DSC-P71/P71M

SERVICE MANUAL

Level 2



Ver 1.1 2002, 04







US Model DSC-P71/P71M

Canadian Model AEP Model UK Model E Model Hong Kong Model Australian Model Chinese Model Korea Model Tourist Model Japanese Model DSC-P71

This service manual contains information for Japanese model as well.

On the SY-075 board

This service manual procides the information that is premised the circuit board replacement service and not intended repair inside the

Therefore, schematic diagram, printed wiring board and electrical parts list of the SY-075 board are not shown.

The following pages are not shown.

SY-075 board

Schematic diagram	Pages 4-11 to 4-26
Printed wiring board	Pages 4-43 to 4-46
Electrical parts list	Pages 6-4 to 6-11

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

SPECIFICATIONS

System

Lens

Image device 8.93mm (1/1.8 type) color

CCD

Primary color filter

Effective pixels number of camera Approx. 3 210 000 pixels

3×2 doom lens

f=8~24.0 mm (35 mm camera conversion: 39 to 117mm)

F2.8~5.3

Exposure control

Automatic

Scene Selection (3 mode) White balance Automatic, Daylight, Cloudy,

Fluorescent, Incandescent

Data formats Moving images: MPEG1 Still images: JPEG, GIFF (for Clip

Recording media "Memory Stick"

Flash Recommended distance

0.5 to 3.8 m (1.6 to 12.5 ft) (W)

0.5 to 2.5 m (1.6 to 8.2 ft) (T) (when ISO sensitivity is set to Auto)

Output connectors

VIDEO OUT jack

Miniiack 1 Vp-p, 75 ohm, unbalanced, sync

USB jack mini-B

LCD screen

LCD panel used

3.8 cm (1.5 type) TFT drive

Total number of dots 123 200 (560x220) dots

AA nickel hydride batteries (2)

AC-LS1 AC power adaptor (not supplied), 4.2 V

Power consumption (when recording)

2.1W

Operating temperature range 0° to +40°C (32° to +104°F)

Storage temperature range

 -20° to $+60^{\circ}$ C (-4° to $+140^{\circ}$ F)

124.9 × [38 × [43.6 mm (5 × [2] 3/8 $1^{3}/_{4}$ inches)

(W/H/D, protruding portions not

included)

284 g (10 oz) (camera, two batteries. Mass

included)

BC-CS1 Ni-MH battery charger

Power requirements

AC 100 to 240V 50/60Hz 2.2 W

Output voltage

DC 1.8V 180/110 mA × 2

 $70 \times 29 \times 4 \text{ mm} (2^{7}/8 \times 3^{1}/16 \times 3^{1})$ inches) (W/H/D)

Approx. 70g (2 oz)

Operating temperature range

0° to +40°C (32° to +104°F)

AC-LS1 AC power adaptor (not supplied)

AC 100 – 240 V, 50/60 Hz

Rated output voltage

DC 4.2 V, 1.5 A

105 × $\boxed{3}$ 6 × $\boxed{5}$ 6 mm (4 1 /₄ × $\boxed{1}$ 7 /₁₆ × $\boxed{2}$ 1 /₄) (W/H/D, protruding parts not

included)

Approx. 180 g (6 oz) (adaptor only)

Operating temperature range 0° to +40°C (32° to +104°F)

Storage temperature range -20° to $+60^{\circ}$ C (-4° to $+140^{\circ}$ F)

Accessories

• [Video connector cable (1) • R6 (size AA) Ni-MH batteries (2)

• Ni-MH Battery charger (1)

Power cord (mains lead) (1)

• USB cable (1)

• Wrist strap

•[]'Memory Stick" (16MB) (1)

• CD-ROM (USB driver: SPVD-008) (1)

• CD-ROM (for Customer registration) (1)

Operation Instructions (1)

Design and specifications are subject to change

DIGITAL STILL CAMERA



Table for differences of function

Model	DSC-P71	DSC-P71M (Note)
Destination	US, Canadian, AEP, UK E, J, Hong Kong, Australian, Chinese, Korea, Tourist	US

Note: DSC-P71M is the same as DSC-P71 (US model) except packing materials. Therefore, information about DSC-P71 (US model) in the text is applied.

CAUTION

Use of controls or adjustments or performance procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle 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 PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE A SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS 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.

- Check the area of your repair for unsoldered or poorly-soldered 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 transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
- Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend 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 soldering or unsoldering.

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the leadfree mark (LF) indicating the solder contains no lead.

(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

🛂 : LEAD FREE MARK

Unleaded solder has the following characteristics.

 Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.

Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.

Soldering irons using a temperature regulator should be set to about 350 $^{\circ}\text{C}$.

Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!

Strong viscosity

Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.

Usable with ordinary solder
 It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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DSC-P71/P71M

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^{*} The color reproduction frame is shown on page 167.

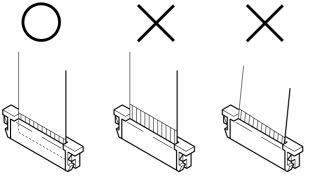
SERVICE NOTE

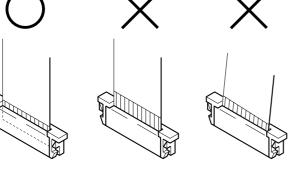
NOTE FOR REPAIR

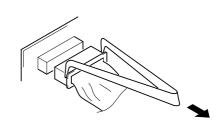
Make sure that the flat cable and flexible board are not cracked of bent at the terminal.

Do not insert the cable insufficiently nor crookedly.

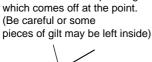
When remove a connector, don't pull at wire of connector. It is possible that a wire is snapped.





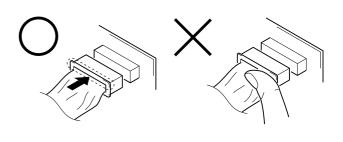


When installing a connector, don't press down at wire of connector. It is possible that a wire is snapped.



Cut and remove the part of gilt





[Discharging of the ST-075 board's charging capacitor (C510)]

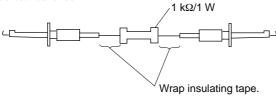
The charging capacitor (C510) of the ST-075 board is charged up to the maximum 300 V potential.

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

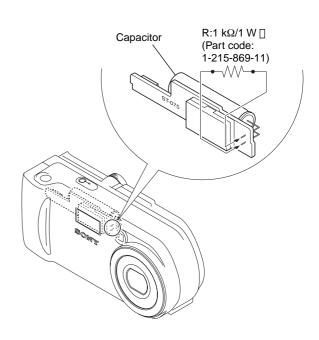
To preparing the short jig, a small clip is attached to each end of a resistor of 1 k Ω /1 W (1-215-869-11).

Wrap insulating tape fully around the leads of the resistor to prevent electrical shock.



Discharging the Capacitor

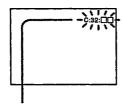
Short-circuit between the positive and the negative terminals of charged capacitor with the short jig about 10 seconds.



[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 $\square\square$) 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
C:13:LL	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.	_
	Insert a battery pack correctly.	Battery pack is not inserted correctly.	
E:92:□□	Turn the power off and on again.	Battery pack was installed or removed when using the AC adaptor.	

SECTION 1 GENERAL

WARNING

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

For the Customers in the U.S.A.





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. 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.

Declaration of Conformity

Trade Name: SONY Model No.: DSC-P31

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.

DOOT OWN THIS I DECISION IN

This section is extracted from DSC-P31/P71 instruction manual.

Declaration of Conformity

Trade Name: SONY Model No.: DSC-P71

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.

2

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
- —Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- —Consult the dealer or an experienced radio/TV technician for help.

The 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

RECYCLING NICKEL-METAL HYDRIDE BATTERIES

Nickel-metal hydride batteries are recyclable.

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

AHD

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

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.

CAUTION:

To reduce the risk of hazards, use only USA/UL Certified power supply cord set, cord is Type SPT-2 or heavier, minimum NO.18 AWG copper, one end is provided with a moulded-on male attachment plug cap (with a specified NEMA configuration), and the other end is provided with a moulded-on female connector body (with a specified IEC non-industrial type configuration).

NOTICE FOR THE CUSTOMERS IN THE UNITED KINGDOM

A moulded plug complying with BS 1363 is fitted to this equipment for your safety and convenience.

Should the fuse in the plug supplied need to be replaced, a 5 AMP fuse approved by ASTA or BSI to BS 1362, (i.e. marked with $\mfoattilde{\otimes}$ or $\mfoatle{\otimes}$ 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 fuse 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.

Attention

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

"Memory Stick"





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

THIS CLASS B DIGITAL DEVICE COMPLIES WITH PART 15 OF THE FCC RULES AND THE CANADIAN ICES-003 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.

4

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 Rules for Camera File Systems universal standard established by the JEITA (Japan Electronics and Information Technology Industries Association).
- 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

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.

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, see page 99 and follow the instructions on how to remove it before using the camera.

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The auto zoom lens (for the DSC-P71 only)

This camera is equipped with an auto zoom lens. Be careful not to bump the lens, and be careful not to apply force to it.

On illustrations

Illustrations used in this manual are of the DSC-P71 unless noted otherwise.

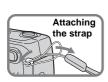
The pictures used in this manual

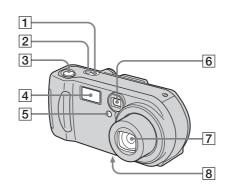
The photographs used as examples of pictures in this manual are reproduced images, and are not actual images shot using this camera.

Trademarks

- "Memory Stick," "MagicGate Memory Stick," and , are trademarks of Sony Corporation.
- MAGICGATE is a trademark of Sony Corporation.
- Microsoft and Windows are registered trademarks of the U.S. Microsoft Corporation in the United States and other countries.
- Macintosh, Mac OS, and QuickTime, are trademarks or registered trademarks of Apple Computer, Inc.
- In addition, system and product names used in this manual are, in general, trademarks or registered trademarks of their respective developers or manufacturers. However, the or ® marks not used in all cases in this manual.

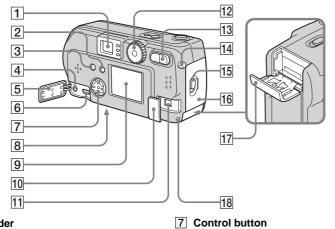
Identifying the parts (DSC-P71)





- 1 POWER ON/OFF lamp (20)
- 2 POWER button (20)
- 3 Shutter button (26)
- 4 Flash (30)
- 5 Self-timer lamp (29)/ AF illuminator (31, 97)
- 6 Finder window
- 7 Lens
- 8 Tripod receptacle (bottom surface)
- Use a tripod with a screw length of less than 5.5mm (7/32 inch). You will be unable to firmly secure the camera to tripods having longer screws, and may damage the camera.

10



- 1 Finder
- Self-timer/recording lamp (red)
 AE/AF lock lamp (green)
 \$ Flash charge lamp (orange) (30)
- 2 DISPLAY/LCD ON/OFF button (32)
- **3** MENU button (24)
- 4 VIDEO OUT jack (38)
- 5 Jack cover
- **6** USB jack (47)

- Mode dial (21)

 ■: To shoot still images
 - ►: To view or edit images

 : To view or edit images
 : To shoot movies /Clip Motion images/Multi Burst mode images
 SET UP: To set the SET UP items
 SCN: To shoot in the SCENE
 SELECTION mode
- **I3** Zoom button (for shooting) (28)/ Index button (for viewing) (37)
- 14 Wrist strap hook
- 15 Open lever
- 16 Battery cover
- 17 "Memory Stick" cover
- **18** Access lamp (23)

11

(Menu on) (**△/**▼/**⊲**/►/**●**) (20)/

8 RESET button (bottom surface)

(82)

9 LCD screen

10 DC IN jack cover (19)11 DC IN jack (19)

(Menu off) (\$/\infty) (27, 29, 30)

Preparing batteries

Charging the batteries

Use the following batteries in this camera.

Acceptable batteries

R6 (size AA) Nickel-Metal Hydride batteries (2)

- NH-AA-DI (2) (supplied)
- NH-AA-2DI twin-pack (recommended, not supplied)

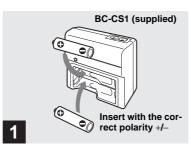
Batteries that cannot be used

Manganese batteries, lithium batteries, nicad batteries, alkaline batteries (cannot be used with the DSC-P71)

* Use of AA alkaline batteries may result in shorter than desired operating time. (only in the DSC-P31)

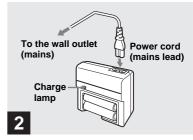
When alkaline batteries are used, take note of the following information.

- Turn POWER SAVE "ON", shut the LCD screen off, and use the Finder to shoot your images. This will lengthen battery life (page 16).
- There is a big difference in the performance of batteries of different types and of batteries made by different manufacturers. This is especially true in low temperatures, where some batteries are noticeably weaker.
 You may not be able to shoot in temperatures below +5°C (41°F).
- The battery remaining indicator may not display the correct information.



Insert Nickel-Metal Hydride batteries into the charger (supplied).

- Be sure to charge the Nickel-Metal Hydride batteries supplied with your camera before using them.
- Be sure to charge the batteries in an environment where the ambient temperature is 10°C to 30°C (50°F to 86°F). If the batteries are charged in an environment where the temperature is outside that range, the batteries may not charge efficiently.
- Connect the battery charger to an easily accessible wall outlet (mains) close by. If something goes wrong while you are using the charger, immediately shut off the power by pulling the plug out of the wall outlet.



Connect the charger to a wall outlet (mains) using the power cord (mains lead).

Charging starts, and the charge lamp lights. When the charge lamp goes out, charging is finished.

- When charging is finished, disconnect the power cord (mains lead) from the wall outlet (mains), and remove the Nickel-Metal Hydride batteries from the charger.
- When transporting the Nickel-Metal Hydride batteries, be sure to use the battery case (supplied). If the +/- metal terminals are shorted, there is a possibility of danger from excessive heat or fire.

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Charging the Nickel-Metal Hydride batteries

- If the poles of the Nickel-Metal Hydride batteries are dirty, the batteries may not charge properly. Occasionally clean the poles of the batteries and the terminals of the charger by wiping them with a dry cloth.
- At the time of purchase, or when the Nickel-Metal Hydride batteries haven't been used for a long time, they may not fully charge. This is typical of this type of battery, and is not a malfunction. If this happens, repeatedly using up the battery fully, and then recharging it, should correct the problem.
- Even when Nickel-Metal Hydride batteries are not being used they loose their charge naturally over time. It is recommended that you recharge the batteries just before using them.
- If you recharge Nickel-Metal Hydride batteries before fully using up the existing charge, the so-called memory effect* can occur, and the low battery warning will be triggered sooner than expected. Charging the battery after fully depleting the existing charge should correct the problem.
- * The "memory effect" the situation in which a battery temporarily accepts a less than full charge.
- To use up the batteries completely, put the camera in "SLIDE SHOW" mode and leave it that way until the batteries are used up (page 67).

Precautions to be observed when charging the batteries

- Do not charge any other batteries except Sony Nickel-Metal Hydride batteries in the charger supplied with your camera. If you try to charge any other type of battery (e.g., manganese batteries, alkaline dry cells, or one-time lithium batteries) than the batteries specified, those batteries may leak, overheat, or explode, causing the danger of burns or other injuries.
- Be sure to charge both Nickel-Metal Hydride batteries at the same time.
- When the batteries are charged, use them only in an environment where the temperature range is 0°C to 40°C (32°F to 104°F).
 Otherwise, there is a danger of leaks, explosions, excessive heat, fire, or electric shock.
- Do not charge fully charged Nickel Metal Hydride batteries again. Otherwise, there is a danger of leaks, explosions, excessive heat, fire, or electric shock.
- Do not peel off the external seals or damage the batteries. Never use batteries from which the seals have been partially or completely removed, or batteries that have been split in any way.

Charging time

Nickel-Metal Hydride battery	Charging time
NH-AA-DI × 2 (supplied)	Approx. 13 hours

This represents the time required to charge fully depleted Nickel-Metal Hydride batteries using the supplied BC-CS1 charger in an environment where the ambient temperature is 25°C (77°F).

- Charging is complete in approximately 13 hours. The charge lamp may remain lit longer than 13 hours, but this is not a malfunction.
- If you use the ACC-CSNQ STAMINA "Super Quick charge" kit (not supplied), the batteries will charge faster.

Charging the Nickel-Metal hydride batteries (continued)

Battery remaining indicator

As the battery power decreases with use, the Battery remaining indicator displays the amount of power remaining using the following symbols.

Battery remaining indicator	Battery remaining guidelines (A full charge is 100%)
q.	Sufficient power remaining
	Battery half full
d	Battery low, recording/ playback will stop soon.
Flashing	Change the batteries for fully charged ones, or charge these batteries.

- If the LCD screen is off, press the DISPLAY/ LCD ON/OFF button to turn it on.
- Based on the conditions under which the camera is being used and the state of the charge, or on the environment, this information may not be correctly indicated.
- When the AC adaptor is being used, the Remaining battery information is not displayed.

The POWER SAVE function

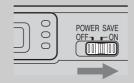
When the POWER SAVE function is set to ON, you can shoot for a longer period of time.

DSC-P71

Turn the Mode dial to SET UP, and set "POWER SAVE" in "SETUP 2" to "ON". When the camera is shipped from the factory, this item is set to "ON" (page 98).

DSC-P31

Set the POWER SAVE switch to ON. When the camera is shipped from the factory, this switch is set to ON.

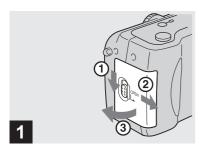


When the POWER SAVE function is ON

- The LCD screen will be darker than it is when POWER SAVE is set to OFF. You cannot change the settings for "LCD BACKLIGHT" at this time (page 98). To make the available shooting time even longer, it is recommended that you turn off the LCD screen and use the Finder to do your shooting (page 32).
- In Flash mode, the "⑤" (No flash) is displayed. If you want to shoot using the flash, press ▲ (⑤) on the control button, and select "⑤" (forced flash) or Auto (page 30).
- When the power turns on, the Flash mode is normally set to "(No flash).
- When the flash is charging ("\$" the Flash charge lamp blinks), the LCD screen turns off
- In shooting still images, the focus only focuses when the shutter is pushed down halfway.

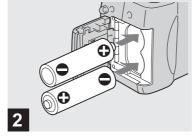
16

Inserting the batteries



→ Open the Battery cover.

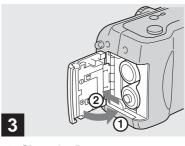
Slide it in the direction of the arrow, and it opens out.



→ Insert the batteries.

Match the +/- poles of the batteries to the +/- marks inside the battery case.

 Occasionally clean the poles of the batteries and the terminals of the Battery cover by wiping them with a dry cloth. If the poles of the batteries or the terminals become covered with a film of dirt or oil from the skin, the operating time of the camera can be greatly reduced.



→ Close the Battery cover.

Close the Battery cover while holding the batteries in. Make sure the cover is closed securely.

To remove the batteries

Stand the camera on end, open the Battery cover upward, then remove the batteries.

• Make sure you don't drop the batteries when opening or closing the Battery cover.

Getting started

Getting started

Inserting the batteries (continued)

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

When shooting* still images DSC-P71

	R6 (size AA) Ni-MH (2) (supplied)			
Image size			No. of images	
2048×1536			Approx. 1800	
	OFF	Approx. 120	Approx. 2400	
640×480	ON	Approx. 90	Approx. 1800	
	OFF	Approx. 120	Approx. 2400	

DSC-P31

	R6 (size AA) Ni-MH (2) (supplied)			
Image size	LCD screen	Battery life (min.)	No. of images	
1600×1200	ON	Approx. 120	Approx. 2400	
	OFF	Approx. 150	Approx. 3000	
640×480	ON	Approx. 120	Approx. 2400	
	OFF	Approx. 150	Approx. 3000	

^{*} Recording one image every three seconds

When playing back** still images DSC-P71

	R6 (size AA) Ni-MH (2) (supplied) Battery life No. of images (min.)		
Image size			
2048×1536	Approx. 230	Approx. 4600	
640×480	Approx. 230	Approx. 4600	

DSC-P31

500101					
	R6 (size AA) Ni-MH (2) (supplied)				
Image size	Battery life (min.)	No. of images			
1600×1200	Approx. 280	Approx. 5600			
640×480	Approx. 280	Approx. 5600			

**With the LCD screen on, showing single images in order, one approximately every three seconds

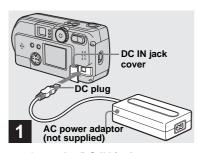
Recording*** movies images

	R6 (size AA) Ni-MH (2) (supplied)		
		LCD screen OFF(min.)	
DSC-P71	Approx. 120	Approx. 170	
DSC-P31	Approx. 150	Approx. 200	

^{***} Continuous recording with a picture size of 160×112

18

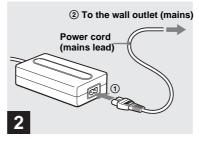
Using an external power source



→ Open the DC IN jack cover, then connect the AC-LS1 AC power adaptor (not supplied) to the DC IN jack of the camera.

Connect the cable with the \triangle mark facing up.

 Connect the AC power adaptor to an easily accessible wall outlet (mains) close by. If something goes wrong while you are using the adaptor, immediately shut off the power by pulling the plug out of the wall outlet.

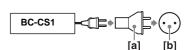


- Connect the power cord (mains lead) to the AC power adaptor and to the wall outlet (mains).
- When you have finished using the AC power adaptor, disconnect it from the DC IN jack of the camera.
- To use power from an automobile, use a DC adaptor/Charger (not supplied).
- If you insert or remove the DC plug while you are using the batteries, the power may shut off.

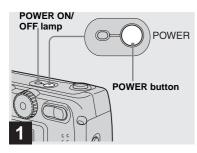
Using your camera abroad

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].



Turning on/off your camera



→ Press the POWER button.

The POWER ON/OFF lamp lights in green, the power is on, and the lens cover opens. When you turn on your camera for the first time, the "CLOCK SET" screen appears (see the next page).

To turn off the power

If you press the POWER button again, the POWER ON/OFF lamp goes out, and the camera turns off.

• if you turn the power on when the Mode dial is set to , , , or SCN, the lens begins to move (DSC-P71 only). Please be careful not to touch the lens.

The Auto Power Off feature

If no tasks are performed for a while* when shooting, playing back, or performing SET UP while using the batteries, power is automatically shut off to preserve battery power.

However, in the following circumstances, even if the battery is being used to power the camera, the Auto Power Off feature will not work.

- · Movies are being played back
- A slide show is being shown
- There is a plug in the USB terminal or the VIDEO OUT jack
- * When POWER SAVE is set to ON: approximately 90 seconds When POWER SAVE is set to OFF: approximately 3 minutes

How to use the control button



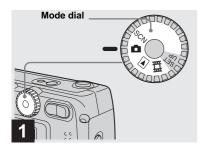
To change the current settings of the camera, bring up the menu or SET UP on the LCD screen (page 55), and use the control button to make the changes.

For each item, press ▲/▼/◄/▶ to select the desired value, then press the center ● or ◄/▶ to make the setting.

• (Spot light-metering) is not displayed on the menu of the DSC-P31 (page 61).

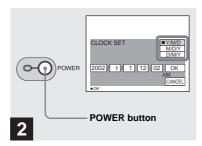
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Setting the date and time



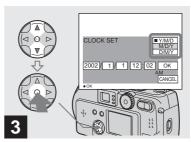
→ Turn the Mode dial to 🗗.

- To change values for the time and the date that have been previously set, change the Mode dial to SET UP, choose "CLOCK SET" in "SETUP 1" (page 97), then proceed from Step 3.
- You can also carry out this operation when the mode dial is set to SCN, ▶, or ➡.



→ Press the POWER button.

The POWER lamp lights in green and the "CLOCK SET" screen appears.



→ Choose the desired order for the date, the month and the year using

/▼ on the control button, then push the center ●.

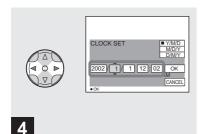
You can choose from "Y/M/D" (year/month/day), "M/D/Y", and "D/M/Y".

If the rechargeable button battery, which
provides the power for saving the time data,
ever loses its charge (page 99), the "CLOCK
SET" screen automatically reappears. If this
happens, reset the date and time by following
the above procedure, starting from Step 3.

Getting started

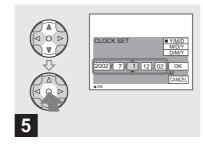
Shooting still images

Setting the date and time (continued)



→ Choose the year, month, day, hour, and minute items using

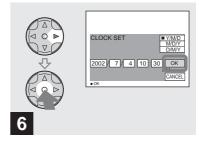
A \blacktriangle will be shown above, and a \blacktriangledown will be shown below the item currently selected to be set.



→ Set the desired numerical value using A/▼ on the control button, then press the center

After setting the current numerical value, move to the next item. Repeat the above process until all of the items have been set.

• If you choose "D/M/Y" in Step 3, use the 24 hour clock display.



→ Choose "OK" using the ➤ on the control button, and then press the center ●.

After the date and time are set, the clock will start to keep time.

• To abort the setting process, choose "CANCEL", and press the center ●.

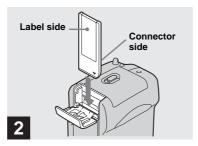
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Inserting and removing a "Memory Stick"



→ Open the "Memory Stick" cover.

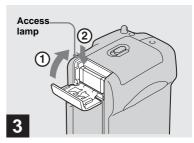
Slide the cover in the direction of the arrow to open it.



→ Insert the "Memory Stick."

Holding the "Memory Stick" as shown in the illustration, insert it all the way in until it clicks.

 Whenever you insert a "Memory Stick," push it all the way in until it clicks. If you do not insert it correctly, a message such as "MEMORY STICK ERROR" will be displayed on the LCD screen.

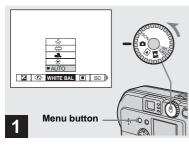


→ Close the "Memory Stick" cover.

To remove a "Memory Stick" Open the "Memory Stick" cover, then push the "Memory Stick" to pop it out.

 Whenever the Access lamp is lit, the camera is recording or reading out an image. Never remove the "Memory Stick" or turn off the power at this time.

Deciding the still image size and image quality

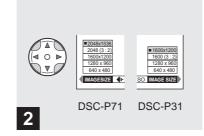


→ Turn the Mode dial to 🗖, turn on the power, and then push the MENU button.

The menu appears.

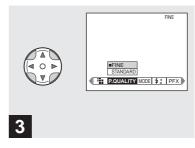
24

- · You can also carry out this operation when the mode dial is set to SCN.
- (Spot light-metering) is not displayed on the menu of the DSC-P31 (page 61).



→ Select "" (Image size) using ◄/▶ on the control button. Use **▲/**▼ to select the desired image size.

The image size is set.



→ Select "4:" (Image quality) using **◄/▶** on the control button. Use **▲/▼** to select the desired image quality.

The image quality is set. When the setting is completed, press the MENU button. The menu disappears from the screen.

- For image quality, you can choose either "FINE" or "STANDARD".
- · The image size and quality values chosen here will be preserved even when the camera is turned off.

Image size and quality

You can choose image size (number of pixels) and image quality (compression ratio) based on the kind of images you want to shoot. The larger you make the image size and the higher you make the image quality, the better your image, but also the larger the amount of data needed to preserve your image. This means you can save fewer images in your "Memory Stick."

Choose an image size and quality level appropriate for the kind of images you

You can resize the images later (Resize function, see page 71).

You can choose image size from among the six options in the following tables.

Image size	Examples
2048×1536 (DSC-P71)	Very fine prints
2048(3:2) (DSC-P71)	3:2 prints ¹⁾
1600×1200	Printing A4 size images
1600 (3:2) (DSC-P31)	3:2 prints ¹⁾
1280×960	Printing postcard size images
640×480	For images to be attached to e-mail

The number of images* that can be saved in a "Memory Stick"

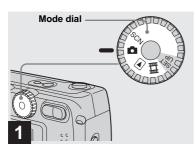
The number of images that can be saved in FINE (STANDARD) mode are shown below. (Units: number of images)

(
Capacity Image size	8MB	16MB	32MB	64MB	128MB	
2048×1536 (DSC-P71)	5 (9)	10 (18)	20 (36)	40 (72)	80 (144)	
2048(3:2) (DSC-P71)	5 (9)	10 (18)	20 (36)	40 (72)	80 (144)	
1600×1200	8 (15)	16 (30)	32 (60)	64 (120)	128 (240)	
1600 (3:2) (DSC-P31)	8 (15)	16 (30)	32 (60)	64 (120)	128 (240)	
1280×960	12 (22)	24 (44)	50 (93)	100 (186)	200 (372)	
640×480	48 (118)	96 (240)	195 (488)	393 (983)	786 (1966)	

- * When the shooting mode is normal For the number of images that can be saved in other modes, see page 91.
- The image size is the screen size used when viewing the images on a personal computer. When the images are viewed on the LCD screen of the camera, they all look the same
- Number of shooting images can differ from these values according to shooting conditions.
- 1) This option records images in a horizontal to vertical proportion of 3:2 to match the size of the print paper used.
- The image size value (e.g., 2048×1536) is the number of pixels displayed.

For information how to shoot images to be used as attachments to e-mail messages, see page 65.

Basic still image shooting (using auto adjustment mode)



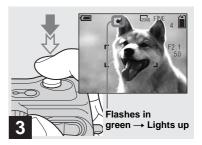
- → Set the mode dial to , and turn on your camera.
- The lens cover opens when the power is turned on.
- When the camera is turned on or when using the zoom, and the lens is moving, don't touch the lens assembly (DSC-P71 only) (page 28).
- When the Mode dial is set to , the exposure and focus are adjusted automatically.
- Clean the lens with a soft cloth if it is dirty (page 99).



Hold your camera with your both hands and position a subject in the center of the frame to focus on.

Do not cover the lens or flash with your fingers.

 You can choose either Multi-point AF mode or Center AF as the AF mode (page 58).

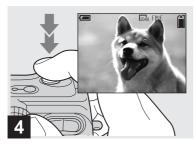


Press and hold the shutter halfway down.

The camera beeps. When the AE/AF lock indicator stops flashing and remains on, the camera is ready for shooting.

- If you remove your finger from the shutter, shooting will be canceled.
- The minimum focal distance to a subject is 50 cm (19 ¹¹/₁₆ inches) for the DSC-P71, and 10 cm (3 ¹⁵/₁₆ inches) for the DSC-P31. To shoot subjects at distances closer than this, use Macro mode (DSC-P71 only) (page 28).
- The frame appearing on the LCD screen shows the limits of the area where the focus will be adjusted. (For more details on the AF range finder, see page 58.)

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→ Press the shutter fully down.

A beeping sound is heard, the shooting is completed, and the still image is saved in the "Memory Stick." When the Recording lamp goes out, you can shoot the next image.

- When you are shooting with the battery, if no tasks are performed for a while* with the camera turned on, power is automatically shut off to preserve battery power (page 20).
- * When POWER SAVE is set to ON: approximately 90 seconds When POWER SAVE is set to OFF: approximately 3 minutes

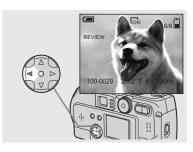
About Auto Focus

When you try to shoot a subject that is hard to focus on, the AE/AF lock indicator will change to flashing slowly.

The Auto Focus function may be difficult to use with in the following subjects. In such cases, release the shutter, then try to recompose the shot and focus again.

- The subject is distant from the camera and dark
- The contrast of the subject and its background is poor
- The subject is seen through glass, such as a window
- A fast-moving subject
- The subject has a reflection, such as that from a mirror, or there is a luminous body and a lustrous subject
- A flashing subject.

Checking the last shot image (Quick Review)



→ Press ◄ (⑤) on the control button.

To return to shooting mode, press the shutter lightly or press $\P(\textcircled{s})$ on the control button again.

To delete the image displayed on the LCD screen

- 1 Press MENU button to display the menu.
- 2 Press ▶ on the control button to select "DELETE", then press the center ●.
- 3 Press ▲ on the control button to select "OK", then press the center ●.
 The image will be deleted.

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Press the Zoom button to choose the desired image size, and shoot your image.

The minimum distance needed to focus on a subject

DSC-P71

 $50\,\text{cm}\,(19^{\,11}\!/_{16}\,\text{inches})$ for both W (wide angle) and T (telephoto)

DSC-P31

 $10 \text{ cm} (3 \frac{15}{16} \text{ inches})$

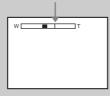
- The lens moves when the zoom feature is being used (DSC-P71 only). Be very careful not to touch the lens.
- The zoom feature cannot be used when shooting movies (page 83).

Digital zoom

DSC-P71

When the zoom exceeds 3x, enlargement is carried out using digital processing of the image. The image can then be enlarged up to 6x using the digital zoom feature. Because picture quality deteriorates when digital zoom is used, set "DIGITAL ZOOM" in SET UP to "OFF" when this feature is not needed (page 97).

The T side of this line shows the extent of digital zoom



DSC-P31

The DSC-P31 does not have an optical zoom. It has only a 3x digital zoom. There is no Digital zoom item in SET LIP

- When you are using digital zoom, you cannot confirm the image using the finder.
- When you are using the digital zoom feature, the Auto focus frame is not displayed.

Shooting close-ups (Macro) (DSC-P71 only)



For close-ups of small subjects like flowers or insects, shoot using the Macro feature. You can use this feature for close-ups of subjects up to the distances specified below.

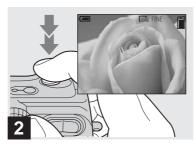
When the zoom is set all the way to the W side: distances up to $10~{\rm cm}~(3^{15}/_{16}$ inches) from the end of the lens

When the zoom is set all the way to the T side: distances up to $50~{\rm cm}~(19^{~11}/_{16}$ inches) from the end of the lens

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→ Turn the Mode dial to ♠, and press ► (♥) on the control button.

- (Macro) will appear on the LCD screen.
- If the menu is currently displayed, press the MENU button first and the menu will disappear.



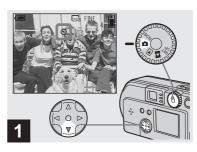
Center the subject in the frame, and shoot the image.

To return to normal shooting

Press ► (♥) on the control button one more time. ♥ disappears from the LCD screen.

 Use the LCD screen to shoot when using the Macro feature. If you use the finder, the limits of what you see and what you actually shoot may be different.

Using the self-timer



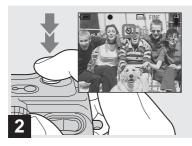
→ Turn the Mode dial to , and press ▼ (⑤) on the control button.

(Self-timer) will appear on the LCD

- If the menu is currently displayed, press the MENU button first and the menu will disappear.
- You can also carry out this operation when the mode dial is set to SCN, or

Shooting still images

Selecting a flash mode



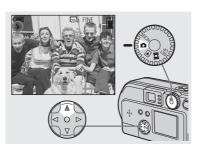
Center the subject in the frame, and press the shutter all the way down.

The Self-timer lamp (page 10 for the DSC-P71, page 12 for the DSC-P31) will blink in orange, and you will hear a beeping sound. The image will be shot within approximately 10 seconds.

To cancel the self-timer in the middle of the operation

Press ∇ (δ) on the control button one more time.

• If you stand in front of the camera and press the shutter, the focus and the exposure may not be correctly set.



→ Turn the mode dial to select n. and press ▲ (≰) on the control button repeatedly to select a flash mode.

Flash mode has the following features.

No indicator (Auto): Based on the lighting conditions, the camera will decide if there is enough light, and will use the flash accordingly (factory setting).

4 (forced flash): The flash will be used regardless of the amount of ambient light. (no flash): The flash will not be used. Each time you press the button, the display changes as follows.

When POWER SAVE is OFF

No indicator (Auto) \rightarrow 4 (forced flash) \rightarrow (no flash)

When POWER SAVE is ON

 $(no flash) \rightarrow No indicator (Auto) \rightarrow$ 4 (forced flash)

- If the menu is currently displayed, press the MENU button first and the menu will disappear.
- · You can change the brightness of the flash using "FLASH LEVEL" in the settings menu (page 93).
- When Flash mode is set to Auto or **\$** (forced flash), and you look at the LCD screen in a dark place, you may notice some "noise" in the image, but this will have no effect on the image you shoot.
- While the flash is being charged, the \$ Flash charging lamp blinks. When charging is completed, the lamp goes out.
- · When you press the shutter button halfway down while the flash is flashing, (4) the Flash charge lamp turns on.

To reduce "red-eye" when recording live subjects

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When the flash begins to strobe before the image is shot, the red-eye phenomenon is reduced. In SET UP, set "RED EYE REDUCTION" to "ON" (page 97). "

" will be displayed on the LCD screen.





• The amount of red-eye reduction possible varies according to the individual. In addition, the distance to the subject, and whether or not the subject has seen the flash begin to strobe may also reduce the effectiveness of the red-eye reduction process.

Shooting with the AF illuminator

This is additional lighting provided to assist in focussing when shooting in dark places.

Set "AF ILLUMINATOR" (page 97) in SET UP to "AUTO". When shooting, " \mathfrak{F}_{ON} " is displayed; the AF illuminator will flash automatically during the time between when the shutter is pressed halfway down and the focus locks.

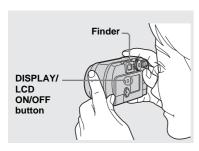


- · When the AF illuminator flashes, but sufficient light does not reach the subject (the maximum recommended distance for this feature is 2.8m (9.2 ft.) (wide), 1.8m (5.9 ft.) (tele) in DSC-P71, 2.5m (8.2 ft.) in DSC-P31, or the subject has weak contrast, the camera may not focus properly.
- . The light from the AF illuminator may miss the center of the image somewhat, but as long as it reaches the subject, the camera will focus properly.

- When the focus is adjusted manually, the AF illuminator doesn't function.
- Under the following conditions, the AF illuminator will not function.
- When shooting in Twilight landscape mode
- When shooting in Landscape mode
- The AF illuminator is a bright light. There are no safety hazards, but when shooting at short distances, do not aim it directly at the subject's eyes.

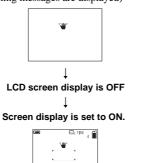
Shooting still images

Shooting with the finder



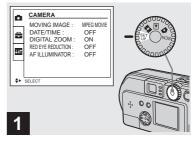
The finder is convenient when you want to save battery power, or when it is difficult to confirm the image using the LCD screen. Each time you press the DISPLAY/LCD ON/OFF button, the display changes in the following order.

When the LCD screen display is off (only warning messages are displayed)



- For further details on the items displayed, see page 103.
- Just as with the AE/AF lock indicator on the LCD screen display, when the AE/AF lock lamp of the Finder section stops flashing and remains lit, you can start shooting again (page 26).
- When the LCD screen display is turned off, the digital zoom does not function (page 28).
- When the LCD screen display is turned off, if you press the **\$** (Flash mode) (Self-timer)/ (Macro, DSC-P71) or (Spot lightmetering, DSC-P31), the image will be displayed on the screen for approximately 2 seconds so you can check or change the setting.

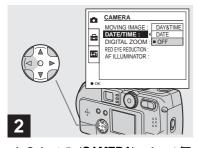
Shooting with the date and time inserted



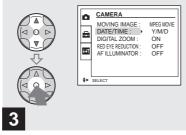
Turn the mode dial to SET UP.

The SET UP menu is displayed.

- When images are shot with the date and time inserted, the date and time cannot be removed later.
- When shooting images with the date and time inserted, the actual date and time are not displayed on the LCD screen, instead, "LEE" is displayed in the upper left portion of the LCD screen. The actual date and time are displayed when the image is played back.
- When you have chosen a date format, you can choose [Insert the correct date and time] (page 21), and the information will be inserted in the format you chose.
- The "DIGITAL ZOOM" item is not displayed on the SET UP screen of the DSC-P31 (page 28).



Select (CAMERA) using I/V on the control button and press ►.
Select "DATE/TIME" using I/V and press ►.



→ Choose the type of data to be inserted using A/▼ on the control button, then press the center ●.

DAY/TIME: Inserts the day and the time of shooting into the image

DATE: Inserts the year, the month and the date of shooting into the image

OFF: Does not insert date/time data into the image

After the setting have been completed, turn the mode dial to , and continue your shooting.

- You can also carry out this operation when the mode dial is set to SCN.
- The settings made here will be saved even when the power is turned off.

Shooting still images

Shooting according to scene conditions (SCENE SELECTION)





Twilight portrait mode





Ordinarily shoot with the camera set to set to Auto (Mode dial:), but when shooting at night, shooting people at night, or shooting landscapes, use the modes listed below to increase the quality of your images.

Twilight mode

Under dark lighting conditions, you can shoot using the Twilight mode, and still get good images. However, because the shutter speed is slower under these conditions, we recommend you use a tripod.

• The flash cannot be used.

■ Twilight portrait mode

Use this mode when shooting people in the foreground at night.

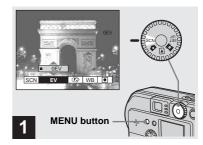
Because the shutter speed is slow, it is recommended that you use a tripod.

- Allows you to shoot images of people in the foreground with distinct outlines without losing the feeling that you are shooting at night.
- The flash can be used.

▲ Landscape mode

Focuses on images far away, so is convenient for shooting landscapes at a distance.

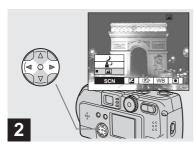
· You cannot shoot in Macro mode.



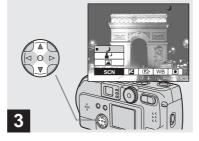
→ Turn the mode dial to SCN, and press the MENU button.

The menu appears.

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- Select "SCN" using ◄/▶ on the control button.
- Spot light-metering) is not displayed on the menu of the DSC-P31 (page 61).



The mode will be set to your choice. When the setting is completed, press the MENU button. The menu disappears from the screen.

- When you cancel Scene selection, set the mode dial to something other than SCN.
- The settings made here will be saved even when the power is turned off.

NR slow shutter

In Twilight or Twilight portrait mode, when the shutter speed exceeds a 1/2 second, "NR" is displayed before the shutter speed indication, and the camera automatically changes to the NR slow shutter mode.

The NR slow shutter mode removes noise from recorded images, providing clear, crisp images. To eliminate the effects of vibration, use of a tripod is recommended.

Press the shutter all the way down.

"CAPTURING" is displayed on the screen.

Then the screen turns black.

Next, "PROCESSING" is displayed.

Finally, when "PROCESSING" disappears, the image has been recorded.

Viewing images on the LCD screen of your camera

Single (Single image display)



Index (9 images display)



Index (3 images display)



• For movies, see page 75.

displayed, see page 105.

· For information on the various symbols

You can see the images you shoot with this camera almost immediately on the LCD screen. This camera offers the following three methods for viewing your images.

Single (Single image display)

You can view one image at a time, occupying the entire screen.

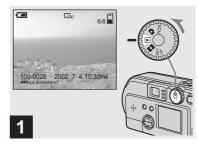
Index (9 images display)

Nine images will be displayed simultaneously in separate panels on the screen.

Index (3 images display)

Three images will be displayed simultaneously in separate panels on the screen. Various items of image information will also be displayed.

Viewing single images



→ Turn the mode dial to ▶, and turn on the power.

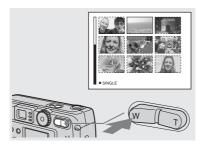
The last image you shot will be displayed.

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Viewing Index (9 or 3 images display)



- Select Still Image using ◄/▶ on the control button.
- **◄** : Displays the previous image.
- ▶ : Displays the next image.

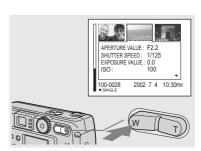


→ Press the Zoom W button once.

The display switches to the **Index (9** images) screen.

To display the previous (next) Index screen

Press $\triangle/\nabla/\blacktriangleleft/\triangleright$ on the control button to move the yellow frame up/down/left/right.



Press the Zoom W button once more.

The display switches to the **Index (3** images) screen.

When you press $\blacktriangle/\blacktriangledown$ on the control button, the remaining image information is displayed.

To display the previous (next) Index screen

Press **◄/▶** on the control button.

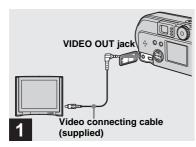
To return to the Single image screen

Repeatedly press the Zoom T button, or press the center • on the control button.

Viewing still images

Deleting still images

Viewing images on a TV screen



- → Using the video connecting cable, connect the VIDEO OUT jack of the camera to the Image of the TV set.
- Connect the video cable to the camera and the TV set only after confirming that both are turned off.



- → Turn on the power of the TV set, and set the TV/Video toggle switch of the TV to "Video."
- Depending on your TV set, the name and location of this switch may be different.



→ Turn the Mode dial to ▶ and turn on the camera.

Press $\blacktriangleleft/\triangleright$ on the control button to select an image.

 When using this feature, it may be necessary to switch the video output signal to match that of your TV system (see page 98).

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Deleting images

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

PAL-M system

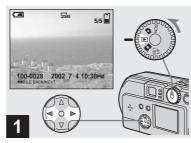
Brazil

PAL-N system

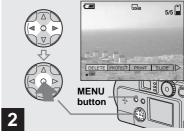
Argentina, Paraguay, Uruguay

SECAM system

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



→ Turn the Mode dial to ► and turn on the camera. Press ◄/► on the control button to select an image to be deleted.



→ Press the MENU button, press ✓/► on the control button to select "DELETE", then press the center ●.

The image has not yet been deleted at this point.

Deleting images (continued)

Deleting on the Index (9 images) screen

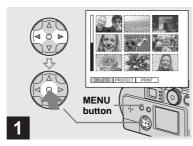


Select "OK" using ▲ on the control button, then press the center ●.

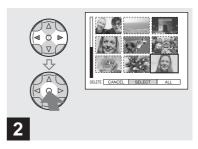
"MEMORY STICK ACCESS" is displayed on the screen. When this message disappears, the image has been deleted.

To cancel the deletion

Using ▼ on the control button, choose "CANCEL", then press the center ●.



While an Index (9 images) screen (page 37) is displayed, press the MENU button, select "DELETE" using ◄/► on the control button, then press the center ●.

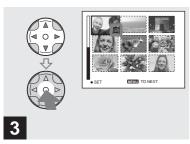


→ Select "SELECT" using
✓ on the control button, then press the center
●.

To delete the entire screen

Select "ALL" using ◀/▶ on the control button, then press the center ●. Select "OK" again, and press the center ●. To halt the deletion, select "EXIT", then press the center ●.

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⇒ Select the image you want to delete using A/V/4/> on the control button then press the center ●.

The mark appears next to the selected images. At this point, the images have not yet been deleted. Put a mark next to all of the images you want to delete.

To cancel your selection, press the center
 one more time.



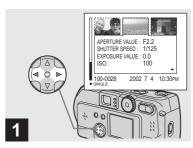
→ Press the MENU button, select "OK" using
/> on the control button, then press the center

When "MEMORY STICK ACCESS" disappears, the images have been deleted.

To cancel the deletion

Using ◀ on the control button, select "EXIT", then press the center ●.

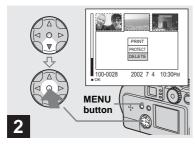
Deleting on the Index (3 images) screen



⇒ While an Index (3 images) screen (page 37) is displayed, select the images you want to delete using
✓ on the control button. Deleting still images

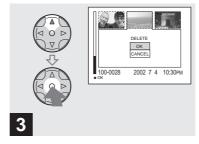
Deleting still images

Deleting on the Index (3 images) screen (continued)



→ Press the MENU button, and select "DELETE" using the ▼ on the control button, then press the center ●.

At this point, the images have not yet been deleted.



Select "OK" using ▲ on the control button, then press the center ●.

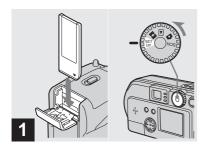
When "MEMORY STICK ACCESS" disappears, the image has been deleted.

To cancel the deletion

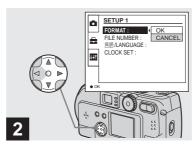
Use ▼ on the control button to select "CANCEL", then press the center ●.

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Formatting a "Memory Stick"



- → Insert the "Memory Stick" you want to format into the camera. Turn the mode dial to SET UP, and turn on the power.
- The term "formatting" means preparing a
 "Memory Stick" to record images; this process
 is also called "initialization." The "Memory
 Stick" provided with this camera, and those
 available commercially, are already formatted,
 and can be used immediately. When you
 format a "Memory Stick," be aware that
 all of the images in the "Memory Stick"
 will be permanently deleted.

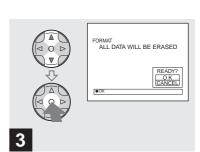


Select "➡" ("SETUP 1") using
 ▲/▼ on the control button, select "FORMAT" by pressing

 Then, press ►, select "OK" using ▲/▼, and press the center ●.

To cancel the formatting

Select "CANCEL" using ∇ on the control button, then press the center \bullet .



Select "OK" using ▲/▼ on the control button, then press the center ●.

The "FORMATTING" message appears. When this message disappears, the format is complete.

Copying still images to your computer

Follow the steps below to copy the images you shot to your computer.

Steps required by your OS (Operating System)

os	Steps
Windows 98/98SE/2000/ Me	Steps 1 to 6 (pages 45 to 53)
Windows XP	Steps 2 to 5 (pages 46, 47, 49, and 53)
Mac OS 8.5.1/8.6/ 9.0/9.1/9.2, Mac OS X (v10.0/v10.1)	Page 54

- Step 1 may be unnecessary depending on your
- · After you complete the installation of the USB driver, step 1 is unnecessary.

Recommended computer environment

Recommended Windows environment

OS: Microsoft Windows 98, Windows 98SE, Windows 2000 Professional, Windows Millennium Edition. Windows XP Home Edition, or Windows XP Professional An OS installed at the factory (not upgraded) is required for correct

operations. We cannot guarantee operations for operating systems not listed above.

CPU: MMX Pentium 200 MHz or faster USB connector:

Provided as standard equipment

Recommended Macintosh environment

OS: Mac OS 8.5.1, 8.6, 9.0, 9.1, 9.2, or Mac OS X(v10.0/v10.1) An OS installed at the factory is required for correct operations. For the following models, update your OS to Mac OS 9.0 or 9.1.

- iMac with Mac OS 8.6 installed at the factory, and a slot loading type CD-ROM drive
- iBook or Power Mac G4 with the Mac OS 8.6 installed at the factory

USB connector:

Provided as standard equipment

- If you connect two or more USB devices to your computer at one time, some devices including your camera, may not work, depending on the type of USB device.
- · Operations are not guaranteed when using a USB hub
- · Operations are not guaranteed for all the recommended environments mentioned above.

USB mode

There are two modes for a USB connection, "NORMAL" and "PTP" modes. The factory setting is the "NORMAL" mode. This section describes the USB connection using the "NORMAL" mode.

Communication with your computer (for Windows users only)

If you recover your computer from the suspend or sleep mode, communication between your camera and your computer may not recover at the same time.

When a USB connector is not provided on your computer

When neither a USB connector nor a "Memory Stick" slot is provided, you can copy images using an additional device. See the Sony Website for details.

1 Installing the USB driver 98 2000 985E Me



→ Turn on your computer, and insert the supplied CD-ROM into the CD-ROM drive.

Do not connect your camera to your computer at this time.

The opening window appears. If it does not (ImageMixer) in order.

- · This section describes how to establish a USB connection using Windows Me as an example. Required operations may be different depending on your OS.
- · Shut down all other applications before installation of the driver.
- When you are using Windows 2000, log on as Administrators.



→ Click "USB Driver" on the opening window.

The "InstallShield wizard" appears.



→ Click "Next." When the "Information" window appears, click "Next," and eject the CD-ROM.

The USB driver installation starts. When the installation is completed, the window informs you of completion.

Copying still images to your computer

Preparing your camera 98 2000 XP 985E Me

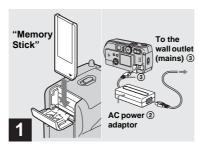




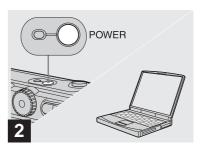
→ Click "Yes, I want to restart my computer now," then click "Finish."

Your computer restarts. Then, you can establish the USB connection.

- You can use the "PIXELA ImageMixer for Sony" software to copy images to your computer. To install this software, click "PIXELA ImageMixer," on the operating window, then follow instructions on each window.
- · Be sure to install DirectX when using the "PIXELA ImageMixer for Sony" software. Click "DirectX" and follow instructions on each window. Your computer restarts when the installation is completed.



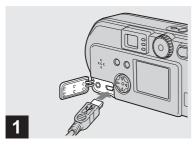
- → Insert the "Memory Stick" with the images you want to copy into the camera. Connect the camera and the AC power adaptor, and plug the adaptor into a wall outlet (mains).
- For further details on the "Memory Stick," see page 23.
- · For further details on the AC power adaptor, see page 19.



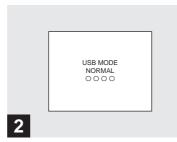
Turn on the PC and your camera.

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3 Connecting your camera to your computer 98 2000 XP 985 Me



- → Open the jack cover, and connect the supplied USB cable to your camera. Then, connect the other end of the USB cable to your computer.
- When using a desktop computer, connect the USB cable to the USB connector on the rear
- When using Windows XP, the copy wizard automatically appears on the desktop. Proceed to page 49.



"USB MODE NORMAL" appears on the LCD screen of your camera. When a USB connection is established for the first time. your computer automatically runs the used program to recognize your camera. Wait for

• If "USB MODE NORMAL" is not shown, confirm that "USB CONNECT" is set to "NORMAL" in the SET UP settings (page 98).

Removing the USB cable from your computer or the "Memory Stick" from your camera during a USB connection

For Windows 2000, Me, or XP users

- Double-click 🕏 at the lower-right corner of the desktop.
- 2 Click 🖨 (Sony DSC), then click "Stop."
- 3 Confirm the device on the confirmation window, then click "OK."
- 4 Click "OK."
- 5 Disconnect the USB cable or remove the "Memory Stick."

For Windows 98 or 98SE users Carry out only Step 5 above.

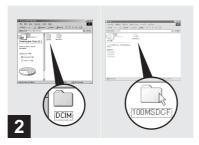
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→ Double-click "My Computer," then double-click "Removable Disk."

The contents of the "Memory Stick" inserted in your camera appear.

- This section describes an example of copying images into the "My Documents" folder.
- When using Windows XP, see pages 49 to 51.
- When the "Removable Disk" icon is not shown, see the next page.
- You can use the "PIXELA ImageMixer for Sony" software to copy images to your computer. For details, see the software's help files.



→ Double-click "DCIM," then double-click "100MSDCF."

The "100MSDCF" folder opens.

- The "100MSDCF" folder contains the image files you shot using your camera.
- The folder names vary depending on the type of images they contain (page 51).



Drag and drop the image files into the "My Documents" folder.

The image files are copied to the "My Documents" folder.

 When you try to copy an image to a folder in which an image with the same file name is stored, the overwrite confirmation message appears. When you want to overwrite the existing image with the new one, click "Yes." When you do not want to overwrite it, click "No," then change the file name.

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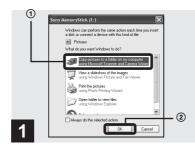
When a removable disk icon is not shown

- 1 Right-click "My Computer," then click "Property."

 The "System Property" window
 - The "System Property" window appears.
- **2** Confirm if other devices are already installed.
 - ① Click "Device Manager."
 - ② Double-click "③ Other Devices."
 - ③ Confirm if there is a "n Sony DSC" or "n Sony Handycam" with a n mark.
- **3** If you find either of the devices above, follow the steps below to delete them.
 - ① Click "¶ Sony DSC" or "¶ Sony Handycam."
 - ② Click "Delete."
 The "Device deletion confirmation" window appears.
 - ③ Click "OK."
 The device is deleted.

Try the USB driver installation again using the supplied CD-ROM (page 45).

④ Copying images (for Windows XP users) ■ XP■



→ Click "Copy pictures to a folder on my computer using Microsoft Scanner and Camera Wizard," then click "OK."

The "Scanner and Camera Wizard" appears.

 When following the steps on page 47, the copy wizard appears on the desktop of your computer.



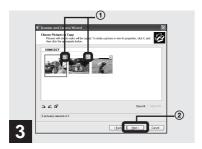
→ Click "Next."

The images stored in the "Memory Stick" are displayed.

Copying still images to your computer

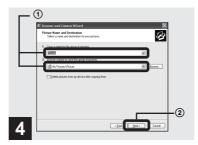
Copying still images to your computer

④ Copying images (for Windows XP users) **XP** (continued)



→ Click to remove the checkmark from any images you do not want to copy to your computer, then click "Next."

The "Picture Name and Destination" window appears.



Specify the image file names to be copied and the copy destination.

Copying of the images starts. When the task is completed, the "Other Options" window appears.

• Copy images into the "My Documents" folder.



Click "Nothing. I'm finished working with these pictures," then click "Next."

The "Completing the Scanner and Camera Wizard" window appears.

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Completing the Scanner and Camera Wiscard Completing the Scanner and Camera Wiscard Visit and Completing the Scanner and Camera Visit and Completing the

→ Click "Finish."

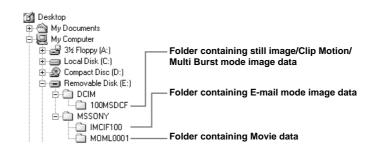
The wizard closes.

 When you want to continue copying other images, disconnect the USB cable once and reconnect it. Then, follow the process from Step 1.

Image file storage destinations and file names

The image files recorded with your camera are grouped as folders in the "Memory Stick," depending on the recording modes.

Example: when viewing folders on Windows Me



Copying still images to your computer

Image file storage destinations and file names (continued)

Folder	File name	File meaning
100MSDCF	DSC0□□□.JPG	Still image files shot normally Still image files shot in E-MAIL mode (page 65) Multi Burst mode (page 64)
	CLP0□□□□.GIF	Clip Motion files shot in NORMAL mode (page 62)
	CLP0□□□□.THM	Index image files of Clip Motion files shot in NORMAL mode
	MBL0□□□.GIF	Clip Motion files shot in MOBILE mode (page 62)
	MBL0□□□.THM	Index image files of Clip Motion files shot in MOBILE mode
IMCIF100	DSC0□□□□.JPG	Small-size image files shot in E-MAIL mode (page 65)
MOML0001	MOV0□□□□.MPG	Movie files shot normally (page 74)

Note on the table

- The meanings of the file names are as above: $\square\square\square\square$ stands for any number within the range from 0001 to 9999.
- The numerical portions of the following files are the same.
 - A small-size image file shot in E-MAIL mode and its corresponding image file
 - An image file shot with Clip Motion and its corresponding index image file

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5 Viewing the images on your computer

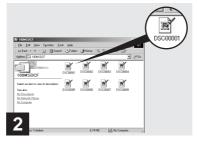


→ Double-click "My Documents" on the desktop.

The "My Documents" folder opens.

- This section describes the steps followed for copying images to the "My Documents" folder on page 48.
- When using Windows XP, click "Start"→"My
- Documents" in that order.

 You can use the "PIXELA ImageMixer for Sony" software to view images on your computer. For details, see the software's help files.



→ Double-click the desired image

The image file opens.



Follow the steps below, according to your OS.

os	Steps
Mac OS 8.5.1/8.6/9.0	Steps 1 to 5
Mac OS 9.1/9.2/ Mac OS X(v10.0/v10.1)	Steps 2 to 5

1 Installing the USB driver (For Mac OS 8.5.1, 8.6, or 9.0 users only)

1 Turn on your computer, and set the supplied CD-ROM to the CD-ROM drive.

The "PIXELA ImageMixer" window appears.

- 2 Double-click (Setup Menu).
- 3 Click "USB Driver." The "USB Driver" window appears.
- 4 Double-click the icon of the hard disk containing the OS to open the window.
- 5 Drag and drop the following two files from the window opened in step 3 to the System Folder icon in the window opened in step 4.
 - Sony USB Driver
 - Sony USB Shim

- 6 When the message "Do you want to put these items into Extension Folder?" is shown, click "OK."
- 7 Restart your computer.

2 Preparing your camera

For details, see page 46.

3 Connecting your camera to your computer

For details, see page 47.

Removing the USB cable from your computer or the "Memory Stick" from your camera during a USB connection.

Drag and drop the drive icon of the "Memory Stick" to the "Trash" icon, then remove the USB cable or "Memory Stick."

* If you are using Mac OS X, remove the USB cable, etc., after you have turned your computer

4 Copying images

- 1 Double-click the newly recognized icon on the desktop. The contents of the "Memory Stick" inserted in your camera appear.
- 2 Double-click "DCIM."

- 3 Double-click "100MSDCF."
- 4 Drag and drop the image files to the hard disk icon.

The image files are copied to your hard

Viewing the images on your computer

- 1 Double-click the hard disk icon.
- 2 Double-click the desired image file in the folder containing the copied files. The image file opens.
- You can use the "PIXELA ImageMixer for Sony" software to copy images to your computer and view the images on your computer. To install the software, insert the supplied CD-ROM drive, then click "PIXELA ImageMixer" on the opening window and follow the instructions on each window. For details, see the software's help files.

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How to setup and operate your camera

Here we will explain the most commonly used menus and the SET UP screen. **Control button**

MENU button Mode Dial

Changing menu settings

1 Press the MENU button and the menu will be displayed.



2 Select the setting item you want to change using **◄/▶** on the control button.

> The letters and symbols of the item you select will turn yellow.



3 Select the desired setting using **▲/▼** on the control button.

The frame of the selected setting will turn yellow, and the setting will be made.

 Spot light-metering) is not displayed on the menu of the DSC-P31 (page 61).

To turn off the menu display Press the MENU button.

Changing items in the SET **UP** screen

1 Turn the Mode dial to SET UP, and the SET UP screen appears.



2 Select the setting item you want to change using ▲/▼/◄/▶ on the control button.

The frame of the item you select will turn yellow.



3 Press the center ● on the control button to enter the setting.

• On the DSC-P31, the "DIGITAL ZOOM" (page 28) and "POWER SAVE" (page 16) items are not displayed.

To turn off the SET UP screen display

Turn the Mode dial to anything other than SET UP.

Advanced still image shooting

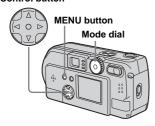
Adjusting the exposure

- EV adjustment

Mode dial setting: ₫/SCN/

Used when you want to change the automatic exposure to one of your own choice. The value can be set over a range from +2.0EV to -2.0EV, in 1/3EV increments.

Control button



- 1 Turn the Mode dial to ♠, SCN, or □.
- **2** Press the MENU button. The menu appears.
- 3 Select "

 " using

 √▶.

The value of the exposure adjustment is displayed.



4 Select the exposure adjustment value.

Select the exposure adjustment value using $\blacktriangle \nabla$.

Make your adjustment while confirming the brightness of the background of the subject on the LCD screen.

To return to auto adjust mode

Return the exposure adjustment value to 0 EV.

- Spot light-metering) is not displayed on the menu of the DSC-P31 (page 61).
- When the subject is at the brightest or darkest ends of the range, or when you are using the flash, the adjustment value set may not actually be used.

Shooting techniques

In normal shooting, the camera makes automatic exposure adjustments. Check the image to be shot, if it looks like the image below, you should make manual adjustments. If you are shooting a back-lit person or a snowy scene, make your adjustments in the + plus direction; if you have a dark subject that fills the screen, making your adjustments in the – direction should give the best results.



Inadequate exposure

→ Adjust in the + direction



Appropriate exposure



Overexposed → Adjust in the – direction

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Adjusting color tones

- WHITE BALANCE

Mode dial setting: **⚠**/SCN/ﷺ

When shooting images using automatic features, the white balance is set automatically in response to the condition of the subject, and the overall color balance is adjusted accordingly. When you want to fix the conditions under which the image is captured, or when shooting under special lighting conditions, you can select the settings manually.

AUTO (no display)

The white balance is adjusted automatically.

Daylight (*)

Used when shooting outdoors, and for shooting at night, under neon lights, for fireworks, sunrises and sunsets.

Cloudy (4)

Used when shooting under a cloudy sky.

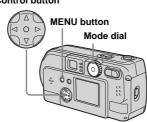
Fluorescent ()

Used when shooting under fluorescent lights.

Incandescent (绿)

- Used when shooting, for example, at a party, where the lighting conditions change often
- · Used in a studio, or under video lights
- Used when shooting under sodium or mercury lights

Control button



- 1 Turn the mode dial to ♠, SCN, or ₺₺.
- **2** Push the menu button. The menu appears.
- Select WB using ◀/▶, then select the desired setting using ▲/▼.

To return to automatic settings

In Step 3, select "AUTO".

- Under fluorescent lights that flicker, even if you choose Fluorescent, you may feel that the overall color of the image may show differences from the actual color.
- When the flash is triggered, the manual setting is cancelled, and the shooting of the image is done in "AUTO" mode.

Shooting techniques

The color of the subject that you see will be captured according to the lighting conditions. Under the bright summer sun, everything will appear bluish, under a light sources like a light bulb, white objects will appear will appear reddish. The human eye has an excellent ability to adjust. Even when lighting conditions change, the eye can adjust and recognize the correct color almost instantly. However, digital still cameras are greatly influenced by light. Normally, this camera adjusts automatically, but if you notice that the color of the entire image seems to be a bit unnatural when replaying an image on the LCD screen, it is recommended that you adjust the white balance.

Choosing a focus method

Mode dial settings: ₫/SCN/Щ

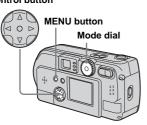
Multipoint AF

When you use Multipoint AF, it calculates the distance in three places, in the center of the image, and to both the left and right of the center, you can shoot with the auto focus function without being dependent on the composition of the image. It is useful when it is difficult to focus on the subject because it is not in the center of the frame.

Center AF

You can focus automatically using the AF range finder in the center of the frame.

Control button



- Turn the Mode dial to either ♠, SCN, or ⊞.
- 2 Press the MENU button.
- Select "♠" using **√**/▶, select "MULTI AF" or "CENTER AF" using **△**/▼.

The focus is adjusted automatically using the AF range finder. The color of the range finder frame changes from white to green.

Multipoint AF



Center AF



- When you are shooting movies (MPEG MOVIE) and you choose Multipoint AF, the distance to the center of the screen is estimated as an average, so the AF works even with a certain amount of vibration. The Center AF automatically focuses only on the center of the image, so it is convenient when you want to focus only on what you aim at.
- When you use Digital zoom or AF illuminator, priority AF movement is given to subjects in or near the center of the frame. In this case, the AF range finder isn't displayed.

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Shooting with the AF lock using Center AF

If it is difficult to focus because the subject is not in the center of the frame, you can focus in this situation using the AF range finder. For example, when you are shooting two human subjects, and there is a gap between them, the camera may focus on the background visible in the gap. In a case like this, use AF lock to ensure the subjects are in correct focus.

 When you are using AF lock, you can capture an image with the correct focus even if the subject is at the edge of the frame.

Compose the shot so that the subject is centered in the AF range finder, and press the shutter halfway down.

First, the focus for the subject you are aiming at will be adjusted. When the AE/AF lock indicator stops flashing and stays lit, and there is a beeping sound, focus adjustment is completed.



AF range finder

 AE/AF lock indicator

Return to the fully composed shot, and press the shutter down again.

When you hear a beeping sound, the image will be recorded with the proper focus for the human subjects.



 You can carry out the AF lock adjustment process any number of times, as long as you do it before you press the shutter.

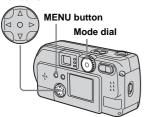
Setting the distance to the subject

- Focus preset

Mode dial setting: ₼/SCN/□

When shooting an image using a previously set distance to the subject, or when shooting a subject through a net or through window glass, it is difficult to get the proper focus using the automatic focus function. This is when use of the Focus preset is convenient.

Control button



- 1 Turn the Mode dial to n, SCN, or 🖽
- 2 Press the MENU button. The menu appears.
- 3 Select "⊕" using **√/**▶, then select the distance to the subject using ▲/▼.

You can select from the following distance settings.

0.5m, 1.0m, 3.0m, 7.0m, ∞ (unlimited distance)



To return to automatic adjustment

Press the MENU button again, select "E", then select "MULTI AF" or "CENTER

- (Spot light-metering) is not displayed on the menu of the DSC-P31 (page 61).
- · The focus distance settings include a small margin of error. Use them as guidelines only.
- If you point the lens up or down, the error increases (DSC-P71 only).

Adding special effects

- Picture effect

Mode dial setting: ₼/SCN/□

You can add special effects to bring out the contrast in your images.

SOLARIZE





Like an illustration with clearly delineated bright and dark portions

NEG.ART

SEPIA



Colored to look like an Made to look like a old photograph

negative image

- 1 Turn the Mode dial to , SCN,
- 2 Press the MENU button. The menu appears.

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3 Select "PFX" (P. EFFECT) using **◄/▶**, then select the desired mode using ▲/▼.

To cancel Picture Effect

In Step 3, select "OFF"

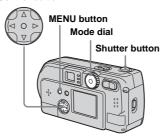
Spot light-metering

Mode dial setting: ₼/SCN/iii

When there is reflected light, or the background of the subject provides a very high contrast, you can adjust the focus to that most appropriate for your subject. You can aim at a particular point, and meter the light to adjust the focus for that point.

• When the place you want to focus on and the place you are using Spot light-metering on are the same, it recommended that you use Center AF (page 58).

Control button



For the DSC-P71

- 1 Turn the Mode dial to n, SCN,
- 2 Press the MENU button.

The menu appears.

3 Select " ● " using </>
, then select "ON" using ▲/▼.

The Spot light-metering aiming point is displayed.



4 Aim the Spot light-metering aiming point at the spot you want to shoot, then shoot your image.

Advanced still image shooting

To cancel Spot light-metering

Press the MENU button again and select "
 " using ◀/▶ on the control button, select "OFF" then using ▲/▼. The Spot light-metering aiming point disappears, and the camera returns to normal light-metering.

For the DSC-P31

- **1** Turn the Mode dial to ♠, SCN, or Ⅲ.
- Press ► () on the control button to turn Spot light-metering on.

The Spot light-metering aiming point is displayed.

Aim the Spot light-metering aiming point at the spot you want to shoot, then shoot your image.

To cancel Spot light-metering

Shooting multiple frames

- Clip Motion

Mode dial setting: 🖽

You can shoot a number of still images consecutively (GIF animation). Because the file size is small, these images are ideal for use on a home page, or for attaching to an email message.

 Clip Motion images are restricted to color levels of 256 colors and below. This is a characteristic of GIF format recording. For this reason, the image quality of some images may deteriorate.

NORMAL (160×120)

The maximum number of frames you can shoot in one Clip Motion shot is ten. This is the best choice for use on a home page.

MOBILE (120×108)

Two frames is the maximum number that can be shot in Clip Motion in this mode.

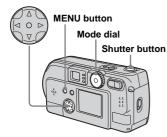
- MOBILE mode has strict file size limits, so picture quality falls accordingly.
- For the number of images you can record using Clip Motion, see page 91.

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Before using Clip Motion

In "MOVING IMAGE" in SET UP, select "CLIP MOTION" (pages 55, 97).

Control button



- 1 Turn the Mode dial to **!!!**.
- **2** Press the MENU button. The menu appears.
- Select "■" (IMAGE SIZE) using ◄/▶, and select the desired mode useing ▲/▼.

4 Shoot one frame.



5 Shoot the next frame.

Press the shutter once to shoot the next frame, then repeat this operation until you have shot the desired number of frames.

6 Press the center .

All of the frames will be saved in the "Memory Stick."

- If you do not complete Step 6, the image will not be saved in the "Memory Stick." Up to that point, the image is saved temporarily in the
- In Clip Motion mode, the date and time will not be recorded.
- When you view Clip Motion images using the Index screen, the images may appear different from the actual image recorded.
- GIF files made on other cameras may not display correctly on this camera.

To delete shot images in the midst of shooting

- 1 In Steps 4 or 5 on the previous page, press ◀ (⑤)
 - Shot images will be played back in order, playback stops when the last image is reached.
- 2 Press the MENU button, select either "DELETE LAST", or "DELETE ALL", and press the center ●.
- 3 Select "OK", then press the center ●. If you chose "DELETE LAST" in Step 2, repeat Steps 1 to 3 to delete the images in order, from the latest one shot.

Shooting in Multi Burst mode

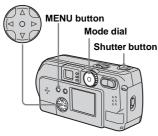
- Multi Burst mode Mode dial setting: Щ

Pressing the shutter once records 16 frames in a row. This is convenient for checking your form in sports, for example. You can set the interval between frames using the menu

Before beginning the operation, select "MULTI BURST" in "MOVING IMAGE" (page 55).



Control button



- Turn the Mode dial to 🖽
- 2 Press the MENU button.

The menu appears.

Select "■" using </
>

√>, then select the desired betweenframe interval using △√.

You can choose the between-frame interval from among the following. NTSC: 1/7.5 sec., 1/15 sec., 1/30 sec. PAL: 1/6.3 sec., 1/12.5 sec., 1/25 sec. (For information on NTSC/PAL, see page 95.)



4 Press the shutter.

16 frames will be recorded as one image (image size: 1280×960).

- When you play back images recorded with this camera in Multi Burst mode, the 16 frames will be played back in order, with a fixed interval between them
- When the images are played back on a computer, the 16 frames you shot will all be displayed at the same time as part of one image.

- When Multi Burst images are played back on a camera without the Multi Burst feature, the 16 frames will all be displayed at the same time, as part of one image, just as they are on a computer.
- For the number of images that can be recorded using the Multi Burst mode, see page 91.
- In Multi Burst mode, the date and time cannot be displayed.

Deleting shot images

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When using this mode, you cannot delete only certain frames. When you delete images, all 16 of the frames will be deleted at the same time.

- 1 Turn the Mode dial to ▶.
- Press the MENU button and select "DELETE" from the menu, then press the center •.
- 3 Select "OK", and press the center ●.

All of the frames are deleted.

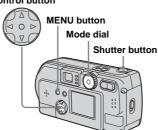
Shooting still images for e-mail

- E-MAIL

Mode dial setting: **₾**/SCN

You can shoot images and save them in a file that is small enough to attach to an email message (see page 24 for available file sizes).

Control button



- Turn the Mode dial to ♠, or SCN.
- **2** Press the MENU button. The menu appears.
- Select "MODE" (recording mode) using **◄/▶**, then select "E-MAIL" using **▲/▼**.

4 Shoot your image.

To return to Normal mode

In Step 3, select "NORMAL."

 For instructions on how to attach your images to an e-mail message, refer to the Help files of the e-mail software you are using.

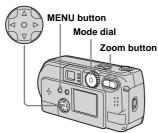
Advanced still image shooting

Enlarging a portion of a still image

Mode dial setting: ▶

You can magnify an image up to five times the size of the original image. You can also record the magnified image as a new file.

Control buttor



Enlarging an image – Playback

- 1 Turn the Mode dial to ▶.
- 2 Display the image you want to enlarge.
- Press the T zoom button, the image will be enlarged.
- 4 Press the control button repeatedly to select a portion of the image to enlarge.



- ▲: To view a portion of the top of the image
- ▼: To view a portion of the bottom of the image
- To view a portion of the left side of the image
- ►: To view a portion of the right side of the image

5 Press the T zoom button repeatedly, the portion of the image selected in Step 4 will be enlarged.



To cancel enlarged viewing

Press the center .

- You cannot use Playback zoom with movies (MPEG MOVIE)/Clip Motion/Multi Burst images
- If you press the W zoom button when you are viewing images that have not been enlarged, the Index screen will appear (page 37).
- The images displayed in Quick Review (page 27) can be enlarged using the procedures outlined in Steps 3 to 5.

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Recording an enlarged image – Trimming

- 1 After you have viewed an image using playback zoom, press the MENU button.
- 2 Select "TRIMMING" using ▶, then press the center ●.
- Select the image size using **△**/
 ▼, then press the center ●.

The image will be recorded, and the screen image will return to the size it was before enlargement.

- The trimmed image will be recorded as the newest file, and the original image will be retained.
- The trimmed image may suffer some deterioration in image quality
- You cannot trim an image using the 3:2 image size.

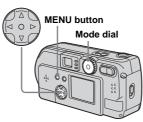
Playing back successive images

- Slide show

Mode dial setting: ▶

You can playback recorded images in succession, one after another. This is useful for checking your images, or for giving a presentation.

Control button



- 1 Turn the mode dial to ▶.
- 2 Press the MENU button.

The menu appears.

3 Select "SLIDE" using **△/▼**, and press the center **●**.

Select an interval from those listed below.

INTERVAL settings

 $3 \sec/5 \sec/10 \sec/30 \sec/1 \min$

REPEAT

ON:Plays the images back repeatedly.
OFF:Plays through the images one
time and then stops.

4 Select "START" using ▲/▼/◄/
▶, then press the center ●.

The slide show begins.

To cancel the Slide show setting

In Step **3**, select "CANCEL", then press the center **●**.

To stop the playback of the slide show

Press the center lacktriangle, select "EXIT" using lacktriangle, then press the center lacktriangle.

To fast forward or to go back to a previous image during a slide show

Press the ► (Forward), or the ◀ (Backward).

 The interval settings are just guidelines. The actual intervals will differ, based on factors like the size of the image.

Rotating still images

Mode dial setting: ▶

Images shot when holding the camera vertically can be rotated and displayed horizontally.





- 1 Turn the mode dial to ▶, and display the image you want to rotate.
- **2** Press the MENU button. The menu appears.
- 3 Select "ROTATE" using **◄/►**, then press the center **●**.
- 5 Select "OK" using **◄/►**, then press the center **●**.

To cancel rotation

In Step 4, select "CANCEL", then press the center ●.

- Protected images (page 69)/movies (MPEG MOVIE)/Clip Motion/Multi Burst images cannot be rotated.
- Images shot on other cameras may not rotate correctly on this camera.
- When viewing images on a personal computer, the image viewing software used may not handle the rotation information correctly.

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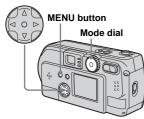
Protecting images

- Protect

Mode dial setting: ▶

To prevent accidental erasure of an important image, you can protect it.

Control button



For single images

- 1 Turn the mode dial to ▶.
- 2 Display the image you want to protect using ◄/►.
- **3** Press the MENU button. The menu appears.
- 4 Select "PROTECT" using **◄/►**, then press the center **●**.

The image currently being displayed is now protected, and a **O**—n (Protect) mark is shown on the screen.



To cancel the protection applied to an image

In Step 4, press the center ● again. The • (Protect) mark disappears.

For Index (9 images) screen

- Turn the mode dial to ▶, press the W zoom button once, the Index (9 image) screen appears.
- **2** Press the MENU button. The menu appears
- 3 Select "PROTECT" using **√/>**, and press the center **●**.
- 4 Select "SELECT" using **◄/▶**, and press the center **●**.

The frame around the selected image turns green.

5 Select the image you want to protect using the control button, and press the center

A On (Protect) mark will be attached to the selected image.



Still image editting

- 6 To protect other images, repeat Step 5.
- 7 Press the MENU button. The menu appears.
- 8 Select "OK" using the ▶, then press the center .

The selected image will be protected.

To end the protection operation

Select "CANCEL" in Step 4 or select "EXIT" in Step 8, then press the center ●

To cancel protection of a protected image

In Step 5, using the control button, select an image for which you want to cancel protection, and press the center . Repeat this operation for all of the images for which you want to cancel protection. Then, press the MENU button, select "OK", and press the center .

To protect all of your images

In Step 4 select "ALL", and press the center . Then select "ON", and press the center .

To remove protection from all of your images

In Step 4 select "ALL", and press the center . Then select "OFF", and press the center .

For Index (3 images) screen

- 1 Turn the mode dial to ▶, press the W zoom button twice, the Index (3 images) screen appears.
- 2 Move the image you want to protect to the center using ◀/ ▶, and press the center ●.
- 3 Press the MENU button. The menu appears
- 4 Select "PROTECT" using ▲/▼, and press the center .

The center image is protected, and a Om (Protect) mark will be attached to that image.



5 To protect other images, move the image you want to protect to the center using **◄/▶**, and repeat Step 4.

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To remove protection from previously protected images

In Step 4, select the image from which you want to remove protection, and press the center . To remove protection from all of your images, repeat this process for each of them.

Changing image size

- Resize

Mode dial setting: ▶

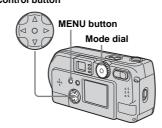
You can change the size of your images, and record them as new files.

You can change your images to the following sizes.

2048×1536 (DSC-P71 only), 1600×1200, 1280×960, 640×480

After the resizing is finished, the original image is retained.

Control button



- 1 Turn the mode dial to ▶.
- 2 Select the image for which the size is to be changed using ◀/

3 Press the MENU button.

The menu appears

- 4 Select "RESIZE" using **4/**▶, then press the center .
- 5 Using **△/▼**, select the new size, then press the center .

The resized image is recorded as the newest file.

To stop the resizing process

In Step 5, select "CANCEL", then press the center .

- Movies (MPEG MOVIE)/Clip Motion/Multi Burst images cannot be resized.
- · When images are resized from a smaller to a larger size, the image quality will deteriorate.
- · 3:2-sized images cannot be resized.
- If you try to resize a 3:2-sized image, black bands will appear at the top and bottom of the image.

Choosing images to print

- Print mark

Mode dial setting: ▶

You can designate certain images to be

This is convenient when you want to have images printed in shops that follow DPOF (Digital Print Order Format) specifications.

- Print marks cannot be attached to movies (MPEG MOVIE) or images recorded using Clip Motion.
- In E-MAIL mode, the Print mark will be attached to the normal size image that was recorded at the same time.
- You can attach a print mark to images shot using Multi Burst mode; all the images will be printed on one sheet divided into 16 panels.

Single images

- 1 Turn the mode dial to ▶.
- Display the image you want to print using ◄/▶.
- 3 Press the MENU button.

The menu appears.

4 Select "PRINT" using **◄/▶**, then press the center **●**.

A (Print) mark will be attached to this image.



To delete a Print mark

In Step 4, press the center ● again. The (Print) mark disappears.

Index (9 images) screen

- 1 Turn the mode dial to ▶ and press the W zoom button once to switch to the Index (9 images) screen.
- 2 Press the MENU button.

The menu appears.

3 Select "PRINT" using **◄/►**, then press the center **●**.

The frame around the image selected turns green.

- You cannot select "ALL".
- 4 Select "SELECT" using **√/>**, then press the center **●**.

The frame of the selected picture changes to green.

- You cannot select "ALL".
- Select the images you want to print using the control button, then press the center ●.

A (Print) mark is attached to the image.



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- 6 To print other images, repeat Step 5 for each of them.
- **7** Press the MENU button.

The menu appears

8 Select "OK" using ▶, then press the center ●.

The setting of the (Print) mark is completed.

To delete a 🖭 (Print) mark

To delete a (Print) mark, select an image using the control button, and press the center ●.

To delete the Print marks attached to all of your images

In Step 4, select "ALL", then press the center ●. Next, select "OFF", and press the center ●.

To cancel the Print mark operation

In Step 4, select "CANCEL", or select "EXIT" in Step 8, then press the center •

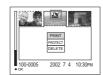
Index (3 images) screen

- Turn the mode dial to ▶, press the W zoom button twice, and the Index (3 images) screen appears.
- Display the image you want to print in the center using ◄/►.
- 3 Press the MENU button.

The menu appears.

4 Select "PRINT" using ▲/▼, then press the center ●.

The image in the center will have a (Print) mark attached to it.



To print other images, move the image you want to print to the center using **◄/▶**, and repeat Step **4**.

To delete a Print mark

In Step 4, press the center ● again. The (Print) mark will disappear.

Still image editting

Shooting movies

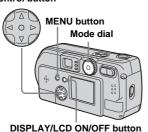
Mode dial setting:

You can shoot movies.

Before starting

In "MOVING IMAGE" in SET UP, select "MPEG MOVIE" (pages 55, 97).

Control button



- 1 Turn the Mode dial to 🖽.
- 2 Press the MENU button.

The menu appears.

You can choose from 320 (HQX), 320×240, or 160×112. See page 91 for the recording time allowed for each screen size.

4 Press the shutter all the way down.

"RECORDING" appears on the screen and the camera starts recording the image.



- When the capacity of the "Memory Stick" is used up, recording stops.
- For details on the recording time for movies, see page 91.
- 5 Press the shutter all the way down again to stop recording.

The message displayed on the screen while you are shooting

It is not written onto the image.
Each time you press the DISPLAY/LCD
ON/OFF button, the status of the LCD
screen changes as follows: Display OFF →
LCD OFF → Display ON. See page 104
for a detailed description of the indicated
items.

To shoot close-ups (MACRO) (DSC-P71 only)

Turn the Mode dial to **to** and follow the procedure on page 28.

To shoot with a self-timer

Turn the Mode dial to **t** and follow the procedure on page 29.

- · You cannot use a flash.
- You cannot write the date and time on the image.

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Viewing movies on the LCD screen

Mode dial setting: ▶

You can view movies on the LCD screen of the camera.

1 Turn the Mode dial to ▶.

2 Select the desired movie using $\checkmark/\triangleright$.

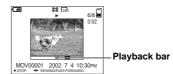
Movies are displayed a size smaller than still images.



3 Press the center .

The movie is played back.

▶ (PLAYBACK) appears on the LCD screen while a movie is playing back.



To stop playback

Press the center

.

To rewind / fast-forward

Press ◀/▶ while playing back a movie. To return to the normal playback, press the center ●.

High quality movies

Movies with the image size "320 (HQX)" appear on the full screen.

Messages displayed on the screen while movies are being played back

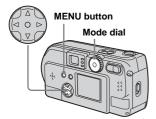
Each time you press the DISPLAY/LCD ON/OFF button, the status of the LCD screen changes as follows: Display OFF → LCD OFF → Display ON. See page 105 for a detailed description of the indicated items.

 The procedure for viewing movies on a TV is the same as that for viewing still images (page 38).

Deleting movies

Mode dial setting: ▶

Control button



Deleting on the single screen

- **1** Turn the Mode dial to **▶**.
- Select the image you want to delete using ◄/►.
- 3 Press the MENU button.

The menu appears.

4 Select "DELETE" using **√/>** and press the center **●**.

You have not deleted the image yet at this point.

5 Select "OK" using ▲ and press the center ●.

"MEMORY STICK ACCESS" appears on the screen.
The image has been deleted when the message disappears.

To cancel the deletion

Select "CANCEL" in Step \blacksquare , and press the center \blacksquare .

Deleting on the Index (9 images) screen

- Turn the Mode dial to ▶ and press the W zoom button once to display an Index (9 images) screen.
- **2** Press the MENU button. The menu appears.
- 3 Select "DELETE" using **◄/▶** and press the center **●**.
- 4 Select "SELECT" using **◄/▶** and press the center **●**.
- 5 Select the image you want to delete using ▲/▼/◄/▶ and press the center ●.

Selected images are indicated with "\overline{1}".



You have not deleted the images yet at this point.

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- 6 Repeat Step 5 of the procedure to delete other images.
- **7** Press the MENU button. The menu appears.
- 8 Select "OK" using **◄/▶** and press the center **●**.

The image is deleted when the "MEMORY STICK ACCESS" message disappears.

To cancel the deletion

Select "CANCEL" in Step **3**, and press the center **●**.

To Delete all the images

Select "ALL" in Step 4, and press the center ●. To cancel the deletion, select "CANCEL" using ◀/▶ and press the center ●.

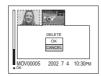
Deleting on the Index (3 images) screen

- Turn the Mode dial to ▶ and press the W zoom button twice to display an Index (3 images) screen.
- Show the desired image at the center using ◀/▶.
- 3 Press the MENU button.

The menu appears.

4 Select "DELETE" using **▼** and press the center **●**.

You have not deleted the image yet at this point.



5 Select "OK" using ▲ and press the center ●.

The image is deleted when the "MEMORY STICK ACCESS" message disappears.

To cancel the deletion

Select "CANCEL" in Step **5**, and press the center **●**.

Enjoying movies

Editing movies

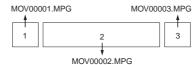
Mode dial setting: ▶

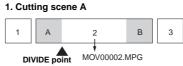
With the Mode dial, you can cut movies, or delete unnecessary portions of movies. This is the recommended mode to use when the "Memory Stick" capacity is insufficient, or when you attach movies to your e-mail messages.

The file numbers assigned when movies are cut

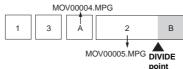
The files saved after a movie cut are recognized as the latest files and are assigned new numbers. The original files are deleted, and the numbers previously assigned to those files are treated as missing numbers.

<Example> Cutting a file numbered MOV00002.MPG

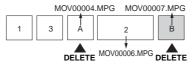




2. Cutting scene B



3. Deleting scene A and B if they are unnecessary

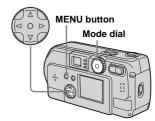


4. Only the desired scenes remain



Cutting movies

Control button



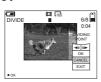
- 1 Turn the Mode dial to ▶.
- 2 Select the image you want to cut using **◄/▶**.
- **3** Press the MENU button. The menu appears.
- Select "DIVIDE" using ▶ and press the center ●, and select "OK" using ▲, then press the center ●.

The playback of the movie starts.

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5 Deciding on a cutting point.

Press the center • at the desired cutting point.



When you want to adjust the cutting point, use "◀II/II▶" (frame forward/rewind) and adjust the cutting point using ◀/▶. If you want to change the cutting point, select "CANCEL". The playback of the movie starts again.

- 6 When you have decided on a cutting point, select "OK" using ▲/▼, and press the center ●.
- **7** Select "OK" using **▲** and press the center **●**.

The movie is cut.

To cancel cutting

Select "EXIT" in Step 5. The movie appears on the screen again.

- You cannot cut the following files.
 - Clip Motion files
 - Multi Burst files
- Still image files
- Files not long enough to cut
- You cannot restore files once you cut them.
 The original file is deleted when you cut it.

Deleting unnecessary portions of a movie

- Cut an unnecessary portion of a movie (see the previous page).
- Display the portion of the movie you want to delete.
- **3** Press the MENU button. The menu appears.
- 4 Select "DELETE" using ◀/ ► and press the center ●.
- 5 Select "OK" using ▲ and press the center ●.

The movie currently displayed on the screen is deleted.

Copying movies to your computer

Follow the steps below to copy movies you shot to your computer.

Preparations

- 1 Install the USB driver.
- 2 Insert the "Memory Stick" on which the movies are stored, into your camera.

 Then, turn on the camera.
- 3 Connect the camera to your PC.
- For details, see page 44.
- Step 1 is unnecessary when your OS is Windows XP, Mac OS 9.1, Mac OS 9.2, or Mac OS X(v10.0/v10.1).

For Windows 98, 98SE, 2000, Me users

The contents of the "Memory Stick" inserted into your camera appear.

- This section describes an example of copying movies into the "My Documents" folder.
- 2 Double-click "MSSONY," then double-click " "MOML0001."

The "MOML0001" folder opens.

3 Drag and drop the movie files into the "My Documents" folder.

The movie files are copied to the "My Documents" folder.

For Windows XP users

On the Copy Wizard screen, click "Copy images to a folder on the computer. Use the Microsoft Scanner and Camera Wizard.", then click O.K.

The "Scanner and Camera Wizard starting.." screen appears.

2 Click "Next."

All of the images recorded in the "Memory Stick" will be displayed on the screen

Click to remove the checkmark from the checkboxes of images that you do not want to copy to the computer, then click "Next."

The "Image names and Copy destination" screen is displayed.

4 Designate the image names and copy destination, then click "Next."

The copying of your images begins. When the copying is finished, the "Other Options" screen is displayed.

Please select "My Documents" as the copy destination.

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5 Select "Finish", then click "Next."

The "Close the Scanner and Camera Wizard" screen is displayed.

6 Click "Finish."

The Wizard screen closes.

• If you want to copy other images, disconnect the USB cable, and then start over again from Step 1.

For Macintosh users

- Double-click the newly recognized icon on the desktop.
 - The contents of the "Memory Stick" inserted into your camera appear.
- 2 Double-click "MSSONY."
- 3 Double-click "MOML0001."
- **4** Drag and drop the movie files to the hard disk icon.

The movie files are copied to your hard disk.

To copy movie files using "ImageMixer"

You can copy movie files using the supplied "PIXELA ImageMixer for Sony" software. The operation is the same as the operation used to copy still images. For details, see the software's help files.

Troubleshooting

Troubleshooting

If you have trouble with your camera, try the following solutions.

- 1 Check the items on pages 82 to 88. If the screen or the display window shows "C:□□:□□", the self-diagnostics function is working. Please see page 90.
- 2 Press the RESET button (pages 11, 13) on the bottom of the camera, then turn on the power again. (This will erase the date/time settings, etc.)

RESET button

3 Consult your Sony dealer or local authorized Sony service facility.

Batteries and Power

Symptom	Cause	Solution
The battery remaining indicator is incorrect. Or the sufficient battery remaining indicator is displayed but the power soon runs out.	You have used the camera for a long time in an extremely hot or an extremely cold location. The batteries are dead (page 101). The batteries are discharged. A mismatch has occurred in the remaining battery time information.	 → Replace the batteries with a new one. → Install a charged batteries (page 14). → Fully charge the batteries (page 16).
The battery runs down too quickly.	You are recording/playing back images in an extremely cold location. The batteries are not charged enough. The batteries are dead (page 101).	→ Fully charge the batteries (page 14).→ Replace the batteries with a new one.
The power cannot be turned on.	The batteries are not installed correctly. The AC power adaptor is disconnected.	 → Install the batteries correctly (page 17). → Connect it securely to your camera (page 19).
The power turns off suddenly.	If you do not operate the camera for about three minutes while the power is on, the camera turns off automatically to prevent wearing down the battery (when POWER SAVE is ON, after 90 seconds.) (page 20). The batteries are discharged.	→ Turn on the power again (page 20).→ Replace it with a charged battery (page 14).

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Taking Still / Moving images

Symptom	Cause	Solution
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.	→ Turn the LCD screen on (page 32).
The subject is not visible on the LCD screen.	• The mode dial is not set to or SCN, or .	→ Set it to nor SCN, or 11 (pages 26, 74).
The image is out of focus.	The subject is too close. Scene selection is set to the Landscape mode. Manual focus is selected. Center AF is selected.	→ Set the macro recording mode (DSC-P71 only) when you shoot a subject that is within 50 cm (19 11/16 inches) from the lens. Make sure to place the lens farther away from the subject than the shortest shooting distance when shooting (page 28). → Cancel the setting (page 34). → Choose a focus method (page 58). → Use either the Multipoint AF (page 58) or Center AF to shoot with AF lock (page 59).
Unable to zoom.	You cannot zoom while shooting a movie (MPEG Movie).	_
Digital zoom does not function.	You cannot zoom while shooting a movie (MPEG MOVIE). DIGITAL ZOOM is set to "OFF" in SET UP (DSC-P71 only). The LCD screen is OFF.	→ Change it to "ON" (pages 55, 97). → Turn it ON (page 32).
The image is too dark.	 You are shooting a subject with a light source behind the subject. The brightness of the LCD screen is too low. The POWER SAVE is set to ON. 	 → Adjust the exposure (page 56). → Adjust the brightness of the LCD screen in the SET UP settings (pages 55, 98). → Turn the POWER SAVE OFF (page 16).
The image is too bright.	You are shooting under a spotlight in a dark location, like stage lighting. The LCD is too bright.	 → Adjust the exposure (page 56). → Adjust the "LCD BACKLIGHT" in the SET UP settings (pages 55, 98).
The image is monochrome (black and white).	• P. EFFECT is set to "B & W" mode.	→ Cancel "B&W" mode (page 60).

Symptom	Cause	Solution
Vertical streaks appear when you are shooting a very bright subject.	The smear phenomenon is occurring.	→ This is not a malfunction.
You cannot shoot images.	No "Memory Stick" has been inserted. The "Memory Stick" is full. The write-protect tab on the "Memory Stick" is set to the LOCK position. You cannot shoot while the flash is charging. The mode dial is not set to □ or SCN while shooting a still picture. The mode dial is not set to □ when shooting a moving picture.	 → Insert a "Memory Stick" (page 23). → Delete the images saved in the "Memory Stick," or format it. → Change the "Memory Stick." → Change the LOCK position (page 100). — → Set it to or SCN (page 26). → Set it to (page 74).
Cannot record images with the flash.	 The mode dial is set to , SET UP, or . The flash is set to (No flash). When recording still images, Scene Selection is set to Night Scene mode. 	 → Set it to a setting other than ▶, SET UP, or ☐ (page 30). → Set the flash to "AUTO" (no indicator) or \$ (forced flash) (page 30). → Cancel the setting (forced flash) (page 34).
The eyes of the subject come out red.	_	→ Set the red eye reduction mode (page 31).
The date and time are recorded incorrectly.	The date and time are not set correctly.	→ Set the correct date and time. (page 21)

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Viewing images

Symptom	Cause	Solution
The image cannot be played back.	• The mode dial is not set to ▶.	→ Set the mode dial to ▶ (page 36).
Images are coarse right after being played back.	_	→ This is not a malfunction.
The images cannot be played back on a TV.	The "VIDEO OUT" setting for your camera in SET UP is incorrect. The connection is not correct.	→ Set it to "NTSC" or "PAL" (pages 55, 98). → Check the connection (page 38).
	The connection is not correct.	Check the connection (page 36).
The images cannot be played back on a personal computer.	_	→ See page 86.

Deleting/Editing an image

Symptom	Cause	Solution
Your camera cannot delete an image.	The image is protected. The write-protect tab on the "Memory Stick" is set to the LOCK position.	 → Cancel the protection (page 69). → Change the LOCK position (page 100).
You have deleted the image by mistake.	Once you have deleted a file, you cannot restore it.	→ The write-protect tab on the "Memory Stick" will prevent you from deleting images by mistake (page 100).
The resizing function does not work.	Movies (MPEG MOVIE)/Clip Motion/Multi Burst images cannot be resized.	
You cannot display a print mark.	You cannot display print marks on Clip Motion images and MPEG movies.	_

Personal computers

Symptom	Cause	Solution
You do not know the OS of your computer.	_	→ Check "Recommended environment for personal computers" (page 44).
You cannot install the USB driver.	_	→ In Windows 2000, log on as Administrators (authorized Administrators) (page 45).
Your personal computer does not recognize your camera.	The camera is turned off. The battery level is too low. You are not using the supplied USB cable. The USB cable is not connected securely. "USB CONNECT" is set to "PTP" in the SET UP settings. The USB connectors on your personal computer are connected to other equipment besides the keyboard, the mouse, and your camera. The USB driver is not installed. Your computer does not properly recognize the device because you connected the camera and your computer with the USB cable before you installed the "USB Driver" from the supplied CD-ROM.	 → Turn on the camera (page 20). → Use the AC power adaptor (not supplied) (page 19). → Use the supplied USB cable (page 47). → Disconnect the USB cable, and connect it again securely. Make sure that "USB MODE" is displayed on the LCD screen (page 47). → Set it to "NORMAL" (pages 55, 98). → Disconnect the USB cables except for those connected to the keyboard, the mouse, and your camera. → Install the USB driver (page 45). → Delete the erroneously recognized device from your computer, then install the USB driver (pages 45, 49).
You cannot copy images.	The camera is not correctly connected to your computer. The copy procedure differs depending on your OS.	 → Connect the camera and your computer correctly using the USB cable. → Follow the copy procedure that your OS suggests (pages 48, 49, 54). → If you are using the "PIXELA ImageMixer for Sony" software, click on HELP.
The image cannot be played back on a personal computer.	_	 → If you are using the "PIXELA ImageMixer for Sony" software, click on HELP. → Consult the personal computer or software manufacturer.

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Personal computers (continued)

Symptom	Cause	Solution
The image is affected by noise when you play back an image on a personal computer.	You are playing back the file directly from the "Memory Stick."	→ Copy the file to the hard disk of the personal computer and then play the file back from the hard disk (page 80).
You cannot print an image.	_	 → Check the printer settings. → Click on HELP files for the "PIXELA ImageMixer for Sony" software.

"Memory Stick"

Symptom	Cause	Solution
You cannot insert a "Memory Stick."	You are inserting it backwards.	→ Insert it from the right side (page 23).
You cannot record on a "Memory Stick."	The write-protect tab on the "Memory Stick" is set to the LOCK position. The "Memory Stick" is full.	→ Change the LOCK position (page 100).→ Delete unnecessary images (page 39).
You cannot format a "Memory Stick."	The write-protect tab on the "Memory Stick" is set to the LOCK position.	→ Change the LOCK position (page 100).
You have formatted a "Memory Stick" by mistake.	All the images on the "Memory Stick" are deleted by formatting.	→ Set the "Memory Stick" write-protect tab to the LOCK position (page 100).

Others

Symptom	Cause	Solution
The camera doesn't work, no operations can be performed.	 The battery level is low or zero (The indicator appears.). The AC power adaptor is not connected securely. The built-in microcomputer is not working properly. 	 → Charge the battery (page 14). → Connect it securely to the DC IN jack of your camera and to a wall outlet (mains) (page 19). → Disconnect, and then, after one minute, reconnect all power sources. Then turn the power on and check that the camera works properly.

Symptom	Cause	Solution
The power is on, but the camera does not work.	The built-in microcomputer is not working properly.	→ Remove, and then, after one minute, reinstall the battery. If this doesn't work, press the RESET button on the bottom of the camera with pointed object, then turn the power on again. (This will clear the date/time settings, etc.)
You cannot identify the indicator on the LCD screen.	_	→ Check the indicator (pages 103 to 105).
The lens does not move when you turn off the camera. (DSC-P71 only)	The battery pack is discharged.	→ Replace it with a full charged battery or use the AC power adaptor (pages 14, 17, 19).
The lens gets fogged.	Condensation is occurring.	→ Leave the camera for about an hour and then try to use it again (page 99).

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Warnings and messages

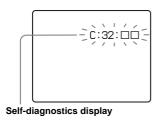
The following messages appear on the LCD screen.

ite tonowing messages appear on the LCD sector.		
Message	Meaning/ Corrective Action	
NO MEMORY STICK	• Insert a "Memory Stick" (page 23).	
SYSTEM ERROR	• Turn the power off and on again (page 20).	
MEMORY STICK ERROR	 The inserted "Memory Stick" cannot be used in your camera (page 100). The "Memory Stick" is damaged, or the terminal section of the "Memory Stick" is dirty. Insert the "Memory Stick" correctly (page 23). 	
FORMAT ERROR	• The "Memory Stick" format failed. Format the "Memory Stick" again (page 43).	
MEMORY STICK LOCKED	The write-protect tab on the "Memory Stick" is set to the LOCK position. Move it to the recording/UNLOCK position (page 100).	
NO SPACE ON MEMORY STICK	The "Memory Stick" is full. You cannot record images. Delete unnecessary images (page 39).	
NO FILE	No images have been recorded on the "Memory Stick."	
FILE ERROR	An error occurred while playing back the image.	
FILE PROTECT	The image is protected against erasure.	
FOLDER ERROR	A folder with the same name already exists on the "Memory Stick."	
OVERSIZED IMAGE	You are playing back an image of a size that cannot be played back on your camera.	
INVALID OPERATION	You are playing back a file that was created on equipment other than this camera.	
溢	• The battery level is low or zero. Charge the battery (page 14). Depending on the conditions of use or the type of battery, the indicator may flash even though there are 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.	
«ф»	You are not holding the camera steadly enough. Use the flash, mount the camera on a tripod, or otherwise secure the camera in place.	
RESTART	A problem with the lens caused an error.	

Self-Diagnostics Display

 When a message starting with a letter of the alphabet appears

Your camera has a self-diagnostics display. This function displays the condition of the camera on the LCD screen using a combination of a letter and four numerical digits. If this occurs, check the following code chart and take the corresponding countermeasure. The last two digits (indicated by \(\squip\))will differ depending on the state of the camera.



Message	Cause	Countermeasure
C:32: □□	There is trouble with your camera's hardware, or with the zoom function.	Turn the power off and on again (page 20).
C:13: □□	The camera cannot read or write data on the "Memory Stick."	Re-insert the "Memory Stick" several times.
	An unformatted "Memory Stick" has been inserted.	• Format the "Memory Stick" (page 43).
	The inserted "Memory Stick" cannot be used with your camera, or the data is damaged.	Insert a new "Memory Stick" (page 23).
E:61: □□ E:91: □□ E:92: □□	A camera malfunction that you cannot reverse has occurred.	Press the RESET button (pages 11, 13) on the bottom of the camera, then turn the power on again.

If your camera is not still functioning well after trying the countermeasure a couple of times, contact your nearest Sony service station and inform them of the 5-digit service code.

Example: E:61:10

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The number of images that can be saved/ shooting time

The number of images that can be saved and the shooting time are different, depending on the capacity of the "Memory Stick," the image size, and the image quality. Refer to the following charts when you choose a "Memory Stick."

- The number of images is listed in FINE (STANDARD) order.
- The values for the number of images that can be saved and the shooting time may vary, depending on the shooting conditions.
- For normal shooting times and numbers of images that can be saved, see page 25.

E-mail

(Units: images)

	8M	16M	32M	64M	128M
2048×1536	4	9	20	40	80
(DSC-P71)	(8)	(17)	(36)	(72)	(146)
2048 (3:2)	4	9	20	40	80
(DSC-P71)	(8)	(17)	(36)	(72)	(146)
1600×1200	8	16	32	64	128
	(14)	(28)	(59)	(118)	(236)
1600 (3:2)	8	16	32	64	128
(DSC-P31)	(14)	(28)	(59)	(118)	(236)
1280×960	12	21	48	96	192
	(21)	(42)	(88)	(176)	(352)
640×480	43	87	177	357	714
	(95)	(192)	(390)	(786)	(1572)

Clip Motion

(Units: images)

	8M	16M	32M	64M	128M
Normal	40	80	160	320	640
Mobile	350	450	900	1800	3600

Normal: When 10 frames are shot Mobile: When 2 frames are shot

MPEG movies

(Units: seconds)

	8M	16M	32M	64M	128M
320 (HQX)	20	40	85	170	340
320×240	80	160	340	680	1360
160×112	320	640	1300	2700	5400

Multi Burst

(Units: images)

	8M	16M	32M	64M	128M
1280×960	12 (22)	24 (44)			200 (372)

Menu items

Menu items that can be changed differ depending on the position of the Mode dial. The LCD screen shows only the items you can operate based on the current position of the Mode dial. Factory settings are indicated with .

When the Mode dial is set to , SCN

Item	Setting	Description
SCN	■ \c <u>.</u> \c	Selects one of the scene selections. (In node, this setting cannot be carried out.) (page 34)
⊠ EV	+2.0/+1.7/+1.3/+1.0/+0.7/ +0.3/ 1 0/-0.3/-0.7/-1.0/ -1.3/-1.7/-2.0	Adjusts the exposure (page 56).
(FOCUS)	■ MULTI AF / CENTER AF / 0.5 m / 1.0 m / 3.0 m / 7.0 m / ∞	Chooses the auto focus method, set the prefocus distance (pages 58, 60)
WB (WHITE BAL)	■AUTO/※/▲/☆/☆	Sets the white balance (page 57)
Spot light-metering (can be set using a menu with the DSC- P71 only)	ON / ■ OFF	To match the exposure to the subject you want to shoot (page 61).
ISO	A UTO / 100 / 200 / 400	Selects the ISO sensitivity. When recording under dark conditions or recording a fast-moving subject, use a high-number setting. When recording high-quality images, use a low-number setting (except when the Mode dial is set to SCN).
(IMAGE SIZE) (DSC-P71)	■2048×1536 / 2048 (3:2)/ 1600×1200 / 1280×960 / 640×480	Selects the image size used when shooting still pictures (page 24).
(IMAGE SIZE) (DSC-P31)	■1600×1200 / 1600 (3:2) / 1280×960 / 640×480	Selects the image size used when shooting still pictures (page 24)

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When the Mode dial is set to , SCN. (continued)

Item	Setting	Description
€:- (QUALITY)	■FINE / STANDARD	Records images with fine image quality mode. / Records images in the standard image quality mode (page 24).
MODE(REC MODE)	E-MAIL NORMAL	 Records a small-size (320×240) JPEG file in addition to the selected image size (page 65). Records an image using the normal recording mode.
	BRIGHT ■STANDARD DARK	 Makes the flash level higher than normal. Normal setting. Makes the flash level lower than normal.
PFX (P.EFFECT)	SOLARIZE/B&W/SEPIA/ NEG.ART/■OFF	Sets the special effects for the image (page 60).
(SHARPNESS)	+2 / +1 / 1 0 / -1 / -2	Adjusts the sharpness of the image. The \(\bigcup \) indicator appears (except when the setting is 0).

When the Mode dial is set to ### (MOVING IMAGE is set to MPEG MOVIE in the SET UP settings.)

Item	Setting	Description
⊠ EV	+2.0/+1.7/+1.3/+1.0/+0.7/ +0.3/\bullet0/-0.3/-0.7/-1.0/ -1.3/-1.7/-2.0	Adjusts the exposure (page 56).
(FOCUS)	■ MULTI AF / CENTER AF / 0.5 m / 1.0 m / 3.0 m / 7.0 m / ∞	Chooses the auto focus method, set the prefocus distance (pages 58, 60).
WB (WHITE BAL)	■AUTO/*///	Sets the white balance (page 57).
Spot light-metering (can be set using a menu with the DSC- P71 only)	ON / ■ OFF	To match the exposure to the subject you want to shoot (page 61).
III (IMAGE SIZE)	320(HQX)/ 320×240/ ■160×112	Selects the MPEG image size when recording movies (page 74).
PFX (P.EFFECT)	SOLARIZE/B&W/SEPIA/ NEG.ART/■OFF	Sets the special effects for the image (page 60).

Additional information

When the Mode dial is set to [1] (MOVING IMAGE is set to CLIP MOTION in the SET UP settings.)

Item	Setting	Description
™ EV	+2.0/+1.7/+1.3/+1.0/+0.7/ +0.3/ 1 0/-0.3/-0.7/-1.0/ -1.3/-1.7/-2.0	Adjusts the exposure (page 56).
€ (FOCUS)	■ MULTI AF / CENTER AF / 0.5 m / 1.0 m / 3.0 m / 7.0 m / ∞	Chooses the auto focus method, set the prefocus distance (pages 58, 60).
WB (WHITE BAL)	■AUTO/*///	Sets the white balance (page 57).
Spot light-metering (can be set using a menu with the DSC- P71 only)	ON / ■ OFF	To match the exposure to the subject you want to shoot (page 61).
∰ (IMAGE SIZE)	■NORMAL/ MOBILE	Selects the Clip Motion image size (page 62).
\$ ± (FLASH LEVEL)	BRIGHT ■STANDARD DARK	Makes the flash level higher than normal. Normal setting. Makes the flash level lower than normal.
PFX (P.EFFECT)	SOLARIZE/B&W/SEPIA/ NEG.ART/■OFF	Sets the special effects for the image (page 60).
(SHARPNESS)	+2/+1/ ■0/-1/-2	Adjusts the sharpness of the image. The \(\begin{align*} \text{Indicator appears (except when the setting is 0).} \end{align*} \)

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When the Mode dial is set to 🖽 (when MOVING IMAGE in SET UP is set to Multi Burst)

Item	Setting	Description
⊠ EV	+2.0/+1.7/+1.3/+1.0/+0.7/ +0.3/ = 0/-0.3/-0.7/-1.0/ -1.3/-1.7/-2.0	Adjusts the exposure (page 56).
(FOCUS)	■ MULTI AF / CENTER AF / 0.5 m / 1.0 m / 3.0 m / 7.0 m / ∞	Chooses the auto focus method, set the prefocus distance (pages 58, 60).
WB (WHITE BAL)	■AUTO/*////	Sets the white balance (page 57).
Spot light-metering (can be set using a menu with the DSC- P71 only)	ON / ■ OFF	To match the exposure to the subject you want to shoot (page 61).
□□ (INTERVAL)	■1/30 / 1/15 / 1/7.5 (NTSC) ■1/25 / 1/12.5 / 1/6.3 (PAL)	 In NTSC mode, choose the Multi Burst between-frame shutter interval. In PAL mode, choose the Multi Burst between-frame shutter interval. * The choices of between-frame shutter interval change depending on the setting of the "VIDEO OUT" item in SET UP (page 98).
€ :- (QUALITY)	■FINE / STANDARD	Records images with fine/high image quality. / Records images in the standard image quality mode (page 24).
PFX (P.EFFECT)	SOLARIZE/B&W/SEPIA/ NEG.ART/■OFF	Sets the special effects for the image (page 60).
(SHARPNESS)	+2/+1/■0/-1/-2	Adjusts the sharpness of the image. The \(\bigcap \) indicator appears (except when the setting is 0).

Item	Setting	Description
DELETE	OK CANCEL	Deletes the displayed image (page 39). Cancels deleting of the image.
PROTECT	_	Protects images against accidental erasure (page 69).
PRINT	_	Selects still images you want to print. (page 72).
SLIDE SHOW	INTERVAL REPEAT START CANCEL	Sets the slide show interval. (For single images only.) 3 sec/ 5sec/ 10sec/ 30sec/ 1min ON/OFF Starts the slide show Cancels the settings and execution of the slide show
RESIZE	2048×1536 (DSC-P71) / 1600×1200/1280×960/ 640×480/ CANCEL	Changes the recorded image size (page 71). (For single images only.)
ROTATE	→ (clockwise) / ✔ (counter- clockwise) / OK / CANCEL	Rotates the still image (page 68). (For single images only.)
DIVIDE	OK / CANCEL	Divides a moving image (page 78). (For single images only.)

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SET UP items

Set the Mode dial to SET UP. The setup screen appears.

Factory settings are indicated with \blacksquare .

When shooting movies/Clip Motion, the date and time cannot be inserted in the image. Also, the date and time will not be displayed when shooting. The date and time of playback will be displayed when the image is played back.

△ CAMERA

Item	Setting	Description
MOVING IMAGE	■MPEG MOVIE / CLIP MOTION / MULTI BURST	Selects the shooting mode (pages 55, 74).
DATE/TIME	DAY & TIME / DATE / ■OFF	Selects whether to insert the date and time into the image (page 32).
DIGITAL ZOOM (DSC- P71)	■ON / OFF	Selects whether to use the digital zoom (page 28).
RED EYE REDUCTION	ON / ■OFF	Reduces the red-eye phenomenon when using a flash (page 31).
AF ILLUMINATOR	■AUTO / OFF	Selects whether to emit an AF assist light in the dark. Helps when it is hard to focus on the subject under dark lighting (page 31).

⇔ SETUP 1

Item	Setting	Description
FORMAT	OK / CANCEL	Formats the "Memory Stick". Please note that formatting erases all the information recorded on a "Memory Stick", including even erasure protected images (page 43).
FILE NUMBER	■ SERIES RESET	 Assigns numbers to files in sequence even if the "Memory Stick" is changed. Resets the file numbering and starts from 0001 each time the "Memory Stick" is changed.
言語 / LANGUAGE	■ ENGLISH 日本語 / JPN	 Displays the menu items, warnings and messages in English. Displays the menu items, warnings and messages in Japanese.
CLOCK SET	OK / CANCEL	Sets the date and time (page 21).

Additional information

SETUP 2

Item	Setting	Description
LCD BRIGHTNESS	BRIGHT/ ■NORMAL/ DARK	Selects the LCD brightness. This has no effect on the recorded images.
LCD BACKLIGHT	BRIGHT/ ■NORMAL	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. Displayed only when you are using your camera with the battery pack.
BEEP	SHUTTER ■ ON OFF	 Turns on the shutter sound when you release the shutter button. Turns on the beep/shutter sound when you press the control button/ release the shutter button. Turns off the beep/shutter sound.
VIDEO OUT	■ NTSC PAL	Sets the video output signal to NTSC mode (Japan, USA). Sets the video output signal to PAL mode (Europe).
USB CONNECT	PTP/■NORMAL	Switches the USB mode (page 44).
POWER SAVE (DSC-P71)	■ ON / OFF	Selects whether to use the POWER SAVE mode (page 16).

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Precautions

Cleaning Cleaning the LCD screen

Clean the screen surface with an LCD cleaning kit (not supplied) to remove fingerprints, dust, etc.

Cleaning the lens

Wipe the lens with a soft cloth 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 with a dry cloth. Do not use any type of solvent such as thinner, alcohol or benzine as this may damage the finish or the casing.

Note on operating temperature

The camera is designed for use within a temperature range of $0^{\circ} - 40^{\circ}$ (32°F and 104° F). Shooting in extremely cold or hot locations 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. This moisture condensation may cause a malfunction of the camera.

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 airconditioned room or car interior to the hot outdoors, etc.

To prevent moisture condensation

When bringing the camera from a cold place to a warm place, seal the camera in a plastic bag and leave it in the new location for about an hour. Remove the plastic bag when the camera has adapted to the new temperature.

If moisture condensation occurs

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

The 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 continually 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.

Note that 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 the battery

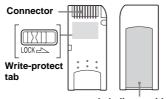
Connect the camera to a wall outlet (mains) using the AC power adapter or install a charged battery pack, and leave the camera for 24 hours or more with the POWER button set to OFF.

"Memory Stick" is a new compact, portable and versatile IC recording medium with a data capacity that exceeds the capacity of a floppy disk.

There are two types of "Memory Stick": an ordinary "Memory Stick" and a "MagicGate Memory Stick." 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.

 You cannot record or delete images when the write-protect tab is set to LOCK. The position or the shape of the write-protect tab may differ depending on the "Memory Stick" you use.



- Labeling position
- Do not remove the "Memory Stick" while reading or writing data.
- Data may be damaged 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.
- When you carry or store the "Memory Stick," put it in the case supplied with it.
- Do not touch the terminals of a "Memory Stick" with your hand or a metal object.
- Do not strike, bend or drop a "Memory Stick."
- Do not disassemble or modify a "Memory Stick."
- Do not expose the "Memory Stick" to water.

The nickel hydride batteries

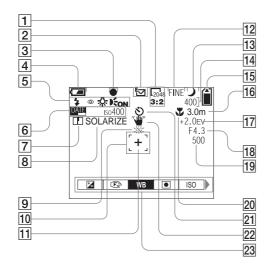
Effective use of the battery

- Battery performance decreases in lowtemperature surroundings, and the battery life is shortened under such circumstances. To use the battery longer, we recommend you keep the battery in a pocket close to your body to warm it, and insert it in your camera just before you start shooting.
- If you use the LCD screen or shoot a lot using the zoom, the battery power will be used up faster.
- We recommend having spare batteries handy for two or three times the expected shooting time, and try test shooting before the actually using the camera.
- Do not expose the battery to water. The battery is not water-resistant.

100

The LCD screen

For shooting still images



- 1 Image size indicator (24, 25)
- 2 Recording mode indicator (65)
- 3 AE/AF LOCK indicator (26, 59)
- 4 Remaining battery indicator display (16)
- 5 Flash mode (30)/Red-eye reduction (31)/White balance indicator (57)/AF illuminator indicator (31, 97)
- 6 Date/time indicator (32) ISO sensitivity (92)
- **7** Sharpness indicator (93, 94, 95)
- 8 Picture effect indicator (60)

- 9 Low battery warning (16)
- 10 AF range finder (58)
- Spot light-meter aiming point (61)
- 12 Image quality indicator (24, 25)
- 13 Mode dial indicator
- 14 Remaining images indicator (25) Self-diagnostics display (90)
- Remaining "Memory Stick" capacity indicator (25)
- To Center AF indicator (58)/
 Focus preset value (60) 3.0 m
- 17 EV adjustment indicator (56)
- 18 Iris value indicator
- 19 Shutter speed indicator (89)
- 20 Macro (DSC-P71) (28)
- 21 Self-timer display (29)
- 22 Vibration warning indicator (89)
- 23 Menu/Guide menu (55)
- When you press the MENU button, Menu/ Guide menu is toggled between display/don't display.
- is not displayed on the menu of the DSC-P31 (page 61).

Additional information

- 1 Recording mode indicator (74)
- 2 Remaining battery indicator display (16)
- 3 White balance indicator (57)
- 4 Picture effect indicator (60)
- **5** Spot light-metering aiming point (61)
- 6 AF range finder (58)
- 7 Image size indicator (74)
- 8 Recording time remaining indicator (Maximum recording time) indicator (18)/ Self-diagnostics display (90)
- 9 Remaining "Memory Stick" capacity indicator (25)

- 10 Center AF indicator (58)/ Focus preset value (60)
- 11 EV adjustment indicator (56)
- 12 Macro (DSC-P71) (28)
- 13 Self-timer indicator (29)
- 14 Menu/Guide menu (55)
- When you press the MENU button, Menu/ Guide menu is toggled between display/don't display
- is not displayed on the menu of the DSC-P31 (page 61).

The page numbers in parentheses indicate the location of additional important information.

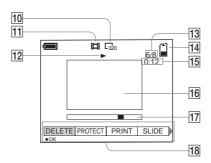
104

For still image playback

1 5 2 0 11/12 6 0 0 2 1.3 8 3 11/12 1 6 0 2 1.3 8

- 1 Recording mode indicator (65)
- 2 Protection indicator (69)/Print mark indicator (72)
- 3 Zoom indicator (66)
- **4** File name (52)
- 5 Number of pages recorded in "Memory Stick" (25)
- 6 Remaining "Memory Stick" capacity indicator (25)
- 7 Image number (25)
- 8 Image size indicator (24, 25)
- 9 Date/time recorded indicator (32)/Menu/Guide menu (55)

For movie playback



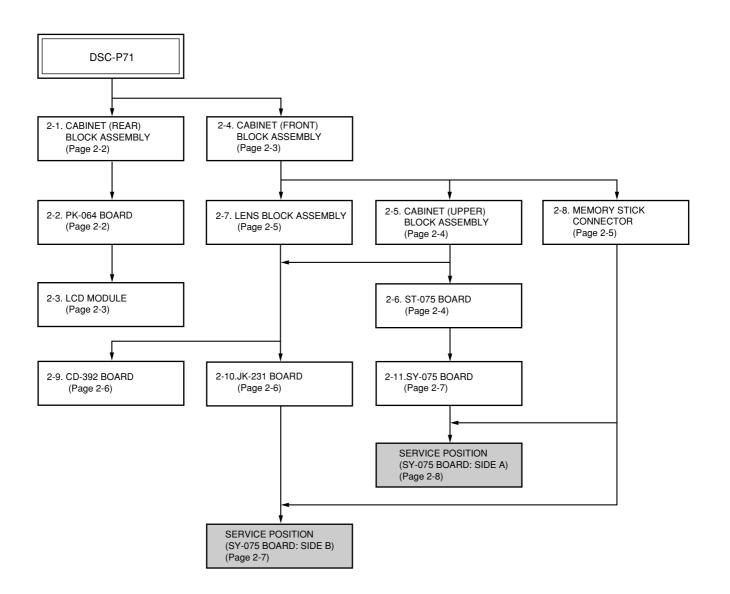
- 10 Image size indicator (75)
- Recording mode indicator (74, 75)
- 12 Playback indicator (75)
- Image number/Number of images recorded in the "Memory Stick" (75)
- 14 Remaining "Memory Stick" capacity (75)
- 15 Counter (75)
- 16 Playback screen (75)
- 17 Playback bar (75)
- 18 Menu/Guide menu (55)

The page numbers in parentheses indicate the location of additional important information.

Additional information

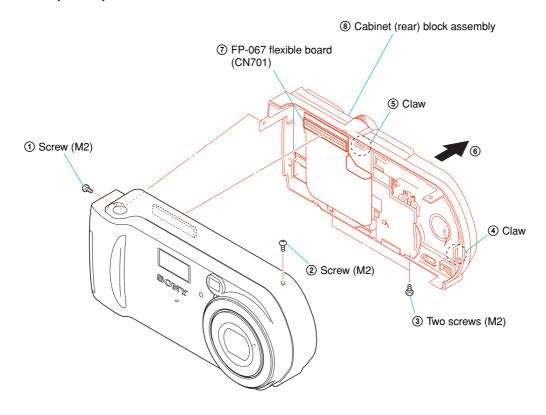
SECTION 2 DISASSEMBLY

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

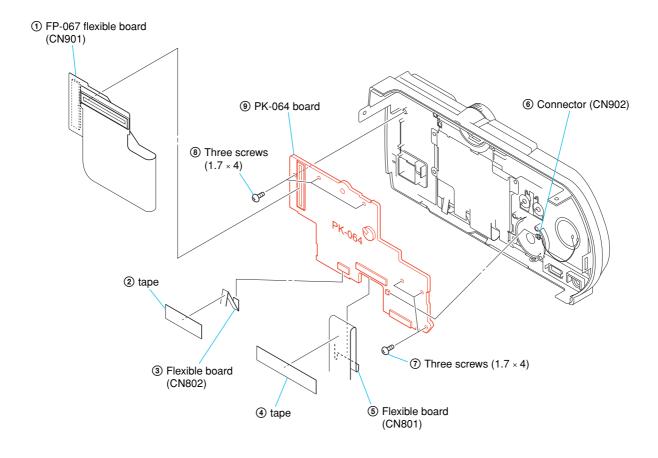


Note: Follow the disassembly procedure in the numerical order given.

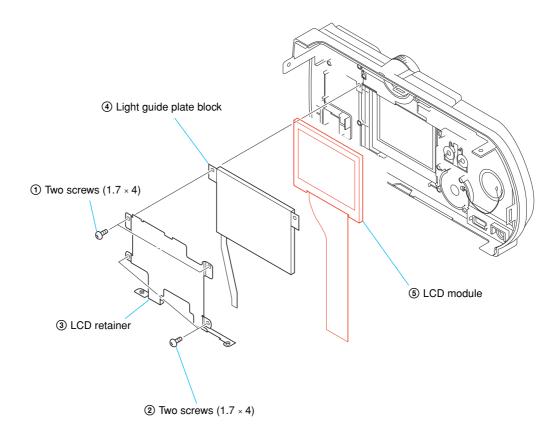
2-1. CABINET (REAR) BLOCK ASSEMBLY



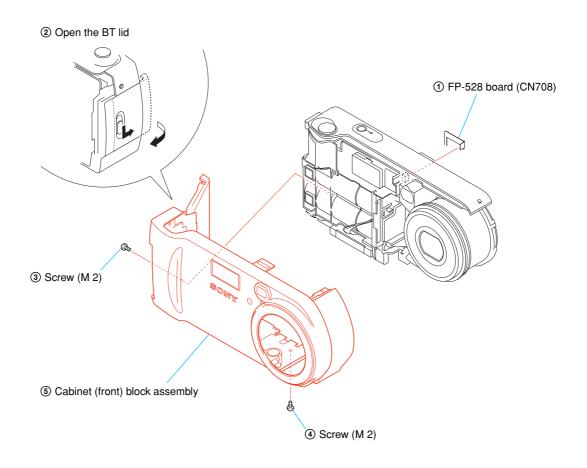
2-2. PK-064 BOARD



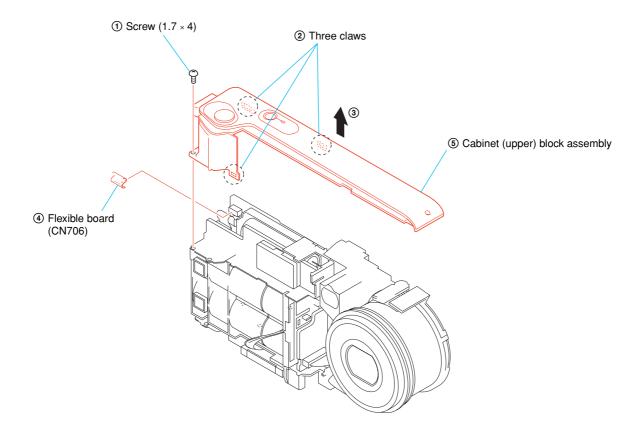
2-3. LCD MODULE



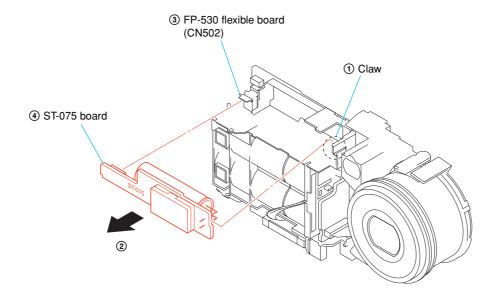
2-4. CABINET (FRONT) BLOCK ASSEMBLY



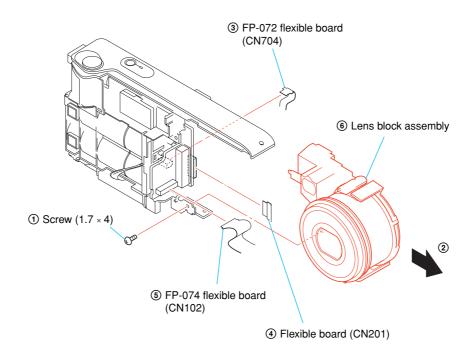
2-5. CABINET (UPPER) BLOCK ASSEMBLY



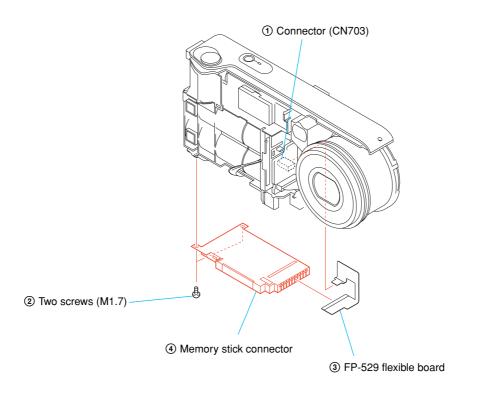
2-6. ST-075 BOARD



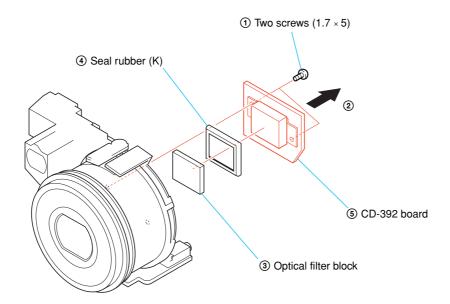
2-7. LENS BLOCK ASSEMBLY



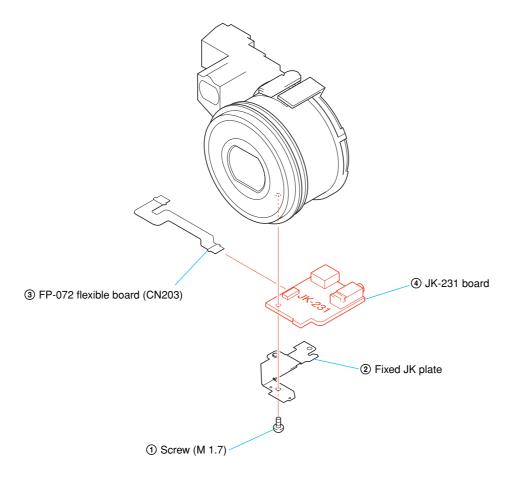
2-8. MEMORY STICK CONNECTOR

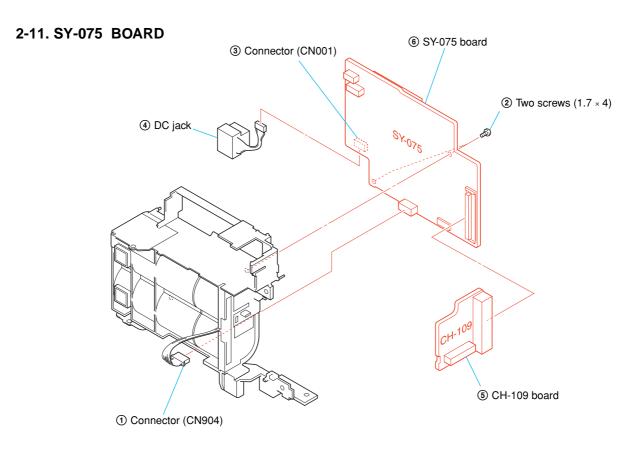


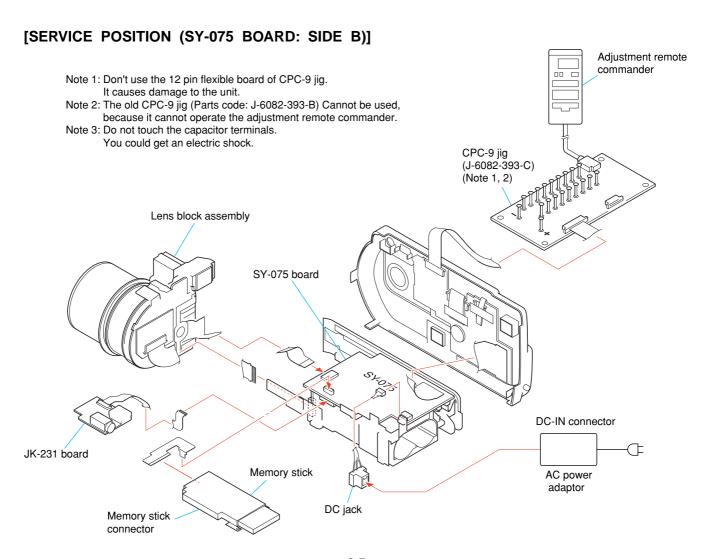
2-9. CD-392 BOARD



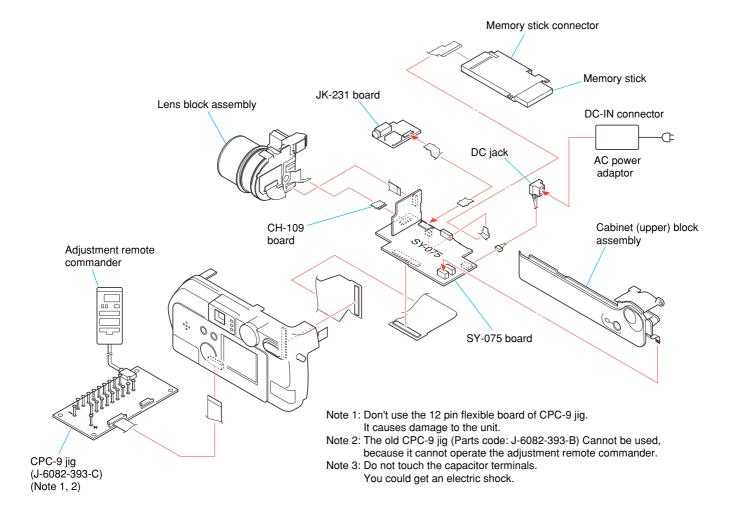
2-10. JK-231 BOARD



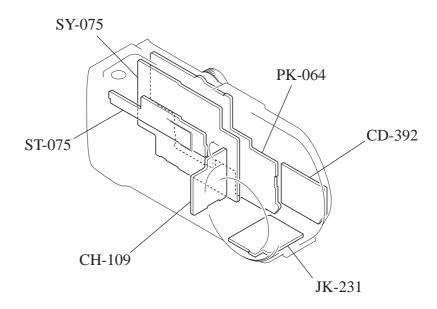




[SERVICE POSITION (SY-075 BOARD: SIDE A)]

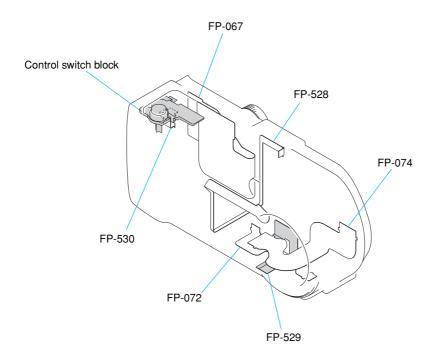


2-12. CIRCUIT BOARDS LOCATION



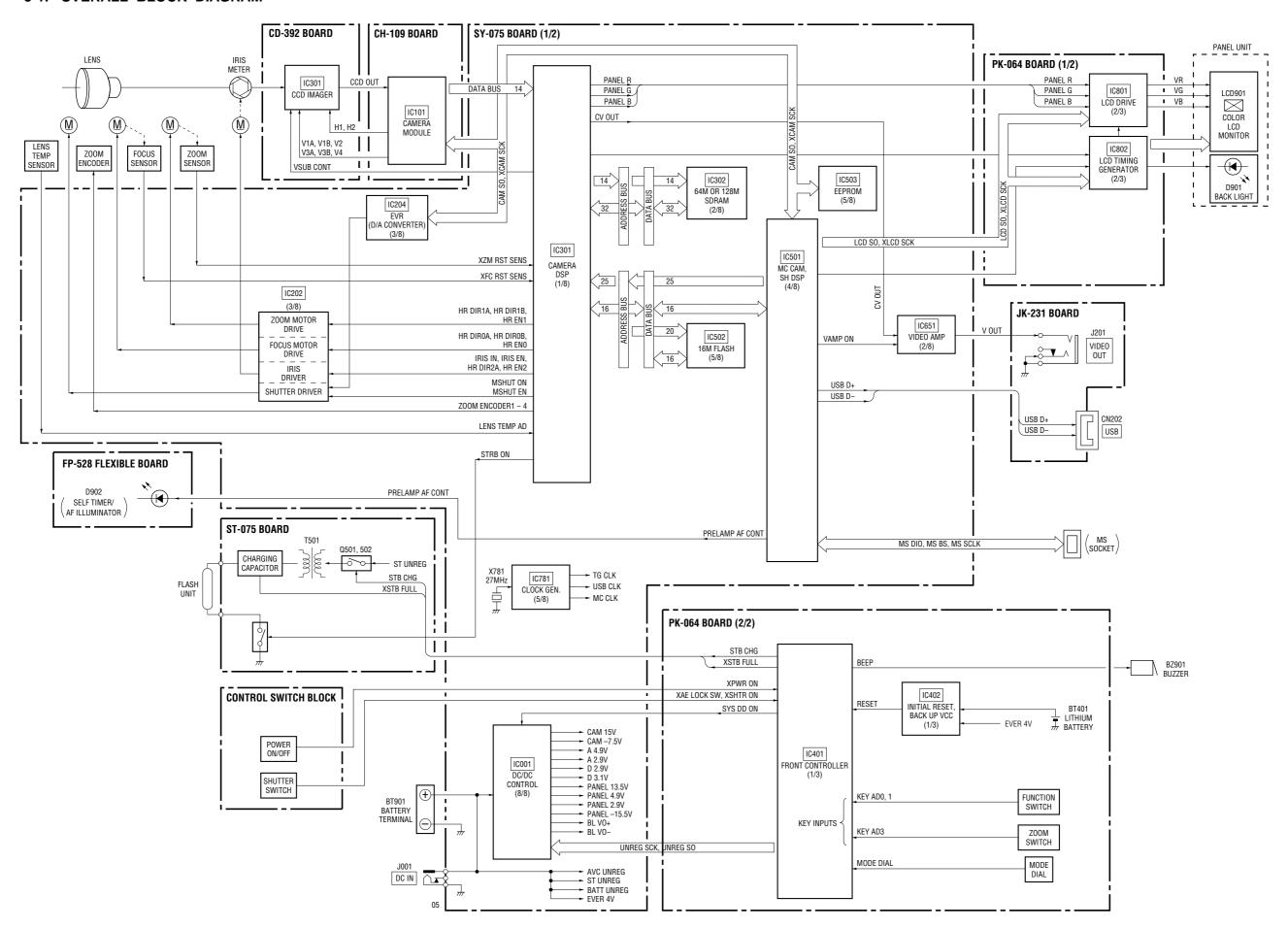
Board Name	Function		
CD-392	CCD IMAGER		
CH-109	CAMERA PROCESS		
SY-075	CAMERA DSP, VIDEO, MEMORY, LENS DRIVE, SH DSP,		
	FLASH MEMORY CLOCK GENERATOR, CONNECTOR, DC IN		
	DC/DC CONVERTER		
ST-075	FLASH DRIVE		
PK-064	FRONT CONTROL, LCD DRIVE, TIMING GENERATOR,		
	CONTROL SWITCH		
JK-231	JACK		

2-13. FLEXIBLE BOARDS LOCATION

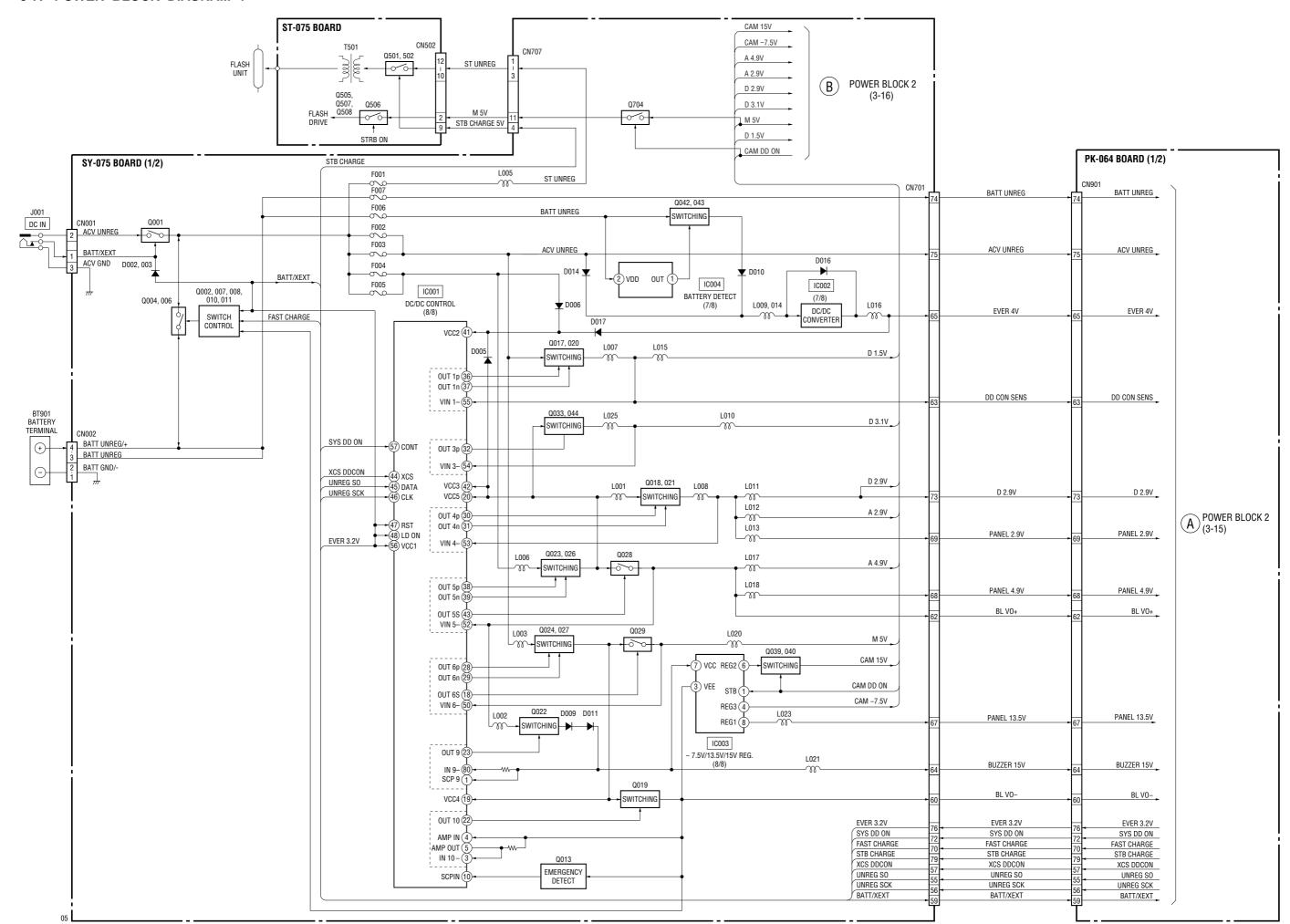


SECTION 3 BLOCK DIAGRAMS

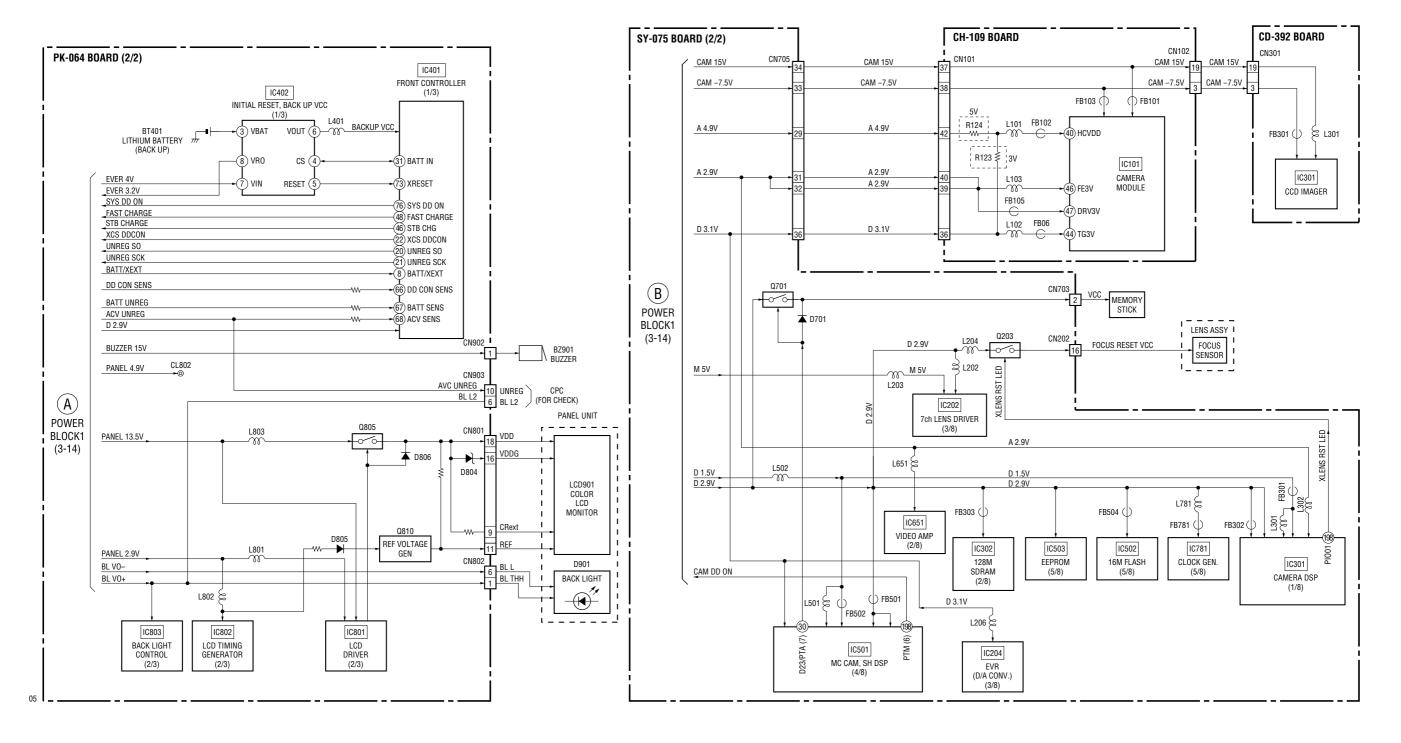
3-1. OVERALL BLOCK DIAGRAM



3-7. POWER BLOCK DIAGRAM 1



3-8. POWER BLOCK DIAGRAM 2



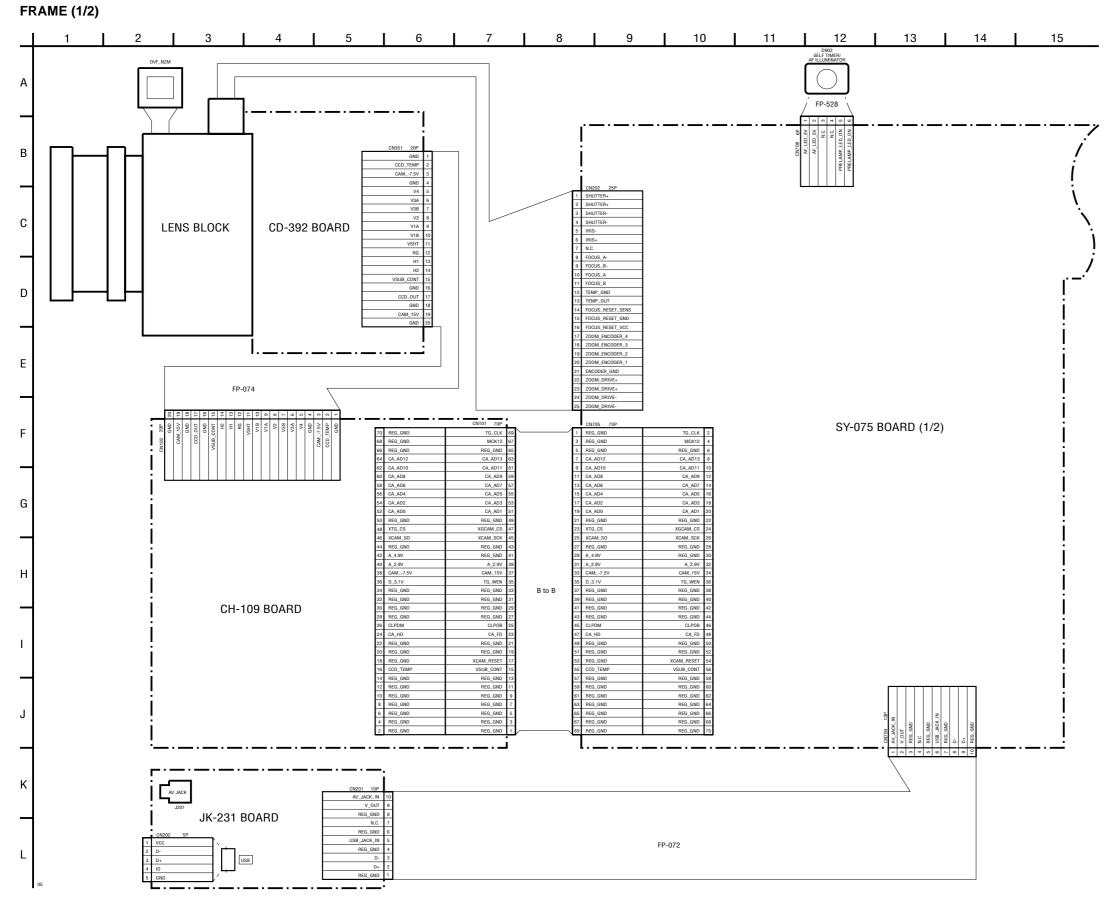
3-15 3-16 E

SECTION 4 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1

4-1. FRAME SCHEMATIC DIAGRAMS





FRAME (2/2) 5 6 8 9 10 11 12 13 14 15 16 Α ST-075 BOARD CONTROL BZ901 BUZZER **SWITCH** ST_UNREG
ST_UNREG
ST_UNREG
STB_CHARG
REG_GND
RSTRE_FULL
XSTRE_FULL
M_SV В BLOCK 1 BEEP_OUT 2 REG_GND CVCHK_OUT N.C. FP-530 REG_GND PK-064 BOARD CPC_IN С BL_L2 PANEL_COM REG_GND REG_GND 1 REG_GND REG_GND VG CPC (FOR CHECK) REG_GND REG_GND REG_GND 5 REG_GND
7 PANEL_R
9 PANEL_G
11 PANEL_B
13 REG_GND
15 AE_LOCK_LED REG_GND REG_GND REG_GND LANC_IN REG_GND LANC_OUT REG_GND PANEL_R REG_GND PANEL_G REG_GND MAKER_RECOG D REG_GND PANEL_B REG_GND TXD REG_GND REG_GND REG_GND XPWR_LED AE_LOCK_LED XPWR_LED RXD 17 XPWR_ON 19 XSTB_PWRSAVE XAE_LOCK_SW XPWR_ON XAE_LOCK_SW RESET XSTB_PWRSAVE XSHTR_ON XSHTR_ON REG_GND REG_GND 21 REG_GND REG_GND 23 FR_SI 25 XFR_SCK 27 REG_GND FR_S0 FR_SI FR_S0 REG_GND XFR_SCK REG_GND Ε XCS_MC REG_GND XCS_MC 29 XMC_NMI 31 PAL/XNTSC 33 XRST_SYS XMC_HELP XMC_NMI XMC_HELP PAL/XNTSC REG_GND REG_GND AV_JACK_IN XRST_SYS AV_JACK_IN BL_THH XMS_IN USB_JACK_IN 35 USB_JACK_IN XMS_IN N.C. SELF_TIMER_LED CVCHK_OUT SELF_TIMER_LED 7 CVCHK_OUT BL_THL SYS_V XMS_ACCESS_LED 39 XMS_ACCESS_LED SYS_V BL_H FP-067 REG_GND REG_GND 41 REG_GND REG_GND N.C. PANEL_V HD0 PANEL_V BL_L 6 REG_GND REG_GND 45 REG_GND REG_GND SY-075 BOARD (2/2) LCD_SO XLCD_SCK 47 XLCD_SCK LCD_S0 REG_GND XCS_PANEL_TG 49 XCS_PANEL_TG REG_GND REG_GND REG_GND 1 REG_GND REG_GND REG_GND REG_GND 53 REG_GND REG_GND N.C. 55 UNREG_SO UNREG_SCK UNREG_SO UNREG_SCK REG_GND XCS_DDCON 7 XCS_DDCON REG_GND VST G BL VO-BATT/XEXT 59 BATT/XEXT BL VO-VCK 61 REG_GND REG_GND BL_VO+ BL_VO+ BUZER_15V DD_CON_SENS 63 DD_CON_SENS BUZER_15V DWN PANEL -15V EVER 4.0V 65 EVER_4.0V PANEL -15V VDD PANEL_4.9V PANEL_13.5V PANEL_4.9V 7 PANEL_13.5V VSS PANEL_2.9V 69 PANEL_2.9V FAST_CHARGE VDDG SYS_DD_ON REG_GND 71 REG_GND 73 D_2.9V SYS_DD_ON VVSSG D_2.9V BATT_UNREG BATT_UNREG SLVSSG Η EVER_3.2V ACV_UNREG EVER_3.2V WIDE 77 REG_GND REG_GND REG_GND REG_GND N.C. CRext HCK2 HCK1 PSIG RGT CN703
VSS
MS_BS
MS_VCC
MS_DIO
MS_DIO
XMS_IN
MS_SCLK
VCC FP-529 ACV J001 LCD901 PANEL UNIT MS SOCKET DRY BATTERY Κ D901 **BACK LIGHT**

FRAME (2/2)

4-3

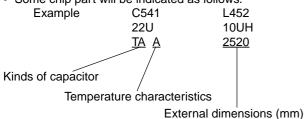
4-4

4-2. SCHEMATIC DIAGRAMS

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

(For schematic diagrams)

- All capacitors are in μF unless otherwise noted. pF : μ
 μF. 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.



- 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 → EDIT

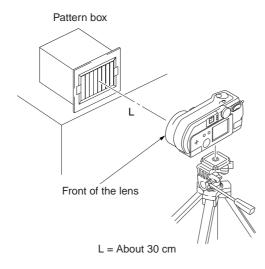
T PB/XREC → PB/REC

- ---: non flammable resistor
- fusible resistor
- ____: panel designation
- : B+ Line
- --: B- Line
- IN/OUT direction of (+,-) B LINE.
- adjustment for repair.
- ____: VIDEO SIGNAL (ANALOG)
- — : AUDIO SIGNAL (ANALOG)
- ---: VIDEO/AUDIO SIGNAL
- : VIDEO/AUDIO/SERVO SIGNAL
- SERVO SIGNAL

· Circled numbers refer to waveforms.

(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 M Ω input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)
- 1. Connection



Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

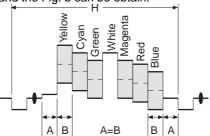


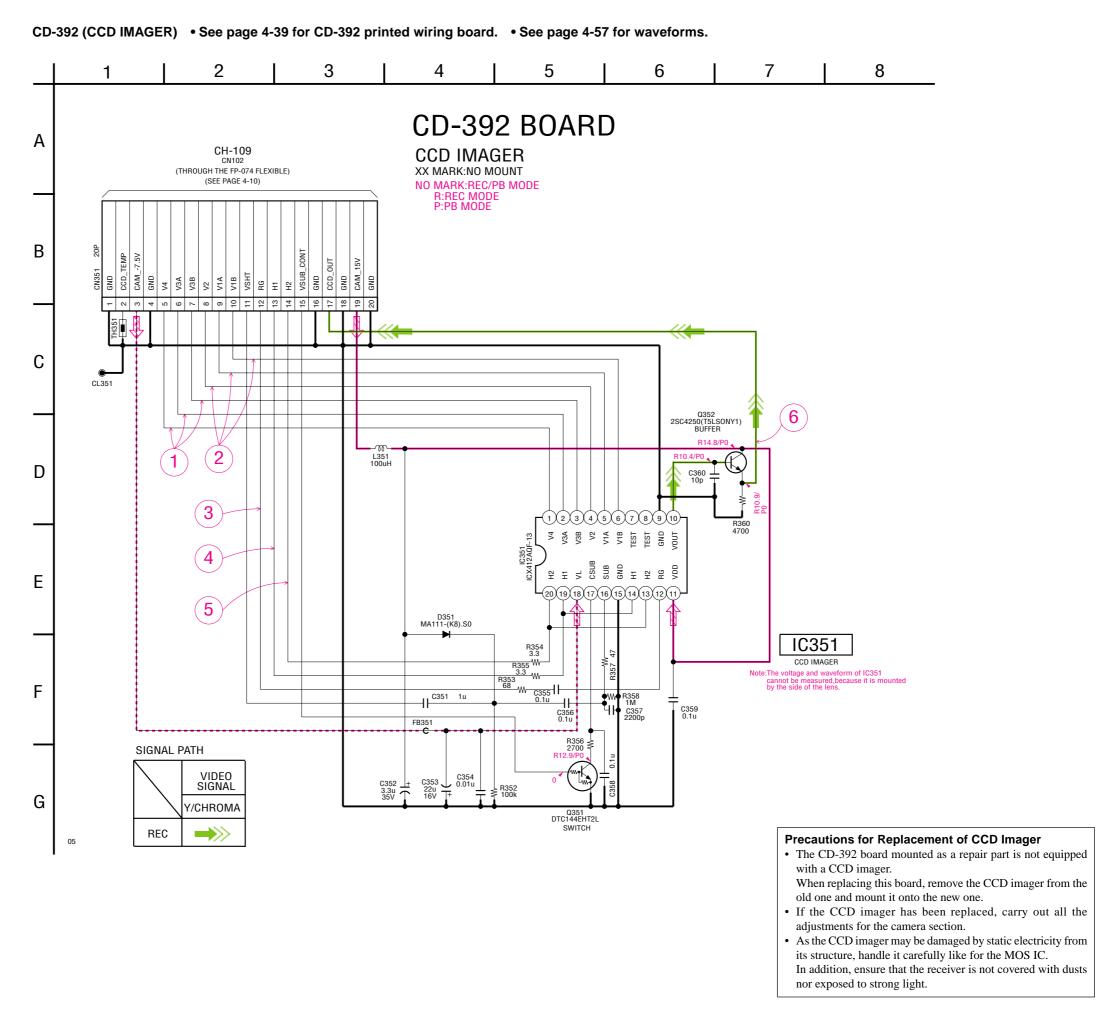
Fig. a (Video output terminal output waveform)



Fig.b (Picture on monitor TV)

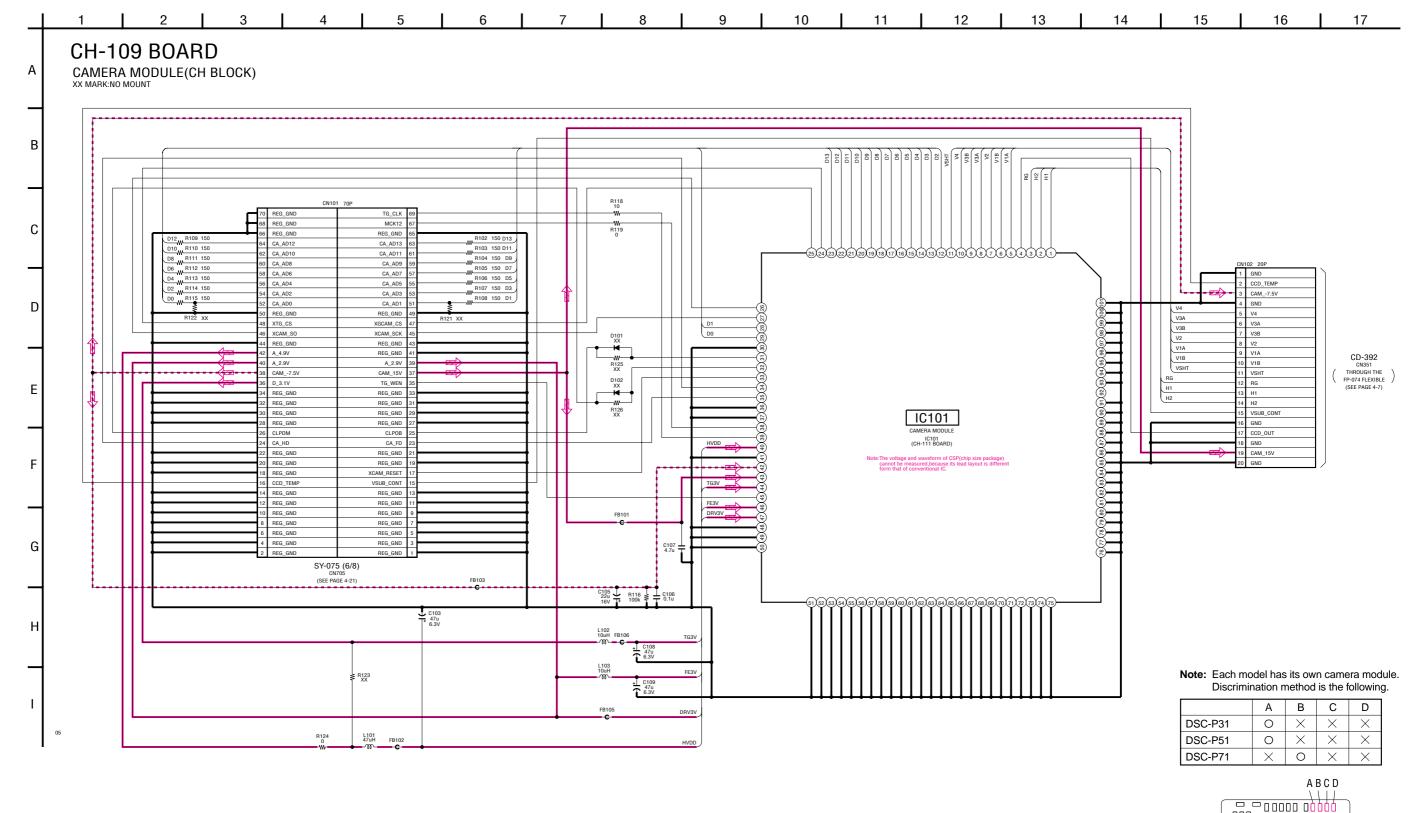
When indicating parts by reference number, please include the board name.

Note: The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

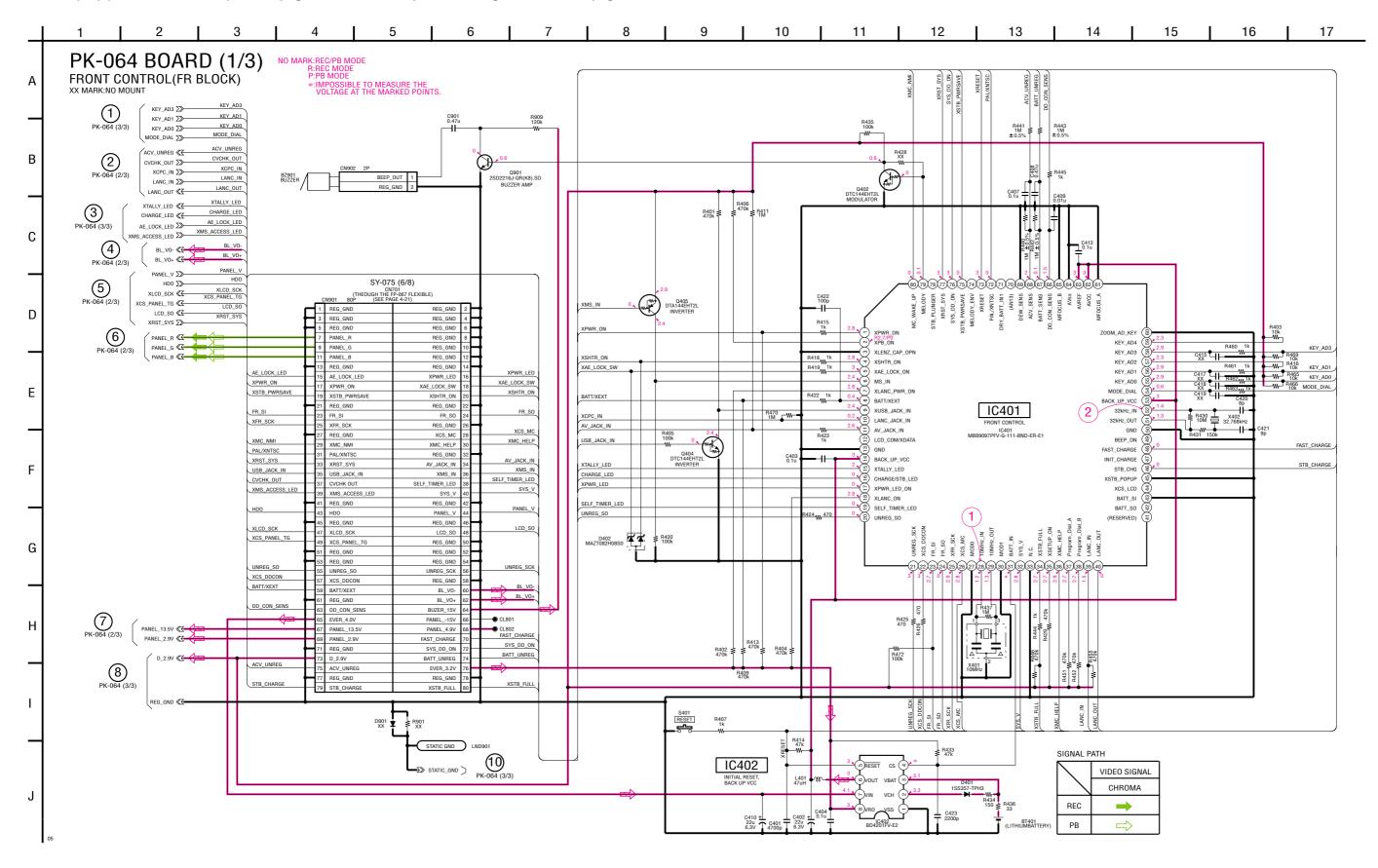


CD-392 4-7

CH-109 (CAMERA PROCESS) • See page 4-41 for CH-109 printed wiring board.

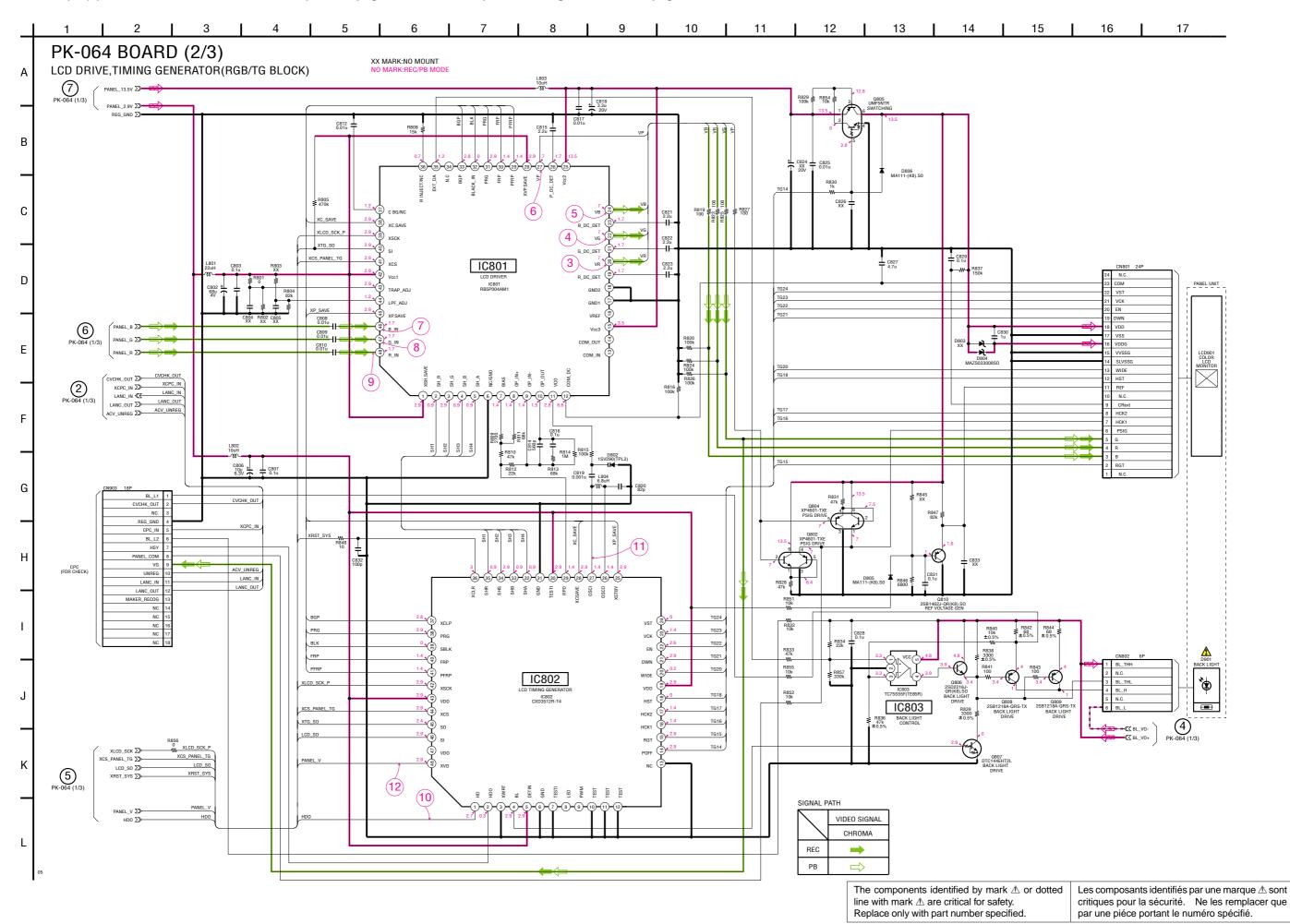


PK-064 (1/3) (FRONT CONTROL) • See page 4-47 for PK-064 printed wiring board. • See page 4-59 for waveforms.

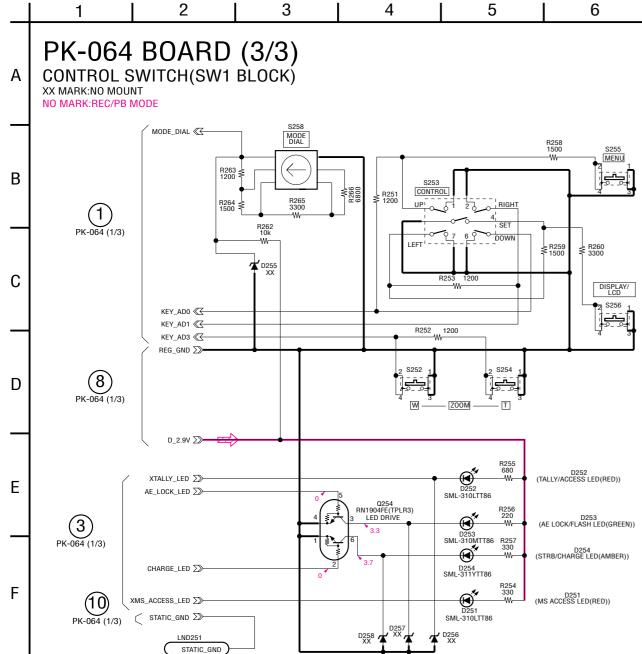


PK-064 (1/3)

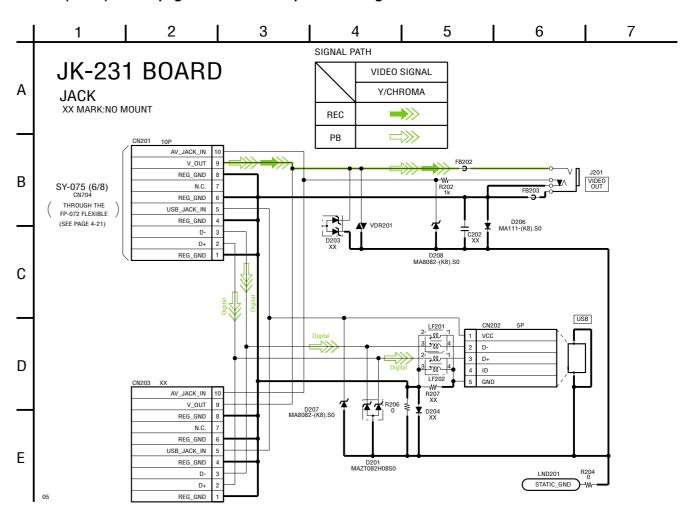
4-27



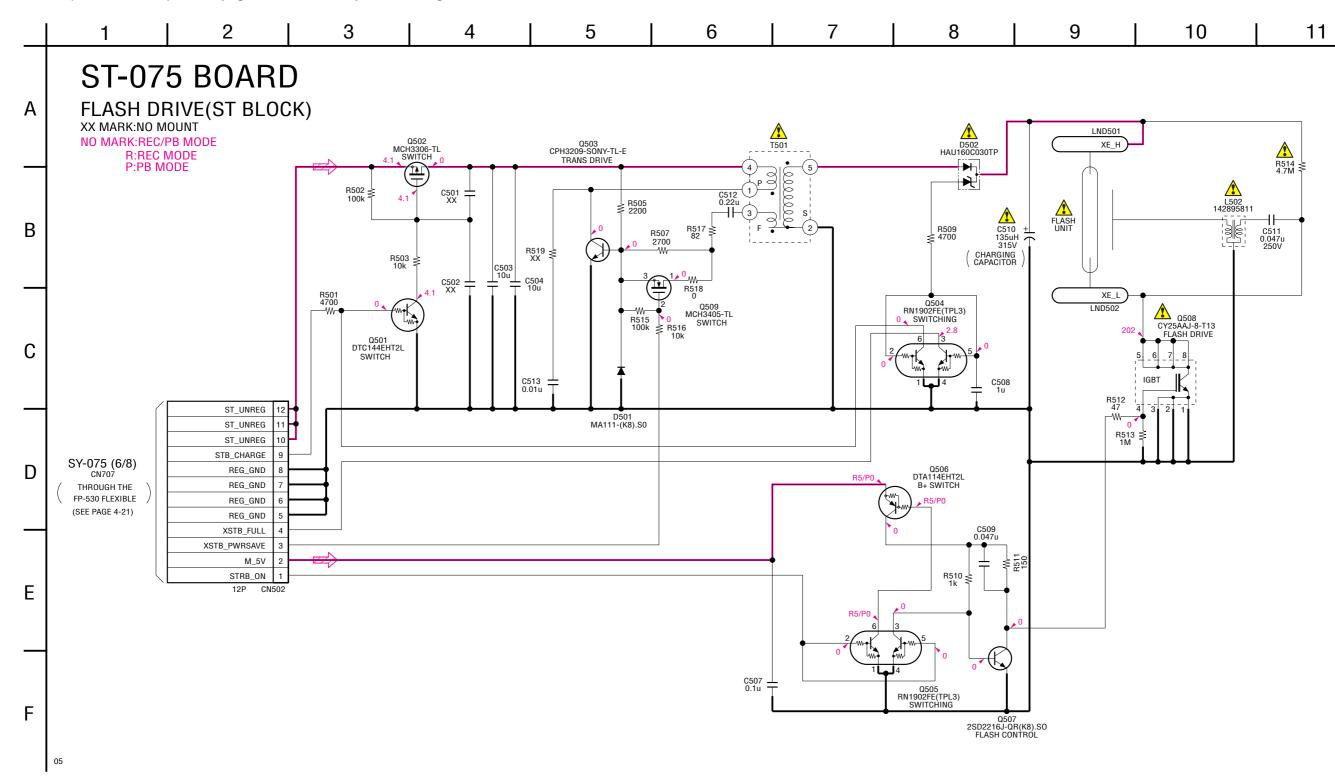
PK-064 (3/3) (CONTROL SWITCH) • See page 4-47 for PK-064 printed wiring board.



JK-231 (JACK) • See page 4-51 for JK-231 printed wiring board.



ST-075 (FLASH DRIVE) • See page 4-53 for ST-075 printed wiring board.



The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

ST-075

4-33

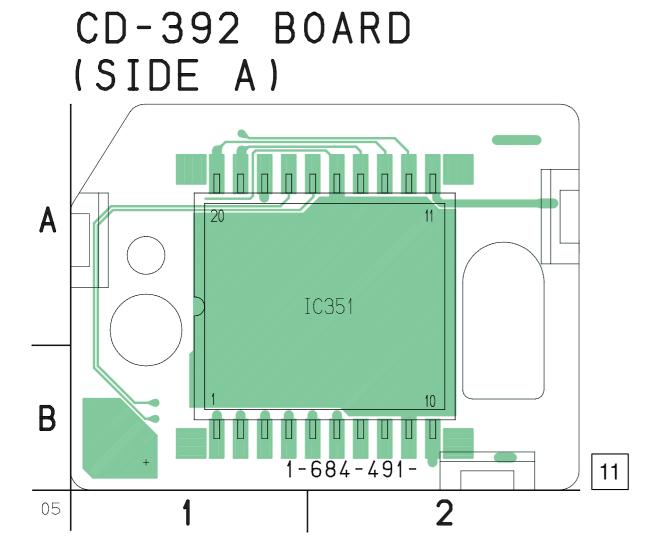
4-3. PRINTED WIRING BOARDS

CD-392 (CCD IMAGER)

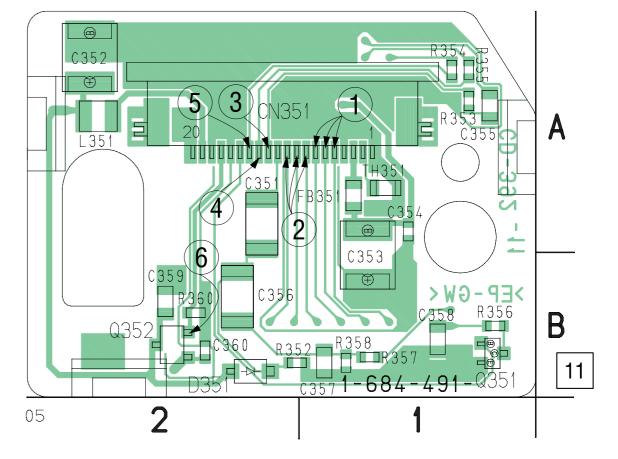
• For Printed Wiring Board.

- **!** :Uses unleaded solder.
- CD-392 board is four-layer print board. However, the patterns
- of layers 2 to 3 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-61 for printed parts location.
- Chip transistor





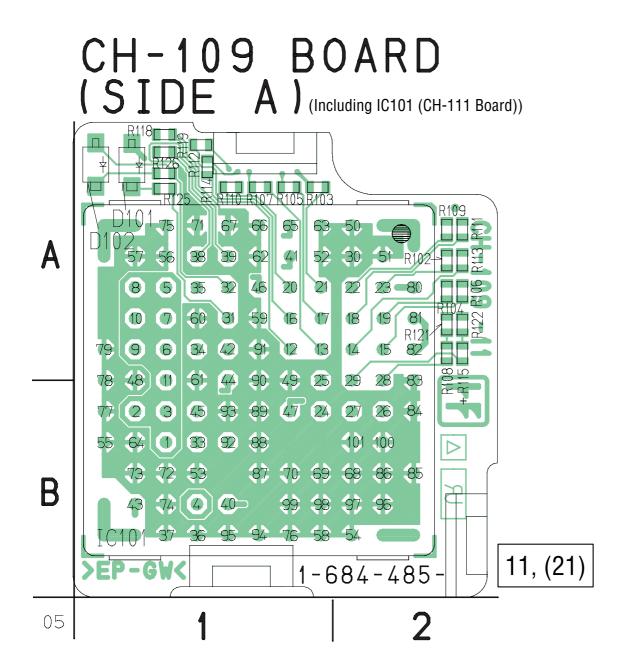
CD-392 BOARD (SIDE B)

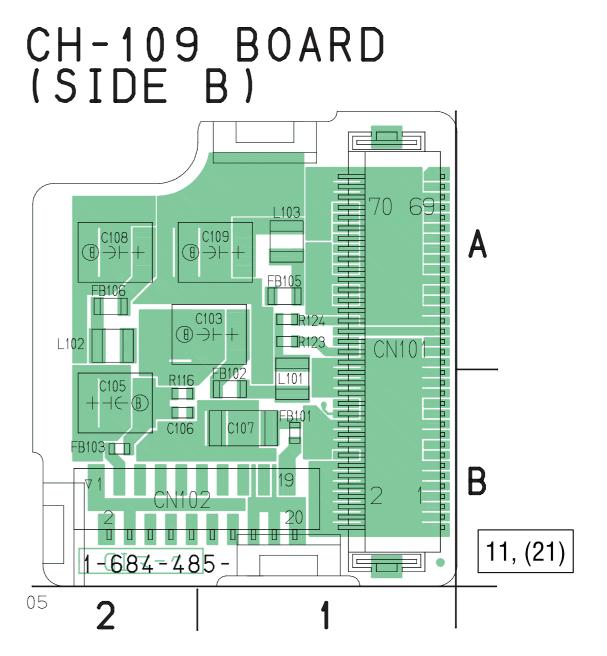


CD-392 4-39 4-40

CH-109 (CAMERA PROCESS)

- For Printed Wiring Board.
- Uses unleaded solder.
- CH-109 board is eight-layer print board. However, the patterns of layers 2 to 7 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-61 for printed parts location.





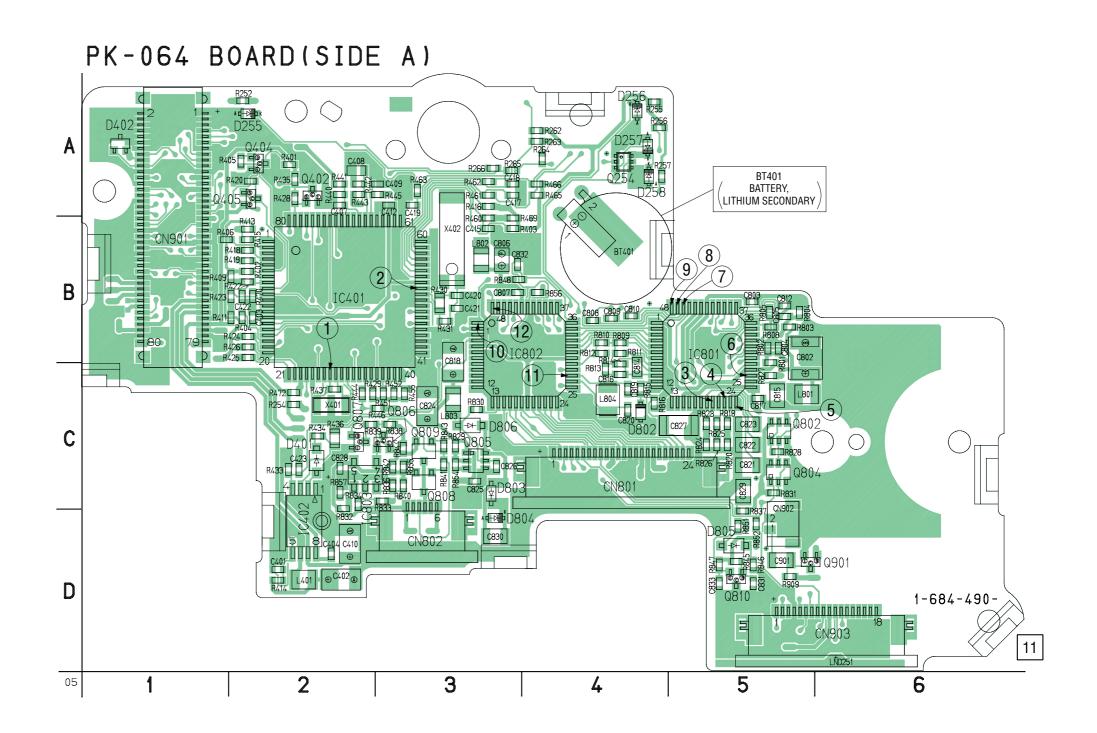
4-41 4-42 CH-109

PK-064 (FRONT CONTROL, LCD DRIVE, TIMING GENERATOR, CONTROL SWITCH)

• For Printed Wiring Board. • Uses unleaded solder.

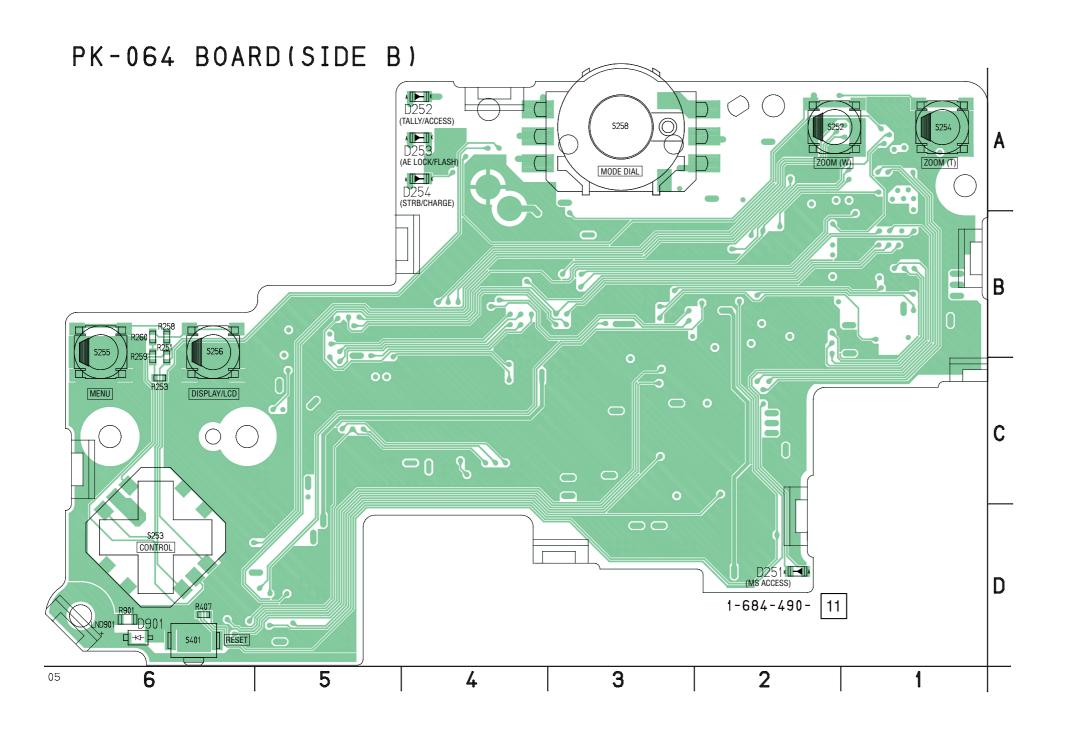
- PK-064 board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-62 for printed parts location.
- Chip transistor





4-47 PK-064 4-48

PK-064



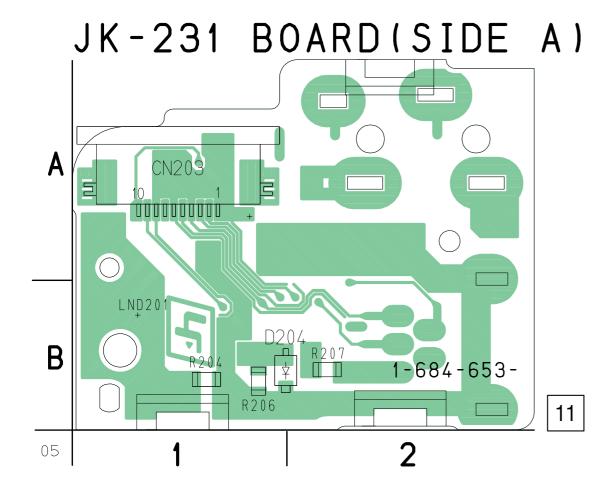
4-49

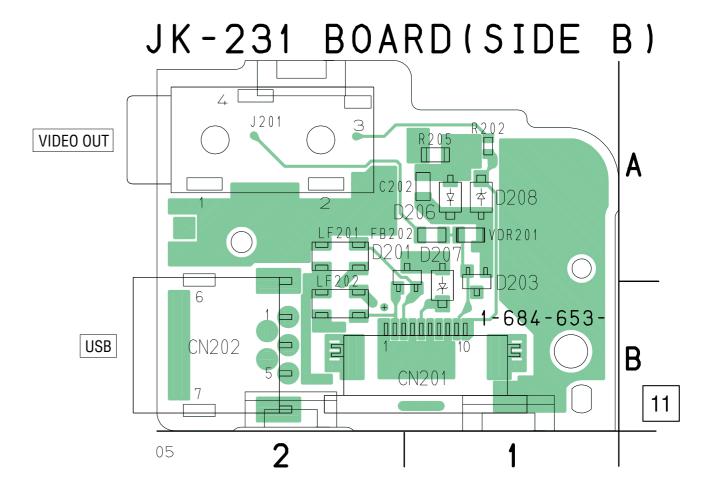
JK-231 (JACK)

• For Printed Wiring Board. • Uses unleaded solder.

- JK-231 board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-62 for printed parts location.
- Chip Diode







JK-231 4-51 4-52

ST-075 (FLASH DRIVE)

For Printed Wiring Board.Uses unleaded solder.

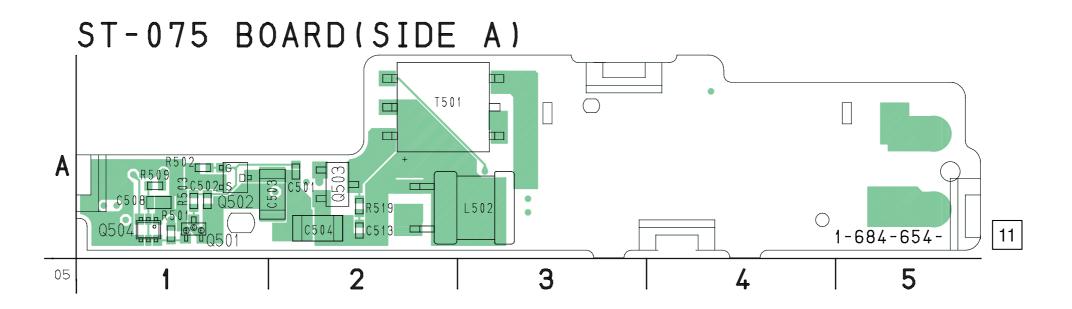
- ST-075 board is four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 4-62 for printed parts location.
- Chip parts

Transistor

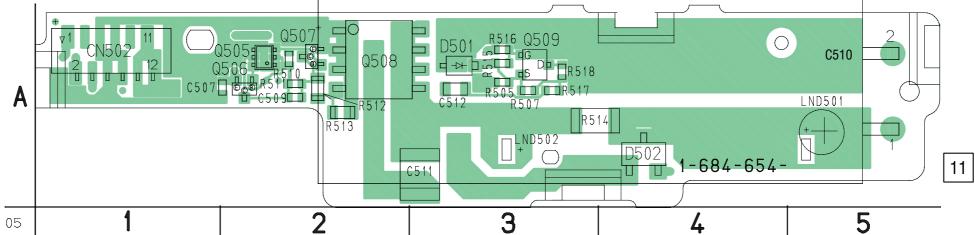






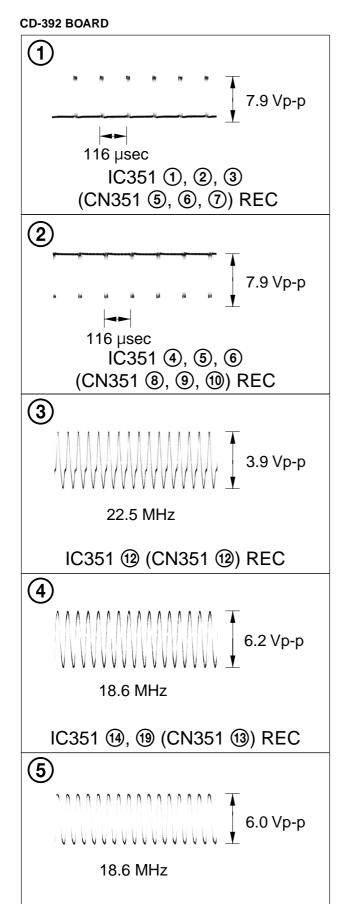


ST-075 BOARD(SIDE B)

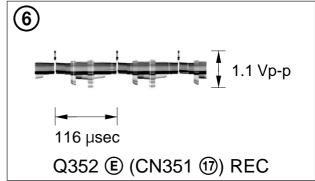


4-53 4-54 ST-075

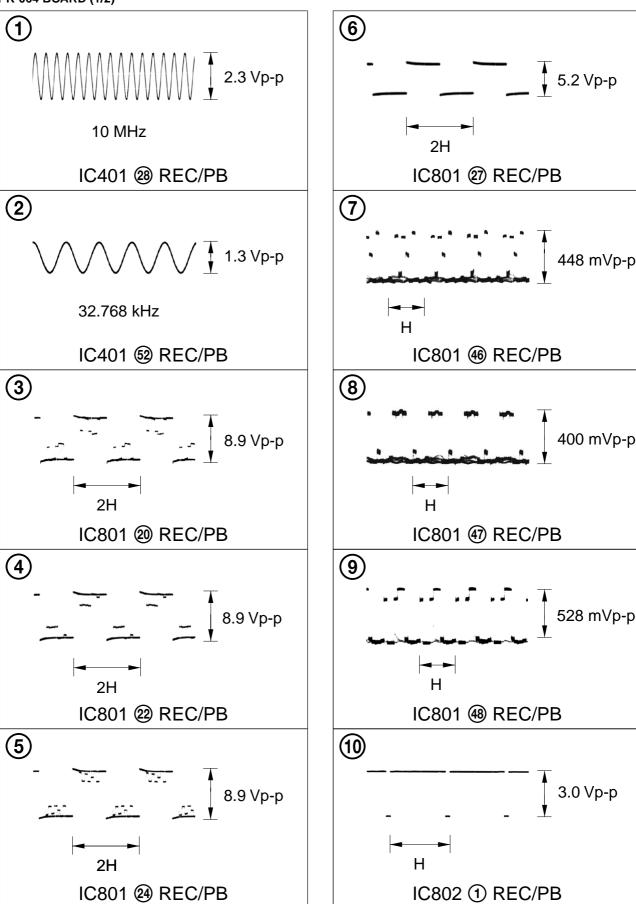
4-4. WAVEFORMS



IC352 13, 20 (CN351 14) REC

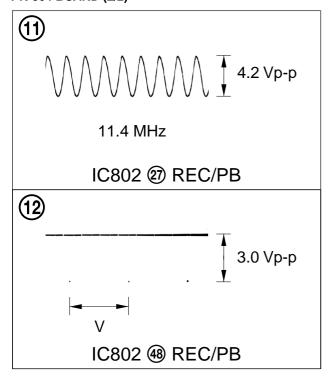


PK-064 BOARD (1/2)



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PK-064 BOARD (2/2)



4-5. PARTS LOCATION

no mark : SIDE A * mark : SIDE B

CD-392 BO	ARD	CH-109 BO	ARD
* C351	A-2	* C103	A-1
* C352	A-2	* C105	B-2
* C353	B-1	* C106	B-2
* C354	A-1	* C107	B-1
* C355	A-1	* C108	A-2
* C356	B-2	* C109	A-1
* C357	B-1		
* C358	B-1	* CN101	A-1
* C359	B-2	* CN102	B-2
* C360	B-2		
		* FB101	B-1
* CN351	A-2	* FB102	B-1
		* FB103	B-2
* D351	B-2	* FB105	A-1
		* FB106	A-2
* FB351	A-1		
		* L101	B-1
IC351	A-2	* L102	A-2
		* L103	A-1
* L351	A-2		
		R102	A-2
* Q351	B-1	R103	A-1
* Q352	B-2	R104	A-2
		R105	A-1
* R352	B-1	R106	A-2
* R353	A-1	R107	A-1
* R354	A-1	R108	B-2
* R355	A-1	R109	A-2
* R356	B-1	R110	A-1
* R357	B-1	R111	A-2
* R358	B-1	R112	A-1
* R360	B-2	R113	A-2
		R114	A-1
* TH351	A-1	R115	B-2
		* R116	B-2
		R118	A-1
		R119	A-1
		* R124	A-1

PK-064 BC	ARD					JK-231 BO	ARD	ST-075 BC	ARD
BT401	B-4	Q805	C-3	R811	B-4	* CN201	B-1	C503	A-2
B1401	D-4	Q806	C-3	R812	B-4		B-1	C504	
0.404	ъ.					* CN202	D-2		A-2
C401	D-2	Q807	C-2	R813	C-4			* C507	A-1
C402	D-2	Q808	C-3	R814	B-4	* D201	A-2	C508	A-1
C403	B-2	Q809	C-3	R815	C-4	* D206	A-1	* C509	A-2
C404	D-2	Q810	D-5	R816	C-4	* D207	A-1	* C510	A-5
C407	A-2	Q901	D-6	R819	C-5	* D208	A-1	* C511	A-3
C408	A-2			R820	C-5			* C512	A-3
C409	A-3	* R251	B-6	R823	C-5	* FB202	A-2	C513	A-2
C410	D-2	R252	A-2	R824	C-5	1 0202	A-Z	0313	7-2
		* R253	C-6	R825	C-5	+ 1004	۸.0	+ 01500	
C412	A-3					* J201	A-2	* CN502	A-1
C420	B-3	R254	C-2	R826	C-5				
C421	B-3	R255	A-4	R827	C-5	* LF201	A-2	* D501	A-3
C422	B-2	R256	A-4	R828	C-5	* LF202	B-2	* D502	A-4
C423	C-2	R257	A-4	R829	C-3				
C802	B-5	* R258	B-6	R830	C-3	* R202	A-1	L502	A-3
C803	B-5	* R259	B-6	R831	C-5	R204	B-1		
C806	B-3	* R260	B-6	R832	D-2	* R205	A-1	Q501	A-1
C807	B-3	R262	A-4	R833	C-3	R206	B-1	Q502	A-1
C808	B-4	R263	A-4	R834	C-2	11200	υ.	Q503	A-2
		R264	A-4	R836	C-3	* \/DD204	۸ ،		
C809	B-4	R265		R837	D-5	* VDR201	A-1	Q504 * O505	A-1
C810	B-4		A-3					* Q505	A-2
C812	B-5	R266	A-3	R838	C-3			* Q506	A-2
C814	B-4	R401	A-2	R839	C-3			* Q507	A-2
C815	C-5	R402	B-2	R840	C-3			* Q508	A-2
C816	C-4	R403	B-4	R841	C-3			* Q509	A-3
C817	C-5	R404	B-2	R842	C-3				
C818	B-3	R405	A-2	R843	C-3			R501	A-1
C819	C-4	R406	B-2	R844	C-3			R502	A-1
		* R407	D-6	R846	D-5				
C820	C-4							R503	A-1
C821	C-5	R409	B-2	R847	D-5			* R505	A-3
C822	C-5	R411	B-2	R848	B-3			* R507	A-3
C823	C-5	R413	B-2	R851	D-5			R509	A-1
C825	C-3	R414	D-2	R852	D-5			* R510	A-2
C827	C-5	R415	B-2	R854	C-3			* R511	A-2
C828	C-2	R416	A-3	R855	C-3			* R512	A-2
C829	C-5	R418	B-2	R856	B-4			* R513	A-2
C830	D-3	R419	B-2	R857	C-2			* R514	A-3
C831	D-5	R420	A-2	R909	D-5			* R515	A-3
		R422	B-2	11000	20				
C832	B-4			* 0050	۸. ۵			* R516	A-3
C901	D-5	R423	B-2	* S252	A-2			* R517	A-3
		R424	B-2	* S253	D-6			* R518	A-3
CN801	C-4	R425	B-2	* S254	A-1				
CN802	D-3	R426	B-2	* S255	B-6			T501	A-2
CN901	B-1	R429	C-3	* S256	B-6				
CN902	D-5	R430	B-3	* S258	A-3				
CN903	D-6	R431	B-3	* S401	D-6				
		R433	C-2						
* D251	D-2	R434	C-2	* X401	C-2				
		R435	A-2	* X402	B-3				
2202	A-4			7,402	D-3				
* D253	A-4	R436	C-2						
* D254	A-4	R437	C-2						
D401	C-2	R440	A-2						
D402	A-1	R441	A-2						
D802	C-4	R442	A-2						
D804	D-3	R443	A-2						
D805	D-5	R444	C-2						
D806	C-3	R445	A-3						
		R446	C-3						
IC401	B-2	R451	C-3						
IC401	D-2	R452	C-3						
IC801	B-5	R455	C-3 A-3						
IC802	B-4	R460							
IC803	C-2	R461	A-3						
		R462	A-3						
L401	D-2	R463	A-3						
L801	C-5	R465	A-4						
L802	B-3	R466	A-4						
L803	C-3	R469	A-4						
L804	C-4	R470	B-2						
_007	J 7	R472	C-2						
Q254	A-4	R801	B-5						
			B-5						
Q402	A-2	R804							
Q404	A-2	R805	B-5						
Q405	A-2	R808	B-5						
Q802	C-5	R809	B-4						
Q804	C-5	R810	B-4						

DSC-P71/P71M

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.

								Rej	plac	ed p	arts							
			Block Mounted parts Board										П					
		replacement				replacement							replacement					
Adjustment section	Adjustment	k assy		k LCD901 (LCD panel)	k D901 (Back light unit)	oard IC351 (CCD imager)	oard (Camera Module)	oard IC204 (EVR)	oard IC301 (CAMERA DSP)	oard IC651 (VIDEO AMP)	oard IC801 (LCD drive)	oard IC802 (LCD Timing generator)	(COMPLET	oard (COMPLETE)	oard (COMPLETE)	oard (COMPLETE)	oard IC503 EEPROM	g RadarW
		Lens block assy	Flash unit	LCD block	LCD block	CD-392 board	CH-109 board	SY-075 board	SY-075 board	SY-075 board	PK-064 board	PK-064 board	CH-109 board	ST-075 board	SY-075 board	PK-064 board	SY-075 board	Supporting
Initialization of A, B, D,	Initialization of A, D page data														•		•	
E, F, 7, 9 page data	Initialization of B, E, F, 7, 9, page data														•		•	
Video	Composite video level adj.							•	•	•					•		•	
Camera	Flange back adj.	•				•									•		•	•
	F No. compensation	•				•									•		•	•
	Mechanical shutter adj.	•				•									•		•	
	Light value adj.	•				•	•						•		•		•	•
	Mixed color cancel adj.	•				•	•						•		•		•	•
	Auto white balance standard data input	•				•	•						•		•		•	•
	Auto white balance adj.	•				•	•						•		•		•	•
	Color reproduction adj.	•				•	•						•		•	H	•	•
	CCD (white and black) defect compensation					•								•	•		•	•
	CCD linearity check					•			•								\Box	
	Strobe white balance adj.		•			•	•	•					•	•	•		•	•
LCD	LCD initial data input														•	•	•	П
	Backlight current adj.			•	•						•	•				•	П	
	VCO adj.											•			•	•	•	
	PSIG Gray adj.										•				•	•	•	П
	D range adj.										•				•	•	•	П
	Black limit adj.										•				•	•	•	
	Contrast adj.										•				•	•	•	
	Center volatge adj.										•				•	•	•	
	V-COM DC adj.			•							•				•	•	•	\square
	White balance adj.	L		•	•						•		L		•		•	

Table 5-1-1

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.

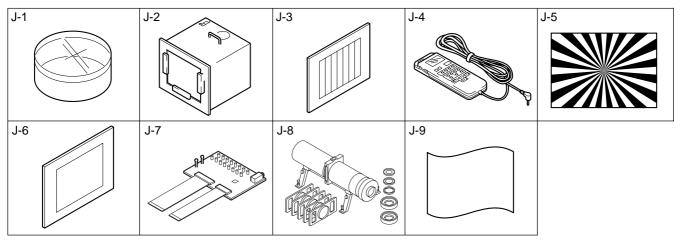


Fig. 5-1-1

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-
- 2) Connect the Adjusting remote commander to PK-064 board CN903 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.
- Select page: D, address: 21, set data: 04, 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.
- Select page: D, address: 21, 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

- Press the FLASH button (PK-064 board S253 (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.

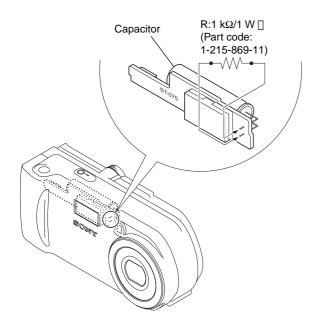


Fig. 5-1-4

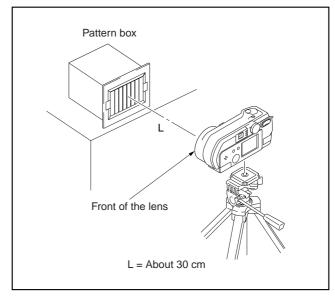
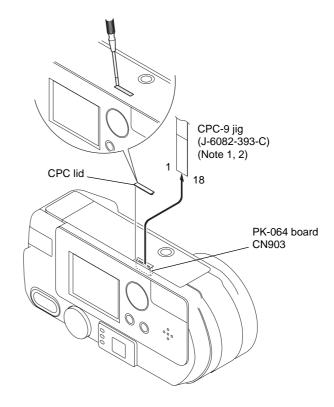


Fig. 5-1-2



- 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

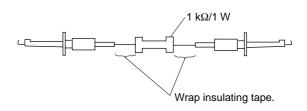


Fig. 5-1-5

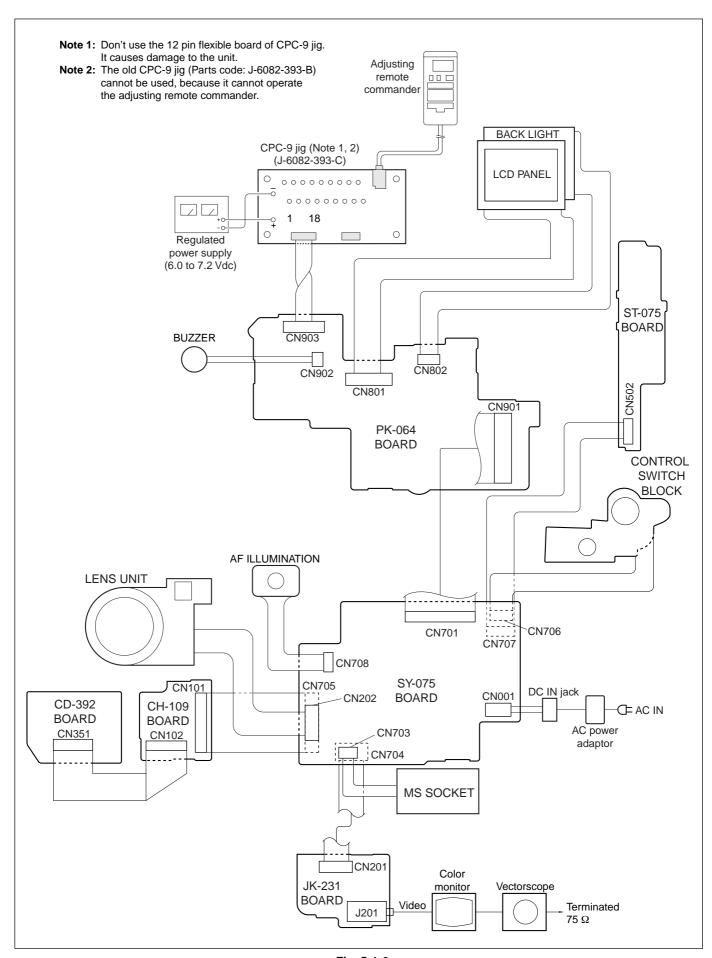


Fig. 5-1-6

1-1-4. Precautions

1. Setting the Switch

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

-01	iii aajastiiioiitsi
1.	Mode Dial CAMERA
2.	ZOOM switch
	(PK-064 board S252, S254) WIDE end
3.	EV (Menu display) 0EV
4.	DSIPLAY/LCD ON/OFF button
	(PK-064 board S256) OSD OFF

5. WB (WHITE BALANCE)
(Menu display) AUTO

(Menu display) AUTC 5. P.EFFECT (Menu display) OFF

7. VIDEO OUT (SET UP setting) NTSC

2. Order of Adjustments

Basically carry out adjustments in the order given.

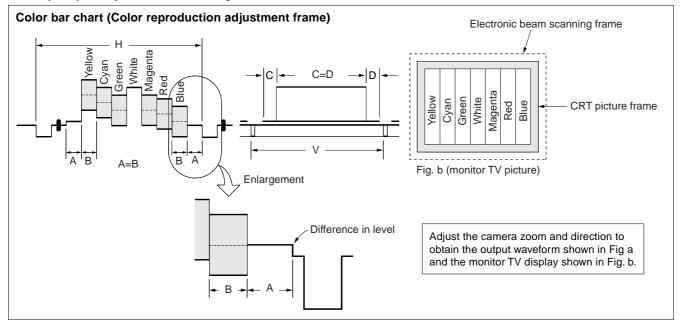
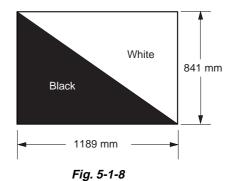


Fig. 5-1-7

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)
- 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.



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.

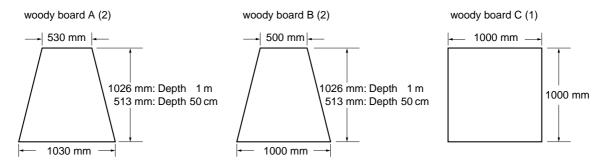


Fig. 5-1-9

- 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)

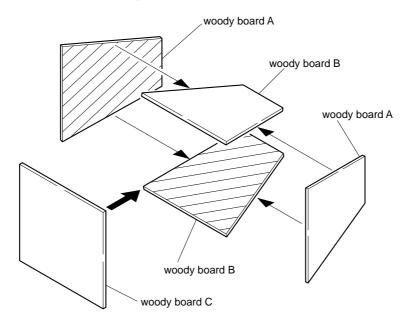


Fig. 5-1-10

1-2. INITIALIZATION OF A, B, D, E, F, 7, 9 PAGE

1-2-1. Initialization of A, D Page Data

1. Initializing A, D Page Data

Note: If the A, D page data has been initialized, the following adjustments need to be performed again.

- 1) Modification of A, D page data
- 2) Video system adjustments
- 3) LCD system adjustments
- 4) System control system adjustments

Adjsuting page	A
Adjsuting Address	00 to FF
Adjusting page	D
Adjusting Address	10 to 73

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	4	03	06	
3	4	00	2D	
4	4	01	2D	Press PAUSE button.
5	4	02		Check the data changes to "01".
6				Perform "Modification of A, D page Data".

2. Modification of A, D Page Data

If the A, 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.
- 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 A, D Page Data:

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

3. A Page Table

Note 1: Fixed data-1: Initialized data.

(Refer to "1. Initializing the A Page Data")

Note 2: Fixed data-2: Modified data.

(Refer to "2. Modification of A Page Data")

		<i>e</i> ,
Address	Initial value	Remark
00, 01		Fixed data-1 (Initialized data)
02	00	Test mode
03 to 61		Fixed data-1 (Initialized data)
62		Final data 2
63		Fixed data-2
64 to 7F		Fixed data-1 (Initialized data)
80	8E	Backlight current adj. (BL L)
81	36	Backlight current adj. (BL H)
82	5E	VCO adj. (NTSC)
83	7C	VCO adj. (PAL)
84	A9	V-COM DC adj.
85	9B	D Range adj.
86	0A	Black limit adj.
87	3A	Psig Gray adj./V-COM adj.
88	90	W/L:4- L-1
89	83	White balance adj.
8A	4C	Contrast adj.
8B	48	Center voltage adj.
8C		
8D		Fined data 2
8E		Fixed data-2
8F		
90 to 9F		Fixed data-1 (Initialized data)
A0	80	Composite video level adj.
A1, A2		Fixed data-1 (Initialized data)
A3		Final data 2
A4		Fixed data-2
A5 to A8		Fixed data-1 (Initialized data)
A9		Fixed data-2
AA to FF		Fixed data-1 (Initialized data)

4. 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 to1F		Fixed data-1 (Initialized data)
20		Not used
21	00	Test mode
22 to 36		Fixed data-1 (Initialized data)
37 to 3F		Not used
40 to 5A		Fixed data-1 (Initialized data)
5B		Not used
5C to 73		Fixed data-1 (Initialized data)

1-2-2. Initialization of B, E, F, 7, 9 Page Data1. 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	В
Adjusting Address	00 to FF
Adjusting page	Е
Adjusting Address	00 to FF
Adjusting page	F
Adjusting Address	00 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	6	03	06	
3	6	00	2D	
4	6	01	2D	Press PAUSE button.
5	6	02		Check the data changes to "01".
6				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:

- Before changing the data, select page: 0, address: 01, and set data: 01.
- 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.
- 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. Modification of B, E, F, 7, 9 Page Data")

Tixed data-1 (Initialized data)	Address	Initial value	Remark
11	00 to 0F		Fixed data-1 (Initialized data)
12 FF 13 FF 14 FF 15 FF 16 FF 17 FF 18 00 19 00 1A 50 1B 00 1C 11 1D B1 1E 09 1F 0F 20 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2D 00 31 00 32 00 31 00 31 00 32 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 31 00 38 00 39 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00	10	FF	
13	11	FF	
14 FF 15 FF 16 FF 16 FF 17 FF 18 00 19 00 1A 50 1B 00 1C 11 1D B1 1E 09 1F 0F 20 00 21 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2F 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00	12	FF	
14 FF 15 FF 16 FF 17 FF 18 00 19 00 1A 50 1B 00 1C 11 1D B1 1E 09 1F 0F 20 00 21 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 24 20 25 20 26 35 27 44 28 0A 29 00 2D 00 2E 00 2F 00 30 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00	13	FF	AE Illumination about
16 FF 17 FF 18 00 19 00 1A 50 1B 00 1C 11 1D B1 1E 09 1F 0F 20 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2D 00 31 00 32 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00	14	FF	AF mummation check.
17 FF 18 00 19 00 1A 50 1B 00 1C 11 1D B1 1E 09 1F 0F 20 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2F 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	15	FF	
18 00 19 00 1A 50 1B 00 1C 11 1D B1 1E 09 1F 0F 20 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 30 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00	16	FF	
19 00 1A 50 1B 00 1C 11 1D B1 1E 09 1F 0F 20 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2F 00 30 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00	17	FF	
1A 50 1B 00 1C 11 1D B1 1E 09 1F 0F 20 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 30 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 38 00 39 00 3A 00 3B 00 3C 00	18	00	
1B 00 1C 11 1D B1 1E 09 1F 0F 20 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2D 00 30 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 38 00 39 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 38 00 39 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 37 00 38 00 39 00 31 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 37 00 38 00 39 00 31 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 37 00 38 00 39 00 31 00 31 00	19	00	
1C 11 1D B1 1E 09 1F 0F 20 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 31 00 38 00 39 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 37 00 38 00 39 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 37 00 38 00 39 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00	1A	50	
1D	1B	00	
1E 09 1F 0F 20 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2F 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	1C	11	
1F	1D	B1	
20 00 21 00 21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2F 00 30 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 30 00 31 00 31 00	1E	09	
21 00 22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 2F 00 30 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 3A 00 3B 00 3C 00	1F	0F	
22 00 23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 30 00 31 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 3A 00 3B 00 3C 00	20	00	
23 00 24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 30 00 31 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 38 00 39 00 31 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 37 00 38 00 39 00 31 00 31 00 31 00 32 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 37 00 38 00 39 00 31 00 31 00 31 00 32 00	21	00	
24 20 25 20 26 35 27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2F 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	22	00	
25	23	00	
26	24	20	
27 44 28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	25	20	
28 0A 29 00 2A 00 2B 00 2C 00 2D 00 2E 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	26	35	
29 00 2A 00 2B 00 2C 00 2D 00 2E 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	27	44	
2A 00 2B 00 2C 00 2D 00 2E 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	28	0A	
2B 00 2C 00 2D 00 2E 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	29	00	Flange back adj.
2C 00 2D 00 2E 00 2F 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	2A	00	
2D 00 2E 00 2F 00 30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	2B	00	
2E 00 2F 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	2C	00	
2F 00 30 00 31 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 39 00 3A 00 3B 00 3C 00	2D	00	
30 00 31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	2E	00	
31 00 32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	2F	00	
32 00 33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	30	00	
33 00 34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	31	00	
34 00 35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	32	00	
35 00 36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	33	00	
36 00 37 00 38 00 39 00 3A 00 3B 00 3C 00	34	00	
37 00 38 00 39 00 3A 00 3B 00 3C 00	35	00	
38 00 39 00 3A 00 3B 00 3C 00	36	00	
39 00 3A 00 3B 00 3C 00	37	00	
3A 00 3B 00 3C 00	38	00	
3B 00 3C 00	39	00	
3C 00	3A	00	
	3B	00	
3D 00	3C	00	
<u> </u>	3D	00	

Address	Initial value	Remark	
3E	FF	Flange back adj.	
3F to 51		Fixed data-1 (Initialized data)	
52	00	Flange back adj.	
53	00		
54 to 5D		Fixed data-1 (Initialized data)	
5E	00		
5F	00		
60	00		
61	00	F No. compensation	
62	00		
63	00		
64	00		
65	30		
66	FE	Light value adj.	
67	6D		
68 to 6D		Fixed data-1 (Initialized data)	
6E	00	Mixed color calcel adj.	
6F	00	white color calcer adj.	
70	32		
71	B2		
72	23		
73	64	AWB 3200K standard data input	
74	32	AWB 3200K standard data input	
75	6C		
76	23		
77	88		
78 to 87		Fixed data-1 (Initialized data)	
88	20		
89	F5		
8A	33		
8B	14	AWB 5800K standard data input	
8C	20	Titi D 50001x Standard data niput	
8D	E2		
8E	33		
8F	89		
90 to 9F		Fixed data-1 (Initialized data)	
A0	29		
A1	D8	AWB 5800K standard data input	
A2	6D		
A3	08		
A4	03		
A5	E9		
A6	63		
A7	83	Color reproduction adj.	
A8	D5		
A9	FE		
AA	73		

Address	Initial value	Remark	
AB	45		
AC	63		
AD	83	Color reproduction adj.	
AE	03		
AF	E9		
В0	00	AWB 3200K standard data input	
B1	00	AWB 5800K standard data input	
В2	00	AWB 3200K standard data input	
В3	00	AWB 5800K standard data input	
B4	00	AWB 3200K standard data input	
В5		Fixed data-1 (Initialized data)	
В6	28		
В7	70	Strobe white balance adj.	
В8	0C		
В9	C1		
BA	0C		
BB	C1		
ВС	00		
BD	00		
BE	00		
BF	00		
C0	00		
C1	00		
C2	00		
C3	00		
C4	00		
C5	00		
C6	00	Mechanical shutter adj.	
C7	33		
C8	33		
C9	33		
CA	33		
СВ	33		
CC	8A		
CD	98		
CE	90		
CF	8A		
D0	8A		
D1	00		
D2	00		
D3	00		
D3	00		
D5	00		
D6	00		
D7	14	Mechanical shutter adj.	
D8 to DA	17	Fixed data-1 (Initialized data)	
20 to D/1	00	1 med data 1 (minumzed data)	
DR			
DB DC	00	Strobe white balance adj.	

Address	Initial value	Remark
DE	00	
DF	00	
E0	00	
E1	00	
E2	00	
E3	00	
E4	00	
E5	00	
E6	00	Strobe white balance adj.
E7	00	
E8	00	
E9	00	
EA	00	
EB	00	
EC	00	
ED	00	
EE	00	
EF	00	
F0 to FF		Fixed data-1 (Initialized data)

6. 7 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)			

7. 9 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)

1-3. VIDEO SYSTEM ADJUSTMENT

1. Composite Video Level Adjustment
Adjust the sync level of the composite video signal output and check the burst level of the composite video signal output.

Mode	PLAY	
Signal	Arbitrary	
Measurement Point	Video terminal of VIDEO OUT jack (75 Ω terminated)	
Measuring Instrument	Oscilloscope	
Adjustment Page	A	
Adjustment Address	A0	
Specified Value	Sync level: A = 286 ± 5 mV (NTSC) A = 300 ± 5 mV (PAL) Burst level: B = 286 ± 10 mV (NTSC) B = 300 ± 30 mV (PAL)	

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	A	02	03	
3	4	F1	04	
4	A	A0		Change the data and set the sync level (A) to the specified value.
5	A	A0		Press PAUSE button.
6				Check the burst level (B) to the specified value.

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

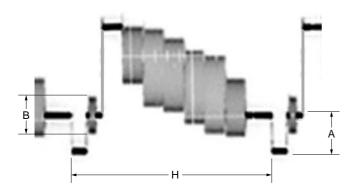


Fig. 5-1-11

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.

It is not necessary to perform the following data setting everytime when you perform some items of camera system adjustments continuously unless the power is turned off. Only when the power is turned off during this adjustments, perform the data setting again, then continue the adjustments.

Set up setting:

Data setting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	A	01		Set the bit value of bit 5 is "1", and press PAUSE button. (Note 1)
3	2	10		Check the bit values of bit3, bit4 and bit5 are "1". (Note 1, 2)
4	A	00		Set the bit value of bit 1 is "1", and press PAUSE button. (Note 1)
5	A	02		Set the bit value of bit 1 is "1", and press PAUSE button. (Note 1)
6	D	21	04	Press PAUSE button.
7	6	C1		Check the data changes to "02".
8	6	6C	01	
9				Wait for 1 second.
10	Е	96	00	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: 00 and set data: 29.
- Select page: 2, address: 01 and set data: 29.
- Select page: 2, address: 0C, set the bit value of bit 1 is
- Select page: 2, address: 04 and set data: 04. Set the adjusting remote commander to normal LANC, and the power will be turned, off and on automatically.

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

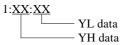
After completing the camera system adjustments, release the data setting:

Or	der	Page	Address	Data	Procedure
	1	Е	96	40	
2	2	6	6C	00	
3	3	D	21	00	Press PAUSE button.
4	4	A	02		Set the bit value of bit 1 is "0", and press PAUSE button. (Note 1)
4	5	A	00		Set the bit value of bit 1 is "0", and press PAUSE button. (Note 1)
	6	A	01		Set the bit value of bit 5 is "0", and press PAUSE button. (Note 1)
	7	0	01	00	

Picture Frame Setting

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

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



Switch setting

- 1) FOCUS (Menu setting)......MULTI AF
- 2) MACRO (Control button).....ON

Setting method:

Order	Page	Address	Data	Procedure
1				Shoot the color bar chart with the zoom WIDE end.
2				Enter the output of VIDEO OUT to the monitor TV, and move the position as shown in Fig. 5-1-14.
3				Horizontal width of one color (B, C) and that of black (A, D) on the color bar chart should be same. (See Fig. 5-1-12)
4				With vertical width of black (E, F) set in same, the color bar chart should come to the center of monitor TV. (See Fig. 5-1-13)
5				Check that the color bar on the monitor TV is focused.
6	0	03	22	
7	1			Note down the YH and YL data. (Note 1)

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	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 7 of "Setting method".

Check on the oscilloscope

1. Horizontal period

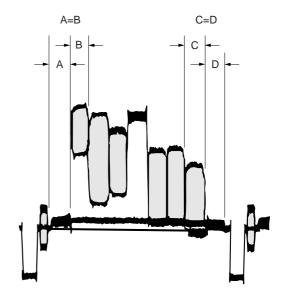


Fig. 5-1-12

2. Vertical period

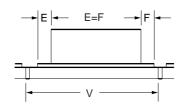


Fig. 5-1-13

Check on the monitor TV

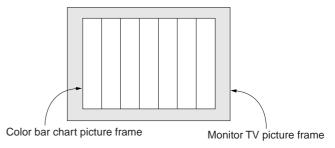


Fig. 5-1-14

1. Flange Back Adjustment (Using the minipattern box) RadarW

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

	•
Mode	CAMERA
Subject	Siemens star chart with ND filter for minipattern box (Note 1)
Measurement Point	Check operation on monitor TV
Measuring Instrument	
Adjustment Page	F
Adjustment Address	18 to 3E, 52, 53

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.

Preparations before adjustments:

1) The minipattern box is installed as shown in the following fig-

Note 3: The attachment lenses are not used.

- 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.
- 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.

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 minipattern box.

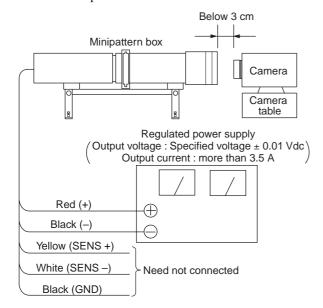


Fig. 5-1-15

Adjusting method:

Order	Page	Address	Data	Procedure
1				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2	6	01	13	Press PAUSE button.
3	6	01	27	Press PAUSE button. (Note 4)
4	6	02		Check the data changes to "01".
5	F	3E		Check the data. 00: Normal 01 to FF: Defective
6	F	24		Check the data. 0A to 7F: Normal 00 to 09, 80 to FF: Defective

Note 4: The adjustment data will be automatically input to page: F, address: 18 to 3E, 52 and 53.

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 1. (Refer to page 5-13)
3				Perform "Flange Back Check".

2. Flange Back Adjustment RadarW (Using the flange back adjustment chart and Subject More than 500 m Away)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

2-1. Flange Back Adjustment (1)

Mode	CAMERA
Subject	Flange back adjustment chart (2.0 m from the front of lens) (Luminance: 300 to 400 lux)
Measurement Point	Check operation on monitor TV
Measuring Instrument	
Adjustment Page	F
Adjustment Address	18 to 3E, 52, 53

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

Preparations before adjustments:

- 1) Place the Flange back adjustment chart 2.0 m from the front of the lens.
- 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.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2	6	01	13	Press PAUSE button.
3	6	01	15	Press PAUSE button. (Note 2)
4	6	02		Check the data changes to "01".
5	F	3E		Check the data. 00: Normal 01 to FF: Defective
6	F	24		Check the data. 0A to 7F: Normal 00 to 09, 80 to FF: Defective

Note 2: The adjustment data will be automatically input to page: F, address: 18 to 3E, 52 and 53.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 1. (Refer to page 5-13)
3				Perform "Flange Back Adjustment (2)".

2-2. Flange Back Adjustment (2)

Perform this adjustment after performing "Flange Back Adjustment (1)".

Mode	CAMERA	
Subject	Subject more than 500 m away (Subject with clear contrast such as buildings, etc.)	
Measurement Point	Check operation on monitor TV	
Measuring Instrument		
Adjustment Page	F	
Adjustment Address	18 to 3E, 52, 53	

Adjusting method:

Order	Page	Address	Data	Procedure
1				Set the zoom lens to the TELE end and expose a subject that is more than 500 m away. (Note 1)
2				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
3	6	01	13	Press PAUSE button.
4				Place ND filter on the lens so that the optimum image is obtain.
5	6	01	29	Press PAUSE button. (Note 2)
6	6	02		Check the data changes to "01".
7	F	3E		Check the data. 00: Normal 01 to FF: Defective
8	F	24		Check the data. 0A to 7F: Normal 00 to 09, 80 to FF: Defective

Note 1: Subject with clear contrast such as building, etc.

Nearby subjects less than 500 m away should not be in the screen.

Note 2: The adjustment data will be automatically input to page: F, address: 18 to 3E, 52 and 53.

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 2. (Refer to page 5-13)
3				Perform "Flange Back Check".

3. Flange Back Check

Mode	CAMERA
Subject	Siemens star (1.0 m from the front of the lens) (Luminance: 200 to 400 lux)
Measurement Point	Check operation on monitor TV
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.
2				To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
3				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
4	В	3D		Note down the data.
5	В	3D	50	Press PAUSE button.
6				Shoot the Siemens star with the zoom TELE end.
7				Turn on the auto focus.
8				Check that the lens is focused.
9	6	2C	01	
10				While observe the TV monitor, change the zoom to the WIDE end and check that the lens is focused.

Order	Page	Address	Data	Procedure
1	6	2C	00	
2	В	3D		Set data noted down at step 4, and press PAUSE button.
3				Release the data setting performed at step 3. (Refer to page 5-13)

4. F No. Compensation RadarW

Compensate the unevenness of the iris meter sensitivity.

Mode	CAMERA
Subject	Clear chart (Standard picture frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	5E to 64

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

Adjusting method:

Order	Page	Address	Data	Procedure
1				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2				Perform "Picture Frame setting". (Refer to page 5-14)
3	6	01	ВВ	Press PAUSE button. (Note 2)
4	6	02		Check the data changes to "01".

Note 2: The adjustment data will be automatically input to page: F, address: 5E to 64.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 1. (Refer to page 5-13)

5. Mechanical Shutter Adjustment RadarW



Adjust the period which the mechanical shutter is closed, and compensate the exposure.

Mode	CAMERA
Subject	Clear chart (Standard picture frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	B8 to D7

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

Adjusting method:

			-	
Order	Page	Address	Data	Procedure
1				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2				Perform "Picture Frame setting". (Refer to page 5-14)
3	6	01	AD	Press PAUSE button. (Note 2)
4	6	02		Check the data changes to "01".
5	6	AB		Check the data is "00".

Note 2: The adjustment data will be automatically input to page: F, address: B8 to D7.

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 1. (Refer to page 5-13)

6. Light Value Adjustment RadarW

Adjust the standard LV value.

Mode	CAMERA
Subject	Clear chart (Standard picture frame with the zoom lens at WIDE end)
Measurement Point	Displayed data of page: 1 (Note 2) and page: F, address: 65
Measuring Instrument	Adjusting remote commander
Adjustment Page	F
Adjustment Address	65 to 67
Specified Value	AE level 1: 0FE0 to 1020 AE level 2: 29 to 3C

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 four digits of the page: 1 displayed data of the adjusting remote commander.

Adjusting method:

Order	Page	Address	Data	Procedure		
1				Perform "Data setting during camera system adjustment". (Refer to page 5-13)		
2				Perform "Picture Frame setting". (Refer to page 5-14)		
3	6	01	0D	Press PAUSE button. (Note 4)		
4	6	02		Check the data changes to "01".		
5	0	03	06			
6	1			Check that the displayed data (Note 2) satisfies the AE level 1 specified value.		
7	F	65		Check that the displayed data satisfies the AE level 2 specified value.		

Note 3: The adjustment data will be automatically input to page: F, address: 65 to 67.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	03	00	
2	6	01	00	Press PAUSE button.
3				Release the data setting performed at step 1. (Refer to page 5-13)

7. Mixed Color Cancel Adjustment RadarW

To perform mixed color cancel adjustment based on data of each color in color bar.

Mode	CAMERA
Subject	Color bar chart (Standard picture frame with the zoom lens at WIDE end)
Adjustment Page	F
Adjustment Address	6E and 6F

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

Adjusting method:

Or	der	Page	Address	Data	Procedure
	1				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
	2				Perform "Picture Frame setting". (Refer to page 5-14)
	3	7	22		Note down the data.
	4	7	22	00	Press PAUSE button.
	5	6	01	D7	Press PAUSE button.
	6	6	01	D5	Press PAUSE button. (Note 2)
	7	6	02		Check the data changes to "01".

Note 2: The adjustment data will be automatically input to page: F, address: 6E and 6F.

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	7	22		Set the data noted down at step 3, and press PAUSE button.
3				Release the data setting performed at step 1. (Refer to page 5-13)

8. Auto White Balance 3200K Standard Data Input RadarW

Adjust the white balance standard data at 3200K.

Mode	CAMERA
Subject	Clear chart (Standard picture frame with the zoom lens at TELE end)
Adjustment Page	F
Adjustment Address	70 to 77, B0, B2, B4

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 3200K 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				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2				Perform "Picture Frame setting". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	04	
6	6	92	00	
7	6	93	00	
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	В6	03	
12	6	37	02	
13	6	01	0B	Press PAUSE button. (Note 3)
14	6	02		Check the data changes to "01".
15	6	01	00	Press PAUSE button.
16	6	37	01	
17	6	01	C1	Press PAUSE button. (Note 3)
18	6	02		Check the data changes to "01".

Note 3: The adjustment data will be automatically input to page: F, address: 70 to 77, B0, B2 and B4."

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	37	00	
4	6	91	00	
5	6	В6	00	
6				Release the data setting performed at step 1. (Refer to page 5-13)

9. Auto White Balance 3200K Check 1

I Dad	00	$M_{\rm A}$
Rad	ar	

Mode	CAMERA		
Subject	Clear chart (Standard picture frame with the zoom lens at TELE end)		
Measurement Point	Displayed data of Page: 1 (Note 2)	Video terminal of VIDEO OUT jack (75 Ω terminated)	
Specified Value	R-Y level data: FFFE to FFFF or 0000 to 0002 B-Y level data: FFFE to FFFF or 0000 to 0002 Y level data: 40 to C0		

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 four 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				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2				Perform "Picture Frame setting". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	04	
6	6	92	00	
7	6	93	00	
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	
11	6	16	04	
12	6	В6	03	
13	6	37	0D	
14	6	01	C1	Press PAUSE button.
15	6	02		Check the data changes to "01".
16	0	03	2C	
17	1			Check that the R-Y level data (Note 2) satisfied the specified value.
18	0	03	2D	
19	1			Check that the B-Y level data (Note 2) satisfied the specified value.
20	0	03	33	
21	1			Check that the Y level data (Note 2) satisfied the specified value.
22				Perform "Auto White Balance 3200K Check 2".

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	91	00	
4	6	В6	00	
5				Release the data setting performed at step 1. (Refer to page 5-13)

10. Auto White Balance 3200K Check 2

	-
Rada	rW.

Mode	CAMERA	CAMERA		
Subject	Clear chart (Standard picture frame with the zoom lens at TELE end)			
Measurement Point	Displayed data of Page: 1 (Note 3)	Video terminal of VIDEO OUT jack (75 Ω terminated)		
Specified Value	R ratio: 3F60 to 40A0 B ratio: 3F60 to 40A0			

Note 1: Perform this check after "Auto white Balance 3200K Check 1" without a break.

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

Note 3: The right four 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				Auto White Balance 3200K check 1 is completed.
2				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
3				Perform "Picture Frame setting". (Refer to page 5-14)
4	6	2C	01	
5	6	90	00	
6	6	91	04	
7	6	92	00	
8	6	93	00	
9	6	01	79	Press PAUSE button.
10	6	07		Check the data changes to "01".
11	6	01	00	Press PAUSE button.
12	6	01	0F	Press PAUSE button.
13	6	02		Check the data changes to "01".
14	0	03	04	
15	1			Check that the displayed data (Note 3) satisfied the R ratio specified value.
16	0	03	05	
17	1			Check that the displayed data (Note 3) satisfied the B ratio specified value.

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	16	00	
3	6	37	00	
4	6	2C	00	
5	6	91	00	
6	0	03	00	
7				Release the data setting performed at step 2. (Refer to page 5-13)

11. Auto White Balance 5800K Standard Data Input RadarW

Adjust the white balance standard data at 5800K.

Mode	CAMERA
Subject	Clear chart (Standard picture frame with the zoom lens at TELE end)
Adjustment Page	F
Adjustment Address	88 to 8F, A0 to A3, B1, B3

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 5800K 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				Place the C14 filter on the lens.
2				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
3				Perform "Picture Frame setting". (Refer to page 5-14)
4	6	2C	01	
5	6	90	00	
6	6	91	04	
7	6	92	00	
8	6	93	00	
9	6	01	79	Press PAUSE button.
10	6	07		Check the data changes to "01".
11	6	01	00	Press PAUSE button.
12	F	A0	29	Press PAUSE button.
13	F	A1	98	Press PAUSE button.
14	F	A2	61	Press PAUSE button.
15	F	A3	08	Press PAUSE button.
16	6	В6	03	
17	6	37	08	
18	6	01	A5	Press PAUSE button. (Note 2)
19	6	02		Check the data changes to "01".
20	6	01	00	Press PAUSE button.
21	6	37	07	
22	6	01	C3	Press PAUSE button. (Note 2)
23	6	02		Check the data changes to "01".

Note 2: The adjustment data will be automatically input to page: F, address: 88 to 8F, A0 to A3, B1 and B3.

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	37	00	
3	6	В6	00	
4	6	2C	00	
5	6	91	00	
6				Release the data setting performed at step 2. (Refer to page 5-13)
7				Remove the C14 filter on the lens.

12. Auto White Balance 5800K Check 1 RadarW



Mode	CAMERA			
Subject	` .	Clear chart (Standard picture frame with the zoom lens at TELE end)		
Filter	Filter C14 for colo	Filter C14 for color temperature correction		
Measurement Point	Displayed data of Page: 1	Video terminal of VIDEO OUT jack (75 Ω terminated)		
Specified Value	Y level data: 20 to C0			

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

Checking method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter on the lens.
2				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
3				Perform "Picture Frame setting". (Refer to page 5-14)
4	6	2C	01	
5	6	90	00	
6	6	91	04	
7	6	92	00	
8	6	93	00	
9	6	01	79	Press PAUSE button.
10	6	07		Check the data changes to "01".
11	6	01	00	Press PAUSE button.
12	6	16	04	
13	6	В6	03	
14	6	37	0E	
15	6	01	C1	Press PAUSE button.
16	6	02		Check the data changes to "01".
17	0	03	33	
18	1			Check that the Y level data satisfied the specified value.
19				Perform " Auto White Balance 5800K check 2".

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	2C	00	
3	6	91	00	
4	6	В6	00	
5				Release the data setting performed at step 2. (Refer to page 5-13)
6				Remove the C14 filter on the lens.

13. Auto White Balance 5800K Check 2 RadarW

Radar	M.
Kauai	A''''

Mode	CAMERA				
Subject	Clear chart (Standard picture frame with the zoom lens at TELE end)				
Measurement Point	Displayed data of Page: 1 Video terminal VIDEO OUT ja (75 Ω terminate)				
Specified Value	R ratio: 28F8 to 2A38 B ratio: 6068 to 61A8				

- Note 1: Perform this check after "Auto White Balance 5800K Check 1" without a break.
- Note 2: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.
- Note 3: The right four digits of the page: 1 displayed data of the adjusting remote commander.

1:<u>XX;XX</u> Displayed data

Checking method:

Order	Page	Address	Data	Procedure
1				"Auto White Balance 5800K Check 1" is complete.
2				Place the C14 filter on the lens.
3				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
4				Perform "Picture Frame setting". (Refer to page 5-14)
5	6	2C	01	
6	6	90	00	
7	6	91	04	
8	6	92	00	
9	6	93	00	
10	6	01	79	Press PAUSE button.
11	6	07		Check the data changes to "01".
12	6	01	00	Press PAUSE button.
13	6	01	3F	Press PAUSE button.
14	6	02		Check the data changes to "01".
15	0	03	04	
16	1			Check that the displayed data (Note 3) satisfied the R ratio specified value.
17	0	03	05	
18	1			Check that the displayed data (Note 3) satisfied the B ratio specified value.

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	16	00	
3	6	37	00	
4	6	2C	00	
5	6	91	00	
6	0	03	00	
7				Release the data setting performed at step 3. (Refer to page 5-13)
8				Remove the C14 filter on the lens.

14. Color Reproduction Adjustment RadarW

Adjust the color separation matrix coefficient so that proper color reproduction is produced.

Mode	CAMERA		
Subject	Color bar chart (Standard picture frame with the zoom lens at WIDE end)		
Measurement Point	Video terminal of VIDEO OUT jack (75 Ω terminated)		
Measuring Instrument	Vectorscope		
Adjustment Page	F		
Adjustment Address	A4 to AF		
Specified Value	All color luminance points should settle within each color reproduction frame.		

Menu setting:

VIDEO OUT of SET UP menu NTSC (NTSC mode)

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

Note 2: "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				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2				Perform "Picture Frame Setting". (Refer to page 5-14)
3	6	01	AB	Press PAUSE button.
4	6	01	A9	Press PAUSE button. (Note 3)
5	6	02		Check the data changes to "01".
6				Check the each color luminance point is in each color reproduction frame.

Note 3: The adjustment data will be automatically input to page: F, address: A4 to AF.

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 1. (Refer to page 5-13)

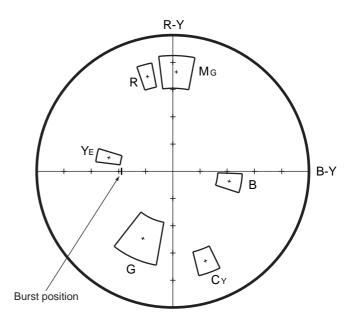


Fig. 5-1-16

15. CCD White Defect Compensation



Mode	CAMERA
Subject	Not required
Measurement Point	Displayed data of page: 6, address: 55
Measuring Instrument	Adjusting remote commander

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				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2	Е	64		Note down the data.
3	Е	64	1E	Press PAUSE button.
4	Е	69		Note down the data.
5	Е	69	0A	Press PAUSE button.
6	6	01	8B	Press PAUSE button.
7	6	02		Check the data changes to "01".
8	6	55		Check the data. 00 to 7F: Normal 80 to FF: Defective
9	6	01	00	Press PAUSE button.
10	Е	64	0F	Press PAUSE button.
11	Е	69	60	Press PAUSE button.
12	6	01	87	Press PAUSE button.
13	6	02		Check the data changes to "01".
14	6	55		Check the data. 00: Normal 01 to FF: Defective

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	Е	64		Set data noted down at step 2, and press PAUSE button.
3	Е	69		Set data noted down at step 4, and press PAUSE button.
4				Release the data setting performed at step 1. (Refer to page 5-13)

16. CCD Black Defect Compensation RadarW



Mode	CAMERA
Subject	Clear chart (Standard picture frame with the zoom lens at WIDE end)
Measurement Point	Displayed data of page: 6, address: 55
Measuring Instrument	Adjusting remote commander

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				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2	Е	65		Note down the data.
3	Е	65	4C	Press PAUSE button.
4	6	2C	01	
5	6	90	00	
6	6	91	03	
7	6	92	00	
8	6	93	00	
9	6	01	79	Press PAUSE button.
10	6	30	08	
11	6	07		Check the data changes to "01".
12				Wait for 4 seconds.
13	6	01	8D	Press PAUSE button.
14	6	02		Check the data changes to "01".
15	6	55		Check the data. 00 to 14 : Normal 15 to FF : Defective (Note 4)
16	6	01	00	Press PAUSE button.
17	Е	65	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. 00: Normal 01 to FF: Defective

Note 4: If the data is "00" at the check in this adjustment method order #15, skip the orders from #16 to #20, and go forward to "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	Е	65		Set data noted down at step 2, and press PAUSE button.
6				Release the data setting performed at step 1. (Refer to page 5-13)

17. CCD Linearity Check RadarW
Check that CCD output keeps being straight even ISO sensitivity is changed.

Mode	CAMERA
Subject	Clear chart (Standard picture frame with the zoom lens at TELE end)
Measurement Point	Displayed data of Page: 1 (Note 1)
Measuring Instrument	Adjusting remote commander
Specified Value	R ratio: 3E00 to 4200 B ratio: 3E00 to 4200

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

1:<u>XX;XX</u> — Displayed data

Adjusting method:

Order	Page	Address	Data	Procedure
1				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2				Perform "Picture Frame setting". (Refer to page 5-14)
3	6	2C	01	
4	6	90	00	
5	6	91	04	
6	6	92	00	
7	6	93	00	
8	6	01	79	Press PAUSE button.
9	6	07		Check the data changes to "01".
10	6	01	00	
11	7	66		Note down the data.
12	7	67		Note down the data.
13	7	68		Note down the data.
14	7	66	BF	Press PAUSE button.
15	7	67	FF	
16	7	68	30	
17	6	14	8B	
18	6	01	0F	Press PAUSE button.
19	6	02		Check the data changes to "01".
20	0	03	04	
21	1			Check that the displayed data (Note 1) satisfied the R ratio specified value.
22	0	03	05	
23	1			Check that the displayed data (Note 1) satisfied the B ratio specified value.
24	6	01	00	Press PAUSE button.
25	7	10		Note down the data.
26	7	10	FF	
27	6	14	90	
28	6	13	A0	

Order	Page	Address	Data	Procedure
29	6	01	0F	Press PAUSE button.
30	6	02		Check the data changes to "01".
31	0	03	04	
32	1			Check that the displayed data (Note 1) satisfied the R ratio specified value.
33	0	03	05	
34	1			Check that the displayed data (Note 1) satisfied the B ratio specified value.

Order	Page	Address	Data	Procedure
1	7 7	66	Data	"Set data noted down at step 11, and press PAUSE button."
2	7	67		"Set data noted down at step 12, and press PAUSE button."
3	7	68		"Set data noted down at step 13, and press PAUSE button."
4	6	01	00	Press PAUSE button.
5	6	13	00	
6	6	14	00	
7	7	10		"Set data noted down at step 25, and press PAUSE button."
8	0	03	00	
9				Release the data setting performed at step 2. (Refer to page 5-13)

18. Strobe White Balance Adjustment RadarW

Adjust the white balance when the strobe light flashed.

Mode	CAMERA
Subject	Flash adjustment box (Note 3) (50 cm from the front of lens)
Measurement Point	Displayed data of page: 1 (Note 4) and page: F, address: E8, EA, EC, EE
Measuring Instrument	Adjusting remote commander
Adjustment Page	F
Adjustment Address	B6, B7, DB to EF
Specified Value	Y level data: 07 to 0F 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.
- **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.



Note 5: "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				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2				Perform "Picture Frame setting". (Refer to page 5-14)
3	4	1E		Note down the data.
4	4	1E	00	
5	6	2C	01	
6	6	90	00	
7	6	91	00	
8	6	92	FF	
9	6	93	FF	
10	6	6C	01	
11	6	01	79	Press PAUSE button.
12	6	07		Check the data changes to "01".
13	6	01	67	Press PAUSE button.
14				Check the flashing.
15	6	02		Check the data changes to "01".
16	F	E8		Check that the displayed data satisfies the Y level specified value.
17	6	01	00	Press PAUSE button.

			5 /	
Order	Page	Address	Data	Procedure
18	6	01	67	Press PAUSE button.
19				Check the flashing.
20	6	02		Check the data changes to "01".
21	6	01	00	Press PAUSE button.
22	6	90	40	
23	6	91	02	
24	6	01	79	Press PAUSE button.
25	6	07		Check the data changes to "01".
26	6	01	67	Press PAUSE button.
27				Check the flashing.
28	6	02		Check the data changes to "01".
29	6	01	00	Press PAUSE button.
30	6	90	80	
31	6	01	79	Press PAUSE button.
32	6	07		Check the data changes to "01".
33	6	01	67	Press PAUSE button.
34				Check the flashing.
35	6	02		Check the data changes to "01".
36	6	01	00	Press PAUSE button.
37	6	90	00	
38	6	91	00	
39	6	01	79	Press PAUSE button.
40	6	07		Check the data changes to "01".
41	6	01	В9	Press PAUSE button. (Note 6)
42				Check the flashing.
43	6	02		Check the data changes to "01".
44	6	01	00	Press PAUSE button.
45	6	01	E7	Press PAUSE button.
46				Check the flashing.
47	6	02		Check the data changes to "01".
48				Wait for 1 second.
49	F	EA EC EE		Check that the displayed data satisfies the Y level specified value.
50	0	03	02	
51	1			"Check that the R-Y, B-Y level data (Note 4) satisfies the specified value.
Note 6: The adjustment data will be automatically input to page:				

Note 6: The adjustment data will be automatically input to page: F, address: B6 to B7 and DB to EF.

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	90	00	
3	6	91	00	
4	6	92	00	
5	6	93	00	
6	6	2C	00	
7	6	6C	00	
8	0	03	00	
9	4	1E		"Set data noted down at step 3, and press PAUSE button."
10				Release the data setting performed at step 1. (Refer to page 5-13)

19. AF Illumination Check RadarW

Check the deviation of optical axis of AF illuminator.

Mode	CAMERA
Subject	Flash adjustment box (Note 3) (50 cm or 1 m from the front of lens)
Measurement Point	Check operation on monitor TV
Measuring Instrument	

- Note 1: Perform checking by making the shooting surface of the Flash adjustment box perpendicular to the optical axis of the camera.
- **Note 2:** Perform this checking in the Flash adjustment box. Restrict external light to enter the Flash adjustment box as less as possible.
- **Note 3:** Refer to "4. Preparing the Flash adjustment box". (See page 5-7)

Preparation

- 1) Take a reduced or enlarged copy on the clear sheet so that a rectangular frame of the sheet for auxiliary light is suitable for the effective image size of the monitor.
- 2) Stick the copied sheet for auxiliary light on the monitor screen.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Perform "Data setting during camera system adjustment". (Refer to page 5-13)
2	9	A9	06/04	Press PAUSE button. (50 cm/1 m)
3	6	01	EF	Press PAUSE button.
4	6	02		Check the data changes to "01".
5	F	10		Check that the data is "00"

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2				Release the data setting performed at step 1. (Refer to page 5-13)

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.

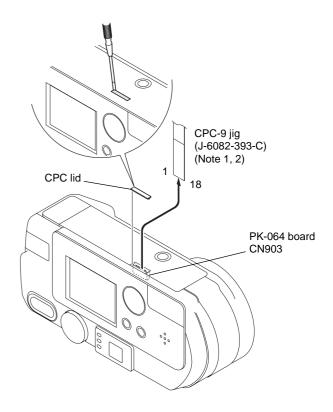
[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN 903 of the PK-064 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 903.

Pin No.	Signal Name	Pin No.	Signal Name
1	BL_L1	10	UNREG
2	CVCHK OUT	11	LANC IN
3	N. C.	12	LANC OUT
4	REG_GND	13	MAKER_RECOG
5	CPC_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.



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. 5-1-17

1. LCD Initial Data Input (1)

Mode	PLAY	
Signal	Arbitrary	
Adjustment Page	A	
Adjustment Address	62, 63, 80 to 8F, A3, A4	

Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: A, 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	
62	9A	Fixed value	
63	66	rixed value	
80	8E	Backlight current adj.(BL L)	
81	36	Backlight current adj.(BL H)	
82	5E	VCO adj. (NTSC)	
83	7C	VCO adj. (PAL)	
84	A9	V-COM DC adj.	
85	9B	D Range adj.	
86	0A	Black Limit adj	
87	3A	Psig Gray adj.	
88	90	27/1:4 D1 1:	
89	83	White Blance adj.	
8A	4C	Contrast adj.	
8B	48	Center voltage adj.	
8C	2F		
8D	11		
8E	16	Fixed value	
8F	1F		
A3	28		
A4	04		

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	В
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	57	
3B	FE	
3C	02	Fixed data
3D	5A	1 ixed data
3E	00	
3F	01	

Processing after Completing Adjustments:

1) Select page: 0, address: 01, and set data: 00.

3. Backlight Current Adjustment (PK-064 Board)

Adjust electric current value of backlight in two modes.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin (6) of CN903 (BL-L2) Pin (1) of CN903 (BL-L1)
Measuring Instrument	Digital voltmeter
Adjustment Page	A
Adjustment Address	80, 81
Specified Value	L = 0.408 ± 0.004 Vp-p H = 0.748 ± 0.004 Vp-p

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	A	80		Change the data and set the voltage (L) to the specified value.
3	A	80		Press PAUSE button.
4	A	81		Change the data and set the voltage (H) to the specified value.
5	A	81		Press PAUSE button.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	1 0 01		00	

4. VCO Adjustment (PK-064 Board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	PLAY		
Signal	Arbitrary		
Measurement Point	Pin ⑦ of CN903 (HSY)		
Measuring Instrument	Frequency counter		
Adjustment Page	A		
Adjustment Address	82 (NTSC) 83 (PAL)		
Specified Value	T = 15734 ± 30 Hz (NTSC) T = 15625 ± 30 Hz (PAL)		

Menu setting:

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	4	F1	13	(NTSC)
3	4	1D	82	(PAL)
4	A	82		Change the data and set the frequency (f) to the NTSC specified value.
5	A	82		Press PAUSE button.
6	A	83		Change the data and set the frequency (f) to the PAL specified value.
7	A	83		Press PAUSE button.

Order	Page	Address	Data	Procedure
1	4	F1	00	(NTSC)
2	4	1D	80	(PAL)
3	0	01	00	

5. PSIG Gray Adjustment (PK-064 Board)

Set the common electrode drive signal level of LCD to the specified value.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin ® of CN903
	(PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	A
Adjustment Address	87
Specified Value	$A = 5.0 \pm 0.1 \text{ Vp-p}$

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	A	02	03	Press PAUSE button
3	4	F1	02	
4	A	87		Change the data and set the PSIG signal level (A) to the specified value. (Note)
5	A	87		Press PAUSE button.

Note: Adjust it between data 00 and 7F.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	A	02	00	Press PAUSE button
2	4	F1	00	
3	0	01	00	

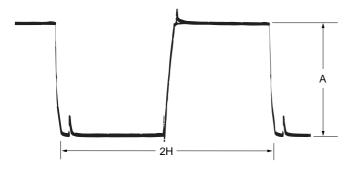


Fig. 5-1-18

6. D Range Adjustment (PK-064 Board)

Set the D Range 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 CN903 (VG) External trigger: Pin (8) of CN903 (PANEL_COM)
Measuring Instrument	Oscilloscope
Adjustment Page	A
Adjustment Address	85
Specified Value	$A = 7.96 \pm 0.05 \text{ Vp-p}$

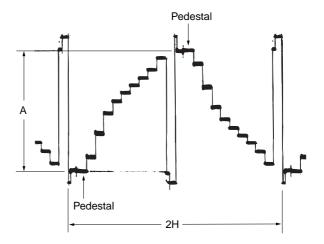
Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	A	02	03	Press PAUSE button
3	4	F1	03	
4	A	85		Change the data and set the voltage (A) to the specified value. (Note)
5	A	85		Press PAUSE button.

Note: Adjust it between data 00 and FF.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	A	02	00	Press PAUSE button
2	4	F1	00	
3	0	01	00	



A: Pedestal level difference between 1H period and previous 1H period.

Fig. 5-1-19

7. Black Limit Adjustment (PK-064 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 ® of CN903 (PANEL COM)	
Measuring Instrument	Oscilloscope	
Adjustment Page	A	
Adjustment Address	86	
Specified Value	$A = 8.30 \pm 0.07 \text{ Vp-p}$	

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	A	02	03	Press PAUSE button
3	4	F1	08	
4	A	86		Change the data and set the voltage (A) to the specified value. (Note 1)
5	A	86		Press PAUSE button.

Note 1: Adjust it between data 00 and 0F.

Note 2: Check that the adjusted value of D range is within specified value after this adjustment is performed.

If not, perform the adjustment again.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	A	02	00	Press PAUSE button
2	4	F1	00	
3	0	01	00	

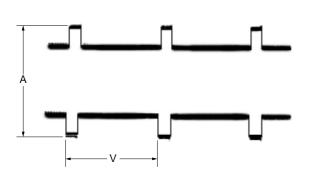


Fig. 5-1-20

8. Contrast Adjustment (PK-064 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 (a) of CN903 (VG) External trigger: Pin (b) of CN903 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	A
Adjustment Address	8A
Specified Value	$A = 2.50 \pm 0.05 \text{ Vp-p}$

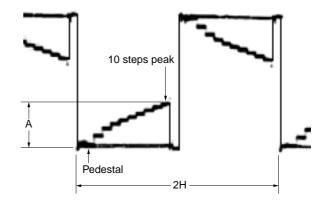
Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	A	02	03	Press PAUSE button
3	4	F1	03	
4	A	8A		Change the data and set the voltage (A) to the specified value. (Note)
5	A	8A		Press PAUSE button.

Note: Adjust it between data 00 and 7F.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	A	02	00	Press PAUSE button
2	4	F1	00	
3	0	01	00	



A: Between the pedestal and 10 steps peak

Fig. 5-1-21

9. Center Voltage Adjustment (PK-064 Board)

Set the center level of VIDEO signal for driving the LCD to the specified value.

Mode	PLAY
Signal	Arbitrary
Measurement Point	Pin (9) of CN903 (VG)
Measuring Instrument	Digital voltmeter
Adjustment Page	A
Adjustment Address	8B
Specified Value	$A = 7.00 \pm 0.05 \text{ Vp-p}$

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	A	02	03	Press PAUSE button
3	4	F1	03	
4	A	8B		Change the data and set the DC voltage (A) to the specified value. (Note)
5	A	8B		Press PAUSE button.

Note: Adjust it between data 00 and 7F.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	A	02	00	Press PAUSE button
2	4	F1	00	
3	0	01	00	

10. V-COM DC Adjustment (PK-064 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	Charle on the LCD server	
Measuring Instrument	Check on the LCD screen	
Adjustment Page	A	
Adjustment Address	84	
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	A	02	03	Press PAUSE button
3	4	F1	82	
4	A	84		Change the data so that brightness of the section A and section B is equal.
5	A	84		Read the data and this data is named Dref.
6				Convert Dref to decimal notation, and obtain Dref'. (Note 2)
7				Calculate D_{84} ' using following equations. (decimal calculation) D_{84} ' = Dref' -02
8				Convert D ₈₄ ' to a hexadecimal number, and obtain D ₈₄ . (Note 2)
9	A	84	D ₈₄	Press PAUSE button.

Note 2: Refer to table 5-2-2. "Hexadecimal-decimal conversion table".

Order	Page	Address	Data	Procedure
1	A	02	00	Press PAUSE buttton
2	4	F1	00	
3	0	01	00	

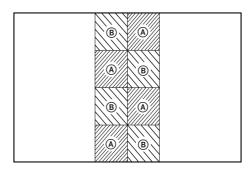


Fig. 5-1-22

11. White Balance Adjustment (PK-064 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	A	
Adjustment Address	88, 89	
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	A	02	03	Press PAUSE button
3	4	F1	02	
4	A	88	90	Press PAUSE button. (Intital value)
5	A	89	83	Press PAUSE button. (Intital value)
6				Check that the LCD screen is not colored. If not colored, proceed to "Processing after Completing Adjustments".
7	A	88 89		Change the data so that the LCD screen is not colored. (Note 2)

Note 2: To write in the non-volatile memory (EEPROM), press the PAUSE button each time to set the data.

Order	Page	Address	Data	Procedure
1	A	02	00	Press PAUSE button
2	4	F1	00	
3	0	01	00	

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 CN903 on the PK-064 Board via CPC-9 jig (J-6082-393-C).
- 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.

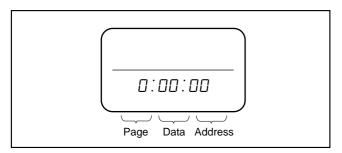


Fig. 5-2-1

- 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	_	1	2	2	4	-	_	7	0	_		ъ		Ъ	Б	F
notation	U	1		3	4	3	0	/	0	9	А	D	C	ט	E	Г
LCD Display	0	1	2	3	Ч	5	5	7	8	9	Я	Ь	С	Ь	Ε	F
Decimal notation	_	1	2	2	4	_	_	7	0	0	10	11	12	12	1.4	1.5
conversion value	0	1		3	4	٥	6	/	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.

exade	cimal nontation-Decimal notat	ion													2		
	The lower digits of the	0	1	2	3	4	5	6	7	8	9	Α	В	С	D	Е	F
	hexadecimal notation																
	The upper digits of the											(H)	(b)	(८)	(占)	(E)	(F)
	hexadecimal notation																
	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 (F)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
①→	В (Ь)	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 (<i>E</i>)	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 the ① 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 21
--------	------------

Data	Function
00	Normal
02	Forced MOVIE mode power ON
03	Forced PLAY mode power ON
04	Forced CAMERA mode power ON

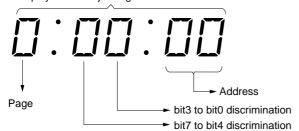
- Before setting the data, select page: 0, address: 01, and set data:
 01
- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjusting remote commander. In this case, take note that the test mode will not be exited even when the main power is turned 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



	Display on the		Bit va	alues	
	Adjusting	bit3	bit2	bit1	bit0
	remote	or	or	or	or
	commander	bit7	bit6	bit5	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
A	8	1	0	0	0
	9	1	0	0	1
	A (Ħ)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
₿	E(<i>E</i>)	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. 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			
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.

4. Switch Check (2)

Using method:

- 1) Select page: 2, addresses: 90, 91, 92 and 94.
- By discriminating the dispaly data, the pressed key can be discriminated.

Address				Data			
Address	00 to 0C	0D to 27	28 to 48	49 to 73	74 to A5	A6 to DC	DD to FF
90 (MODE DIAL) (IC401 ⑤)	MODE DIAL (SET UP) (PK-064 board) (S258)	MODE DIAL (MOVIE) (PK-064 board) (S258)	MODE DIAL (PB) (PK-064 board) (S258)	MODE DIAL (CAMERA) (PK-064 board) (S258)	MODE DIAL (NIGHT) (PK-064 board) (S258)		
91 (KEY AD0) (IC401 ⑤)	CONTROL DOWN (PK-064 board) (S253)	CONTROL UP (PK-064 board) (S253)	MENU (PK-064 board) (S255)				
92 (KEY AD1) (IC401 ®)	CONTROL RIGHT (PK-064 board) (S253)	CONTROL LEFT (PK-064 board) (S253)	CONTROL SET (PK-064 board) (S253)	DISPLAY/LCD ON/OFF (PK-064 board) (S256)			
94 (KEY AD3) (IC401 (38))	ZOOM (W) (PK-064 board) (S252)	ZOOM (T) (PK-064 board) (S254)					

5. LED Check

Using method:

- 1) Select page: 2, address: 04, set data: 02, 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.

6. 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
C.13.LL	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.	_
	Insert a battery pack correctly.	Battery pack is not inserted correctly.	
E:92:□□	Turn the power off and on again.	Battery pack was installed or removed when using the AC adaptor.	

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.
- DSC-P71M is the same as DSC-P71 (US model) except packing materials. Therefore, information about DSC-P71 (US model) in the text is applied.

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.

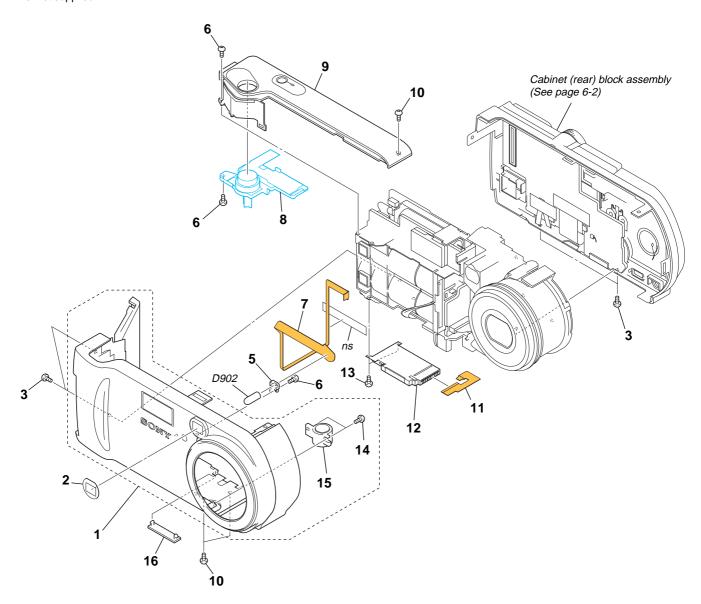
Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiquens pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. CABINET (FRONT) SECTION

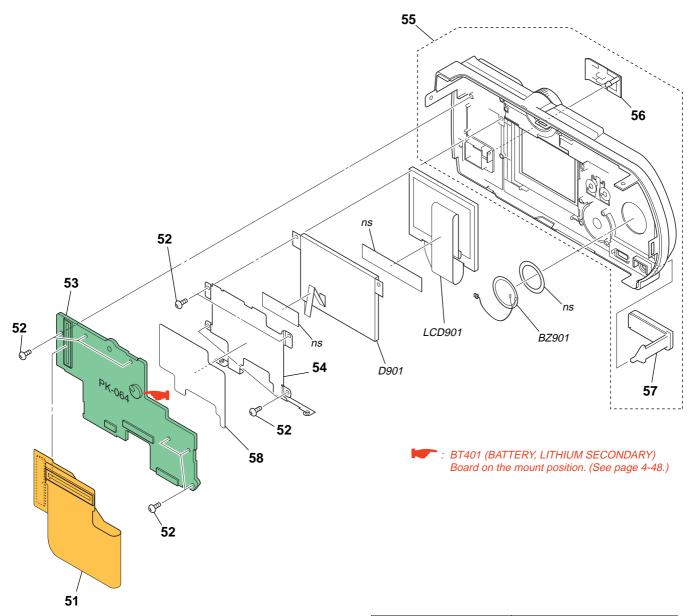
ns: not supplied



Ref. No.	Part No.	<u>Description</u>	Ref. No.	Part No.	<u>Description</u>
1	X-3952-319-1	CABINET (FRONT) ASSY	10	3-968-729-91	SCREW (M2), LOCK ACE, P2
2	3-074-049-01	WINDOW, OVF	11	1-684-471-11	FP-529 FLEXIBLE BOARD
3	3-968-729-71	SCREW (M2), LOCK ACE, P2	12	1-815-853-13	CONNECTOR, MEMORY STICK
5	3-074-032-01	HOLDER, AF	13	3-056-030-31	ACE (M1.7), 0 PLATE 2 MAIN LOCK
6	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION	14	3-713-791-11	SCREW (M1.7X5), TAPPING, P2
7	1-684-481-11	FP-528 FLEXIBLE BOARD	15	3-060-274-01	SCREW, TRIPOD
8	1-477-243-11	SWITCH BLOCK, CONTROL	16	3-074-035-01	LID, CPC
9	X-3952-320-1	CABINET (UPPER) ASSY	D902	6-500-102-01	DIODE TLOH20TP (SONY 2)

6-1-2. CABINET (REAR) ASSEMBLY

ns: not supplied

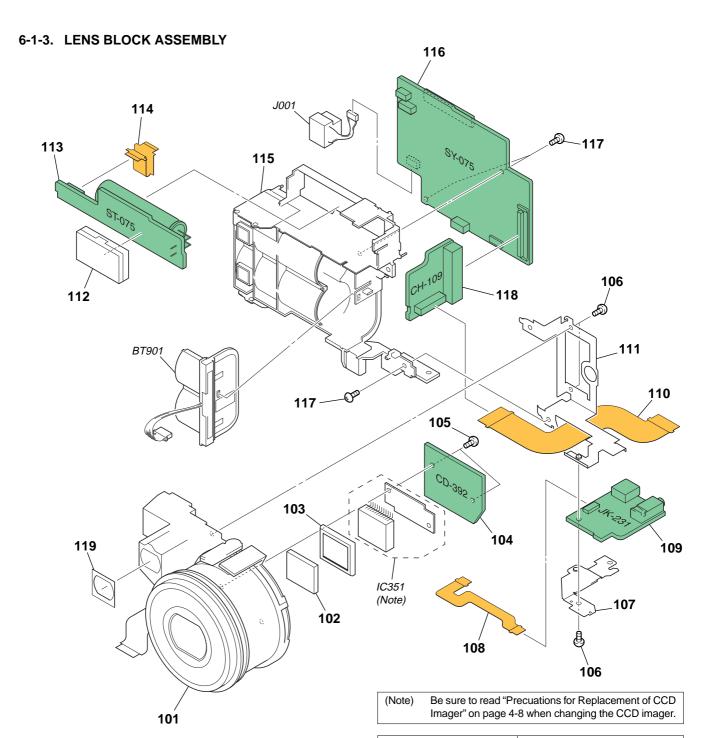


The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	<u>Description</u>
51	1-684-470-21	FP-067 FLEXIBLE BOARD
52	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION
53	A-7078-122-A	PK-064 BOARD, COMPLETE
54	3-074-036-01	RETAINER, LCD
55	X-3952-321-1	CABINET (REAR) ASSY
56	3-074-007-01	COVER, DC

1	Ref. No.	Part No.	<u>Description</u>
	57	X-3952-462-1	HINGE ASSY
	58	3-075-492-01	SHEET, LCD
	BZ901	1-544-829-21	BUZZER, PIEZOELECTRIC
	△ D901	1-477-165-11	BLOCK, LIGHT GUIDE PLATE (1.5)
	LCD901	8-753-050-67	ACX309AK-1



The components identified by mark \triangle or dotted line with mark \triangle 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.

Ret. No.	<u>Part No.</u>	Description	Ret. No.	Part No.	<u>Description</u>
101	1-758-766-11	LENS, VIDEO (98WB)	 112	1-476-678-31	FLASH UNIT
102	1-758-516-11	FILTER BLOCK, OPTICAL	113	A-7078-150-A	ST-075 BOARD, COMPLETE
103	3-054-555-01	RUBBER (K), SEAL	114	1-684-472-11	FP-530 FLEXIBLE BOARD
104	A-7078-123-A	CD-392 BOARD, COMPLETE	115	X-3952-304-1	BATTERY HOLDER ASSY
105	3-713-791-41	SCREW (M 1.7X5), TAPPING, P2	116	A-7078-286-A	SY-075 BOARD, COMPLETE (SERVICE)
106	3-056-030-31	ACE (M1.7), 0 PLATE 2 MAIN LOCK	117	3-914-366-01	SCREW (DIA. 1.7X4) PRECISION
107	3-074-311-01	PLATE, FIXED, JK	118	A-7078-126-A	CH-109 BOARD, COMPLETE
108	1-684-482-11	FP-072 FLEXIBLE BOARD	119	3-065-690-01	PLATE, LIGHT INTERCEPTION
109	A-7078-149-A	JK-231 BOARD, COMPLETE	BT901	1-694-812-21	TERMINAL BOARD, BATTERY
110	1-684-483-11	FP-074 FLEXIBLE BOARD	IC351	A-7031-361-A	CCD BLOCK ASSY (Note)
111	3-074-312-01	FRAME, LENS	J001	1-815-571-31	JACK, DC

CD-392

CH-109

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 KR : Korean model CND : Canadian model JE : Tourist model HK : Hong Kong model J : Japanese 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:

- CAPACITORS uF: µF
- COILS uH: µH

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque \triangle 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.

 DSC-P71M is the same as DSC-P71 (US model) except packing materials. Therefore, information about DSC-P71 (US model) in the text is applied.

Ref. No.	Part No.	<u>Description</u>				Ref. No.	Part No.	<u>Description</u>			
	A-7078-123-A		OARD, COMPLETE ***********			R355 R356	1-220-802-11 1-218-958-11		3.3 2.7K	5% 5%	1/16W 1/16W
		(IC351 is not in	cluded in th	is compl	ete board)						
		< CAPACITOR >				R357 R358	1-218-937-11 1-218-989-11	RES-CHIP	47 1M	5% 5%	1/16W 1/16W
C351	1-125-827-91	CERAMIC CHIP	1uF	10%	25V	R360	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
C352 C353		TANTAL. CHIP TANTAL. CHIP	3.3uF 22uF	20% 20%	35V 16V			< THERMISTOR :	>		
C354	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	TH351	1-810-816-11	THERMISTOR, N	TC (1608)		
C355		CERAMIC CHIP	0.1uF	10%	16V						
C356 C357		CERAMIC CHIP CERAMIC CHIP	0.1uF 0.0022uF	10% 10%	50V 50V		A-7078-126-A	CH-109 BOARD,	COMPLETE cluding IC10		11 Board))
C358 C359		CERAMIC CHIP CERAMIC CHIP	0.1uF 0.1uF	10%	16V 16V			*******		,	,,
C360		CERAMIC CHIP	10PF	0.5PF	50V			< CAPACITOR >			
		< CONNECTOR >				C103		TANTAL. CHIP	47uF	20%	6.3V
CN351	1-766-350-21	CONNECTOR, FFO	C/FPC 20P			C105 C106		TANTAL. CHIP CERAMIC CHIP	22uF 0.1uF	20% 10%	16V 10V
						C107	1-164-506-11	CERAMIC CHIP	4.7uF		16V
		< DIODE >				C108	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
D351	8-719-073-01	DIODE MA111-	(K8).S0			C109	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
		< FERRITE BEAD	>					< CONNECTOR >			
FB351	1-414-228-11	FERRITE	0uH			CN101		CONNECTOR, BO		ARD 70F)
		< IC >				CN102	1-779-334-11	CONNECTOR, FF	C/FPC 20P		
IC351	A-7031-361-A	CCD BLOCK ASS	Y (Note)					< FERRITE BEAD	>		
.0001			. ()			FB101	1-469-082-21		600uH		
		< COIL >				FB102 FB103	1-414-228-11 1-469-082-21		0uH 600uH		
L351	1-469-561-21	INDUCTOR	100uH			FB105	1-414-228-11		0uH		
		< TRANSISTOR >	•			FB106	1-414-228-11		0uH		
Q351	8-729-052-64	TDANGISTOD	DTC144EH	IT0I				< COIL >			
Q352	8-729-050-22		2SC4250		Y1)	L101	1-469-559-21		47uH		
		< RESISTOR >				L102 L103	1-469-555-21 1-469-555-21		10uH 10uH		
R352	1-218-977-11	RES-CHIP	100K	5%	1/16W			< RESISTOR >			
R353	1-218-939-11	RES-CHIP	68	5%	1/16W	D400	4 040 040 44		450	5 0/	4 /4 034/
R354	1-220-802-11	RES-UHIP	3.3	5%	1/16W	R102	1-218-943-11	KES-CHIP	150	5%	1/16W

(Note) Be sure to read "Note on the CCD Imager Replacement" on page 4-8 when changing the CCD imager.

CH-109	JK-231	PK-064

Ref. No.	Part No.	Description				Ref. No.	Part No.	<u>Description</u>			
R103	1-218-943-11	RES-CHIP	150	5%	1/16W	C402	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
R104	1-218-943-11		150	5%	1/16W	C403	1-125-777-11		0.1uF	10%	10V
R105	1-218-943-11		150	5%	1/16W	C404		CERAMIC CHIP	0.1uF	10%	10V
R106	1-218-943-11	RES-CHIP	150	5%	1/16W	C407	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
D407	1 010 040 11	DEC OUID	150	F0/	4/4014	0.400	1 117 000 11	OED ANALO OLUD	0.475	100/	C 01/
R107	1-218-943-11 1-218-943-11		150 150	5% 5%	1/16W 1/16W	C408 C409	1-117-863-11	CERAMIC CHIP	0.47uF 0.01uF	10% 10%	6.3V 16V
R108 R109	1-218-943-11		150	5% 5%	1/16W	C409		TANTAL. CHIP	0.01ur 22uF	20%	6.3V
R110	1-218-943-11		150	5% 5%	1/16W	C410		CERAMIC CHIP	0.1uF	10%	10V
R111	1-218-943-11		150	5%	1/16W	C420	1-117-746-81		8PF	10 /0	16V
				• , ,	.,	0.20		02	• • •		
R112	1-218-943-11	RES-CHIP	150	5%	1/16W	C421	1-117-747-11	CERAMIC CHIP	9PF		16V
R113	1-218-943-11	RES-CHIP	150	5%	1/16W	C422	1-164-931-11	CERAMIC CHIP	100PF	10%	50V
R114	1-218-943-11		150	5%	1/16W	C423	1-164-939-11		0.0022uF	10%	50V
R115	1-218-943-11		150	5%	1/16W	C802		TANTAL. CHIP	68uF	20%	4V
R116	1-218-977-11	RES-CHIP	100K	5%	1/16W	C803	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
R118	1-208-635-11	RES-CHIP	10	5%	1/16W	C806	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
R119	1-218-990-11		0	0 70	1/1011	C807	1-125-777-11		0.1uF	10%	10V
R124	1-218-990-11		0			C808	1-164-943-11		0.01uF	10%	16V
11121	1 210 000 11	OHOH	ŭ .			C809		CERAMIC CHIP	0.01uF	10%	16V
						C810		CERAMIC CHIP	0.01uF	10%	16V
	A-7078-149-A	JK-231 BOARD, (COMPLETE								
		******	******			C812	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
						C814	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
		< CONNECTOR >				C815	1-125-838-11		2.2uF	10%	6.3V
						C816		CERAMIC CHIP	0.1uF	10%	10V
CN201		CONNECTOR, FFO				C817	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
CN202	1-794-962-11	CONNECTOR, SQ	UARE TYP	E (USB 51	P) (USB)	0040	4 407 007 44	TANTAL OUID		000/	001/
		DIODE				C818		TANTAL. CHIP	3.3uF	20%	20V
		< DIODE >				C819		CERAMIC CHIP	0.001uF	10%	50V
D201	0 710 075 15	DIODE MAZTO8	200000			C820 C821		CERAMIC CHIP CERAMIC CHIP	82PF 2.2uF	5% 10%	50V 6.3V
D201		DIODE MA111-				C822		CERAMIC CHIP	2.2uF 2.2uF	10%	6.3V
D200		DIODE MA8082				0022	1-125-050-11	CLIMINIC CITIF	Z.Zui	10 /0	0.5 V
D208		DIODE MA8082	` '			C823	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
DEGG	0 7 10 070 00	DIODE WINGOOD	(110).00			C825		CERAMIC CHIP	0.01uF	10%	16V
		< FERRITE BEAD	>			C827		CERAMIC CHIP	4.7uF	10%	10V
						C828	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
FB202	1-500-284-21	FERRITE	0uH			C829	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
		1401/				0000	1 100 000 11	OED ANALO OLUD	4	100/	101/
		< JACK >				C830 C831		CERAMIC CHIP CERAMIC CHIP	1uF 0.1uF	10% 10%	10V 10V
J201	1-569-950-31	JACK (SMALL TY	PE) (VIDE	ידוו ר		C832		CERAMIC CHIP	100PF	10%	50V
0201	1 303 330 01	ONON (OWNEE 11	r L) (VIDL	3 001)		C901		CERAMIC CHIP	0.47uF	10%	16V
		< LINE FILTER >									
1.5004	4 440 400 04	INDUCTOR	0.11					< CONNECTOR >			
LF201	1-419-100-21 1-419-100-21		0uH			ON004	1 700 054 01	CONNECTOR FE	0/500 040		
LF202	1-419-100-21	INDUCTOR	0uH			CN801 CN802	1-766-336-21	CONNECTOR, FF			
		< RESISTOR >				CN901		CONNECTOR, BO		VBD 801	ס
		< TILOIOTOTI >				CN902		PIN, CONNECTOR		AIID OOI	
R202	1-218-953-11	RES-CHIP	1K	5%	1/16W	CN903		CONNECTOR, FF			
R204	1-216-864-11		0	5%	1/16W			,			
R205	1-500-284-21		0uH					< DIODE >			
R206	1-216-864-11	METAL CHIP	0	5%	1/16W						
						D251		DIODE CL-190L			
		< VARISTOR >				D252		DIODE CL-190L		LLY/ACC	ESS LED)
VDD004	4 000 074 04	VADIOTOD OUID				D253	8-719-053-07	DIODE SML-310		1 00K/FI	40111ED)
VDR201	1-803-974-21	VARISTOR, CHIP				D054	0 710 060 00	DIODE CMI 21:			LASH LED)
						D254 D401		DIODE SML-31 ⁻¹ DIODE 1SS357-		KB/UHAI	ide Led)
	Λ_7078_122_Λ	PK-064 BOARD,	COMPLETE			D401	0-719-027-70	DIODE 199991-	TENS		
	A 1010-122-A	*********				D402	8-719-075-15	DIODE MAZTO8	2H08S0		
						D802		DIODE 1SV290			
		< BATTERY >				D804		DIODE MAZS03			
						D805		DIODE MA111-			
BT401	1-756-191-11	BATTERY, LITHIU	JM (SECON	DARY)		D806		DIODE MA111-			
		0.45.0:====						10			
		< CAPACITOR >						< IC >			
C401	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V	IC401	6-801-537-01	IC MB89097PF\	/-G-111-RN	D-FR-F1	
1040	1 10 1 -5 1 1-11	OLITAWIO OTTI	0.00 1 1 uF	10/0	101	10701	0 001-00 <i>1-</i> 01	19 INDOOUSLEL	י עוניייטוע	רוו <u>.</u> רו	

DSC-P71/P71M

PK-064

Ref. No.	Part No.	Description				Ref. No.	Part No.	Description			
IC402	6-702-096-01	IC BD4201FV-E2)			R424	1-218-949-11	RES-CHIP	470	5%	1/16W
IC801		IC RB5P004AM1				R425	1-218-949-11	RES-CHIP	470	5%	1/16W
10802		IC CXD3512R-T4				D.400	1 010 040 11	DEC OUID	470	F0/	4 /4 () ()
IC803	8-759-387-31	IC TC75S55F (TI	:85K)			R426 R429	1-218-949-11 1-218-985-11		470 470K	5% 5%	1/16W 1/16W
		< COIL >				R430	1-219-570-11		10M	5%	1/10W
						R431	1-218-979-11		150K	5%	1/16W
L401	1-469-559-21		47uH			R433	1-218-973-11	RES-CHIP	47K	5%	1/16W
L801 L802	1-469-557-21 1-469-757-21		22uH 10uH			R434	1-218-943-11	RES-CHIP	150	5%	1/16W
L803	1-469-757-21		10uH			R435	1-218-977-11		100K	5%	1/16W
L804	1-412-949-21	INDUCTOR	6.8uH			R436	1-216-803-11		33	5%	1/16W
		TDANGICTOD				R437	1-218-989-11		1M	5%	1/16W
		< TRANSISTOR >				R440	1-218-989-11	METAL CHIP	1M	0.5%	1/16W
Q254	8-729-053-58	TRANSISTOR	RN1904FE	(TPLR3))	R441	1-218-989-11	METAL CHIP	1M	0.5%	1/16W
Q402	8-729-052-64		DTC144EH			R442	1-218-989-11		1M	0.5%	1/16W
Q404 Q405	8-729-052-64 8-729-052-59		DTC144EH DTA144EH			R443 R444	1-218-989-11 1-218-953-11		1M	0.5%	1/16W 1/16W
Q802	8-729-427-74		XP4601	112L		R444 R445	1-218-953-11		1K 1K	5% 5%	1/16W
QUUL	0 7 2 0 1 2 7 7 1	THANGIOTOR	7(1 1001			11110	1 210 000 11	neo om	110	0 70	17 1011
Q804	8-729-427-74		XP4601			R446	1-218-985-11		470K	5%	1/16W
Q805	6-550-016-01		UMF5NTR			R451	1-218-985-11		470K	5%	1/16W
Q806 Q807	8-729-037-52 8-729-052-64		2SD2216J DTC144EH			R452 R455	1-218-985-11 1-218-985-11		470K 470K	5% 5%	1/16W 1/16W
Q808	8-729-420-24		2SB1218A			R460	1-218-953-11		1K	5%	1/16W
Q809	8-729-420-24		2SB1218A		00	R461	1-218-953-11		1K	5%	1/16W
Q810 Q901	8-729-042-26 8-729-037-52		2SB1462J 2SD2216J			R462 R463	1-218-953-11 1-218-953-11		1K 1K	5% 5%	1/16W 1/16W
Q901	0-729-037-32	INANSISTUN	23022100	run (IX)		R465	1-218-965-11		10K	5 % 5%	1/16W
		< RESISTOR >				R466	1-218-965-11		10K	5%	1/16W
								550 05			
R251 R252	1-218-954-11 1-218-954-11		1.2K 1.2K	5%	1/16W 1/16W	R469	1-218-965-11 1-218-989-11		10K 1M	5%	1/16W 1/16W
R252 R253	1-218-954-11		1.2K 1.2K	5% 5%	1/16W 1/16W	R470 R472	1-218-977-11		100K	5% 5%	1/16W
R254	1-218-947-11		330	5%	1/16W	R801	1-218-990-11		0	0 70	1, 1011
R255	1-218-951-11	RES-CHIP	680	5%	1/16W	R804	1-208-933-11	METAL CHIP	82K	0.5%	1/16W
R256	1-218-945-11	BES-CHID	220	5%	1/16W	R805	1-218-985-11	RES-CHIP	470K	5%	1/16W
R257	1-218-947-11		330	5%	1/16W	R808	1-218-967-11		15K	5%	1/16W
R258	1-218-955-11		1.5K	5%	1/16W	R809	1-218-958-11		2.7K	5%	1/16W
R259	1-218-955-11		1.5K	5%	1/16W	R810	1-218-973-11		47K	5%	1/16W
R260	1-218-959-11	RES-CHIP	3.3K	5%	1/16W	R811	1-218-975-11	RES-CHIP	68K	5%	1/16W
R262	1-218-965-11	RES-CHIP	10K	5%	1/16W	R812	1-218-969-11	RES-CHIP	22K	5%	1/16W
R263	1-218-954-11		1.2K	5%	1/16W	R813	1-218-975-11		68K	5%	1/16W
R264	1-218-955-11		1.5K	5%	1/16W	R814	1-218-989-11		1M	5%	1/16W
R265 R266	1-218-959-11 1-218-963-11		3.3K 6.8K	5% 5%	1/16W 1/16W	R815 R816	1-218-977-11 1-218-977-11		100K 100K	5% 5%	1/16W 1/16W
11200	1-210-303-11	NEO-OHIF	U.UK	J /0	1/1000	11010	1-210-311-11	NES-OTH	TOOK	J /0	1/ 10 VV
R401	1-218-985-11	RES-CHIP	470K	5%	1/16W	R819	1-218-941-81		100	5%	1/16W
R402	1-218-985-11		470K	5%	1/16W	R820	1-218-977-11		100K	5%	1/16W
R403 R404	1-218-965-11 1-218-985-11		10K 470K	5% 5%	1/16W 1/16W	R823 R824	1-218-941-81 1-218-977-11		100 100K	5% 5%	1/16W 1/16W
R404 R405	1-218-977-11		100K	5%	1/16W 1/16W	R825	1-218-941-81		100k	5 % 5%	1/16W
		0 0		• , ,	.,			0 0		0 / 0	.,
R406	1-218-985-11		470K	5%	1/16W	R826	1-218-977-11		100K	5%	1/16W
R407 R409	1-218-953-11 1-218-985-11		1K 470K	5% 5%	1/16W 1/16W	R827 R828	1-218-941-81 1-218-973-11		100 47K	5% 5%	1/16W 1/16W
R411	1-218-989-11		470K 1M	5%	1/16W 1/16W	R829	1-218-977-11		100K	5 % 5%	1/16W
R413	1-218-985-11		470K	5%	1/16W	R830	1-218-953-11		1K	5%	1/16W
D 44 4	1 010 070 11	DEC CUID	471/	E0/	1/1014	D004	1 010 070 11	DEC CUID	471/	F0'	4/4/0144
R414 R415	1-218-973-11 1-218-953-11		47K 1K	5% 5%	1/16W 1/16W	R831 R832	1-218-973-11 1-218-965-11		47K 10K	5% 5%	1/16W 1/16W
R416	1-218-965-11		10K	5% 5%	1/16W 1/16W	R833	1-218-973-11		47K	5% 5%	1/16W
R418	1-218-953-11	RES-CHIP	1K	5%	1/16W	R834	1-218-969-11		22K	5%	1/16W
R419	1-218-953-11	RES-CHIP	1K	5%	1/16W	R836	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R420	1-218-977-11	RES-CHID	100K	5%	1/16W	R837	1-218-979-11	RES-CHID	150K	5%	1/16W
R420 R422	1-218-953-11		160K	5% 5%	1/16W 1/16W	R838	1-218-979-11		3.3K	0.5%	1/16W
R423	1-218-953-11		1K	5%	1/16W	R839	1-208-695-11		3.3K	0.5%	1/16W

PK-064

ST-075

Ref. No.	Part No.	<u>Description</u>			
R840 R841	1-208-707-11 1-218-941-81	METAL CHIP RES-CHIP	10K 100	0.5% 5%	1/16W 1/16W
R842	1-218-939-11	METAL CHIP	68	0.5%	1/16W
R843 R844	1-218-941-81 1-218-939-11	RES-CHIP METAL CHIP	100 68	5% 0.5%	1/16W 1/16W
R846	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R847	1-218-976-11	RES-CHIP	82K	5%	1/16W
R848 R851	1-208-635-11 1-218-965-11	RES-CHIP RES-CHIP	10 10K	5% 5%	1/16W 1/16W
R852	1-218-965-11	RES-CHIP	10K	5%	1/16W
R854 R855	1-218-965-11 1-218-965-11	RES-CHIP RES-CHIP	10K 10K	5% 5%	1/16W 1/16W
	1 010 000 11	CHODT	0		
R856 R857	1-218-990-11 1-218-983-11	SHORT RES-CHIP	0 330K	5%	1/16W
R909	1-218-978-11	RES-CHIP	120K	5%	1/16W
		< SWITCH >			
S252	1-771-138-82	SWITCH, KEY BO			
S253 S254	1-786-039-21 1-771-138-82	SWITCH, TACTIL SWITCH, KEY BO			
S255	1-771-138-82	SWITCH, KEY BO	ARD (MEN	J)	`
S256	1-771-138-82	SWITCH, KEY BO	,)
S258	1-786-342-11	ROTARY, ROTARY			ODE DIAL)
S401	1-786-227-21	SWITCH, TACTIL	E (RESET)		
		< VIBRATOR >			
X401 X402	1-795-244-11 1-767-994-42	VIBRATOR, CERA VIBRATOR, CRYS			
	1-767-994-42		STAL (32.76 COMPLETE	8kHz)	
	1-767-994-42	VIBRATOR, CRYS	STAL (32.76 COMPLETE	8kHz)	
X402 C503	1-767-994-42 A-7078-150-A 1-127-692-11	ST-075 BOARD, 0 ********** < CAPACITOR > CERAMIC CHIP	COMPLETE ***********************************	8kHz)	6.3V
C503 C504	1-767-994-42 A-7078-150-A 1-127-692-11 1-127-692-11	ST-075 BOARD, 0 ********** < CAPACITOR > CERAMIC CHIP CERAMIC CHIP	COMPLETE ********* 10uF 10uF	8kHz) - 10% 10%	6.3V
C503 C504 C507 C508	1-767-994-42 A-7078-150-A 1-127-692-11 1-127-692-11 1-125-777-11 1-125-837-91	ST-075 BOARD, 0 *********** < CAPACITOR > CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP	COMPLETE ******** 10uF 10uF 0.1uF 1uF	10% 10% 10% 10% 10%	6.3V 10V 6.3V
C503 C504 C507	1-767-994-42 A-7078-150-A 1-127-692-11 1-127-692-11 1-125-777-11	ST-075 BOARD, 0 ********** < CAPACITOR > CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP CERAMIC CHIP	COMPLETE ******** 10uF 10uF 0.1uF	8kHz) 10% 10% 10%	6.3V 10V
C503 C504 C507 C508 C509 △ C510	1-767-994-42 A-7078-150-A 1-127-692-11 1-127-692-11 1-125-777-11 1-125-837-91 1-119-923-81 1-165-943-11	ST-075 BOARD, 0 *********** < CAPACITOR > CERAMIC CHIP ELECT	COMPLETE ******** 10uF 10uF 0.1uF 1uF 0.047uF 135uF	10% 10% 10% 10% 10%	6.3V 10V 6.3V 10V 315V
C503 C504 C507 C508 C509	1-767-994-42 A-7078-150-A 1-127-692-11 1-127-692-11 1-125-777-11 1-125-837-91 1-119-923-81	ST-075 BOARD, 0 *********** < CAPACITOR > CERAMIC CHIP	COMPLETE ******** 10uF 10uF 0.1uF 1uF 0.047uF	10% 10% 10% 10% 10%	6.3V 10V 6.3V 10V
C503 C504 C507 C508 C509 △ C510 C511	1-767-994-42 A-7078-150-A 1-127-692-11 1-127-692-11 1-125-777-11 1-125-837-91 1-119-923-81 1-165-943-11 1-137-723-21	ST-075 BOARD, 0 *********** < CAPACITOR > CERAMIC CHIP	10uF 10uF 10uF 0.1uF 0.047uF 135uF 0.047uF	10% 10% 10% 10% 10%	6.3V 10V 6.3V 10V 315V 250V
C503 C504 C507 C508 C509 △ C510 C511 C512	1-767-994-42 A-7078-150-A 1-127-692-11 1-127-692-11 1-125-777-11 1-125-837-91 1-119-923-81 1-165-943-11 1-137-723-21 1-127-715-91	ST-075 BOARD, 0 ************ < CAPACITOR > CERAMIC CHIP	10uF 10uF 10uF 0.1uF 0.047uF 135uF 0.047uF 0.022uF	10% 10% 10% 10% 10% 10%	6.3V 10V 6.3V 10V 315V 250V 16V
C503 C504 C507 C508 C509 △ C510 C511 C512	1-767-994-42 A-7078-150-A 1-127-692-11 1-127-692-11 1-125-777-11 1-125-837-91 1-119-923-81 1-165-943-11 1-137-723-21 1-127-715-91	ST-075 BOARD, 0 *********** < CAPACITOR > CERAMIC CHIP	10uF 10uF 10uF 0.1uF 0.047uF 135uF 0.047uF 0.022uF 0.01uF	10% 10% 10% 10% 10% 10%	6.3V 10V 6.3V 10V 315V 250V 16V
C503 C504 C507 C508 C509 △ C510 C511 C512 C513	1-767-994-42 A-7078-150-A 1-127-692-11 1-127-692-11 1-125-777-11 1-125-837-91 1-119-923-81 1-165-943-11 1-137-723-21 1-127-715-91 1-164-943-11	ST-075 BOARD, 0 ************ < CAPACITOR > CERAMIC CHIP	10uF 10uF 10uF 0.1uF 0.047uF 135uF 0.047uF 0.022uF 0.01uF	10% 10% 10% 10% 10% 10%	6.3V 10V 6.3V 10V 315V 250V 16V
C503 C504 C507 C508 C509 ⚠ C510 C511 C512 C513	1-767-994-42 A-7078-150-A 1-127-692-11 1-127-692-11 1-125-777-11 1-125-837-91 1-119-923-81 1-165-943-11 1-137-723-21 1-127-715-91 1-164-943-11 1-779-330-21 8-719-073-01	ST-075 BOARD, 0 ************* < CAPACITOR > CERAMIC CHIP CONNECTOR > CONNECTOR, FFO < DIODE > DIODE MA111-	10uF 10uF 10uF 0.1uF 0.047uF 135uF 0.047uF 0.022uF 0.01uF	10% 10% 10% 10% 10% 10%	6.3V 10V 6.3V 10V 315V 250V 16V
C503 C504 C507 C508 C509 △ C510 C511 C512 C513	1-767-994-42 A-7078-150-A 1-127-692-11 1-127-692-11 1-125-777-11 1-125-837-91 1-119-923-81 1-165-943-11 1-137-723-21 1-127-715-91 1-164-943-11 1-779-330-21	ST-075 BOARD, 0 *********** < CAPACITOR > CERAMIC CHIP CONNECTOR > CONNECTOR, FFO < DIODE > DIODE MA111- DIODE HAU1606	10uF 10uF 10uF 0.1uF 0.047uF 135uF 0.047uF 0.022uF 0.01uF	10% 10% 10% 10% 10% 10%	6.3V 10V 6.3V 10V 315V 250V 16V
C503 C504 C507 C508 C509 ⚠ C510 C511 C512 C513	1-767-994-42 A-7078-150-A 1-127-692-11 1-125-777-11 1-125-837-91 1-119-923-81 1-165-943-11 1-137-723-21 1-127-715-91 1-164-943-11 1-779-330-21 8-719-073-01 6-500-237-01	ST-075 BOARD, 0 ************* < CAPACITOR > CERAMIC CHIP CONNECTOR > CONNECTOR, FFO < DIODE > DIODE MA111-	10uF 10uF 10uF 0.1uF 0.047uF 135uF 0.047uF 0.022uF 0.01uF	10% 10% 10% 10% 10% 10%	6.3V 10V 6.3V 10V 315V 250V 16V
C503 C504 C507 C508 C509 ⚠ C510 C511 C512 C513 CN502	1-767-994-42 A-7078-150-A 1-127-692-11 1-125-777-11 1-125-837-91 1-119-923-81 1-165-943-11 1-137-723-21 1-127-715-91 1-164-943-11 1-779-330-21 8-719-073-01 6-500-237-01	ST-075 BOARD, 0 *********** < CAPACITOR > CERAMIC CHIP CONNECTOR > CONNECTOR, FFO < DIODE > DIODE MA111- DIODE HAU1600 < COIL >	10uF 10uF 10uF 10uF 0.1uF 10uF 0.047uF 0.047uF 0.022uF 0.01uF	10% 10% 10% 10% 10% 10%	6.3V 10V 6.3V 10V 315V 250V 16V

Q501

8-729-052-64 TRANSISTOR

Ref. No. Q502 Q503 Q504	Part No. 8-729-055-89 6-550-183-01 8-729-053-57	Description TRANSISTOR TRANSISTOR TRANSISTOR	MCH3306 CPH3209- RN1902FI	-SONY-TL	_
Q505	8-729-053-57	TRANSISTOR	RN1902FI	` ')
Q506 Q507 ▲ Q508 Q509	8-729-042-58 8-729-037-52 8-729-053-74 8-729-056-01	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	UN9111J- (K8).SO 2SD2216J-QR (TX) CY25AAJ-8-T13 MCH3405-TL-E		
		< RESISTOR >			
R501 R502 R503 R505 R507	1-218-961-11 1-218-977-11 1-218-965-11 1-218-957-11 1-218-958-11	RES-CHIP RES-CHIP RES-CHIP RES-CHIP	4.7K 100K 10K 2.2K 2.7K	5% 5% 5% 5% 5%	1/16W 1/16W 1/16W 1/16W 1/16W
R509 R510 R511 R512 R513	1-218-961-11 1-218-953-11 1-218-943-11 1-216-805-11 1-216-857-11	RES-CHIP RES-CHIP RES-CHIP METAL CHIP METAL CHIP	4.7K 1K 150 47 1M	5% 5% 5% 5% 5%	1/16W 1/16W 1/16W 1/16W 1/16W
⚠ R514 R515 R516 R517 R518	1-216-286-00 1-218-977-11 1-218-965-11 1-218-940-11 1-218-990-11	RES-CHIP RES-CHIP RES-CHIP RES-CHIP SHORT	4.7M 100K 10K 82 0	5% 5% 5% 5%	1/8W 1/16W 1/16W 1/16W
		< TRANSFORMER	۲>		
 ∆ T501	1-437-737-11	TRANSFORMER,	DC-DC COI	NVERTER	

Electrical parts list of the SY-075 board is not shown.

Pages 6-8 to 6-10 are not shown.

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité

DTC144EHT2L

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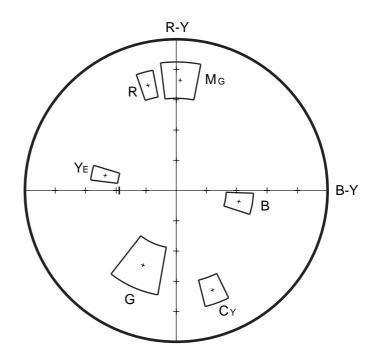
Ref. No.	Part No.	<u>Description</u>	Ref. No.	Part No.	<u>Description</u>
		ACCESSORIES			

<u> </u>		CHARGER, BATTERY (BC-CS1) (US, CND)			
\triangle	1-477-227-31	CHARGER, BATTERY (BC-CS1)			
A	1 477 007 41	(AEP, UK, E, HK, AUS, JE)			
<u>^</u>		CHARGER, BATTERY (BC-CS1) (KR) CHARGER, BATTERY (BC-CS1) (CH)			
<u> </u>		ADAPTOR, CONVERSION (E, JE)			
2.3	1 000 007 11	TIETH TOTI, CONVERTICION (E, CE)			
\triangle	1-569-008-21	ADAPTOR, CONVERSION 2P (E)			
\triangle	1-696-819-11	CORD, POWER (AUS)			
<u> </u>	1-769-608-11	CORD, POWER (AEP, E)			
\triangle		CORD, POWER (KR)			
\triangle	1-782-476-11	CORD, POWER (CH)			
A	1 700 074 11	CODD DOWED (HK HK)			
<u>^</u>		CORD, POWER (UK, HK) CORD, POWER (US, CND)			
<u> </u>		CORD, POWER (JE)			
<u> </u>		CORD, CONNECTION (AV CONNECTING 1.5m)			
		CORD, CONNECTION (USB 5P)			
	. 020 002	(602 0.7)			
	3-070-841-01	STRAP, HAND			
	3-072-414-01	SPVD-008 (CD-ROM) (EXCEPT US, CND)			
	3-072-654-01	SPVD-008 (I) (CD-ROM) (US, CND)			
	3-074-351-11	MANUAL, INSTRUCTION (ENGLISH)			
		(US, CND, AEP, UK, E, HK, AUS, CH, JE)			
	3-074-351-21	MANUAL, INSTRUCTION (FRENCH, GERMAN)			
		(CND, AEP)			
	3-07/1-351-31	MANUAL, INSTRUCTION			
	0 074 001 01	(SPANISH, PORTUGUESE) (AEP, E, JE)			
	3-074-351-41	MANUAL, INSTRUCTION (DUTCH, ITALIAN)			
		(AEP)			
	3-074-351-51	MANUAL, INSTRUCTION			
		(TRADITIONAL CHINESE, SIMPLIFIED CHINESE)			
		(E, HK, CH, JE)			
	3-074-351-61	MANUAL, INSTRUCTION			
	2 074 251 71	(SWEDISH, RUSSIAN) (AEP)			
	3-U/4-331-/1	MANUAL, INSTRUCTION (ARABIC) (E)			
	3-074-351-81	MANUAL, INSTRUCTION (KOREAN) (KR)			
		CASE, BATTERY CARRYING			

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

For NTSC mode



DSC-P71/P71M

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SONY

SERVICE MANUAL

Level 2

Ver 1.1 2002. 04

US Model

Canadian Model
AEP Model
UK Model
E Model
Hong Kong Model
Australian Model
Brazilian Model
Chinese Model
Korea Model

Japanese Model

DSC-P71

SUPPLEMENT-1

File this supplement with the service manual.

(PV01-066)

- Addition of Brazilian Model.
- Change of the end number of the board.
 CH-109 board:

the end number of the board has been changed from [-11, 21] to [-12, -22].

Note: Brazilian model is same as other models except accessories.

Accessories (Brazilian model)

Ref. No. Part No. Description

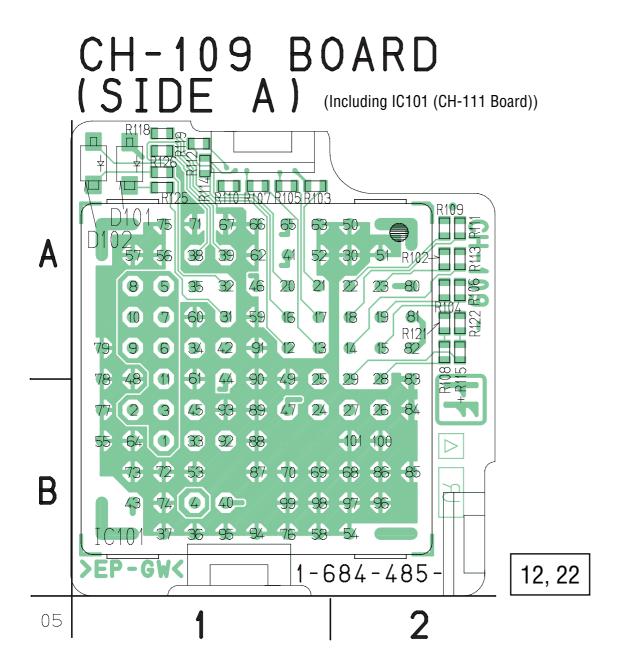
1-824-009-81 CORD, CONNECTION (AV CONNECTING 1.5m)

1-823-932-11 CORD, CONNECTION (USB 5P)

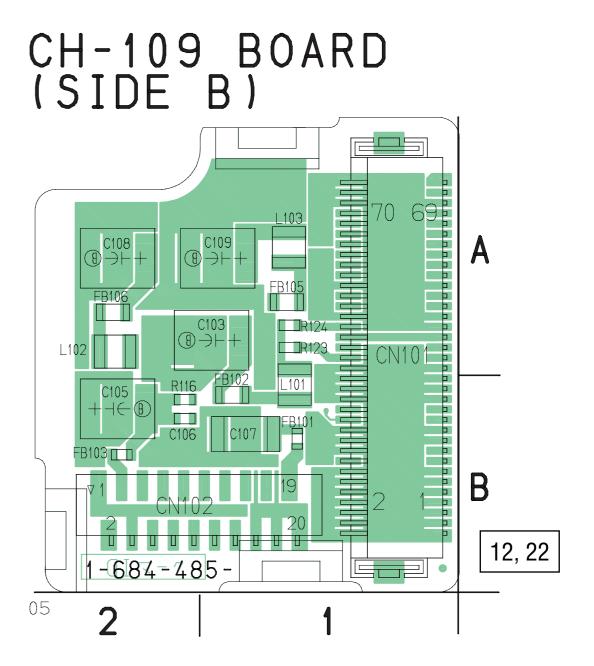
3-070-841-01 STRAP, HAND 3-072-414-01 SPVD-008 (CD-ROM) 3-074-757-01 CASE, BATTERY CARRYING

CH-109 (CAMERA PROCESS)

- For Printed Wiring Board.
- Uses unleaded solder.
- CH-109 board is eight-layer print board. However, the patterns of layers 2 to 7 have not been included in the diagram.
- There are a few cases that the part isn't mounted in this model is printed on this diagram.
- See page 7 for printed parts location.



- 3 -



CH-109 -4-

4-5. PARTS LOCATION

no mark : SIDE A * mark : SIDE B

CH-109 BC	ARD
* C103	A-1
* C105	B-2
* C106	B-2
* C107	B-1
* C108	A-2
* C109	A-1
* CN101	A-1
* CN102	B-2
* FB101	B-1
* FB102	B-1
* FB103	B-2
* FB105	A-1
* FB106	A-2
* L101	B-1
* L102	A-2
* L103	A-1
R102 R103 R104 R105 R106 R107 R108 R109 R110 R111 R112 R113	A-2 A-1 A-2 A-1 B-2 A-2 A-1 A-2 A-1
R114	A-1
R115	B-2
* R116	B-2
R118	A-1
R119	A-1
R121	A-2
R122	A-2
* R123	A-1

DSC-P71/P71M

Revision History

Ver.	Date	History	Contents	S.M. Rev.
1.0	2002.03	Official Release	_	
1.1	2002.04	Supplement-1 (PV01-006)	Change of the end number of the board. Addition of Brazilian Model.	No
		(2 + 02 000)	120000000000000000000000000000000000000	