DSC-P5

SERVICE MANUAL

Level 2

Self Diagnosis
Supported model

Ver 1.5 2003. 01

Cyber-shot
Digital Still Camera

InfoLITHIUM **C**

MEMORY STICK

US Model
Canadian Model
AEP Model
UK Model
E Model
Hong Kong Model
Australian Model
Chinese Model
Korea Model
Tourist Model
Japanese Model

This service manual contains information for Japanese model as well.

> **When the machine needs to be repaired, please refer to page 7 to discriminate the type of IC.**

On the DD-163, SY-69 boards

This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the DD-163, SY-69 boards.
Therefore, schematic diagram, printed wiring board and electrical parts list of the DD-163, SY-69 boards are not shown.
The following pages are not shown.

SY-69 board

DD-163 board

The above-described information is shown in service manual Level 3.

SPECIFICATIONS

System
Image device
8.93 mm (1/1.8 type) color CCD
Effective pixels number of camera
Approx. 3 207 000 pixels
Lens
3× zoom lens
f = 8 – 24 mm
(11/32 – 31/32 inches)
(39 – 117 mm (1 9/10 – 4 5/8 inches) when converted to a 35 mm still camera)
F = 2.8 – 5.6
Exposure control
Automatic exposure
White balance
Automatic, Hold, Indoor, Outdoor

Data system
Movie: MPEG1
Still: JPEG, GIF (in TEXT mode, Clip Motion), TIFF
Audio with still image: MPEG1 (Monaural)
Recording medium
"Memory Stick"
Flash
Recommended recording distance (ISO set to AUTO):
W side: 0.5 m to 2.8 m (19 3/4 inches to 9 feet 2 1/4 inches)
T side: 0.6 m to 1.4 m (19 3/4 inches to 4 feet 7 1/8 inches)

Output connector
A/V OUT (Monaural)
Minijack
Video: 1 Vp-p, 75 Ω, unbalanced, sync negative

Audio: 327 mV (at a 47 kΩ load)
Output impedance: 2.2 kΩ
USB jack
mini-B

LCD screen
Used LCD panel
3.8 cm (1.5 type) TFT (Thin Film Transistor active matrix) drive
Total number of dots
123 200 (560×220) dots

General
Used battery pack
NP-FC10
Power requirements
3.6 V

Power consumption (during recording)
2.4 W/2.2 W (LCD BACKLIGHT: BRIGHT/ NORMAL)
1.5 W (LCD BACKLIGHT: OFF)
Operation temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to +60°C
(–4°F to +140°F)
Dimensions
112.5×53.8×36.2 mm
(4 1/2×2 1/8×1 7/16 inches)
(w/h/d) (excluding maximum protrusions)

DIGITAL STILL CAMERA

SONY

DSC-P5

Mass
Approx. 214 g (7.5 oz)
(including battery pack NP-
FC10, "Memory Stick" and
wrist strap, etc.)
Built-in microphone
Electret condenser microphone
Built-in speaker
Dynamic speaker

AC-LS1A
AC power adaptor
Power requirements
100 to 240 V AC, 50/60 Hz
Rated output voltage
DC 4.2 V, 1.5 A in operating
mode
Operation temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to +60°C
(–4°F to +140°F)
Maximum dimensions
105×36×56 mm
(4 1/4×1 7/16×2 1/4 inches)
(w/h/d) (excluding maximum
protrusions)
Mass
Approx. 180 g (6.4 oz)

NP-FC10 battery pack
Used battery
Lithium ion battery
Maximum voltage
DC 4.2 V
Nominal voltage
DC 3.6 V
Capacity
2.4 Wh (675 mAh)

Accessories
A/V connecting cable (1)
NP-FC10 battery pack (1)
AC-LS1A AC power adaptor
(1)
Power cord (1)
USB cable (1)
Wrist strap (1)
"Memory Stick" (8 MB) (1)
CD-ROM (USB driver
SPVD-004) (1)
Operating Instructions (1)

Design and specifications are
subject to change without
notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED
LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS
AND IN THE PARTS LIST ARE CRITICAL TO SAFE
OPERATION. REPLACE THESE COMPONENTS WITH
SONY PARTS WHOSE PART NUMBERS APPEAR AS
SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUB-
LISHED BY SONY.

**ATTENTION AU COMPOSANT AYANT RAPPORT
À LA SÉCURITÉ!**

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠
SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE
DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ
DE FONCTIONNEMENT. NE REMPLACER CES COM-
POSANTS QUE PAR DES PIÈCES SONY DONT LES
NUMÉROS SONT DONNÉS DANS CE MANUEL OU
DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following
safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-sol-
   dered connections. Check the entire board surface for solder
   splashes and bridges.

2. Check the interboard wiring to ensure that no wires are
   "pinched" or contact high-wattage resistors.

3. Look for unauthorized replacement parts, particularly transis-
   tors, that were installed during a previous repair. Point them
   out to the customer and recommend their replacement.

4. Look for parts which, though functioning, show obvious signs
   of deterioration. Point them out to the customer and recom-
   mend their replacement.

5. Check the B+ voltage to see it is at the values specified.

6. Flexible Circuit Board Repairing

   • Keep the temperature of the soldering iron around 270 ˚C
     during repairing.

   • Do not touch the soldering iron on the same conductor of
     the circuit board (within 3 times).

   • Be careful not to apply force on the conductor when sol-
     dering or unsoldering.

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6.   REPAIR PARTS LIST

∗ The color reproduction frame is shown on page 117.
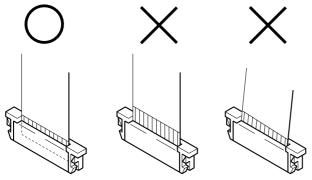
SERVICE NOTE
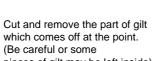
• NOTE FOR REPAIR

Make sure that the flat cable and flexible board are not cracked of bent at the terminal.
Do not insert the cable insufficiently nor crookedly.
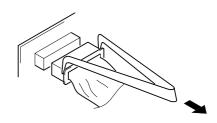
Cut and remove the part of gilt which comes off at the point.
(Be careful or some pieces of gilt may be left inside)

When remove a connector, don't pull at wire of connector.
It is possible that a wire is snapped.
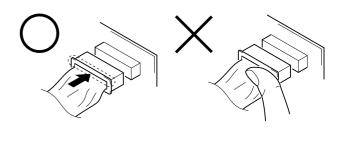
When installing a connector, don't press down at wire of connector.
It is possible that a wire is snapped.

[Discharging of the ST-67 board's charging capacitor (C008)]
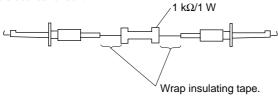
The charging capacitor (C008) of the ST-67 board is charged up to the maximum 300 V potential.
There is a danger of electric shock by this high voltage when the battery is handled by hand. The electric shock is caused by the charged voltage which is kept without discharging when the main power of the unit is simply turned off. Therefore, the remaining voltage must be discharged as described below.

Preparing the Short Jig
To preparing the short jig, a small clip is attached to each end of a resistor of 1 kΩ /1 W (1-215-869-11).
Wrap insulating tape fully around the leads of the resistor to prevent electrical shock.
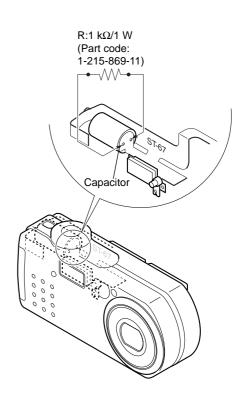
1 kΩ/1 W

Wrap insulating tape.

Discharging the Capacitor
Short-circuit between the positive and the negative terminals of charged capacitor with the short jig about 10 seconds.
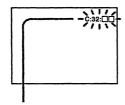
R:1 kΩ/1 W
(Part code: 1-215-869-11)

ST-67

Capacitor

[Description on Self-diagnosis Display]

Self-diagnosis display

The camera has a self-diagnosis display. This function displays the camera condition with five-digits (a combination of a letter and figures) on the LCD screen. If this occurs check the following code chart. The five-digits display informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.

Self-diagnosis display

• C: □□: □□
 You can reverse the camera malfunction yourself. (However, contact your Sony dealer or local authorized Sony service facility when you cannot recover from the camera malfunction.)

• E: □□: □□
 Contact your Sony dealer or local authorized Sony service facility.

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:□□	Turn the power off and on again.	Trouble with hardware.	SYSTEM ERROR
C:13:□□	Format the "Memory stick".	Unformatted memory stick is inserted.	FORMAT ERROR
	Insert a new "Memory Stick".	Memory stick is broken.	MEMORY STICK ERROR
E:61:□□	Checking of lens drive circuit.	When failed in the focus and zoom initialization.	—
E:91:□□	Checking of flash unit or replacement of flash unit.	Abnormality when flash is being charged.	—

[Precaution on Replacing the Lens Block or the SY-69 Board]

The DSC-P5 uses the position sensor to detect the zoom position. Accordingly, the zoom position will vary if the position data changes due to the replacement of the lens block or the SY-69 board, thus causing the lens block to collide against the mechanism end when the power is turned off.
Though the position data is calibrated at the "Flange Back Adjustment", add the following work when making an adjustment at the replacement of lens block to prevent a collision of lens block.

When Replacing the Lens Block

1) With current lens block assembled, turn the power on, and set the bit value of Bit0 on Page:9, Address:65 to "0" using the adjusting remote commander, then turn the power off.
2) Replace the lens block with a new one, turn the power on, and perform the "Flange Back Adjustment".
 Thus, new position data will be written.
3) After the "Flange Back Adjustment", return the bit value of Bit0 on Page:9, Address:65 to "1" using the adjusting remote commander.

When Replacing the SY-69 Board

1) Replace the SY-69 board with a new one, set the mode dial to "PLAY", turn the power on, and set the bit value of Bit0 on Page:9, Address:65 to "0" using the adjusting remote commander, then turn the power off.
2) Set the mode dial to "CAMERA", turn the power on, and perform the "Flange Back Adjustment".
 Thus, new position data will be written.
3) After the "Flange Back Adjustment", return the bit value of Bit0 on Page:9, Address:65 to "1" using the adjusting remote commander.

[IC type check]
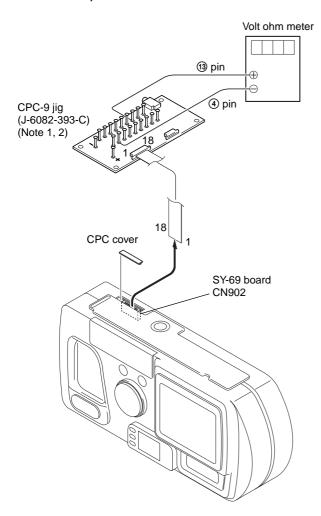
By measuring the resistor value between Pin ⑬ of CN902 and Pin ④ of CN902 on SY-69 board, the type of IC801 (LCD drive) can be discriminated.

SY-69 board CN902

Resistor value	IC type
15 kΩ	AN12511A
22 kΩ	CXA8116R

Note 1: Don't use the 12 pin flexible board of CPC-9 jig.
It causes damage to the unit.
Note 2: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjustment remote commander.

Differences of mounted parts

Different types of IC801 (LCD drive) have different parts mounted on SY-69 board.
When the current IC is replaced to the different type, also replace the following parts.

IC TYPE Ref. No.	AN12511A	CXA8116R
C806	✕✕	2.2u
C835	1u	✕✕
IC801	AN12511A-BB	CXA8116R-T4
R802	0	22k
R803	2200	10k
R804	✕✕	100
R805	✕✕	100
R806	✕✕	100
R807	✕✕	100
R808	0	22k
R811	✕✕	33k
R812	✕✕	47k
R813	✕✕	33k
R814	✕✕	47k
R816	27k	39k
R817	15k	39k
R819	47k	✕✕
R820	10k	✕✕
R821	15k	22k
R824	22k	47k
R826	✕✕	100k
R899	✕✕	0

WARNING

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

For the Customers in the U.S.A.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

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

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 temperature above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.

If you have any questions about this product, you may call:
Sony Customer Information Services 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.:	DSC-P5
Responsible Party:	Sony Electronics Inc.
Address:	680 Kinderkamack Road, Oradell, NJ 07649 USA
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.

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.

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The supplied interface cable must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the Customers in the U.S.A. and Canada

DISPOSAL OF LITHIUM ION BATTERY.
LITHIUM ION BATTERY.
DISPOSE OF PROPERLY.

You can return your unwanted lithium ion batteries to your nearest Sony Service Center or Factory Service Center.

Note:
In some areas the disposal of lithium ion batteries in household or business trash may be prohibited.

For the Sony Service Center nearest you call 1-800-222-SONY (United States only)
For the Sony Factory Service Center nearest you call 416-499-SONY (Canada only)

Caution:
Do not handle damaged or leaking lithium ion battery.

For the Customers in Canada

CAUTION
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

Notice for the Customers in the United Kingdom

A moulded plug complying with BS1363 is fitted to this equipment for your safety and convenience.
Should the fuse in the plug supplied need to be replaced, a 5AMP fuse approved by ASTA or BSI to BS1362, (i.e., marked with ⊛ or ♡ mark) must be used.
If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the

fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the cover, please contact your nearest Sony service station.

For the Customers in Germany

Directive: EMC Directive 89/336/EEC, 92/31/EEC
This equipment complies with the EMC regulations when used under the following circumstances:
• Residential area
• Business district
• Light-industry district
(This equipment complies with the EMC standard regulations EN55022 Class B.)

Attention for the Customers in Europe

This product has been tested and found compliant with the limits sets out on the EMC Directive for using connection cables shorter than 3 meters.

The electromagnetic fields at the specific frequencies may influence the picture and sound of this camera.

"Memory Stick" and Battery Pack

CE   N50

For the Customers in the U.S.A.
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.

3

For the Customers in Canada
THIS CLASS B DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.

Be sure to read the following before using your camera

Trial recording
Before you record one-time events, you may want to make a trial recording to make sure that the camera is working correctly.

No compensation for contents of the recording
Contents of the recording cannot be compensated for if recording or playback is not possible due to a malfunction of your camera or recording medium, etc.

Notes on image data compatibility
• This camera conforms with the Design rule for Camera File system universal standard established by the JEITA (Japan Electronics and Information Technology Industries Association). You cannot play back on your camera still images recorded on other equipment (DCR-TRV890E/ TRV900/TRV900E, DSC-D700, DSC-D770) that does not conform with this universal standard. (These models are not sold in some areas.)
• Playback of images recorded with your camera on other equipment and playback of images recorded or edited with other equipment on your camera are not guaranteed.

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

Do not shake or strike the camera
In addition to malfunctions and inability to record images, this may render the "Memory Stick" unusable or image data breakdown, damage or loss may occur.

Do not aim the camera at the sun or other bright light
This may cause irrecoverable damage to your eyes.

LCD screen, LCD finder (only models with a finder) and lens
• The LCD screen and the LCD 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 LCD finder. These points are normal in the manufacturing process and do not affect the recording in any way.
• 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.

Do not get the camera wet
When taking pictures outdoors in the rain or under similar conditions, be careful not to get the camera wet. If moisture condensation occurs, refer to page 82 and follow the instructions on how to remove it before using the camera.

Back up recommendation
To avoid the potential risk of data loss, always copy (back up) data to a disk.

Handling of the movable lens
This camera uses a movable lens. Be careful not to strike or apply excessive force to the lens portion.
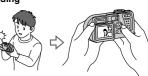
When the camera is used for long periods
Note that the camera body may become hot.

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Introduction

Check images after recording

Recording still images:
page 19
Playing back still images:
page 28
Deleting images (DELETE):
page 71

Capture images with your computer

You can copy images onto your computer and view and modify images or attach images to e-mail on your computer using the supplied USB cable and application software.
Viewing images using a computer: page 31
Recording still images for e-mail (E-MAIL): page 55

Record moving pictures (MPEG Movie or Clip Motion)

The digital still camera can record a moving picture with audio (MPEG MOVIE):
page 26
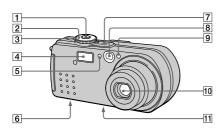
Select from various recording modes

Creating Clip Motion Files: page 59
Adding audio files to still images (VOICE): page 56
Recording text documents (TEXT): page 57
Recording still images as uncompressed files (TIFF): page 58

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Identifying the parts

See the pages in parentheses for details of operation.
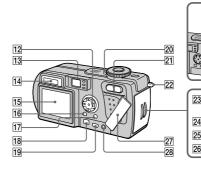
① **Shutter button (19, 27)**

② **Mode dial (18)**

  ☽ : To record in TWILIGHT mode

  📷 : To record still images, VOICE mode audio data

  ▶ : To playback or edit images

  🎬 : To record moving images or Clip Motion images

  SET UP: To set the setup items (80)

③ **POWER button (15)**

④ **Flash (24)**

⑤ **Photocell window for flash**

  Do not block while recording with the flash.

⑥ **Speaker**

⑦ **Built-in microphone**

  Do not touch while recording.

⑧ **Finder window**

⑨ **Self-timer (24, 27)/ AF illuminator (25)**

⑩ **Lens**

⑪ **Tripod receptacle (bottom surface)**

  Use a tripod with a screw length of less than 5.5 mm (7/32 inch). You will be unable to firmly secure the camera to tripods having longer screws, and may damage the camera.

Attaching the strap

⑫ **Control button (18, 46)**

⑬ **Finder (21)**
   Self-timer/recording lamp (red)
   AE/AF lock lamp (green)
   ⚡ Flash charge lamp (orange) (22)

⑭ **Display window (95)**

⑮ **LCD screen (96)**

⑯ **DSPL/LCD ON/OFF button (21)**

⑰ **MENU button (18, 46)**

⑱ **DC IN jack (11, 14)**

⑲ **Ψ (USB) jack (36)**

⑳ **POWER lamp (15)**

㉑ **Zoom button (for recording) (23)**
   INDEX/zoom button (for playback) (67)

㉒ **Hook for wrist strap**

㉓ **RESET button (86)**

㉔ **Battery/"Memory Stick" cover**

㉕ **Battery eject lever (10)**

㉖ **Access lamp (17)**

㉗ **Jack cover**

㉘ **A/V OUT jack (70)**
   Audio output is monaural.
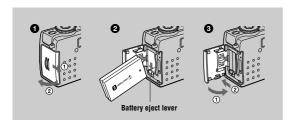
Preparing the power supply

Installing the battery pack

Your camera operates only with the "InfoLITHIUM" NP-FC10 battery pack* (C type) (supplied). You cannot use any other battery pack. See page 84 for more information about the "InfoLITHIUM" battery pack.

Battery eject lever

❶ **Open the battery/"Memory Stick" cover.**
   Slide the cover in the direction of the arrow.

❷ **Install the battery pack.**
   Insert the battery pack with the ▲ mark facing toward the battery compartment as illustrated.

❸ **Close the battery/"Memory Stick" cover.**

To remove the battery pack

Open the battery/"Memory Stick" cover. Slide the battery eject lever downward, and remove the battery pack.
Be careful not to drop the battery pack when removing it.
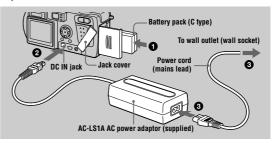
* What is "InfoLITHIUM"?

"InfoLITHIUM" is a lithium ion battery pack which can exchange information such as battery consumption with compatible electronic equipment. This unit is compatible with the "InfoLITHIUM" battery pack (C type). "InfoLITHIUM" C type battery packs have the ⓘ InfoLITHIUM Ⓒ mark. "InfoLITHIUM" is a trademark of Sony Corporation.

Charging the battery pack

You cannot charge the battery pack while your camera is turned on. Be sure to turn off your camera.

Battery pack (C type)

To wall outlet (wall socket)

DC IN jack   **Jack cover**   **Power cord (mains lead)**

AC-LS1A AC power adaptor (supplied)

❶ **Insert the battery pack into your camera.**

❷ **Open the jack cover and connect the DC connecting cable to the DC IN jack of your camera with the ▲ mark facing up.**

❸ **Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (wall socket).**
   The battery indicator ⏻▱ in the display window flashes when charging begins. When the battery indicator stops flashing, **normal charge** is completed. For **full charge**, which allows you to use the battery longer than usual, leave the battery pack inserted for about one hour after normal charge is completed until the battery remaining indicator and "Full" is displayed alternately in the display window.

After charging the battery pack

Disconnect the AC power adaptor from the DC IN jack of your camera.

Battery remaining indicator

The LCD screen on the camera shows the remaining time for which you can still record or play back images. When charging, this shows an indication of the continuous recording time (with LCD screen ON). This indication may not be entirely accurate depending on the conditions of use and the operating environment.

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).

NP-FC10 battery pack

When you record images in an extremely cold location or using the LCD screen, the operating time becomes short. When using the camera in an extremely cold location, place the battery pack in your pocket or other place to keep it warm, then insert the battery pack into the camera just before recording. When using a pocket heater, take care not to let the heater directly contact the battery.

Power save mode

When [POWER SAVE] in the SET UP screen is set to [ON], the battery life will be extended when recording still images. The factory setting is [OFF] (page 81).

When [POWER SAVE] is [ON] (page 81)

- The LCD screen turns off while the flash is being charged (while the ⚡ flash charge lamp is flashing*). When the camera is turned on for the first time after being left unused for a long period of time, the flash will take longer than usual to charge.
  *If the charging time is short, the ⚡ flash charge lamp may not light.
- The time from when you press the shutter button until the image is recorded is slightly longer than when [POWER SAVE] is [OFF].
- The focus is only aligned when the shutter button is pressed halfway, even when auto focusing is activated.

Charging time

Battery pack	Full charge (min.)	Normal charge (min.)
NP-FC10 (supplied)	Approx. 150	Approx. 90

Approximate time to charge a completely discharged battery pack using the AC-LS1A AC power adaptor at a temperature of 25°C (77°F).

Battery life and number of images that can be recorded/played back

Still image recording*

	NP-FC10 (supplied)	
	Battery life (min.)	Number of images
LCD screen ON	Approx. 60	Approx. 1200
LCD screen OFF	Approx. 90	Approx. 1800

Approximate battery life and number of images that can be recorded with a fully charged battery pack at a temperature of 25°C (77°F), 640×480 image size, standard picture quality and in NORMAL recording mode.

* POWER SAVE mode OFF and recording at about 4-second intervals

Still image playback**

	NP-FC10 (supplied)	
	Battery life (min.)	Number of images
LCD screen ON	Approx. 100	Approx. 2000

Approximate battery life and number of images that can be played back with a fully charged battery pack at a temperature of 25°C (77°F), 640×480 image size, standard picture quality and in NORMAL recording mode.
** Playing back single images in order at about 3-second intervals

Moving image recording

	NP-FC10 (supplied)	
	LCD screen OFF (min.)	LCD screen ON (min.)
Continuous recording	Approx. 90	Approx. 60

Approximate recording time with a fully charged battery pack at a temperature of 25°C (77°F) and 160×112 image size.
The recording time and playback time with a normal charge are roughly 90% of what they would be when the battery is fully charged.

⬛Notes
- The battery life and number of images will be decreased if you use your camera at low temperatures, use the flash, repeatedly turn the power on/off or use the zoom.
- When LCD BACKLIGHT is set to BRIGHT, the battery life and number of images will be decreased.
- The numbers of images shown on tables above are a guide. The actual numbers may be less depending on conditions.
- The capacity of the "Memory Stick" is limited. The above figures are a for guide when you continuously record/play back while replacing the "Memory Stick."
- "----" appears in the display window until the battery remaining time is calculated.
- During charging, the indicators in the display window may not appear correctly or may flash in the following cases.
  — When the battery pack is not installed correctly.
  — When the AC power adaptor is disconnected.
  — When the battery pack has malfunctioned.
- When you turn the LCD screen on and off, it takes about one minute for the correct battery remaining time to appear.
- If sufficient battery remaining time is indicated but the power runs out soon, fully charge the battery so that the correct battery remaining time appears.
- Do not short the DC plug on the AC power adaptor with a piece of metal, and do not use the DC plug if it is dirty. Use a dry cotton swab to remove any dirt on the DC plug. Using a dirty plug or shorting the plug can result in improper charging or damage to the camera.
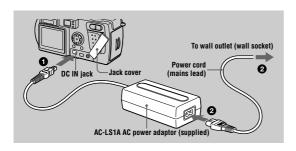
Using the AC power adaptor

To wall outlet (wall socket)
Power cord (mains lead)
DC IN jack   Jack cover
AC-LS1A AC power adaptor (supplied)

❶ **Open the jack cover and connect the DC connecting cable to the DC IN jack of your camera with the ▲ mark facing up.**

❷ **Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (wall socket).**

Using your camera abroad
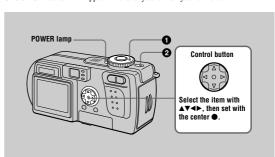
For details, see page 85.

When using the AC power adaptor

Be sure to use it near the wall outlet (wall socket). If a malfunction occurs, disconnect the plug from the wall outlet (wall socket) at once.

Setting the date and time

When you first use your camera, set the date and time. If these are not set, the CLOCK SET screen will appear whenever you turn on your camera.

POWER lamp
Control button
Select the item with ▲▼◄►, then set with the center ●.

❶ **Set the mode dial to 📷, ☽, ▶ or 🎬.**

❷ **Press and hold down the POWER button for approximately one second to turn on the power.**
The POWER lamp (green) lights up.
The CLOCK SET screen appears on the LCD screen.

POWER
ON/OFF(CHG)

❸ **Select the desired date display format with ▲/▼ on the control button, then press the center ●.**
Select from [Y/M/D] (year/month/day), [M/D/Y] (month/day/year) or [D/M/Y] (day/month/year).

❹ **Select the year, month, day, hour or minute item you want to set with ◄/► on the control button.**
The item to be set is indicated with ▲/▼.

DSC-P5

5 Set the numeric value with ▲/▼ on the control button, then press the center ● to enter it.
After entering the number, ▲/▼ moves to the next item.
If you selected [D/M/Y] in step **3**, set the time on a 24-hour cycle.

6 Select [OK] with ▶ on the control button, then press the center ● at the desired moment to begin clock movement.
The date and time are entered.

To cancel the date and time setting
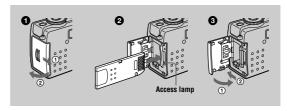
Select [CANCEL] with ▲/▼/◀/▶ on the control button, then press the center ●.

To change the date and time

Set the mode dial to SET UP (page 80) and change the date and time on the CLOCK SET screen in ▇ (SETUP 1).

■Note
If the rechargeable button battery is ever fully discharged (page 83), the CLOCK SET screen will appear again. When this happens, reset the date and time, by starting from step **3** above.

Inserting the "Memory Stick"

Access lamp

1 Open the battery/"Memory Stick" cover.
Slide the cover in the direction of the arrow.

2 Insert the "Memory Stick."
Insert the "Memory Stick" with the ▶ mark facing toward the battery compartment as illustrated until it clicks.

3 Close the battery/"Memory Stick" cover.

Removing the "Memory Stick"

Open the battery/"Memory Stick" cover, then press the "Memory Stick" once lightly.

■Notes
• Insert the "Memory Stick" firmly until it clicks, otherwise a message such as "MEMORY STICK ERROR" will be displayed.
• When the access lamp is lit up, it means data is being read or written. Never remove the "Memory Stick" or turn off the power at this time, as the data may become damaged.
• You cannot record or edit images on a "Memory Stick" if the erasure prevention switch is set to the LOCK position.

Connector

Erasure prevention switch

Label space

* The position and shape of the erasure prevention switch may differ depending on the types of "Memory Stick" used.

Basic operations

How to use the mode dial

The mode dial switches the function which is used for recording, playback, or editing. Set the dial as follows before starting to operate your camera.

☽ : To record still images in TWILIGHT mode (pages 19, 54)
◌ : To record still images, VOICE mode audio data (pages 19, 56)
▶ : To play back or edit images (pages 28, 29, 71)
▦ : To record moving images or Clip Motion images (pages 26, 59)
SET UP: To set the setup items (page 80)

How to use the control button

When the menu is not displayed

The control button is used to perform the following operations.

⚡ (▲): Recording with flash (page 24)
⟳ (▼): Recording with self-timer (pages 24, 27)
⏴ (◀): Checking the last recorded image (page 22)
✿ (▶): Recording close subjects (macro recording) (page 61)

When the menu or setup screen is displayed

The control button is used to select the buttons, images and menu items displayed on the LCD screen of your camera and modify the settings.

Select   **Enter (OK)**

Turning on/off the operation buttons (menu) on the LCD screen

Press MENU to display/clear the menu on the LCD screen.

Menu
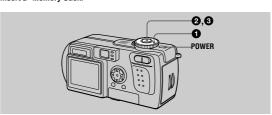
You can perform this operation even when the LCD screen is off.

Recording still images

Still images are recorded in JPEG format.
To record still images, press the POWER button to turn on the power and insert a "Memory Stick."

POWER

1 Set the mode dial to **◌** or **☽**.

2 Press and hold the shutter button halfway down.
The beeps sound, but the image is not recorded yet. While the AE/AF lock indicator ● is flashing, the camera automatically adjusts the exposure and focus of the captured image. When the camera finishes the automatic adjustments, the AE/AF lock indicator ● changes from flashing to lighted up* and the camera is ready for recording.
If you release the shutter button, the recording will be canceled.

AE/AF lock indicator (green) flashes → lights up

* If the flashing AE/AF lock indicator changes to flashing slowly, the subject may be difficult to focus on (dark, poor contrast) or the subject may be extremely close. Release the shutter button, then focus again.

---

❸ **Press the shutter button fully down.**
The shutter sounds.
"RECORDING" appears on the LCD screen, and the image will be recorded on the "Memory Stick." When "RECORDING" disappears, you can record the next image.

RECORDING

Auto power-off function
If you do not operate the camera for about three minutes during recording or playback, the camera turns off automatically to prevent wearing down the battery. To use the camera again, press the POWER button to turn on the camera again. The auto power-off function only operates when the camera is operating using a battery pack. The auto power-off function also will not operate when playing back moving images or playing back a slide show (page 68), or when a connector is plugged into the USB jack, the DC IN jack or the A/V OUT jack.

The number of images you can record on a "Memory Stick" (8 MB)
See pages 53 and 56 to 60.

❏*Notes*
• Do not touch the lens portion while it is operating.
• The following phenomena may occur when AE/AF is locked, but this does not affect the recorded image.
 — When recording a bright subject, the LCD screen color may change.
 — When recording a dark subject, the LCD screen may brighten momentarily.
• If you press the shutter button fully down at once in step ❷, the camera starts recording after the automatic adjustments are complete. However, the recording cannot be carried out while the ⚡ flash charge lamp (page 22) is flashing. (During this time, the camera is charging the flash.)

Holding the camera correctly
Hold the camera so that your fingers do not block the flash or touch the lens portion when recording images.

Recording images with the finder
You can extend the battery time by turning off the LCD screen and recording using the finder.
Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows:
See page 96 for a detailed description of the indicated items.
 The LCD backlight is turned on.
 (All the available indicators are turned on.)
 ↓
 The LCD backlight is turned on.
 (Warning messages are turned on.)
 ↓
 The LCD backlight is turned off.

DSPL/LCD ON/OFF

Indicators in the finder

Self-timer/recording lamp (red)
AE/AF lock lamp (green)
⚡ Flash charge lamp (orange)
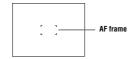
❏*Notes*
• You cannot check the entire recording range with the finder. Recording with the LCD screen is recommended when it is necessary to correctly understand the recording range.
• Because of the difference in the positions of the finder and the lens, use the LCD screen when you record a subject closer than 1 m (3 1/4 feet).
• When [DEMO] is set to [ON] in the SET UP settings, you cannot turn off the LCD screen once the demonstration starts.
• You cannot turn off the LCD backlight in SET UP or when displaying the menu.
• You cannot turn off the self-timer indicators and some of the indicators used in advanced operations.
• The indicators on the LCD screen are not recorded.

Recording with the LCD screen
When recording with the LCD screen, align the AF frame in the center of the screen with the subject.

AF frame

Checking the last recorded image (Quick Review)
You can check the last recorded image by clearing the menu from the screen (page 18) and pressing ◀ (🗑) on the control button.
To return to the normal recording mode: Press lightly on the shutter button or press ◀ (🗑) again.
To delete the image:
1. Display the menu.
2. Select [DELETE] with ▶ on the control button, then press the center ●.
3. Select [OK] with ▲ on the control button, then press the center ●.

Using the zoom feature
The lens portion moves during zoom operation. Be careful not to touch the lens portion while it is operating.

Zoom button
W side: for wide-angle (subject appears farther away)
T side: for telephoto (subject appears closer)

Minimum focal distance to the subject
W side: About 50 cm (19 3/4 inches) or more
T side: About 60 cm (23 5/8 inches) or more
To record even closer subjects, see page 61.
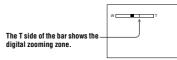
Digital zoom function
This camera has a digital zoom function.
Digital zoom enlarges the image by digital processing and it starts to function when zoom exceeds 3×.

The T side of the bar shows the digital zooming zone.

Using digital zoom
• The maximum zoom magnification is 6×.
• Digital zooming deteriorates the picture quality. When digital zoom is not necessary, set [DIGITAL ZOOM] to [OFF] in the SET UP settings (page 80).

❏*Notes*
• Zoom does not work for moving images.
• Use the LCD screen when using the digital zoom function. Digitally zoomed images do not appear in the finder.
• The AF frame (page 22) does not appear on the LCD screen.
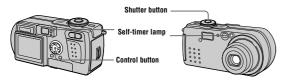
Using the self-timer

When you use the self-timer function, the subject is recorded about 10 seconds after you press the shutter button.

Shutter button

Self-timer lamp

Control button

1. Clear the menu (page 18).
2. Press the control button ▼ (🕑), then press the shutter button.
   The 🕑 (self-timer) indicator appears on the LCD screen, and about 10 seconds after you press the shutter button, the subject is recorded. The self-timer lamp flashes and a beep sounds after you press the shutter button until the shutter is released.

To cancel the self-timer recording
Press the control button ▼ (🕑) again.

Recording images with the flash

In this mode, the flash automatically strobes when the surroundings is dark. The factory setting is auto (no indicator). To change the flash mode, clear the menu (page 18), then press the control button ▲ (⚡) repeatedly so that the flash mode indicator appears on the LCD screen.

Control button ▲ (⚡)

Each time you press the control button ▲ (⚡), the indicator changes as follows.
   (No indicator) → ⚡ → 🚫 → (No indicator)
   ⚡ Forced flash: The flash strobes regardless of the surrounding brightness.
   🚫 No flash: The flash does not strobe.

You can change the brightness of the flash with [⚡±] (FLASH LEVEL) in the menu settings (page 48).

To reduce the red-eye phenomenon

Set [RED EYE REDUCTION] to [ON] in the SET UP settings (page 80). The flash pre-strobes before recording to reduce the red-eye phenomenon. When [ON] is selected and the mode dial is set to ☽ or ▲, ● appears on the LCD screen.

⚠Notes
- When [ISO] is set to [AUTO] in the menu settings, the recommended shooting distance using the built-in flash is 0.5 m to 2.8 m (19 3/4 inches to 9 feet 2 1/4 inches) at the W side, and 0.6 m to 1.4 m (19 3/4 inches to 4 feet 7 1/8 inches) at the T side. When it is not set to [AUTO], the flash may be ineffective even if the flash level is changed.
- Red-eye reduction may not produce the desired effects depending on individual differences, the distance to the subject, if the subject does not see the pre-strobe, or other conditions.
- The flash effect is not obtained easily when you use ⚡ forced flash in a bright location.
- While charging the flash, the ⚡ flash charge lamp flashes. After the charging is complete, the lamp goes out.
- The flash does not function when recording moving images (excluding Clip Motion) or recording in BURST2 mode.
- When you record images in a dark place with the camera set to 🚫 (no flash), the shutter speed becomes slow, so using a tripod is recommended to prevent shaking.

Recording images with the AF illuminator

The AF illuminator is fill light to focus on a subject easily. Set [AF ILLUMINATOR] (page 80) to [ON] in the SET UP settings. 🔅ON appears on the LCD screen and the AF illuminator emits light when the shutter button is pressed halfway until the focus is locked.

AF illuminator

⚠Notes
- If AF illuminator light does not reach the subject sufficiently or the subject has no contrast, focus will not be achieved. (An approximate distance up to 2.4 m (7 feet 10 1/2 inches) at the W side, up to 1.4 m (4 feet 7 1/8 inches) at the T side is recommended.)
- In TWILIGHT mode, the AF illuminator will emit light only when the flash mode is set to ⚡ (Forced flash).
- Focus is achieved as long as AF illuminator light reaches the subject even if its light is slightly out of the middle position of the subject.
- The AF illuminator does not operate when adjusting focus manually.
- The AF illuminator is a very bright light. Although it is safe to use, avoid shining it directly into someone's eyes at a close distance.

▼ Recording

Recording moving images

Moving images with audio are recorded in MPEG format (page 45).
To record moving images, press the POWER button to turn on the power and insert a "Memory Stick."

⑥,⑦
①,⑤
POWER
②,③,④
DSPL/LCD ON/OFF

① Set the mode dial to SET UP.

② Select [▲] (CAMERA) with ▲/▼ on the control button, then press ►.

CAMERA	
MOVING IMAGE:	MPEG MOVIE
DATE/TIME:	OFF
DIGITAL ZOOM:	ON
RED EYE REDUCTION:	OFF
AF ILLUMINATOR:	ON
◄ PAGE SELECT	

③ Select [MOVING IMAGE] with ▲/▼ on the control button, then press ►.

CAMERA	
MOVING IMAGE:	◄MPEG MOVIE
DATE/TIME:	CLIP MOTION
DIGITAL ZOOM:	
RED EYE REDUCTION:	
AF ILLUMINATOR:	
● OK	

④ Select [MPEG MOVIE] with ▲/▼ on the control button, then press the center ●.

CAMERA	
MOVING IMAGE:	MPEG MOVIE
DATE/TIME:	OFF
DIGITAL ZOOM:	ON
RED EYE REDUCTION:	OFF
AF ILLUMINATOR:	ON
◄ PAGE SELECT	

⑤ Set the mode dial to 🎥.

⑥ **Press the shutter button fully down.**
   "REC" appears on the LCD screen, and recording of the image and sound on the "Memory Stick" begins.

⑦ **Press the shutter button fully down again to stop recording.**
   The recording stops.
   When selecting the 320 (HQ) size: The recording stops in approximately 15 seconds (page 52).
   When selecting the 320×240 or 160×112 sizes: The recording stops when the "Memory Stick" is full.
   For details on the image size, see "Setting the image size (IMAGE SIZE)" on page 52.

Using the self-timer

When you use the self-timer function, the subject is recorded about 10 seconds after you press the shutter button.
1. Clear the menu (page 18).
2. Press the control button ▼ (🕑), then press the shutter button.
   The 🕑 (self-timer) indicator appears on the LCD screen, and the recording starts about 10 seconds after you press the shutter button. The self-timer lamp flashes and a beep sounds after you press the shutter button until the shutter is released.

To cancel the self-timer recording
Press the control button ▼ (🕑) again.

LCD screen indicators during recording
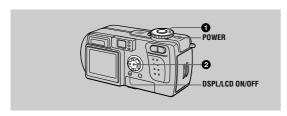
Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows: all indicators on → indicators off → LCD screen off.
These indicators are not recorded. See page 97 for a detailed description of the indicators.

⚠Note
When using the camera for long periods, use the AC power adaptor. If you remove the battery pack or otherwise turn off the power partway through a recording, the moving image recorded thus far is not saved. When the ⊟ mark appears while operating the camera, stop the recording at this point before the battery completely runs out.

▼ Recording

Playing back still images

To play back still images, press the POWER button to turn on the power and insert a "Memory Stick."

❶ POWER

❷

DSPL/LCD ON/OFF

❶ **Set the mode dial to ►.**
The last recorded image (still or moving) appears on the LCD screen.

❷ **Select the desired still image with the control button ◄/►.**
◄: To display the preceding image.
►: To display the next image.

6/8
100-0028 2001 7 4 10:30PM
◄► FILE BACK/NEXT   ↕ VOLUME

⊟Notes
• You might not be able to correctly play back images recorded with this camera on other equipment.
• You cannot play back images on this camera which are larger than the maximum image size that can be recorded with this camera.
• A rough image is played back, followed by the normal image.

LCD screen indicators during still image playback

Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows: all indicators on → indicators off → LCD screen off.
See page 98 for a detailed description of the indicators.

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Playing back moving images

To play back moving images, press the POWER button to turn on the power and insert a "Memory Stick."

❶ POWER

❷,❸

DSPL/LCD ON/OFF

❶ **Set the mode dial to ►.**
The last recorded image (still or moving) appears on the LCD screen.

❷ **Select the desired moving image with the control button ◄/►.**
Moving images are displayed one-size smaller than still images.
◄: To display the preceding image.
►: To display the next image.

6/8
0:00
MOV 00001 2001 7 4 10:30PM
● PLAY   ◄► FILE BACK/NEXT   ↕ VOLUME

❸ **Press the center ● on the control button to start the playback.**
The moving image and sound are played back.
During playback, ► (playback) appears on the LCD screen.

6/8
4:45
MOV 00001 200 7 4 10:30PM
● STOP   ◄► REV/CUE   ↕ VOLUME

Playback bar

To pause playback
Press the center ● on the control button to pause the playback.

To advance or rewind the moving image
Press the control button ◄/► during playback.
To return to normal playback, press the center ● on the control button.

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Moving images recorded with the image of [320 (HQ)] (page 52)
The images are displayed over the entire screen.

Adjusting the volume
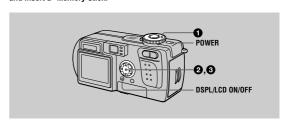
Press the control button ▲/▼ to adjust the volume.

LCD screen indicators during moving image playback

Each time you press DSPL/LCD ON/OFF, the status of the LCD screen changes as follows: all indicators on → indicators off → LCD screen off.
See page 98 for a detailed description of the indicators.

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Viewing images using a computer

You can view data recorded with your camera on a computer, and modify and attach it to e-mail using application software. This section describes the method for viewing images on a computer using the supplied USB cable.

The USB cable is used to connect the camera to a computer so that operations can be performed on image files recorded in a "Memory Stick" from the computer.
In order to use the USB cable, a USB driver must be installed in the computer beforehand.
Be sure to also refer to the operation manuals for your computer and the application software.

There are two ways to make the USB connection, which are the normal connection and the PTP connection. This is set using [USB CONNECT] in the SETUP settings (page 81). The factory setting is [NORMAL].
This section describes the way using the [NORMAL] setting. Users will be informed at the Sony website when PTP connection is supported.

Viewing images on Windows: page 32
Viewing images on Macintosh: page 41
Notes on using your computer: page 43

⊟Notes
• Data recorded with your camera is stored in the following formats. Make sure that applications that support these file formats are installed on your computer.
— Still images (other than TEXT mode and uncompressed mode): JPEG format
— Moving images/audio: MPEG format
— Uncompressed mode still images: TIFF format
— TEXT mode/Clip Motion: GIF format
• Depending on your application software, the file size may increase when you open a still image file.
• When you copy an image to the camera from your computer, which was modified with retouching software and was converted to another file format, the "FILE ERROR" message may appear and you may be unable to open the image.
• Depending on your application software, only the first frame of the Clip Motion file may be played back.
• **Communications with your computer (for Windows only)**
Communications between your camera and your computer may not recover after recovering from Suspend or Sleep.

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• Macintosh, Mac OS and QuickTime are either registered trademarks or trademarks of Apple Computer, Inc.
• All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, "™" and "®" are not mentioned in each case in this manual.

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Viewing images on Windows

Recommended computer environment

OS: Microsoft Windows 98, Windows 98SE, Windows 2000 Professional, Windows Millennium Edition
The above OS must be installed at the factory.
Operation is not assured in an environment upgraded to the operating systems described above.
CPU: MMX Pentium 200 MHz or faster
The USB connector must be provided as standard.
Windows Media Player (recommended) must be installed (to play back moving pictures).

⍰Notes
- If you connect two or more USB equipment to a single computer at the same time, some equipment may not operate depending on the type of USB equipment.
- Operations are not guaranteed when using a hub.
- Operations are not guaranteed for all the recommended computer environments mentioned above.

Installing the USB driver to the computer

Before connecting your camera to your computer, install the USB driver to the computer. The USB driver is included with the application software in the CD-ROM which is supplied with your camera.

⍰Caution
Be sure to complete installation of the USB driver before connecting your camera to the computer. If you connect the USB cable first, you will be unable to install the USB driver properly.

See page 35 for corrective measures if the USB cable was connected before installing the driver and the driver software could not be installed correctly.

❶ **Turn on your computer and allow Windows to load.**
Do not connect the USB cable in this step.
- Close down all applications running on the computer.

---

❷ **Insert the supplied CD-ROM in the CD-ROM drive of your computer.**

The title screen appears after a moment.

If the title screen does not appear
① **Double-click "My Computer."**
② **Double-click the CD-ROM ("PhotoSuite (E:)").**
  ∗ The drive symbol ((E:), etc.) may differ depending on your computer.

➡ The title screen appears after a moment.

❸ **Move the arrow (mouse pointer) to "USB Driver Installation for Windows 98/98SE/Me and Windows 2000" in the title screen and click the left button of the mouse.**

Left-click here.

➡ The Install Wizard program starts and the "InstallShield Wizard" screen appears.

▼ Playback

---

❹ **Left-click "Next."**

Left-click "Next."

➡ Installation starts. When installation finishes, a screen indicating that installation has been completed appears.
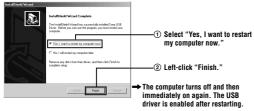
❺ **Eject the CD-ROM from the computer.**

❻ **Follow the on-screen messages to quit the InstallShield Wizard.**

① Select "Yes, I want to restart my computer now."

② Left-click "Finish."

➡ The computer turns off and then immediately on again. The USB driver is enabled after restarting.

If you cannot install the USB driver

Another USB driver may already be installed. Follow the procedure on page 36 to connect the camera and then try the following steps.
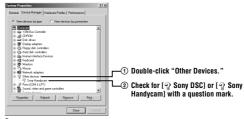
For Windows 98, Windows 98SE and Windows Me users:
The screens shown below are taken from Windows Me.

1 Display the "System Properties" screen.
The "System Properties" screen appears.

① Right-click "My Computer."
② Left-click "Properties."

③ Left-click "Device Manager" in the "System Properties" screen.

2 Check whether a USB driver is already installed.

① Double-click "Other Devices."

② Check for [📷 Sony DSC] or [📷 Sony Handycam] with a question mark.

3 If a USB driver is installed, remove it.
If the check in step **2** shows [📷 Sony DSC] or [📷 Sony Handycam] in "Other Devices", another USB driver is already installed in your computer. In this case, the driver must be removed and then installed again. The removal procedure is as follows.
① Left-click [📷 Sony DSC] or [📷 Sony Handycam].
② Left-click "Remove." The "Confirm Device Removal" screen appears.
③ Left-click the "OK" button to remove the driver.

Perform the operations starting over from step ❶ (page 32) to reinstall the USB driver.

▼ Playback

For Windows 2000 Professional users:
Log in with the permission of administrator.
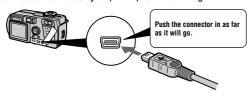
1 Right-click " My Computer," then left-click "Properties".
The "System properties" screen appears.

2 Left-click "Hardware," then left-click "Device Manager."

3 Left-click "View" in "Device Manager," then left-click "Devices by type."

4 Right-click " Sony DSC" in " Other devices," then left-click "Delete."
Perform the operations starting over from step ❶ (page 32) to reinstall the USB driver.
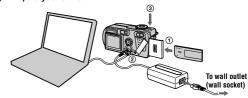
❼ **Open the jack cover on the camera and insert the USB cable connector into the USB jack (mini-B) as far as it will go.**

Push the connector in as far as it will go.

❽ **Connect the other USB cable connector to the USB jack on your computer.**

Connect to the USB jack on your computer.

∗ The USB jack position may differ depending on your computer.

---

❾ **Prepare your camera.**

To wall outlet (wall socket)

① Insert a "Memory Stick" into your camera.
② Connect the AC power adaptor to your camera.
③ Turn on your camera.
"USB MODE" appears on the LCD screen of your camera.
When you first connect the camera, the Device Manager automatically starts twice in succession to allow your computer to recognize the camera. There is no need to operate either your computer or the camera during this period. Be sure to wait until the Device Manager has started twice.

❏Note
If "USB MODE" does not appear after finishing step ③, check [USB CONNECT] in the SET UP settings, and change the setting to [NORMAL] if it is different.

❏Notes
• Do not connect the USB cable before the USB driver installation is completed in step ❻.
• In step ❾, make sure that a "Memory Stick" is inserted into your camera before turning on the camera. Otherwise, you will be unable to recognize the camera.

▼ Playback

Viewing images
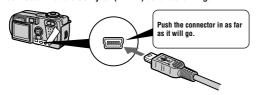
When viewing moving images on a Windows system, Windows Media Player or other moving image playback applications must be installed.
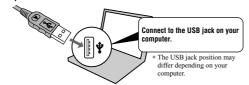
Example: Viewing still images
The procedure is the same as for viewing moving images and other image data.

❶ **Turn on your computer and allow Windows to load.**

❷ **Open the jack cover on the camera and insert the USB cable connector into the USB jack (mini-B) as far as it will go.**

Push the connector in as far as it will go.

❸ **Connect the other USB cable connector to the USB jack on your computer.**

Connect to the USB jack on your computer.

∗ The USB jack position may differ depending on your computer.

❹ **Insert a "Memory Stick" into your camera, and connect the AC power adaptor to your camera and then to a wall outlet (wall socket).**

❺ **Turn on the power of your camera.**
"USB MODE" appears on the LCD screen of the camera.

---

❻ **Double-click "My Computer."**

This "Removable Disk (F:)" indicates the connected camera.

∗ The drive symbol ((F:), etc.) may differ depending on your computer.

➡ The "My Computer" folder is displayed.

❼ **Double-click the newly recognized drive.**

Double-click the "Removable Disk (F:)" folder.

➡ The "Removable Disk (F:)" folder contents are displayed.

❽ **Double-click the "DCIM" folder.**

➡ The "DCIM" folder contents are displayed.

❾ **Double-click the "100MSDCF" folder.**

➡ The "100MSDCF" folder contents are displayed.

▼ Playback

❿ **Double-click the image.**

➜ The image is displayed.

Desired file type	Double-click in this order
Still image	"Dcim" folder → "100msdcf" folder → Image file
Moving image*	"Mssony" folder → "Moml0001" folder → Image file*
Audio*	"Mssony" folder → "Momlv100" folder → Audio file*
Clip Motion image	"Dcim" folder → "100msdcf" folder → Image file
E-mail image TIFF image (uncompressed)	"Mssony" folder → "Imcif100" 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.

To copy the image data to your computer

Drag and drop the image data to the "My Document" (example) folder.

➜ The image data is copied to the "My Document" (example) folder.

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❻ **When "Put these items into the Extensions folder?" appears, click "OK."**

❼ **Restart your computer.**

Viewing images

When viewing moving images on a Macintosh system, QuickTime 3.0 or later must be installed.

❶ **Turn on your computer and allow the Mac OS to load.**

❷ **Open the jack cover on the camera and insert the USB cable connector into the USB jack (mini-B) as far as it will go.**

❸ **Connect the other USB cable connector to the USB jack on your computer.**

❹ **Insert a "Memory Stick" into your camera, and connect the AC power adaptor to your camera and then to a wall outlet (wall socket).**

❺ **Turn on the power of your camera.**
"USB MODE" appears on the LCD screen of the camera.

❻ **Double-click the newly recognized icon on the desktop.**
The folders inside the "Memory Stick" are displayed.

❼ **Select and double-click the desired image/sound file from the folder.**

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Viewing images on Macintosh

Recommended Computer environment

OS: Mac OS 8.5.1/8.6/9.0/9.1, Mac OS X
The above OS must be installed at the factory.
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 factory pre-installed and a slot loading type CD-ROM drive
— iBook or Power Mac G4 with the Mac OS 8.6 factory pre-installed
The USB connector must be provided as standard.
QuickTime 3.0 or newer must be installed (to play back moving pictures).

⚠Notes
• If you connect two or more USB equipment to a single computer at the same time, some equipment may not operate depending on the type of USB equipment.
• Operations are not guaranteed when using a hub.
• Operations are not guaranteed for all the recommended computer environments mentioned above.

Installing the USB driver to the computer

For Mac OS 9.1, Mac OS X users
It is not necessary to install the USB driver. The Macintosh recognizes the camera as a drive simply by connecting it to the Macintosh with the USB cable.

For Mac OS 8.5.1/8.6/9.0 users
Follow the procedures below to install the driver.

❶ **Turn on your computer and allow the Mac OS to load.**

❷ **Insert the supplied CD-ROM in the CD-ROM drive of your computer.**

❸ **Double-click the CD-ROM drive icon to open the window.**

❹ **Double-click the icon of the hard disk containing the OS to open the window.**

❺ **Move the following two files from the window opened in step ❸ to the "System Folder" icon in the window opened in step ❹ (drag and drop).**
• Sony USB Driver
• Sony USB Shim

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Notes on using your computer

"Memory Stick"
• Operation is not guaranteed if you are using a "Memory Stick" that was formatted with a computer, or if you used a computer to format the "Memory Stick" in your camera through a USB connection.
• Do not optimize the "Memory Stick" on a Windows machine. This will shorten the "Memory Stick" life.
• Do not compress the data on the "Memory Stick." Compressed files cannot be played back on your camera.

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 the supplied retouch software from your computer to the camera or when you directly modify the image on the camera, the image format will differ so the "FILE ERROR" message may appear and you may be unable to open the file.
• Depending on your application software, only the first frame of the Clip Motion file may be played back.

For Windows Me and Windows 2000 users
The following procedures are recommended when disconnecting the USB cable from your computer or ejecting the "Memory Stick" from the camera while it is connected to your computer.
1 Stop the drive by clicking on the "Unplug/Eject" icon in the task tray.
2 When the message appears confirming the safe removal of the hardware, disconnect the USB cable or eject the "Memory Stick."

Communications with your computer (for Windows only)
Communications between your camera and your computer may not recover after recovering from Suspend or Sleep.
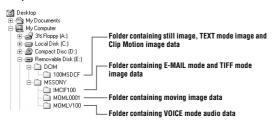
For Mac OS X users
Turn off your computer before disconnecting the USB cable from the computer or removing the "Memory Stick."

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▼ Playback

Image file storage destinations and image files

Image files recorded with your camera 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 recognizing the camera is "E.")

Desktop
- My Documents
- My Computer
  - 3½ Floppy (A:)
  - Local Disk (C:)
  - Compact Disc (D:)
  - Removable Disk (E:)
    - DCIM
      - 100MSDCF — **Folder containing still image, TEXT mode image and Clip Motion image data**
    - MSSONY
      - IMCIF100 — **Folder containing E-MAIL mode and TIFF mode image data**
      - MOML0001 — **Folder containing moving image data**
      - MOMLV100 — **Folder containing VOICE mode audio data**

Folder	File	Meaning
100MSDCF	DSC0□□□□.JPG	• Still image file recorded normally • Still image file recorded in — E-MAIL mode (page 55) — TIFF mode (page 58) — VOICE mode (page 56) — Burst mode (page 55)
	CLP0□□□□.GIF	• Clip Motion file recorded in NORMAL mode (page 59)
	CLP0□□□□.THM	• Index image file of Clip Motion file recorded in NORMAL mode
	MBL0□□□□.GIF	• Clip Motion file recorded in MOBILE mode (page 59)
	MBL0□□□□.THM	• Index image file of Clip Motion file recorded in MOBILE mode
	TXT0□□□□.GIF	• Still image file recorded in TEXT mode (page 57)
	TXT0□□□□.THM	• Index image file of still image file recorded in TEXT mode

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Folder	File	Meaning
IMCIF100	DSC0□□□□.JPG	• Small-size image file recorded in E-MAIL mode (page 55)
	DSC0□□□□.TIF	• Uncompressed image file recorded in TIFF mode (page 58)
MOML0001	MOV0□□□□.MPG	• Moving image file recorded normally
MOMLV100	DSC0□□□□.MPG	• Audio file recorded in VOICE mode (page 56)

🗒Notes
• The numerical portions of the following files are the same.
– A small-size image file recorded in E-MAIL mode and its corresponding image file
– An uncompressed image file recorded in TIFF mode and its corresponding image file
– An audio file recorded in VOICE mode and its corresponding image file
– An image file recorded in TEXT mode and its corresponding index image file
– An image file recorded with Clip Motion and its corresponding index image file
• Do not change these folder and file names on your computer. If the name is changed, the camera may be unable to open that folder or file.

Tips
The digital still camera saves recorded images as digital data. The format of the saved data is called as the file format. The formats that can be used with this camera are as follows:

JPEG format
Most digital still cameras, computer operating systems, and browser software adopt this format. This format is able to compress files without appreciable deterioration. However, if the image is compressed and saved on repeated occasions, the image quality will deteriorate. This camera records still images using the JPEG format for normal recording.

GIF format
Using this format, the image quality will not deteriorate even if the image is compressed and saved on repeated occasions. This format limits the number of colors to 256 colors. This camera records still images using the GIF format in Clip Motion (page 59) or TEXT mode (page 57).

TIFF format
Stores shot images without compression, so the image quality does not deteriorate. Most operating systems and applications support this format. This camera records still images using the TIFF format for the TIFF mode (page 58).

MPEG format
This format is very typical for moving images. This camera records audio using the MPEG format for the moving image recordings and the VOICE mode (page 56).

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▶ Playback

Advanced operations

Before performing advanced operations

The operation methods that are frequently used for advanced operations are described below. For mode dial and control button usage, see page 18.

Setting up the items in the SET UP screen

❶ **Set the mode dial to SET UP.**
The SET UP screen appears (page 80).

```
         CAMERA
📷
         MOVING IMAGE:      MPEG MOVIE
💾       DATE/TIME:         OFF
         DIGITAL ZOOM:      ON
💾       RED EYE REDUCTION: OFF
TXT      AF ILLUMINATOR:    ON

     ▶ SELECT
```

❷ **Press ▲/▼/◀/▶ on the control button to select the item you want to set up.**

❸ **Press the center ● on the control button to enter the item.**

Setting up the items in the menu

❶ Set the mode dial to 📷, 🌙, 🎬 or ▶.

❷ **Press MENU.**
The menu appears (page 47).

❸ **When the mode dial is set to ▶:**
① Press ◀/▶ on the control button to select the item you want to set. The selected setting turns yellow.
② Press the center ● on the control button to enter the item.

```
DELETE PROTECT PRINT SLIDE
▶OK
```

When the mode dial is set to 📷, 🌙 or 🎬:
Press ▲/▼/◀/▶ on the control button to select the setting of the item.
The selected setting turns yellow and the setup is complete.

```
                      400
                      200
                      100
                   ■ AUTO
📷 🔆 WB ■ ISO
```

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Menu settings

Menu items that can be modified differ depending on the positions of the mode dial. The LCD screen shows only the items you can operate at the moment. Factory settings are indicated with ■.

When the mode dial is set to 📷/🌙

Item	Setting	Description
🔆 (EV)	+2.0EV to –2.0EV	Adjusts the exposure value. 13 steps in 1/3 EV increments. The factory setting is [0EV].
🔎 (FOCUS)	∞ (infinite) 7.0 m 3.0 m 1.0 m 0.5 m ■ AUTO	Sets the distance to the subject (page 61).
WB (WHITE BAL)	HOLD ■ AUTO IN DOOR OUT DOOR	Sets the white balance (page 63).
⬤ (SPOT METER)	ON ■ OFF	Adjusts the brightness of the spot to be recorded (page 65).
ISO	400 200 100 ■ AUTO	Selects the ISO film speed. When recording under dark conditions or recording a fast-moving subject, use a high-number setting. To record high-quality images, use a low-number setting (except when the mode dial is set to 🌙).
📷 (IMAGE SIZE)	■ 2048×1536 2048 (3:2) 1600×1200 1280×960 640×480	Selects the image size when recording still images (page 52).
🖼 (P. QUALITY)	■ FINE	Records still images in the fine image quality mode.
	STANDARD	Records still images in the standard image quality mode.

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Before performing advanced operations

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Item	Setting	Description
MODE (REC MODE)	TIFF	Records a TIFF (uncompressed) file in addition to the JPEG file (page 58).
	TEXT	Records a GIF file in black-and-white (page 57).
	VOICE	Records an audio file (with a still image) in addition to the JPEG file (page 56).
	E-MAIL	Records a small-size (320×240) JPEG file in addition to the selected image size (page 55).
	BURST2	Records two images continuously (page 55).
	■NORMAL	Records an image using the normal recording mode.
⚡± (FLASH LEVEL)	HIGH	Makes the flash level higher than normal.
	■NORMAL	Normal setting.
	LOW	Makes the flash level lower than normal.
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■OFF	Sets the image special effects (page 64).
(SHARPNESS)	+2 +1 ■ 0 –1 –2	Adjusts the sharpness of the image. The indicator appears (except when the setting is 0).

When the mode dial is set to (MOVING IMAGE is set to MPEG MOVIE in the SETUP settings.)

Item	Setting	Description
(EV)	+2.0EV to –2.0EV	Adjusts the exposure value. 13 steps in 1/3 EV increments. The factory setting is [0EV].
(FOCUS)	∞ (infinite) 7.0 m 3.0 m 1.0 m 0.5 m ■AUTO	Sets the distance to the subject (page 61).
WB (WHITE BAL)	HOLD ■AUTO IN DOOR OUT DOOR	Sets the white balance (page 63).
(SPOT METER)	ON ■OFF	Adjusts the brightness of the spot to be recorded (page 65).
(IMAGE SIZE)	320 (HQ) 320×240 ■160×112	Selects the MPEG image size when recording moving images (page 52).
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■OFF	Sets the image special effects (page 64).

When the mode dial is set to (MOVING IMAGE is set to CLIP MOTION in the SETUP settings.)

Item	Setting	Description
(EV)	+2.0EV to –2.0EV	Adjusts the exposure value. 13 steps in 1/3 EV increments. The factory setting is [0EV].
(FOCUS)	∞ (infinite) 7.0 m 3.0 m 1.0 m 0.5 m ■AUTO	Sets the distance to the subject (page 61).
WB (WHITE BAL)	HOLD ■AUTO IN DOOR OUT DOOR	Sets the white balance (page 63).
(SPOT METER)	ON ■OFF	Adjusts the brightness of the spot to be recorded (page 65).
(IMAGE SIZE)	■NORMAL MOBILE	Selects the Clip Motion image size (page 59).
⚡± (FLASH LEVEL)	HIGH	Makes the flash level higher than normal.
	■NORMAL	Normal setting.
	LOW	Makes the flash level lower than normal.
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■OFF	Sets the image special effects (page 64).
(SHARPNESS)	+2 +1 ■ 0 –1 –2	Adjusts the sharpness of the image. The indicator appears (except when the setting is 0).

When the mode dial is set to ▶
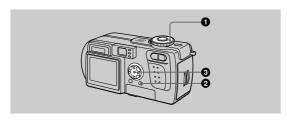
Item	Setting	Description
DELETE	OK	Deletes the displayed image (page 71).
	CANCEL	Cancels deleting of the image.
PROTECT	–	Protects images against accidental erasure (page 72).
PRINT	–	Marks the print mark on still images (page 76).
SLIDE*	INTERVAL	Sets the slide show interval. ■3 sec/5 sec/10 sec/30 sec/1 min
	REPEAT	■ON/OFF
	START	Starts the slide show.
	CANCEL	Cancels the slide show.
COPY	OK	Copies an image (page 75).
	CANCEL	Cancels copying of the image.
RESIZE*	2048×1536 1600×1200 1280×960 640×480	Changes the recorded image size (page 74).
	CANCEL	Cancels changing of the recorded image size.
ROTATE*	↷ ↶ OK	Rotates the still image 90 degrees (page 69).
	CANCEL	Cancels rotation of a still image.
DIVIDE*	OK	Divides a moving image (page 78).
	CANCEL	Cancels division of a moving image.

* Only in single-image mode.

Before performing advanced operations

Setting the image size (IMAGE SIZE)

1 Set the mode dial to 📷 , 🌙 or 🎥.

2 Press MENU.
The menu appears.

3 Select [📷] (IMAGE SIZE) with ◀/▶, then select the desired image size with ▲/▼.

Still image sizes:
2048×1536: 3.0 mega pixels
2048 (3:2)*
1600×1200: 2.0 mega pixels
1280×960: 1.3 mega pixels
640×480: 0.35 mega pixels

∗ The image is recorded in the ratio of three to two to fit the printing paper size. Using this image size, the margin of an image is not printed out. However, a slight amount of the upper and lower black portions are displayed on the LCD screen.

The larger the numbers for the image size are, the larger the file will be, and the fewer images that can be recorded on one "Memory Stick." For details on how many images can be recorded, refer to page 53.

Moving image (MPEG movie) sizes:
320 (HQ)*, 320×240, 160×112

∗ High Quality mode

Clip Motion sizes:
NORMAL (160×120), MOBILE (120×108)

Examples of use and the number of images* or the time that you can record on a "Memory Stick" (8 MB) for each image size**

Still images:

Image size	Usage	Quality	
		STANDARD	FINE
2048×1536	Modifying images	Approx. 9	Approx. 5
2048 (3:2)	Printing in 3:2 ratio	Approx. 9	Approx. 5
1600×1200	Printing in A4 format	Approx. 15	Approx. 8
1280×960	Printing in post card size	Approx. 22	Approx. 12
640×480	Attaching to e-mail	Approx. 118	Approx. 48

Moving images:

Image size	Usage	Number of images or time
320 (HQ)	Viewing on TV	Approx. 20 sec.
320×240	Viewing on computer	Approx. 80 sec.
160×112	Attaching to e-mail	Approx. 320 sec.
MOBILE (120×108) (2 frames)	–	Approx. 300
NORMAL (160×120) (10 frames)	–	Approx. 40

∗ When MODE (REC MODE) is set to NORMAL.
∗∗ The maximum recording time in continuous recording.

Number of recordable images or recordable time (page 96)
The actual number of images or recordable time may differ depending on the recording conditions.

▶ *Various recording*

Recording images according to shooting conditions (TWILIGHT mode)

Mode dial: 🌙

This mode is suitable for the night scene.

1 Set the mode dial to 🌙.
Allows you to record bright subjects in dark places without losing the dark atmosphere of the surroundings. The shutter speed becomes slower, so we recommend that you use a tripod to prevent shaking.

2 Record the image.

To cancel the TWILIGHT mode
Set the mode dial to 📷 .

📝Notes
- Set 🗲 forced flash when you use the flash in the TWILIGHT mode.
- You cannot record moving images in the TWILIGHT mode.
- When using the TWILIGHT mode, the AF illuminator (page 25) emits light when the flash mode is set to 🗲 forced flash.
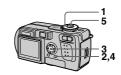
Tips
Under normal recording conditions, the camera automatically makes various adjustments, such as those for the focus, iris, exposure, and white balance, as it shoots. However, you may not be able to carry out your desired shooting depending on the shooting conditions. The TWILIGHT mode provides you with near-optimum adjustments to suit your shooting situation.

Recording two images continuously

Mode dial: 📷 / 🌙

This mode is used for a continuous recording.

1 Set the mode dial to 📷 or 🌙.

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◀/▶, [BURST2] with ▲/▼.

4 Press MENU.
The menu disappears.

5 Record the image.

To return to normal recording mode
Select [NORMAL] with ▲/▼ in step **3**.

📝Notes
- You cannot use the flash in this mode.
- During recording in this mode, the image is not displayed on the LCD screen. Make the composition before pressing the shutter button.
- The recording interval is approximately 0.6 seconds.
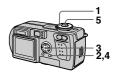
Recording still images for e-mail (E-MAIL)

Mode dial: 📷 / 🌙

In the E-MAIL mode, a small-size image which is suitable for e-mail transmission is also recorded at the same time as recording a normal still image. (The size of the normal still image is set using [📷] (IMAGE SIZE) in the menu settings (page 52).)

1 Set the mode dial to 📷 or 🌙.

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◀/▶, [E-MAIL] with ▲/▼.

4 Press MENU.
The menu disappears.

5 Record the image.

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The number of images that you can record on a "Memory Stick" (8 MB) in E-MAIL mode

Image size	Quality	
	STANDARD	FINE
2048×1536	Approx. 8	Approx. 4
2048 (3:2)	Approx. 8	Approx. 4
1600×1200	Approx. 14	Approx. 8
1280×960	Approx. 21	Approx. 12
640×480	Approx. 95	Approx. 43

Number of recordable images (page 96)
The actual number of images may differ depending on the recording conditions.

To return to normal recording mode
Select [NORMAL] with ▲/▼ in step **3**.

Adding audio files to still images (VOICE)

Mode dial: ⬛ / 🌙

In the VOICE mode, the audio is also recorded at the same time as recording a still image. (The size of the normal still image is set using [⬛] (IMAGE SIZE) in the menu settings (page 52).)

1 Set the mode dial to ⬛ or 🌙.

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◄/►, [VOICE] with ▲/▼.

4 Press MENU.
The menu disappears.

5 Record the image.
If you press and release the shutter button, sound is recorded for five seconds.
If you hold down the shutter button, sound is recorded until you release the shutter button for up to 40 seconds.

The number of images that you can record on a "Memory Stick" (8 MB) in VOICE mode*

Image size	Quality	
	STANDARD	FINE
2048×1536	Approx. 8	Approx. 4
2048 (3:2)	Approx. 8	Approx. 4
1600×1200	Approx. 13	Approx. 7
1280×960	Approx. 19	Approx. 11
640×480	Approx. 56	Approx. 34

∗ When recording 5-second audio.

To return to normal recording mode
Select [NORMAL] with ▲/▼ in step **3**.

Recording text documents (TEXT)

Mode dial: ⬛

The TEXT mode is suitable for recording a document in black and white to emphasize the character. The LCD screen also turns black and white, and the image is recorded in the GIF format.

1 Set the mode dial to ⬛.

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◄/►, [TEXT] with ▲/▼.

4 Press MENU.
The menu disappears.

5 Record the image.

The number of images that you can record on a "Memory Stick" (8 MB) in TEXT mode*

Image size	Number of images*
2048×1536	14–108
2048 (3:2)	16–108
1600×1200	24–138
1280×960	36–162
640×480	121–323

∗ The number of recordable images depends on the document condition, such as the amount of text portions.

To return to normal recording mode
Select [NORMAL] with ▲/▼ in step **3**.

❚Notes
• If the subject is not evenly illuminated, you may be unable to record a clear image.
• Writing and reading data take more time than normal recording.
• When the mode dial is set to 🌙, images can be recorded, but the image may be bleached out or may be turned black.
• The remaining number of recordable images is not displayed.
• The number of recordable images is the same regardless of whether [◄▮•] (P. QUALITY) is set to STANDARD or FINE.

Recording still images as uncompressed files (TIFF)

Mode dial: ⬛ / 🌙

In this mode, a 2048×1536 size uncompressed image is recorded at the same time as a normal still image. (The size of the normal still image is set using [⬛] (IMAGE SIZE) in the menu settings (page 52).) The uncompressed image quality does not deteriorate. Images recorded in this mode are suitable for printing with a high-quality image.

1 Set the mode dial to ⬛ or 🌙.

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◄/►, [TIFF] with ▲/▼.

4 Press MENU.
The menu disappears.

5 Record the image.
The number of images that you can record on a "Memory Stick" (16 MB) in TIFF mode is approximately 1.

To return to normal recording mode
Select [NORMAL] with ▲/▼ in step **3**.
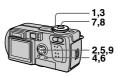
❚Notes
• When [2048 (3:2)] is selected for the image size, the uncompressed image is recorded in the [2048 (3:2)] format.
• Writing data takes more time than normal recording.
• The supplied "Memory Stick" (8 MB) does not have sufficient capacity to record uncompressed images.

Creating Clip Motion Files

Mode dial: 🎞️

Clip Motion is an animation function that plays back still images in succession. The images are stored in GIF format, which is convenient for creating home pages or attaching images to an e-mail.

1 Set the mode dial to SET UP.
The SET UP screen appears.

2 Select [⬛] (CAMERA) with ▲/▼, [MOVING IMAGE] with ►/▲/▼, [CLIP MOTION] with ▲/▼, then press ●.

3 Set the mode dial to 🎞️.

4 Press MENU.
The menu appears.

5 Select [⬛] (IMAGE SIZE) with ◄/►, the desired mode with ▲/▼.

NORMAL (160×120)
Clip Motion of up to 10 frames can be recorded. This is suitable for use on home pages, etc.

MOBILE (120×108)
Clip Motion of up to 2 frames can be recorded. This is suitable for use with portable data terminals.

6 Press MENU.
The menu disappears.

7 Record the image for the first frame.

MAKING "CLIP MOTION"

Before carrying out step **9**, the images are temporarily stored in the memory. These images are not recorded on the "Memory Stick" yet.

8 Record the image for the next frame.

Image recording can be repeated up to the maximum number of recordable frames.

9 Press ●.

All the frame images are recorded on the "Memory Stick."

To delete some or all of the frame images while making a Clip Motion recording

① Press the control button ◄ (⬛) in step **7** or **8**.

The recorded frame images are played back in turn and stop at the last image.

② Press MENU, and select [DELETE LAST] or [DELETE ALL] with ◄/►, then press ●.

③ Select [OK] with ▲/▼, then press ●.

When [DELETE LAST] is selected in step ②, each time you repeat steps ① through ③, a recorded frame is deleted from the newest one.

The number of Clip Motion frames that you can record on a "Memory Stick" (8 MB)

Image size	Number of images
NORMAL (160×120)	Approx. 40*
MOBILE (120×108)	Approx. 300**

* When recording 10 frames per Clip Motion file

** When recording 2 frames per Clip Motion file

⬛Notes
- You cannot change the image size partway through a Clip Motion recording.
- Reading and writing data take more time than normal image recording.
- Due to the limitations of the GIF format, the number of colors for Clip Motion images is reduced to 256 colors or less. Therefore, the picture quality may deteriorate for some images.
- The file size is reduced in MOBILE mode, so the picture quality deteriorates.
- GIF files not created on this camera may not be displayed correctly.
- All the frame images are immediately recorded on the "Memory Stick" if the mode dial is switched or the power is turned off.

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Setting the distance to the subject

Mode dial: ◻ / ♪/閏

Normally the focus is automatically adjusted. This function is useful when the auto focus does not work well such as in dark places.

1 Set the mode dial to ◻, ♪ or 閏.

2 Press MENU.

The menu appears.

3 Select [⬛] (FOCUS) with ◄/►, the desired distance setting with ▲/▼.

You can select from the following 6 focus settings:

AUTO, 0.5 m (1 3/4 feet), 1.0 m (3 1/4 feet), 3.0 m (9 3/4 feet), 7.0 m (23 feet), ∞ (infinite).

4 Press MENU.

The menu disappears.

5 Record the image.

To reactivate auto focusing

Select [AUTO] with ▲/▼ in step **3**.

⬛Notes
- Focal point information may not show the entirely correct distance. Use the information as a guide.
- If you shoot a subject within 0.6 m (23 5/8 feet) while the zoom is set to the T side, you cannot get a clear focus. In such cases, the focal point information flashes. Press the zoom W button until the indicator stops flashing.

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Recording images at close range (MACRO)

Mode dial: ◻ / ♪/閏

The macro recording mode is used when zooming up a small subject, such as flowers, insects.

1 Set the mode dial to ◻, ♪ or 閏.

2 Clear the menu, and press the control button ► (♨).

The ♨ (macro) indicator appears on the LCD screen.

You can record a subject as close as about 10 cm (4 inches) from the lens surface with the zoom set all the way to the W side, or about 60 cm (23 5/8 inches) with the zoom set all the way to the T side.

3 Record the image.

To return to normal recording mode

Press the control button ► (♨) again. The ♨ indicator disappears.

⬛Note

When recording images in macro, use the LCD screen. If you record using the finder, the range visible in the finder may differ from the actual recording range.

▼ Various recording

Adjusting the exposure (EXPOSURE)

Mode dial: ◻ / ♪/閏

This adjusts the exposure value which is set in the automatic adjustment.

1 Set the mode dial to ◻, ♪ or 閏.

2 Press MENU.

The menu appears.

3 Select [⬛] (EV) with ◄/►, the desired exposure value with ▲/▼.

Adjust the exposure value while checking the brightness of the background.

You can select values ranging from +2.0 EV to –2.0 EV in steps of 1/3 EV.

4 Press MENU.

The menu disappears.

5 Record the image.

⬛Note

If a subject is under extremely bright or dark conditions, or the flash is used, the exposure adjustment may not be effective.

Tips

Normally, the camera automatically adjusts the exposure. If the color of the image is too dark or bright as shown below, we recommend that you adjust the exposure manually. When recording a backlighted subject or a subject in the snow, set the exposure toward +, and when recording a subject with extremely bright illumination such as a spotlight, set it toward –.

Set the exposure toward +

Set the exposure toward –

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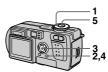
Adjusting the white balance (WHITE BALANCE)

Mode dial: ◻ / ♪/閏

Normally the white balance is automatically adjusted (AUTO). When you record with the shooting condition fixed or under a specific lighting condition, you can manually adjust the white balance.

1 Set the mode dial to ◻, ♪ or 閏.

2 Press MENU.

The menu appears.

3 Select [WB] (WHITE BAL) with ◄/►, the desired setting with ▲/▼.

HOLD

Recording a single-colored subject or background.

AUTO (No indicator)

Adjusts the white balance automatically
Under fluorescent lighting

IN DOOR (⚡)
- Places where the lighting condition changes quickly
- Under bright lighting such as photography studios
- Under sodium or mercury lamps

OUT DOOR (☀)

Recording a sunrise/sunset, night scene, neon signs, or fireworks

4 Press MENU.

The menu disappears.

5 Record the image.

To reactivate auto adjustment

Select [AUTO] with ▲/▼ in step **3**.

Tips

The image is affected by the lighting conditions. The image looks blue under sunlight in the summer, and looks red under mercury lamps. Human eyes can resolve these problems. However, the camera cannot resolve the problem without making adjustments. Normally, the camera adjusts automatically, but if the image appears in strange colors, we recommend that you change the white balance mode.

▼ Various recording

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Enjoying picture effects (P. EFFECT)

Mode dial: ▢ / ◗ / 🎬

You can digitally process images to obtain special effects.

1 Set the mode dial to ▢, ◗ or 🎬.

2 Press MENU.
The menu appears.

3 Select [PFX] (P. EFFECT) with ◄/►, the desired mode with ▲/▼.

SOLARIZE
The light contrast is clearer and the picture looks like an illustration.

B&W
The picture is monochrome (black and white).

SEPIA
The picture is sepia-toned like an old photograph.

NEG.ART
The color and brightness of the picture are reversed as in a negative.

OFF
Does not use the picture effect function.

4 Press MENU.
The menu disappears.

5 Record the image.

To cancel picture effect
Select [OFF] with ▲/▼ in step **3**.

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Recording the date and time on a still image (DATE/TIME)

Mode dial: ▢ / ◗

1 Set the mode dial to SET UP.
The SET UP screen appears.

2 Select [▢] (CAMERA) with ▲/▼, [DATE/TIME] with ►/▲/▼, then press ►.

3 Select the date and time setting with ▲/▼, then press ●.

DAY & TIME
Superimposes the date, hour, and minute.

DATE
Superimposes the year, month, and day.

OFF
Does not superimpose the date and time.

4 Set the mode dial to ▢ or ◗.

5 Record the image.
The date and time do not appear on the LCD screen during shooting. These appear during playback only.

Using the spot light-metering function

Mode dial: ▢ / ◗ / 🎬

Use this function when there is backlight or when there is strong contrast between the subject and the background, etc. Position the spot light-metering cross hair with the point you want to record.

1 Set the mode dial to ▢, ◗ or 🎬.

2 Press MENU.
The menu appears.

3 Select [●] (SPOT METER) with ◄/►, [ON] with ▲/▼.
Position the spot light-metering cross hair with the point you want to record.

4 Record the image.
Gently press the shutter button to record the image when the automatic adjustment has been completed.

LCD screen

Spot light-metering cross hair

To cancel the spot light-metering function
Select [OFF] with ▲/▼ in step **3**.

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▼ Various recording

► Various playback

Playing back three or nine images at once

Mode dial: ▶

You can display multiple images on the LCD screen at one time using the zoom buttons.

1 Set the mode dial to ▶.

2 Press the zoom W button repeatedly.
The LCD screen display changes as follows:
• Single (single-image) screen

100-0001   2001 7 4 10:30PM
◄► FILE BACK/NEXT   ▶ VOLUME

↓

• Index (nine-image) screen

● SINGLE DISPLAY

↓

• Triple-image screen

APERTURE VALUE : F2.2
SHUTTER SPEED : 1/125
EXPOSURE VALUE : 0.0

100-0005   2001 7 4 10:30PM
● SINGLE DISPLAY

The image indicated by the yellow frame in the index screen is displayed in the middle of the triple-image screen with the recording information. To display the other information, press the control button ▲/▼.

The following marks are displayed on each image according to the image type and settings.
🎬 : Moving image file
[♪] : VOICE mode file
✉ : E-mail file
▣ : Print mark
⊶ : Protect mark
TEXT: TEXT file
TIFF: TIFF file
CLIP: Clip Motion file
(No mark): Normal recording (no settings)

To display the next (previous) index screen
Press the control button ▲/▼/◄/►.

To return to normal playback (single-image)
• Press the zoom T button repeatedly.
• Press the control button ●.

■ Note
When viewing an image recorded in Clip Motion or TEXT mode on the index screen, the image may appear different from the actual image.

Tips
When the triple-image screen is displayed, pressing MENU opens the menu including [PRINT], [PROTECT], and [DELETE]. For details on these items, see pages 71, 72, or 76. To close the menu, press MENU again. The menu disappears and the recording information is indicated.

PRINT
PROTECT
DELETE

100-0005   2001 7 4 10:30PM
● OK

Enlarging a part of a still image (Zoom and trimming)

Mode dial: ▶

1 Set the mode dial to ▶.

2 Display the image to be enlarged.

3 Zoom in/out the image with the zoom T/W buttons.

4 Move the image with ▲/▼/◄/► to select the desired portion of the image.

To return to the normal size
Press the control button ●.

To record an enlarged image (trimming)
① Press MENU after zooming.
② Select [TRIMMING] with ►, then press ●.
③ Select the image size with ▲/▼, then press ●.
The image is recorded and the image on the LCD screen returns to the normal size after recording.

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▼ Various playback

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❏Notes
- You cannot zoom moving images and Clip Motion images.
- You can zoom images recorded in TEXT mode, but cannot trim them.
- Zoom scaling is up to 5× regardless of the original image size.
- The quality of enlarged images may be deteriorated.
- The original data is retained even if you enlarge the image.
- The enlarged image is recorded as the newest file.
- If you trim an image, the remaining "Memory Stick" capacity will be decreased.
- If the remaining "Memory Stick" capacity is not sufficient, you may be unable to trim an image.
- You cannot trim to an image size of 3:2.
- You cannot trim uncompressed (TIFF) images.

Playing back still images in order (SLIDE)

Mode dial: ▶

This function is useful for checking the recorded images or for presentations, etc.

1 Set the mode dial to ▶.

2 Press MENU.
The menu appears.

3 Select [SLIDE] with ◀/▶, then press ●.
Set the following items with ▲/▼/◀/▶.

INTERVAL
You can select from 1 min (one minute), 30 sec (30 seconds), 10 sec (10 seconds), 5 sec (5 seconds), or 3 sec (3 seconds).

REPEAT
ON: Plays back images in a continuous loop.
OFF: After all images have been played back, the slide show ends.

4 Select [START] with ▲/▼, then press ●.
The slide show begins.

To cancel the SLIDE SHOW setting
Select [CANCEL] with ▲/▼/◀/▶ in step **3**, then press ●.

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To stop the SLIDE SHOW playback
Press ●, select [EXIT] with ▶, then press ●.

To skip to the next/previous image during the SLIDE SHOW
Press ▶ (next) or ◀ (previous).

❏Note
The interval setting time may vary depending on the image size.

Rotating a still image (ROTATE)

Mode dial: ▶

You can rotate the image recorded in portrait orientation and change it in landscape orientation.

1 Set the mode dial to ▶, and display the image to rotate.

2 Press MENU.
The menu appears.

3 Select [ROTATE] with ◀/▶, then press ●.

4 Select [↶ , ↷] with ▲/▼, then rotate the image with ◀/▶. Select [OK] with ▲/▼, then press ●.

To cancel rotation
Select [CANCEL] with ▲/▼ in step **4**, then press ●.

❏Notes
- You cannot rotate protected or uncompressed images, or images recorded in TEXT mode.
- You may not be able to rotate images recorded with other equipment.
- Also, when viewing images on a computer, the image rotation information may not be reflected depending on the application software.

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▼ Various playback
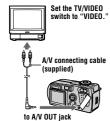
Viewing images on a TV screen

Mode dial: ▶

Before connecting your camera, be sure to turn off the TV.

Set the TV/VIDEO switch to "VIDEO."

A/V connecting cable (supplied)

to A/V OUT jack

1 Set the mode dial to ▶.

2 Connect the A/V connecting cable to the A/V OUT jack of your camera and to the audio/video input jacks of the TV.
If your TV has stereo type input jacks, connect the audio plug (black) of the A/V connecting cable to the Lch jack.

3 Turn on the TV and start playback on your camera.
The image appears on the TV screen.

❏Notes
- You cannot use a TV that has an antenna (aerial) connector only.
- When viewing a still image on the TV, the black band may appear around the image.

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▶ *Editing*

Deleting images (DELETE)

Mode dial: ▶

You can delete unwanted files.

In single-image or triple-image mode

1 Set the mode dial to ▶.

2 In single-image mode:
Display the image you want to delete with ◀/▶.

In triple-image mode:
Press the zoom W button twice in the single-image mode to turn to the triple-image mode. Display the image you want to delete with ◀/▶.

3 Press MENU.
The menu appears.

4 Select [DELETE] with ◀/▶ in single-image mode, or with ▲/▼ in triple-image mode, then press ●.

5 Select [OK] with ▲/▼, then press ●.
The displayed image (or the middle-positioned image in triple-image mode) is deleted.

To cancel deleting
- Press MENU in step **4** or **5** so that the menu turns off.
- Select [CANCEL] with ▲/▼ in step **5**.

In index mode

1 Set the mode dial to ▶, then display the index screen with the zoom W button.

2 Press MENU.
The menu appears.

3 Select [DELETE] with ◀/▶, then press ●.

4 Select [ALL] or [SELECT] with ◀/▶, then press ●.

5 When you select [ALL]
Select [ENTER] with ◀/▶, then press ●.
All the unprotected images are deleted.

When you select [SELECT]
① Select an image to be deleted with ▲/▼/◀/▶. The frame of the selected image turns green. Press ● to toggle 🗑 on and off.

● (🗑) → ● (no indicator) → ● (🗑)

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▼ Editing

Repeat this step until 🗑 has been toggled on for all images that are to be deleted.

② Press MENU.
③ Select [OK] with ◀/▶, the press ●.

To cancel deleting
Select [CANCEL] with ◀/▶ in step **4** or [EXIT] with ◀/▶ in step **5**, then press ●.

◾Note
If there are files on the "Memory Stick" with names having the same last 4 digits as the file name of the image to be deleted, these files are also deleted at the same time.

Preventing accidental erasure (PROTECT)

Mode dial: ▶

This function protects images against accidental erasure.

◾Note
Formatting a "Memory Stick" (page 79) erases even protected images.

In single-image or triple-image mode

1 **Set the mode dial to ▶.**

2 **In single-image mode**
Display the image you want to protect with ◀/▶.

   In triple-image mode
Press the zoom W button twice in the single-image mode to turn to the triple-image mode.
Display the image you want to protect with ◀/▶.

3 **Press MENU.**
The menu appears.

4 **Select [PROTECT] with ◀/▶ in single-image mode, or with ▲/▼ in triple-image mode, then press ●.**
The displayed image (or the middle-positioned image in triple-image mode) is protected.
The ⚮ indicator appears on the image.

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To release protection
Press ● again in step **4**. The ⚮ indicator disappears.

To cancel protection
Press MENU in step **4** so that the menu turns off.

In index mode

1 **Set the mode dial to ▶, then display the index screen with the zoom W button.**

2 **Press MENU.**
The menu appears.

3 **Select [PROTECT] with ◀/▶, then press ●.**

4 **Select [ALL] or [SELECT] with ◀/▶, then press ●.**

5 **When you select [ALL]**
Select [ON] with ◀/▶, then press ●.
All the images in the "Memory Stick" are protected.

When you select [SELECT]
① Select an image to be protected with ▲/▼/◀/▶. The frame of the selected image turns green.
Press ● to toggle ⚮ on and off.

● (⚮) → ● (no indicator) → ● (⚮)

Repeat this step until ⚮ has been toggled on for all images that are to be protected.

② Press MENU.
③ Select [OK] with ◀/▶, the press ●.

To release protection
If you selected [ALL] in step 4:
Select [OFF] with ◀/▶, and then press ●.

If you selected [SELECT] in step 4:
① Select the images to be unprotected with ▲/▼/◀/▶, then press ●.
② Repeat ① for all images that are to be unprotected.
③ Press the MENU button, select [OK] with ◀/▶, and then press ●.

To cancel protection
Select [CANCEL] with ◀/▶ in step **4** or [EXIT] with ◀/▶ in step **5**, then press ●.

▼ Editing

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Changing the recorded still image size (RESIZE)

Mode dial: ▶

You can change the image size of a recorded image in single mode.

1 **Set the mode dial to ▶, then display the image of which you want to change the size.**

2 **Press MENU.**
The menu appears.

3 **Select [RESIZE] with ◀/▶, then press ●.**

4 **Select the desired size with ▲/▼, then press ●.**
2048×1536, 1600×1200, 1280×960, 640×480
The resized image is recorded.

To cancel changing the size
Select [CANCEL] with ▲/▼ in step **4**, then press ●.

◾Notes
- The original image is retained even after resizing.
- You cannot change the size of images recorded in TEXT mode, moving images, uncompressed images, or Clip Motion images.
- The resized image is recorded as the newest file.
- If you resize an image, the remaining "Memory Stick" capacity will be decreased.
- When you change from a small size to a large size, the picture quality deteriorates.
- If the remaining "Memory Stick" capacity is not sufficient, you may not be able to resize an image.
- You cannot resize to an image size of 3:2.
- When you resize a 3:2 image, the upper and lower black portions are displayed on the LCD screen.
- You cannot resize images in index mode or triple-image mode.
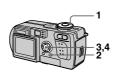
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Copying images (COPY)

Mode dial: ▶

You can copy images to another "Memory Stick."

In single-image mode

1 **Set the mode dial to ▶, then display the image you want to copy.**

2 **Press MENU.**
The menu appears.

3 **Select [COPY] with ◀/▶, then press ●.**

4 **Select [OK] with ▲/▼, then press ●.**
"MEMORY STICK ACCESS" appears.

5 **When "CHANGE MEMORY STICK" appears, eject the "Memory Stick."**
"INSERT MEMORY STICK" appears.

6 **Insert the "Memory Stick" on which to copy the image.**
"RECORDING" appears.
When copying is completed, "COMPLETE" appears.
To end copying, select [EXIT] with ▲/▼, then press ●.
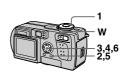
To copy the image to another "Memory Stick"
Select [CONTINUE] with ▲/▼, press ●, then repeat steps **5** and **6**.

To cancel copying
Select [CANCEL] with ▲/▼ in step **4**, then press ●.

In index mode

1 **Set the mode dial to ▶, then display the index screen with the zoom W button.**

2 **Press MENU.**
The menu appears.

3 **Select [COPY] with ◀/▶, then press ●. Select [Select] with ◀/▶, then press ●.**
The frame of the selected image turns green.

4 **Select the image to copy with the control button, then press ●.**
Press ● to toggle ✓ on and off.

● (✓) → ● (no indicator) → ● (✓)

Repeat this step until ✓ has been toggled on for all images that are to be copied.

5 **Press MENU.**
The menu appears.

▼ Editing

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6 Select [ENTER] with ◄/►, then press ●.
"MEMORY STICK ACCESS" appears.

7 When "CHANGE MEMORY STICK" is displayed, eject the "Memory Stick."
"INSERT MEMORY STICK" appears.

8 Insert another "Memory Stick."
"RECORDING" appears. When copying is completed, "COMPLETE" appears. To end copying, select [EXIT] with ▲/▼, then press ●.

To copy the image to another "Memory Stick"
Select [CONTINUE] with ▲/▼ in step **8**, press ●, then repeat steps **7** and **8**.

To cancel copying
Select [CANCEL] with ◄/► in step **3** or [EXIT] with ◄/► in step **6**, then press ●.

❚Notes
• You cannot copy uncompressed images.
• You cannot copy images that are bigger than 5 MB at once. If "NOT ENOUGH MEMORY" appears or ✔ flashes on the INDEX screen, cancel some images to copy and try again.
• If you do not select [EXIT] after "COMPLETE" appears and instead insert a new "Memory Stick," the same image is copied again.

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Selecting still images to print (PRINT)

Mode dial: ►

You can mark a print mark on still images recorded with your camera. This mark is convenient when you have images printed at a shop that conforms with the DPOF (Digital Print Order Format) standard.

In single-image or triple-image mode

1 Set the mode dial to ►.

2 In single-image mode
Display the image you want to print with ◄/►.

In triple-image mode
Press the zoom W button twice in the single-image mode to turn to the triple-image mode.
Display the image you want to print with ◄/►.

3 Press MENU.
The menu appears.

4 Select [PRINT] with ◄/► in single-image mode, or with ▲/▼ in triple-image mode, then press ●.
The ☒ (print) mark is marked on the displayed image (or the middle-positioned image in triple-image mode).

To unmark the print mark
Press ● again in step **4**. The ☒ mark disappears.

To cancel marking the print mark
Press MENU in step **4** so that the menu turns off.

In index mode

1 Set the mode dial to ►, then display the index screen with the zoom W button.

2 Press MENU.
The menu appears.

3 Select [PRINT] with ◄/►, then press ●.

4 Select [SELECT] with ◄/►, then press ●.
The frame of the selected image turns green.
When marking the ☒ mark, you cannot select [ALL].

5 Select the images to be marked with the control button, then press ●.
Press ● to toggle ☒ on and off.

● (☒) → ● (no indicator) → ● (☒)

Repeat this step until ☒ has been toggled on for all images that are to be marked.

To cancel marking the print mark
Press MENU in step **4** so that the menu turns off.

6 Press MENU.
The menu appears.

7 Select [OK] with ◄/►, then press ●.

To unmark selected print marks
Select the images to be unmarked in step **5** with the control button, then press ●.

To unmark all the print marks
Select [ALL] with ◄/► in step **4**, then press ●. Select [OFF] with ◄/►, then press ●.

To cancel marking the print mark
Select [CANCEL] with ◄/► in step **4** or select [EXIT] with ◄/► in step **7**, then press ●.

❚Notes
• You cannot mark moving images, Clip Motion images or images recorded in TEXT mode.
• If you mark an image recorded in TIFF mode with a print mark, only the uncompressed image is printed, and the JPEG image recorded at the same time is not printed.
• In E-mail mode, a print mark is marked on the normal size image that is recorded at the same time.

► Editing
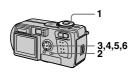
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Dividing a moving image file (DIVIDE)

Mode dial: ►

You can divide moving images recorded in MPEG MOVIE mode. This is convenient when there is not enough space on a "Memory Stick" or when attaching moving images to e-mails.

1 Set the mode dial to ► and display the moving image you want to divide.

2 Press MENU.
The menu appears.

3 Select [DIVIDE] with ◄/►, then press ●, select [OK] with ▲/▼, then press ●.
The moving image is played back.

4 Press ● at the divide point.
The following screen appears.

[◄Ⅱ, Ⅱ►] (frame forward, frame reverse)
You can finely adjust the divide point using ◄/►.
[CANCEL]
The moving image playback restarts and you can reselect the divide point.

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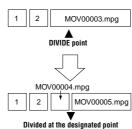
5 When you have decided the divide point, select [OK] with ▲/▼, then press ●.

6 [OK], [CANCEL] and [EXIT] appear on the screen. Select [OK] with ▲/▼, then press ●.
The moving image file is divided.

You cannot divide the following types of files:
• Clip Motion files
• Still image files
• Moving image files that are too short to divide

The file number changes as follows when you divide a file.
<eg.> If you divide the MOV00003.mpg file, the divided file numbers become MOV00004.mpg and MOV00005.mpg, and MOV00003.mpg is skipped. The divided files are saved as the latest files.

| 1 | 2 | MOV00003.mpg |

▲ DIVIDE point

MOV00004.mpg

| 1 | 2 | ↓ | MOV00005.mpg |

Divided at the designated point

To cancel file division
Press [EXIT]. The image playback screen appears.

❚Notes
• You cannot recombine divided files.
• The original undivided file is not saved.

To delete unwanted portions of a moving image
<eg.> To delete the unwanted scenes A and B from the file MOV00002.mpg:

Step 1: Divide
① Divide the unwanted scene A.

| 1 | A | MOV00002.mpg | B | 3 |

▲ DIVIDE point

② Divide the unwanted scene B.

MOV00004.mpg

| 1 | 3 | A | MOV00005.mpg | B |

▲ DIVIDE point

Step 2:Delete
① Delete the unwanted scenes A and B.

MOV00004.mpg   MOV00007.mpg

| 1 | 3 | A | MOV00006.mpg | B |

▲ DELETE   ▲ DELETE

② Only the desired scene remains.

| 1 | 3 | MOV00006.mpg |

Formatting the "Memory Stick" (FORMAT)

Mode dial: SET UP

When you format a "Memory Stick," all data stored on the "Memory Stick" will be deleted. Check the contents of the "Memory Stick" before formatting.

❚Note
Even if images are protected, these images will be deleted.

1 Insert the "Memory Stick" you want to format.

2 Set the mode dial to SET UP.
The SET UP screen appears.

3 Select [📷] (SETUP 1) with ▲/▼, [FORMAT] with ►/▲/▼, then press ►.

4 Select [OK] with ▲/▼, then press ●.

To cancel formatting
Select [CANCEL] with ▲/▼ in step **4**.

❚Notes
• Format the "Memory Stick" only using this camera. You cannot format the "Memory Stick" using a computer via the USB cable.
• When you format, be sure to use a fully charged battery pack or the AC power adaptor as the power source.

► Editing

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Changing the setup settings (SETUP)

The SET UP position changes the settings of infrequently-used items.
Set the mode dial to SET UP. The SET UP screen appears. You can set up the following items with the control button. Factory settings are indicated with ■.

🄰 CAMERA

Item	Setting	Description
MOVING IMAGE	■MPEG MOVIE	Records a MPEG movie file (page 26).
	CLIP MOTION	Records a Clip Motion file (page 59).
DATE/TIME	DAY & TIME DATE ■OFF	Sets whether to superimpose the date and time onto the image (page 64).
DIGITAL ZOOM	■ON OFF	Uses digital zoom (page 23).
RED EYE REDUCTION	ON ■OFF	Reduces the red-eye phenomenon (page 25).
AF ILLUMINATOR	■ON OFF	Uses when it is difficult to focus on the subject under dark conditions (page 25).

🄳 SETUP 1

Item	Setting	Description
FORMAT	OK	**Formats the "Memory Stick." Note that formatting erases all the information recorded on the "Memory Stick", including even erasure protected images.**
	CANCEL	Cancels formatting of the "Memory Stick."
FILE NUMBER	■SERIES	Assigns numbers to files in sequence even if the "Memory Stick" is changed.
	RESET	Resets the file numbering each time the "Memory Stick" is changed.
言語/LANGUAGE	■ENGLISH	Displays the menu items in English.
	日本語/JPN	Displays the menu items in Japanese.
CLOCK SET	OK CANCEL	Sets the date and time (Perform the procedure from step ❸ on page 15).

Notes on [DATE/TIME]
• The date and time do not appear on the LCD screen during shooting. These appear only during playback.
• The date and time are not superimposed onto moving images and Clip Motion images.

Item	Setting	Description
LCD BRIGHTNESS	BRIGHT ■NORMAL DARK	Selects the LCD brightness. This has no effect on the recorded images.
LCD BACKLIGHT	BRIGHT ■NORMAL	Displayed only when using your camera with the battery pack: Selects the brightness of the LCD backlight. Selecting [BRIGHT] makes the screen bright and easy to see when using the camera outdoors or in other bright locations, but also uses up the battery charge faster.
BEEP	SHUTTER	Turns on the shutter sound only. (The shutter sound is heard when you press the shutter button.)
	■ON	Turns on the beep/shutter sound (when you press the control button/shutter button).
	OFF	Turns off the beep/shutter sound.
VIDEO OUT	NTSC	Sets the video output signal to NTSC mode (e.g., Japan, USA) (page 85).
	PAL	Sets the video output signal to PAL mode (e.g., Europe) (page 85).
USB CONNECT	PTP ■NORMAL	Switches the USB mode (page 31). Users will be informed at the Sony website when PTP connection is supported.
POWER SAVE	ON ■OFF	Displayed only when using your camera with the battery pack: Set to [ON] to extend the battery life. When [POWER SAVE] is set to [ON], the time from when you press the shutter button until the image is recorded is longer than normal (page 12).
DEMO	■ON/STBY OFF	Displayed only when you use your camera with the AC power adaptor. [DEMO] is set to [STBY] at the factory, and the demonstration starts about 10 minutes after you have set the mode dial to 🄰 or 🄳. To cancel the demonstration, turn off the power.

▼ Editing

Additional information

Precautions

On cleaning

Cleaning the LCD screen
Wipe the screen surface with a cleaning cloth (not supplied) or a LCD cleaning kit (not supplied) to remove fingerprints, dust, etc.

Cleaning the camera surface
Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface dry. Do not use any type of solvent such as thinner, alcohol or benzine as this may damage the finish or the casing.

After using your camera at the seashore or other dusty locations
Clean your camera carefully. Otherwise, the salty air may corrode the metal fittings or dust may enter the inside of your camera, causing a malfunction.

Note on operating temperature

Your camera is designed for use between the temperatures of 0°C and 40°C (32°F and 104°F). Recording in extremely cold or hot places that exceed this range is not recommended.

On moisture condensation

If the camera is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside or outside the camera. Should this occur, the camera will not operate properly.

Moisture condensation occurs easily when:
• The camera is brought from a cold location such as a ski slope into a warmly heated room.
• The camera is taken from an air-conditioned room or car interior to the hot outdoors, etc.

How to prevent moisture condensation
When bringing the camera from a cold place to a warm place, seal the camera in a plastic bag and allow it to adapt to conditions at the new location over a period of time (about an hour).

If moisture condensation occurs
Turn off the camera and wait about an hour for the moisture to evaporate. Note that if you attempt to record with moisture remaining inside the lens, you will be unable to record clear images.

On AC power adaptor

• The unit is not disconnected from the AC power source as long as it is connected to the wall outlet (wall socket), even if the unit itself has been turned off.
• Unplug the unit from the wall outlet (wall socket) when you are not using the unit for a long time.
• To disconnect the power cord (mains lead), pull it out by the plug. Never pull on the power cord (mains lead) itself.
• Do not operate the unit with a damaged power cord (mains lead) or if the unit has been dropped or damaged.
• Do not bend the power cord (mains lead) forcibly, or place a heavy object on it. This will damage the cord (mains lead) and may cause fire or electrical 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 the 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 reception and video operation will be disturbed.
• 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

On battery pack

• Use only the specified charger 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 or modify the battery pack.
• Install the battery pack in the camera securely.
• Charging while some capacity remains does not affect the original battery capacity.

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

On internal rechargeable button battery

This camera has an internal rechargeable button battery for maintaining the date and time and other settings regardless of whether the power is on or off. This rechargeable button battery is constantly charged as long as you are using the camera. However, if you use the camera for only short periods it discharges gradually, and if you do not use the camera at all for about one month it becomes completely discharged. In this case, be sure to charge this rechargeable button battery before using the camera. However, even if this rechargeable button battery is not charged, you can still use the camera as long as you do not record the date and time.

Charging method
Connect the camera to a wall outlet (wall socket) with the AC power adaptor, or install a charged battery pack, and leave the camera for 24 hours or more with the POWER button set to OFF.

On "Memory Sticks"

"Memory Stick" is a new compact, portable and versatile IC recording medium with a data capacity that exceeds a floppy disk. "Memory Stick" is specially designed for exchanging and sharing digital data among "Memory Stick" compatible products. Because it is removable, "Memory Stick" can also be used for external data storage.

There are two types of "Memory Sticks": general "Memory Sticks" and "MagicGate Memory Sticks" that are equipped with the MagicGate* copyright protection technology.
You can use both types of "Memory Stick" with your camera. However, because your camera does not support the MagicGate standards, data recorded with your camera is not subject to MagicGate copyright protection.

∗ MagicGate is copyright protection technology that uses encryption technology.

"Memory Stick", MEMORY STICK ™, "MagicGate Memory Stick" and 🔒 are trademarks of Sony Corporation.
"MagicGate" and 𝐌𝐀𝐆𝐈𝐂𝐆𝐀𝐓𝐄 are trademarks of Sony Corporation.

Additional information

❚Notes
• Data may be damaged if:
 —you remove the "Memory Stick" or turn off your camera while reading or writing data.
 —you use the "Memory Stick" in a location subject to the effects of static electricity or noise.
• Do not attach any other material than the supplied label on the labeling position.
• Attach the label so that it does not stick out from the proper attachment location.
• When you carry or store the "Memory Stick," put it in its supplied case.
• Do not touch the terminals of the "Memory Stick" with your hand or a metal object.
• Do not strike, bend or drop the "Memory Stick."
• Do not disassemble or modify the "Memory Stick."
• Do not allow the "Memory Stick" to get wet.

On "InfoLITHIUM" battery pack

ⓘ InfoLITHIUM™ Ⓒ TYPE

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

Charging the battery pack
• Be sure to charge the battery pack before you start using your camera.
• We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F) until the "Full" indicator appears, indicating that the battery pack is fully charged. If you charge

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the battery pack outside of this temperature range, you may not be able to efficiently charge the battery pack.
• After charging is completed, disconnect the AC power adaptor from the DC IN jack on your camera or remove the battery pack.
• When the camera temperature is high (60°C), "HI" appears in the LCD screen and the battery pack cannot be charged. However, the camera can be left in this state without problem. When the camera temperature drops and the "HI" indicator disappears, charging starts.

Effective use of the battery pack
• Battery performance decreases in low-temperature surroundings. So, the time that the battery pack can be used is shorter in cold places. 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 camera immediately before you start shooting.
• Frequently using the LCD panel or frequently operating the zoom wears out the battery pack faster.
• Be certain to turn off the power when not taking shots or playing back on your camera.
• We recommend having spare batteries handy for two or three times the expected shooting time, and making trial shots before taking the actual shots.
• Do not expose the battery pack to water. The battery pack is not water-resistant.

Remaining battery time indicator
If the power goes off although the battery remaining indicator indicates that the battery pack has enough power to operate, charge the battery pack fully again so that the indication on the battery remaining 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.

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 camera.
3. Remove the battery from your camera and store it in a dry, cool place.
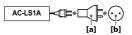
Battery life
• The battery life is limited. Battery capacity decreases little by little as you use it more and more, and as time passes. When the battery operating time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Please buy a new battery pack.
• The battery life varies according to how it is stored and operating conditions and environment for each battery pack.

Using your camera abroad

Power sources
You can use your camera in any country or area with the supplied battery charger 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 (wall socket) **[b]**.

AC-LS1A

[a]   [b]

Watching the playback picture on TV
If you want to view the playback picture on a TV, you need a TV having a video input jack and a video connecting cable.
The color system of the TV must be the same as that of your digital still camera. Check the following list:

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

PAL system
Australia, Austria, Belgium, China, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system
Brazil

PAL-N system
Argentina, Paraguay, Uruguay

SECAM system
Bulgaria, Czech Republic, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Slovak Republic, Ukraine, etc.

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Troubleshooting

If you experience trouble with your camera, first check the following items. Should your camera still not operate properly after you have made these checks, press the RESET button. (If you press the RESET button, all settings including the date and time are cleared.) Should your camera still not operate properly, consult your Sony dealer or local authorized Sony service facility. **If code displays (C:□□:□□) appear on the LCD screen, the self-diagnosis display function is working (page 93).**

Symptom	Cause and/or Solution
The power does not turn on when you press the POWER button.	→Press and hold down the POWER button for approximately one second.
Your camera does not work.	• You are not using an "InfoLITHIUM" battery pack. →Use an "InfoLITHIUM" battery pack (page 10). • The battery level is low (the 🔲 indicator appears on the LCD screen). →Charge the battery pack (page 11). • The AC power adaptor is not connected securely. →Connect it firmly to the DC IN jack of your camera and a wall outlet (wall socket) (pages 11, 14). • The built-in microcomputer is not working properly. →Disconnect and then reconnect all power sources after one minute. Then turn the power on and check that the camera works properly. Press the RESET button using a sharp-pointed object.
Your camera cannot record images.	• You cannot record images while charging the flash. • The mode dial is set to ▶ or SET UP. →Set it to 📷 , 🌙 or 🎦 (pages 19, 26). • No "Memory Stick" has been inserted into your camera. →Insert a "Memory Stick" (page 17). • The erasure prevention switch on the "Memory Stick" is set to LOCK. →Set it to the recording position.
The LCD screen does not light when the power is turned on.	• The power was turned off with the LCD screen set to OFF the last time the camera was used. →The camera retains the settings from the last time it was used. If you turn the power off with the LCD screen set to OFF, the LCD is still set to OFF the next time you turn the power on.

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Symptom	Cause and/or Solution
The picture is out of focus.	• Your camera is not in macro recording mode when you shoot a subject that is about 10 to 60 cm (4 to 23 5/8 inches) from the lens. →Set the macro recording (page 61). • The focus preset is selected. →Cancel the function (page 61).
The resizing function does not work.	• You cannot resize moving images, text images, Clip Motion and uncompressed images.
Images recorded in TEXT mode are blurry.	• Light is not striking the subject evenly. →Adjust so that the lighting strikes the subject evenly.
You cannot record images in TEXT mode.	• The mode dial is set to 🎦 . →Set the mode dial to 📷 .
You cannot display a print mark.	• You cannot display print marks on moving images, text images and Clip Motion images.
The picture is noisy.	• Your camera is placed near a TV or other equipment that uses strong magnets. →Move your camera away from the TV, etc.
The picture is too dark.	• You are shooting a subject with a light source behind the subject. →Adjust the exposure (page 62). • The brightness of the LCD screen is too low. →Adjust the brightness of the LCD screen (page 81).
The picture is too bright.	• You are shooting a spotlighted subject in a dark location such as on a stage. →Adjust the exposure (page 62). • The LCD screen is too bright. →Adjust the brightness of the LCD screen (page 81).
The flash does not work.	• The flash is set to ⚡ no flash. →Set the flash to auto (no indicator) or ⚡ forced flash (page 24). • The mode dial is set to 🌙 . →Set the flash to ⚡ forced flash. • The mode dial is set to ▶ , SET UP or 🎦 (MPEG MOVIE). →Set it to 📷 . • [MODE] (REC MODE) is set to [BURST2] in the menu settings. →Set it to other modes.

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Additional information

Symptom	Cause and/or Solution
The date and time are recorded incorrectly.	• The date and time are not set correctly. →Set the correct date and time (page 15).
Vertical streaks appear when you are shooting a very bright subject.	• The smear phenomenon is happening. →This is not a malfunction.
The battery life is short.	• You are recording/playing back images under extremely cold temperatures. • The battery pack is not charged enough. →Charge the battery pack fully. • The battery pack is dead. →Replace the battery pack with a new one (page 85).
The battery remaining indicator is incorrect.	• You have used the camera for a long time in an extremely hot or an extremely cold location. • The battery pack is dead. →Replace the battery pack with a new one (page 85). • The battery pack is discharged. →Install a charged battery pack (pages 10, 11).
Sufficient battery remaining indicator is displayed but the power runs out soon.	• A deviation has occurred in the remaining battery time. →Fully charge the battery pack (page 11).
The indicators flash during charging.	• The battery pack is not installed correctly. →Install the battery pack correctly (page 10). • The battery pack has malfunctioned. →Contact your Sony dealer or local authorized Sony service facility.
You cannot charge the battery, or nothing appears in the display window.	• The camera is turned on. → Turn the camera off (page 11). • The AC power adaptor is disconnected. →Firmly connect the power cord to the wall outlet (wall socket) (page 11).
The zoom does not work.	• The zoom cannot be used when recording a moving image with [MOVING IMAGE] set to [MPEG MOVIE].

Symptom	Cause and/or Solution
Digital zoom does not function.	• The digital zoom cannot be used when recording a moving image with [MOVING IMAGE] set to [MPEG MOVIE], or the LCD screen is OFF. • [DIGITAL ZOOM] is set to [OFF]. →Set [DIGITAL ZOOM] to [ON] in the menu settings.
Your camera cannot play back images.	• The mode dial is set to ⬛, ⬛, ⬛ or SET UP. →Set it to ▶ (pages 28, 29). • Your camera cannot play back image files copied to the hard disk of your computer if the file name has been changed or the image has been modified.
The image and sound are interrupted by noise when you play back an image on a computer.	• You are playing back the file directly from the "Memory Stick." →Copy the file to the hard disk of the computer and then play back the file from the hard disk (page 40).
The image cannot be played back on a computer.	→Consult the computer or software manufacturer.
Your camera cannot delete an image.	• The image is protected. →Cancel the protection (page 72).
The power turns off suddenly.	• The auto-power off function (page 20) is activated. →Turn on the camera or use the AC power adaptor. • The battery is discharged. →Replace it with a charged battery.
The image does not appear on the TV screen.	• The video output signal setting of your camera is incorrect. →Change the setting (page 81).
A file error occurs when you play back a file.	• Your camera cannot play back files with an image size larger than 2048×1536 that were recorded by another camera.
The picture is monochrome (black and white).	• The camera is set to TEXT mode. →Cancel TEXT mode (page 57). • P. EFFECT is set to B&W mode. →Cancel B&W mode (page 64).
The lens does not retract even when the power is turned off.	• The battery is discharged. →Replace it with a fully charged battery or use the AC power adaptor.

Symptom	Cause and/or Solution
Your computer does not recognize your camera.	• The battery level is low. →Use the AC power adaptor (page 14). • The camera is turned off. →Turn on the camera. • The USB cable is not connected firmly. →Disconnect the USB cable, and connect it again firmly. Make sure that "USB MODE" is displayed on the LCD screen (pages 37, 38). • [USB CONNECT] is set to [PTP] in the setup settings. →Set it to [NORMAL] (page 81). • The USB connectors on your computer are connected to other equipment besides the keyboard, the mouse, and your camera. →Disconnect the USB cables except for the ones connected to the keyboard, the mouse, and your camera. • The USB driver is not installed. →Install the USB driver (page 32). • Since the camera is connected to a computer with the USB cable before installing the USB driver, the drive is not recognized by the computer. →Delete the drive which is not recognized, then install the USB driver. For details, see the procedure on page 35.
No function works though the power is on.	→Remove the battery pack, then install it again after about one minute. If the functions still do not work, press the RESET button (page 9) using a sharp-pointed object. (If you press the RESET button, all settings including the date and time are cleared.)

Warning and notice messages
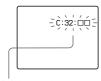
Various messages appear on the LCD screen. Check the corresponding descriptions in the following list.

Message	Meaning
NO MEMORY STICK	No "Memory Stick" has been inserted.
SYSTEM ERROR	Turn the power off and on again.
MEMORY STICK ERROR	• The inserted "Memory Stick" cannot be used with your camera, or is damaged. • The "Memory Stick" is not inserted correctly.
FORMAT ERROR	Failed to format the "Memory Stick."
MEMORY STICK LOCKED	The write-protect tab on the "Memory Stick" is set to the LOCK position.
NO MEMORY SPACE	The capacity of the "Memory Stick" is full, and you cannot record or copy images.
NO FILE	No image has been recorded on the "Memory Stick."
FILE ERROR	An error occurred while playing back the image.
FILE PROTECT	The image is protected against erasure.
for "InfoLITHIUM" battery only	The battery is not the "InfoLITHIUM" type.
NOT ENOUGH MEMORY	The images you want to copy are too big to copy with your camera.
COPY ERROR	Copying was not performed correctly, or the "Memory Stick" was removed during copying.
DIRECTORY ERROR	A directory with the same name already exists on the "Memory Stick."
IMAGE SIZE OVER	You are playing back an image of a size that cannot be played back with your camera.
INVALID OPERATION	You are playing back a file that was created on equipment other than your camera.

Additional information

Message	Meaning
⛁	The battery level is low. Depending on the conditions of use or the type of battery pack, the indicator may flash even though there is still 5 to 10 minutes of remaining battery time left.
CANNOT DIVIDE	• The file is not long enough to be divided. • The file is not a moving image.
〰	The amount of light is not sufficient or the shutter speed is too slow. (Mount the camera on a tripod or otherwise secure the camera in place.)
TURN THE POWER OFF AND ON AGAIN	The power did not turn on properly.

Self-diagnosis display

Your camera has a self-diagnosis display. This function displays the camera condition on the LCD screen with a combination of a letter and four digits of numbers. If this occurs, check the following code chart. The code informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.

Self-diagnosis display
• C:□□:□□
  You can reverse the camera malfunction yourself.
• E:□□:□□
  Contact your Sony dealer or local authorized Sony service facility.

First three digits	Cause and/or Corrective Action
C:32:□□	• There is trouble with your camera's hardware or zooming function. →Turn the power off and on again.
C:13:□□	• The camera cannot read or write data on the "Memory Stick." →Re-insert the "Memory Stick" several times. • An unformatted "Memory Stick" is inserted. →Format the "Memory Stick" (page 79). • The inserted "Memory Stick" cannot be used with your camera, or is damaged. →Insert a new "Memory Stick" (page 17).
E:61:□□ E:91:□□	• A camera malfunction that you cannot reverse has occurred. →Contact your Sony dealer or local authorized Sony service facility and inform them of the 5-digit service code (example: E:61:10).

If you are unable to solve the problem even after trying the corrective actions a few times, or if the camera is not reset even if you press the RESET button, contact your Sony dealer or local authorized Sony service facility.

Additional information
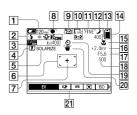
Display window indicators

1 **Self-timer indicator**

2 **Macro mode indicator**

3 **Flash mode indicator**

4 **Battery remaining indicator**

5 **"Memory Stick" mark**

6 **Remaining number of recordable images indicator (+999 is displayed for 999 or more images)/Battery usable time indicator (displayed only during charging)/Minutes indicator for the remaining recordable time of moving images**

Additional information

LCD screen indicators

The indicators during recording still images

1 **Battery remaining indicator**

2 **Flash mode/red eye reduction/white balance/AF illuminator indicator**

3 **Date/time/ISO number indicator**

4 **Sharpness indicator**

5 **Picture effect indicator**

6 **AF frame**

7 **Spot light-metering cross hair**

8 **AE/AF lock indicator**

9 **Recording mode indicator**

10 **Image size indicator**

11 **Image quality indicator**

12 **TWILIGHT mode indicator**
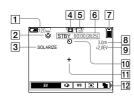
13 **Remaining number of recordable images indicator/ Self-diagnosis function indicator**

The actual number of remaining images may differ depending on the recording conditions.

14 **Remaining memory capacity indicator**

15 **Macro ♣/focus mode ☞ indicator/Focus preset value**

16 **EV level indicator**

17 **Aperture value indicator**

18 **Shutter speed indicator**

19 **Self-timer indicator**

20 **Light amount warning indicator**

21 **Menu and guide menu**

Pressing MENU switches the menu on/off.

DSC-P5

The indicators during recording moving images
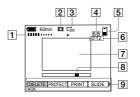
1 Battery remaining indicator

2 White balance indicator

3 Picture effect indicator

4 Recording mode indicator

5 Image size indicator

6 Recording time [maximum recordable time] indicator/ Self-diagnosis function indicator

7 Remaining memory capacity indicator

8 Macro ♣/focus mode ⬚ indicator/Focus preset value

9 EV level indicator

10 Self-timer indicator

11 Spot light-metering cross hair

12 Menu and guide menu
   Pressing MENU switches the menu on/off.

When playing back still images

1 Protect/print mark indicator

2 Zoom scaling indicator

3 File name

4 Recording mode indicator

5 Image size indicator

6 Image number/number of stored images in "Memory Stick"

7 Remaining memory capacity indicator

8 Recording date of the playback image/menu and guide menu

When playing back moving images
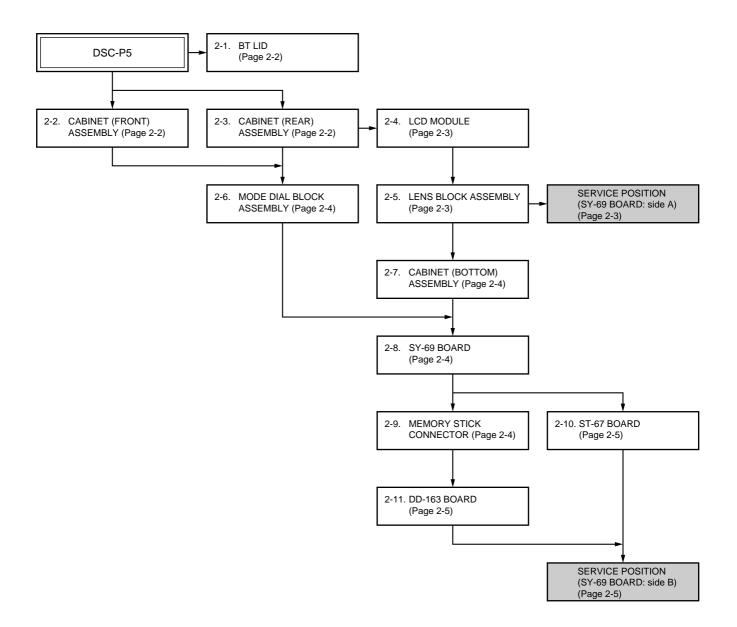
1 VOL. (Volume) indicator

2 Recording mode indicator

3 Image size indicator

4 Image number/number of stored images in "Memory Stick"

5 Remaining memory capacity indicator

6 Counter

7 Playback image

8 Play bar

9 Menu and guide menu

Additional information
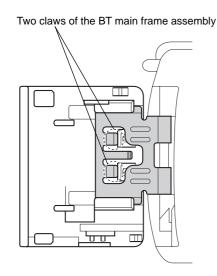
• This set can be disassembled in the order shown below.

```
┌─────────────────┐      ┌─────────────────────┐
│     DSC-P5      │ ───► │ 2-1.  BT LID        │
│                 │      │       (Page 2-2)    │
└─────────────────┘      └─────────────────────┘
        │
        ▼
┌─────────────────────┐  ┌─────────────────────┐  ┌─────────────────────┐
│ 2-2.  CABINET (FRONT)│  │ 2-3.  CABINET (REAR) │─►│ 2-4.  LCD MODULE    │
│  ASSEMBLY (Page 2-2) │  │  ASSEMBLY (Page 2-2) │  │       (Page 2-3)    │
└─────────────────────┘  └─────────────────────┘  └─────────────────────┘
        │                         │                         │
        └────────────────────────►│                         ▼
                    ┌─────────────────────┐  ┌─────────────────────┐  ┌─────────────────────────┐
                    │ 2-6.  MODE DIAL BLOCK│  │ 2-5.  LENS BLOCK     │─►│ SERVICE POSITION        │
                    │  ASSEMBLY (Page 2-4) │  │  ASSEMBLY (Page 2-3) │  │ (SY-69 BOARD: side A)   │
                    └─────────────────────┘  └─────────────────────┘  │ (Page 2-3)              │
                             │                         │               └─────────────────────────┘
                             │                         ▼
                             │              ┌─────────────────────┐
                             │              │ 2-7.  CABINET (BOTTOM)│
                             │              │  ASSEMBLY (Page 2-4) │
                             │              └─────────────────────┘
                             │                         │
                             └────────────────────────►│
                                           ┌─────────────────────┐
                                           │ 2-8.  SY-69 BOARD   │
                                           │       (Page 2-4)    │
                                           └─────────────────────┘
                                                      │
                              ┌───────────────────────┴───────────────┐
                              ▼                                        ▼
                    ┌─────────────────────┐                ┌─────────────────────┐
                    │ 2-9.  MEMORY STICK  │                │ 2-10. ST-67 BOARD   │
                    │ CONNECTOR (Page 2-4)│                │       (Page 2-5)    │
                    └─────────────────────┘                └─────────────────────┘
                              │                                        │
                              ▼                                        │
                    ┌─────────────────────┐                           │
                    │ 2-11. DD-163 BOARD  │                           │
                    │       (Page 2-5)    │                           │
                    └─────────────────────┘                           │
                              │                                        │
                              └────────────────────┬───────────────────┘
                                                    ▼
                                        ┌─────────────────────────┐
                                        │ SERVICE POSITION        │
                                        │ (SY-69 BOARD: side B)   │
                                        │ (Page 2-5)              │
                                        └─────────────────────────┘
```

Note: Follow the disassembly procedure in the numerical order given.

2-1. BT LID
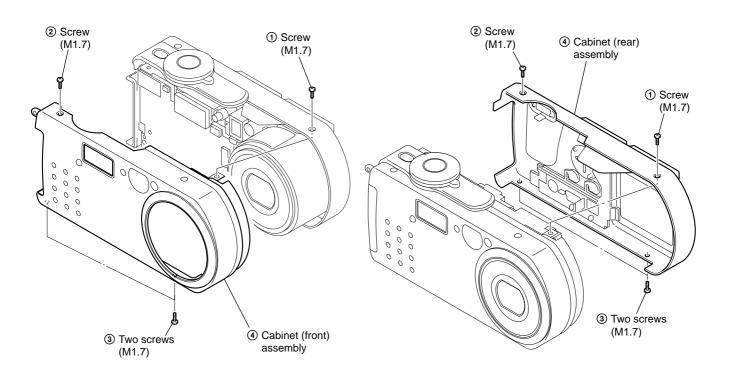
**When removing the BT lid, destroy and do it.
When two claws of the BT main frame assembly
have bent, it becomes not possible to use.**

Two claws of the BT main frame assembly

NG

2-2. CABINET (FRONT) ASSEMBLY

② Screw (M1.7)

① Screw (M1.7)

③ Two screws (M1.7)

④ Cabinet (front) assembly

2-3. CABINET (REAR) ASSEMBLY

② Screw (M1.7)

④ Cabinet (rear) assembly

① Screw (M1.7)

③ Two screws (M1.7)

2-4. LCD MODULE

④ Light interception sheet (LCD)
① Flexible board (CN952)
⑦ LCD module
② Flexible board (CN953)
③ Two screws (M1.7)
⑤ Four claws
⑥ Back light unit

2-5. LENS BLOCK ASSEMBLY

③ Pull the flexible board in the direction of the arrow, and it removes while lifting LCD (charactor display). (Because a both side tape is pasted)
④ Two step screws (M1.7)
② Claw
⑤ Two cushion (L)
⑥ Lens block assembly
① Two flexible board (CN101, 201)

[SERVICE POSITION (SY-69 BOARD: side A)]

Note 1: Don't use the 12 pin flexible board of CPC-9 jig. It causes damage to the unit.
Note 2: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjustment remote commander.

Adjusting remote commander

CPC-9 jig (J-6082-393-C)

18

1

SY-69 board

18

SY-69

1

Lens block assembly

Regulated power supply (6.0 to 7.2 Vdc)

Color monitor

LCD module

Back light unit

AC power adaptor

AC IN

Base

2-6. MODE DIAL BLOCK ASSEMBLY

③ Mode dial block assembly

① Claw

② Boss

④ Connector
(CN906)

⑤ Flexible board
(CN905)

2-8. SY-69 BOARD

⑦ Flexible board
(CN501)

① Connector
(CN102)

④ Screw
(M1.7 × 4)

⑥ SY-69 board

② Connector
(CN901)

⑤ Claw

③ Three flexible boards
(CN101, 201, 904)

2-7. CABINET (BOTTOM) ASSEMBLY

① Claw

② Cabinet (bottom) assembly

2-9. MEMORY STICK CONNECTOR

① Two screws
(M1.7 × 3)

② Claw

③ Memory stick connector

2-10. ST-67 BOARD

② ST-67 board

ST-67

① Screw
(M1.7 × 4)

2-11. DD-163 BOARD

⑤ Sdhesive sheet (LCD)

⑥ Two screws
(M1.7 × 4)

DD-163

⑧ DD-163 board

⑦ Claw

③ DD sheet metal

② Claw

① Screw
(M1.7 × 4)

④ Screw
(M1.7)

[SERVICE POSITION (SY-69 BOARD: side B)]

Adjusting remote
commander

CPC-9 jig
(J-6082-393-C)

18

1

Regulated power supply
(6.0 to 7.2 Vdc)

Note 1: Don't use the 12 pin flexible board of CPC-9 jig.
It causes damage to the unit.
Note 2: The old CPC-9 jig (Parts code: J-6082-393-B)
cannot be used, because it cannot operate
the adjustment remote commander.

DD-163 board

LCD module

DD-163

Back light unit

SY-69 board

AC power
adaptor

AC IN

18

1

ST-67

SY-69

Color monitor

ST-67 board

Mode dial block assembly

Base

Lens block assembly

Memory stick connector

2-12. CIRCUIT BOARDS LOCATION

DD-163
$\left(\begin{array}{l}\text{CONTROL SWITCH, BACK LIGHT DRIVE,}\\ \text{DC/DC CONVERTER, JACK}\end{array}\right)$

ST-67
(FLASH DRIVE)

CD-340
(CCD IMAGER)

SY-69
$\left(\begin{array}{l}\text{CAMERA PROCESS, CAMERA DSP,}\\ \text{VIDEO, MEMORY, LENS DRIVE,}\\ \text{SH DSP, USB I/F, FRONT CONTROL,}\\ \text{AUDIO, LCD DRIVE, TIMING GENERATOR,}\\ \text{FLASH CONTROL, REGULATOR}\end{array}\right)$

SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM

DSC-P5

3-8. POWER BLOCK DIAGRAM 1

3-9. POWER BLOCK DIAGRAM 2

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)
- ▨▨▨▨ : Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.
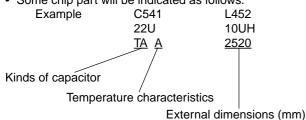
Transistor   Diode

(For schematic diagrams)
- All capacitors are in μF unless otherwise noted. pF : $\mu\mu$F. 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted.
  kΩ=1000 Ω, MΩ=1000 kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

  Example   C541   L452
                   22U   10UH
                   TA A   2520

  Kinds of capacitor

  Temperature characteristics

  External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination. Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → $\overline{\text{PB/REC}}$
- ─▨▨▨─ : non flammable resistor
- ─▨▨●● ─ : fusible resistor
- ▭ : panel designation
- ▬▬ : B+ Line *
- ▬ ▬ ▬ : B– Line *
- ⇨ : IN/OUT direction of (+,–) B LINE. *
- ▭ : adjustment for repair. *
- Circled numbers refer to waveforms. *
- * Indicated by the color red.
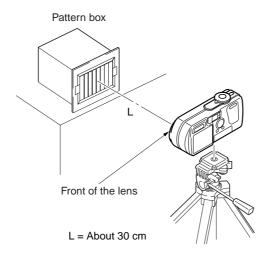
Note :   The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

(Measuring conditions voltage and waveform)
- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. *
  (VOM of DC 10 MΩ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

1. Connection

Pattern box

L

Front of the lens

L = About 30 cm

2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.
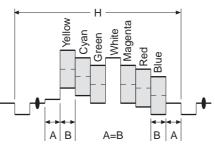
Fig. a (Video output terminal output waveform)

Color bar chart picture frame

Monitor TV picture frame

Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

Note :   Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifie.

4-1. FRAME SCHEMATIC DIAGRAMS

FRAME SCHEMATIC DIAGRAM (1/2)

FRAME(1/2)

FLASH UNIT

Q012
(BRIGHT LEVEL SENSOR)

D101
SELF TIMER/
AF ILLUMINATOR(RED)

LCD902
LCD MODULE
(CHARACTER DISPLAY)

CONTROL SWITCH BLOCK

S005
MODE DIAL

POWER
ON/OFF(CHG)
S004

C008
(CHARGING CAPACITOR)

ST-67 BOARD

BT101
LITHIUM BATTERY
(BACK UP)

S003

(SHUTTER)

D001
(POWER(GREEN))

MS
SOCKET

FP-380
FLEXIBLE
BOARD

CN501 8P

8	VSS
7	BS
6	VCC
5	DIO
4	INT
3	SCLK
2	VCC
1	VSS

CN102
30P

1	PRELAMP_POWER
3	COM4
5	COM3
7	COM2
9	COM1
11	SEG9
13	SEG8
15	SEG7
17	REG_GND
19	REG_GND
21	STB_FULL
23	ST_UNREG
25	ST_UNREG
27	ST_UNREG
29	VL_3V

2	XPRELAMP_AF_ON
4	SEG1
6	SEG2
8	SEG3
10	SEG4
12	SEG6
14	SEG5
16	REG_GND
18	REG_GND
20	REG_GND
22	REG_GND
24	REG_GND
26	PHOTO_TR_C
28	PHOTO_TR_OUT
30	STB_ON1

CN903 30P

CN905 14P

1	XPWR_ON
2	XPWR_LED
3	NC
4	PWR_LED_VCC
5	MODE_DIAL
6	D_3.2V
7	NC
8	GND
9	NC
10	XPB_ON
11	XMOVIE
12	XSET_UP
13	XSHTR_SW
14	XAE_LOCK_SW

CN902 18P

1	BL_L1
2	N.C
3	N.C
4	REG_GND
5	CPC_IN
6	BL_L2
7	HSY
8	PANEL_COM
9	VG
10	HI_UNREG
11	LANC_IN
12	LANC_OUT
13	MAKER_RECOG
14	N.C
15	N.C
16	N.C
17	N.C
18	N.C

CPC
(FOR CHECK)

RESET
S401

D502
(ACCESS LED(RED))

SY-69 BOARD(1/2)

MIC901
MICRO PHONE

CN906 2P

| 2 | MIC_SIG |
| 1 | REG_GND |

05

FRAME (1/2)

4-3

4-4

FRAME SCHEMATIC DIAGRAM (2/2)

FRAME(2/2)

LENS UNIT

OPTICAL VIEW FINDER

LENS

CCD

CD-340 BOARD
(INCLUDED IN THE LENS UNIT)

SY-69 BOARD(2/2)

DD-163 BOARD

PANEL UNIT

LCD901
1.5INCH
COLOR
LCD UNIT

D901
BACK LIGHT

ZOOM
S952 W
S953 T

CONTROL
S951

MENU
S954

DSPL/LCD ON/OFF
S955

D952
(FLASH(AMBER))

D953
(AE/AF LOCK(GREEN))

D954
(SELF TIMER/REC(RED))

BT901
BATTERY TERMINAL

USB

DC IN J652

A/V OUT (MONO) J651

CN652 5P
VCC 1
D- 2
D+ 3
ID 4
GND 5

SP901 SPEAKER

CN952
1 TESTR
2 RGT
3 B
4 R
5 G
6 PSIG
7 HCK1
8 HCK2
9 CRext
10 SDUT (N.C)
11 REF
12 HST
13 WIDE
14 CS
15 VSSG
16 VDDG
17 VSS
18 VDD
19 DWN
20 EN
21 VCK
22 VST
23 COM
24 TESTL

CN953
6 PANEL_3.2V
5 NC
4 BL_FB
3 BL_H
2 NC
1 BL_L

FRAME (2/2)

DSC-P5

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

CD-340 (CCD IMAGER) PRINTED WIRING BOARD
– Ref. No.: CD-340 board; 2,000 series –

• **For Printed Wiring Board.**
• There are a few cases that the part isn't mounted in this model is printed on this diagram.
• Chip parts

Transistor

CD-340 BOARD(SIDE A)

CD-340 BOARD(SIDE B)

CD-340 (CCD IMAGER) SCHEMATIC DIAGRAM • See page 4-7 for CD-340 printed wiring board.

CD-340 BOARD

(CD-340 BOARD is replaced as a lens block assy)

CCD IMAGER(CCD BLOCK)

-REF.NO.:2,000 SERIES-
XX MARK:NO MOUNT

Note:Voltage and waveforms of parts mounted on CD-340 board can not be measured because they are(mounted)by the side of the lens.

IC501
CCD IMAGER

SY-69 BOARD (1/11)
CN101
(SEE PAGE 4-15)

LND521	21	GND
LND520	20	CCD_OUT
LND519	19	GND
LND518	18	GND
LND517	17	V3B
LND516	16	V3A
LND515	15	V4
LND514	14	V1B
LND513	13	V1A
LND512	12	V2
LND511	11	CCD_TEMP_AD
LND510	10	VSHT
LND509	9	VSUB_CONT
LND508	8	GND
LND507	7	CAM_-7.5V
LND506	6	CAM_15V
LND505	5	GND
LND504	4	H2
LND503	3	RG
LND502	2	H1
LND501	1	GND

R505 3300
C507 XX
C506 10p
Q502 2SC4250(T5LSONY1) BUFFER
C503 0.1u 16V
R506 0

ICX262AQF-13

10 9 8 7 6 5 4 3 2 1
VOUT GND TEST TEST V1B V1A V2 V3B V3A V4

IC501

11 12 13 14 15 16 17 18 19 20
VDD RG H2 H1 GND SUB CSUB VL H1 H2

TH501
(CCD TEMP SENSOR)

C504 0.1u 16V
R503 47
R501 120
C508 0.1u 16V
R504 1M
C501 XX

C509 10u 16V
C505 0.1u 16V
R502 2700
C502 0.1u 16V

Q501 UN9213J-(K8).SO SWITCH

SIGNAL PATH

	VIDEO SIGNAL
	Y/CHROMA
REC	➤➤➤

05

CCD IMAGER
CD-340

CONTROL SWITCH BLOCK, FP-380 (FLEXIBLE BOARD) SCHEMATIC DIAGRAM

CONTROL SWITCH BLOCK

(CONTROL SWITCH BLOCK is replaced as a block,
so that PRINTED WIRING BOARD is omitted.)

S005
MODE DIAL

SET_UP   B
           G
MOVIE   6   2   TWILIGHT   R002 4000
PLAY   A   1   CAMERA   R003 6000

(5 POSITION MODE_DIAL)

S004
POWER
ON/OFF(CHG)

D001
(POWER(GREEN))

R001
20k

(1st)
S003
(2nd) (SHUTTER)

14P	XPWR_ON	XPWR_LED	NC	PWR_LED_VCC	MODE_DIAL	D_3.2V	NC	GND	NC	XPB_ON	XMOVIE	XSET_UP	XSHTR_SW	XAE_LOCK_SW
	1	2	3	4	5	6	7	8	9	10	11	12	13	14

SY-69 BOARD (7/11)
CN905
(SEE PAGE 4-27)

05

FP-380 FLEXIBLE BOARD

(FP-380 FLEXIBLE BOARD is replaced as a block,
so that this PRINTED WIRING BOARD is omitted.)

SY-69 BOARD (5/11)
CN501
(SEE PAGE 4-23)

LND001	1	VSS
LND002	2	VCC
LND003	3	SCLK
LND004	4	INT
LND005	5	DIO
LND006	6	VCC
LND007	7	BS
LND008	8	VSS

Digital

1	VSS	LND009
2	VCC	LND010
3	SCLK	LND011
4	N.C.	LND012
5	INT	LND013
6	N.C.	LND014
7	DIO	LND015
8	VCC	LND016
9	BS	LND017
10	VSS	LND018

MS
SOCKET

SIGNAL PATH

	VIDEO SIGNAL	AUDIO SIGNAL
	Y/CHROMA	
REC	➡	➡
PB	➡	➡

05

CONTROL SWITCH BLOCK/FLEXIBLE BOARD
FP-380

DSC-P5

ST-67 (FLASH DIVE) PRINTED WIRING BOARD
– Ref. No.: ST-67 board; 3,000 series –

FLASH UNIT

• **For Printed Wiring Board.**
• There are a few cases that the part isn't mounted in this model is printed on this diagram.

ST-67 BOARD(SIDE A)

LND001
LND003
L002
LND002

Q011
T001
R018
D002
R016 C003 R005
R017 R010 C010
R015 D001
R006
Q005 C005 R102
R009

CN102
30
29

1-682-671- [11]

05 1   2   3   4   5   6   7   8   9   10   11   12

ST-67 BOARD(SIDE B)

LCD902
LCD MODULE
(CHARACTOR DISPLAY)

BT101
(BATTERY,
LITHIUM SECONDARY)

BT101

D101
SELF TIMER/
AF ILLUMINATOR
(RED)

C008

Q012
(BRIGHT LEVEL
SENSOR)

1-682-671- [11]

05 1   2   3   4   5   6   7   8   9   10   11   12

ST-67 (FLASH DIVE) SCHEMATIC DIAGRAM • See page 4-39 for ST-67 printed wiring board.

ST-67 BOARD

FLASH DRIVE(ST BLOCK)

-REF.NO.:3,000 SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE

4-4. PARTS LOCATION

no mark : SIDE A
* mark   : SIDE B

CD-340 BOARD			ST-67 BOARD		
C502	A-3		*	BT101	C-10
C503	B-3				
C504	A-3			C003	B-6
C505	A-2			C005	C-7
C506	B-2			C010	B-7
C508	A-1				
C509	A-1			CN102	C-12
Q501	A-3			D001	C-7
Q502	B-3			D002	B-7
R501	A-3			Q005	C-7
R502	A-3			Q011	B-6
R503	A-3		*	Q012	A-5
R504	A-3				
R505	B-3			R005	B-6
R506	B-3			R006	C-7
				R009	C-7
TH501	A-1			R010	B-7
				R016	B-6
				R017	B-5
				R018	B-7
				R102	C-7
				T001	B-6

SECTION 5
ADJUSTMENTS
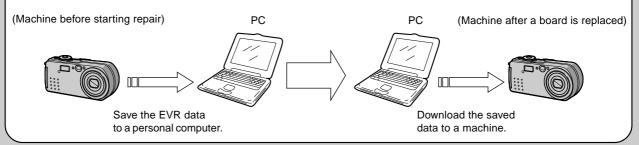
Before starting adjustment

EVR Data Re-writing Procedure When Replacing Board
The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

Procedure 1
Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.
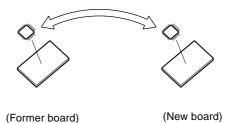
(Machine before starting repair)　　　　　　　　　　　　PC　　　　　　　　PC　　　　(Machine after a board is replaced)

Save the EVR data
to a personal computer.

Download the saved
data to a machine.
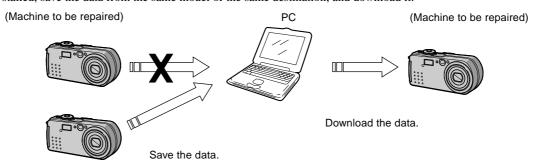
Procedure 2
Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.

Remove the EEPROM and install it.

(Former board)　　　　　　　　(New board)

Procedure 3
When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.

(Machine to be repaired)　　　　　　　　　　　PC　　　　　　　　(Machine to be repaired)

Download the data.

Save the data.

(The same model of the same destination)

After the EVR data is saved and downloaded, check the
respective items of the EVR data.
(Refer to page 5-2 for the items to be checked.)

1-1. Adjusting items when replacing main parts and boards

When replacing main parts and boards, adjust the items indicated by ● in the following table.

Adjustment section	Adjustment	Lens block assy (Note)	Flash unit	LCD901 (LCD panel) LCD block	D901 (Back light unit) LCD block	IC102 (S/H, AGC, A/D) SY-69 board	IC506 (EVR) SY-69 board	IC601 (VIDEO AMP) SY-69 board	IC801 (LCD drive) SY-69 board	IC804 (LCD Timing generator) SY-69 board	IC802 (EVR) SY-69 board	ST-67 board (COMPLETE)	SY-69 board (COMPLETE) (Note)	IC503 EEPROM SY-69 board
Initialization of B, D, E, F, 7, 9, page data	Initialization of D page data												●	●
	Initialization of B, E, F, 7, 9 page data												●	●
Video	Video sync level adj.						●	●					●	●
	Video burst level adj.						●	●					●	●
Camera	Flange back adj.	●											●	●
	F No. standard data input	●											●	●
	Mechanical shutter adj.	●											●	●
	Light value adj.	●				●							●	●
	Auto white balance standard data input	●				●							●	●
	Auto white balance adj.	●				●							●	●
	Color reproduction adj.	●				●							●	●
	CCD (white and black) defect compensation	●											●	●
	Strobe white balance adj.	●	●			●						●	●	●
LCD	LCD initial data input												●	●
	VCO adj.									●	●		●	●
	Black limit adj.								●		●		●	●
	Bright adj.								●		●		●	●
	Contrast adj.								●		●		●	●
	Color adj.								●		●		●	●
	PSIG adj.								●		●		●	●
	VG center adj.								●		●		●	●
	V-COM adj.			●					●		●		●	●
	White balance adj.			●	●				●		●		●	●
System control	Battery down adj.												●	●

Table 5-1-1

Note : When replacing the lens block or the SY-69 board, refer to "Precaution on Replacing the Lens Block or the SY-69 board". (See page 6)

5-1. CAMERA SECTION ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT

1-1-1. List of Service Tools

• Oscilloscope   • Color monitor   • Vectorscope
• Regulated power supply   • Digital voltmeter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	Pattern box PTB-450	J-6082-200-A	
J-3	Color bar chart for pattern box	J-6020-250-A	
J-4	Adjusting remote commander (RM-95 upgraded). (Note 1)	J-6082-053-B	
J-5	Siemens star chart	J-6080-875-A	For checking the flange back
J-6	Clear chart for pattern box	J-6080-621-A	
J-7	CPC-9 jig (Note 2)	J-6082-393-C	For connecting the adjusting remote commander For adjusting the LCD block
J-8	Minipattern box	J-6082-353-B	For adjusting the flange back
J-9	Back ground paper	J-2501-130-A	For adjusting the strobe

Note 1: If the micro processor IC in the adjusting remote commander is not the new micro processor (UPD7503G-C56-12), The pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

Note 2: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjusting remote commander.
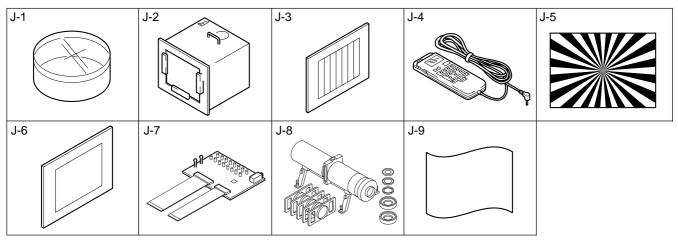
Fig. 5-1-1

1-1-2. Preparations

Note 1: For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

Note 2: When performing only the adjustments, the lens block and boards need not be disassemble.

1) Connect the equipment for adjustments according to Fig. 5-1-6.

2) Connect the Adjusting remote commander to SY-69 board CN902 via CPC-9 jig (J-6082-393-C). (See Fig. 5-1-3)

Note 3: Setting the "Forced CAMERA mode power ON" Mode
   1) Select page: 0, address: 01, and set data: 01.
   2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjusting remote commander.
   The above procedure will enable the camera power to be turned on. After completing adjustments, be sure to exit the "Forced CAMERA mode power ON Mode".

Note 4: Exiting the "Forced CAMERA mode power ON Mode"
   1) Select page: 0, address: 01, and set data: 01.
   2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjusting remote commander.
   3) Select page: 0, address: 01, and set data: 00.

1-1-3. Discharging of the Flashlight Power Supply

The capacitor which is used as power supply of flashlight is charged with 200 V to 300 V voltage. Discharge this voltage before starting adjustments in order to protect service engineers from electric shock during adjustment.

Discharge procedure
1. Press the FLASH button (DD-163 board S951 (CONTROL UP)) and set the NO FLASH mode.
2. Fabricate the discharging jig as shown in Fig. 5-1-5 locally by yourself. Connect the discharging jig to the positive (+) and negative (−) terminal of the flash voltage charge capacitor. Allow ten seconds to discharge the voltage.
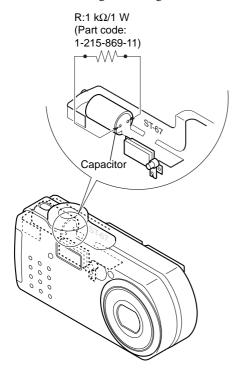
Fig. 5-1-2
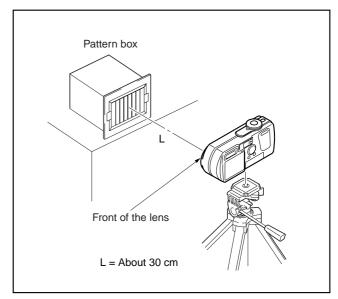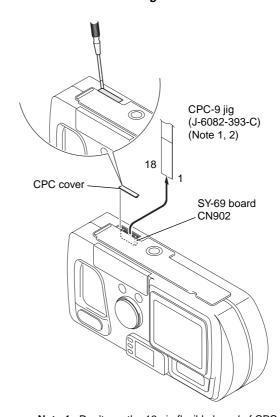
Note 1: Don't use the 12 pin flexible board of CPC-9 jig. It causes damage to the unit.
Note 2: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjusting remote commander.

Fig. 5-1-3

Fig. 5-1-4

Fig. 5-1-5

Fig. 5-1-6

Must be connected when the MIC UNIT is used.

CONTROL SWITCH BLOCK

MS SOCKET

Must be connected when the Memory Stick is used.

ST-67 BOARD

LENS UNIT

CN102

CN906

CN903

CN905

CN501

CN101

SY-69 BOARD

CN201

CN901

CN902

18   1

CN904

CN951

DC IN jack (J652)

A/V OUT jack (J651)

CN953

DD-163 BOARD

CN952

PANEL UNIT

Audio (Black)

Vectorscope   Color monitor

Terminated 75 Ω

Video (yellow)

AC IN

Adjusting remote commander

18   1

Regulated power supply (6.0 to 7.2 Vdc)

AC power adaptor

CPC-9 jig (Note 1, 2) (J-6082-393-C)

Note 1: Don't use the 12 pin flexible board of CPC-9 jig. It causes damage to the unit.
Note 2: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjusting remote commander.

1-1-4. Precautions
1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments.

1. Mode Dial .... CAMERA
2. ZOOM switch
   (DD-163 board S952, 953) .... WIDE end
3. EV (Menu display) 0EV
4. DSPL/LCD ON/OFF button
   (DD-163 board S954) .... OSD OFF
5. WB (WHITE BALANCE)
   (Menu display) .... AUTO
6. P.EFFECT (Menu display) .... OFF
7. DEMO (SET UP setting) .... OFF
8. VIDEO OUT (SET UP setting) .... NTSC

2. Order of Adjustments

Basically carry out adjustments in the order given.

Color bar chart (Color reproduction adjustment frame)

Adjust the camera zoom and direction to obtain the output waveform shown in Fig a and the monitor TV display shown in Fig. b.
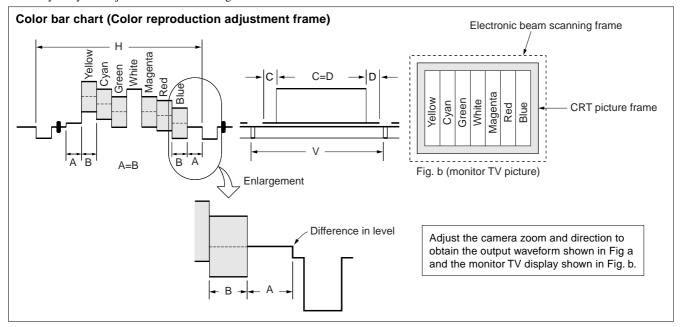
Fig. 5-1-7

3. Subjects

1) Color bar chart (Standard picture frame).
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-7. (Standard picture frame)
2) Clear chart (Standard picture frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time)
3) Chart for flange back adjustment
   Join together a piece of white A0 size paper (1189mm × 841 mm) and a piece of black paper to make the chart shown in Fig. 5-1-8.

Note: Use a non-reflecting and non-glazing vellum paper. The size must be A0 or larger and the joint between the white and black paper must not have any undulations.
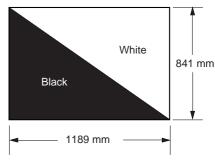
Fig. 5-1-8

4. Preparing the Flash Adjustment Box

A dark room is required to provide an accurate flash adjustment.
If it is not available, prepare the flash adjustment box as given below;

1) Provide woody board A, B and C of 15 mm thickness.

woody board A (2) →| 530 mm |← 1026 mm 1030 mm

woody board B (2) →| 500 mm |← 1026 mm 1000 mm

woody board C (1) ←— 1000 mm —→ 1000 mm
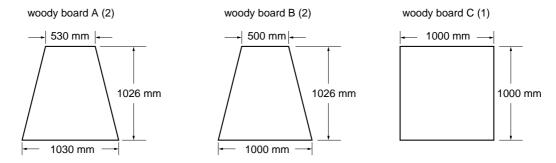
Fig. 5-1-9

2) Apply black mat paint to one side of woody board A and B.
3) Attach background paper (J-2501-130-A) to woody board C.
4) Assemble so that the black sides and the background paper side of woody board A, B and C are internal. (Fig 5-1-10)

woody board A
woody board B
woody board A
woody board B
woody board C

Fig. 5-1-10

DSC-P5
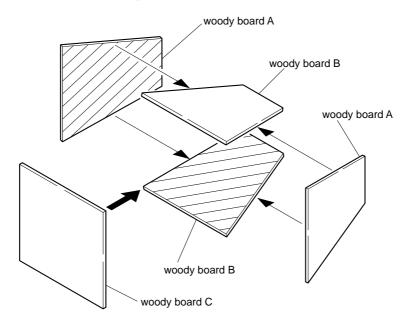
1-2. INITIALIZATION OF B, D, E, F, 7, 9 PAGE DATA
1-2-1. Initialization of D Page Data
1. Initializing D Page Data

Note: If the D page data has been initialized, the following adjustments need to be performed again.
1) Modification of D page data
2) Video system adjustments
3) LCD system adjustments
4) System control system adjustments

Adjusting page	D
Adjusting Address	10 to EF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	03	10	
3	4	00	2D	
4	4	01	2D	Press PAUSE button.
5	4	02		Check the data changes to "01".
6				Perform "Modification of D page Data".

2. Modification of D Page Data

If the D page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:
1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camera may not operate.
3) When changing the data, press the PAUSE button of the adjusting remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of D Page Data:

Order	Page	Address	Data	Procedure
1	2	00	29	
2	2	01	29	Press PAUSE button.

3. D Page table

Note 1: Fixed data-1: Initialized data.
(Refer to "1. Initializing the D Page Data")

Note 2: Fixed data-2: Modified data.
(Refer to "2. Modification of D Page Data")

Address	Initial value	Remark
10	00	Test mode
11 to 4E		Fixed data-1 (Initialized data)
4F		Fixed data-2
50 to 8F		Fixed data-1 (Initialized data)
90	80	
91	88	
92	AD	Battery down adj.
93	C2	
94	CD	
95 to C5		Fixed data-1 (Initialized data)
C6	5A	Video sync level adj.
C7	61	Video burst level adj.
C8 to CD		Fixed data-1 (Initialized data)
CE		Fixed data-2
CF		
D0	76 / 7D	Bright adj. (Note 3)
D1	C3 / 7E	Color adj. (Note 3)
D2	60 / BB	White balance adj. (Note 3)
D3	AA / 83	
D4	B9 / D5	Contrast adj. (Note 3)
D5	5C / 90	Black limit adj. (Note 3)
D6	AC / 8D	VG center adj.(Note 3)
D7	5C / 5C	VCO adj. (NTSC) (Note 3)
D8	77 / 5A	V-COM adj. (Note 3)
D9		Fixed data-2
DA	61 / 7A	PSIG adj. (Note 3)
DB		Fixed data-2
DC		
DD	6A / 6B	VCO adj. (PAL) (Note 3)
DE		Fixed data-2
DF		
E0 to EF		Fixed data-1 (Initialized data)

Note 3: AN12511A type / CXA8116R type

1-2-2. Initialization of B, E, F, 7, 9 Page Data
1. Initializing B, E, F, 7, 9 Page Data
Note: If the B, E, F, 7, 9 Page data has been initialized,
"Modification of B, E, F, 7, 9 Page Data" and following
adjustments need to be performed again.
1) Modification of B, E, F, 7, 9 page data
2) Camera system adjustments

Adjusting page	B
Adjusting Address	00 to FF
Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	7
Adjusting Address	00 to FF
Adjusting page	9
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	B	00	00	Press PAUSE button.
3	6	03	10	
4	6	00	2D	
5	6	01	2D	Press PAUSE button.
6	6	02		Check the data changes to "01".
7				Perform "Modification of B, E, F, 7, 9 page Data".

2. Modification of B, E, F, 7, 9 Page Data
If the B, E, F, 7, 9 Page data has been initialized, change the data
of the "Fixed data-2" address shown in the following tables by
manual input.

Modifying Method:
1) Before changing the data, select page: 0, address: 01, and set
data: 01.
2) New data for changing are not shown in the tables because
they are different in destination. When changing the data, copy
the data built in the same model.
   Note: If copy the data built in the different model, the
camera may not operate.
3) When changing the data, press the PAUSE button of the
adjusting remote commander each time when setting new data
to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value.
If not, change the data to the initial value.

**Processing after Completing Modification of B, E, F, 7, 9
Page data**

Order	Page	Address	Data	Procedure
1	2	00	29	
2	2	01	29	Press PAUSE button.

3. B Page Table
Note 1: Fixed data-1: Initialized data.
(Refer to "1. Initializing B, E, F, 7, 9 Page Data")
Note 2: Fixed data-2: Modified data.
(Refer to "2. Modification of B, E, F, 7, 9 Page Data")

Address	Initial value	Remark
00 to FF		Fixed data-1 (Initialized data)

4. E Page Table
Note 1: Fixed data-1: Initialized data.
(Refer to "1. Initializing B, E, F, 7, 9 Page Data")
Note 2: Fixed data-2: Modified data.
(Refer to "2. Modification of B, E, F, 7, 9 Page Data")

Address	Initial value	Remark
00 to FF		Fixed data-1 (Initialized data)

5. F Page Table

Note 1: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7, 9 Page Data")
Note 2: Fixed data-2: Modified data. (Refer to "2. Modified of B, E, F, 7, 9 Page Data")

Address	Initial value	Remark
10	D0	
11	5C	
12	B2	
13	8C	
14	36	
15	54	
16	87	
17	71	
18	10	
19	C0	
1A	00	Flange back adj.
1B	00	
1C	00	
1D	00	
1E	00	
1F	00	
20	20	
21	20	
22	13	
23	46	
24	0A	
25	00	
26	85	
27	B0	Light value adj.
28	94	
29	00	
2A	00	
2B	00	F No. standard data input
2C	00	
2D	00	
2E to 39		Fixed data-1 (Initialized data)
3A	2F	
3B	37	Auto white balance standard data input
3C	40	
3D	D0	
3E		Fixed data-1 (Initialized data)
3F	B5	Auto white balance adj.
40	43	
41	03	
42	E9	
43	63	
44	83	
45	D5	Color reproduction adj.
46	FE	
47	73	
48	45	
49 to 4C		Fixed data-1 (Initialized data)

Address	Initial value	Remark
4D	28	Strobe white balance adj.
4E	6E	
4F to 58		Fixed data-1 (Initialized data)
59	00	Auto white balance standard data input
5A	14	Mechanical shutter adj.
5B		Fixed data-1 (Initialized data)
5C	63	
5D	83	Color reproduction adj.
5E	03	
5F	E9	
60 to 63		Fixed data-1 (Initialized data)
64	10	Strobe white balance adj.
65 to 68		Fixed data-1 (Initialized data)
69	02	
6A	79	Strobe white balance adj.
6B	F8	
6C	04	
6D	A0	
6E	03	
6F	D0	
70	00	
71	00	
72	00	
73	00	
74	00	
75	00	Mechanical shutter adj.
76	00	
77	00	
78	00	
79	00	
7A	00	
7B	33	
7C	33	
7D	33	
7E	33	
7F	33	
80	00	Auto white balance adj.
81 to 86		Fixed data-1 (Initialized data)
87	FF	
88	00	
89	00	
8A	00	
8B	00	Flange back adj.
8C	00	
8D	00	
8E	00	
8F	00	

Address	Initial value	Remark
90	00	Flange back adj.
91	00	
92	00	
93	00	
94	00	
95	00	
96	00	
97	00	
98	00	
99	00	
9A	00	
9B	00	
9C to A8		Fixed data-1 (Initialized data)
A9	10	Auto white balance adj.
AA	04	
AB to D3		Fixed data-1 (Initialized data)
D4	80	Mechanical shutter adj.
D5	98	
D6	A0	
D7	98	
D8	90	
D9 to FF		Fixed data-1 (Initialized data)

6. 7 Page Table

Note 1: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7, 9 Page Data")
Note 2: Fixed data-2: Modified data. (Refer to "2. Modified of B, E, F, 7, 9 Page Data")

Address	Initial value	Remark	Address	Initial value	Remark
00 to 5F		Fixed data-1 (Initialized data)	8F	FF	
60	0F		90	0F	
61	FF		91	FF	
62	0F		92	0F	
63	FF		93	FF	
64	0F		94	0F	
65	FF		95	FF	
66	0F		96	0F	
67	FF		97	FF	
68	0F		98	0F	
69	FF		99	FF	
6A	0F		9A	0F	
6B	FF		9B	FF	
6C	0F		9C	0F	
6D	FF		9D	FF	
6E	0F		9E	0F	
6F	FF		9F	FF	
70	0F		A0	0F	
71	FF		A1	FF	
72	0F	CCD black defect compensation	A2	0F	
73	FF		A3	FF	
74	0F		A4	0F	
75	FF		A5	FF	
76	0F		A6	0F	CCD white defect compensation
77	FF		A7	FF	
78	0F		A8	0F	
79	FF		A9	FF	
7A	0F		AA	0F	
7B	FF		AB	FF	
7C	0F		AC	0F	
7D	FF		AD	FF	
7E	0F		AE	0F	
7F	FF		AF	FF	
80	0F		B0	0F	
81	FF		B1	FF	
82	0F		B2	0F	
83	FF		B3	FF	
84	0F		B4	0F	
85	FF		B5	FF	
86	0F		B6	0F	
87	FF		B7	FF	
88	0F		B8	0F	
89	FF		B9	FF	
8A	0F		BA	0F	
8B	FF	CCD white defect compensation	BB	FF	
8C	0F		BC	0F	
8D	FF		BD	FF	
8E	0F		BE	0F	

Address	Initial value	Remark
BF	FF	
C0	0F	
C1	FF	
C2	0F	
C3	FF	
C4	0F	
C5	FF	
C6	0F	
C7	FF	
C8	0F	
C9	FF	
CA	0F	
CB	FF	
CC	0F	
CD	FF	
CE	0F	
CF	FF	
D0	0F	
D1	FF	
D2	0F	
D3	FF	
D4	0F	
D5	FF	
D6	0F	
D7	FF	
D8	0F	
D9	FF	CCD white defect compensation
DA	0F	
DB	FF	
DC	0F	
DD	FF	
DE	0F	
DF	FF	
E0	0F	
E1	FF	
E2	0F	
E3	FF	
E4	0F	
E5	FF	
E6	0F	
E7	FF	
E8	0F	
E9	FF	
EA	0F	
EB	FF	
EC	0F	
ED	FF	
EE	0F	
EF	FF	
F0	0F	

Address	Initial value	Remark
F1	FF	
F2	0F	
F3	FF	
F4	0F	
F5	FF	
F6	0F	
F7	FF	
F8	0F	CCD white defect compensation
F9	FF	
FA	0F	
FB	FF	
FC	0F	
FD	FF	
FE	0F	
FF	FF	

7.   9 Page Table

Note 1: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7, 9 Page Data")

Note 2: Fixed data-2: Modified data. (Refer to "2. Modified of B, E, F, 7, 9 Page Data")

Address	Initial value	Remark
00 to 07		Fixed data-1 (Initialized data)
08		Fixed data-2
09 to 67		Fixed data-1 (Initialized data)
68		Fixed data-2
69 to 6F		Fixed data-1 (Initialized data)
70	00	
71	00	
72	00	
73	00	
74	00	
75	00	
76	00	
77	00	
78	00	
79	00	
7A	00	Flange back adj.
7B	00	
7C	00	
7D	00	
7E	00	
7F	00	
80	00	
81	00	
82	00	
83	00	
84		Fixed data-2
85 to FF		Fixed data-1 (Initialized data)

DSC-P5

1-3. VIDEO SYSTEM ADJUSTMENTS

1. Video Sync Level Adjustment

Adjust the sync level of the composite video signal output.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Video terminal of A/V OUT jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	C6
Specified Value	A = 286 ± 5 mVp-p (NTSC) A = 300 ± 5 mVp-p (PAL)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	04	
3	D	C6		Change the data and set the sync level (A) to the specified value.
4	D	C6		Press PAUSE button

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	

2. Video Burst Level Adjustment

Adjust the burst level of the composite video signal output.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Video terminal of A/V OUT jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	C7
Specified Value	A = 286 ± 8 mVp-p (NTSC) A = 300 ± 8 mVp-p (PAL)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	04	
3	D	C7		Change the data and set the burst level (A) to the specified value.
4	D	C7		Press PAUSE button

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	
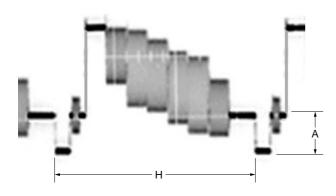
Fig. 5-1-11
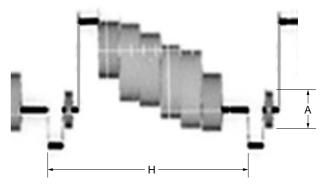
Fig. 5-1-12

1-4. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENTS" are satisfied.

Note: For "CAMERA SYSTEM ADJUSTMENTS", perform in order of item numbers.

Data setting during camera system adjustments

Perform the following data setting before the camera system adjustments.

Set up setting:
1) VIDEO OUT of SET UP setting .... NTSC (NTSC mode)
   (This adjustment must be performed in NTSC mode, so don't set the SET UP setting to "PAL")

Data setting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	D	10	80	Press PAUSE button.
3	2	10		Check the bit values of bit3, bit4 and bit5 are "1". (Note 1, 2)
4	D	11	40	Press PAUSE button.
5	D	10	81	Press PAUSE button.
5	6	C1		Check the data changes to "02".
6	4	06	01	
7	6	6C	01	
8				Wait for 1 second.
9	F	38	B1	Press PAUSE button.
10	F	DE	1E	Press PAUSE button.
11	F	E3	13	Press PAUSE button.
12	B	75	00	Press PAUSE button.
13	B	DE	D6	Press PAUSE button.
14	9	08	FF	Press PAUSE button.
15	9	84	00	Press PAUSE button.
16	9	F1	A5	Press PAUSE button.

Note 1: For the bit values, refer to "5-2. SERVICE MODE", "2-3. 2. Bit value discrimination".

Note 2: In case of wrong data, select page: 2, address: 0A and set data: 02.
Set the adjusting remote commander to normal LANC, and the power will be turned off and on automatically. Wait for more than 0.167 second after the power on, and set the adjusting remote commander to the service LANC. Then, retry from the step 1.

Note 3: Repeat the "Data setting method", if the power was turned off and on during the "CAMERA SYSTEM ADJUSTMENTS".

After completing the camera system adjustments, release the data setting:

Order	Page	Address	Data	Procedure
1	4	06	00	
2	6	6C	00	
3	F	38	B3	Press PAUSE button.
4	F	DE	0F	Press PAUSE button.
5	F	E3	13	Press PAUSE button.
6	B	75	10	Press PAUSE button.
7	9	F1	5A	Press PAUSE button.
8	D	11	00	Press PAUSE button.
9	D	10	00	Press PAUSE button.
10	0	01	00	

1. Flange Back Adjustment (Using the minipattern box)

The flange back of inner focus lens is adjusted automatically. If shifted, the auto focus is disordered.

Mode	CAMERA	
Subject	Siemens star chart with ND filter for minipattern box (Note 1)	
Measurement Point	Check operation on TV monitor	
Measuring Instrument		
Adjustment Page	F	9
Adjustment Address	10 to 25, 87 to 9B	70 to 83

Note 1: Dark Siemens star chart.
Note 2: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Caution:
If the video lens or SY-69 board was replaced, make a setting by referring to "Precaution on Replacing the Video Lens or the SY-69 Board" on page 5-17 and then perform the adjustment.

Preparations before adjustments:
1) The minipattern box is installed as shown in the following figure.
Note 3: The attachment lenses are not used.
Note 4: Take care not to hit the mini-pattern box when extending the lens.
2) Install the minipattern box so that the distance between it and the front of lens of camera is less than 3 cm.
3) Make the height of minipattern box and the camera equal.
4) Check the output voltage of the regulated power supply is the specified voltage ± 0.01 Vdc.
5) Check that the center of Siemens star chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.
6) Check that the data on page: F, address: 10 to 25, 87 to 9B and page: 9, address: 70 to 83 are initial value (See table below).

9 page

Address	Data	Address	Data	Address	Data
70	00	77	00	7E	00
71	00	78	00	7F	00
72	00	79	00	80	00
73	00	7A	00	81	00
74	00	7B	00	82	00
75	00	7C	00	83	00
76	00	7D	00		

F page

Address	Data	Address	Data	Address	Data
10	D0	1F	00	8F	00
11	5C	20	20	90	00
12	B2	21	20	91	00
13	8C	22	13	92	00
14	36	23	46	93	00
15	54	24	0A	94	00
16	87	25	00	95	00
17	71	87	FF	96	00
18	10	88	00	97	00
19	C0	89	00	98	00
1A	00	8A	00	99	00
1B	00	8B	00	9A	00
1C	00	8C	00	9B	00
1D	00	8D	00		
1E	00	8E	00		

Specified voltage: The specified voltage varies according to the minipattern box, so adjustment the power supply output voltage to the specified voltage written on the sheet which is supplied with the mini-pattern box.
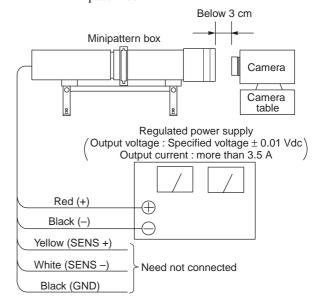
Fig. 5-1-13

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-15)
3	6	01	13	Press PAUSE button.
4	6	01	27	Press PAUSE button. (Note 5)
5	6	02		Check the data changes to "01".
6	F	87		Check the data changes to "00".

Note 5: The adjustment data will be automatically input to page: F, address: 10 to 25, 87 to 9B and page: 9, address: 70 to 83.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 2. (Refer to page 5-15)
3	0	01	00	
4				Perform "Flange Back Check".

**2. Flange Back Adjustment
    (Using the flange back adjustment chart)**

The flange back of inner focus lens is adjusted automatically. If shifted, the auto focus is disordered.

Mode	CAMERA	
Subject	Flange back adjustment chart (2.0 m from the front of the lens) (Luminance: 300 to 400 lux)	
Measurement Point	Check operation on TV monitor	
Measuring Instrument		
Adjustment Page	F	9
Adjustment Address	10 to 25, 87 to 9B	70 to 83

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

> **Caution:**
> If the video lens or SY-69 board was replaced, make a setting by referring to "Precaution on Replacing the Video Lens or the SY-69 Board" and then perform the adjustment.

Preparations before adjustments:
1) Place the Flange back adjustment chart 2.0 m from the front of the lens.
2) Check that the center of Flange back adjustment chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.
3) Check that the data on page: F, address: 10 to 25, 87 to 9B and page: 9, address: 70 to 83 are initial value (See table below).

9 page

Address	Data	Address	Data	Address	Data
70	00	77	00	7E	00
71	00	78	00	7F	00
72	00	79	00	80	00
73	00	7A	00	81	00
74	00	7B	00	82	00
75	00	7C	00	83	00
76	00	7D	00		

F page

Address	Data	Address	Data	Address	Data
10	D0	1F	00	8F	00
11	5C	20	20	90	00
12	B2	21	20	91	00
13	8C	22	13	92	00
14	36	23	46	93	00
15	54	24	0A	94	00
16	87	25	00	95	00
17	71	87	FF	96	00
18	10	88	00	97	00
19	C0	89	00	98	00
1A	00	8A	00	99	00
1B	00	8B	00	9A	00
1C	00	8C	00	9B	00
1D	00	8D	00		
1E	00	8E	00		

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-15)
3	6	01	13	Press PAUSE button.
4	6	01	15	Press PAUSE button. (Note 2)
5	6	02		Check the data changes to "01".
6	F	87		Check the data changes to "00".

Note 2: The adjustment data will be automatically input to page: F, address: 10 to 25, 87 to 9B and page: 9, address: 70 to 83.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 2. (Refer to page 5-15)
3	0	01	00	
4				Perform "Flange Back Check".

[Precaution on Replacing the Video Lens or the SY-69 Board]

The DSC-P5 uses the position sensor to detect the zoom position. Accordingly, the zoom position will vary if the position data changes due to the replacement of the video lens or the SY-69 board, thus causing the video lens to collide against the mechanism end when the power is turned off.
Though the position data is calibrated at the "Flange Back Adjustment", add the following work when making an adjustment at the replacement of video lens to prevent a collision of video lens.

When Replacing the Video Lens
1) With current video lens assembled, turn the power on, and set the bit value of Bit0 on Page:9, Address:65 to "0" using the adjusting remote commander, then turn the power off.
2) Replace the video lens with a new one, turn the power on, and perform the "Flange Back Adjustment".
   Thus, new position data will be written.
3) After the "Flange Back Adjustment", return the bit value of Bit0 on Page:9, Address:65 to "1" using the adjusting remote commander.

When Replacing the SY-69 Board
1) Replace the SY-69 board with a new one, set the mode dial to "PLAY", turn the power on, and set the bit value of Bit0 on Page:9, Address:65 to "0" using the adjusting remote commander, then turn the power off.
2) Set the mode dial to "CAMERA", turn the power on, and perform the "Flange Back Adjustment".
   Thus, new position data will be written.
3) After the "Flange Back Adjustment", return the bit value of Bit0 on Page:9, Address:65 to "1" using the adjusting remote commander.

3. Flange Back Check

Mode	CAMERA
Subject	Siemens star chart (1.0 m from the front of the lens) (Luminance: 200 to 400 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified value	Focused at the TELE end and WIDE end

Checking method:
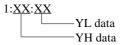
Order	Page	Address	Data	Procedure
1				Place the Siemens star 1.0 m from the front of the lens. To open the IRIS , decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
2	0	01	01	
3				Perform "Data setting during camera system adjustments". (Refer to page 5-15)
4	B	3D		Note dwon the data.
5	B	3D	64	Press PAUSE button.
6				Shoot the Siemens star chart with the zoom TELE end. At this time, the center of Siemens star chart should be in the center of the LCD screen.
7				Check that the lens is focused.
8	6	2C	01	
9				While observe the LCD screen, change the zoom to the WIDE end and check that the lens is focused.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	2C	00	
2	B	3D		Set the data note down at step 4, and press PAUSE button.
3				Release the data setting performed at step 3. (Refer to page 5-15)
4	0	01	00	

4. Picture Frame Setting

Mode	CAMERA
Subject	Color bar chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Measurement Point	Video terminal of A/V OUT jack (75 Ω terminated)
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Note 1: Displayed data of the page 1 of adjusting remote commander.

1:<u>XX</u>:<u>XX</u>
—— YL data
—— YH data

Switch setting:
1) FOCUS (Menu setting) .... AUTO
2) MACRO (Control button) .... ON

Setting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Shoot the color bar chart with the zoom WIDE end.
3				Enter the output of VIDEO OUT to the TV monitor, and move to the position as shown in Fig. 5-1-16.
4				Horizontal width of one color (B, C) and that of black (A, D) on the color bar chart should be same. (See Fig. 5-1-14)
5				With vertical width of black (E, F) set in same, the color bar chart should come to the center of TV monitor. (See Fig. 5-1-15)
6				Check that the color bar on the TV monitor is focused.
7	0	03	22	
8	1			Note down the YH and YL data. (Note 1)

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	0	01	00	

How to reset the zoom and focus when they deviated:

Order	Page	Address	Data	Procedure
1	6	2C	01	
2	6	90	00	
3	6	91	00	
4	6	92	YL	(Note 2)
5	6	93	YH	(Note 2)
6	6	01	79	Press PAUSE button.
7	6	07		Check the data changes to "01".
8	6	01	00	Press PAUSE button.

Note 2: The data noted down at step 8 of "Setting method".

Check on the oscilloscope

1. Horizontal period
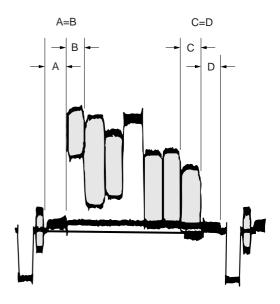
Fig. 5-1-14

2. Vertical period
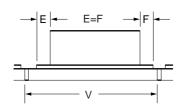
Fig. 5-1-15

Check on the TV monitor

Color bar chart picture frame   TV monitor picture frame

Fig. 5-1-16

DSC-P5
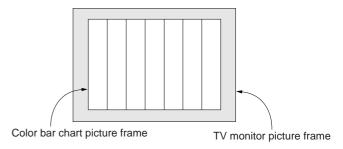
5. F No. Standard Data Input
Compensate the unevenness of the iris meter sensitivity.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	29 to 2D

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.
Note 2: Refer to "Picture Frame Setting" for YH and YL.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-15)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	BB	Press PAUSE button. (Note 3)
12	6	02		Check the data changes to "01".

Note 3: The adjustment data will be automatically input to page: F, address: 29 to 2D.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2. (Refer to page 5-15)
6	0	01	00	

6. Mechanical Shutter Adjustment
Adjust the period which the mechanical shutter is closed, and compensate the exposure.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	5A, 6C to 7F, D4 to D8

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.
Note 2: Refer to "Picture Frame Setting" for YH and YL.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-15)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	AD	Press PAUSE button. (Note 3)
12	6	02		Check the data changes to "01".
13	6	AB		Check the data is "00".

Note 3: The adjustment data will be automatically input to page: F, address: 5A, 6C to 7F and D4 to D8.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2. (Refer to page 5-15)
6	0	01	00	

7. Light Value Adjustment

Adjust the standard light value.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Measurement Point	Displayed data of page: 1 (Note 3) and page: F, address: 28
Measuring Instrument	Adjusting remote commander
Adjustment Page	F
Adjustment Address	26 to 28
Specified Value	AE level 1: 0FE0 to 1020 AE level 2: 28 to 53

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.
Note 2: Refer to "Picture Frame Setting" for YH and YL.
Note 3: The right 4 digits of the page: 1 displayed data of the adjusting remote commander.

1:XX:XX
└────Displayed data

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-15)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	0D	Press PAUSE button. (Note 4)
12	6	02		Check the data changes to "01".
13	0	03	06	
14	1			Check that the displayed data (Note 3) satisfies the AE level 1 specified value.
15	F	28		Check that the displayed data satisfies AE level 2 specified value.

Note 4: The adjustment data will be automatically input to page: F, address: 26 to 28.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3	6	2C	00	
4	6	92	00	
5	6	93	00	
6				Release the data setting performed at step 2. (Refer to page 5-15)
7	0	01	00	

8. Auto White Balance Standard Data Input

Adjust the white balance standard data at 3200K.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	3A to 3D, 59

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Note 2: "Auto White Balance Standard Data Input" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-15)
3	6	90	00	
4	6	91	04	
5	6	92	00	
6	6	93	30	
7	6	6C	01	
8	6	2C	01	
9	6	01	79	Press PAUSE button.
10	6	07		Check the data changes to "01".
11	6	01	11	Press PAUSE button.
12	6	01	0B	Press PAUSE button. (Note 3)
13	6	02		Check the data changes to "01".

Note 3: The adjustment data will be automatically input to page: F, address: 3A to 3D and 59.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	91	00	
4	6	93	00	
5				Release the data setting performed at step 2. (Refer to page 5-15)
6	0	01	00	

9. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction
Measurement Point	Displayed data of page: 1 (Note 2)
Measuring Instrument	Adjusting remote commander
Adjustment Page	F
Adjustment Address	3F, 40, 80, A9, AA
Specified Value	R ratio: 2A60 to 2BA0 B ratio: 5C60 to 5DA0

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Note 2: The right 4 digits of the page: 1 displayed data of the adjusting remote commander.

1:<u>XX:XX</u>
└──── Displayed data

Note 3: "Auto White Balance Adjustment" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter on the lens.
2	0	01	01	
3				Perform "Data setting during camera system adjustment". (Refer to page 5-15)
4	E	4E		Note down the data.
5	E	4E	80	Press PAUSE button.
6	6	90	00	
7	6	91	04	
8	6	92	00	
9	6	93	30	
10	6	6C	01	
11	6	2C	01	
12	6	01	79	Press PAUSE button.
13	6	07		Check the data changes to "01".
14	6	01	A7	Press PAUSE button.
15	F	49 4A 4B 4C		Note down the data.
16	F	49 4A 4B 4C	2B 00 5D 00	Press PAUSE button.
17	6	01	A5	Press PAUSE button. (Note 4)
18	6	02		Check the data changes to "01".
19	6	01	3F	Press PAUSE button.

Order	Page	Address	Data	Procedure
20	0	03	04	
21	1			Check that the displayed data (Note 2) satisfied the R ratio specified value.
22	0	03	05	
23	1			Check that the displayed data (Note 2) satisfied the B ratio specified value.

Note 4: The adjustment data will be automatically input to page: F, address: 3F, 40, 80, A9 and AA.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3	6	2C	00	
4	6	6C	00	
5	6	91	00	
6	6	93	00	
7	E	4E		Set data noted down at step 4, and press PAUSE button.
8	F	49 4A 4B 4C		Set data noted down at step 15, and press PAUSE button.
9				Release the data setting performed at step 3. (Refer to page 5-15)
10	0	01	00	
11				Remove the C14 filter on the lens.

DSC-P5

10. Auto White Balance Check

Mode	CAMERA	
Subject	Clear chart (Color reproduction adjustment frame)	
Filter	Filter C14 for color temperature correction	
Measurement Point	Displayed data of of Page: 1 (Note 2)	Video terminal A/V OUT jack (75 Ω terminated)
Measuring Instrument	Adjusting remote commander	Vectorscope
Specified Value	R ratio: 3E00 to 4200 B ratio: 3E00 to 4200	Fig. 5-1-17 (A) and (B)

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Note 2: The right 4 digits of the page: 1 displayed data of the adjusting remote commander.

1:XX:XX

—— Displayed data

Checking method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter on the lens.
2	0	01	01	
3				Perform "Data setting during camera system adjustment". (Refer to page 5-15)
4	6	90	00	
5	6	91	04	
6	6	92	00	
7	6	93	30	
8	6	6C	01	
9	6	2C	01	
10	6	01	79	Press PAUSE button.
11	6	07		Check the data changes to "01".
OUTDOOR luminance point check				
12	6	01	3F	Press PAUSE button.
13				Check that the center of the white luminance point settles in the circle shown Fig 5-1-17 (B).
INDOOR data check				
14				Remove the C14 filter on the lens.
15	E	52		Note down the data.
16	E	52	1A	Press PAUSE button.
17	6	01	0F	Press PAUSE button.
18	0	03	04	
19	1			Check that the displayed data (Note 2) satisfied the R ratio specified value.
20	0	03	05	

Order	Page	Address	Data	Procedure
21	1			Check that the displayed data (Note 2) satisfied the B ratio specified value.
INDOOR luminance point check				
22				Check that the center of the white luminance point within the circle shown Fig 5-1-17 (A).

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3	6	2C	00	
4	6	6C	00	
5	6	91	00	
6	6	93	00	
7	E	52		Set data noted down at step 15, and press PAUSE button.
8				Release the data setting performed at step 3. (Refer to page 5-15)
9	0	01	00	
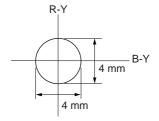
Fig. 5-1-17 (A)
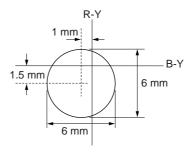
Fig. 5-1-17 (B)

11. Color Reproduction Adjustment

Adjust the color separation matrix coefficient so that proper color reproduction is produced.

Mode	CAMERA
Subject	Color bar chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	41 to 48, 5C to 5F

Note 1: Perform "Auto White Balance Standard Data Input" before this adjustment.
Note 2: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.
Note 3: Refer to "Picture Frame Setting" for YH and YL.
Note 4: "Color Reproduction Adjustment" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-15)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 3)
7	6	93	YH	(Note 3)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	01	AB	Press PAUSE button.
12	6	01	A9	Press PAUSE button. (Note 5)
13	6	02		Check the data changes to "01".

Note 5: The adjustment data will be automatically input to page: F, address: 41 to 48 and 5C to 5F.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	92	00	
4	6	93	00	
5				Release the data setting performed at step 2. (Refer to page 5-15)
6	0	01	00	
7				Perform "Color Reproduction Check".

12. Color Reproduction Check

Mode	CAMERA
Subject	Color bar chart (Color reproduction adjustment frame with the zoom lens at WIDE end)
Measurement Point	Video terminal of A/V OUT jack (75 Ω terminated)
Measuring Instrument	Vectorscope
Specified Value	All color luminance points should settle within each color reproduction frame.

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.
Note 2: Refer to "Picture Frame Setting" for YH and YL.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-15)
3	6	2C	01	
4	6	90	00	
5	6	91	00	
6	6	92	YL	(Note 2)
7	6	93	YH	(Note 2)
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	Press PAUSE button.
11	6	10	01	
12	E	52		Note down the data.
13	E	52	0A	Press PAUSE button.
14	6	01	0F	Press PAUSE button.
15				Check the each color luminance point is in each color reproduction frame.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	10	00	
3	6	2C	00	
4	6	92	00	
5	6	93	00	
6	E	52		Set the data noted down at step 12, and press PAUSE button.
7				Release the data setting performed at step 2 . (Refer to page 5-15)
8	0	01	00	
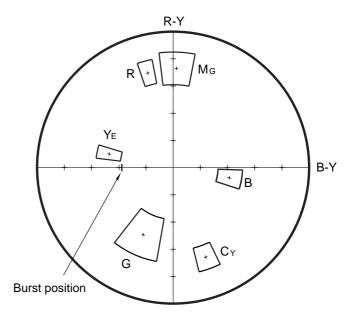
Fig. 5-1-18

13. CCD White Defect Compensation

Mode	CAMERA
Subject	Not required
Measurement Point	Displayed data of page: 6, address: 55
Measuring Instrument	Adjusting remote commander
Adjustment Page	7
Adjustment Address	88 to FF

Note 1: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.
Note 2: The "CCD White Defect Compensation" should be made when the set warms up at certain duration after the power was turned on, as it is affected with the temperature.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-15)
3	F	DE	1E	Press PAUSE button.
4	F	E3	13	Press PAUSE button.
5	6	01	8B	Press PAUSE button. (Note 3)
6	6	02		Check the data changes to "01".
7	6	55		Check the data. 00 to 7F: Normal 80 to FF: Defective
8	6	01	00	Press PAUSE button.
9	F	DE	0F	Press PAUSE button.
10	F	E3	60	Press PAUSE button.
11	6	01	87	Press PAUSE button.
12	6	02		Check the data changes to "01".
13	6	55		Check the data is "00".

Note 3: The adjustment data will be automatically input to page: 7, address: 88 to FF.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 2. (Refer to page 5-15)
3	0	01	00	

14. CCD Black Defect Compensation

Mode	CAMERA
Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Displayed data of page: 6, address: 55
Measuring Instrument	Adjusting remote commander
Adjustment Page	7
Adjustment Address	60 to 87

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.
Note 2: Check that there are no dust, no dirt and reflection of the clear chart.
Note 3: Any subject other than the clear chart should be in the screen.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustments". (Refer to page 5-15)
3	F	DF		Note down the data.
4	F	DF	4C	Press PAUSE button.
5	6	2C	01	
6	6	90	00	
7	6	91	03	
8	6	92	00	
9	6	93	00	
10	6	01	79	Press PAUSE button.
11	6	30	01	
12	6	07		Check the data changes to "01".
13	6	01	8D	Press PAUSE button. (Note 4)
14	6	02		Check the data changes to "01".
15	6	55		Check the data. 00: Proceed to "Processing after Completing Adjustment". 01 to 0A: Normal 0B to FF: Defective
16	6	01	00	Press PAUSE button.
17	F	DF	5A	Press PAUSE button.
18	6	01	89	Press PAUSE button.
19	6	02		Check the data changes to "01".
20	6	55		Check the data is "00".

Note 4: The adjustment data will be automatically input to page: 7, address: 60 to 87.

Processing after Completing Adjustment:

| Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	30	00	
4	6	91	00	
5	F	DF		Set the data noted down at step 3, and press PAUSE button.
6				Release the data setting performed at step 2 . (Refer to page 5-15)
7	0	01	00	

15. Strobe White Balance Adjustment

Adjust the white balance when the strobe light flashed.

Mode	CAMERA
Subject	Flash adjustment box (Note 3) (1 m from the front of the lens)
Adjustment Page	F
Adjustment Address	4D, 4E, 64, 69 to 6B
Specified Value	Y level data: 70 to 90 (Note 5) R-Y level data: FA to FF or 00 to 06 (Note 4) B-Y level data: FA to FF or 00 to 06 (Note 4)

Note 1: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Note 2: Perform this adjustment in the Flash adjustment box. Do not block the photocell window for flash. Restrict external light to enter the photocell window for flash as less as possible.

Note 3: Refer to "4. Preparing the Flash adjustment box". (See page 5-7)

Note 4: The right four digits of the page: 1 displayed data of the adjusting remote commander.

1:XX:XX

— B-Y level data
— R-Y level data

Note 5: Displayed data of page: F, address: 64, of the adjusting remote commander.

F:XX:64

— Y level data

Note 6: "Strobe White Balance Adjustment" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.

Switch setting:

1) FLASH (Control button) .... ON

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Perform "Data setting during camera system adjustment". (Refer to page 5-15)
3	6	14	90	
4	6	90	00	
5	6	91	00	
6	6	92	FF	
7	6	93	FF	
8	6	6C	01	
9	6	2C	01	
10	6	01	79	Press PAUSE button.
11	6	07		Check the data changes to "01".
12	6	01	67	Press PAUSE button.
13				Check the flashing of strobe light.
14	6	02		Check the data changes to "01".
15	6	01	00	Press PAUSE button.
16	6	01	67	Press PAUSE button.

Order	Page	Address	Data	Procedure
17				Check the flashing of strobe light.
18	6	02		Check the data changes to "01".
19	6	01	00	Press PAUSE button.
20	6	01	B9	Press PAUSE button. (Note 7)
21				Check the flashing of strobe light.
22	6	02		Check the data changes to "01".
23	6	01	00	Press PAUSE button.
24	6	01	67	Press PAUSE button.
25				Check the flashing of strobe light.
26	6	02		Check the data changes to "01".
27	0	03	02	
28	1			Check that the R-Y, B-Y level data (Note 4) satisfies the specified value.
29	F	64		Check that the Y level data (Note 5) satisfies the specified value.

Note 7: The adjustment data will be automatically input to page: F, address: 4D, 4E, 64 and 69 to 6B.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3	6	2C	00	
4	6	6C	00	
5	6	92	00	
6	6	93	00	
7	6	14	00	
8				Release the data setting performed at step 2. (Refer to page 5-15)
9	0	01	00	

1-5. LCD SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENTS" are satisfied.

Note 1: Taken an extreme care not to destroy the liquid crystal display module by static electricity when replacing it.
Note 2: Set the LCD BRIGHTENSS (SET UP setting) to the NORMAL.

[Adjusting connector]
Most of the measuring points for adjusting the LCD system are concentrated in CN 902 of the SY-69 board.
Connect the Measuring Instruments via the CPC-9 jig (J-6082-393-C).
The following table shows the Pin No. and signal name of CN 902.
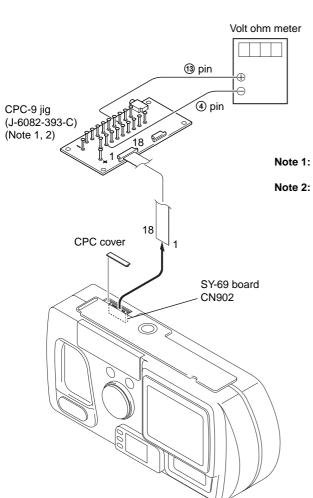
Pin No.	Signal Name	Pin No.	Signal Name
1	BL_L1	10	HI_UNREG
2	N. C.	11	LANC IN
3	N. C.	12	LANC OUT
4	REG_GND	13	MAKER_RECOG
5	CPU_IN	14	N. C.
6	BL_L2	15	N. C.
7	HSY	16	N. C.
8	PANEL_COM	17	N. C.
9	VG	18	N. C.

[IC type check]
By measuring the resistor value between Pin ⑬ of CN902 and Pin ④ of CN902, the type of IC801 (LCD drive) can be discriminated.

SY-69 board CN902

Resistor value	IC type
15 kΩ	AN12511A
22 kΩ	CXA8116R

Note 1: Don't use the 12 pin flexible board of CPC-9 jig. It causes damage to the unit.
Note 2: The old CPC-9 jig (Parts code: J-6082-393-B) cannot be used, because it cannot operate the adjusting remote commander.

Fig. 5-1-19

1. LCD Initial Data Input (1)

Mode	PLAY
Signal	Arbitrary
Adjustment Page	B
Adjustment Address	3A to 3F

Adjusting method:
1) Select page: 0, address: 01, and set data: 01.
2) Select page: B, and enter the data given in the following table.

Note: Press the PAUSE button each time the data are set, as the data are written to non-volatile memory (EEPROM).

Address	Data	Remark
3A	59	
3B	00	
3C	04	Fixed data
3D	5B	
3E	00	
3F	02	

Processing after Completing Adjustments:
1) Select page: 0, address: 01, and set data: 00.

2. LCD Initial Data Input (2)

Mode	PLAY
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	CE to DF

Adjusting method:
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, and enter the data given in the following table.

Note: Press the PAUSE button each time the data are set, as the data are written to non-volatile memory (EEPROM).

Address	Data		Remark
	AN12511A	CXA8116R	
CE	46	4D	Fixed value
CF	B9	D5	
D0	76	7D	Bright Adjustment
D1	C3	7E	Color Adjustment
D2	60	BB	White Blance Adjustment
D3	AA	83	
D4	B9	D5	Contrast Adjustment
D5	5C	90	Black Limit Adjustment
D6	AC	8D	VG Center Adjustment
D7	5C	5C	VCO Adjustment (NTSC)
D8	77	5A	V-COM Adjustment
D9	B0	B0	Fixed value
DA	61	7A	PSIG Adjustment
DB	00	00	Fixed value
DC	4D	4D	
DD	6A	6B	VCO Adjustment (PAL)
DE	A6	AD	Fixed value
DF	B9	D5	

Processing after Completing Adjustments:
1) Select page: 0, address: 01, and set data: 00.

3. VCO Adjustment (SY-69 Board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	PLAY
Signal	Arbitrary
Measurement Point	CH1: Pin ⑦ of CN902 (HSY) CH2: Video terminal of A/V OUT jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D7 (NTSC) DD (PAL)
Specified Value	T = 2.04 ± 0.1 μs (NTSC) T = 2.63 ± 0.1 μs (PAL)

Menu setting:
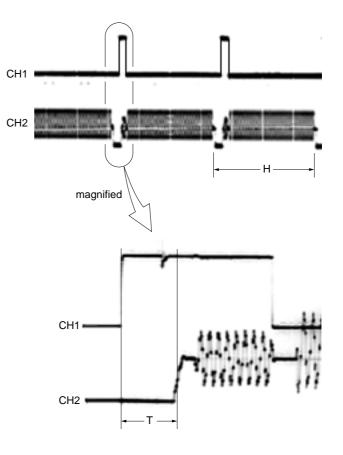
1) VIDEO OUT of SET UP setting
   ....NTSC (NTSC mode)
   (This adjustment must be performed in NTSC mode, so don't set the menu setting to "PAL")

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	D	D7		Change the data and set the phase difference (T) to the NTSC specified value.
3	D	D7		Press PAUSE button.
4	D	DD		Change the data and set the phase difference (T) to the PAL specified value.
5	D	DD		Press PAUSE button.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	0	01	00	

T: Between the center of HSY signal rising and VIDEO SYNC signal rising

Fig. 5-1-20

4. Black Limit Adjustment (SY-69 Board)

Set the maximum amplitude of the RGB decoder for driving the LCD to the specified value.
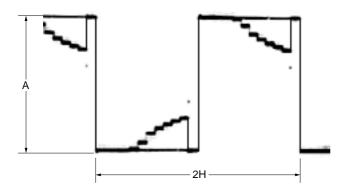
If deviated, the LCD screen image will be blackish or saturated (whitish).

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN902 (VG) External trigger: Pin ⑧ of CN902 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D5
Specified Value	A = 8.20 ± 0.1 Vp-p

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	03	
3	D	D0	20	Set the data. (Don't press PAUSE button.)
4	D	D5		Change the data and set the voltage (A) to the specified value.
5	D	D5		Press PAUSE button.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	

A: Between the reversed waveform peak and non-reversed waveform peak

Fig. 5-1-21

5. Bright Adjustment (SY-69 Board)

Set the amplitude of the RGB decoder for driving the LCD to the specified value.

If deviated, the LCD screen image will be blackish or saturated (whitish).
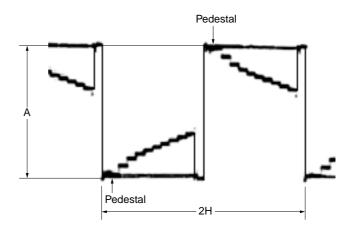
Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN902 (VG) External trigger: Pin ⑧ of CN902 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D0
Specified Value	A = 7.96 ± 0.1 Vp-p

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	03	
3	D	D0		Change the data and set the voltage (A) to the specified value.
4	D	D0		Press PAUSE button.
5	D	D0		Read the data and this data is named Dref.
6				Convert Dref to decimal notation, and obtain Dref'. (Note)
7				Calculate D_{CE}' and D_{DE}' using following equations. (decimal calculation) $D_{CE}' = Dref' - 48$ $D_{DE}' = Dref' + 48$
8				Convert D_{CE}' and D_{DE}' to hexadecimal numbers, and obtain D_{CE} and D_{DE}. (Note)
9	D	CE	D_{CE}	Press PAUSE button.
10	D	DE	D_{DE}	Press PAUSE button.

Note: Refer to table 5-2-2. "Hexadecimal-decimal conversion table".

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	

A: Between the reversed waveform pedestal and non-reversed waveform pedestal

Fig. 5-1-22

6. Contrast Adjustment (SY-69 Board)

Set the level of the VIDEO signal for driving the LCD to the specified value.
If deviated, the LCD screen image will be blackish or saturated (whitish).
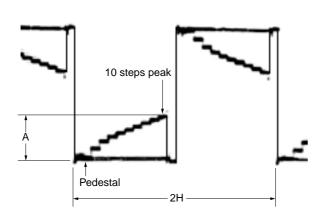
Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN902 (VG) External trigger: Pin ⑧ of CN902 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D4
Specified Value	A = 2.50 ± 0.05 Vp-p

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	03	
3	D	D4		Change the data and set the voltage (A) to the specified value.
4	D	D4		Press PAUSE button.
5	D	D4		Read the data and this data is named Dref.
6	D	CF	Dref	Press PAUSE button.
7	D	DF	Dref	Press PAUSE button.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	

A: Between the pedestal and 10 steps peak

Fig. 5-1-23

7. Color Adjustment (SY-69 Board)
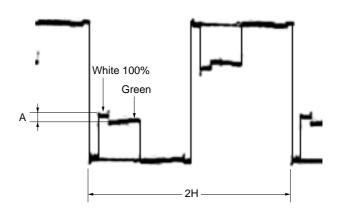
Set the color saturation to the standard value.
If, deviated, the color will be dark or light.

Mode	PLAY
Signal	Arbitray
Measurement Point	Pin ⑨ of CN902 (VG) External trigger: Pin ⑧ of CN902 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D1
Specified Value	A = 350 ± 50 mVp-p

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	04	
2	D	D1		Change the data and set the voltage (A) to the specified value.
4	D	D1		Press PAUSE button.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	

A: Between the white 100% (Reference level) and green

Fig. 5-1-24

8. VG Center Adjustment (SY-69 Board)

Set the center of VG signal for driving the LCD to the specified value.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑨ of CN902 (VG)
Measuring Instrument	Digital voltmeter
Adjustment Page	D
Adjustment Address	D6
Specified Value	A = 7.00 ± 0.05 V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	02	
3	D	D6		Change the data and set the DC voltage (A) to the specified value.
4	D	D6		Press PAUSE button.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	

9. PSIG Adjustment (SY-69 Board)

Set the common electrode drive signal level of LCD to the specified value.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ⑧ of CN902 (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	DA
Specified Value	A = 5.0 ± 0.1 Vp-p

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	02	
3	D	DA		Change the data and set the PSIG signal level (A) to the specified value.
4	D	DA		Press PAUSE button.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	
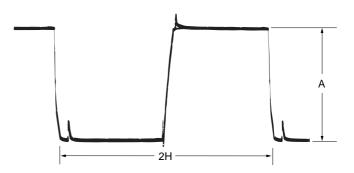
Fig. 5-1-25

10. V-COM Adjustment (SY-69 Board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will be move, producing flicker and conspicuous vertical lines.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Check on the LCD screen
Measuring Instrument	
Adjustment Page	D
Adjustment Address	D8
Specified Value	The brightness difference between the section-A and section-B is minimum

Note 1: Perform "Bright Adjustment" and "Contrast Adjustment" before this adjustment.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	02	
3	4	10	02	
4	D	D8		Change the data so that brightness of the section A and section B is equal.
5	D	D8		Read the data and this data is named Dref.
6				Convert Dref to decimal notation, and obtain Dref'. (Note 2)
7				Calculate D_{D8}' using following equations. (decimal calculation) $D_{D8}' = Dref' - 13$
8				Convert D_{D8}' to a hexadecimal number, and obtain D_{D8}. (Note 2)
9	D	D8	D_{D8}	Press PAUSE button.

Note 2: Refer to table 5-2-2. "Hexadecimal-decimal conversion table".

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	4	10	00	
3	0	01	00	
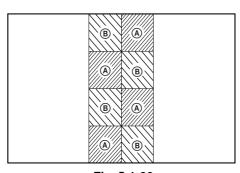
Fig. 5-1-26

11. White Balance Adjustment (SY-69 Board)

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Check on the LCD screen
Measuring Instrument	
Adjustment Page	D
Adjustment Address	D2, D3
Specified Value	LCD screen must not be colored

Note 1: Check the white balance only when replacing the following parts. If necessary, adjust them.
    1. LCD panel
    2. Light induction plate
    3. IC801

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	F1	02	
3	D	D2	60/BB	Press PAUSE button. (Intital value) (Note 2)
4	D	D3	AA/83	Press PAUSE button. (Intital value) (Note 2)
5				Check that the LCD screen is not colored. If not colored, proceed to "Processing after Completing Adjustments".
6	D	D2 D3		Change the data so that the LCD screen is not colored. (Note 3)

Note 2: AN12511A type/CXA8116R type
Note 3: To write in the non-volatile memory (EEPROM), press the PAUSE button each time to set the data.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	4	F1	00	
2	0	01	00	

1-6. SYSTEM CONTROL SYSTEM ADJUSTMENTS

1. Battery Down Adjustment

Set the battery end voltage.
If the voltage is incorrect, the life of battery will shorten.
The image at the battery end will also be rough.

Mode	CAMERA
Subject	Arbitrary
Measurement Point	Displayed data of page: 2, address: 9A
Measuring Instrument	Adjusting remote commander
Adjustment Page	D
Adjustment Address	90 to 94

Connection:
1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-1-27.

Preparations before adjustment:
1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 4.2 ± 0.1 Vdc.
2) Turn off the power supply.
3) Set the HOLD switch of the adjusting remote commander to "HOLD" (SERVICE position).
4) Turn on the power supply.
5) Insert the memory stick to the unit, and set the CAMERA mode.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	2C	01	
3				Decrease the output voltage of the regulated power supply so that digital voltmeter display is 3.20 ± 0.01 Vdc.
4	2	9A		Read the data, and this data is named Dref.
5	D	90	Dref	Press PAUSE button.
6				Convert Dref to decimal notation and obtain Dref'. (Note)
7				Calculate D_{91}', D_{92}', D_{93}' and D_{94}' using following equations(decimal calculation) $D_{91}'=Dref'+6$ $D_{92}'=Dref'+23$ $D_{93}'=Dref'+44$ $D_{94}'=Dref'+55$
8				Convert D_{91}', D_{92}', D_{93}' and D_{94}' to a hexadecimal number, and obtain D_{91}, D_{92}, D_{93} and D_{94} (Note)
9	D	91	D_{91}	Press PAUSE button.
10	D	92	D_{92}	Press PAUSE button.
11	D	93	D_{93}	Press PAUSE button.
12	D	94	D_{94}	Press PAUSE button.

Note: Refer to table 5-2-2. "Hexadecimal-decimal conversion table"

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	2C	00	
2	0	01	00	
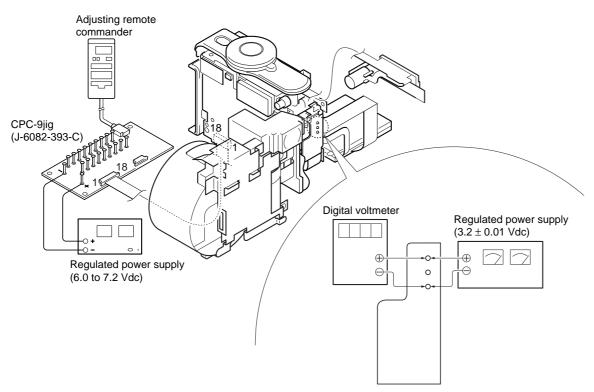
Fig. 5-1-27

5-2. SERVICE MODE
2-1. ADJUSTING REMOTE COMMANDER

The adjusting remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjusting remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Used the Adjusting Remote Commander

1) Connect the adjusting remote commander to the CN902 on the SY-69 board via CPC-9 jig (J-6082-393-C).
2) Set the HOLD switch of the adjusting remote commander to "HOLD" (SERVICE position).
3) Turn on the power with the POWER switch of the unit.

If it has been properly connected, the LCD on the adjusting remote commander will display as shown in Fig. 5-2-1.
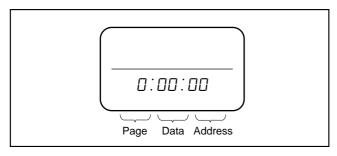
Fig. 5-2-1

4) Operate the adjusting remote commander as follows.
   • Changing the page
   The page increases when the EDIT SEARCH + button is pressed, and decreases when the EDIT SEARCH – button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0 1 2 3 4 5 6 7 8 9 A B C D E F
LCD Display	0 1 2 3 4 5 6 7 8 9 A b c d E F
Decimal notation conversion value	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Table 5-2-1

• Changing the address
The address increases when the FF (►►) button is pressed, and decreases when the REW (►►) button is pressed. There are altogether 256 addresses, from 00 to FF.

• Changing the data (Data setting)
The data increases when the PLAY (►) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.

• Writing the adjustment data
The PAUSE button must be pressed to write the adjustment data in the nonvolatile memory. (The new adjustment data will not be recorded in the nonvolatile memory if this step is not performed)

2. Precautions upon Using the Adjusting Remote Commander

Mishandling of the adjusting remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

2-2. DATA PROCESS

The calculation of the adjusting remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Table 5-2-2. indicates the hexadecimal notation- the decimal notation, calculation table.

Hexadecimal nontation-Decimal notation ②↓

The lower digits of the hexadecimal notation / The upper digits of the hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
①→ B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note : ( ) indicate the adjusting remote control unit display.

(Example) In the case that the adjusting remote control unit display are BD (bd).
As the upper digit of the hexadecimal notation is B (b), and the lower digit is D (d), the intersection "189" of the① and ② in the above table is the decimal notation to be calculated.

Table 5-2-2

2-3. SERVICE MODE
1. Setting the Test Mode

Page D	Address 10

Data	Function
00	Normal
01	Forced CAMERA mode power ON
02	Forced PLAY mode power ON
03	Forced MOVIE mode power ON
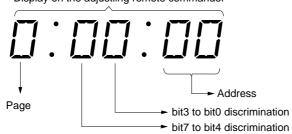
- Before setting the data, select page: 0, address: 01, and set data: 01.
- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjusting remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, be sure to return the data of this address to "00", and press the PAUSE button of the adjusting remote commander.
  Select page: 0, address: 01, and set data: 00.

2. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjusting remote commander for following items. Use the table below to discriminate if the bit value is "1" or "0".

Display on the adjustilng remote commander

Page
bit3 to bit0 discrimination
bit7 to bit4 discrimination
Address

Display on the	Bit values			
Adjusting remote commander	bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
Ⓐ 8	1	0	0	0
9	1	0	0	1
A (𝐴)	1	0	1	0
B (𝑏)	1	0	1	1
C (𝑐)	1	1	0	0
D (𝑑)	1	1	0	1
Ⓑ E (𝐸)	1	1	1	0
F (𝐹)	1	1	1	1

Example: If "8E" is displayed on the adjusting remote commander, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

3. Mode Dial Check (1)

Page 2	Address 94

Data	Function
00 to 14	MOVIE
15 to 3D	TWILIGHT
3E to 67	CAMERA

Using method:
1) Select page: 2, address: 94.
2) By discriminating the bit value of dispaly data, the state of the switches can be discriminated.

4. Mode Dial Check (2)

Page 2	Address 80, 86

Address	Bit	Function	When bit value=1	When bit value=0
80	1	PLAY	others	PLAY
86	6	SET UP	others	SET UP

Using method:
1) Select page: 2, address: 80 and 86.
2) By discriminating the bit value of dispaly data, the state of the switches can be discriminated.

5. Switch Check (1)

Page 2	Address 80

Bit	Function	When bit value=1	When bit value=0
0	POWER SW (CONTROL SWITCH BLOCK)	OFF	ON
1	PLAY (Mode Dial) (CONTROL SWITCH BLOCK)	others	PLAY
2			
3	SHUTTR SW (CONTROL SWITCH BLOCK)	OFF	ON
4	XSHUTTER LOCK SW (CONTROL SWITCH BLOCK)	OFF	ON
5	MEMORY STICK IN SW (MS Socket)	OUT	IN

Using method:
1) Select page: 2, address: 80.
2) By discriminating the bit value of dispaly data, the state of the switches can be discriminated.

6. Switch Check (2)

Page 2	Addresses 90, 91, 93

Using method:
1) Select page: 2, addresses: 90, 91 and 93.
2) By discriminating the dispaly data, the pressed key can be discriminated.

Address	Data						
	00 to 0C	0D to 27	28 to 48	49 to 74	75 to A6	A7 to DD	DE to FF
90 (KEY AD0) (IC401 ⑧②)	CONTROL DOWN (DD-163 board) (S951)	CONTROL UP (DD-163 board) (S951)	MENU (DD-163 board) (S954)				
91 (KEY AD1) (IC401 ⑧③)	CONTROL RIGHT (DD-163 board) (S951)	CONTROL LEFT (DD-163 board) (S951)	CONTROL SET (DD-163 board) (S951)	DISPLAY/LCD ON/OFF (DD-163 board) (S955)			
93 (KEY AD3) (IC401 ⑧⑤)	ZOOM (W) (DD-163 board) (S952)	ZOOM (T) (DD-163 board) (S953)					

7. LED Check

Page 2	Address 04	Data 01

Using method:
1) Select page: 2, address: 04, set data: 01, and press the PAUSE button of the adjusting remote commander.
2) Check that all LED except for the ACCESS LED are lit and all segments of LCD (display window) are lit.
3) Select page: 2, address: 04, set data: 00 and press the PAUSE button of the adjusting remote commander.

8. Self Diagnosis Code

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:□□	Turn the power off and on again.	Trouble with hardware.	SYSTEM ERROR
C:13:□□	Format the "Memory stick".	Unformatted memory stick is inserted.	FORMAT ERROR
	Insert a new "Memory Stick".	Memory stick is broken.	MEMORY STICK ERROR
E:61:□□	Checking of lens drive circuit.	When failed in the focus and zoom initialization.	—
E:91:□□	Checking of flash unit or replacement of flash unit.	Abnormality when flash is being charged.	

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

NOTE:
• -XX and -X mean standardized parts, so they may have some difference from the original one.
• Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• The mechanical parts with no reference number in the exploded views are not supplied.
• Accessories are given in the last of the electrical parts list.
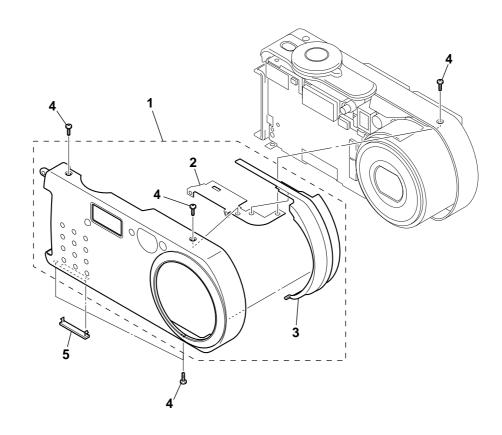
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.
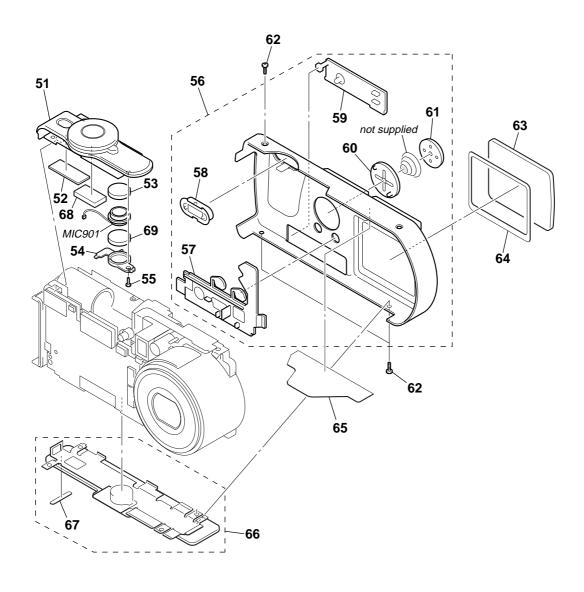
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. CABINET (FRONT) ASSEMBLY
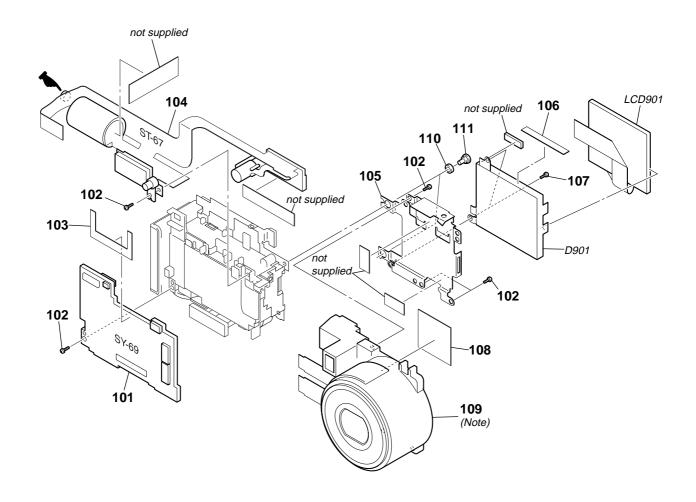
Ref. No.	Part No.	Description	Remark
1	X-3951-968-1	CABINET (FRONT) ASSY	
2	3-071-056-01	PLATE (UPPER), INNER	
3	3-071-037-01	CABINET, CENTER	

Ref. No.	Part No.	Description	Remark
4	3-989-735-51	SCREW (M1.7), LOCK ACE, P2	
5	3-064-225-01	LID, CPC	

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6-1-2. CABINET (REAR) ASSEMBLY

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	1-476-875-11	SWITCH BLOCK, CONTROL		61	3-071-051-01	BUTTON, FUNCTION	
52	3-071-108-01	CUSHION (MODE DIAL)		62	3-989-735-51	SCREW (M1.7), LOCK ACE, P2	
* 53	3-055-971-01	CUSHION, MICROPHONE		63	3-071-002-01	LCD WINDOW (1.5)	
54	3-071-012-01	CAP, MICROPHONE		64	3-071-003-01	SHEET (1.5), ADHESIVE	
55	3-713-791-71	SCREW (M1.7X4)		65	3-071-059-01	SHEET (ST), INSULATING	
56	X-3951-969-1	CABINET (REAR) ASSY		66	X-3951-970-1	CABINET (BOTTOM) ASSY	
57	3-071-054-01	WINDOW, JACK		67	3-070-999-01	FOOT (UN), RUBBER	
58	3-071-048-01	BUTTON, ZOOM		68	3-072-132-01	MA CUSHION	
59	3-071-055-01	COVER, JACK		69	3-072-219-01	CUSHION (NM), MICROPHONE	
60	3-071-052-01	HOLDER, FUNCTION BUTTON		MIC901	1-542-446-21	MICROPHONE	

6-1-3. LENS BLOCK AND LCD SECTION
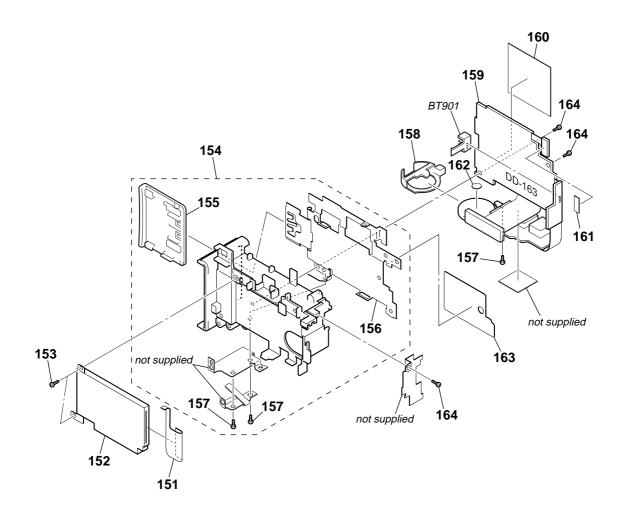
: BT101 (BATTERY, LITHIUM SECONDARY)
Board on the mount position. (See page 4-40.)

(Note) The lens block assembly is a mechanical unit which
has completely been adjusted in the factroy. So never
disassemble the lens block assembly.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	A-7074-984-A	SY-69 BOARD, COMPLETE (SERVICE)		108	3-071-019-01	SHEET, PROTECTION	
102	3-713-791-71	SCREW (M1.7X4)		109	A-7031-334-A	LENS BLOCK ASSY (Note)	
103	3-071-017-01	SHEET (STROBOSCOPE), INSULATING		110	3-064-216-01	CUSHION (L)	
104	A-7074-974-A	ST-67 BOARD, COMPLETE		111	3-064-215-01	SCREW (M1.7), STEP	
105	3-071-035-01	FRAME, LENS		⚠ D901	1-476-931-11	BLOCK LIGHT GUIDE PLATE (1.5)	
106	3-071-020-01	SHEET (LCD), LIGHT INTERCEPTION		LCD901	8-753-050-67	ACX309AK-1	
107	3-989-735-51	SCREW (M1.7), LOCK ACE, P2					

6-1-4. BATTERY HOLDER ASSEMBLY

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	1-682-672-11	FP-380 FLEXIBLE BOARD		159	A-7074-973-A	DD-163 BOARD, COMPLETE	
152	1-815-853-11	CONNECTOR, MEMORY STICK		160	3-071-014-01	SHEET (DD), INSULATING	
153	3-695-653-01	SCREW (1.7X3), TAPPING (B)		161	3-071-015-01	SHEET (LED), ADHESIVE	
154	X-3951-967-1	HOLDER ASSY, BATTERY		162	3-071-013-01	SP CUSHION	
155	3-071-027-01	LID, BT		163	3-071-005-01	DD SPACER	
156	X-3951-971-1	FRAME ASSY, BT MAIN		164	3-713-791-71	SCREW (M1.7X4)	
157	3-989-735-51	SCREW (M1.7), LOCK ACE, P2		BT901	1-694-854-11	BATTERY TERMINAL BOARD	
158	3-071-008-01	SP HOLDER					

6-2. ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Abbreviation
  AUS : Australian model
  CN   : Chinese model
  CND : Canadian model
  HK   : Hong Kong model
  J   : Japanese model
  JE   : Tourist model
  KR   : Korea model

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. .   uPA. .   : μPA. .
  uPB. . : μPB. .   uPC. .   : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark
		CD-340 BOARD, COMPLETE	

```
************************
          (Ref. No.: 2,000 Series)
```

Note: The parts mounted on this board are not supplied individually for service.
These are included in the LENS BLOCK ASSY (A-7031-334-A).

Electrical parts list of the DD-163 board is not shown.
Pages 6-6 to 6-8 are not shown.

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ST-67

Ref. No.	Part No.	Description			Remark
	A-7074-974-A	ST-67 BOARD, COMPLETE			
		********************			
					(Ref. No.: 3,000 Series)
⚠	1-476-678-21	FLASH UNIT			
	3-068-578-01	SENSOR TABLE B			
	3-071-032-01	TABLE, SENSOR			
	3-071-033-01	HOLDER, LED			

< BATTERY >

BT101	1-528-999-31	BATTERY, LITHIUM SECONDARY			

< CAPACITOR >

C003	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C005	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
⚠C008	1-165-806-11	ELECT	120uF		310V
⚠C010	1-137-723-21	CERAMIC CHIP	0.047uF	10%	250V

< CONNECTOR >

CN102	1-778-596-21	CONNECTOR, BOARD TO BOARD 30P			

< DIODE >

D001	8-719-056-23	DIODE	MA2S111- (K8).SO
⚠D002	8-719-083-17	DIODE	HAU140C029TP
D101	6-500-102-01	DIODE	TLOH20TP (SONY2)
			(SELF TIMER/AF ILLUMINATOR (RED))

< COIL >

⚠L002	1-424-770-11	COIL, TRIGGER

< TRANSISTOR >

Q005	8-729-422-87	TRANSISTOR	2SB1073-R
⚠Q011	8-729-053-74	TRANSISTOR	CY25AAJ-8-T13
Q012	8-729-039-61	TRANSISTOR	TPS613-BC
			(BRIGHT LEVEL SENSOR)

< RESISTOR >

R005	1-216-805-11	METAL CHIP	47	5%	1/16W
R006	1-216-838-11	METAL CHIP	27K	5%	1/16W
R009	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R010	1-216-814-11	METAL CHIP	270	5%	1/16W
R016	1-216-805-11	METAL CHIP	47	5%	1/16W
R017	1-216-857-11	METAL CHIP	1M	5%	1/16W
⚠R018	1-216-121-11	RES-CHIP	1M	5%	1/10W
R102	1-216-803-11	METAL CHIP	33	5%	1/16W

< TRANSFORMER >

⚠T001	1-435-741-21	TRANSFORMER, DC-DC CONVERTER

> Electrical parts list of the SY-69 board is not shown.
> Pages 6-10 to 6-15 are not shown.
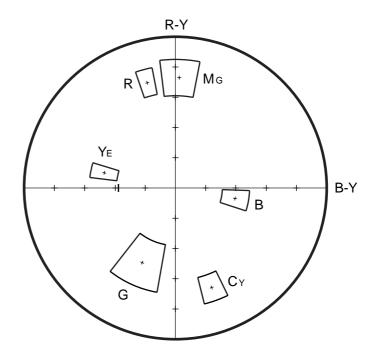
Ref. No.	Part No.	Description	Remark
		ACCESSORIES	
		************	
⚠	1-476-332-11	ADAPTOR, AC (AC-LSI) (US, CND, JE, J)	
⚠	1-476-332-21	ADAPTOR, AC (AC-LSI) (CN)	
⚠	1-476-332-31	ADAPTOR, AC (AC-LSI) (KR)	
⚠	1-476-332-41	ADAPTOR, AC (AC-LSI) (AEP, UK, E, HK, AUS)	
⚠	1-569-007-11	ADAPTOR, CONVERSION (E)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (E)	
⚠	1-696-819-11	CORD, POWER (AUS)	
	1-757-293-11	CORD, CONNECTION (USB 5P)	
⚠	1-769-608-11	CORD, POWER (AEP, E)	
⚠	1-776-985-11	CORD, POWER (KR)	
⚠	1-782-476-11	CORD, POWER (CN)	
⚠	1-783-374-11	CORD, POWER (UK, HK)	
	1-783-738-31	CORD, CONNECTION (AV CONNECTING)	
⚠	1-790-107-22	CORD, POWER (US, CND)	
⚠	1-790-732-11	CORD, POWER (JE, J)	
	3-050-664-11	STRAP, HAND	
	3-065-665-01	MANUAL, INSTRUCTION (for SAFETY) (JAPANESE) (JE, J)	
	3-066-676-01	SPVD-004 (P) (CD-ROM) (AEP, UK, E, HK, KR, AUS, CN)	
	3-066-677-01	SPVD-004 (I) (CD-ROM) (US, CND, JE, J)	
	3-068-191-01	PC INSTRUCTION MANUAL (JAPANESE) (JE, J)	
	3-070-845-01	REGISTRATION (CD-ROM) (JE, J)	
	3-070-925-01	MANUAL, INSTRUCTION (JAPANESE) (JE, J)	
	3-070-925-11	MANUAL, INSTRUCTION (ENGLISH) (US, CND, AEP, UK, E, HK, AUS, CN)	
	3-070-925-21	MANUAL, INSTRUCTION (FRENCH, GERMAN) (CND, AEP)	
	3-070-925-31	MANUAL, INSTRUCTION (SPANISH, PORTUGUESE) (AEP, E)	
	3-070-925-41	MANUAL, INSTRUCTION (ITALIAN, DUTCH) (AEP)	
	3-070-925-51	MANUAL, INSTRUCTION (TRADITIONAL CHINESE, SIMPLIFIED CHINESE) (E, HK, CN)	
	3-070-925-61	MANUAL, INSTRUCTION (RUSSIAN, SWEDISH) (AEP)	
	3-070-925-71	MANUAL, INSTRUCTION (ARABIC) (E)	
	3-070-925-81	MANUAL, INSTRUCTION (KOREAN) (KR)	
	A-7096-900-A	CLUB 2 (JA) ASSY, PICTURE PARADISE (JE, J)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

For NTSC mode

DSC-P5

DSC-P5

US Model
Canadian Model
AEP Model
UK Model
E Model
Hong Kong Model
Australian Model
Chinese Model
Korea Model
Tourist Model
Japanese Model

SUPPLEMENT-1

File this supplement with the service manual.

(PV01-042)

> • **Change of Lens Block Assy.**

SERVICE NOTE

● NOTE FOR REPAIR

[Precaution on Replacing the Video Lens or the SY-69 Board]

The DSC-P5 uses the position sensor to detect the zoom position. Accordingly, the zoom position will vary if the position data changes due to the replacement of the video lens or the SY-69 board, thus causing the video lens to collide against the mechanism end when the power is turned off.

Though the position data is calibrated at the "Flange Back Adjustment", add the following work when making an adjustment at the replacement of video lens to prevent a collision of video lens.

When Replacing the Video Lens

1) With current video lens assembled, turn the power on, and set the bit value of Bit0 on Page:9, Address:65 to "0" using the adjusting remote commander, then turn the power off.
2) Replace the video lens with a new one, turn the power on, and perform the "Flange Back Adjustment".
   Thus, new position data will be written.
3) After the "Flange Back Adjustment", return the bit value of Bit0 on Page:9, Address:65 to "1" using the adjusting remote commander.

When Replacing the SY-69 Board

1) Replace the SY-69 board with a new one, set the mode dial to "PLAY", turn the power on, and set the bit value of Bit0 on Page:9, Address:65 to "0" using the adjusting remote commander, then turn the power off.
2) Set the mode dial to "CAMERA", turn the power on, and perform the "Flange Back Adjustment".
   Thus, new position data will be written.
3) After the "Flange Back Adjustment", return the bit value of Bit0 on Page:9, Address:65 to "1" using the adjusting remote commander.

[Note in Lens Frame Installation]
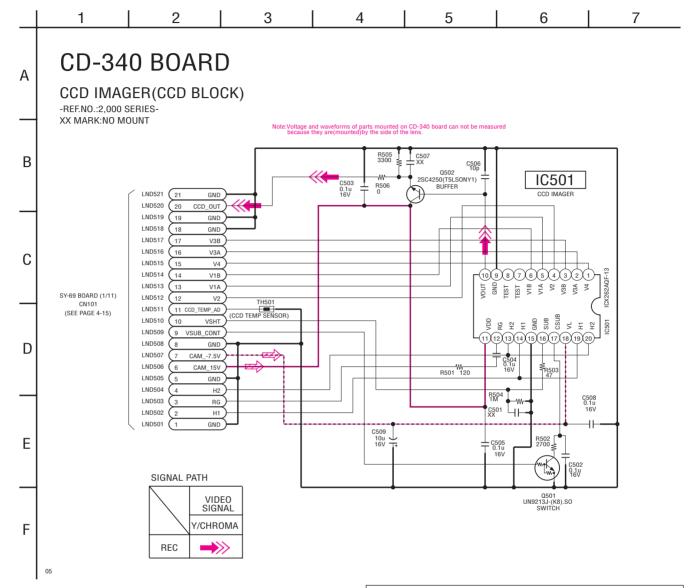
When tightening a screw, have both sides of the lens block assembly so as not for the load to depend.

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

CD-340 (CCD IMAGER) SCHEMATIC DIAGRAM

CD-340 BOARD

CCD IMAGER(CCD BLOCK)
-REF.NO.:2,000 SERIES-
XX MARK:NO MOUNT

Note:Voltage and waveforms of parts mounted on CD-340 board can not be measured because they are(mounted)by the side of the lens.

IC501
CCD IMAGER

SY-69 BOARD (1/11)
CN101
(SEE PAGE 4-15)

LND521	21	GND
LND520	20	CCD_OUT
LND519	19	GND
LND518	18	GND
LND517	17	V3B
LND516	16	V3A
LND515	15	V4
LND514	14	V1B
LND513	13	V1A
LND512	12	V2
LND511	11	CCD_TEMP_AD
LND510	10	VSHT
LND509	9	VSUB_CONT
LND508	8	GND
LND507	7	CAM_-7.5V
LND506	6	CAM_15V
LND505	5	GND
LND504	4	H2
LND503	3	RG
LND502	2	H1
LND501	1	GND

R505 3300
C507 XX
C506 10p
Q502 2SC4250(T5LSONY1) BUFFER
C503 0.1u 16V
R506 0

TH501 (CCD TEMP SENSOR)

VOUT GND TEST TEST V1B V1A V2 V3B V3A V4
10 9 8 7 6 5 4 3 2 1
ICX262AQF-13

VDD RG H2 H1 GND SUB CSUB VL H1 H2
11 12 13 14 15 16 17 18 19 20
IC501

C504 0.1u 16V
R501 120
R503 47
R504 1M
C501 XX
C508 0.1u 16V
C509 10u 16V
C505 0.1u 16V
R502 2700
C502 0.1u 16V
Q501 UN9213J-(K8).SO SWITCH

SIGNAL PATH

	VIDEO SIGNAL
	Y/CHROMA
REC	

05

Precautions for Replacement of CCD Imager
• The CD-340 board mounted as a repair part is not equipped with a CCD imager.
  When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
• If the CCD imager has been replaced, carry out all the adjustments for the camera section.
• As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

SECTION 5
ADJUSTMENTS

1-1. Adjusting items when replacing main parts and boards

When replacing main parts and boards, adjust the items indicated by ● in the following table.
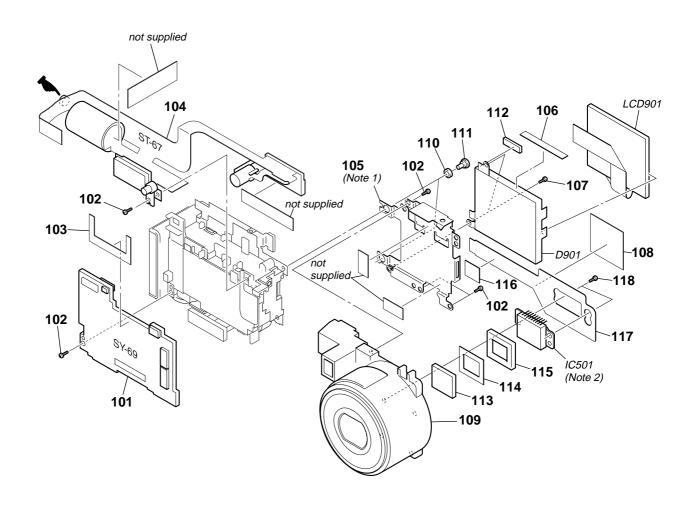
Adjustment section	Adjustment	Video lens (Note)	Flash unit	LCD901 (LCD panel) / LCD block	D9001 (Back light unit) / LCD block	IC501 (CCD imager) / CD-340 board	IC102 (S/H, AGC, A/D) / SY-69 board	IC506 (EVR) / SY-69 board	IC601 (VIDEO AMP) / SY-69 board	IC801 (LCD drive) / SY-69 board	IC804 (LCD Timing generator) / SY-69 board	IC802 (EVR) / SY-69 board	(COMPLETE) / ST-67 board	(COMPLETE) / SY-69 board	IC503 EEPROM / SY-69 board
Initialization of 7, 9, B, D, E, F, page data	Initialization of D page data													●	●
	Initialization of B, E, F, 7, 9 page data													●	●
Video	Video sync level adj.							●	●					●	●
	Video burst level adj.							●	●					●	●
Camera	Flange back adj.	●				●								●	●
	F No. standard data input	●				●								●	●
	Mechanical shutter adj.	●				●								●	●
	Light value adj.	●				●	●							●	●
	Auto white balance standard data input	●				●	●							●	●
	Auto white balance adj.	●				●	●							●	●
	Color reproduction adj.	●				●	●							●	●
	CCD (white and black) defect compensation					●								●	●
	Strobe white balance adj.		●			●	●						●	●	●
LCD	LCD initial data input													●	●
	VCO adj.										●	●		●	●
	Black limit adj.									●		●		●	●
	Bright adj.									●		●		●	●
	Contrast adj.									●		●		●	●
	Color adj.									●		●		●	●
	PSIG adj.									●		●		●	●
	VG center adj.									●		●		●	●
	V-COM adj.			●						●		●		●	●
	White balance adj.			●	●					●		●		●	●
System control	Battery down adj.													●	●

Table 5-1-1

Note : When replacing the video lens or the SY-69 board, refer to "Precaution on Replacing the Video Lens or the SY-69 board". (See page 2)

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS
6-1-3. LENS BLOCK AND LCD SECTION

🖐 : BT101 (BATTERY, LITHIUM SECONDARY)
Board on the mount position.
(See original manual page 4-40.)

(Note 2) Be sure to read "Precautions for Replacement of CCD Imager" on page 3 in this supplement manual when changing the CCD imager.

(Note 1) Refer to page 2 when installing the lens frame to the lens block assembly.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
101	A-7074-984-A	SY-69 BOARD, COMPLETE (SERVICE)	
102	3-713-791-71	SCREW (M1.7X4)	
103	3-071-017-01	SHEET (STROBOSCOPE), INSULATING	
104	A-7074-974-A	ST-67 BOARD, COMPLETE	
105	3-071-035-01	FRAME, LENS (Note 1)	
106	3-071-020-01	SHEET (LCD), LIGHT INTERCEPTION	
107	3-989-735-51	SCREW (M1.7), LOCK ACE, P2	
108	3-071-019-01	SHEET, PROTECTION	
109	1-758-665-11	LENS, VIDEO (CE010A0)	
110	3-064-216-01	CUSHION (L)	
111	3-064-215-01	SCREW (M1.7), STEP	

Ref. No.	Part No.	Description	Remark
112	3-070-998-01	CUSHION (LCD), INTERCEPTION	
113	1-758-633-12	FILTER BLOCK, OPTICAL	
114	3-070-143-01	PLATE, LIGHT INTERCEPTION	
115	3-054-555-01	RUBBER (K), SEAL	
116	3-070-996-01	SHEET (LENS MOTOR), PROTECTION	
117	A-7074-975-A	CD-340 BOARD, COMPLETE	
118	3-713-791-11	SCREW (M17.X5), TAPPING, P2	
⚠ D901	1-476-931-11	BLOCK LIGHT GUIDE PLATE (1.5)	
IC501	A-7031-134-A	CCD BLOCK ASSY (CCD IMAGER) (Note 2)	
LCD901	8-753-050-67	ACX309AK-1	

DSC-P5

CD-340

6-2. ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description			Remark
	A-7074-975-A	CD-340 BOARD, COMPLETE			
		************************			
		(Ref. No.: 2,000 Series)			
		(IC501 is not included in this complete board)			
		< CAPACITOR >			
C502	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C503	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C504	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C505	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C506	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C508	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C509	1-135-957-91	TANTAL. CHIP	10uF	20%	16V
		< IC >			
IC501	A-7031-134-A	CCD BLOCK ASSY (CCD IMAGER) (Note)			
		< TRANSISTOR >			
Q501	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO		
Q502	8-729-050-22	TRANSISTOR	2SC4250 (T5LSONY1)		
		< RESISTOR >			
R501	1-216-810-11	METAL CHIP	120	5%	1/16W
R502	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R503	1-216-805-11	METAL CHIP	47	5%	1/16W
R504	1-216-857-11	METAL CHIP	1M	5%	1/16W
R505	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R506	1-216-864-11	METAL CHIP	0	5%	1/16W
		< THERMISTOR >			
TH501	1-810-816-11	THERMISTOR, NTC (1608)			

(Note) Be sure to read "Precuations for Replacement of CCD Imager" on page 3 in this supplement manual when changing the CCD imager.

9-929-914-81

Sony EMCS Co.
– 6 –

2001L0500-1
© 2001. 12
Published by DI Customer Center

DSC-P5

SONY

SERVICE MANUAL

Level 2

Ver 1.4 2002. 06

SUPPLEMENT-2

File this supplement with the service manual.

(PV02-002)

• **Change of the end number of the part.**

6-1.   EXPLODED VIEWS
6-1-2.   CABINET (REAR) ASSEMBLY
(See original service manual page 6-2.)
☛ : Points changed portion.

Former type				New type			
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	1-476-875-11	SWITCH BLOCK, CONTROL		51	1-476-875-12	SWITCH BLOCK, CONTROL	

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2001.09	Official Release	—	—
1.1	2001.11	Correction (C1)	S.M. correction : Page 5-33, Page 5-34, Page 5-35	Yes
1.2	2001.12	Supplement-1 (S1 PV01-042)	• Change of lens block assy.	No
1.3	2002.02	Correction (C2 PV01-055)	• Correction of DISASSEMBLY. (Correction of process.) S.M. correction : Page 2-1, Page 2-4	Yes
1.4	2002.06	Supplement-2 (S2 PV02-002)	• Change of the end number of the part.	No
1.5	2003.01	Correction (C3)	• Correction of Flange Back Adjustment. S.M. correction : Page 5-16, Page 5-17	Yes