menu settings.

While using the picture effect function, you cannot select the following functions:

- OLD MOVIE
- BOUNCE
- Recording still images on a “Memory Stick” in the tape recording or standby mode (except DCR-TRV16)

When you set the POWER switch to other than CAMERA

Picture effect is automatically canceled.

Using special effects – Digital effect

You can add special effects to recorded pictures using the various digital functions. Sound is recorded normally.

STILL:

You can record a still image so that it is superimposed on a moving picture.

FLASH (Flash motion):

You can record still images successively at constant intervals.

LUMI. (Luminance key):

You can swap a brighter area in a still image with a moving picture.

TRAIL:

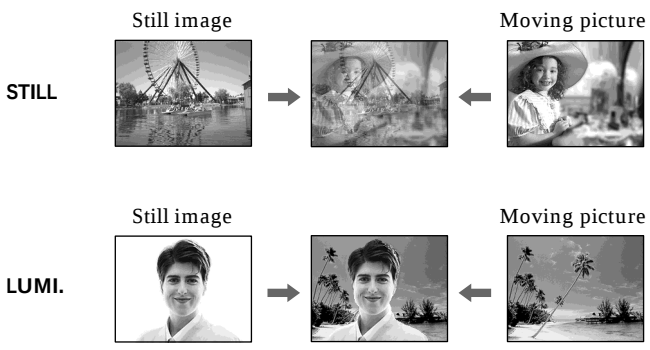
You can record the picture so that an incidental image like a trail is left.

SLOW SHTR (Slow shutter):

You can slow down the shutter speed. The slow shutter mode is good for recording dark pictures more brightly.

OLD MOVIE:

You can add an old movie type atmosphere to pictures. Your camcorder automatically sets the wide mode to ON and picture effect to SEPIA, and sets the appropriate shutter speed.



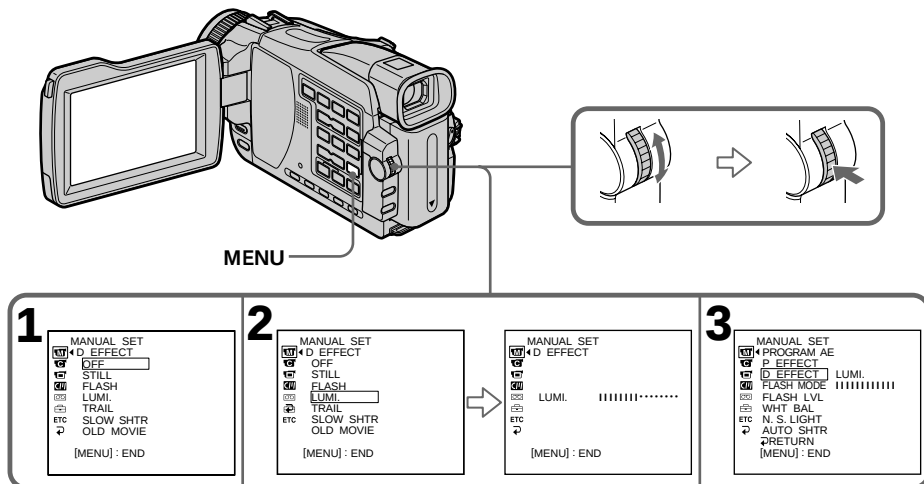
Using special effects – Digital effect

- (1) Set the POWER switch to CAMERA. Press MENU, then select D EFFECT in  with the SEL / PUSH EXEC dial (p. 176).
- (2) Select the desired digital effect mode in the menu settings, then press the SEL / PUSH EXEC dial.
In the STILL and LUMI. modes, the still image when pressing the dial is recorded in the memory.
- (3) Turn the SEL / PUSH EXEC dial to adjust the effect, then press the dial.

The bars appear in the following modes: STILL, FLASH, LUMI. and TRAIL. The more bars there are on the screen, the stronger the digital effect.

Items to be adjusted

STILL	The rate of the still image you want to superimpose on the moving picture
FLASH	Frame by frame playback
LUMI.	The color scheme of the area in the still image which is to be swapped with a moving picture
TRAIL	The time until the incidental image vanishes
SLOW SHTR	Shutter speed. The larger the shutter speed number, the slower the shutter speed becomes.
OLD MOVIE	No adjustment necessary



To cancel the digital effect function

Set D EFFECT to OFF in the menu settings.

Notes

- The following functions do not work during digital effect:
 - Fader
 - Super NightShot
 - Color Slow Shutter
 - Recording still images on a “Memory Stick” in the tape recording or standby mode (except DCR-TRV16)
 - Tape Photo recording
- The PROGRAM AE function does not work in the slow shutter mode.
- The following functions do not work in the old movie mode:
 - Wide mode
 - Picture effect
 - PROGRAM AE

When you set the POWER switch to OFF (CHG)

Digital effect will be automatically canceled.

When recording in the slow shutter mode

Auto focus may not be effective. Focus manually using a tripod.

Shutter speed

Shutter speed number	Shutter speed
SLOW SHTR 1	1/30
SLOW SHTR 2	1/15
SLOW SHTR 3	1/8
SLOW SHTR 4	1/4

Using the PROGRAM AE function

You can select PROGRAM AE (Auto Exposure) mode to suit your specific shooting requirements.

SPOTLIGHT:

This mode prevents people's faces, for example, from appearing excessively white when shooting subjects lit by strong light in the theater.

PORTRAIT (Soft portrait):

This mode brings out the subject while creating a soft background for subjects such as people or flowers.

SPORTS (Sports lesson):

This mode minimizes camera-shake on fast-moving subjects such as in tennis or golf.

BEACH&SKI:

This mode prevents people's faces from appearing dark in strong light or reflected light, such as at a beach in midsummer or on a ski slope.

SUNSETMOON (Sunset & moon):

This mode allows you to maintain atmosphere when you are recording sunsets, general night views, fireworks displays and neon signs.

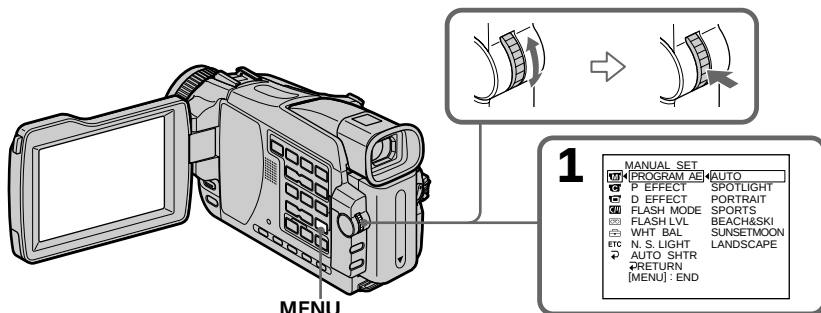
LANDSCAPE:

This mode is for when you are recording distant subjects such as mountains, and prevents your camcorder from focusing on glass or metal mesh in windows when you are recording a subject behind glass or a screen.



Using the PROGRAM AE function

- (1) Set the POWER switch to CAMERA or MEMORY (except DCR-TRV16). Press MENU, then select PROGRAM AE in  with the SEL/PUSH EXEC dial (p. 176).
- (2) Select the desired mode with the SEL/PUSH EXEC dial.



To cancel the PROGRAM AE function

Set PROGRAM AE to AUTO in the menu settings.

Notes

- Because your camcorder is set to focus only on subjects in the middle to far distance, you cannot take close-ups in the following mode:
 - SPOTLIGHT
 - SPORTS
 - BEACH&SKI
- Your camcorder is set to focus only on distant subjects in the following modes:
 - SUNSETMOON
 - LANDSCAPE
- The following functions do not work in the PROGRAM AE function:
 - Color Slow Shutter
 - Slow shutter
 - OLD MOVIE
 - BOUNCE
- While setting the NIGHTSHOT to ON, the PROGRAM AE function does not work. The indicator flashes.
- When you set the POWER switch to MEMORY (except DCR-TRV16), Sports lesson mode does not work. The indicator flashes.

While WHT BAL is set to AUTO in the menu settings

The white balance is adjusted even if the PROGRAM AE function is selected.

Even if the PROGRAM AE function is selected

You can adjust the exposure.

If you are recording under a discharge tube such as a fluorescent lamp, sodium lamp or mercury lamp

Flickering or changes in color may occur in the following modes. If this happens, cancel the PROGRAM AE function.

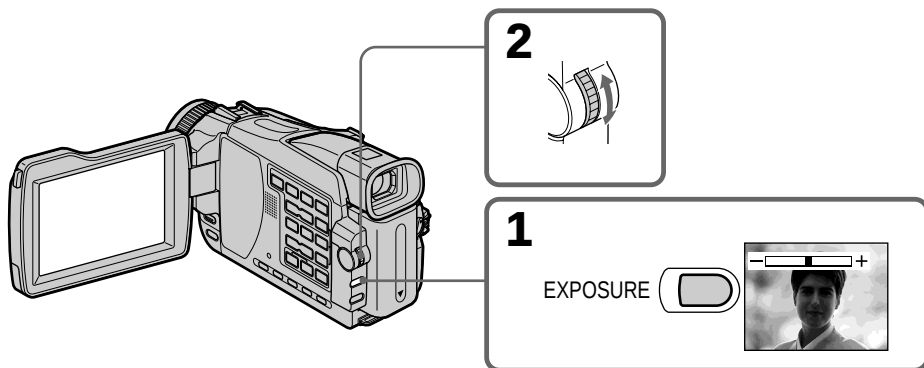
- PORTRAIT
- SPORTS

Adjusting the exposure manually

You can manually adjust and set the exposure. Normally exposure is automatically adjusted. Adjust the exposure manually in the following cases:

- When the subject is backlit
- When the subject is too bright against the background
- When recording dark pictures (e.g. night scenes) faithfully

- (1) Set the POWER switch to CAMERA or MEMORY (except DCR-TRV16), press EXPOSURE. The exposure indicator appears.
- (2) Turn the SEL / PUSH EXEC dial to adjust the brightness.



To return to the automatic exposure mode

Press EXPOSURE again.

When you adjust the exposure manually, the following functions do not work:

- Color Slow Shutter
- BACK LIGHT

Your camcorder automatically returns to the automatic exposure mode:

- If you change the PROGRAM AE mode.
- If you slide NIGHTSHOT to ON.

Focusing manually

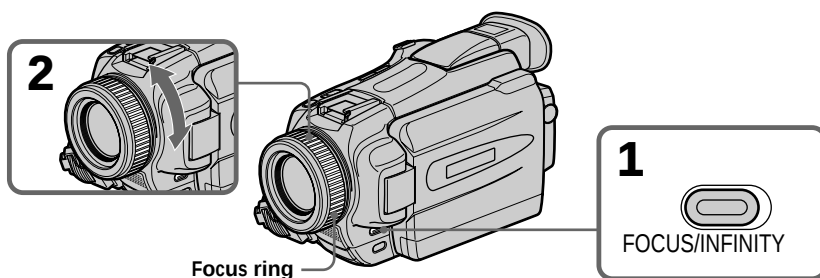
Normally, focus is automatically adjusted.

However, you can gain better results by manually adjusting the focus in the following cases:

- The autofocus mode is not effective when shooting
 - Subjects through glass coated with water droplets
 - Horizontal stripes
 - Subjects with little contrast with backgrounds such as walls and sky
- When you want to change the focus from a subject in the foreground to a subject in the background
- Shooting a stationary subject when using a tripod



- (1) Set the POWER switch to CAMERA or MEMORY (except DCR-TRV16), press FOCUS/INFINITY lightly. The  (manual focus) indicator appears.
- (2) Turn the focus ring to sharpen focus.



To return to the autofocus mode

Press FOCUS/INFINITY lightly to turn off the indicator.

To record distant subjects

When you press FOCUS/INFINITY down firmly, the lens focuses on the infinity and  indicator appears. When you release FOCUS/INFINITY, your camcorder returns to the manual focus mode. Use this mode when your camcorder focuses on near objects even though you are trying to shoot a distant object.

To focus precisely

It is easier to focus on subjects if you adjust the zoom to shoot at the “W” (wide-angle) after focusing at the “T” (telephoto) position.

When you shoot close to the subject

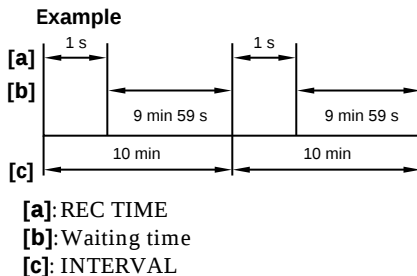
Focus at the end of the “W” (wide-angle) position.

 changes as follows:

-  when recording a distant subject.
-  when the subject is too close to focus on.

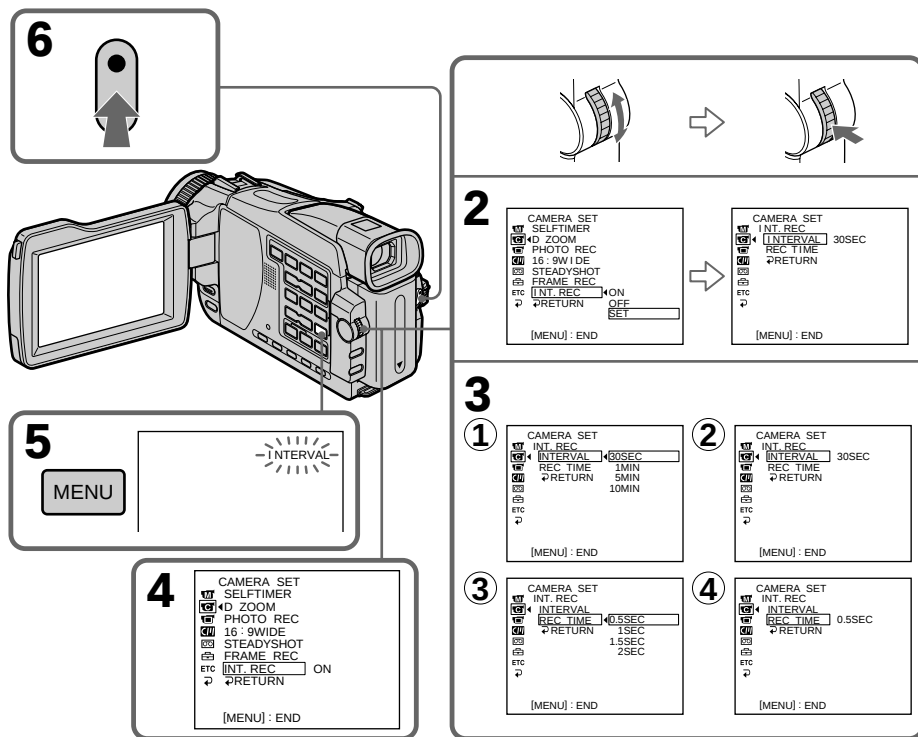
Interval recording

You can make a time-lapse recording by setting the camcorder to automatically record and standby sequentially. You can achieve an excellent recording for flowering, gradual appearances, etc., with this function.



- (1) In the standby mode, press MENU. Select INT. REC in  with the SEL / PUSH EXEC dial (p. 177).
- (2) Turn the SEL / PUSH EXEC dial to select SET, then press the dial.
- (3) Set INTERVAL and REC TIME.
 - ① Turn the SEL / PUSH EXEC dial to select INTERVAL, then press the dial.
 - ② Turn the SEL / PUSH EXEC dial to select the desired interval time, then press the dial.
The time: 30SEC ↔ 1MIN ↔ 5MIN ↔ 10MIN
 - ③ Turn the SEL / PUSH EXEC dial to select REC TIME, then press the dial.
 - ④ Turn the SEL / PUSH EXEC dial to select the desired recording time, then press the dial.
The time: 0.5SEC ↔ 1SEC ↔ 1.5SEC ↔ 2SEC
 - ⑤ Turn the SEL / PUSH EXEC dial to select  RETURN, then press the dial.
- (4) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (5) Press MENU to erase the menu display. The INTERVAL indicator flashes.
- (6) Press START / STOP to start interval recording. The INTERVAL indicator lights up.

Interval recording



To cancel the interval recording

Perform either of the following:

- Set INT. REC to OFF in the menu settings.
- Set the POWER switch to other than CAMERA.

To suspend interval recording and perform normal recording

Press START/STOP during the interval time except during recording time. The INTERVAL indicator flashes and normal recording starts.

To restart interval recording, stop recording and then press START/STOP again. The INTERVAL indicator stops flashing and remains on, and recording time begins.

When the POWER switch is set to MEMORY (except DCR-TRV16)

You cannot do interval recording.

On recording time

There may be a discrepancy in the recording time of up to –/ + six frames from the selected time.

When pressing START/STOP during recording time

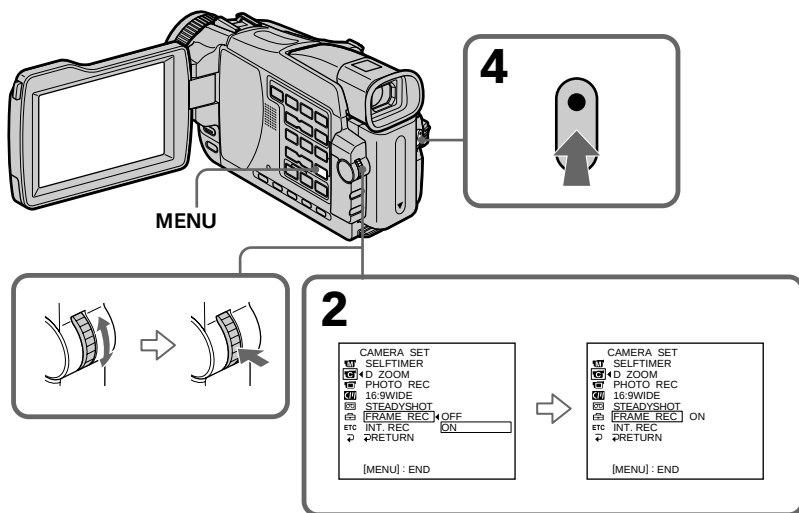
Interval recording stops. To restart it, perform step 6.

Frame by frame recording

– Frame recording

You can make a recording with a stop-motion animated effect using frame recording. To create this effect, alternately move the subject a little and make a frame recording. We recommend that you use a tripod, and operate your camcorder using the Remote Commander after step 4.

- (1) In the standby mode, press MENU. Select FRAME REC in  with the SEL / PUSH EXEC dial (p. 177).
- (2) Select ON with the SEL / PUSH EXEC dial.
- (3) Press MENU to erase the menu display. The FRAME REC indicator lights up.
- (4) Press START/STOP to start frame recording. Your camcorder makes a recording for about six frames, and returns to recording standby.
- (5) Move the subject, and repeat step 4.



To cancel the frame recording

Perform either of the following:

- Set FRAME REC to OFF in the menu settings.
- Set the POWER switch to other than CAMERA.

Note

The proper remaining tape is not indicated if you use the frame recording function continuously.

When the POWER switch is set to MEMORY (except DCR-TRV16)

You cannot use the frame recording.

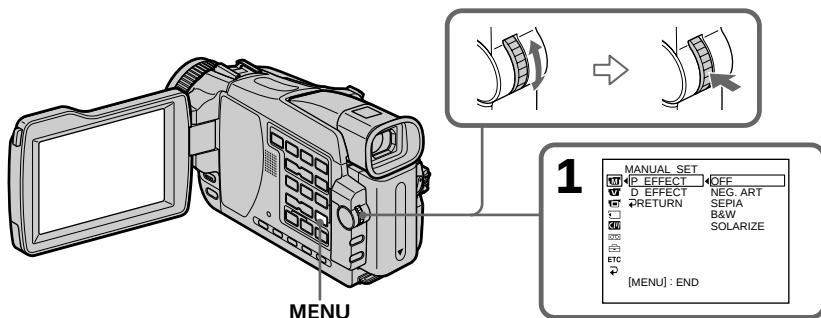
When using the frame recording function

The last recorded frame is longer than other frame.

Playing back tapes with picture effect

During playback, you can process a scene using the following picture effect functions: NEG. ART, SEPIA, B&W and SOLARIZE.

- (1) In the playback or playback pause mode, press MENU. Select P EFFECT in  with the SEL / PUSH EXEC dial (p. 176).
 - (2) Select the desired mode by turning the SEL / PUSH EXEC dial.
- For details of each picture effect function, see page 54.



To cancel the picture effect

Set P EFFECT to OFF in the menu settings.

Notes

- You cannot process externally input scenes using the picture effect function.
- To record images that you have processed using the picture effect function, record images on a “Memory Stick” (except DCR-TRV16) (p. 117, 128), or on a VCR using your camcorder as a player.

Pictures processed by picture effect functions

Pictures processed by the picture effect function are not output through the  DV IN / OUT jack.

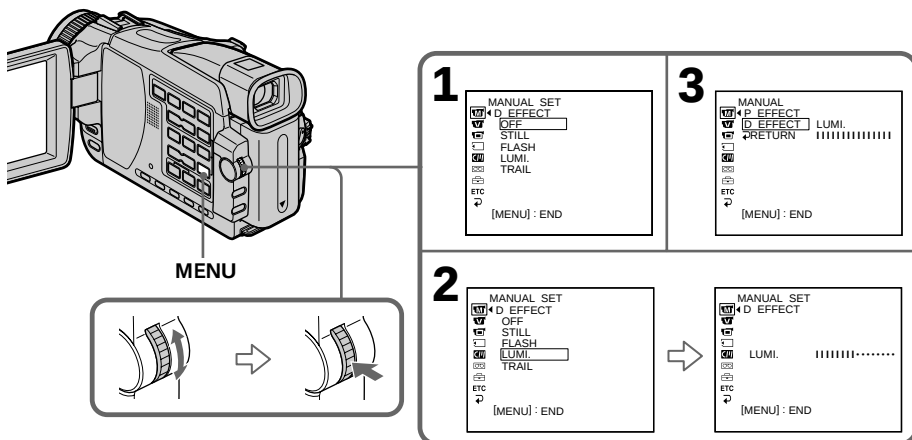
When you set the POWER switch to OFF (CHG) or stop playing back

The picture effect function is automatically canceled.

Playing back tapes with digital effect

During playback, you can process a scene using the following digital effect functions: STILL, FLASH, LUMI. and TRAIL.

- (1) In the playback or playback pause mode, press MENU. Select D EFFECT in  with the SEL / PUSH EXEC dial (p. 176).
- (2) Select the desired digital effect mode in the menu settings, then press the SEL / PUSH EXEC dial. The digital effect indicator lights up and the bars appear. In the STILL or LUMI. mode, the image where you press the SEL / PUSH EXEC dial is stored in memory as a still image.
- (3) Turn the SEL / PUSH EXEC dial to adjust the effect, then press the dial.
For details of each digital effect function, see page 55.



To cancel the digital effect

Set D EFFECT to OFF in the menu settings.

Notes

- You cannot process externally input scenes using digital effect functions.
- To record images that you have processed the image using the digital effect function, record images on a “Memory Stick” (except DCR-TRV16) (p. 117, 128), or on a VCR using your camcorder as a player.

Pictures processed by digital effect functions

- Pictures processed by digital effect functions are not output through the  DV IN / OUT jack.
- You cannot use the tape PB ZOOM function for pictures processed by digital effect functions.

When you set the POWER switch to OFF (CHG) or stop playing back

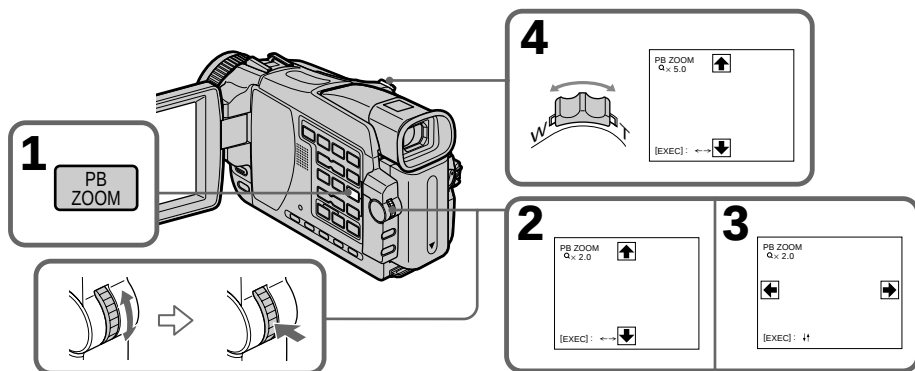
The digital effect function is automatically canceled.

Enlarging images recorded on a tape

– Tape PB ZOOM

You can enlarge playback images recorded on tapes. Besides the operation described here, your camcorder can enlarge still images recorded on “Memory Stick”s (except DCR-TRV16) (p. 145).

- (1) In the playback or playback pause mode, press PB ZOOM on your camcorder. The center of the image is enlarged to about twice its size, and   appears on the screen.
- (2) Turn the SEL / PUSH EXEC dial to move the enlarged image, then press the dial.
 -  : The image moves downwards.
 -  : The image moves upwards.
- (3) Turn the SEL / PUSH EXEC dial to move the enlarged image, then press the dial.
 -  : The image moves leftward (Turn the dial upwards.)
 -  : The image moves rightward (Turn the dial downwards.)
- (4) Adjust the zoom ratio by the power zoom lever.
 - W : Decreases the zoom ratio.
 - T : Increases the zoom ratio.



To cancel the PB ZOOM function

Press PB ZOOM.

Notes

- You cannot process externally input scenes using the PB ZOOM function with your camcorder.
- You cannot record images on a tape on your camcorder when you have processed the image using the tape PB ZOOM function. However, you can record images on a VCR using your camcorder as a player.
- You cannot record moving pictures on a “Memory Stick” (except DCR-TRV16) on your camcorder when you have processed the picture using the tape PB ZOOM function.

Enlarging images recorded on a tape – Tape PB ZOOM

Pictures in the PB ZOOM

Pictures in the PB ZOOM mode are not output through the  DV IN / OUT jack and the  (USB) jack.

The PB ZOOM function is automatically canceled when you execute the following functions:

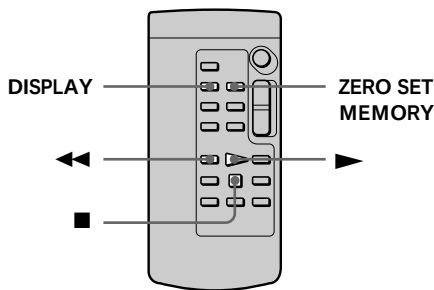
- Set the POWER switch to OFF (CHG)
- Stop playback
- Display the menu settings
- Insert a “Memory Stick” (except DCR-TRV16)

Quickly locating a scene

– ZERO SET MEMORY

Your camcorder goes forward or backward to automatically stop at a desired scene having a tape counter value of “0:00:00”. Use the Remote Commander for this operation.

- (1) In the playback mode, press DISPLAY.
- (2) Press ZERO SET MEMORY at the point you want to locate later. The tape counter shows “0:00:00” and then starts counting. The ZERO SET MEMORY indicator flashes.
- (3) Press ■ when you want to stop playback.
- (4) Press ◀◀ to rewind the tape to the tape counter’s zero point. The tape stops automatically when the tape counter reaches approximately zero. The ZERO SET MEMORY indicator disappears, and the time code appears.
- (5) Press ▶▶. Playback starts from the counter’s zero point.



Notes

- When you press ZERO SET MEMORY before rewinding the tape, the zero set memory function will be canceled.
- There may be a discrepancy of several seconds from the time code.

If a tape has a blank portion between recorded portions

The zero set memory function may not work correctly.

Searching the boundaries of recorded tape by title – TITLE SEARCH

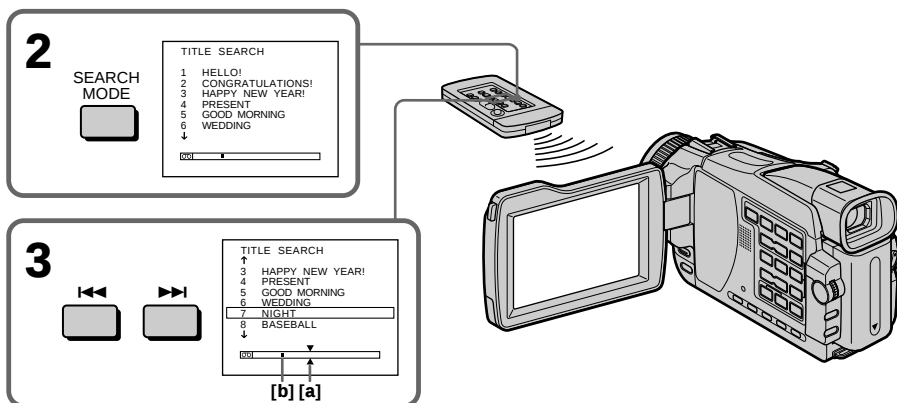


If you use a cassette with cassette memory, you can search for the boundaries of recorded tape by title. Use the Remote Commander for this operation.

Before operation

Set CM SEARCH in to ON in the menu settings. (The default setting is ON.)

- (1) Set the POWER switch to VCR.
- (2) Press SEARCH MODE on the Remote Commander repeatedly until the TITLE SEARCH indicator appears. The indicator changes as follows:
no indicator ← TITLE SEARCH → DATE SEARCH → PHOTO SEARCH → PHOTO SCAN ←
- (3) Press or on the Remote Commander to select the title for playback. Your camcorder automatically starts playback of the scene having the title that you selected.



[a]: Actual point you are trying to search for

[b]: Present point on the tape

To stop searching

Press .

If you use a cassette without cassette memory

You cannot superimpose or search a title.

If a tape has a blank portion between recorded portions

The title search function may not work correctly.

To superimpose a title

See page 98.

Searching a recording by date

– DATE SEARCH

You can automatically search for the point where the recording date changes and start playback from that point. Use a tape with cassette memory for convenience. Use the Remote Commander for this operation.

Use this function to check where recording dates change or to edit the tape at each recording date.

Searching for the date by using cassette memory

Before operation

- You can use this function only when playing back a cassette with cassette memory.
- Set CM SEARCH in  to ON in the menu settings. (The default setting is ON.)

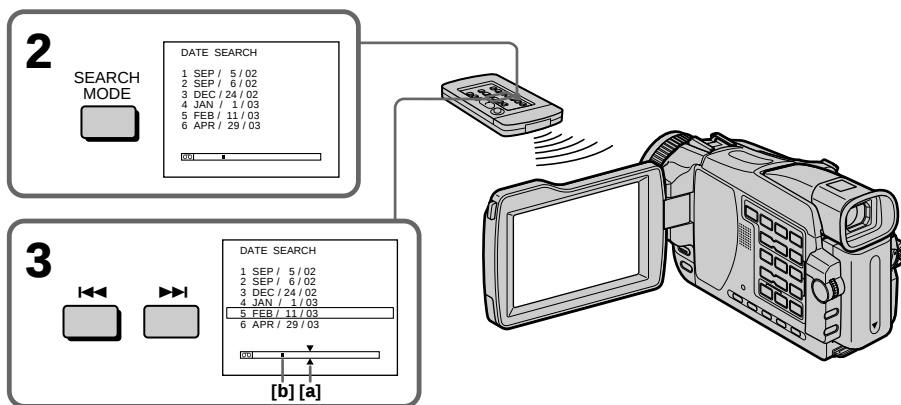
(1) Set the POWER switch to VCR.

(2) Press SEARCH MODE on the Remote Commander repeatedly until the DATE SEARCH indicator appears.

The indicator changes as follows:



(3) Press  or  on the Remote Commander to select the date for playback. Your camcorder automatically starts playback at the beginning of the selected date.



[a]: Actual point you are trying to search for

[b]: Present point on the tape

To stop searching

Press .

Searching a recording by date – DATE SEARCH

Note

If one day's recording is less than two minutes, your camcorder may not accurately find the point where the recording date changes.

If a tape has a blank portion between recorded portions

The date search function may not work correctly.

Cassette memory

The tape with cassette memory can hold six recording data. If you search among seven or more data, see "Searching for the date without using cassette memory" below.

Searching for the date without using cassette memory

- (1) Set the POWER switch to VCR.
- (2) Set CM SEARCH in  to OFF in the menu settings (p. 181).
- (3) Press SEARCH MODE on the Remote Commander repeatedly until the DATE SEARCH indicator appears.
The indicator changes as follows:
→ DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
- (4) Press  on the Remote Commander to search for the previous date or press  on the Remote Commander to search for the next date. Your camcorder automatically starts playback at the point where the date changes. Each time you press  or  your camcorder searches for the previous or next date.

To stop searching

Press .

Searching for a photo

– PHOTO SEARCH/PHOTO SCAN

You can search for a still image you have recorded on a tape (**PHOTO SEARCH**). It is convenient to use the cassette with the cassette memory.

You can also search for still images one after another and display each picture for five seconds automatically regardless of cassette memory (**PHOTO SCAN**). Use the Remote Commander for these operations.

Use this function to check or edit still images.

Searching for a photo by using cassette memory

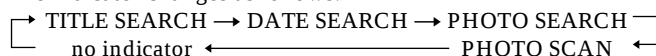
Before operation

- You can use this function only when playing back a cassette with cassette memory.
- Set CM SEARCH in  to ON in the menu settings. (The default setting is ON.)

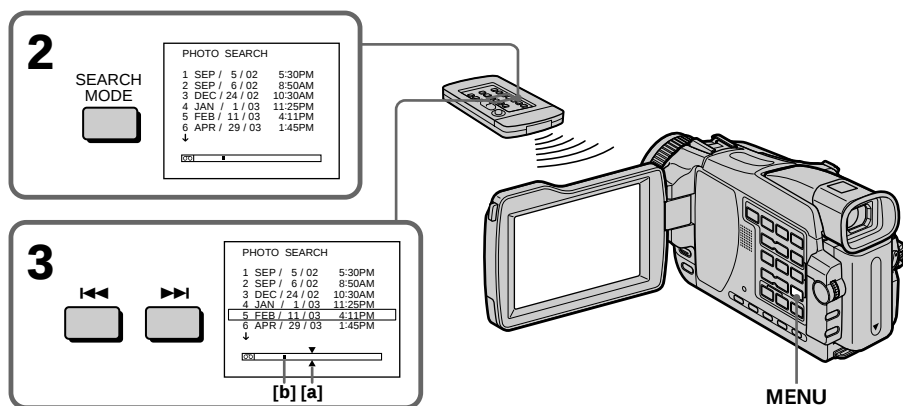
(1) Set the POWER switch to VCR.

(2) Press SEARCH MODE on the Remote Commander repeatedly, until the PHOTO SEARCH indicator appears.

The indicator changes as follows:



(3) Press  or  on the Remote Commander to select the date for playback. Your camcorder automatically starts playback of the photo having the date that you selected.



[a]: Actual point you are trying to search for

[b]: Present point on the tape

To stop searching

Press .

Searching for a photo – PHOTO SEARCH/PHOTO SCAN

Searching for a photo without using cassette memory

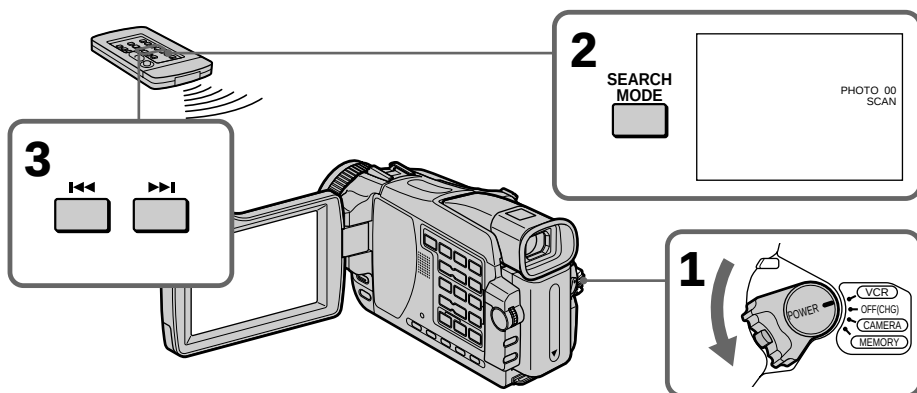
- (1) Set the POWER switch to VCR.
- (2) Set CM SEARCH in  to OFF in the menu settings (p. 181).
- (3) Press SEARCH MODE on the Remote Commander repeatedly until the PHOTO SEARCH indicator appears.
The indicator changes as follows:
→ DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → no indicator
- (4) Press  or  on the Remote Commander to select the photo for playback.
Each time you press  or  your camcorder searches for the previous or next photo.
Your camcorder automatically starts playback of the photo.

To stop searching

Press .

Scanning photo

- (1) Set the POWER switch to VCR.
- (2) Press SEARCH MODE on the Remote Commander repeatedly until the PHOTO SCAN indicator appears.
The indicator changes as follows:
→ TITLE SEARCH* → DATE SEARCH → PHOTO SEARCH → no indicator ← PHOTO SCAN
- (3) Press  or  on the Remote Commander.
Each photo is played back for about five seconds automatically.



To stop scanning

Press .

If a tape has a blank portion between recorded portions

The photo search / photo scan function may not work correctly.

The available number of photos that can be searched using the cassette memory

The available number is up to 12 photos. However, you can search 13 photos or more using the photo scan function.

Dubbing a tape

Using the A/V connecting cable

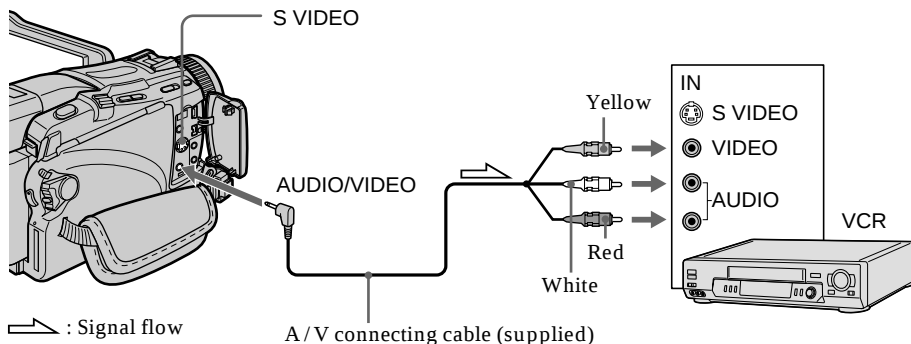
You can dub or edit on the VCR connected to your camcorder using your camcorder as a player. Connect your camcorder to the VCR using the A/V connecting cable supplied with your camcorder.

Before operation

- Set DISPLAY in **ETC** to LCD in the menu settings. (The default setting is LCD.)
- Press the following buttons to make the indicator disappear so that they will not be superimposed on the edited tape:
 - DISPLAY
 - DATA CODE on the Remote Commander
 - SEARCH MODE on the Remote Commander

- (1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
- (2) Prepare the VCR for recording, then set the input selector to LINE. Connect the A/V connecting cable to the AUDIO/VIDEO jack. Refer to the operating instructions of the VCR.
- (3) Set the POWER switch to VCR on your camcorder.
- (4) Play back the recorded tape on your camcorder.
- (5) Start recording on the VCR. Refer to the operating instructions of your VCR.

Editing



When you have finished dubbing a tape

Press **■** on both your camcorder and the VCR.

You can edit on VCRs that support the following systems:

8 8 mm, **Hi8** Hi8, **VHS** VHS, **S-VHS** S-VHS, **VHS-C** VHS-C, **S-VHS-C** S-VHS-C,
B Betamax, **ED Beta** ED Betamax, **Mini DV** mini DV, **DV** DV, **D** Digital8, **MICROMV** MICRO MV

Dubbing a tape

If your VCR is a monaural type

Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and when the red plug is connected, the right channel audio is output.

If your VCR has an S video jack

Pictures can be reproduced more faithfully by using an S video cable (optional).

With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.

Connect an S video cable (optional) to the S video jacks of both your camcorder and the VCR.

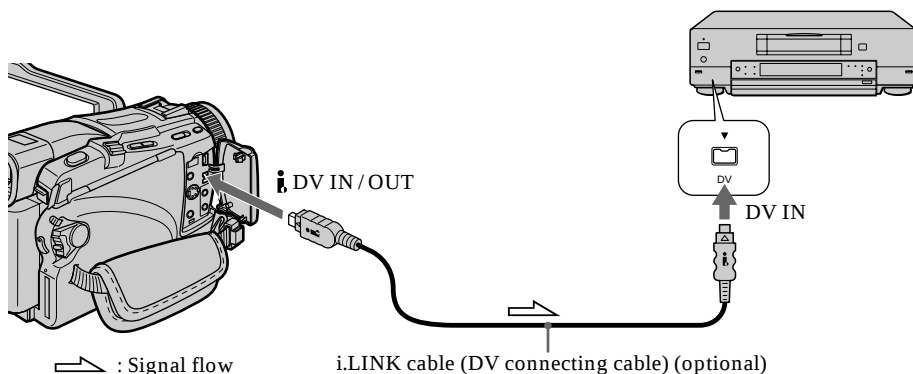
This connection produces higher quality DV format pictures.

Using the i.LINK cable (DV connecting cable)

Simply connect the i.LINK cable (DV connecting cable) (optional) to  DV IN / OUT jack on your camcorder and to DV IN on the DV products. With a digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing. You can not dub the titles, display indicators, the contents of cassette memory or letters on the "Memory Stick" index screen (except DCR-TRV16).

Set the input selector on the VCR to the DV input position if the VCR is equipped with the input selector.

- (1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
- (2) Prepare the VCR for recording.
Set the input selector to LINE (DV input position). Refer to the operating instructions of the VCR.
- (3) Set the POWER switch to VCR on your camcorder.
- (4) Play back the recorded tape on your camcorder.
- (5) Start recording on the VCR. Refer to the operating instructions of your VCR.



When you have finished dubbing a tape

Press  on both your camcorder and the VCR.

Dubbing a tape

You can connect one VCR only using the i.LINK cable (DV connecting cable)

See page 199 for more information about i.LINK.

Pictures processed by the picture effect, the digital effect or PB ZOOM function

Pictures processed by the picture effect, the digital effect or PB ZOOM function are not output through the  DV IN / OUT jack.

If you record a playback pause picture with the DV IN/OUT jack

The recorded picture becomes rough. Also, when you play back the picture using other video equipment, the picture may jitter.

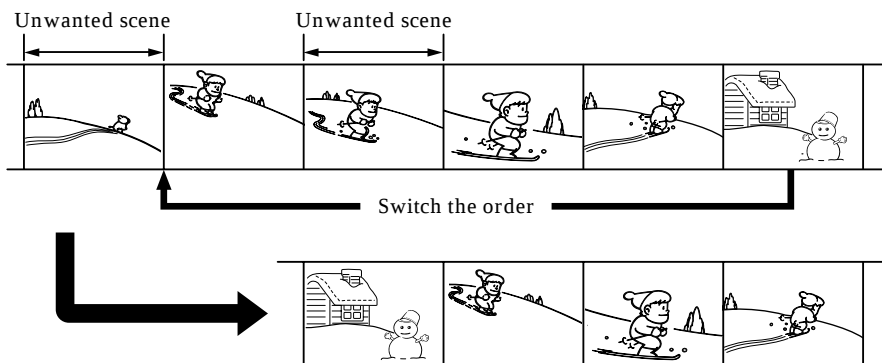
Dubbing only desired scenes

- Digital program editing (on tapes)

You can duplicate selected scenes (programs) for editing onto a tape without operating the VCR.

Scenes can be selected by frame. You can set up to 20 programs.

Your camcorder can dub on "Memory Stick"s (except DCR-TRV16). See page 132 for more information.



Before operating the Digital program editing on tapes recorded on other equipment

Step 1 Connecting the VCR (p. 78).

Step 2 Setting the VCR for operation.

- Using the A/V connecting cable (p. 79)

- Using the i.LINK cable (DV connecting cable) (p. 83)

Step 3 Adjusting the synchronization of the VCR (p. 84).

When you dub using the same VCR again, you can skip steps 2 and 3.

Using the Digital program editing function on tapes recorded on other equipment

Operation 1 Making a program (p. 86).

Operation 2 Performing the program (dubbing a tape) (p. 88).

Note

When editing digital video on tapes, the operation signals cannot be sent with

LANC.

Step 1: Connecting the VCR

You can connect both the A/V connecting cable and the i.LINK cable (DV connecting cable).

When you use the A/V connecting cable, connect the devices as illustrated on page 75.

When you use the i.LINK cable (DV connecting cable), connect the devices as illustrated on page 76.

If you connect using the i.LINK cable (DV connecting cable)

With a digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing.

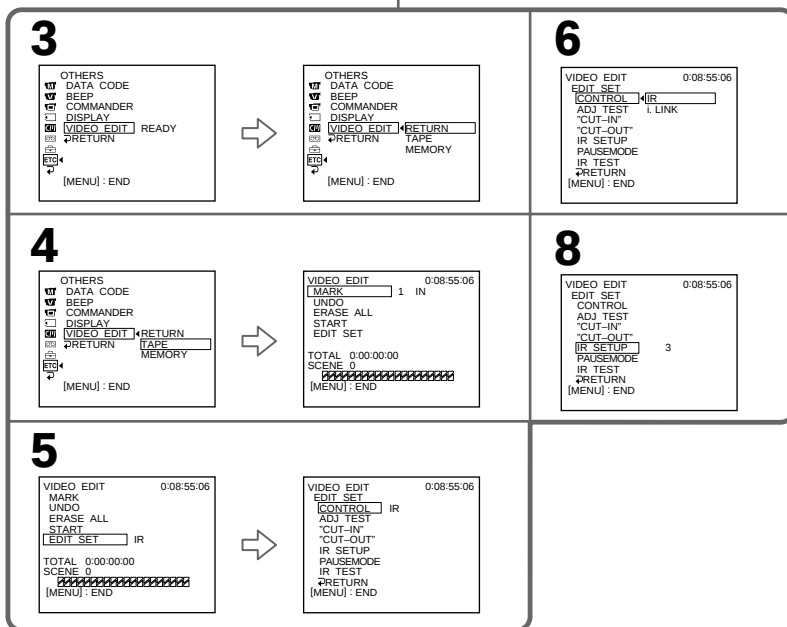
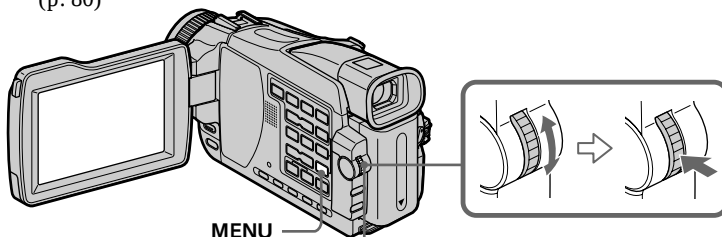
Step 2: Setting the VCR to operate with the A/V connecting cable

To edit using the VCR, send the control signal by infrared rays to the remote sensor on the VCR.

When you connect using the A/V connecting cable, follow the procedure below, (1) to (4), to send the control signal correctly.

(1) Set the IR SETUP code

- ① Set the POWER switch to VCR on your camcorder.
- ② Turn the power of the connected VCR on, then set the input selector to LINE.
When you connect a video camera recorder, set its power switch to VCR/VTR.
- ③ Press MENU. Select VIDEO EDIT in  with the SEL/PUSH EXEC dial (p. 184).
- ④ Turn the SEL/PUSH EXEC dial to select TAPE, then press the dial. (except DCR-TRV16)
- ⑤ Turn the SEL/PUSH EXEC dial to select EDIT SET, then press the dial.
- ⑥ Turn the SEL/PUSH EXEC dial to select CONTROL, then press the dial.
- ⑦ Turn the SEL/PUSH EXEC dial to select IR, then press the dial.
- ⑧ Turn the SEL/PUSH EXEC dial to select IR SETUP, then select IR SETUP code of your VCR, then press the dial. Check the code in “About IR SETUP code.” (p. 80)



Dubbing only desired scenes – Digital program editing (on tapes)

About IR SETUP codes

The IR SETUP code is stored in the memory of your camcorder. Be sure to set the correct code to match your VCR. The default setting is code number 3.

Brand	IR SETUP code
Sony	1, 2, 3, 4, 5, 6
Admiral (M. Wards)	89
Aiwa	47, 54, 80
Akai	49, 51
Audio Dynamic	21, 35
Bell&Howell (M. Wards)	36
Broksonic	21, 70, 82
Canon	77, 78
Citizen	47
Craig	47, 73
Curtis Mathis	8, 77, 80
Daewoo	26, 40, 77
DBX	21, 33, 35
Dimensia	8
Emerson	26, 48, 59, 70, 80, 81, 82
Fisher	36, 37, 44, 45
Funai	80
General Electric	8, 32*, 77, 94*, 101
Goldstar / LG	47
GO VIDEO	71
Hitachi	8, 42, 78
HQ	40
Instant Replay	77, 78
JC Penny	8, 21, 33, 35, 36, 42, 77
JVC	12, 13, 14, 21, 33, 35
Kenwood	21, 33, 35, 47
LXI (Sears)	36, 37, 42, 44, 45, 47, 49, 80
Magnavox	17, 77, 78, 83
Marantz	21, 33, 35
Marta	47
Memorex	37, 77
Minolta	8, 42

Brand	IR SETUP code
Mitsubishi / MGA	22, 23, 24, 28, 29
Multitech	23, 32, 80
NEC	21, 33, 35
Olympic	77, 78
Optimus	22
Orion	60
Panasonic	16, 17, 77, 78
Pentax	8, 42
Philco	26, 70, 77, 78
Philips	47, 77, 78, 83
Pioneer	78
Quasar	6, 16, 17, 77, 78
RCA / PROSCAN	7, 8, 16, 40, 41, 42, 77, 78*, 83, 101
Realistic	22, 36, 37, 77, 80, 88
Sansui	21
Singer	73
Samsung	24, 24*, 32, 32*, 41, 94, 94*
Sanyo	26, 36, 37, 47
Scott	22, 23, 24, 28, 32, 37, 40, 41
Sharp	88, 89
Shintom	73
Signature 2000	80, 89
Sylvania	77, 78, 80, 83
Symphonic	80
Tashiro	47
Tatung	21, 33, 35
Teac	21, 33, 35, 80
Technics	77, 78
Toshiba	7, 40, 49
Wards	37, 47, 88, 89, 95
Yamaha	21, 33, 35, 36
Zenith	95

* TV / VCR component

Note on IR SETUP codes

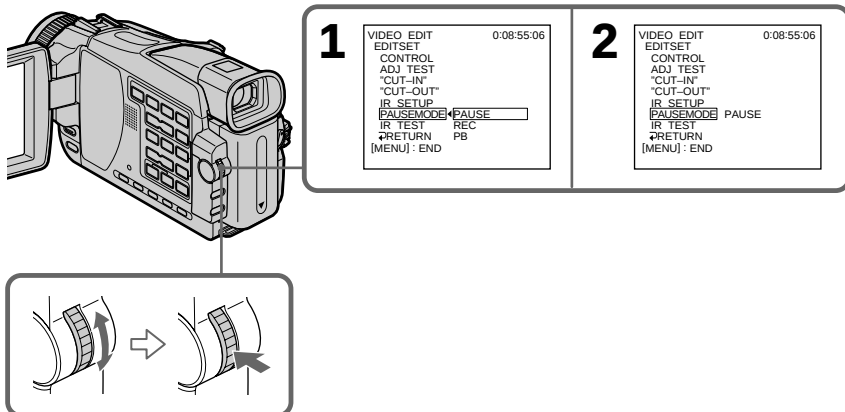
Digital program editing is not possible if the VCR does not support IR SETUP codes.

Dubbing only desired scenes – Digital program editing (on tapes)

(2) Setting the modes to cancel the recording pause on the VCR

- ① Turn the SEL/PUSH EXEC dial to select PAUSEMODE, then press the dial.
- ② Turn the SEL/PUSH EXEC dial to select the mode to cancel recording pause on the VCR, then press the dial.

Refer to the operating instructions of your VCR.



Buttons to cancel recording pause on the VCR

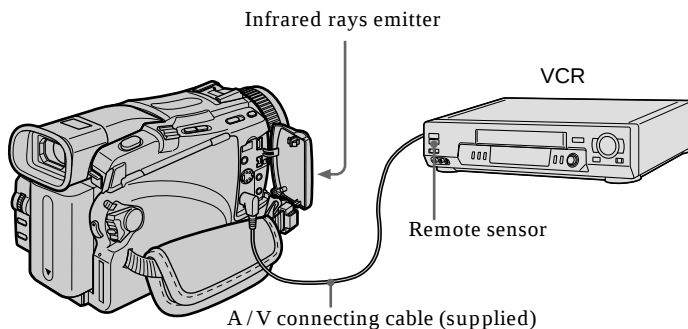
The buttons vary depending on your VCR. To cancel recording pause:

- Select PAUSE if the button to cancel recording pause is **II**.
- Select REC if the button to cancel recording pause is **●**.
- Select PB if the button to cancel recording pause is **▶**.

(3) Setting your camcorder and the VCR to face each other

Locate the infrared rays emitter of your camcorder and face it towards the remote sensor of the VCR.

Set the devices about 30 cm (12 in.) apart, and remove any obstacles between the devices.



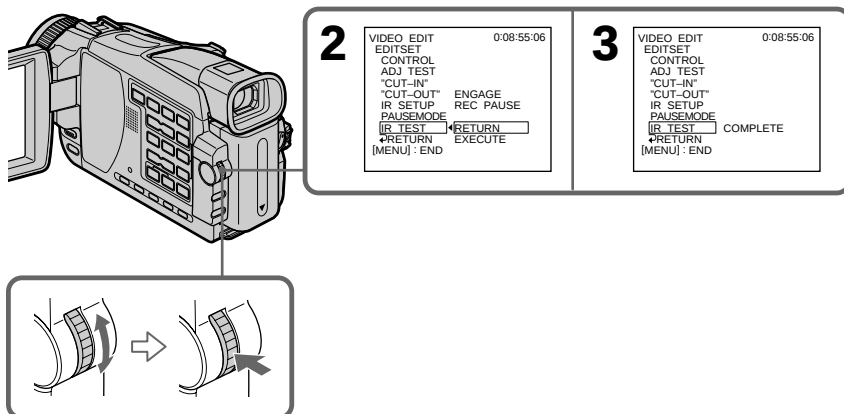
Dubbing only desired scenes – Digital program editing (on tapes)

(4) Confirming VCR operation

- ① Insert a recordable tape into the VCR, then set to recording pause.
- ② Turn the SEL / PUSH EXEC dial to select IR TEST, then press the dial.
- ③ Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.

If the VCR starts recording, the setting is correct.

When recording is finished, the indicator changes to COMPLETE.



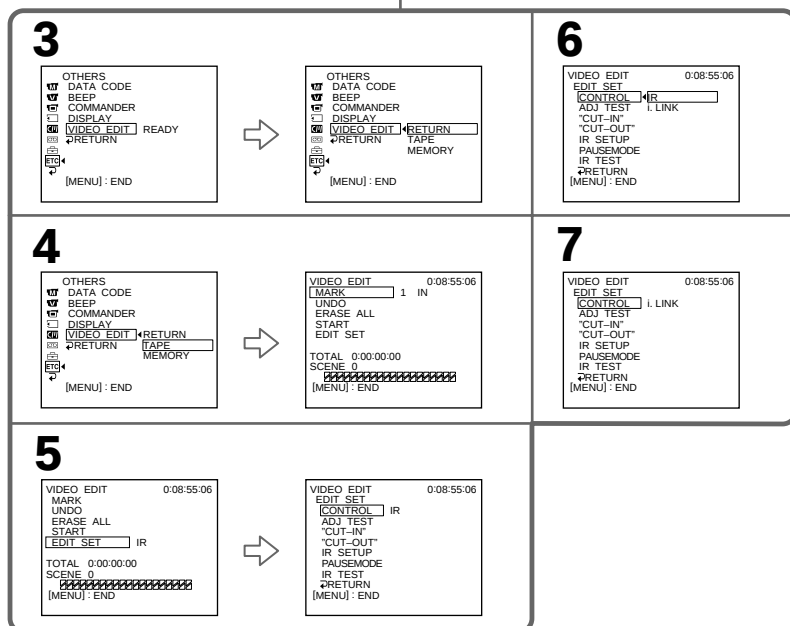
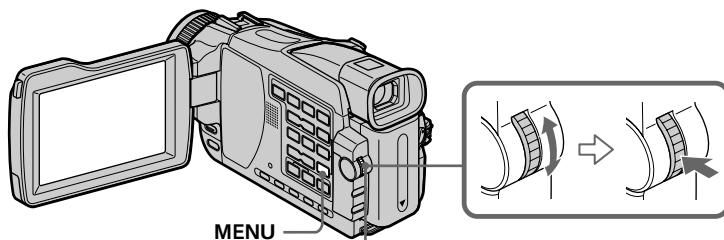
When the VCR does not operate correctly

- After checking the code in "About IR SETUP codes," set the IR SETUP or the PAUSEMODE again.
- Place your camcorder at least 30 cm (12 in.) away from the VCR.
- Refer to the operating instructions of your VCR.

Step 2: Setting the VCR to operate with the i.LINK cable (DV connecting cable)

When you connect using the i.LINK cable (DV connecting cable) (optional), follow the procedure below.

- (1) Set the POWER switch to VCR on your camcorder.
- (2) Turn the power of the connected VCR on, then set the input selector to DV input. When you connect a digital video camera recorder, set its power switch to VCR/VTR.
- (3) Press MENU. Select VIDEO EDIT in **ETC** with the SEL / PUSH EXEC dial (p. 184).
- (4) Turn the SEL / PUSH EXEC dial to select TAPE, then press the dial (except DCR-TRV16).
- (5) Turn the SEL / PUSH EXEC dial to select EDIT SET, then press the dial.
- (6) Turn the SEL / PUSH EXEC dial to select CONTROL, then press the dial.
- (7) Turn the SEL / PUSH EXEC dial to select i.LINK, then press the dial.



Dubbing only desired scenes – Digital program editing (on tapes)

When you connect using the i.LINK cable (DV connecting cable)

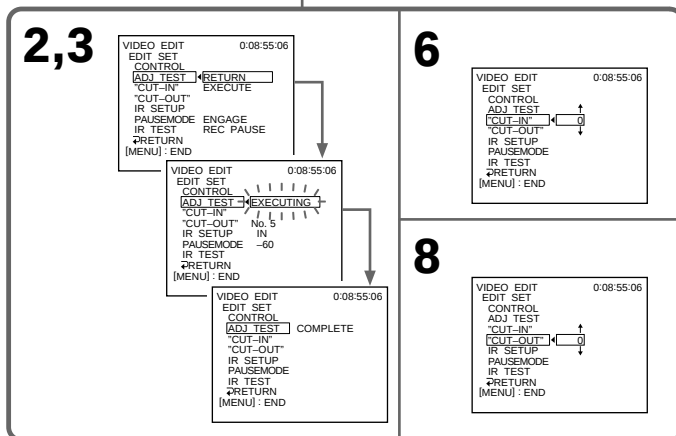
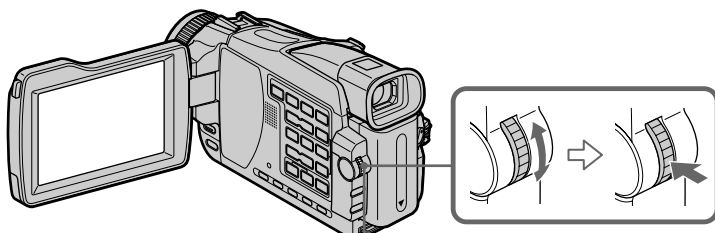
- You cannot dub the titles, display indicators.
- You may not be able to operate the dubbing function correctly, depending on the VCR. Set CONTROL to IR in the menu settings of your camcorder.

Step 3: Adjusting the synchronization of the VCR

You can adjust the synchronization of your camcorder and the VCR. Have a pen and paper ready for notes. Before operation, eject a cassette from your camcorder.

- (1) Insert a blank tape (or a tape you want to record over) into the VCR, then set to recording pause.
When you select i.LINK in CONTROL, you do not need to set to recording pause.
- (2) Turn the SEL / PUSH EXEC dial to select ADJ TEST, then press the dial.
- (3) Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
IN and OUT are recorded on an image for five times each to calculate the number values for adjusting the synchronization.
The EXECUTING indicator flashes on the screen.
When finished, the indicator changes to COMPLETE.
- (4) Rewind the tape in the VCR, then start slow playback.
Take a note of the first number value of each IN and the closing number value of each OUT.
- (5) Calculate the average of all the first number values of each IN, and the average of all the last number values of each OUT.
- (6) Turn the SEL / PUSH EXEC dial to select "CUT-IN", then press the dial.
- (7) Turn the SEL / PUSH EXEC dial to select the average number value of IN, then press the dial.
The calculated start position for recording is set.
- (8) Turn the SEL / PUSH EXEC dial to select "CUT-OUT", then press the dial.
- (9) Turn the SEL / PUSH EXEC dial to select the average number value of OUT, then press the dial.
The calculated stop position for recording is set.
- (10) Turn the SEL / PUSH EXEC dial to select ↺ RETURN, then press the dial.

Dubbing only desired scenes – Digital program editing (on tapes)



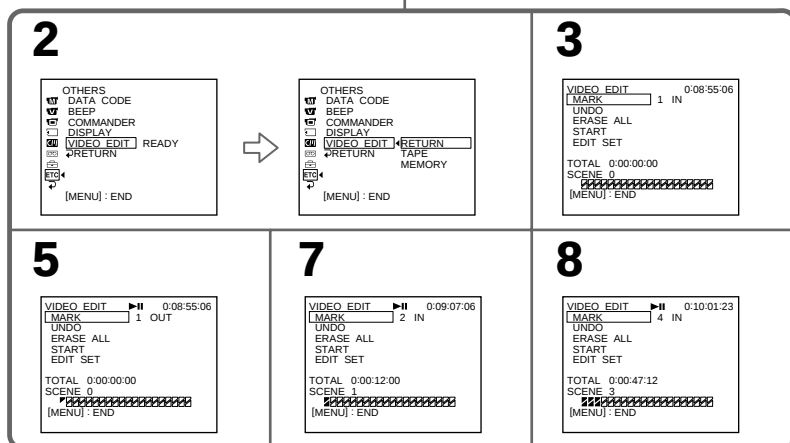
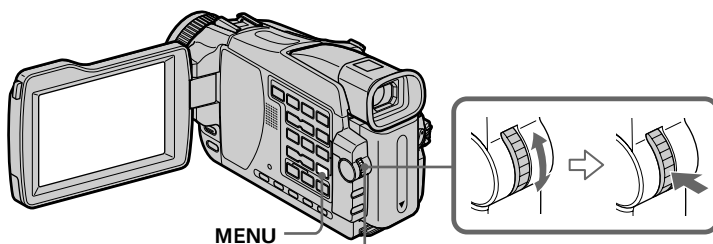
Notes

- When you complete step 3, the image used to adjust the synchronization is recorded for about 50 seconds.
- If you start recording from the very beginning of the tape, the first few seconds of the tape may not record properly. Be sure to allow about 10 seconds' lead before starting recording.
- When you connect with the i.LINK cable (DV connecting cable), you may not be able to operate the dubbing function correctly, depending on the VCR. Keep the i.LINK connection and set CONTROL to IR in the menu settings (p. 79). Video and audio are sent by digital signals.

Dubbing only desired scenes – Digital program editing (on tapes)

Operation 1: Making the program

- (1) Insert the tape for playback into your camcorder, and insert a tape for recording into the VCR.
- (2) Press MENU, then select VIDEO EDIT in ETC with the SEL / PUSH EXEC dial.
- (3) Turn the SEL / PUSH EXEC dial to select TAPE, then press the dial (except DCR-TRV16).
- (4) Search for the beginning of the first scene you want to insert using the video operation buttons, then pause playback.
You can fine-adjust one frame at a time with EDITSEARCH.
- (5) Turn the SEL / PUSH EXEC dial to select MARK, then press the dial.
The IN point of the first program is set, and the top part of the program mark changes to light blue.
- (6) Search for the end of the first scene you want to insert using the video operation buttons, then pause playback.
- (7) Turn the SEL / PUSH EXEC dial to select MARK, then press the dial.
The OUT point of the first program is set, then the bottom part of the program mark changes to light blue.
- (8) Repeat steps 4 to 7, then set the program.
When the program is set, the program mark changes to light blue.
You can set up to 20 programs in maximum.



Erasing the program you have set

Erase OUT first and then IN from the last set program.

- (1) Turn the SEL / PUSH EXEC dial to select UNDO, then press the dial.
- (2) Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
The last set program mark flashes, then the setting is canceled.

To cancel erasing

Select RETURN in step 2.

Erasing all programs

- (1) Select VIDEO EDIT in the menu settings.
- (2) Turn the SEL / PUSH EXEC dial to select TAPE, then press the dial (except DCR-TRV16).
- (3) Select ERASE ALL in the menu settings. Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
All the program marks flash, then the settings are canceled.

To cancel erasing all programs

Select RETURN in step 3.

To cancel a program you have set

Press MENU.

The program is stored in memory until the tape is ejected.

Note

You cannot operate recording during Digital program editing.

On a blank portion of the tape

You cannot set IN or OUT on blank portions of the tape.

If there is a blank portion between IN and OUT on the tape

The total time code may not be displayed correctly.

Dubbing only desired scenes – Digital program editing (on tapes)

Operation 2: Performing the program (Dubbing a tape)

Make sure your camcorder and VCR are connected, and that the VCR is set to recording pause. (When you use the i.LINK cable (DV connecting cable) this procedure is not necessary.)

When you use a digital video camera recorder, set its power switch to VCR/VTR.

- (1)** Select VIDEO EDIT in the menu settings. Turn the SEL / PUSH EXEC dial to select TAPE, then press the dial (except DCR-TRV16).
- (2)** Turn the SEL / PUSH EXEC dial to select START, then select EXECUTE.
Search for the beginning of the first program, then start dubbing.
The program mark flashes.
The SEARCH indicator appears during search, and the EDITING indicator appears during edit on the screen.
The program mark changes to light blue after dubbing ends.
When dubbing ends, your camcorder and the VCR automatically stop.

To stop dubbing during editing

Press ■ using the video operation buttons.

To end the Digital program editing function

Your camcorder stops when the dubbing ends. Then the display returns to VIDEO EDIT in the menu settings.

Press MENU to end the Digital program editing function.

You cannot record on the VCR when:

- The tape has run out.
- The write-protect tab on the cassette is set to lock.
- The IR SETUP code is not correct (when IR is selected).
- The button to cancel recording pause is not correct (when IR is selected).

NOT READY appears on the LCD screen when:

- The program to operate the Digital program editing has not been made.
- i.LINK is selected but the i.LINK cable (DV connecting cable) is not connected.
- The power of the connected VCR is not turned on (when you set i.LINK).

Recording video or TV programs

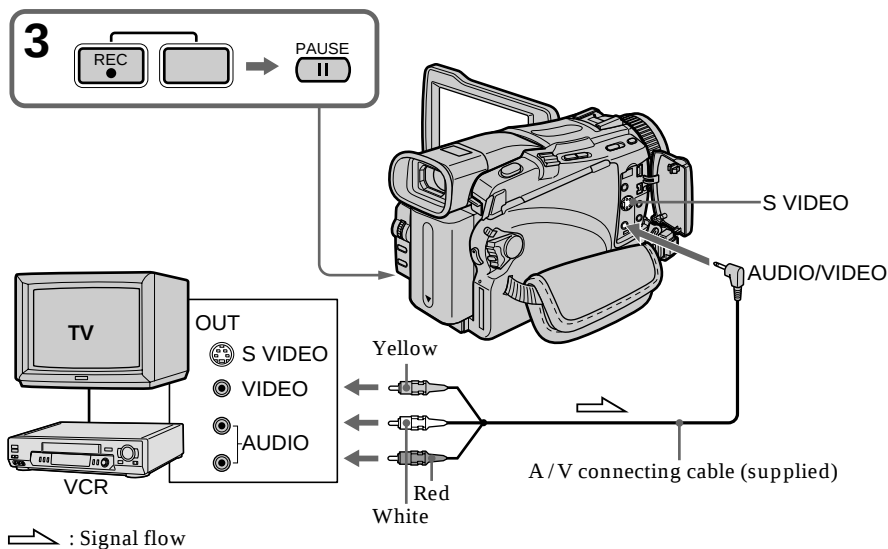
Using the A/V connecting cable

You can record a tape from another VCR or a TV program from a TV that has video / audio outputs. Use your camcorder as a recorder.

Before operation

Set DISPLAY in **[ETC]** to LCD in the menu settings. (The default setting is LCD.)

- (1) Insert a blank tape (or a tape you want to record over) into your camcorder. If you are recording a tape from the VCR, insert a recorded tape into the VCR.
- (2) Set the POWER switch to VCR on your camcorder.
- (3) Press **● REC** and the button on its right simultaneously on your camcorder, then immediately press **II** on your camcorder.
- (4) Press **▶** on the VCR to start playback if you record a tape from a VCR. Select a TV program if you are recording from a TV. The picture from a TV or VCR appears on the screen.
- (5) Press **II** on your camcorder at the scene where you want to start recording from.



When you have finished dubbing a tape

Press **■** on both your camcorder and the VCR.

Recording video or TV programs

If your VCR or TV is a monaural type

Connect the yellow plug of the A/V connecting cable to the video output jack and the white or the red plug to the audio output jack on the VCR or the TV. When the white plug is connected, the left channel audio is recorded, and when the red plug is connected, the right channel audio is recorded.

If your TV or VCR has an S video jack

Pictures can be reproduced more faithfully by using an S video cable (optional).

With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.

Connect an S video cable (optional) to the S video jacks of both your camcorder and the TV or VCR.

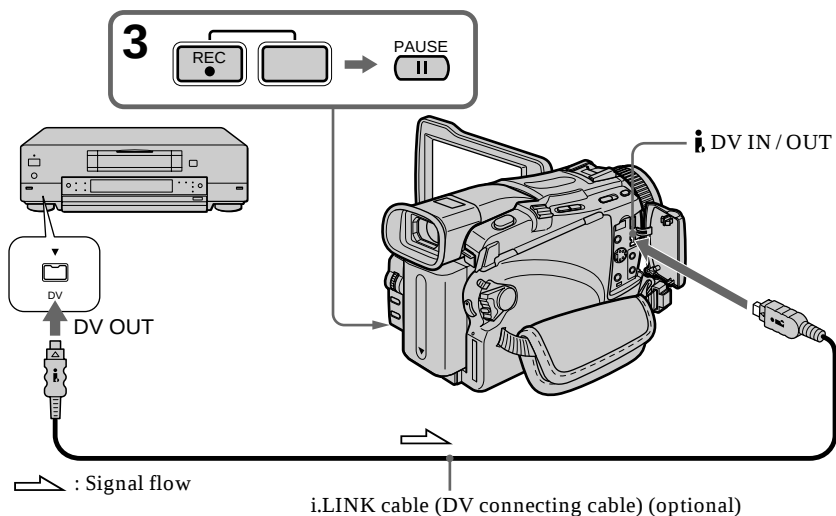
This connection produces higher quality DV format pictures.

Recording video or TV programs

Using the i.LINK cable (DV connecting cable)

Simply connect the i.LINK cable (DV connecting cable) (optional) to **i** DV IN / OUT jack on your camcorder and to DV OUT on the DV products. With a digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing.

- (1) Insert a blank tape (or a tape you want to record over) into your camcorder, and insert the recorded tape into the VCR.
- (2) Set the POWER switch to VCR on your camcorder.
- (3) Press **● REC** and the button on its right simultaneously on your camcorder, then immediately press **||** on your camcorder.
- (4) Press **▶** on the VCR to start playback. The picture to be recorded appears on the screen.
- (5) Press **||** on your camcorder at the scene where you want to start recording from.



When you have finished dubbing a tape

Press **■** on your camcorder, and then press the stop button on the VCR.

You can connect one VCR only using the i.LINK cable (DV connecting cable).

When you dub a picture in digital form

The color of the display may be uneven. However, this does not affect the dubbed picture.

If you record the playback paused picture with the **i** DV IN/OUT jack

The recorded picture becomes rough. When you play back the picture using your camcorder, the picture may jitter.

Before recording

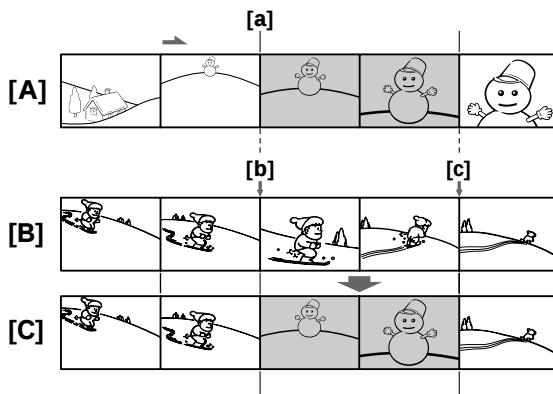
Make sure that the DV IN indicator appears on the screen. The DV IN indicator may appear on both equipment.

Inserting a scene from a VCR

- Insert Editing

You can insert a new scene with sound from a VCR onto your originally recorded tape by specifying the insert start and end points. Use the Remote Commander for this operation. Connections are the same as on page 89 or 91.

Insert a cassette containing the desired scene to insert into the VCR.



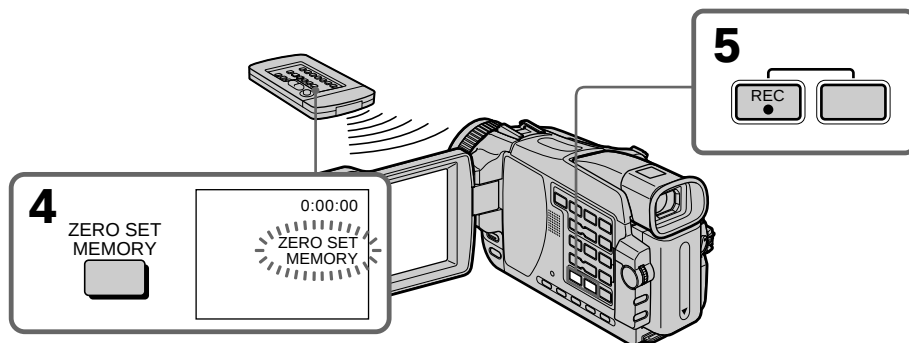
[A]: A tape that contains the scene to be superimposed

[B]: A tape before editing

[C]: A tape after editing

- (1) Set the POWER switch to VCR on your camcorder.
- (2) On the connected VCR, locate just before the insert start point [a], then press **II** to set the VCR to the playback pause mode.
- (3) On your camcorder, locate the insert end point [c] by pressing **◀◀** or **▶▶**. Then press **II** to set your camcorder to the playback pause mode.
- (4) Press ZERO SET MEMORY on the Remote Commander. The ZERO SET MEMORY indicator flashes and the end point of the insert is stored in memory. The tape counter shows "0:00:00."
- (5) On your camcorder, locate the insert start point [b] by pressing **◀◀**, then press **● REC** and the button on its right simultaneously.
- (6) First press **II** on the VCR, and after a few seconds press **II** on your camcorder to start inserting the new scene with sound. Inserting automatically stops near the zero point on the tape counter. Your camcorder automatically stops recording and the ZERO SET MEMORY is canceled.

Inserting a scene from a VCR – Insert Editing



To change the insert end point

Press ZERO SET MEMORY again after step 5 to erase the ZERO SET MEMORY indicator and begin from step 3.

Note

Pictures and sound recorded on the portion between the insert start and end points will be erased when you insert the new scene.

If you insert scenes on the tape recorded on another camcorder

The pictures and sound may be distorted. We recommend that you insert scenes on a tape recorded on your camcorder.

When the inserted picture is played back

Pictures and sound may be distorted at the end of the inserted portion. This is not a malfunction.

Pictures and sound at the start point and the end point may be distorted in the LP mode.

To insert a scene without setting the insert end point

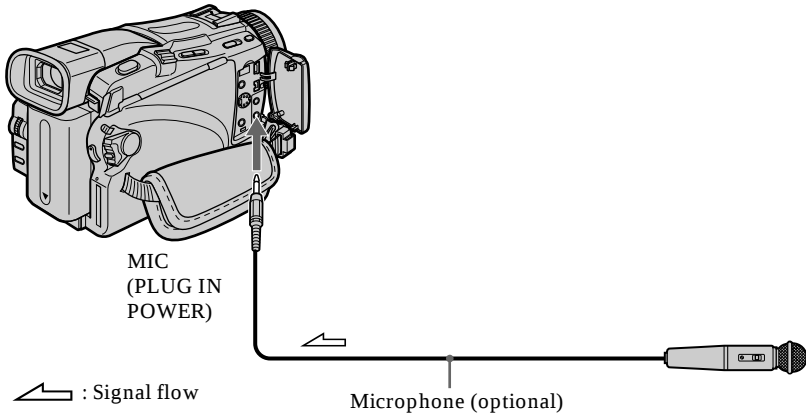
Skip steps 3 and 4. Press ■ on your camcorder when you want to stop inserting.

Audio dubbing

If you connect audio equipment, you can add sound to your recorded tape already recorded in the 12-bit mode by specifying the start and end points. The original sound will not be erased.

Select one of the following connections to add audio.

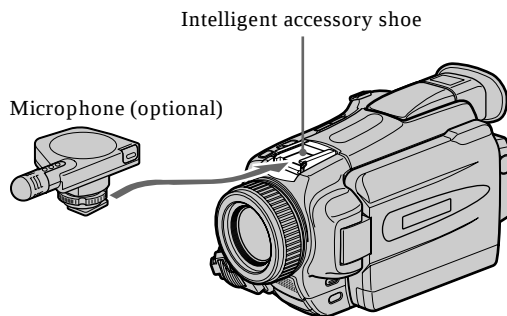
Connecting the microphone with the MIC jack



You can check recorded picture and sound by connecting your camcorder to a TV with the A/V connecting cable.

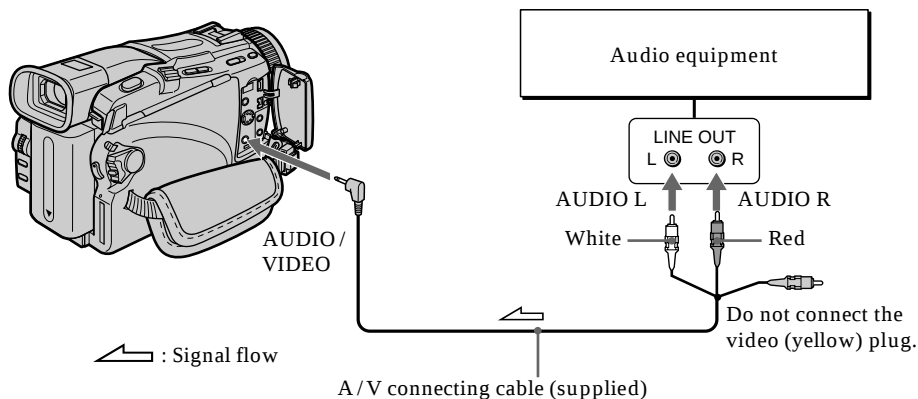
Recorded sound is not output from the speaker. Check the sound by using a TV or headphones.

Connecting the microphone to the intelligent accessory shoe



Audio dubbing

Dubbing with the AUDIO/VIDEO jack



Editing

Dubbing with the built-in microphone

No connection is necessary.

Note

When dubbing with the AUDIO/VIDEO jack or the built-in microphone, pictures are not output through the S VIDEO jack or the AUDIO/VIDEO jack. Check the recorded picture on the screen. You can check the recorded sound by using headphones.

If you make all the connections

The audio input to be recorded will take precedence over others in the following order:

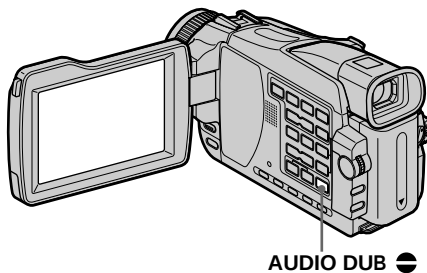
- MIC (PLUG IN POWER) jack
- Intelligent accessory shoe
- AUDIO/VIDEO jack
- Built-in microphone

Audio dubbing

Adding audio on a recorded tape

Choose a connection described on the previous pages, and connect audio equipment or microphone to your camcorder. Then follow the procedure below.

- (1) Insert the recorded tape into your camcorder.
- (2) Set the POWER switch to VCR on your camcorder.
- (3) Locate the recording start point by pressing ►. Then press ■ at the point where you want to start recording to set your camcorder to the playback pause mode.
- (4) Press AUDIO DUB ●. The green ● ■ indicator appears on screen.
- (5) Press ■ on your camcorder and start playing back the audio you want to record at the same time.
The new sound is recorded in stereo 2 (ST2) during playback. During recording new sound, the red ● appears on the screen.
- (6) Press ■ on your camcorder at the point where you want to stop recording.



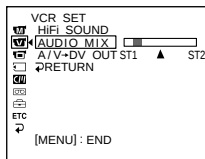
To add audio more precisely

Press ZERO SET MEMORY on the Remote Commander at the point where you want to stop recording later in the playback mode.

Carry out steps 3 to 5. Recording automatically stops at the point where ZERO SET MEMORY was pressed.

Monitoring the new recorded sound

- (1) Play back the tape on which you added audio.
- (2) Press MENU, then select AUDIO MIX in [V] with the SEL/PUSH EXEC dial (p. 178).



- (3) Turn the SEL/PUSH EXEC dial to adjust the balance between the original sound (ST1) and the new sound (ST2), then press the dial.

Five minutes after you disconnect the power supply or remove the battery pack, the AUDIO MIX setting returns to original sound (ST1) only. The default setting is original sound only.

Notes

- New audio cannot be recorded on a tape already recorded in the 16-bit mode (32 kHz, 44.1 kHz or 48 kHz).
- New audio cannot be recorded on a tape already recorded in the LP mode.
- You cannot add audio with the  DV IN / OUT jack.
- You cannot add audio on the blank portion of the tape.

If an i.LINK cable (DV connecting cable) (optional) is connected to your camcorder

You cannot add audio to a recorded tape.

We recommend that you add audio on a tape recorded with your camcorder

If you add audio on a tape recorded with another camcorder, the sound quality may become worse.

If you set the write-protect tab of the cassette to lock

You cannot record on a tape. Slide the write-protect tab to release the write protection.

If you use a tape with cassette memory, you can superimpose the title. When you play back the tape, the title is displayed for five seconds from the point where you superimposed it.



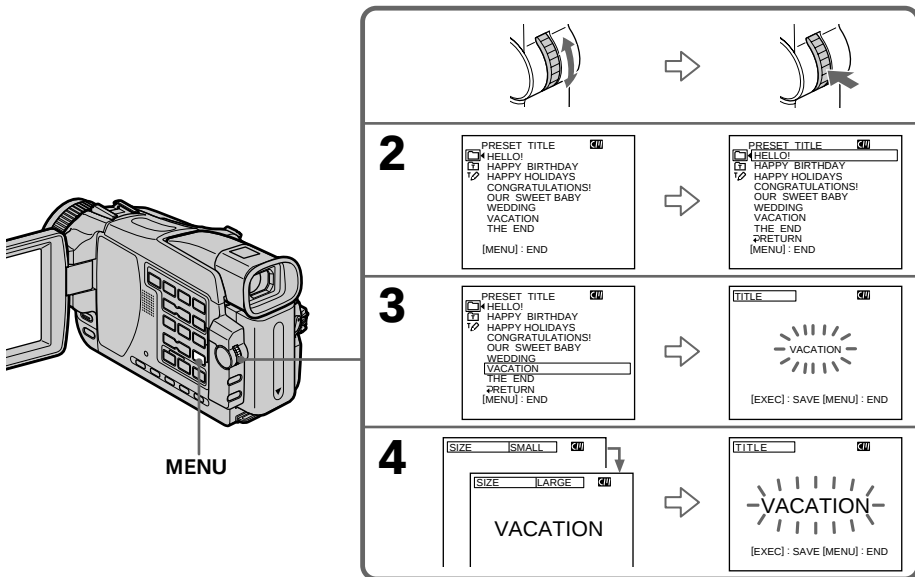
- (1)** In the recording, standby mode, playback or playback pause, press MENU, then select TITLE in  with the SEL / PUSH EXEC dial.
- (2)** Turn the SEL / PUSH EXEC dial to select , then press the dial.
- (3)** Turn the SEL / PUSH EXEC dial to select the desired title, then press the dial. The title flashes.
- (4)** Change the color, size, or position, if necessary.
 - ①** Turn the SEL / PUSH EXEC dial to select COLOR, SIZE or POSITION, then press the dial. The selected item appears.
 - ②** Turn the SEL / PUSH EXEC dial to select the desired item, then press the dial.
 - ③** Repeat steps **①** and **②** until the title is laid out as desired.
- (5)** Press the SEL / PUSH EXEC dial again to complete the setting.

In the recording, playback or playback pause mode:

The TITLE SAVE indicator appears on the screen for five seconds and the title is set.

In the standby mode:

The TITLE indicator appears. When you press START/STOP to start recording, TITLE SAVE appears on the screen for five seconds, and the title is set.



Superimposing a title

If you set the write-protect tab of the cassette to lock

You cannot superimpose or erase the title. Slide the write-protect tab to release the write protection.

To use a custom title

If you want to use a custom title, select  in step 2.

If the tape has a blank portion

You cannot superimpose a title on the portion.

If the tape has a blank portion between recorded portions

The title may not be displayed correctly.

Titles superimposed with your camcorder

- Titles are displayed by only the DV ^{Mini} DV format video equipment with an index titler function.
- The point you superimposed the title may be detected as an index signal when searching a recording with other video equipment.

If the tape has too many index signals

You may not be able to superimpose a title because the cassette memory becomes full. In this case, delete unwanted titles.

To not display titles

Set TITLE DSPL to OFF in the menu settings (p. 181).

Title setting

- The title color changes as follows:
WHITE ↔ YELLOW ↔ VIOLET ↔ RED ↔ CYAN ↔ GREEN ↔ BLUE
- The title size changes as follows:
SMALL ↔ LARGE
You cannot input 13 characters or more for a LARGE size. If you input more than 12 characters, the title size returns to SMALL even if you select LARGE.
- If you select the title size SMALL, you have nine choices for the title position.
If you select the title size LARGE, you have eight choices for the title position.

One cassette can have up to about 20 titles, with each title comprising five characters

However, if the cassette memory is full with date, photo and cassette label data, one cassette can have only up to about 11 titles each comprising five characters.

Cassette memory capacity is as follows:

- Six date data (maximum)
- 12 photo data (maximum)
- One cassette label (maximum)

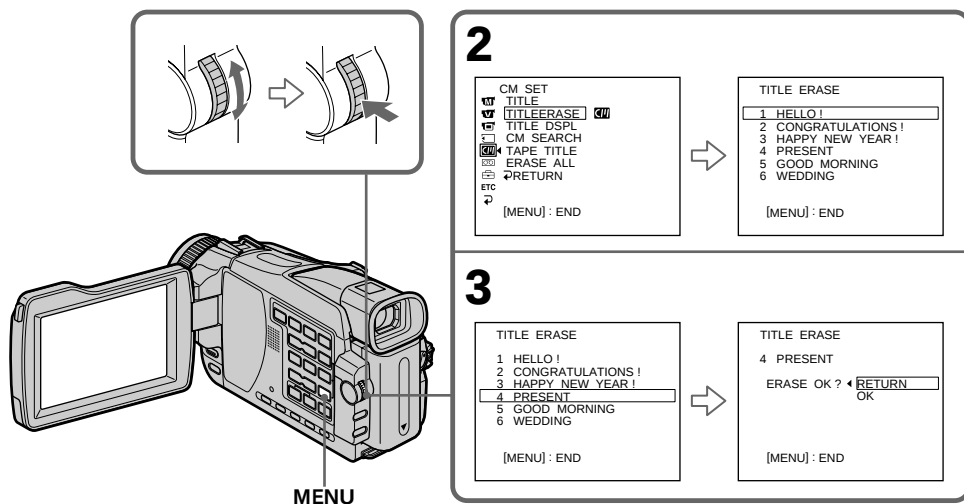
If the “ FULL” mark appears

The cassette memory is full. Erase unwanted titles.

Superimposing a title

Erasing a title

- (1) Set the POWER switch to CAMERA or VCR.
- (2) Press MENU, then select TITLEERASE in  with the SEL / PUSH EXEC dial (p. 181).
- (3) Turn the SEL / PUSH EXEC dial to select the title you want to erase, then press the dial.
ERASE OK ? indicator appears.
- (4) Make sure that the title is the one you want to erase, and turn the SEL / PUSH EXEC dial to select OK, then press the dial. OK changes to EXECUTE.
- (5) Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
ERASING flashes on the screen. When the title is erased, COMPLETE is displayed.



To cancel erasing a title

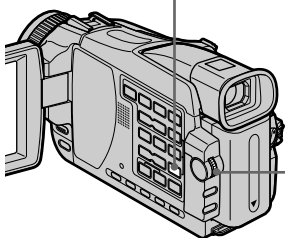
Select RETURN in step 4 or 5.

Making your own titles

You can make up to two titles and store them in the memory of your camcorder. Each title can have up to 20 characters.

- (1) Set the POWER switch to CAMERA or VCR. Press MENU, then select TITLE in  with the SEL / PUSH EXEC dial (p. 181).
- (2) Turn the SEL / PUSH EXEC dial to select , then press the dial.
- (3) Turn the SEL / PUSH EXEC dial to select CUSTOM1 SET or CUSTOM2 SET, then press the dial.
- (4) Turn the SEL / PUSH EXEC dial to select the column of the desired character, then press the dial.
- (5) Turn the SEL / PUSH EXEC dial to select the desired character, then press the dial.
- (6) Repeat steps 4 and 5 until you have selected all characters and completed the title.
- (7) To finish making your own titles, turn the SEL / PUSH EXEC dial to select [SET], then press the dial.
- (8) Press MENU to make the title menu disappear.

Editing



1

PRESET TITLE 

 HELLO!

 HAPPY BIRTHDAY

 HAPPY HOLIDAYS

CONGRATULATIONS!

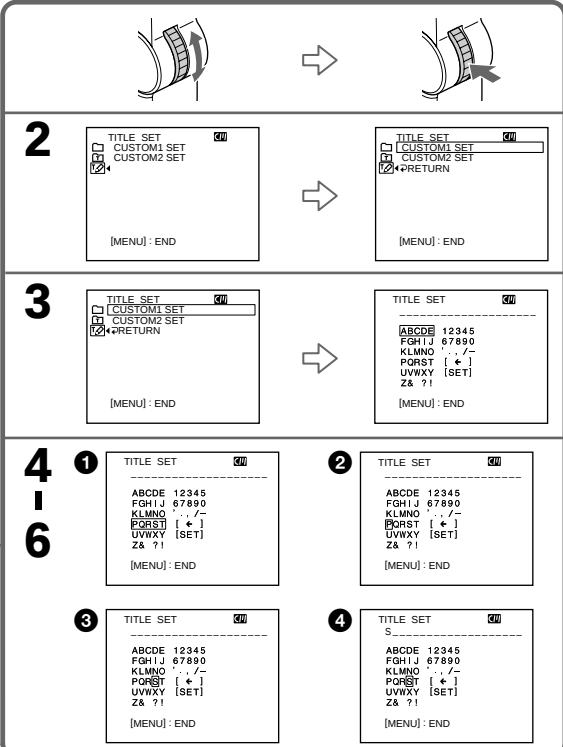
OUR SWEET BABY

WEDDING

VACATION

THE END

[MENU] : END



2

TITLE SET 

 CUSTOM1 SET

 CUSTOM2 SET

[MENU] : END

➔

TITLE SET 

 CUSTOM1 SET

 CUSTOM2 SET

 RETURN

[MENU] : END

3

TITLE SET 

 CUSTOM1 SET

 CUSTOM2 SET

 RETURN

[MENU] : END

➔

TITLE SET 

AB CDE 12345

FGHIJ 67890

KL MNO . . / -

PO RST [*]

UVWXY [SET]

Z & ? !

[MENU] : END

4

1

TITLE SET 

AB CDE 12345

FGHIJ 67890

KL MNO . . / -

PO RST [*]

UVWXY [SET]

Z & ? !

[MENU] : END

2

TITLE SET 

AB CDE 12345

FGHIJ 67890

KL MNO . . / -

PO RST [*]

UVWXY [SET]

Z & ? !

[MENU] : END

6

3

TITLE SET 

AB CDE 12345

FGHIJ 67890

KL MNO . . / -

PO RST [*]

UVWXY [SET]

Z & ? !

[MENU] : END

4

TITLE SET 

S

AB CDE 12345

FGHIJ 67890

KL MNO . . / -

PO RST [*]

UVWXY [SET]

Z & ? !

[MENU] : END

Making your own titles

To change a title you have stored

In step 3, select CUSTOM1 SET or CUSTOM2 SET, depending on which title you want to change, then press the SEL/PUSH EXEC dial. Turn the SEL/PUSH EXEC dial to select [←], then press the dial to delete the title. The last character is erased. Enter the new title as desired.

If you take five minutes or longer to enter characters in the standby mode while a cassette in your camcorder

The power automatically goes off. The characters you have entered remain stored in memory. Set the POWER switch to OFF (CHG) once and then to CAMERA, then proceed from step 1.

We recommend setting the POWER switch to VCR or removing the cassette so that your camcorder does not automatically turn off while you are entering title characters.

To delete the title

Select [←]. The last character is erased.

To enter a space

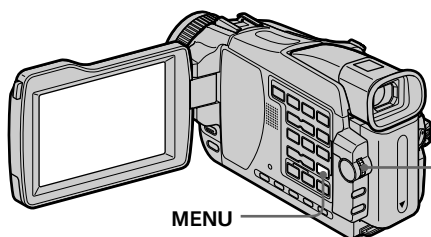
Select [Z& ?!], then select the blank part.

Labeling a cassette

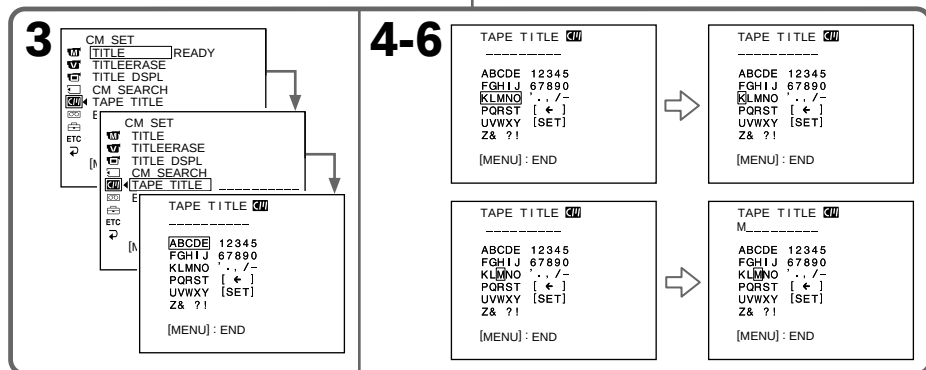
CM
only

If you use a cassette with cassette memory, you can label a cassette. Labels can consist of up to 10 characters and are stored in cassette memory. When you insert the labeled cassette and set the POWER switch to CAMERA or VCR, the label is displayed for about five seconds.

- (1) Insert the cassette you want to label.
- (2) Set the POWER switch to CAMERA or VCR.
- (3) Press MENU, then select TAPE TITLE in  with the SEL / PUSH EXEC dial (p. 181). The tape title display appears.
- (4) Turn the SEL / PUSH EXEC dial to select the column of the desired character, then press the dial.
- (5) Turn the SEL / PUSH EXEC dial to select the desired character, then press the dial.
- (6) Repeat steps 4 and 5 until you complete the label.
- (7) Turn the SEL / PUSH EXEC dial to select [SET], then press the dial.
The label is stored in memory.
- (8) Press MENU to erase the menu display.



Editing



Labeling a cassette

To erase the label you have made

In step 4 turn the SEL / PUSH EXEC dial to select [←], then press the dial. The last character is erased.

To change the label you have made

Insert the cassette to change the label, and operate in the same way to make a new label.

If you set the write-protect tab of the cassette to lock

You cannot label the tape. Slide the write-protect tab to release the write protection.

If the tape has too many index signals

You may not be able to label a cassette because the memory becomes full. In this case, delete data you do not need.

If you have superimposed titles in the cassette

When the label is displayed, up to four titles also appear.

When the "-----" indicator has fewer than 10 spaces

The cassette memory is full.

"-----" indicates the number of characters you can select for the label.

To erase the character

Press [←]. The last character is erased.

To enter a space

Select [Z& ?!], then select the blank part.

Erasing all the data in cassette memory

You can erase all the data in cassette memory at once.

- (1) Set the POWER switch to CAMERA or VCR.
- (2) Press MENU, then select ERASE ALL in  with the SEL / PUSH EXEC dial (p. 181).
- (3) Turn the SEL / PUSH EXEC dial to select OK, then press the dial. OK changes to EXECUTE.
- (4) Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial. ERASING flashes on the screen. When all the data is erased, COMPLETE is displayed.

To cancel deleting

Select RETURN with the SEL / PUSH EXEC in step 3 or 4.

Using a “Memory Stick” – Introduction

– Except DCR-TRV16

You can easily record and playback images on the “Memory Stick” supplied with your camcorder. You can also do the following operations:

- Reading the image from the tape to the “Memory Stick” or from the “Memory Stick” to the tape
- Importing images recorded on your camcorder to your computer
- Deleting images, protecting images, placing a print mark onto images

On file format

Still image (JPEG)

Your camcorder compresses image data in JPEG format (extension .jpg).

Moving picture (MPEG)

Your camcorder compresses picture data in MPEG format (extension .mpg).

Typical image data file name

Still image

100-0001: This file name appears on the screen of your camcorder.

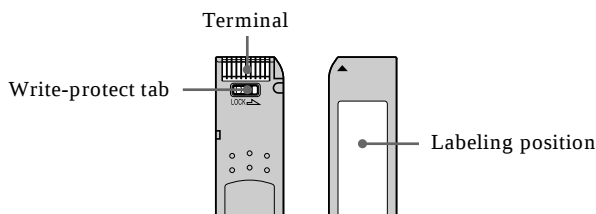
Dsc00001.jpg: This file name appears on the display of your personal computer.

Moving picture

MOV00001: This file name appears on the screen of your camcorder.

Mov00001.mpg: This file name appears on the display of your personal computer.

Using a “Memory Stick”



- You cannot record or erase images when the write-protect tab on the “Memory Stick” is set to LOCK.
- The position and shape of the write-protect tab may be different depending on the model.
- We recommend backing up important data on the hard disk of your computer.
- Image data may be damaged in the following cases:
 - If you eject the “Memory Stick” or turn the power off during reading or writing.
 - If you use “Memory Stick”s near static electricity or magnetic fields.
- Prevent metallic objects or your finger from coming into contact with the metal parts of the terminal.
- Do not attach any other material than the supplied label on the labeling position.
- Do not bend, drop or apply strong shock to “Memory Stick”s.
- Do not disassemble or modify “Memory Stick”s.
- Do not let “Memory Stick”s become wet.
- Do not use or keep “Memory Stick”s in locations that are:
 - Extremely hot such as in a car parked in the sun or under the scorching sun
 - Under direct sunlight
 - Very humid or subject to corrosive gases
- When you carry or store a “Memory Stick,” put it in its case.

Using a “Memory Stick” – Introduction

“Memory Stick”s formatted on a computer

“Memory Stick”s formatted on Windows OS or Macintosh computers are not guaranteed compatible with your camcorder.

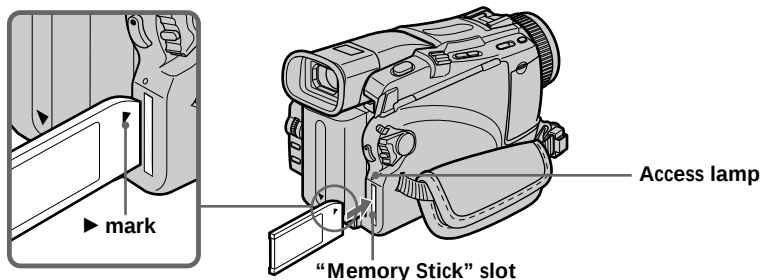
Notes on image data compatibility

- Image data files recorded on “Memory Stick”s by your camcorder conform with the Design Rules for Camera File Systems universal standard established by the JEITA (Japan Electronics and Information Technology Industries Association). You cannot play back on your camcorder still images recorded on other equipment (DCR-TRV890E/TRV900/TRV900E or DSC-D700/D770) that does not conform with this universal standard. (These models are not sold in some areas.)
- If you cannot use the “Memory Stick” that is used with other equipment, format it with this camcorder (p. 180). However, formatting erases all information on the “Memory Stick.”

-
- “Memory Stick” and  are trademarks of Sony Corporation.
 - All other product names mentioned here may be the trademarks or registered trademarks of their respective companies. “TM” and “®” are not mentioned in each case in this manual.

Inserting a “Memory Stick”

Insert a “Memory Stick” in the “Memory Stick” slot as far as it can go with the ► mark facing as illustrated.



Ejecting a “Memory Stick”

Press the “Memory Stick” once lightly.

While the access lamp is lit or flashing

Do not shake or knock your camcorder because your camcorder is reading the data from the “Memory Stick” or recording the data on the “Memory Stick.” Do not turn the power off or eject the “Memory Stick”. Otherwise, the image data may become damaged.

If “ MEMORY STICK ERROR” is displayed

Reinsert the “Memory Stick” a few times. The “Memory Stick” may be damaged if the indicator is still displayed. If this occurs, use another “Memory Stick.”

Using a "Memory Stick" – Introduction

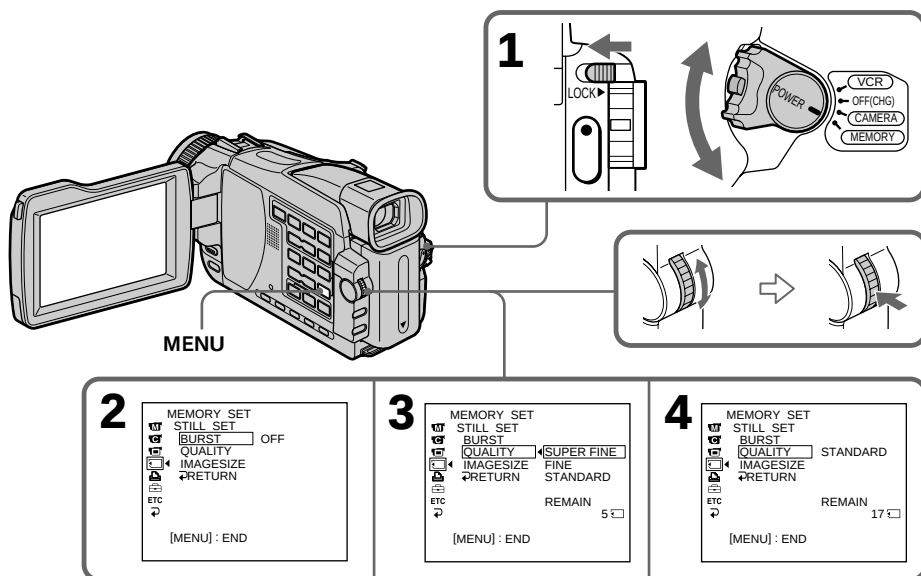
Selecting the still image quality mode

You can select the image quality mode in still image recording.

The default setting is FINE. (DCR-TRV18 only).

The default setting is SUPER FINE. (DCR-TRV25/TRV27 only).

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MENU, then select STILL SET in  with the SEL / PUSH EXEC dial (p. 179).
- (3) Turn the SEL / PUSH EXEC dial to select QUALITY, then press the dial.
- (4) Turn the SEL / PUSH EXEC dial to select the desired image quality, then press the dial.



Using a “Memory Stick” – Introduction

Image quality settings

Setting	Meaning
SUPER FINE (SFN)*	This is the highest image quality in your camcorder. The number of still images you can record is less than in FINE mode. Super fine images are compressed to about 1/3.
FINE (FINE)	Use this mode when you want to record high quality images. Fine images are compressed to about 1/6.
STANDARD (STD)	This is the standard image quality in your camcorder. Standard images are compressed to about 1/10.

Note

In some cases, changing the image quality mode may not affect the image quality, depending on the type of images you are shooting.

Differences in image quality mode

Recorded images are compressed in JPEG format before being stored in memory. The memory capacity allotted to each image varies depending on the selected image quality mode and image size. Details are shown in the table below.

1152 × 864 image size*

Image quality	Memory capacity
SUPER FINE	About 600 KB
FINE	About 300 KB
STANDARD	About 200 KB

640 × 480 image size

Image quality	Memory capacity
SUPER FINE*	About 190 KB
FINE	About 100 KB
STANDARD	About 60 KB

* DCR-TRV25/TRV27 only

Image quality mode indicator

The image quality mode indicator is not displayed during playback.

When you select image quality

The number of images you can shoot in the currently selected image quality appears on the screen.

Using a “Memory Stick” – Introduction

Selecting the image size

Still images:

DCR-TRV25/TRV27: You can select either of two image sizes.

1152 × 864 or 640 × 480 (When the POWER switch is set to CAMERA or VCR, the image size is automatically set to 640 × 480.)

The default setting is 1152 × 864.

DCR-TRV18:

640 × 480 only

Moving pictures:

You can select either of two picture sizes.

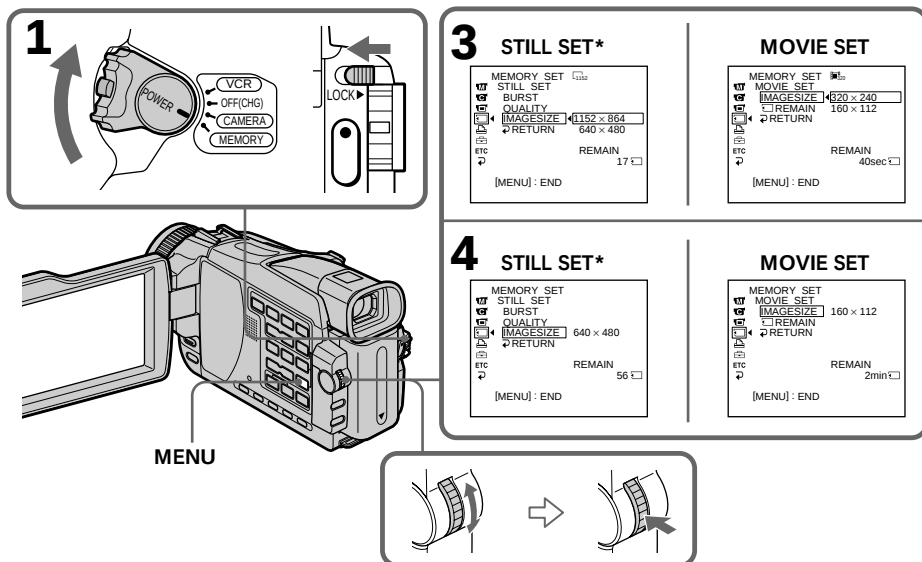
320 × 240 or 160 × 112

The default setting is 320 × 240.

- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MENU, then select STILL SET (still image) or MOVIE SET (moving picture) in  with the SEL / PUSH EXEC dial (p. 179).
- (3) Turn the SEL / PUSH EXEC dial to select IMAGESIZE, then press the dial.
- (4) Turn the SEL / PUSH EXEC dial to select the desired image size, then press the dial.

The indicator changes as follows:

Still images*:  ↔ 
Moving pictures:  ↔ 



* DCR-TRV25/TRV27 only

Using a “Memory Stick” – Introduction

Image size settings

Setting	Meaning	Indicator
1152 × 864*	Records 1152 × 864 still images.	
640 × 480	Records 640 × 480 still images.	
320 × 240	Records 320 × 240 moving pictures.	
160 × 112	Records 160 × 112 moving pictures.	

Approximate number of still images you can record on a “Memory Stick”

The number of images you can record varies depending on which image quality and image size you select and the complexity of the subject.

Image quality	Image size	Type of “Memory Stick”s				
		8MB (supplied)	16MB (optional)	32MB (optional)	64MB (optional)	128MB (optional)
SUPER FINE*	1152 × 864	12 images	25 images	51 images	100 images	205 images
	640 × 480	40 images	80 images	160 images	325 images	650 images
FINE	1152 × 864*	25 images	50 images	100 images	205 images	415 images
	640 × 480	80 images	160 images	325 images	650 images	1310 images
STANDARD	1152 × 864*	37 images	74 images	150 images	300 images	600 images
	640 × 480	120 images	240 images	485 images	980 images	1970 images

Note*

If you record a 1152 × 864 still image with your camcorder and attempt to play back the data file on another device that does not support this image size, the image might be displayed in a smaller size.

* DCR-TRV25/TRV27 only

Using a “Memory Stick” – Introduction

Approximate time of moving pictures you can record on a “Memory Stick”

The time of moving pictures you can record varies depending on which image size you select and the complexity of the subject.

Image size	Type of “Memory Stick”s				
	8MB (supplied)	16MB (optional)	32MB (optional)	64MB (optional)	128MB (optional)
320 × 240	1 min. 20 sec.	2 min. 40 sec.	5 min. 20 sec.	10 min. 40 sec.	21 min. 20 sec.
160 × 112	5 min. 20 sec.	10 min. 40 sec.	21 min. 20 sec.	42 min. 40 sec.	85 min. 20 sec.

The table shows approximate number of still images and times of moving pictures you can record on a “Memory Stick” formatted on your camcorder.

Recording still images on a “Memory Stick” – Memory Photo recording

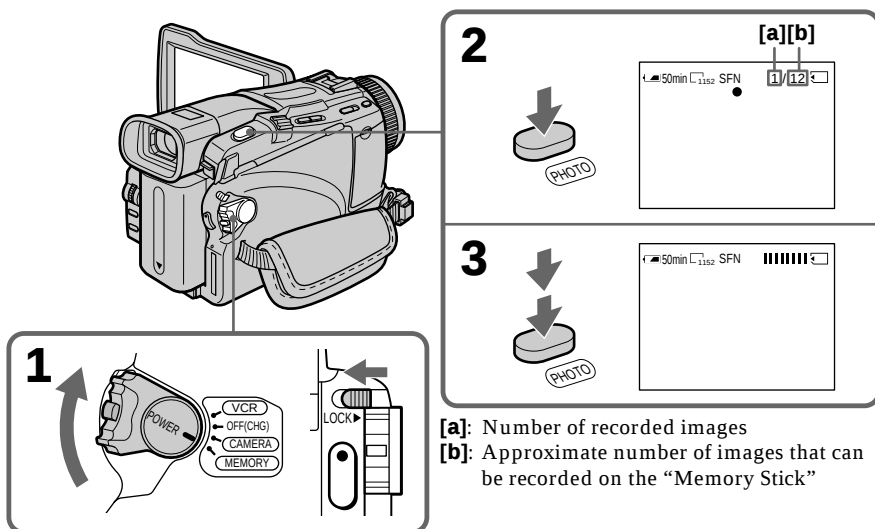
– Except DCR-TRV16

You can record still images on “Memory Stick”s.

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Keep pressing PHOTO lightly. The green ● mark (AE/AF lock indicator) stops flashing, then lights up. The brightness of the image and focus are adjusted, being targeted for the middle of the image and are fixed. Recording does not start yet.
- (3) Press PHOTO deeper. The still image displayed after shutter sounds. Recording is complete when the bar scroll indicator disappears. The image when you pressed PHOTO deeper will be recorded on the “Memory Stick.”



You can record still images on “Memory Stick”s in the tape recording or recording standby

For more information, see page 43.

Recording still images on a “Memory Stick” – Memory Photo recording

When the POWER switch is set to MEMORY

The following functions do not work:

- Wide mode
- Digital zoom
- SteadyShot
- Super NightShot
- Color Slow Shutter
- Fader
- Picture effect
- Digital effect
- Title
- Sports lesson of PROGRAM AE (The indicator flashes.)

While you are recording a still image

You can neither turn off the power nor press PHOTO.

When you press PHOTO on the Remote Commander

Your camcorder immediately records the image that is on the screen when you press the button.

When you press PHOTO lightly in step 2

The image momentarily flickers. This is not a malfunction.

Recording data

The recording data (date/time or various settings when recorded) are not displayed while recording. However, they are recorded automatically onto the “Memory Stick.” To display the recording data, press DATA CODE on the Remote Commander during playback.

When the POWER switch is set to MEMORY (DCR-TRV25/TRV27 only)

The angle of view is slightly larger compared with the angle of view when the POWER switch is set to CAMERA.

Recording still images on a “Memory Stick” – Memory Photo recording

Recording images continuously

You can record still images continuously. Select one of the following modes in BURST in the menu settings before recording.

NORMAL * [a]

Your camcorder shoots up to four still images in 1152×864 size or 13 still images in 640×480 size at about 0.5 sec intervals. ()

EXP BRKTG (Exposure bracketing) *

Your camcorder automatically shoots three images at about 0.5 sec intervals at different exposures. (**BRK**)

MULTI SCRN (Multi screen) [b]

Your camcorder shoots nine still images at about 0.4 sec intervals and displays the images on a single page divided into nine boxes. Still images are recorded in 640×480 size. ()

[a]



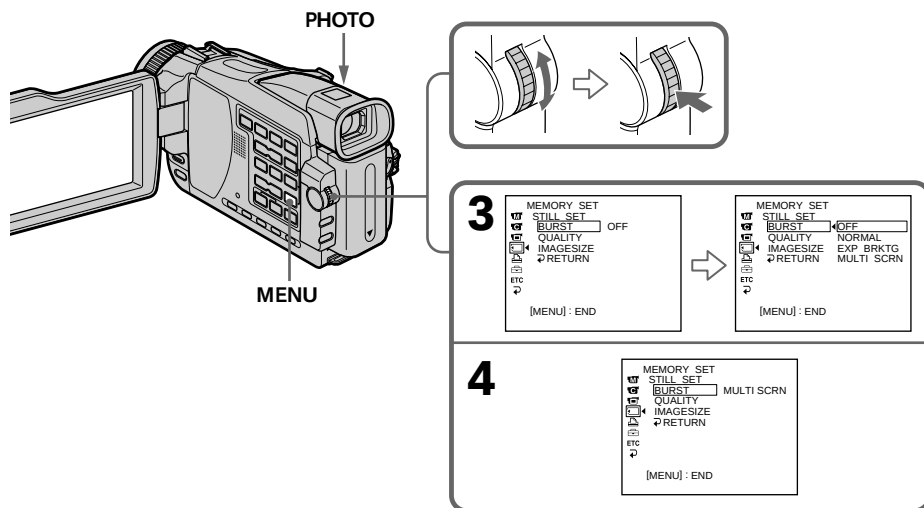
[b]



- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MENU, then select STILL SET in  with the SEL / PUSH EXEC dial (p. 179).
- (3) Turn the SEL / PUSH EXEC dial to select BURST, then press the dial.
- (4) Turn the SEL / PUSH EXEC dial to select the desired setting, then press the dial.
- (5) Press MENU to make the menu setting disappear.
- (6) Press PHOTO deeper.

* DCR-TRV25/TRV27 only

Recording still images on a “Memory Stick” – Memory Photo recording



If the capacity of the “Memory Stick” becomes full

“ FULL” appears on the screen, and you cannot record a still image on this “Memory Stick.”

The number of images in continuous shooting

The number of images you can shoot continuously varies depending on the image size and the capacity of the “Memory Stick.”

During recording images continuously

The flash (optional) does not work.

When shooting with the self-timer function or the Remote Commander

Your camcorder automatically records up to the maximum recordable number of still images.

When selecting NORMAL*

Recording continues up to the maximum number of still images during pressing PHOTO deeper. Release PHOTO to stop recording.

The effect of exposure bracketing (EXP BRKTG)*

The effect may not appear clearly on the LCD screen. Checking images on a TV monitor or computer display for the expected effect is recommended.

If there is space remaining on the “Memory Stick” for less than three photos*

You cannot carry out the exposure bracketing (EXP BRKTG). “ FULL” is displayed when you press PHOTO.

* DCR-TRV25/TRV27 only

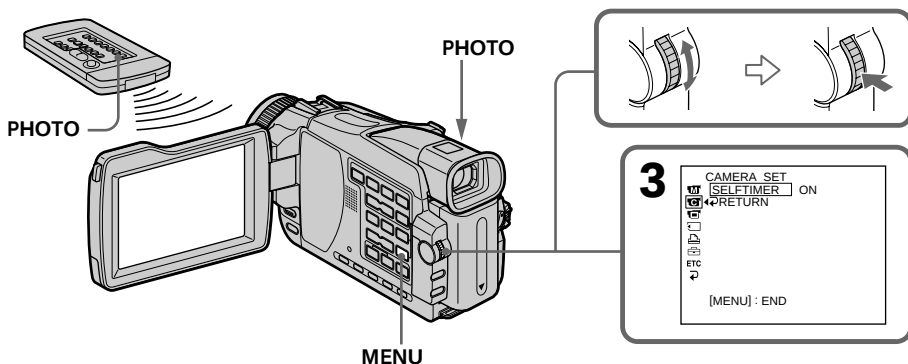
Recording still images on a “Memory Stick” – Memory Photo recording

Self-timer memory photo recording

You can record still images on “Memory Stick”s with the self-timer. You can also use the Remote Commander for this operation.

- (1) Set the POWER switch to MEMORY. Make sure that the LOCK is set to the left (unlock) position.
- (2) Press MENU, then select SELFTIMER in  with the SEL / PUSH EXEC dial (p. 177).
- (3) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (4) Press MENU to make the menu settings disappear. The  (self-timer) indicator appears on the screen.
- (5) Press PHOTO deeper.

Self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.



To cancel self-timer

Set SELFTIMER to OFF in the menu settings while your camcorder is in the standby mode. You cannot cancel self-timer with the Remote Commander.

Note

The self-timer is automatically canceled when:

- Self-timer recording is finished.
- The POWER switch is set to OFF (CHG) or VCR.

Recording an image from a tape as a still image

– Except DCR-TRV16

Your camcorder can read moving picture data recorded on a tape and record it as a still image on a “Memory Stick”. Your camcorder can also capture moving picture data through the input connector and record it as a still image on a “Memory Stick”.

Before operation

- Insert a recorded tape into your camcorder.
- Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to VCR.
- (2) Press ►. Moving picture recorded on the tape is played back.
- (3) Keep pressing PHOTO lightly until the picture from the tape freezes. CAPTURE appears on the screen. Recording does not start yet. To change from the image selected to another image, release PHOTO once and press it lightly again.
- (4) Press PHOTO deeper. The image displayed on the screen will be recorded on the “Memory Stick.” Recording is complete when the bar scroll indicator disappears.

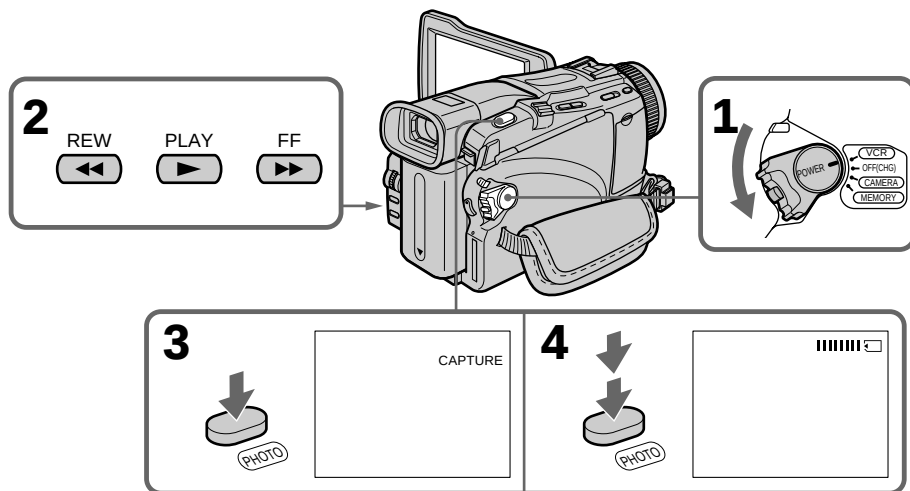


Image size of still images

Image size is automatically set to 640 × 480.

When the access lamp is lit or flashing

Do not shake or strike the unit. Also, do not turn the power off, eject a “Memory Stick”. Otherwise, image data may become damaged.

If “” appears on the screen

The inserted “Memory Stick” is incompatible with your camcorder because its format does not conform with your camcorder. Check the format of the “Memory Stick.”

Recording an image from a tape as a still image

If you press PHOTO lightly in the playback mode

The cassette stops momentarily.

Sound recorded on a tape

You cannot record audio from a tape.

Titles already recorded on cassettes

You cannot record titles on “Memory Stick”s. Titles do not appear on the screen while you are recording a still image with PHOTO.

Recording date/time

The recording data (date / time) when it is recorded on a “Memory Stick” is recorded. Various settings are not recorded. Data codes recorded on a tape cannot be recorded on a “Memory Stick”.

When you press PHOTO on the Remote Commander

Your camcorder immediately records the image that is on the screen when you press the button.

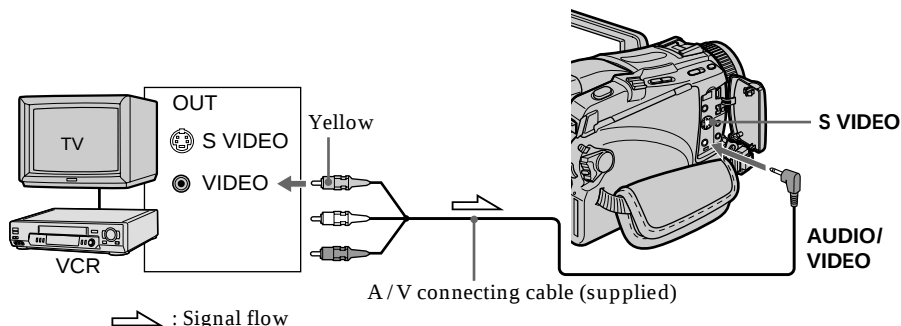
Recording a still image from external equipment

Before operation

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

- (1) Set the POWER switch to VCR.
- (2) Play back the recorded tape, or turn the TV on to see the desired program.
The image of the external equipment is displayed on the screen.
- (3) Follow steps 3 and 4 on page 117.

Using the A/V connecting cable



Connect the yellow plug of the A/V connecting cable to the video jack on the VCR or the TV.

If your TV or VCR has an S video jack

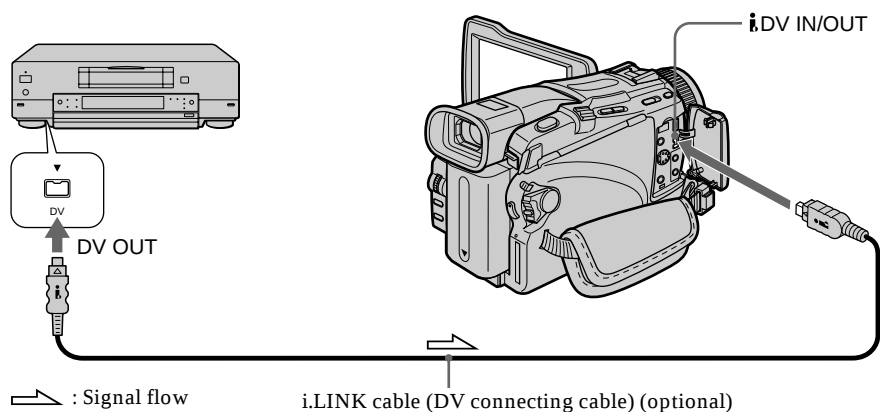
Pictures can be reproduced more faithfully by using an S video cable (optional).

With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.

Connect an S video cable (optional) to the S video jacks of both your camcorder and the TV or VCR.

Recording an image from a tape as a still image

Using the i.LINK cable (DV connecting cable)



Note

- In the following instances, recording is interrupted or "REC ERROR" is displayed.
- When recording on a tape in a poor recording state, for example, on a tape that has been repeatedly used for dubbing
 - When attempting to input images that are distorted due to poor radio wave reception when a TV tuner unit is in use

Superimposing a still image in the “Memory Stick” on an image

– MEMORY MIX

– Except DCR-TRV16

You can superimpose a still image you have recorded on the “Memory Stick” on the moving picture you are recording. You can record the superimposed images on a tape or a “Memory Stick.” (However, you can record only superimposed still images on the “Memory Stick.”)

M. CHROM (Memory chroma key):

You can swap a blue area of a still image such as an illustration or a frame with a moving picture.

M. LUMI (Memory luminance key):

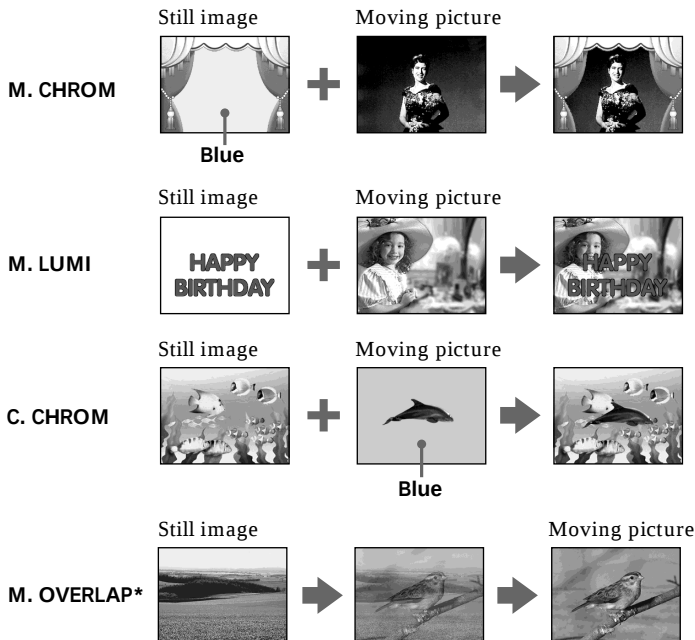
You can swap a brighter area of a still image such as a handwritten illustration or title with a moving picture. Record a title on the “Memory Stick” before a trip or event for convenience.

C. CHROM (Camera chroma key):

You can superimpose a moving picture on a still image such as an image that can be used as background. Shoot the subject against a blue background. The blue area of the moving picture will be swapped with a still image.

M. OVERLAP* (Memory overlap):

You can make a moving picture fade in on top of a still image recorded on the “Memory Stick” as the overlap function.



* The superimposed image using Memory overlap function can be recorded on tapes only.

Superimposing a still image in the “Memory Stick” on an image – MEMORY MIX

Recording superimposed images on a tape

Before operation

- Insert a tape for recording into your camcorder.
- Insert a “Memory Stick” with recorded still images into your camcorder.

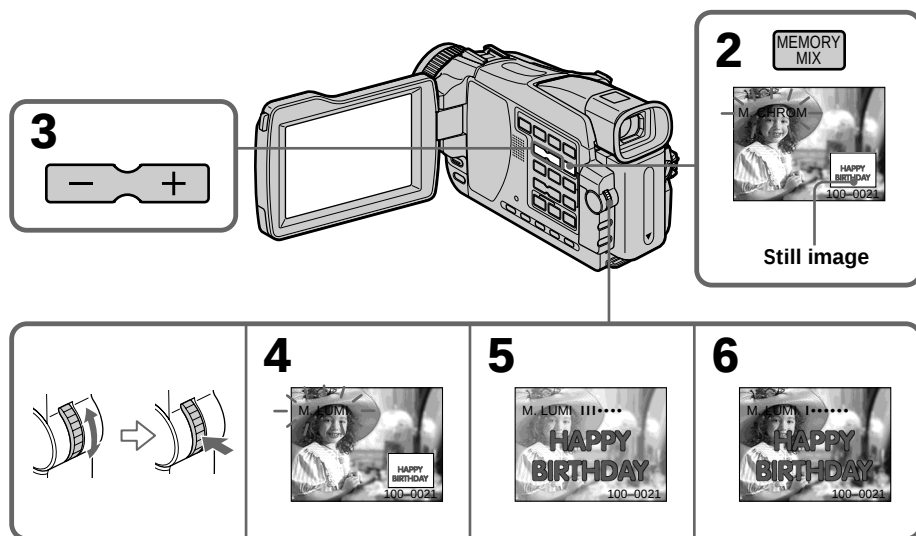
- (1) Set the POWER switch to CAMERA.
- (2) Press MEMORY MIX.
The last recorded or last composed image appears on the lower part of the screen as a thumbnail image.
- (3) Press MEMORY –/+ to select the still image you want to superimpose.
MEMORY – : To display the previous image
MEMORY + : To display the following image
- (4) Select the desired mode with the SEL/PUSH EXEC dial.
The mode changes as follows:
M. CHROM ↔ M. LUMI ↔ C. CHROM ↔ M. OVERLAP
- (5) Press the SEL/PUSH EXEC dial.
The still image is superimposed on the moving picture.
- (6) Turn the SEL/PUSH EXEC dial to adjust the effect.

- M. CHROM – Blue chroma key (blue background) to extract a still image and superimpose it on a moving picture
- M. LUMI – Brightness level used when extracting a still image and superimposing it on a moving picture
- C. CHROM – Blue chroma key (blue background) to extract a moving picture and superimpose it on a still image
- M. OVERLAP – No adjustment necessary

The fewer bars there are on the screen, the stronger the effect.

- (7) Press START/STOP to start recording.

Superimposing a still image in the “Memory Stick” on an image – MEMORY MIX



To change the still image to superimpose

Do either of the following:

- Press MEMORY –/+ before step 6.
- Press the SEL / PUSH EXEC dial before step 6, and repeat the procedure from step 4. (except for M. OVERLAP)

To change the mode setting

Press the SEL / PUSH EXEC dial before step 6, and repeat the procedure from step 4. (except for M. OVERLAP)

To cancel MEMORY MIX

Press MEMORY MIX.

Notes

- You cannot use the MEMORY MIX function for moving pictures recorded on “Memory Stick”s.
- When the overlapping still image has a large amount of white, the thumbnail image of the picture may not be clear.

Image data modified on your computer or shot with other equipment

You may not be able to play back modified images with your camcorder.

When you select M. OVERLAP

You cannot change the still image or the mode setting.

During recording

You cannot change the mode setting.

To record the superimposed image as a still image

Press PHOTO deeper in step 7.

Before operation, select PHOTO REC in to TAPE in the menu settings (p. 177).

Superimposing a still image in the “Memory Stick” on an image – MEMORY MIX

Recording superimposed images on a “Memory Stick” as a still image

Image size is automatically set to 640×480 .

Before operation

Insert a “Memory Stick” including still images into your camcorder.

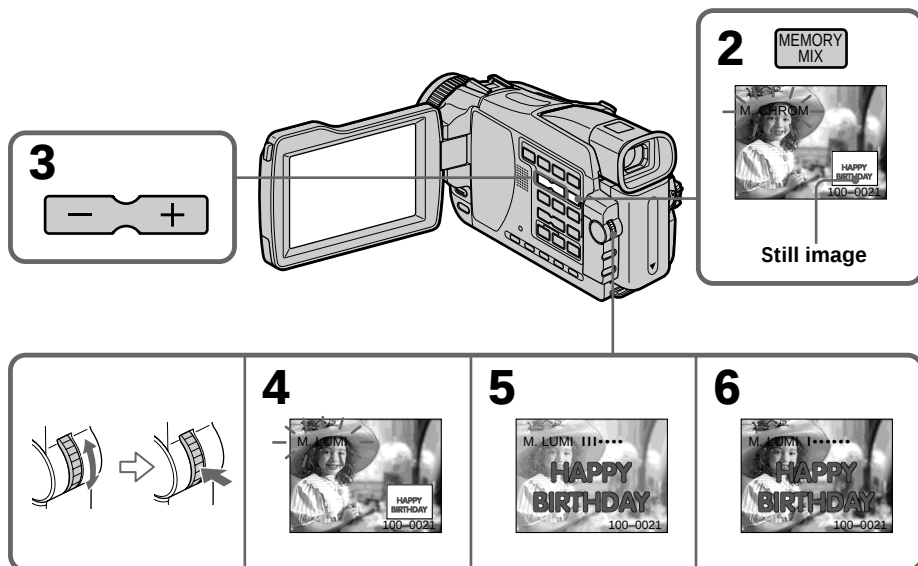
- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MEMORY MIX.
The last recorded or composed image appears on the lower part of the screen.
- (3) Press MEMORY –/+ to select the image you want to superimpose.
MEMORY – : To display the previous image
MEMORY + : To display the following image
- (4) Select the desired mode with the SEL/PUSH EXEC dial.
The mode changes as follows:
M. CHROM ↔ M. LUMI ↔ C. CHROM
- (5) Press the SEL/PUSH EXEC dial.
The still image is superimposed on the moving picture.
- (6) Turn the SEL/PUSH EXEC dial to adjust the effect.

- M. CHROM – Blue chroma key (blue background) to extract a still image and superimpose it on a moving picture
- M. LUMI – Brightness level used when extracting a still image and superimposing it on a moving picture
- C. CHROM – Blue chroma key (blue background) to extract a moving picture and superimpose it on a still image

The fewer bars there are on the screen, the stronger the effect.

- (7) Press PHOTO deeper to start recording.
The image displayed on the screen will be recorded on a “Memory Stick.”
Recording is complete when the bar scroll indicator disappears.

Superimposing a still image in the “Memory Stick” on an image – MEMORY MIX



To change the still image to superimpose

Do either of the following:

- Press MEMORY –/+ before step 6.
- Press the SEL / PUSH EXEC dial before step 6, and repeat the procedure from step 4.

To change the mode setting

Press the SEL / PUSH EXEC dial before step 6, and repeat the procedure from step 4.

To cancel MEMORY MIX

Press MEMORY MIX.

Notes

- You cannot use the MEMORY MIX function for moving pictures recorded on “Memory Stick”s.
- When the overlapping still image has a large amount of white, the thumbnail image of the picture may not be clear.

Image data modified on your computer or shot with other equipment

You may not be able to play back modified images with your camcorder.

During recording

You cannot change the mode setting.

When recording images on a “Memory Stick” using the MEMORY MIX function

The PROGRAM AE function does not work. (The indicator flashes.)

The “Memory Stick” supplied with your camcorder is already stored with 20 images

- For M. CHROM: 18 images (such as a frame) 100-0001 to 100-0018
- For C. CHROM: two images (such as a background) 100-0019 to 100-0020

Sample images

Sample images stored in the “Memory Stick” supplied with your camcorder are protected (p. 148).

Recording moving pictures on a “Memory Stick” – MPEG movie recording

– Except DCR-TRV16

You can record moving pictures with sound on “Memory Stick”s.

The picture and sound are recorded up to the capacity of “Memory Stick”. (MPEG MOVIE EX)

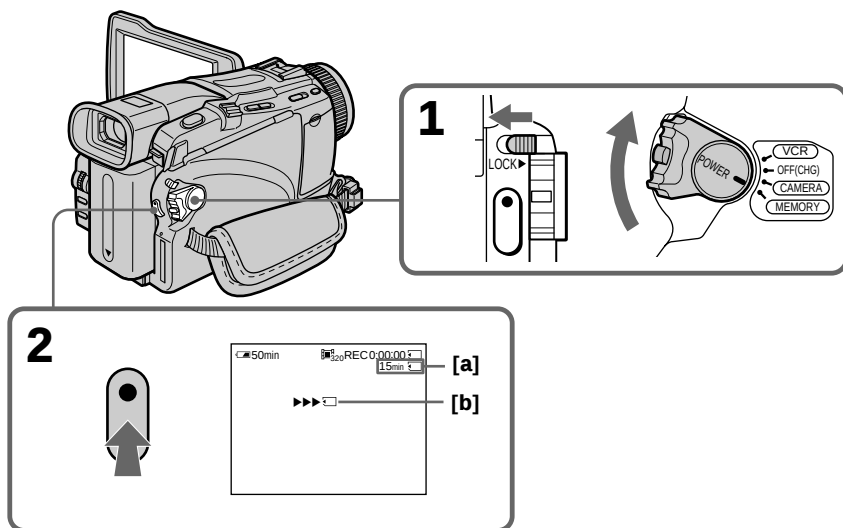
Before operation

Insert a “Memory Stick” into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.

(2) Press START/STOP.

Your camcorder starts recording. The camera recording lamp located on the front of your camcorder lights up. Picture and sound are recorded up to the remaining capacity of the “Memory Stick.” For more information about recording time, see page 111.



[a]: The recording time that can be recorded on the “Memory Stick”

[b]: This indicator is displayed for five seconds after pressing START/STOP. This indicator is not recorded.

To stop recording

Press START/STOP.

Note

Sound is recorded in monaural.

Recording moving pictures on a “Memory Stick” – MPEG movie recording

When the POWER switch is set to MEMORY

The following functions do not work:

- Wide mode
- Digital zoom
- SteadyShot
- Super NightShot
- Color Slow Shutter
- Fader
- Picture effect
- Digital effect
- Title
- Sports lesson of PROGRAM AE (The indicator flashes.)

Recording date/time

The date/time are not displayed while recording. However, they are automatically recorded onto the “Memory Stick.”

To display the recording date/time, press DATA CODE on the Remote Commander during playback. Various settings cannot be recorded.

During recording on a “Memory Stick”

Do not eject the cassette tape from your camcorder. During ejecting the tape, sound is recorded on the “Memory Stick.”

When the POWER switch is set to MEMORY (DCR-TRV25/TRV27 only)

The angle of view is slightly larger compared with the angle of view when the POWER switch is set to CAMERA.

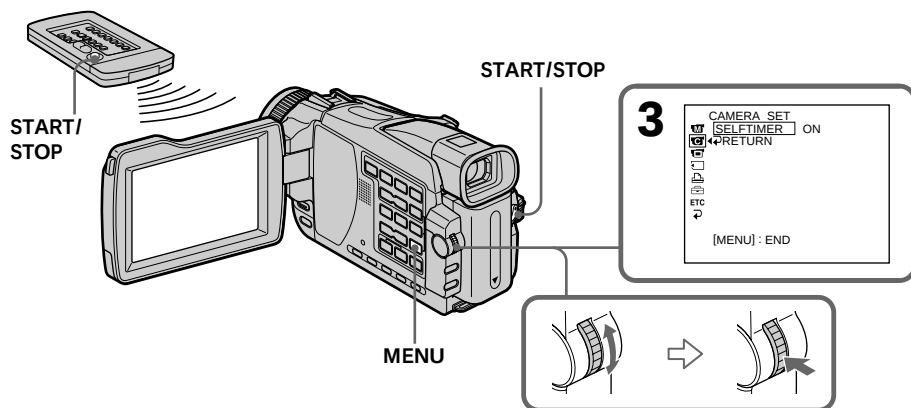
Recording moving pictures on a “Memory Stick” – MPEG movie recording

Self-timer MPEG movie recording

You can record moving pictures on “Memory Stick”s with the self-timer. You can also use the Remote Commander for this operation.

- (1) Set the POWER switch to MEMORY. Make sure that the LOCK is set to the left (unlock) position.
- (2) Press MENU, then select SELFTIMER in  with the SEL / PUSH EXEC dial.
- (3) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (4) Press MENU to make the menu settings disappear.
The  (self-timer) indicator appears on the screen.
- (5) Press START / STOP.

Self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.



To stop the countdown

Press START/STOP. To restart the countdown, press START/STOP again.

To cancel self-timer

Set SELFTIMER to OFF in the menu settings in the standby mode. You cannot cancel self-timer with the Remote Commander.

Note

The self-timer is automatically canceled when:

- Self-timer recording is finished.
- The POWER switch is set to OFF (CHG) or VCR.

Recording pictures from a tape as a moving picture

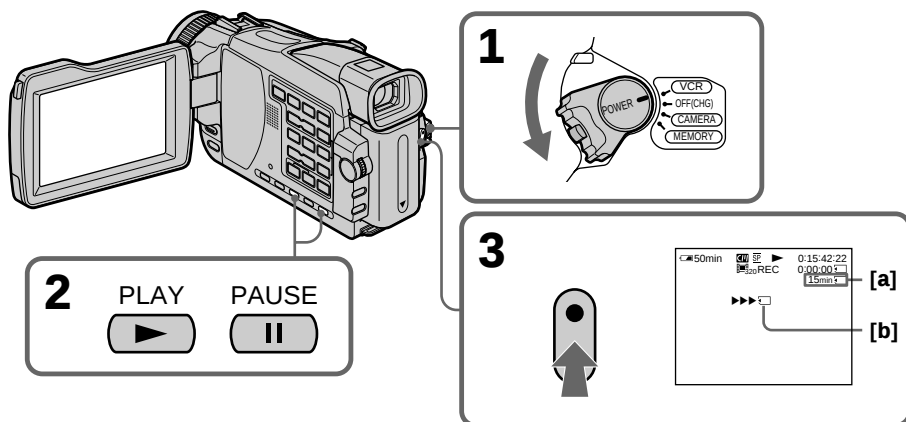
– Except DCR-TRV16

Your camcorder can read moving picture data recorded on a tape and record it as a moving picture on a “Memory Stick.” Your camcorder can also capture moving picture data through the input connector and record it as a moving picture on a “Memory Stick.”

Before operation

- Insert a recorded tape into your camcorder.
- Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to VCR.
- (2) Press ►. The picture recorded on the tape is played back. And press || at the scene where you want to start recording from.
- (3) Press START/STOP on your camcorder. Picture and sound are recorded up to the remaining capacity of the “Memory Stick.” For more information about recording time, see page 111.



[a]: The recording time that can be recorded on the “Memory Stick”

[b]: This indicator is displayed for five seconds after pressing START/STOP. This indicator is not recorded.

To stop recording

Press START/STOP.

Recording pictures from a tape as a moving picture

Notes

- Sound recorded in 48 kHz is converted to 32 kHz sound when recording images from a tape to “Memory Stick”s.
- Sound recorded in stereo is converted to monaural sound when recording from a tape.

When the access lamp is lit or flashing

Do not shake or knock the unit. Also, do not turn the power off or eject a “Memory Stick”. Otherwise, image data may become damaged.

Titles already recorded on cassettes

You cannot record titles onto “Memory Stick”s. Titles do not appear while you are recording moving pictures with START/STOP.

Recording date/time

The recording data (date/time) when it is recorded on a “Memory Stick” is recorded. Various settings are not recorded. Data codes recorded on a tape cannot be recorded on a “Memory Stick”.

If “ AUDIO ERROR” is displayed

Sound that cannot be recorded by your camcorder has been recorded. Connect the A/V connecting cable to input images from external equipment used to play back the image (p. 130).

Recording pictures from a tape as a moving picture

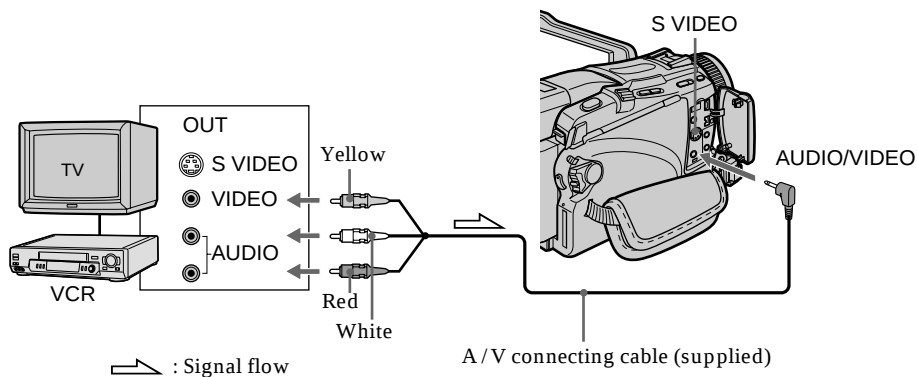
Recording a moving picture from external equipment

Before operation

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

- (1) Set the POWER switch to VCR.
- (2) Play back the recorded tape on the VCR, or turn the TV on to see the desired program.
The image of the other equipment is displayed on the screen.
- (3) Follow step 3 on page 128 at the point where you want to start recording from.

Using the A/V connecting cable



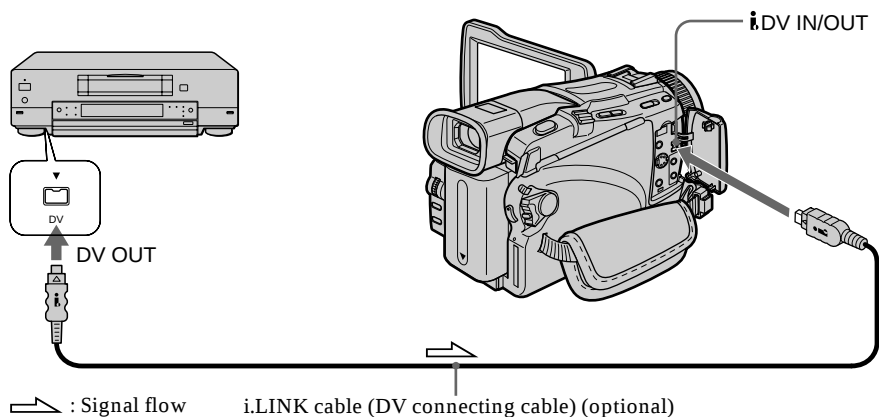
If your TV or VCR has an S video jack

Pictures can be reproduced more faithfully by using an S video cable (optional). With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.

Connect an S video cable (optional) to the S video jacks of both your camcorder and the TV or VCR.

Recording pictures from a tape as a moving picture

Using the i.LINK cable (DV connecting cable)



Note

In the following instances, recording is interrupted or “ REC ERROR” is displayed and you cannot record pictures.

- When recording on a tape in a poor recording state, for example, on a tape that has been repeatedly used for dubbing
- When attempting to input images that are distorted due to poor radio wave reception when a TV tuner unit is in use
- When the input signal is cut off.

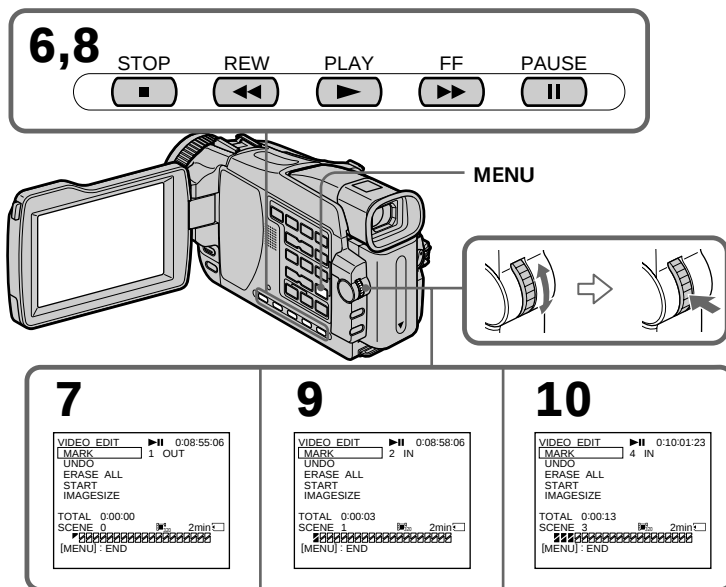
Recording edited pictures from a tape as a moving picture – Digital program editing (on “Memory Stick”s)

– Except DCR-TRV16

You can duplicate selected scenes (programs) for editing onto “Memory Stick”s.

Making the program

- (1) Set the POWER switch to VCR on your camcorder.
- (2) Insert the tape for playback, and a “Memory Stick” for recording into your camcorder.
- (3) Press MENU, then select VIDEO EDIT in  with the SEL / PUSH EXEC dial (p. 184).
- (4) Turn the SEL / PUSH EXEC dial to select MEMORY, then press the dial.
- (5) Turn the SEL / PUSH EXEC dial to select IMAGESIZE and select the desired image size, then press the dial.
- (6) Search for the beginning of the first scene you want to insert using the video operation buttons, then pause playback.
You can fine-adjust one frame at a time with EDITSEARCH.
- (7) Turn the SEL / PUSH EXEC dial to select MARK, then press the dial.
The IN point of the first program is set, and the top part of the program mark changes to light blue.
- (8) Search for the end of the first scene you want to insert using the video operation buttons, then pause playback.
- (9) Press the SEL / PUSH EXEC dial.
The OUT point of the first program is set, then the bottom part of the program mark changes to light blue.
- (10) Repeat steps 6 to 9, then set the program.
When one program is set, the program mark changes to light blue.
You can set 20 programs in maximum.



Recording edited pictures from a tape as a moving picture – Digital program editing (on “Memory Stick”s)

Erasing the program you have set

Erase OUT first and then IN from of the last program.

- (1) Turn the SEL/PUSH EXEC dial to select UNDO, then press the dial.
- (2) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
The last set program mark flashes, then the setting is canceled.

To cancel erasing

Turn the SEL/PUSH EXEC dial to select RETURN, then press the dial in step 2.

Erasing all programs

- (1) Turn the SEL/PUSH EXEC dial to select VIDEO EDIT in the menu settings, then select MEMORY with the dial.
- (2) Turn the SEL/PUSH EXEC dial to select ERASE ALL, then select EXECUTE with the dial.
All the program marks flash, then the settings are canceled.

To cancel erasing all programs

Turn the SEL/PUSH EXEC dial to select RETURN with the dial in step 2.

To cancel a program you have set

Press MENU.

The program is stored in memory until the tape is ejected.

Notes

- You cannot dub the titles, display indicators, or the contents of cassette memory.
- You cannot operate recording during the Digital program editing on “Memory Stick”s.

On a blank portion of the tape

You cannot set IN or OUT.

If there is a blank portion between IN and OUT on the tape

The total time code may not be displayed correctly.

During making a program

If you eject the cassette, NOT READY appears on the screen. The program will be erased.

Recording edited pictures from a tape as a moving picture – Digital program editing (on “Memory Stick”s)

Performing the program (Dubbing a “Memory Stick”)

- (1) Select VIDEO EDIT in the menu settings. Turn the SEL / PUSH EXEC dial to select MEMORY, then press the dial.
- (2) Select START in the menu settings. Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
Search for the beginning of the first program, then start dubbing.
The program mark flashes.
The SEARCH indicator appears during search, the EDITING indicator appears during writing of data on your camcorder, and REC appears during dubbing on the screen.
The program mark changes to light blue after dubbing is complete.
When the dubbing ends, your camcorder automatically stops.

To stop dubbing during editing

Press ■ using the video operation buttons.

The program you made is recorded on a “Memory Stick” up to the place where you pressed ■.

To end the Digital program editing function

Your camcorder stops when the dubbing ends. Then the display returns to VIDEO EDIT in the menu settings.

Press MENU to end the Digital program editing function.

NOT READY appears on the LCD screen when:

- The program to operate the Digital program editing has not been made.
- The “Memory Stick” is not inserted.
- The write-protect tab on the “Memory Stick” is set to LOCK.

When “Memory Stick” does not have enough space to record

LOW MEMORY appears on the screen. However, you can record pictures up to the time indicated.

Copying still images from a tape

– PHOTO SAVE

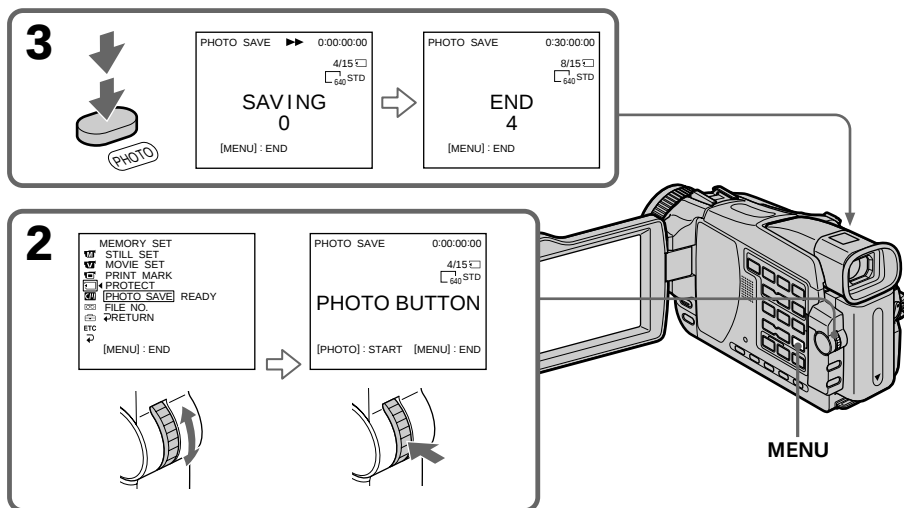
– Except DCR-TRV16

Using the search function, you can automatically capture only still images from tapes and record them on a “Memory Stick” in sequence.

Before operation

- Insert a recorded tape into your camcorder and rewind the tape.
- Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to VCR.
- (2) Press MENU to display the menu. Select PHOTO SAVE in  with SEL / PUSH EXEC dial (p. 180). PHOTO BUTTON appears on the screen.
- (3) Press PHOTO deeper. The still images from the tape are recorded on the “Memory Stick.” The number of still images copied is displayed. END is displayed when copying ends.



“Memory Stick” Operations

To stop copying

Press MENU or .

When the “Memory Stick” becomes full

MEMORY FULL appears on the screen, and copying stops. Insert another “Memory Stick” and repeat the procedure from step 2.

Copying still images from a tape – PHOTO SAVE

Image size of still images

Image size is automatically set to 640×480 .

When the access lamp is lit or flashing

Do not shake or knock your camcorder. As well do not turn the power off or eject a “Memory Stick”. Otherwise, image data may become damaged.

If the write-protect tab on the “Memory Stick” is set to LOCK

NOT READY appears when you select the item in the menu settings.

When you change “Memory Stick”s during copying

Your camcorder resumes copying from the last image recorded on the previous “Memory Stick.”

Viewing still images

– Memory Photo playback

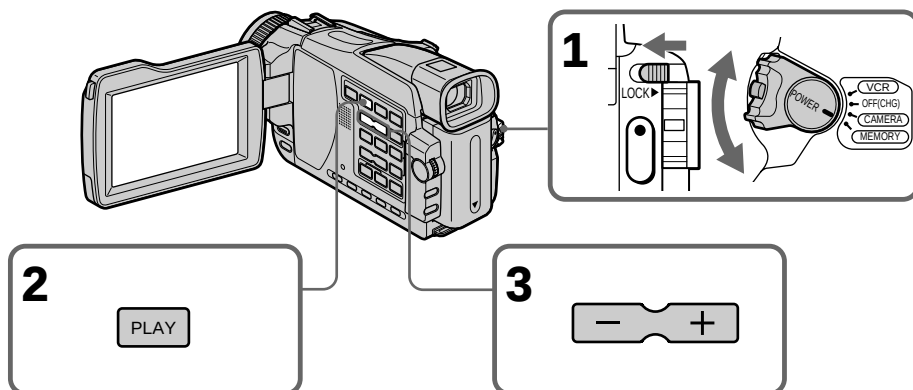
– Except DCR-TRV16

You can play back still images recorded on a “Memory Stick.” You can also play back six images including moving pictures in order at a time by selecting the index screen.

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY or VCR.
Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MEMORY PLAY. The last recorded image is displayed.
- (3) Press MEMORY –/+ to select the desired still image.
MEMORY – : To display the previous image
MEMORY + : To display the following image



To stop memory photo playback

Press MEMORY PLAY.

Note

You may not be able to play back images with your camcorder:

- when playing back image data modified on your computers.
- when playing back image data shot with other equipment.

Notes on the file name

- The directory number may not be displayed and only the file name may be displayed if the structure of the directory does not conform to the DCF standard.
- “ DIRECTORY ERROR” may appear on the screen if the structure of the directory does not conform to the DCF standard. While this message appears, you can play back images but cannot record them on the “Memory Stick.”
- The file name flashes on the screen if the file is corrupted or the file is unreadable.

Viewing still images – Memory Photo playback

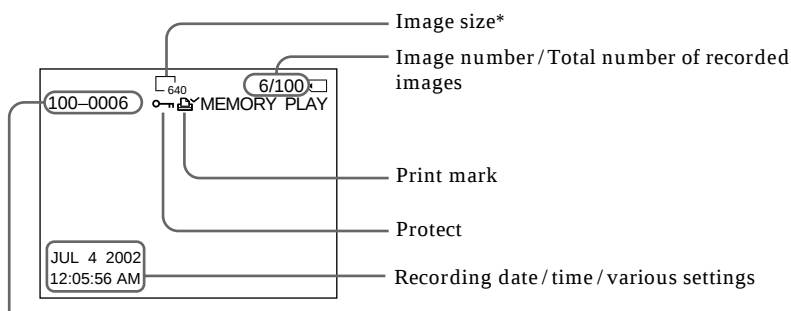
To play back recorded images on a TV screen

- Connect your camcorder to the TV with the A/V connecting cable supplied with your camcorder before operation.
- When operating memory photo playback on a TV or on the LCD screen, the image quality may appear to have deteriorated. This is not a malfunction. The image data is as good as ever.
- Turn the audio volume of the TV down before operation, or noise (howling) may be output from the TV speakers.

When no image is recorded on the “Memory Stick”

The message “ NO FILE” appears.

Screen indicators during still image playback



Data Directory Number, File Number

*DCR-TRV25 / TRV27 only

Recording data

You can view the recording data (date / time or various settings when recorded) by pressing DATA CODE on the Remote Commander.

Viewing still images – Memory Photo playback

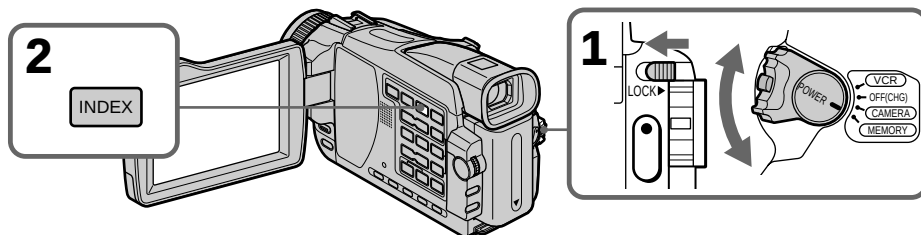
Playing back six recorded images at a time (index screen)

You can play back six recorded images at a time. This function is especially useful when searching for a particular image.

Before operation

Insert a “Memory Stick” into your camcorder.

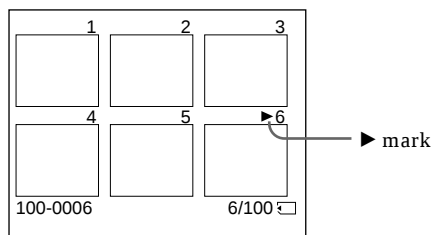
- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MEMORY INDEX to display the index screen.



A red ► mark appears above the image that is displayed before changing to the index screen mode.

MEMORY – : To display the previous six images

MEMORY + : To display the following six images



To return to the normal playback screen (single screen)

Press MEMORY –/+ to move the ► mark to the image you want to display on full screen, then press MEMORY PLAY.

Note

When displaying the index screen, the number appears above each image. This indicates the order in which images are recorded on the “Memory Stick.” These numbers are different from the data file names (p. 105).

Image data modified on your computer or shot with other equipment

These files are sometimes not displayed on the index screen.

Viewing moving pictures

– MPEG movie playback

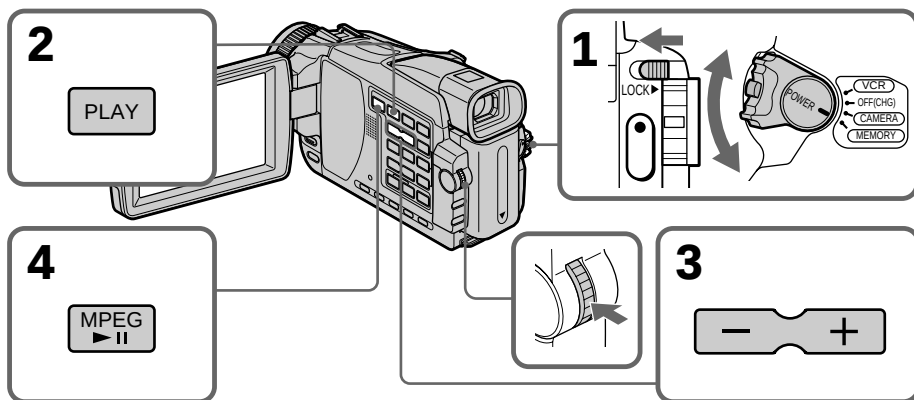
– Except DCR-TRV16

You can play back moving pictures recorded on a “Memory Stick.” You can also play back six images including still images in order at a time by selecting the index screen.

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MEMORY PLAY. The last recorded image is displayed.
- (3) Press MEMORY –/+ to select the desired moving pictures.
MEMORY – : To display the previous image
MEMORY + : To display the following image
- (4) Press MPEG ► || or SEL / PUSH EXEC dial to start playback.
- (5) To adjust the volume, press either of the two buttons on VOLUME.
– : To turn the volume down
+ : To turn the volume up



To stop MPEG movie playback

Press MPEG ► || or SEL / PUSH EXEC dial.

Note

You may not be able to play back images properly in the following cases:

- When playing back on your camcorder image data modified on your computer
- When playing back image data on other equipment.

To play back recorded pictures on a TV screen

- Before operation, connect your camcorder to the TV with the A / V connecting cable supplied with your camcorder.
- Turn the audio volume of the TV down before operation, or noise (howling) may be output from the TV speakers.

When no image is recorded on the “Memory Stick”

The message “ NO FILE” appears.

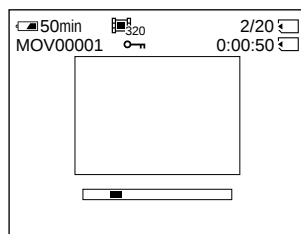
Viewing moving pictures – MPEG movie playback

Playing back a moving picture from the desired part

The moving picture recorded on a “Memory Stick” is divided into 23 parts. You can select any point and playback the picture.

- (1) Follow steps 1 to 3 on page 140.
- (2) Turn the SEL/PUSH EXEC dial and select the point where you want to start playback, then press the dial.
 - ↑ : To see the next part
 - ↓ : To see the previous part

As you turn the dial to select the playback scene you want, the bar and counter change to indicate the playback point.



- (3) Press MPEG ► || or SEL/PUSH EXEC dial to start playback.
- (4) To adjust the volume, press either of the two buttons on VOLUME.
 - : To turn the volume down
 - +: To turn the volume up

To stop MPEG movie playback

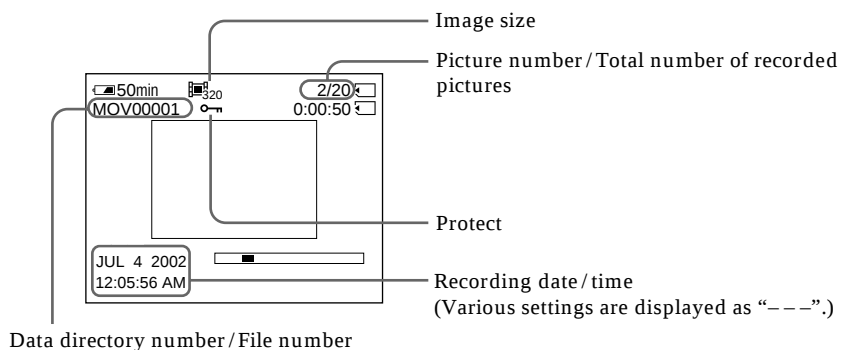
Press MPEG ► || or SEL/PUSH EXEC dial.

When recording time is not long

The moving picture may not be divided into 23 parts.

Viewing moving pictures – MPEG movie playback

Screen indicators during moving picture playback



Recording date/time

Recording date/time are displayed when you press the DATA CODE button on the Remote Commander. Various settings are not recorded.

Copying images recorded on “Memory Stick”s to a tape

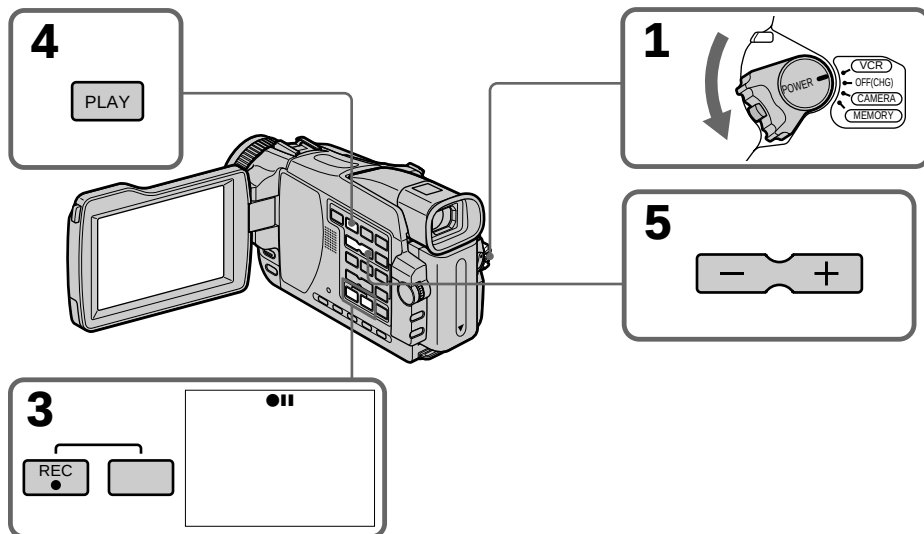
– Except DCR-TRV16

You can copy images recorded on “Memory Stick” and record them to a tape.

Before operation

- Insert a tape for recording into your camcorder.
- Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to VCR.
- (2) Using the video control buttons, search a point where you want to record the desired image. Set the tape to playback pause mode.
- (3) Press ● REC and the button on its right simultaneously on your camcorder. The tape is set to the recording pause mode.
- (4) Press MEMORY PLAY. The last recorded image is displayed.
- (5) Press MEMORY – / + to select the desired image.
MEMORY – : To display the previous image
MEMORY + : To display the following image
- (6) Press ■ to start recording and press ■ again to stop.
● appears on the screen during recording.
- (7) If you have more to copy, repeat steps 5 and 6.



To stop copying in the middle

Press ■.

Copying images recorded on “Memory Stick”s to a tape

During copying

You cannot operate the following buttons:

- MEMORY PLAY
- MEMORY INDEX
- MEMORY DELETE
- MEMORY –/+
- MEMORY MIX

Note on the index screen

You cannot record the index screen.

If you press EDITSEARCH during pause mode

Memory playback stops.

Image data modified on computers or shot with other equipment

You may not be able to copy modified images with your camcorder.

If you press DISPLAY during recording or in the recording standby mode

You can see the memory playback and file name indicators in addition to the time code indicator and other tape-related indicators.

When copying movies

After step 6, press the MPEG ►|| button or SEL / PUSH EXEC dial and play back the image.

Enlarging still images recorded on a “Memory Stick” – Memory PB ZOOM

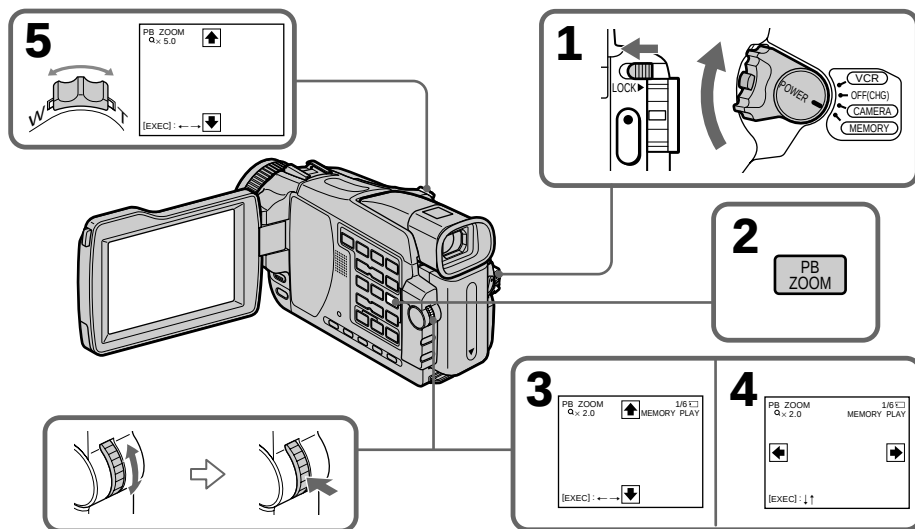
– Except DCR-TRV16

You can enlarge still images recorded on a “Memory Stick.” You can select and view a desired part from the enlarged still image. Also, you can copy the desired part of the enlarged still image to tapes or “Memory Stick”s.

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) In the memory playback mode, press PB ZOOM on your camcorder.
The center of the image is enlarged to about twice its size, and   appear on the screen.
- (3) Turn the SEL / PUSH EXEC dial to move the enlarged image, then press the dial.
 ↑ : The image moves downwards.
 ↓ : The image moves upwards.
- (4) Turn the SEL / PUSH EXEC dial to move the enlarged image, then press the dial.
 → : The image moves leftward. (Turn the dial upwards.)
 ← : The image moves rightward. (Turn the dial downwards.)
- (5) Adjust the zoom ratio by the power zoom lever.
 You can enlarge the image from about 1.1 times up to five times its size.
 W : Decreases the zoom ratio.
 T : Increases the zoom ratio.



To cancel PB ZOOM mode

Press PB ZOOM.

Enlarging still images recorded on a “Memory Stick” – Memory PB ZOOM

The PB ZOOM mode is canceled when the following buttons are pressed:

- MENU
- MEMORY PLAY
- MEMORY INDEX
- MEMORY –/+

Moving pictures recorded on “Memory Stick”s

The PB ZOOM mode does not work.

To record the still image processed by Memory PB ZOOM on “Memory Stick”s

Press the PHOTO button to record the still image processed by PB ZOOM. (Images are recorded at 640 × 480 size.)

To copy the still image processed by Memory PB ZOOM to a tape

See page 143.

Playing back images in a continuous loop – SLIDE SHOW

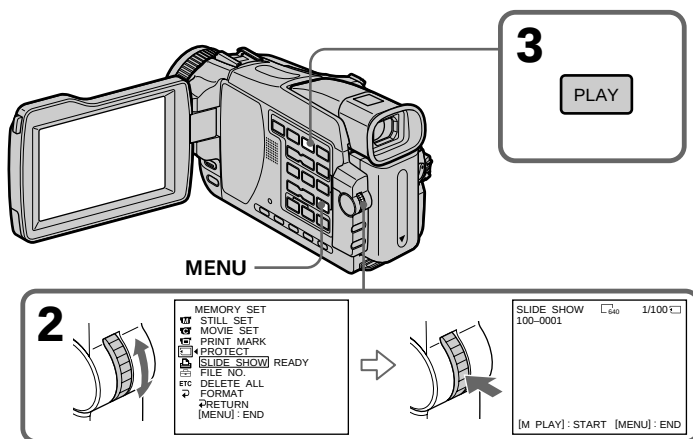
– Except DCR-TRV16

You can automatically play back images in sequence. This function is useful especially when checking recorded images or during a presentation.

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MENU to display the menu. Select SLIDE SHOW in  with the SEL / PUSH EXEC dial (p. 180).
- (3) Press MEMORY PLAY. Your camcorder plays back the images recorded on the “Memory Stick” in sequence.



To stop the slide show

Press MENU.

To pause during a slide show

Press MEMORY PLAY.

To start the slide show from a particular image

Select the desired image using MEMORY –/+ buttons before step 2.

To view recorded images on TV

Before operation, connect your camcorder to a TV with the A/V connecting cable supplied with your camcorder.

If you change the “Memory Stick” during operation

The slide show function does not operate. If you change the “Memory Stick,” be sure to follow the steps again from the beginning.

Preventing accidental erasure – Image protection

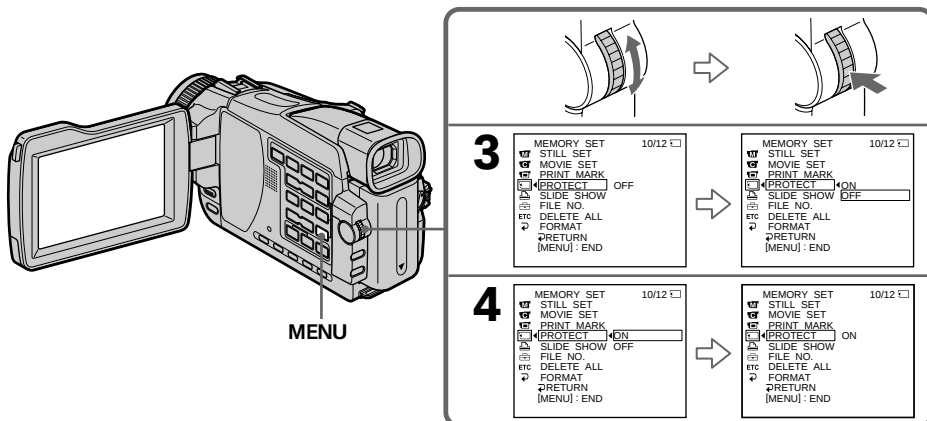
– Except DCR-TRV16

You can protect selected images to prevent accidental erasure of important images.

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Play back the image you want to protect.
- (3) Press MENU, then select PROTECT in  with the SEL / PUSH EXEC dial (p. 180).
- (4) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (5) Press MENU to make the menu display disappear. The “” mark is displayed.



To cancel image protection

Select OFF in step 4, then press the SEL / PUSH EXEC dial. The “” indicator disappears.

Note

Formatting erases all information on the “Memory Stick,” including the protected image data. Before formatting a “Memory Stick,” check its contents.

If the write-protect tab on the “Memory Stick” is set to LOCK

You cannot protect images.

Deleting images – DELETE

– Except DCR-TRV16

You can delete images stored in a “Memory Stick.”

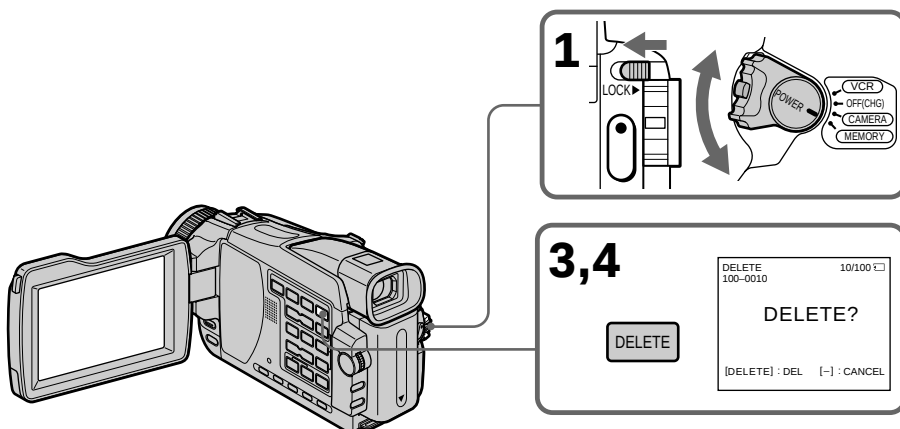
You can delete all images or only selected images.

Deleting selected images

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Play back the image you want to delete.
- (3) Press MEMORY DELETE. “DELETE?” appears on the screen.
- (4) Press MEMORY DELETE again. The selected image is deleted.



“Memory Stick” Operations

To cancel deleting an image

Press MEMORY – in step 4.

To delete an image displayed on the index screen

Press MEMORY – / + to move the ► indicator to the image and follow steps 3 and 4.

Notes

- To delete a protected image, first cancel image protection.
- Once you delete an image, you cannot restore it. Before deleting an image, carefully check the image.

If the write-protect tab on the “Memory Stick” is set to LOCK

You cannot delete images.

Deleting images – DELETE

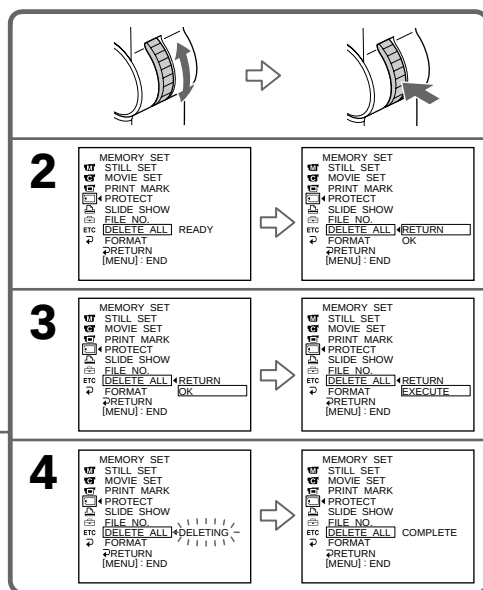
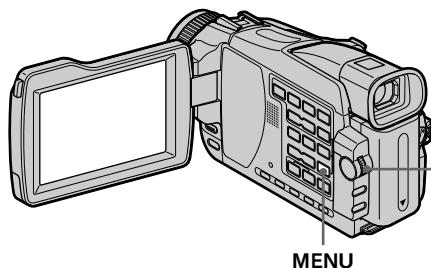
Deleting all images

You can delete all unprotected images in a “Memory Stick.”

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MENU, then select DELETE ALL in  with the SEL / PUSH EXEC dial (p. 180).
- (3) Turn the SEL / PUSH EXEC dial to select OK, then press the dial. OK changes to EXECUTE.
- (4) Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial. DELETING flashes on the screen. When all unprotected images are deleted, COMPLETE is displayed.



To cancel deleting all the images in the “Memory Stick”

Select RETURN in step 3 or 4, then press the SEL / PUSH EXEC dial.

While DELETING appears

Do not turn the POWER switch or press any buttons.

Writing a print mark – PRINT MARK

– Except DCR-TRV16

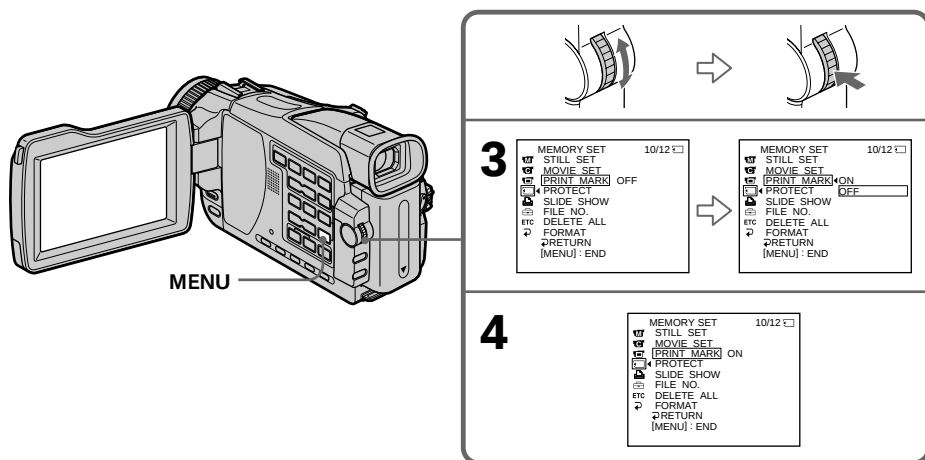
You can specify a recorded still image to print out by putting marks. This function is useful for printing out still images later.

Your camcorder conforms to the DPOF (Digital Print Order Format) standard for specifying still images to print out.

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Play back the image you want to write a print mark.
- (3) Press MENU, then select PRINT MARK in  with the SEL / PUSH EXEC dial (p. 180).
- (4) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (5) Press MENU to make the menu display disappear. The  mark is displayed beside the image with a print mark.



To cancel writing of print marks

Select OFF in step 4, then press the SEL / PUSH EXEC dial.

The  mark disappears from the image.

If the write-protect tab on the “Memory Stick” is set to LOCK

You cannot write print marks on still images.

Moving pictures

You cannot write print marks on moving pictures.

While the file name is flashing

You cannot write the print mark on images.

Using the optional printer

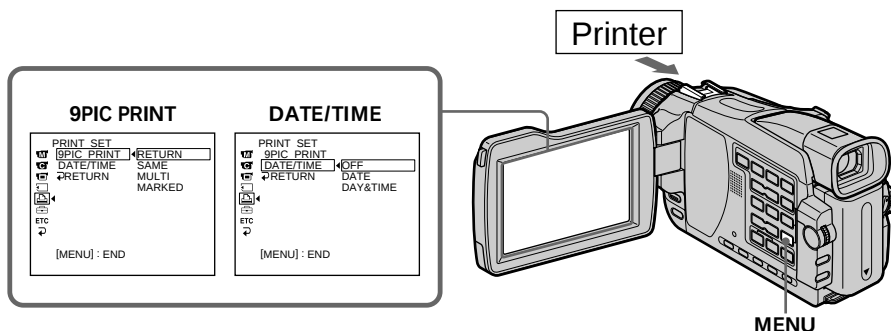
– Except DCR-TRV16

You can use the optional printer on your camcorder to print images on print paper. For details, refer to the operating instructions of the printer.

There are various ways of printing still images. The following, however, describes the setup for print settings by selecting  in the menu on your camcorder.

Before operation

- Insert a recorded “Memory Stick” into your camcorder.
- Attach the optional printer to your camcorder as illustrated.



You can print nine still images on the 9-split print paper. Select the desired mode in the menu settings.

SAME PICS



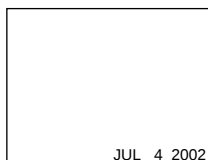
MULTI PICS or MARKED PICS*



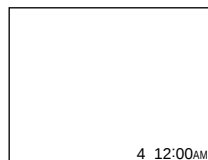
* Nine still images with print marks are printed together.

You can make prints with the recording date and/or recording time. Select the desired mode in the menu settings.

DATE



DAY & TIME



Using the optional printer

Images recorded in the multi screen mode

You cannot print images recorded in the multi screen mode on sticker type print paper.

Moving pictures recorded on a “Memory Stick”

You cannot print the images.

When “Memory Stick” has no files

“ NO STILL IMAGE FILE” appears on the screen.

When there are no files with a PRINT MARK

“ NO PRINT MARK” appears on the screen.

Images processed by 9PIC PRINT

You cannot insert a DATE/TIME indicator.

Viewing images with your computer

– Introduction

There are following ways of connecting the camcorder to a computer in order to view images saved on a “Memory Stick”* or recorded on tape on your computer.

*To view images on a computer which has a Memory Stick slot, first remove the “Memory Stick” from the camcorder and then insert it into the computer’s Memory Stick slot.

	Camcorder Connection jack	Connection cable	Computer environment requirements
Tape stills and movies	USB jack	USB cable (supplied)	USB jack, editing software
	DV jack	i. LINK cable (DV connecting cable) (optional)	DV jack, editing software
“Memory Stick”* stills and movies	USB jack	USB cable (supplied)	USB jack, editing software

When connecting to a computer via the USB jack, complete installation of the USB driver beforehand. If you connect the camcorder to the computer first, you will not be able to install the USB driver correctly.

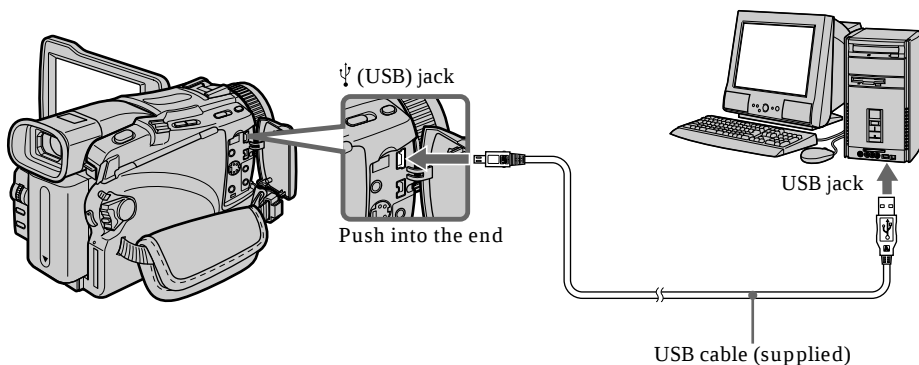
For details about your computer’s jacks and editing software, contact the computer manufacturer.

* Except DCR-TRV16

Viewing images recorded on a tape

When connecting to a computer using the USB cable

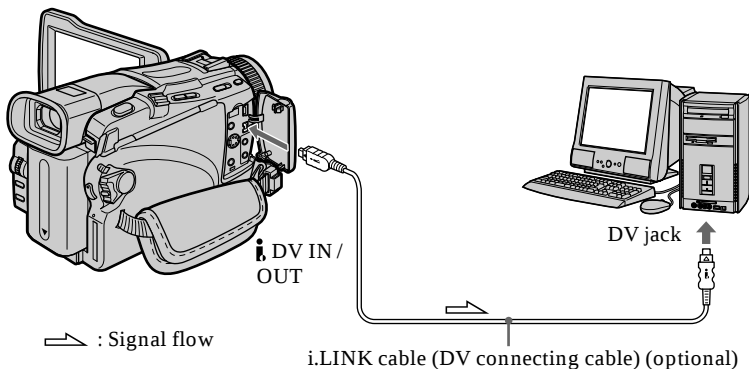
For more information, see page 157.



Viewing images with your computer – Introduction

When connecting to a computer using the i.LINK cable (DV connecting cable)

Your computer must have a DV jack and editing software installed that can read video signals.



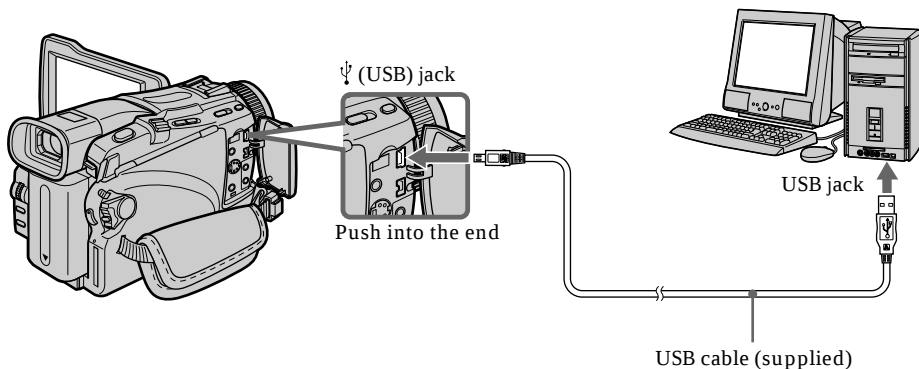
Viewing Images Using Your Computer

Viewing images recorded on a “Memory Stick”

– Except DCR-TRV16

When connecting to a computer using the USB cable

There are two methods of USB connection, NORMAL and PTP. The default setting is NORMAL. Here we explain how to use the camcorder with NORMAL USB connection. See page 157 when using Windows and page 171 when using Macintosh.



You can also use a Memory Stick Reader / Writer (optional).

When connecting to a computer without a USB jack

Use an optional floppy disk adaptor for Memory Stick or a PC card adaptor for Memory Stick.

When purchasing an accessory, check its catalog beforehand for the recommended operating environment.

Notes on using your computer

“Memory Stick”

- “Memory Stick” operations on your camcorder cannot be assured if a “Memory Stick” formatted on your computer is used on your camcorder, or if the “Memory Stick” in your camcorder was formatted from your computer when the USB cable was connected.
- Do not compress the data on the “Memory Stick.” Compressed files cannot be played back on your camcorder.

Software

- Depending on your application software, the file size may increase when you open a still image file.
- When you load an image modified using retouching software from your computer to your camcorder or when you directly modify the image on your camcorder, the image format will differ so a file error indicator may appear and you may be unable to open the file.

Communications with your computer

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

Connecting your camcorder to your computer using the USB cable

– For Windows users

Complete installation of the USB driver before connecting the camcorder to the computer. If you connect the camcorder to the computer first, you will not be able to install the USB driver correctly.

When connecting to a computer using the USB cable

You must **install a USB driver** onto your computer in order to connect the camcorder to the computer's USB jack. The USB driver can be found on the CD-ROM supplied, along with the application software required for viewing images.

If you connect your camcorder and your computer using the USB cable, you can view pictures live from your camcorder and pictures recorded on a tape on your computer (USB streaming function).

Furthermore, if you download pictures from your camcorder to your computer, you can process or edit them in image processing software and append them to e-mail. You can view images recorded on a "Memory Stick" on your computer (except DCR-TRV16).

Recommended computer usage environment to view tape images on the computer

OS:

Microsoft Windows 98SE, Windows Me, Windows 2000 Professional, Windows XP Home Edition or Windows XP Professional.

Standard installation is required.

However, operation is not assured if the above environment is an upgraded OS.

You cannot hear sound if your computer is running Windows 98, but you can read still images.

CPU:

Minimum 500 MHz Intel Pentium III or faster (800 MHz or faster recommended)

Application:

DirectX 8.0a or later

Sound system:

16 bit stereo sound card and stereo speakers

Memory:

64 MB or more

Hard disk:

Available memory required for installation:

at least 200 MB

Available hard disk memory recommended:

at least 1 GB (depending on the size of the image files edited)

Display:

4 MB VRAM video card, Minimum 800 × 600 dot Hi color (16 bit color, 65 000 colors), Direct Draw display driver capability (At 800 × 600 dot or less, 256 colors and less, this product will not operate correctly.)

Others:

This product is compatible with DirectX technology, so it is necessary to install DirectX.

The USB jack must be provided as standard.

You cannot use this function in the Macintosh environment.

Recommended computer usage environment to view “Memory Stick” images on the computer

OS:

Microsoft Windows 98, Windows 98SE, Windows Me, Windows 2000 Professional, Windows XP Home Edition or Windows XP Professional.

Standard installation is required.

However, operation is not assured if the above environment is an upgraded OS.

CPU:

MMX Pentium 200 MHz or faster

The USB jack must be provided as standard.

Windows Media Player must be installed (to play back moving pictures).

Notes

- Operations are not guaranteed for the Windows 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.
- Windows and Windows Media are trademarks or registered trademarks of Microsoft Corporation in the United States and / or other countries.
- Pentium is trademark or registered trademark of Intel Corporation.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, “TM” and “®” are not mentioned in each case in this manual.

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

Installing the USB driver

Start the following operation without connecting the USB cable to your computer.

Connect the USB cable according to “Making the computer recognize the camcorder”.

If you are using Windows 2000 Professional or Windows XP Home Edition / Professional, log in with permission of Administrators.

- (1) Turn on your computer and allow Windows to load.
- (2) Insert the supplied CD-ROM in the CD-ROM drive of your computer. The application software starts up and the title screen appears.
- (3) Move the cursor to “USB Driver” and click. This starts USB driver installation.



- (4) Follow the on-screen messages to install the USB driver.
- (5) Remove the CD-ROM and then restart the computer, in accordance with the instructions on the screen.

Note

If you connect the USB cable before USB driver installation is complete, the USB driver will not be properly registered. Carry out installation again in accordance with the steps on page 162.

Windows XP Home Edition/Professional users

If you go to USBCONNECT in the menu settings and select PTP, you can copy “Memory Stick” images from the camcorder onto your computer without installing the USB driver. This is ideal for simply copying images from a camcorder onto a computer. Refer to page 183 for details.

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

Making the computer recognize the camcorder

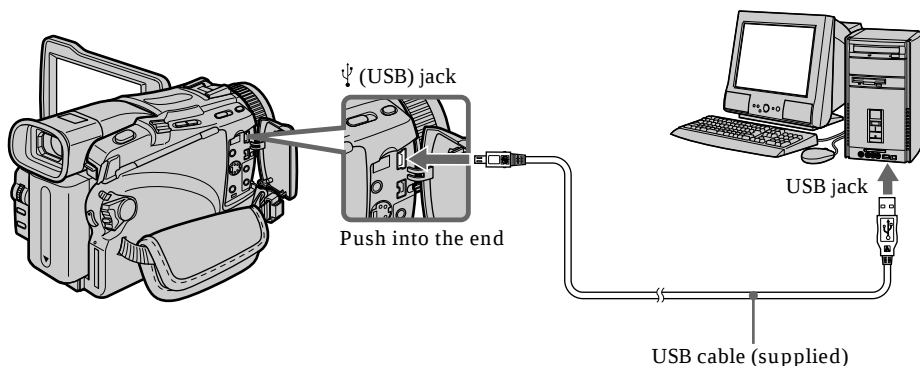
Viewing images recorded on a tape

Refer to page 161 for details on viewing “Memory Stick” images on your computer (except DCR-TRV16).

You need to install PIXELA ImageMixer to view images recorded on a tape. Install it from the CD-ROM supplied with your camcorder.

To install and use this 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.

- (1) Turn on your computer and allow Windows to load.
If you are using your computer, close all running applications.
- (2) Insert the supplied CD-ROM into the CD-ROM drive of your computer.
The application software starts up and the title screen appears. If the application software title screen does not appear, double-click “My Computer” and then “ImageMixer” (CD-ROM Drive). The application software screen appears after a while.
- (3) Move the cursor to “PIXELA ImageMixer” and click.
The Install Wizard program starts up and the “Select Settings Language” screen appears.
- (4) Select the language for installation.
- (5) Follow the on-screen messages.
The installation screen disappears when installation is complete.
- (6) Click DirectX.
Follow the on-screen messages to install DirectX.
When the installation of DirectX is complete, restart the computer.
- (7) Connect the AC power adaptor to your camcorder.
- (8) Set the POWER switch to VCR.
- (9) Select USB STREAM in  to ON in the menu settings (p. 183).
- (10) With the CD-ROM inserted, connect the  (USB) jack of the camcorder and computer using the USB cable supplied with your camcorder.
Your computer recognizes the camcorder, and the Windows Add Hardware Wizard starts.



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

- (11) Follow the on-screen messages so that the Add Hardware Wizard recognizes that the USB drivers have been installed. The Add Hardware Wizard starts three times because three different USB drivers are installed. Be sure to allow the installation to complete without interrupting it.

For Windows 2000 Professional, Windows XP Home Edition / Professional users:

- (12) After the “File Needed” screen appears.
Open “Browse...” → “My Computer” → “ImageMixer” → “Sonyhcb.sys”,
and click “OK”.

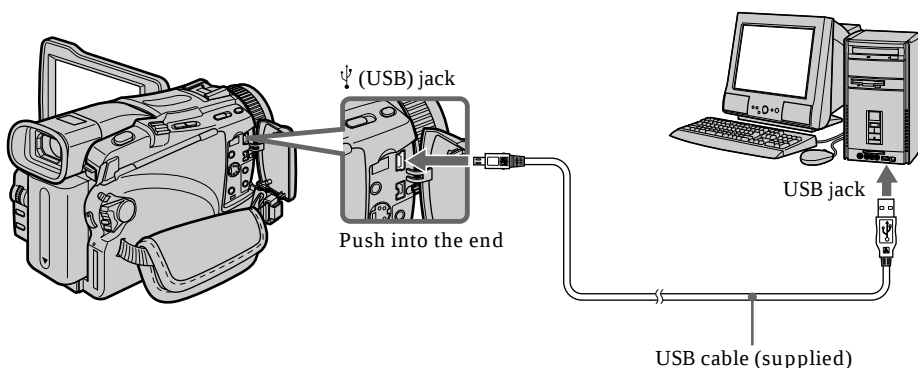
Viewing images recorded on a “Memory Stick” – Except DCR-TRV16

Before operation

Set USBCONNECT in  to NORMAL in the menu settings.

(The default setting is NORMAL.)

- (1) Insert a “Memory Stick” into your camcorder.
- (2) Connect the AC power adaptor and set the POWER switch to MEMORY.
- (3) Connect the  (USB) jack on your camcorder with the USB jack on your computer using the supplied USB cable.
“USB MODE” appears on the LCD screen of your camcorder. Your computer recognizes the camcorder, and the Add Hardware Wizard starts.



- (4) Follow the on-screen messages so that the Add Hardware Wizard recognizes that the USB drivers have been installed. The Add Hardware Wizard starts two times because two different USB drivers are installed. Be sure to allow each installation to complete without interrupting them.

You cannot install the USB driver if a “Memory Stick” is not in your camcorder.

Be sure to insert a “Memory Stick” into your camcorder before installing the USB driver.

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

If you cannot install the USB driver

The USB driver has been registered incorrectly as your computer was connected to your camcorder before installation of the USB driver was completed. Perform the following procedure to correctly install the USB driver.

Viewing images recorded on a tape

Step 1: Uninstall the incorrect USB driver

- ① Turn on your computer and allow Windows to load.
- ② Connect the AC power adaptor, and set the POWER switch to VCR.
- ③ Connect the USB jack on your computer to the Ψ (USB) jack on your camcorder using the USB cable supplied.
- ④ Open your computer's "Device Manager".

Windows XP Home Edition/Professional:

Select "Start" → "Control Panel" → "System" → "Hardware", and click the "Device Manager" button.

If there is no "System" inside "Pick a category" after clicking "Control Panel", click "Switch to classic view" instead.

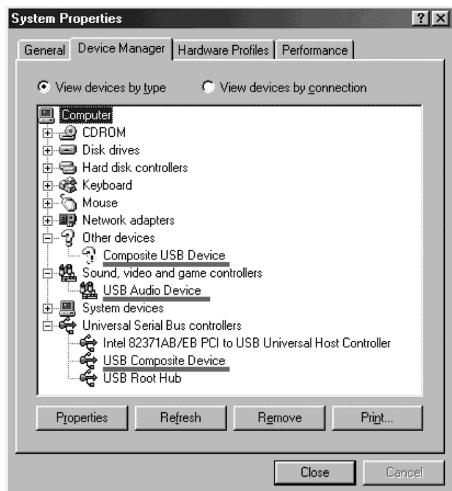
Windows 2000 Professional:

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

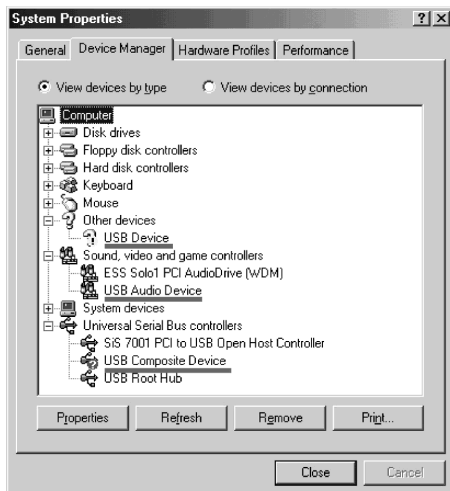
Windows 98SE/Windows Me:

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

- ⑤ Select and delete the underlined devices.

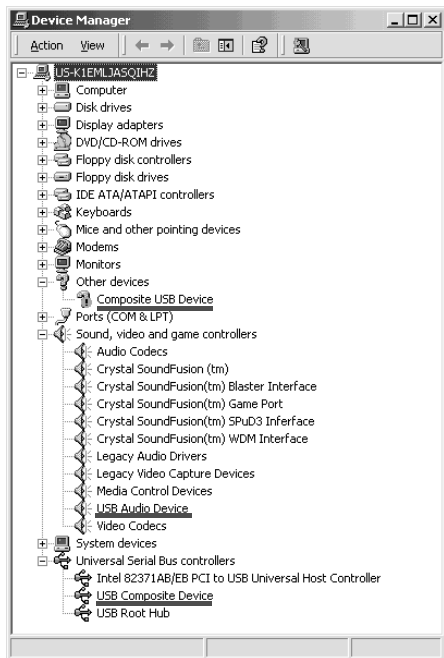


Windows 98SE

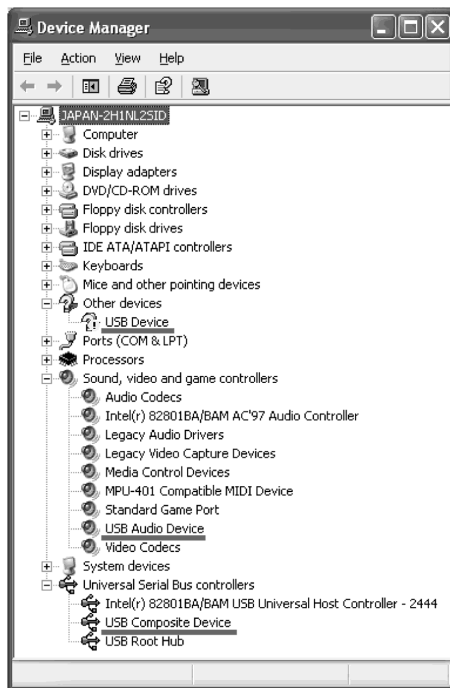


Windows Me

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



Windows 2000 Professional



Windows XP Home Edition/Professional

- 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 159.

Viewing images recorded on a “Memory Stick” – Except DCR-TRV16

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.
- ④ Connect the USB jack on your computer to the  (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 159.

Viewing images recorded on a tape with 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 images recorded on a tape with your computer (p. 159).

To install and use this 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.

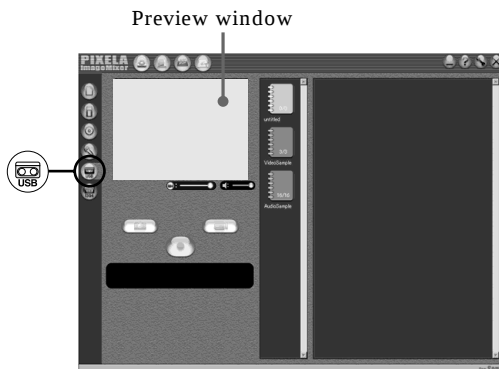
Viewing images recorded on a tape

- (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. 183).
- (4) Select “Start” → “Program” → “PIXELA” → “ImageMixer” → “PIXELA ImageMixer Ver.1.0 for Sony”.
- (5) Click  on the screen.



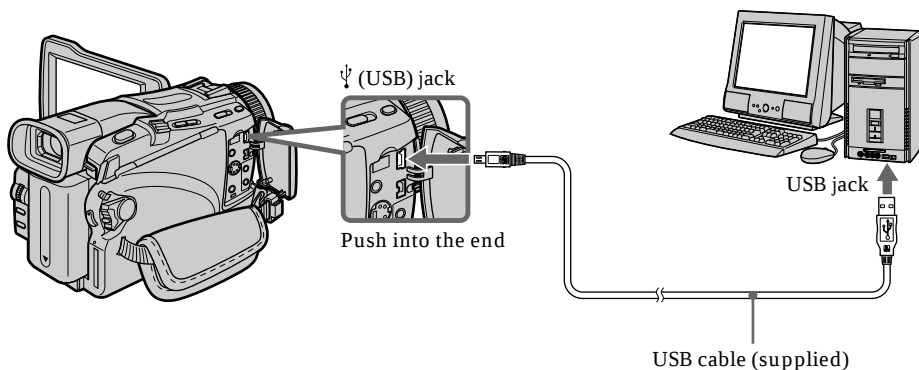
The “PIXELA ImageMixer Ver.1.0 for Sony” startup screen appears on your computer. The title screen is displayed.

- (6) Select .



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

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

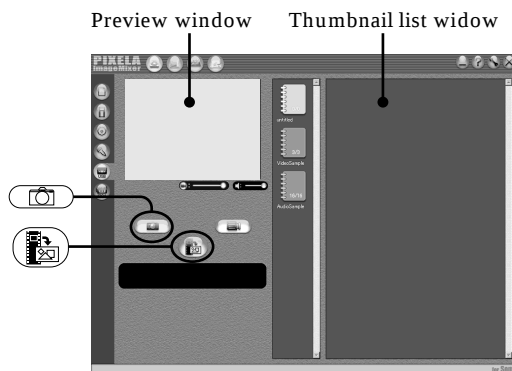


- (8) Press $\blacktriangleright$ to start playback.
The picture from the tape appears on preview window on your computer.

Viewing pictures live from your camcorder

- (1) Follow the steps 1, 2 on page 165.
(2) Set the POWER switch to CAMERA.
Select USB STREAM in to ON in the menu settings (p. 183).
(3) Follow the steps 4 to 7 on pages 165 and 166.
The picture from your camcorder appears on preview window on your computer.

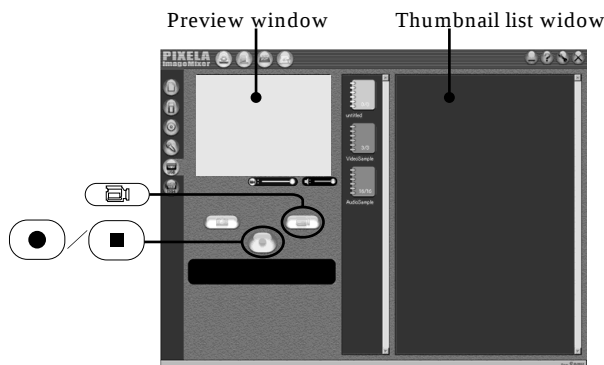
Capturing still images



- (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 with 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 following 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.

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 162.

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.
- Set the POWER switch to the other position or OFF (CHG) on your camcorder.

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

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  button 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 the  button at the top right of the screen.

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

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

Note 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” with your computer

– For Windows users

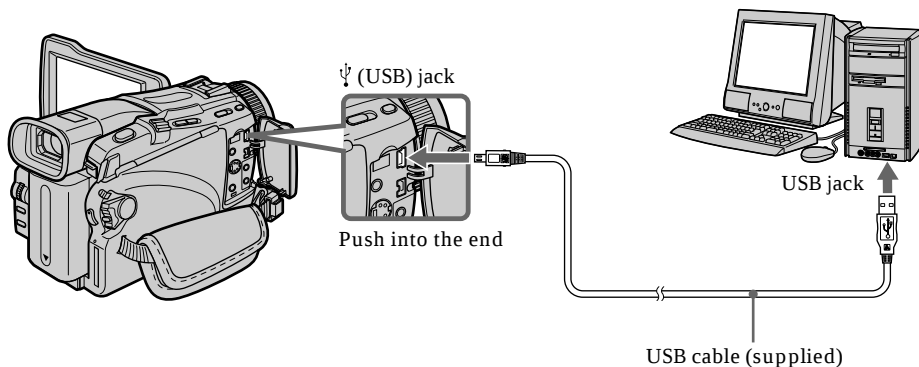
– Except DCR-TRV16

Viewing images

Before operation

- You need to install the USB driver to view “Memory Stick” images with your computer. (p. 159)
- 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 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.
- (4) Connect the USB jack on your computer to the  (USB) jack on your camcorder using the supplied USB cable.
“USB MODE” appears on the screen of your camcorder.



Viewing Images Using Your Computer

- (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. 170).

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

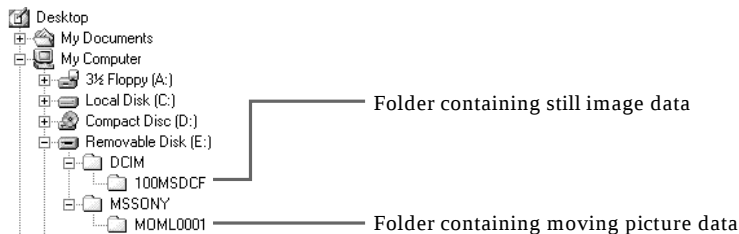
* Copying a file to the hard disk of your computer before viewing it is recommended. If you play back the file directly from the “Memory Stick,” the image and sound may break off.

Viewing images recorded on a “Memory Stick” with 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 (The drive recognising your camcorder is [E:].)



Folder	File	Meaning
100MSDCF	DSC0□□□□.JPG	Still image file
MOML0001	MOV0□□□□.MPG	Moving picture file

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

For Windows 2000 Professional/Me, Windows XP Home Edition/Professional users
To unplug the USB cable, eject the “Memory Stick” or set the POWER switch to OFF (CHG) follow 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

– Except DCR-TRV16

When connecting to a computer using the USB cable

You must **install a USB driver** onto your computer in order to connect the camcorder to the computer's USB jack. The USB driver can be found on the CD-ROM supplied, along with the application software required for viewing images.

Recommended Macintosh environment

OS:

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 upgrade 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 jack must be provided as standard.

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

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.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, “TM” and “®” are not mentioned in each case in this manual.

Installing the USB driver

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

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

The USB driver does not have to be installed. Your camcorder is automatically recognized as a drive just by connecting it to your Mac using the USB cable.

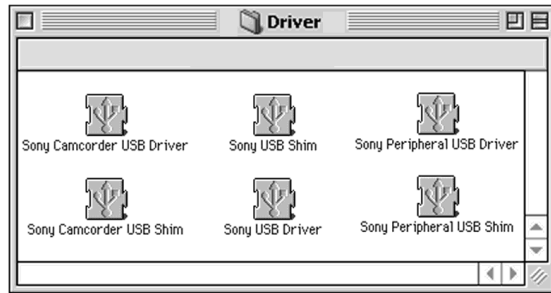
For Mac OS 8.5.1/8.6/9.0 users

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



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

- (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.

Viewing images recorded on a “Memory Stick” with your computer

– For Macintosh users

– Except DCR-TRV16

Viewing images

Before operation

You need to install the USB driver to view a “Memory Stick” images on your computer. (p. 171)
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.
- (4) Connect the  (USB) jack on your camcorder with the USB jack on your computer using the supplied USB cable.
“USB MODE” appears on the 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*	“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.

Disconnect the USB cable and remove 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 your camcorder 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) Unplug the USB cable or eject the “Memory Stick.” Set the POWER switch of your camcorder to OFF (CHG).

For Mac OS X (v10.0) users

Shut down your computer, then unplug the USB cable, 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

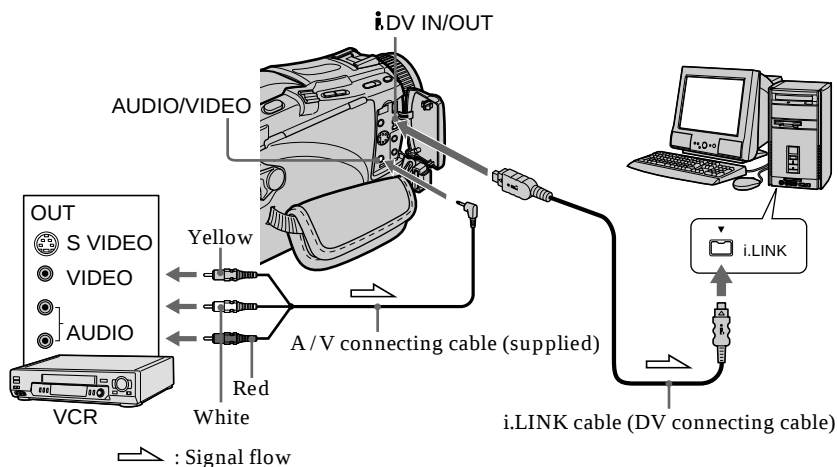
You can capture images and sound from an analog video unit connected to your computer which has the i.LINK (DV) jack connected to your camcorder.

Before operation

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

- (1) Set the POWER switch to VCR.
- (2) Set A/V → DV OUT in  to ON in the menu settings (p. 178).
- (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 manuals 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 exchange video signals.
- Depending on the state of the analog video signals, the computer may not be able to output the images correctly when you convert analog video signals into digital video signals via your camcorder. Depending on the analog video unit, the image may contain noise or incorrect colors.
- 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 jack

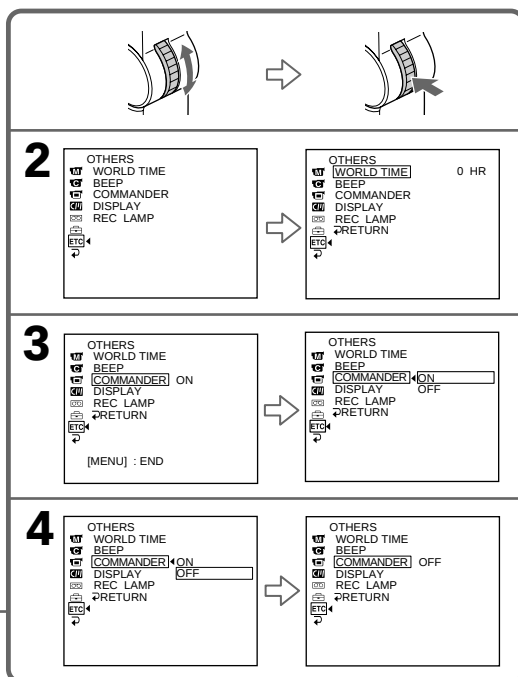
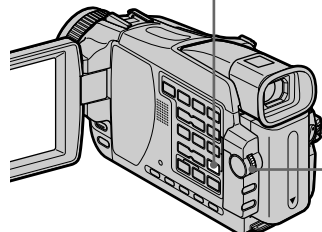
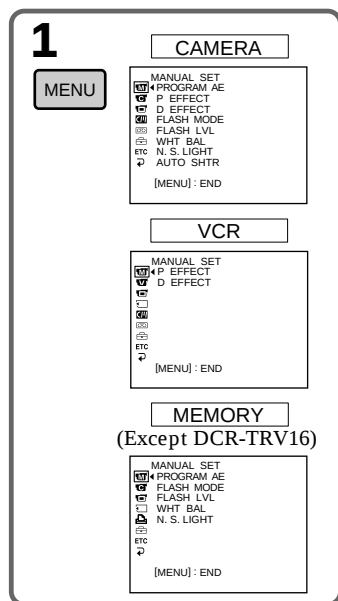
You can connect using a USB cable, but images may not be transferred smoothly.

Changing the menu settings

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

- (1) Set the POWER switch to CAMERA, VCR or MEMORY (except DCR-TRV16), 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  RETURN and press the dial, then repeat steps 2 to 4.

For details, see “Selecting the mode setting of each item” (p. 176).



Changing the menu settings

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 (except DCR-TRV16)
-  PRINT SET (except DCR-TRV16)
-  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.

Icon/item	Mode	Meaning	POWER switch
 MANUAL SET			
PROGRAM AE	—	To suit your specific shooting requirement (p. 58)	CAMERA MEMORY
P EFFECT	—	To add special effects like those in films or on the TV to images (p. 54, 65)	VCR CAMERA
D EFFECT	—	To add special effects using the various digital functions (p. 55, 66)	VCR CAMERA
FLASH MODE	● ON	To fire the flash (optional) regardless of the brightness of the surroundings	CAMERA MEMORY
	AUTO	To fire the flash automatically	
	AUTO ●	To fire the flash before recording to reduce the red-eye phenomenon	
FLASH LVL	HIGH	To make the flash level higher than normal	CAMERA MEMORY
	● NORMAL	Normal setting	
	LOW	To make the flash level lower than normal	
WHT BAL	—	To adjust the white balance (p. 48)	CAMERA MEMORY
N.S.LIGHT	● ON	To use the NightShot Light function (p. 34)	CAMERA MEMORY
	OFF	To cancel the NightShot Light function	
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 MODE and FLASH LVL

You cannot adjust FLASH MODE and FLASH LVL if the external flash (optional) is not connected.

Note on FLASH LVL

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

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
 CAMERA SET			
SELFTIMER*	● OFF	To not use the self-timer function	CAMERA MEMORY
	ON	To use the self-timer function (p. 36, 45, 116, 127)	
D ZOOM	● OFF	To deactivate the digital zoom. Up to 10× zoom is performed.	CAMERA
	20×	To activate the digital zoom. More than 10× to 20× zoom is performed digitally (p. 30)	
	120×	To activate the digital zoom. More than 10× to 120× zoom is performed digitally	
PHOTO REC*	● MEMORY	To record still images on a “Memory Stick” when you press PHOTO during recording of moving pictures on a tape or the standby mode (p. 43)	CAMERA
	TAPE	To record still images on a tape when you press PHOTO during recording of moving pictures on a tape or the standby mode (p. 46)	
16:9WIDE	● OFF	—	CAMERA
	ON	To record a 16:9 wide picture (p. 49)	
STEADYSHOT	● ON	To compensate for camera-shake	CAMERA
	OFF	To cancel the SteadyShot function. 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. 64)	
INT. REC	ON	To activate interval recording (p. 62)	CAMERA
	● OFF	To deactivate interval recording	
	SET	To set the waiting time and recording time for interval recording	

* Except DCR-TRV16

Notes on the SteadyShot function

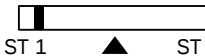
- The SteadyShot function will not correct excessive camera-shake.
- Attachment of a conversion lens (optional) may influence the SteadyShot function.

If you cancel the SteadyShot function

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

(continued on the following page)

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
 VCR SET			
HiFi SOUND	● STEREO	To play back a stereo tape or dual sound track tape with main and sub sound (p. 195)	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. 96) 	VCR
A/V → DV OUT	● 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. 174)	
 LCD/VF SET			
LCD BRIGHT	—	To adjust the brightness on the LCD screen with the SEL / PUSH EXEC dial 	VCR CAMERA MEMORY
LCD B.L.	● BRT NORMAL	To set the brightness on the LCD screen to normal	VCR CAMERA MEMORY
	BRIGHT	To brighten the LCD screen	
LCD COLOR	—	To adjust the color on the LCD screen, turn and press the SEL / PUSH EXEC dial. 	VCR CAMERA MEMORY
VF B.L.	● BRT NORMAL	To set the brightness on the viewfinder screen to normal	VCR CAMERA MEMORY
	BRIGHT	To brighten the viewfinder screen	

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 BRIGHT, LCD B.L., LCD COLOR, and/or VF B.L.

The recorded picture will not be affected.

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
 MEMORY SET (except DCR-TRV16)			
STILL SET			
BURST	● OFF	To not record continuously	MEMORY
	NORMAL* ¹⁾	To record up to four (in 1152 × 864 size) or 13 (in 640 × 480 size) still images continuously (p. 114)	
	EXP BRKTG* ¹⁾	To record three images consecutively with different exposures	
	MULTI SCRΝ	To record nine images continuously, display the images on a single page divided into nine boxes	
QUALITY	● SUPER FINE* ¹⁾	To record still images in the finest image quality mode (p. 107)	VCR MEMORY
	FINE* ²⁾	To record still images in the fine image quality mode	
	STANDARD	To record still images in the standard image quality mode	
IMAGESIZE*¹⁾	● 1152 × 864	To record still images in 1152 × 864 size (p. 109)	MEMORY
	640 × 480	To record still images in 640 × 480 size	
MOVIE SET			
IMAGESIZE	● 320 × 240	To record moving pictures in 320 × 240 size (p. 109)	VCR MEMORY
	160 × 112	To record moving pictures in 160 × 112 size	
 REMAIN	● AUTO	To display the remaining capacity of the “Memory Stick” in the following cases: • For five seconds after setting the POWER switch to VCR or MEMORY • For five seconds after inserting a “Memory Stick” into your camcorder in MEMORY or VCR • When the capacity of the “Memory Stick” is less than two minutes in MEMORY • For five seconds after starting a moving picture recording • For five seconds after completing a moving picture recording	VCR MEMORY
	ON	To always display the remaining capacity of the “Memory Stick”	

*¹⁾ DCR-TRV25/TRV27 only

*²⁾ For DCR-TRV18, the default setting is FINE.

(continued on the following page)

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
 MEMORY SET (except DCR-TRV16)			
PRINT MARK	ON	To write a print mark on recorded still images you want to print out later (p. 151)	VCR MEMORY
	● OFF	To cancel print marks on still images	
PROTECT	ON	To protect selected still images against accidental erasure (p. 148)	VCR MEMORY
	● OFF	To not protect still images	
SLIDE SHOW	—	To play back images in a continuous loop (p. 147)	MEMORY
PHOTO SAVE	—	To copy mini DV still pictures on “Memory Stick”(p. 135)	VCR
FILE NO.	● SERIES	To assign numbers to file in sequence even if the “Memory Stick” is changed	VCR MEMORY
	RESET	To reset the file numbering each time the “Memory Stick” is changed	
DELETE ALL	—	To delete all unprotected images (p. 150)	MEMORY
FORMAT	● RETURN	To cancel formatting	MEMORY
	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 with the SEL / PUSH EXEC dial, then press the dial. 2. Turn the SEL / PUSH EXEC dial to select OK, then press the dial. 3. After “EXECUTE” appears, press the SEL / PUSH EXEC dial. “FORMATTING” flashes during formatting. “COMPLETE” appears when formatting is finished.	

Notes on formatting (except DCR-TRV16)

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

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
 PRINT SET (except DCR-TRV16)			
9PIC PRINT	● RETURN	To cancel prints of split screens	MEMORY
	SAME	To make prints of the same split screen (p. 152)	
	MULTI	To make prints of different split screens	
	MARKED	To make prints of images with print marks in recording order	
DATE/TIME	● OFF	To make prints without the recording date and time	MEMORY
	DATE	To make prints with the recording date (p. 152)	
	DAY&TIME	To make prints with the recording date and time	
 CM SET			
TITLE	—	To superimpose a title or make your own title (p. 98, 101)	VCR CAMERA
TITLEERASE	—	To erase the title you have superimposed (p. 100)	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. 70)	VCR
	OFF	To search without using cassette memory	
TAPE TITLE	—	To label a cassette (p. 103)	VCR CAMERA
ERASE ALL	—	To erase all the data in cassette memory (p. 104)	VCR CAMERA

Note on PRINT SET (except DCR-TRV16)

9PIC PRINT and DATE/TIME are displayed only when an external printer (optional) is connected to the intelligent accessory shoe.

(continued on the following page)

Changing the menu settings

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 (the one stereo sound with high quality)	
 REMAIN	● AUTO	To display the remaining tape bar: • For about eight seconds after your camcorder is turned on and calculates the remaining amount of tape • For about eight seconds after a cassette is inserted and your camcorder calculates the remaining amount of tape. • For about eight seconds after ► is pressed in VCR • For about eight seconds after DISPLAY is pressed to display the screen indicators • For the period of tape rewinding, forwarding or picture search in the VCR	VCR CAMERA
	ON	To always display the remaining tape indicator	

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 menu settings

Icon/item	Mode	Meaning	POWER switch
 SETUP MENU			
CLOCK SET	—	To set the date or time (p. 23)	CAMERA MEMORY
USB STREAM	● OFF	To deactivate the USB streaming function	VCR
	ON	To activate the USB streaming function	CAMERA
USBCONNECT*	● NORMAL	To connect and recognize the “Memory Stick” drive.	MEMORY
	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 USBCONNECT followed by PTP, and press to set. 2 Insert the “Memory Stick” in the camcorder, and connect the camcorder to the computer using the USB cable. Copy Wizard will automatically start up.	
LTR SIZE	● NORMAL	To display selected menu items in normal size	VCR
	2×	To display selected menu items at twice the normal size	CAMERA MEMORY
LANGUAGE	● ENGLISH	To display the following information indicators in English: REC, STBY, min, sec, CAPTURE, END SEARCH and VOL, etc.	VCR CAMERA MEMORY
	FRANÇAIS	To display the information indicators in French	
	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	
DEMO MODE	● ON	To make the demonstration appear	CAMERA
	OFF	To cancel the demonstration mode	

*Except DCR-TRV16

Notes on DEMO MODE

- You cannot select DEMO MODE when a cassette or a “Memory Stick” is inserted in your camcorder.
- 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 and 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.
- When NIGHTSHOT is set to ON, the “NIGHTSHOT” indicator appears on the screen and you cannot select DEMO MODE in the menu settings.

(continued on the following page)

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
ETC OTHERS			
DATA CODE	● DATE / CAM	To press DATA CODE on the Remote Commander to display date, time and various settings during playback (p. 39)	VCR MEMORY
	DATE	To press DATA CODE on the Remote Commander to display date and time during playback	
WORLD TIME	—	To set the clock to the local time. Turn the SEL / PUSH EXEC dial to set a time difference. The clock changes by the time difference you set here. If you set the time difference to 0, the clock returns to the originally set time.	CAMERA MEMORY
BEEP	● MELODY	To output the melody when you start/stop recording or when an unusual condition occurs on your camcorder	VCR CAMERA MEMORY
	NORMAL	To output the beep instead of the melody	
	OFF	To cancel the melody and beep sound	
COMMANDER	● ON	To activate the Remote Commander supplied with your camcorder	VCR CAMERA MEMORY
	OFF	To deactivate the Remote Commander to avoid erroneous remote control operation caused by other VCR's remote control.	
DISPLAY	● LCD	To show the display on the LCD screen and in the viewfinder	VCR CAMERA MEMORY
	V-OUT/LCD	To show the display on the TV screen, LCD screen and in the viewfinder	
REC LAMP	● ON	To light up the camera recording lamp at the front of your camcorder	CAMERA MEMORY
	OFF	To turn the camera recording lamp off so that the person is not aware of the recording	
VIDEO EDIT	● RETURN*	To cancel video editing	VCR
	TAPE*	To make program and perform video editing (p. 78)	
	MEMORY*	To make program and perform MPEG editing (p. 132)	

* Except DCR-TRV16

Note

If you press DISPLAY 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.

In more than five minutes after removing the power source

The “PROGRAM AE”, “AUDIO MIX”, “COMMANDER”, “HiFi SOUND”, and “WHT BAL” settings are returned to their factory settings.

Other menu settings are held in memory even when the battery is removed.

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.

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, disconnect the power source 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 191.

In the recording mode

Symptom	Cause and/or Corrective Actions
START/STOP does not operate.	• The POWER switch is not set to CAMERA. → Set it to CAMERA. (p. 26) • The cassette has run out. → Rewind the tape or insert a new one. (p. 25, 40) • The write-protect tab is set to expose the red mark. → Use a new tape or slide the tab. (p. 25) • The tape is stuck to the drum (moisture condensation). → Remove the cassette and leave your camcorder for at least one hour to acclimatize. (p. 202)
The power goes off.	• While being operated in CAMERA, your camcorder has been in the standby mode for more than five minutes. → Set the POWER switch to OFF (CHG) and then to CAMERA. • The battery pack is dead or nearly dead. → Install a charged battery pack. (p. 16)
The image on the viewfinder screen is not clear.	• The viewfinder lens is not adjusted. → Adjust the viewfinder lens. (p. 29)
The SteadyShot function does not work.	• STEADYSHOT is set to OFF in the menu settings. → Set it to ON. (p. 177)
The autofocus function does not work.	• The setting is the manual focus. → Press FOCUS/INFINITY to set to the autofocus mode. (p. 61) • Shooting conditions are not suitable for autofocus. → Adjust for manual focusing. (p. 61)
The picture does not appear in the viewfinder.	• The LCD panel is open. → Close the LCD panel. (p. 28)
A vertical band appears when you shoot a subject such as lights or a candle flame against a dark background.	• The contrast between the subject and background is too high. This is not a malfunction.
A vertical band appears when you shoot a very bright subject.	• This is not a malfunction.
Some tiny white, red, blue or green spots appear on the screen.	• Slow shutter, Super NightShot or Color Slow Shutter is activated. This is not a malfunction.
An unknown picture is displayed on the screen.	• If 10 minutes elapse after you set the POWER switch to CAMERA or DEMO MODE is set to ON in the menu settings without a cassette and a “Memory Stick” 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. 183)

(continued on the following page)

Types of trouble and how to correct trouble

Symptom	Cause and/or Corrective Actions
The picture is recorded in incorrect or unnatural colors.	• NIGHTSHOT is set to ON. → Set it to OFF. (p. 34)
The picture appears too bright, and the subject does not appear on the screen.	• NIGHTSHOT is set to ON in a bright place. → Set it to OFF. (p. 34) • BACK LIGHT is activated. → Deactivate it. (p. 33)
You cannot record still images on a "Memory Stick" in standby mode or while recording on tape.*	• PHOTO REC is set to TAPE in the menu settings. → Set it to MEMORY (p. 177).
You cannot record still images on a tape.*	• PHOTO REC is set to MEMORY in the menu settings. → Set it to TAPE (p. 177).
The click of the shutter does not sound.	• BEEP is set to OFF in the menu settings. → Set it to MELODY or NORMAL. (p. 184)
Black bands appear when you record TV or computer screen.	→ Set the STEADYSHOT to OFF in the menu settings. (p. 177)

* Except DCR-TRV16

In the playback mode

Symptom	Cause and/or Corrective Actions
The tape does not move when a video control button is pressed.	• The POWER switch is not set to VCR. → Set it to VCR. (p. 38)
The playback button does not work.	• The cassette has run out of tape. → Rewind the tape. (p. 40)
There are horizontal lines on the picture or the playback picture is not clear or does not appear.	• The video heads may be dirty. → Clean the heads using the cleaning cassette (optional). (p. 203)
No sound or only a low sound is heard when playing back a tape.	• The stereo tape is played back with HiFi SOUND set to 2 in the menu settings. → Set it to STEREO (p. 178). • The volume is turned to minimum. → Turn up the volume. (p. 38) • AUDIO MIX is set to ST2 in the menu settings. → Adjust AUDIO MIX. (p. 178)
During displaying the recorded date, date search function does not work.	• The cassette has no cassette memory. → Use a cassette with cassette memory. (p. 71) • CM SEARCH is set to OFF in the menu settings. → Set it to ON. (p. 181) • The tape has a blank portion during recorded portions. (p. 72)

Types of trouble and how to correct trouble

Symptom	Cause and/or Corrective Actions
The title search function does not work.	- The cassette has no cassette memory. → Use a cassette with cassette memory. (p. 70) - CM SEARCH is set to OFF in the menu settings. → Set it to ON. (p. 181) - There is no title in the tape. → Superimpose the titles. (p. 98) - The tape has a blank portion between recorded portions. (p. 70)
The new sound added to the recorded tape is not heard.	AUDIO MIX is set to the ST1 side in the menu settings. → Adjust AUDIO MIX. (p. 178)
The title is not displayed.	TITLE DSPL is set to OFF in the menu settings. → Set it to ON. (p. 181)

In the recording and playback modes

Symptom	Cause and/or Corrective Actions
The power does not turn on.	- The battery pack is not installed, or is dead or nearly dead. → Install a charged battery pack. (p. 16, 17) - The AC power adaptor is not connected to a wall outlet. → Connect the AC power adaptor to a wall outlet. (p. 22)
The end search function does not work.	- The tape was ejected after recording when using a cassette without cassette memory. (p. 37) - You have not recorded on the new cassette yet. (p. 37)
The end search function does not work correctly.	The tape has a blank portion at the beginning or midway. (p. 37)
The battery pack is quickly discharged.	- The operating temperature is too low. - The battery pack is not fully charged. → Charge the battery pack fully again. (p. 17) - The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack. (p. 16)
The battery remaining time indicator does not indicate the correct time.	- You have used the battery pack in an extremely hot or cold environment for a long time. - The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack. (p. 16) - The battery is not fully charged. → Charge the battery pack fully again. (p. 17) - 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. 17)
The power goes off although the battery remaining time indicator indicates that the battery pack has enough power to operate.	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. 17)

(continued on the following page)

Types of trouble and how to correct trouble

Symptom	Cause and/or Corrective Actions
The cassette cannot be removed from the holder.	- The power supply is disconnected. → Connect it firmly. (p. 16, 22) - The battery is dead. → Use a charged battery pack. (p. 16, 17)
The  and  indicators flash and no functions except for cassette ejection work.	Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize. (p. 202)
 indicator does not appear when using a cassette with cassette memory.	The gold-plated connector of the cassette is dirty or dusty. → Clean the gold-plated connector. (p. 196)
Remaining tape indicator is not displayed.	The  REMAIN is set to AUTO in the menu settings. → Set it to ON to always display the remaining tape indicator. (p. 182)

When operating using the “Memory Stick”

– Except DCR-TRV16

Symptom	Cause and/or Corrective Actions
The “Memory Stick” does not function.	- The POWER switch is not set to MEMORY. → Set it to MEMORY. (p. 107) - The “Memory Stick” is not inserted. → Insert a “Memory Stick”. (p. 106)
Recording does not function.	- The “Memory Stick” has already been recorded to its full capacity. → Delete unnecessary images and record again. (p. 149) - The “Memory Stick” formatted incorrectly is inserted. → Format the “Memory Stick” or use another “Memory Stick.” (p. 180) - The write-protect tab on the “Memory Stick” is set to LOCK. → Release the lock. (p. 105)
The image cannot be deleted.	- The image is protected. → Cancel the image protection. (p. 148) - The write-protect tab on the “Memory Stick” is set to LOCK. → Release the lock. (p. 105)
You cannot format the “Memory Stick”.	The write-protect tab on the “Memory Stick” is set to LOCK. → Release the lock. (p. 105)
Deleting all the images cannot be carried out.	The write-protect tab on the “Memory Stick” is set to LOCK. → Release the lock. (p. 105)
You cannot protect the image.	- The write-protect tab on the “Memory Stick” is set to LOCK. → Release the lock. (p. 105) - The image to protect is not played back. → Press MEMORY PLAY to play back the image. (p. 137)

Types of trouble and how to correct trouble

Symptom	Cause and/or Corrective Actions
You cannot write a print mark on the still image.	• The write-protect tab on the “Memory Stick” is set to LOCK. → Release the lock. (p. 105) • The image to write a print mark is not played back. → Press MEMORY PLAY to play back the image. (p. 137) • You are trying to write a print mark on a moving picture. → Print marks cannot be written on a moving picture.
The photo save function does not work.	• The write-protect tab on the “Memory Stick” is set to LOCK. → Release the lock. (p. 105)
You cannot play back images in actual size.	• 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.
You cannot play back image data.	• Your camcorder cannot play back some images processed with a computer (The file name will blink). • If you record images with any other equipment, the images may not play back normally on your camcorder.

Others

Symptom	Cause and/or Corrective Actions
The title is not recorded.	• The cassette has no cassette memory. → Use a cassette with cassette memory. (p. 98) • The cassette memory is full. → Erase unwanted title. (p. 100) • The cassette is set to prevent accidental erasure. → Slide the write-protect tab so that red portion is not visible. (p. 25) • The tape has a blank portion between recorded portions. → Superimpose the title to a recorded portion. (p. 98)
The cassette label is not recorded.	• The cassette has no cassette memory. → Use a cassette with cassette memory. (p. 103) • The cassette memory is full. → Erase unwanted titles. (p. 100) • The cassette is set to prevent accidental erasure. → Slide the write-protect tab so that red mark is not visible. (p. 25)
Digital program editing to a tape does not function.	• The input selector on the VCR is not set correctly. → Check the connection and set the input selector on the VCR again (p. 78) • The camcorder is connected to DV equipment of other than Sony using the i.LINK cable (DV connecting cable). → Set it to IR (p. 83). • Setting program on a blank portion of the tape is attempted. → Set the program again on a recorded portion (p. 86). • The camcorder and the VCR are not synchronized. → Adjust the synchronization (p. 84). • The IR SETUP code is incorrect. → Set the correct code (p. 79).

(continued on the following page)

Types of trouble and how to correct trouble

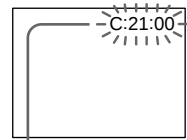
Symptom	Cause and/or Corrective Actions
Digital program editing to a "Memory Stick" does not function.*	Setting program on a blank portion of the tape is attempted. → Set the program again on a recorded portion (p. 132).
The Remote Commander supplied with your camcorder does not work.	- COMMANDER is set to OFF in the menu settings. → Set it to ON. (p. 184) - Something is blocking the infrared rays. → Remove the obstacle. - The batteries are inserted in the battery holder with the + – polarities incorrectly matching the + – marks. → Insert the batteries correctly. (p. 216) - The batteries are dead. → Insert new ones. (p. 216)
The picture from a TV or VCR does not appear even when your camcorder is connected to output on the TV or VCR.	DISPLAY is set to V-OUT/LCD in the menu settings. → Set it to LCD. (p. 184)
The melody or beep sounds for five seconds.	- Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize. (p. 202) - Some troubles have occurred in your camcorder. → Remove the cassette and insert it again, then operate your camcorder.
No function works though the power is on.	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, open the LCD panel and 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. 213)
While charging the battery pack, no indicator appears or the indicator flashes in the display window.	- The battery pack is not properly installed. → Install it properly. (p. 16) - Something is wrong with the battery pack. → Contact your Sony dealer or local authorized Sony service facility.
You cannot charge the battery pack.	The POWER switch is not set to OFF (CHG). → Set it to OFF (CHG). (p. 17)
Image data cannot be transferred by the USB connection.	- The USB cable was connected before installation of the USB driver was completed. → Uninstall the incorrect USB driver and re-install the USB driver (p. 162). - USBCONNECT is set to PTP when the POWER switch is set to MEMORY.* → Set it to NORMAL. (p. 183)
When you set the POWER switch to VCR or OFF (CHG), if you move your camcorder, you may hear a clatter sound from inside your camcorder (DCR-TRV25/TRV27 only).	This is because some functions use a linear mechanism. This is not a malfunction.
The cassette cannot be removed even if the cassette lid is open.	Moisture has started to condense in your camcorder (p. 202).

* Except DCR-TRV16

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) in the viewfinder, on the LCD screen or in the display window. 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:□□	• You are using a battery pack that is not an “InfoLITHIUM” battery pack. → Use an “InfoLITHIUM” battery pack. (p. 197)
C:21:□□	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize. (p. 202)
C:22:□□	• The video heads are dirty. → Clean the heads using the cleaning cassette (optional). (p. 203)
C:31:□□ C:32:□□	• 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.
E:20:□□ E:61:□□ E:62:□□	• 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)

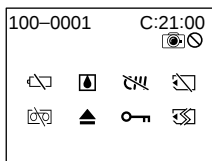
If you are unable to rectify the problem even if you try corrective actions a few times, contact your Sony dealer or local authorized Sony service facility.

Warning indicators and messages

If indicators and messages appear on the LCD screen or in the viewfinder, check the following:

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

Warning indicators



100-0001 Warning indicator as to file

Slow flashing:

- The file is corrupted.
- The file is unreadable.
- You are trying to use the MEMORY MIX function on a moving picture.*¹⁾ (p. 124)

C:21:00 Self-diagnosis display (p. 191)

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.

Moisture condensation has occurred*²⁾

Fast flashing:

- Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette compartment open (p. 202).

Warning indicator as to cassette memory*²⁾

Slow flashing:

- No cassette with cassette memory is inserted (p. 194).

Warning indicator as to “Memory Stick”*¹⁾

Slow flashing:

- No “Memory Stick” is inserted.

Fast flashing*²⁾:

- The “Memory Stick” is not readable on your camcorder (p. 105).
- The image cannot be recorded on a “Memory Stick”.

Warning indicator as to “Memory Stick” formatting*¹⁾ *²⁾

Fast flashing:

- “Memory Stick” is not formatted correctly (p. 180).
- The “Memory Stick” data is corrupted. (p. 105)

Warning indicator as to tape

Slow flashing:

- The tape is near the end.
- No tape is inserted.*²⁾
- The write-protect tab on the cassette is exposed (red)*²⁾ (p. 25).

Fast flashing:

- The cassette has run out of tape.*²⁾

You need to eject the cassette*²⁾

Slow flashing:

- The write-protect tab on the cassette is exposed (red) (p. 25).

Fast flashing:

- Moisture condensation has occurred (p. 202).
- The cassette has run out of tape.
- The self-diagnosis display function is activated (p. 191).

The still image is protected*¹⁾ *²⁾

Slow flashing:

- The still image is protected (p. 148).

Warning indicator as to recording of still image

Slow flashing:

- The still image cannot be recorded on a tape or a “Memory Stick”*¹⁾ (p. 44, 46)

*¹⁾ Except DCR-TRV16

*²⁾ You hear the melody or beep.

Warning messages

- | | |
|---------------------------------------|--|
| • CLOCK SET | Set the date and time (p. 23). |
| • FOR "InfoLITHIUM" BATTERY ONLY | Use an "InfoLITHIUM" battery pack (p. 21). |
| • CLEANING CASSETTE | The video heads are dirty. The indicator and "CLEANING CASSETTE" message appear one after another on the screen (p. 203). |
| • FULL | The cassette memory is full.* ²⁾ |
| • 16BIT | AUDIO MODE is set to 16BIT (p. 182).* ²⁾ You cannot dub new audio. |
| • REC MODE | REC MODE is set to LP (p. 182).* ²⁾ You cannot dub new audio. |
| • TAPE | There is no recorded portion on the tape.* ²⁾ You cannot dub new audio. |
| • "i.LINK" CABLE | The i.LINK cable is connected (p. 91).* ²⁾ You cannot dub new audio. |
| • FULL* ¹⁾ | The "Memory Stick" is full (p. 135).* ²⁾ |
| • * ¹⁾ | The write-protect tab on the "Memory Stick" is set to LOCK (p. 105).* ²⁾ |
| • NO FILE* ¹⁾ | No still image is recorded on the "Memory Stick" (p. 138).* ²⁾ |
| • NO MEMORY STICK* ¹⁾ | No "Memory Stick" is inserted.* ²⁾ |
| • AUDIO ERROR* ¹⁾ | You are trying to record an image with sound that cannot be recorded by your camcorder on the "Memory Stick" (p. 129).* ²⁾ |
| • NO STILL IMAGE FILE* ¹⁾ | No still image is recorded on the "Memory Stick" though you are trying to print in the 9PIC PRINT mode (p. 153). |
| • MEMORY STICK ERROR* ¹⁾ | The "Memory Stick" data is corrupted (p. 106).* ²⁾ |
| • FORMAT ERROR* ¹⁾ | The "Memory Stick" is not recognized. Check the format (p. 180).* ²⁾ |
| • DIRECTORY ERROR* ¹⁾ | There are more than two of the same directories (p. 137).* ²⁾ |
| • PLAY ERROR* ¹⁾ | The image cannot be played back. Reinsert the "Memory Stick", then play back the image again. |
| • REC ERROR* ¹⁾ | Check the input signals before retrying recording (p. 119, 131). |
| • COPY INHIBIT | The tape contains copyright control signals for copyright protection of software (p. 195).* ²⁾ |
| • NO PRINT MARK* ¹⁾ | You selected MARKED in 9PIC PRINT in the menu settings using a "Memory Stick" containing no image with a print mark (p. 153).* ²⁾ |
| • TAPE END | The tape has reached its end.* ²⁾ |
| • NO TAPE | Insert a cassette tape.* ²⁾ |
| • DELETING* ¹⁾ | You have pressed PHOTO during deleting all images on "Memory Stick." |
| • FORMATTING* ¹⁾ | You have pressed PHOTO during formatting a "Memory Stick." |
| • NOW CHARGING | Charging an external flash (optional) does not work correctly.* ²⁾ |

*¹⁾ Except DCR-TRV16

*²⁾ You hear the melody or beep.

Usable cassettes

Selecting cassette types

You can use ^{Mini}**DV** mini DV cassettes only*. You cannot use any other **8** 8 mm, **Hi8** Hi8, **D** Digital8, **VHS** VHS, **VHS-C** VHSC, **S-VHS** S-VHS, **S-VHS-C** 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 you to 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 SEARCH to go to the end of the recorded portion before you begin the next recording if you operate the following:

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

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 function on a tape recorded by one with the cassette memory function.

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.

Copyright signal

When you play back

Using any other video camera recorder, you cannot record on a 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 camcorders 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 the 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. 178).

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.

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 a malfunction of your camcorder.

After using the cassette

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

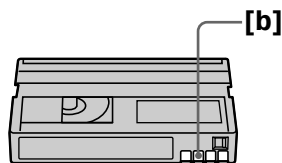
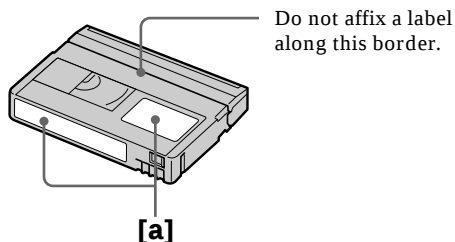
When the cassette memory function does not work

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 AC adaptor / charger (optional).

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 pack 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 close to your body 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 mode or playback is paused.
- Have spare battery packs handy for two or three times the expected recording time, and make a trial recording before the actual recording.
- Do not expose the battery pack to water. The battery pack is not water-resistant.

About the “InfoLITHIUM” battery pack

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, charge the battery pack fully 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 shooting 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.

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 mode 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 jack on this unit is an i.LINK-compliant DV input/output jack. 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.

Note

Normally, only one piece of equipment can be connected to this unit by the i.LINK cable (DV connecting 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.

About i.LINK

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.

i.LINK functions on this unit

For details on how to dub when this unit is connected to other video equipment having DV jacks, see page 76 and 91.

This unit can also be connected to other i.LINK (DV) 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).

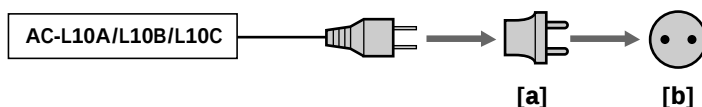
i.LINK and  are trademarks.

Using your camcorder abroad

Using your camcorder abroad

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.

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.

Additional Information

Simple setting of clock by time difference

You can easily set the clock to the local time by setting a time difference. Select WORLD TIME in the menu settings. See page 184 for more information.

Maintenance information and precautions

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 sounds 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  OPEN/EJECT switch (cassette ejection) work while the alarm indicator is on. Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette compartment 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.

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 a 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 humid 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).

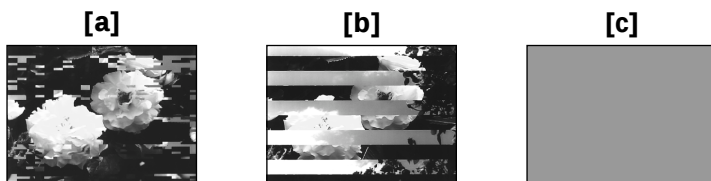
Maintenance information

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.

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.



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

Note on the videohead

The videohead suffers from wear after long use. If you cannot obtain a clear image even after using a cleaning cassette, it might be because the videohead is worn. Please contact your Sony dealer or local authorized Sony service facility to have the videohead replaced.

Cleaning the LCD screen

If fingerprints or dust make the LCD screen dirty, we recommend using the LCD Cleaning Kit (optional) to clean the LCD screen.

Charging the built-in rechargeable battery in your camcorder

The built-in rechargeable battery is installed in your camcorder to retain the date and time, etc., regardless of the setting of the POWER switch. 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 wall outlet 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 fully charged battery pack in your camcorder, and leave your camcorder with the POWER switch turned off 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 touch the LCD screen with your fingers or a sharp-pointed object.
- 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 tape 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 tape, 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 susceptible to salt such as the seaside
- Store the lens in a well-ventilated location subject to little dirt or dust.

To prevent mold from occurring, 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.

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. 2 min. and 30 seconds

Viewfinder

Electric viewfinder (color)

Image device

DCR-TRV16:

4.5 mm (1/4 type) CCD (Charge

Coupled Device)

Gross: Approx. 680 000 pixels

Effective :

Approx. 340 000 pixels

DCR-TRV18:

4.5 mm (1/4 type) CCD (Charge

Coupled Device)

Gross: Approx. 680 000 pixels

Effective (still):

Approx. 340 000 pixels

Effective (moving):

Approx. 340 000 pixels

DCR-TRV25/TRV27:

3.8 mm (1/4.7 type) CCD (Charge

Coupled Device)

Gross: Approx. 1 070 000

Effective (still):

Approx. 1 000 000 pixels

Effective (moving):

Approx. 690 000 pixels

Lens

Carl Zeiss

Combined power zoom lens

Filter diameter:

30 mm (1 3/16 in.)

10× (Optical), 120× (Digital)

DCR-TRV16/TRV18:

F = 1.7 – 2.2

DCR-TRV25/TRV27:

F = 1.8 – 2

Focal length

DCR-TRV16/TRV18:

3.3 – 33 mm (5/32 – 1 5/16 in.)

When converted to a 35 mm still

camera

In CAMERA / MEMORY (DCR-

TRV18 only) :

42 – 420 mm (1 11/16 – 16 5/8 in.)

DCR-TRV25/TRV27:

3.7 – 37 mm (5/32 – 1 1/2 in.)

When converted to a 35 mm still

camera

In CAMERA:

50 – 500 mm (2 – 19 3/4 in.)

In MEMORY:

42 – 420 mm (1 11/16 – 16 5/8 in.)

Color temperature

Auto, HOLD (Hold),  Indoor

(3 200 K),  Outdoor (5 800 K)

Minimum illumination

DCR-TRV16/TRV18:

5 lx (lux) (F 1.7)

0 lx (lux) (in the NightShot mode)*

DCR-TRV25/TRV27:

7 lx (lux) (F 1.8)

0 lx (lux) (in the NightShot mode)*

* Objects unable to be seen due to the dark can be shot with infrared lighting.

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)

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 3.5mm)

Input impedance more than

47 kΩ (kilohms)

DV input/output

4-pin connector

Headphone jack

Stereo minijack (ø 3.5 mm)

USB jack

mini-B

LANC jack

Stereo mini-minijack (ø 2.5 mm)

MIC jack

Stereo minijack (ø 3.5 mm)

LCD screen

Picture

DCR-TRV16/TRV18/TRV25:

6.2 cm (2.5 type)

50.3 × 37.4 mm (2 × 1 1/2 in.)

DCR-TRV27:

8.8 cm (3.5 type)

72.2 × 50.4 mm (2 7/8 × 2 in.)

Total dot number

123 200 (560 × 220)

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

DCR-TRV16/TRV18: 3.3 W

DCR-TRV25: 4.2 W

DCR-TRV27: 4.6 W

Viewfinder

DCR-TRV16/TRV18: 2.5 W

DCR-TRV25/TRV27: 3.4 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.)

DCR-TRV 16/TRV18:

76 × 93 × 162 mm

(3 × 3 3/4 × 6 1/2 in.)

(w/h/d)

DCR-TRV 25/TRV27:

76 × 93 × 163 mm

(3 × 3 3/4 × 6 1/2 in.)

(w/h/d)

Specifications

Mass (approx.)

DCR-TRV16: 610 g (1 lb 5 oz)

DCR-TRV18: 620 g (1 lb 5 oz)

DCR-TRV25: 640 g (1 lb 6 oz)

DCR-TRV27: 660 g (1 lb 7 oz)

main unit only

DCR-TRV16: 700 g (1 lb 8 oz)

DCR-TRV18: 710 g (1 lb 9 oz)

DCR-TRV25: 740 g (1 lb 10 oz)

DCR-TRV27: 760 g (1 lb 10 oz)

including the battery pack,

cassette DVM60 and lens cap

Supplied accessories

See page 15.

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

DCR-TRV16/TRV18: NP-FM30

Maximum output voltage

DC 8.4 V

Output voltage

DC 7.2 V

Capacity

5.0 Wh (700 mAh)

Dimensions (approx.)

38.2 × 20.5 × 55.6 mm

(1 9/16 × 13/16 × 2 1/4 in.)

(w/h/d)

Mass (approx.)

65 g (2.3 oz)

Type

Lithium ion

DCR-TRV25/TRV27: NP-FM50

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” (except DCR- TRV16)

Memory

Flash memory

8 MB: MSA-8A

Operating voltage

2.7 – 3.6V

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)

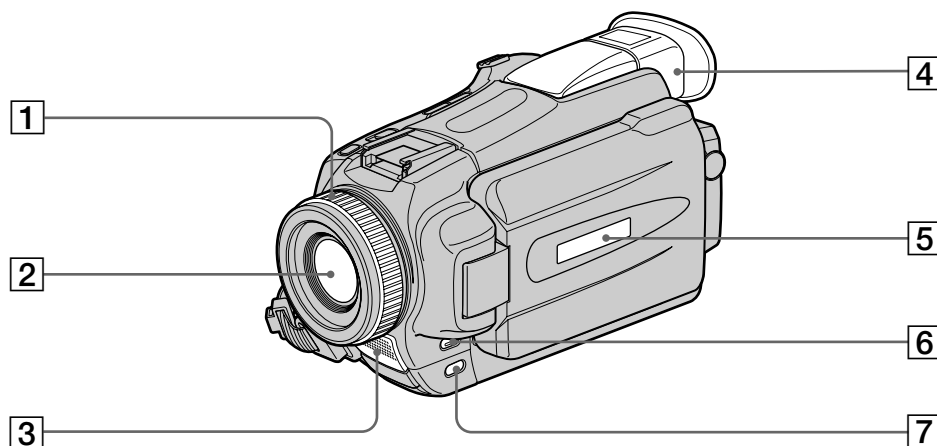
Mass (approx.)

4 g (0.14 oz)

Design and specifications are subject to change without notice.

Identifying parts and controls

Camcorder



1 Focus ring (p. 61)

2 Lens

3 Microphone

4 Viewfinder (p. 29)

5 Display window (p. 17)

6 FOCUS/INFINITY button (p. 61)

7 FADER button (p. 52)

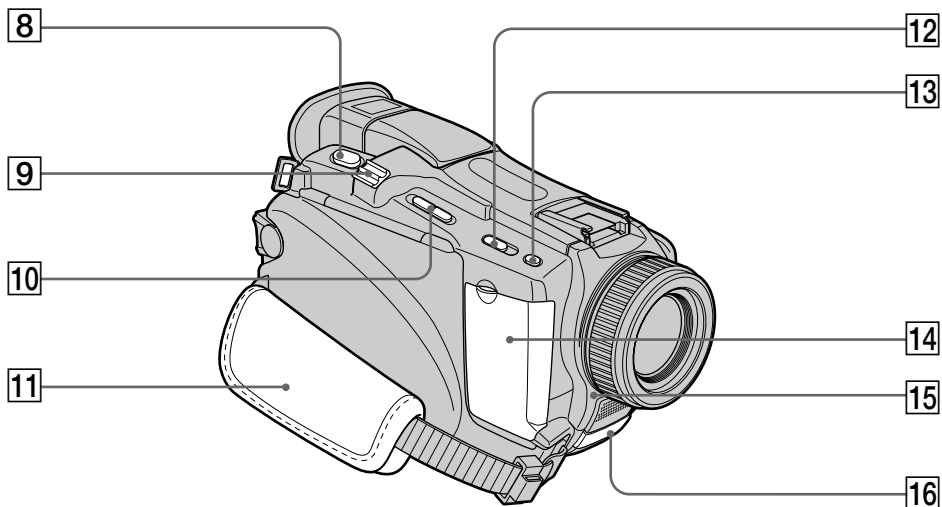
Note on the Carl Zeiss lens

Your camcorder is equipped with a Carl Zeiss lens which can reproduce fine images. The lens for your camcorder was developed jointly by Carl Zeiss, in Germany, and Sony Corporation. It adopts the MTF* measurement system for video camera and offers a quality as the Carl Zeiss lens.

* MTF stands for Modulation Transfer Function.

The value number indicates the amount of light of a subject coming into the lens.

Identifying parts and controls



8 PHOTO button (p. 43)

9 Power zoom lever (p. 30)

10 EDITSEARCH button (p. 37)

11 Grip strap

12 NIGHTSHOT switch (p. 34)

13 SUPER NS/COLOR SLOW S button
(p. 34)

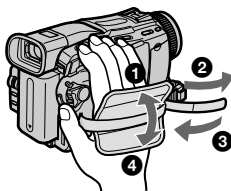
14 Jack cover

15 Camera recording lamp (p. 26, 184)

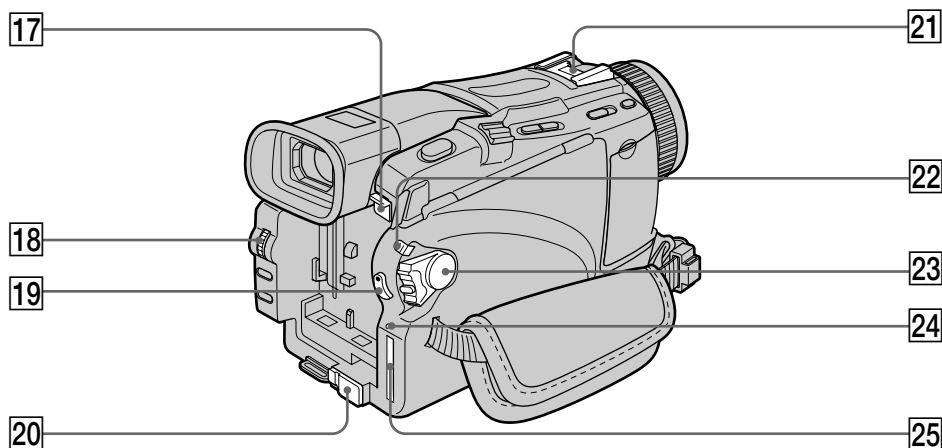
16 Remote sensor/Infrared rays emitter
(p. 34, 81)

Fastening the grip strap

Fasten the grip strap firmly.



Identifying parts and controls



17 BATT release button (p. 16)

18 SEL/PUSH EXEC dial (p. 23)

19 START/STOP button (p. 26)

20 DC IN jack cover

21 Intelligent accessory shoe (p. 94)

22 LOCK switch* (p. 26)

23 POWER switch (p. 17)

24 Access lamp* (p. 106)

25 “Memory Stick” slot* (p. 106)

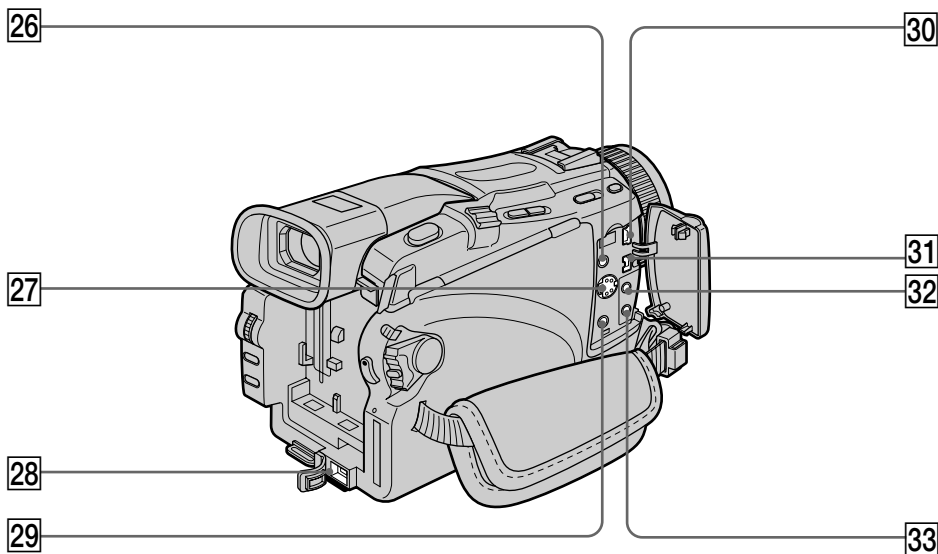


Notes on the intelligent accessory shoe

- The intelligent accessory shoe supplies power to optional accessories such as a video light, microphone or printer.*
- 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.

* Except DCR-TRV16

Identifying parts and controls



26 **(LANC) control jack (blue)**

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

27 **S VIDEO jack** (p. 75)

28 **DC IN jack** (p. 17)

29 **AUDIO/VIDEO jack (black)** (p. 75, 95)

30 **(USB) jack**

31 **DV IN/OUT jack** (p. 76)

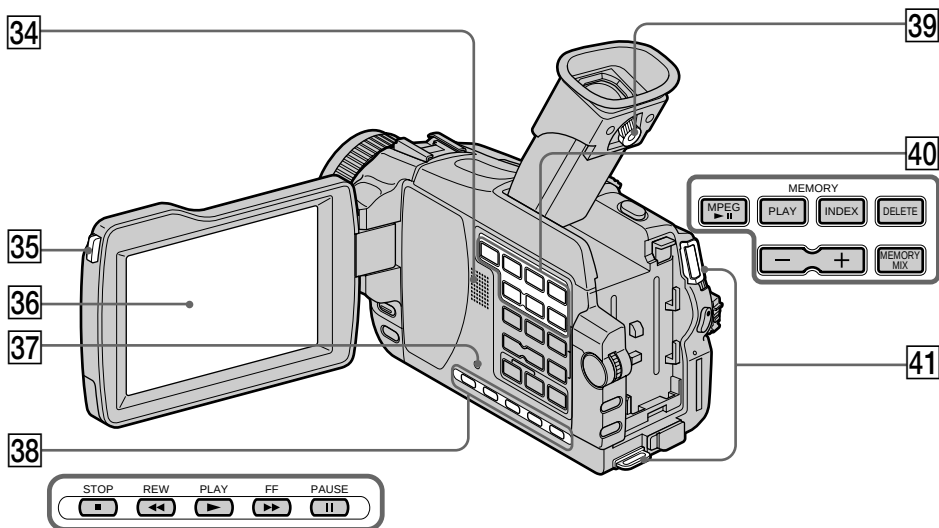
32 **(headphones) jack (green)**

When you use headphones, the speaker on your camcorder is silent.

33 **MIC jack (PLUG IN POWER) (red)**

Connect an external microphone (optional). This jack also accepts a “plug-in-power” microphone.

Identifying parts and controls



34 Speaker

35 OPEN button (p. 26)

36 LCD screen (p. 26)

37 RESET button (p. 190)

38 Video control buttons (p. 40)

- STOP (stop)
- ◀◀ REW (rewind)
- ▶▶ PLAY (playback)
- ▶▶ FF (fastforward)
- || PAUSE (pause)

39 Viewfinder lens adjustment lever
(p. 29)

40 MEMORY operation buttons* (p. 121)

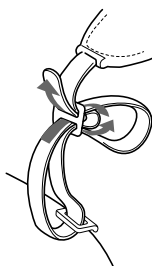
- MPEG ▶|| button
- MEMORY PLAY button
- MEMORY INDEX button
- MEMORY DELETE button
- MEMORY -/+ buttons
- MEMORY MIX button

41 Hooks for sholder strap

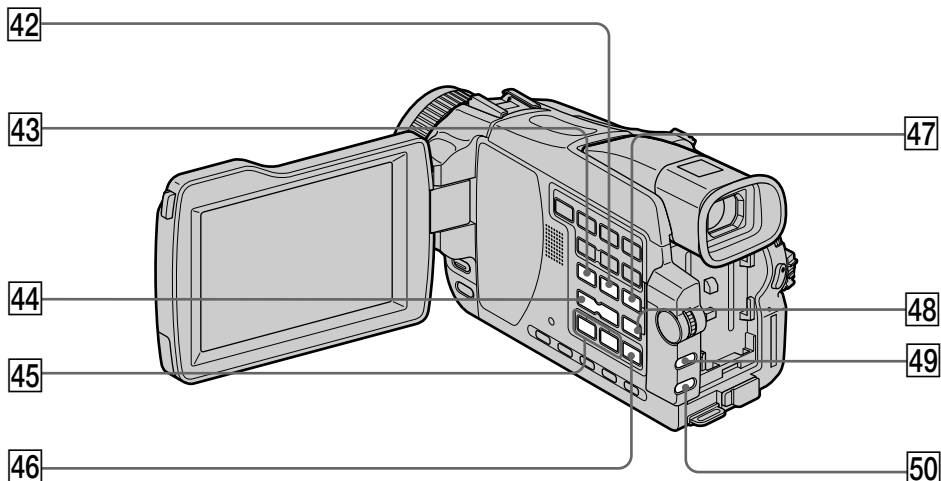
* Except DCR-TRV16

Attaching the shoulder strap

Attach the shoulder strap supplied with your camcorder to the hooks for the shoulder strap.



Identifying parts and controls



42 ENDSEARCH button (p. 37)

43 DISPLAY button (p. 39)

44 VOLUME buttons (p. 38)

45 REC (record) button (p. 89, 91, 93, 143)

46 AUDIO DUB button (p. 96)

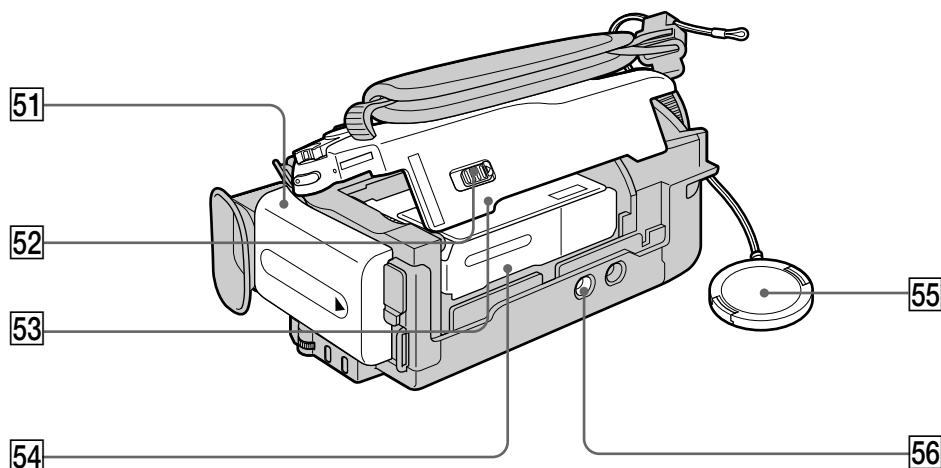
47 PB ZOOM button (p. 67, 145)

48 MENU button (p. 175)

49 EXPOSURE button (p. 60)

50 BACK LIGHT button (p. 33)

Identifying parts and controls



51 Battery pack (p. 16)

52  OPEN/EJECT lever (p. 25)

53 Cassette lid

54 Cassette compartment

55 Lens cap (p. 26)

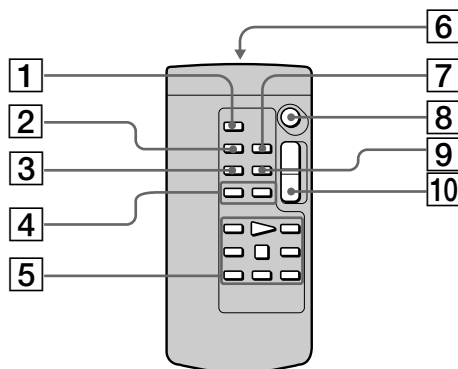
56 Tripod receptacle

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.

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. 43)

2 DISPLAY button (p. 39)

3 SEARCH MODE button (p. 70)

4 I◀◀/▶▶I buttons (p. 70)

5 Tape transport buttons (p. 40)

6 Transmitter

Point toward the remote sensor to control the camcorder after turning on the camcorder.

7 ZERO SET MEMORY button (p. 69)

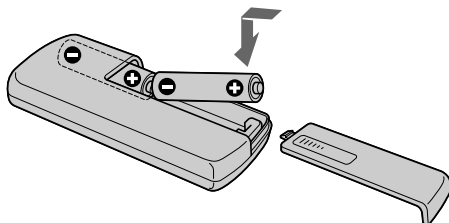
8 START/STOP button (p. 26)

9 DATA CODE button (p. 39)

10 Power zoom button (p. 30)

To prepare the Remote Commander

Insert 2 size AA (R6) batteries by matching the + and – on the batteries to the + and – in the battery compartment.



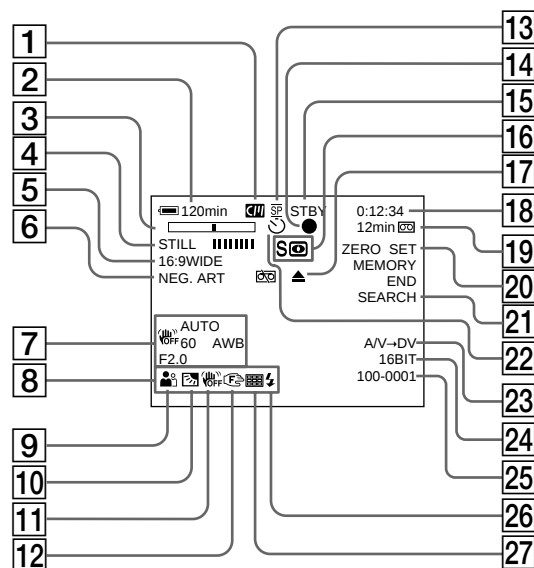
Notes on the Remote Commander

- 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.

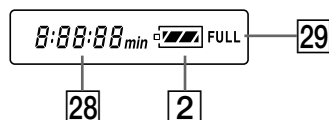
Identifying parts and controls

Operation indicators

LCD screen and viewfinder



Display window



- 1 Cassette memory (p. 13, 194)
- 2 Remaining battery time (p. 32)
- 3 Zoom (p. 30)/Exposure (p. 60)/Data file name*¹⁾ (p. 105)
- 4 Digital effect (p. 55, 66)/MEMORY MIX*¹⁾ (p. 120)/FADER (p. 51)
- 5 16:9WIDE (p. 49)
- 6 Picture effect (p. 54, 65)
- 7 Data code (p. 39)
- 8 Volume (p. 38)/Date (p. 32)/Time (p. 32)
- 9 PROGRAM AE (p. 58)
- 10 Backlight (p. 33)
- 11 SteadyShot off (p. 177)
- 12 Manual focus/Infinity (p. 61)
- 13 Recording mode (p. 32)
- 14 AE/AF lock indicator (green)*¹⁾
- 15 STBY/REC (p. 32)/Video control mode/Image size*¹⁾ (p. 109)/Image quality mode*¹⁾ (p. 107)
- 16 NIGHTSHOT (p. 34)/SUPER NIGHTSHOT (p. 34)/COLOR SLOW SHUTTER (p. 34)
- 17 Warning (p. 192)
- 18 Tape counter (p. 32)/Time code (p. 32)/Self-diagnosis (p. 191)/Tape photo (p. 46) / Memory photo*¹⁾ (p. 112)/Image number*¹⁾ (p. 138, 142)
- 19 Remaining tape (p. 32)/Memory playback*¹⁾ (p. 138, 142)
- 20 ZERO SET MEMORY (p. 69)
- 21 END SEARCH (p. 37)
- 22 Self-timer*¹⁾ (p. 36, 45, 116, 127)
- 23 A/V → DV (p. 174)/DV IN (p. 91)

*¹⁾ Except DCR-TRV16

Identifying parts and controls

- 24 Audio mode** (p. 182)
- 25 Data file name*¹⁾ *²⁾** (p. 124)/**Time**
(p. 23)
- 26 Video flash ready**
This indicator appears when you use the video flash light (optional).
- 27 Continuous mode*¹⁾** (p. 114)
- 28 Remaining battery time** (p. 17)
/Tape counter (p. 32)/**Memory counter*¹⁾**/Time code (p. 32)/**Self-diagnosis** (p. 191)
- 29 FULL charge** (p. 17)

*¹⁾ Except DCR-TRV16

*²⁾ This indicator appears when the MEMORY MIX functions work.

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