This video copy processor complies with the requirements of the EC Directive 89/336/EEC, 73/23/EEC, 93/42/EEC and 93/68/EEC.
The electro-magnetic susceptibility has been chosen at a level that gains proper operation in residential areas, on business and light industrial premises and on small-scale enterprises, inside as well as outside of the buildings. All places of operation are characterised by their connection to the public low voltage power supply system.
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety precautions</td>
<td>3-5</td>
</tr>
<tr>
<td>Special features</td>
<td>6</td>
</tr>
<tr>
<td>Unpacking</td>
<td>7</td>
</tr>
<tr>
<td>Features and functions</td>
<td>8-10</td>
</tr>
<tr>
<td>Connections</td>
<td>11-16</td>
</tr>
<tr>
<td>Before operation</td>
<td>17</td>
</tr>
<tr>
<td>Printing (Basic)</td>
<td>22-27</td>
</tr>
<tr>
<td>Setting the functions (Menu chart)</td>
<td>34-37</td>
</tr>
<tr>
<td>Adjustments &amp; settings (MAIN MENU)</td>
<td>38-44</td>
</tr>
<tr>
<td>Adjustments &amp; settings (SERVICE MENU)</td>
<td>45-53</td>
</tr>
<tr>
<td>Error messages</td>
<td>54</td>
</tr>
<tr>
<td>Before calling for service</td>
<td>55-56</td>
</tr>
<tr>
<td>Overcoming paper jams</td>
<td>57</td>
</tr>
<tr>
<td>Cleaning</td>
<td>58</td>
</tr>
<tr>
<td>Spec &amp; options</td>
<td>59</td>
</tr>
</tbody>
</table>
SAFETY PRECAUTIONS

In the interest of safety, please observe the following precautions:

POWER REQUIREMENT
This Colour Video Copy Processor is designed for operation on 220-240V, 50Hz AC. Never connect to any outlet or power supply having a different voltage or frequency.

WARNING: THIS APPARATUS MUST BE EARTHED.
AVERTISSEMENT: CET APPAREIL DOIT ETRE MIS A LA TERRE.

PROTECTIVE MEASURES

IF ABNORMALITIES ARISE, ....
Use of the unit during emission of smoke or abnormal sounds (without adopting countermeasures) is dangerous. In such a case, unplug the power cord from the source outlet immediately, and request maintenance service from the sales dealer.

NEVER INSERT ANY OBJECT INTO THE UNIT
Foreign objects of any kind inserted into this unit constitute a safety hazard and can cause extensive damage.

DO NOT PLACE ANYTHING ON THE COLOUR VIDEO COPY PROCESSOR
Heavy objects placed on the Colour Video Copy Processor can cause damage or obstruct proper ventilation.

PROTECT THE POWER CORD
Damage to the power cord may cause fire or shock hazard. When unplugging, hold by the plug only and remove carefully.

DO NOT PLACE WATER CONTAINERS ON THE UNIT
Do not place flower vases, and other water-holding containers on the device. If, for some reason, water seeps to the inside of the unit, unplug the power cord from the source outlet, and contact the sales dealer. If used without corrective measures, the unit may be damaged.

“IN THE INTEREST OF SAFETY, AVOID HANDLING OF LIQUIDS NEAR THE UNIT.”

DO NOT REMOVE THE CABINET
Touching internal parts is dangerous, besides, it may lead to malfunction. Contact the sales dealer to carry out internal checks and adjustments. Before opening the cover for eliminating a jammed paper, etc., be sure to disconnect the power cord plug.

UNPLUG THE POWER CORD DURING A LONG ABSENCE
Turn off the MAIN power switch and unplug the power cord during a long absence.

WHEN TRANSPORTING THE UNIT
When transporting the unit, remove the ink cassette and paper. Make sure to slide the printing unit lock switch to the lock position.

BE CAREFUL AROUND PRINT PAPER EXIT SLOT
Do not insert your hand or any material into the paper exit slot during printing.
Do not touch the cutter blade inside the paper exit slot.
Otherwise, your finger will be injured.

DO NOT TOUCH THE THERMAL HEAD
Do not touch your hand to the thermal head (located inside the unit).
The thermal head is heated to high temperature.
This may cause injury.

BE CAREFUL WITH THE PRINTING UNIT
Do not move the unit while the printing unit is sliding out. This may cause injury.
Be careful not to catch your finger in the printing unit while the printing unit is being retracted into the unit.

CONNECTION CABLES
Use the provided power cord. When connecting the unit with an equipment with RS-232C interface, use the RS-232C crossover cable.
SAFETY PRECAUTIONS

INSTALLATION LOCATIONS

MAINTAIN GOOD VENTILATION
Ventilation slots and holes are provided on this unit. Place the unit on a hard and level surface and locate at least 10 cm from walls to insure proper ventilation. When putting the unit on the system rack, take a space between the unit and the back of the rack.

UNSUITABLE LOCATIONS
Avoid shaky places or hot-springs areas where hydrogen sulfide and acidic ions are likely to be generated.

PLACES WITH HIGH HUMIDITY AND DUST
Do not place the unit locations with high humidity and dust. They can cause extensive damage. Avoid places where unit is likely to be exposed to oily fumes and vapours.

PLACES NOT LIKELY TO BE EXTREMELY HOT
Places exposed to direct sunlight, or near heating appliances can attain extremely high temperatures, which may deform the cabinet, or can become a prime cause of damage.

PLACE THE UNIT ON A HORIZONTAL LEVEL
The unit is likely to be affected if it is placed in slanted conditions or in unstable places.

PROTECT AGAINST DEW FORMATION
In extremely cold regions, if the unit is moved quickly from an extremely cold place to warmer one, dew is likely to be formed. If dew is formed, printing is not possible.

OPERATING AMBIENT TEMPERATURE RANGE
The operating ambient temperature range is 41°C - 104°F (5°C to 40°C), and humidity of 20 - 80%. When using the unit on the system rack, be sure to keep this ambient temperature inside the rack.

FOR LONG OPERATING LIFE

UNSUITABLE MATERIALS FOR THE COLOUR VIDEO COPY PROCESSOR
Coat flaking and deformation are likely to occur if the unit is wiped with chemical dusters, benzine, thinner or any other solvent, if rubber or PVC items are left in contact with the unit for extended duration, or if the unit is sprayed with insecticide.

CARE OF THE CABINET
Unplug and clean with a soft cloth slightly moistened with a mild soap and water solution. Allow to dry completely before operating. Never use petroleum base solutions or abrasive cleaners.

HEAD ABRASION
The thermal head, like the video head, wears out. When it is abraded, it becomes hard to print out fine details of the picture. In such a case, it is necessary to replace the thermal head. Consult with the sales dealer for replacing the head.

CONNECTING DEVICES
Read thoroughly “Operating Precautions” of the instruction booklets for the devices connected with the Colour Video Copy Processor.

The power cord must be disconnected after printing is over.

CAUTION ON RELOCATING
When transporting this unit, make sure it is not likely to be subjected to impacts. They can be a prime cause for damage. Further, make sure to disconnect the power cord from the power outlet, and the cables from the connected devices.

SAFETY CHECKS

Periods: According to the recommendations of the manufacturer of the medical devices.
Scope: a) Visual inspection
Housing, leads, controls, displays, labels/markings, accessories, operation manual.
b) Functionality test
Testing of functions (according to operation manual) as well as compatibility and usability of devices and accessories.
c) Electrical test
Testing of electrical safety of the system according to EN60601-1.

High humidity or dust
Avoid locations with high humidity and dust in order to avoid malfunctioning of the device.
Also avoid locations subject to corrosive gasses and smoke.

Heat
Direct sunlight, heaters or other heat sources may deform the housing and subsequently cause malfunctioning.
TECHNICAL DESCRIPTIONS

The supplier will make available on request such circuit diagrams, component part lists, descriptions, calibration instructions or other information which will assist the USER’s appropriately qualified technical personnel to repair those parts of the EQUIPMENT which are classified by the manufacturer as repairable.

The use of ACCESSORY equipment not complying with the equivalent safety requirements of this equipment may lead to a reduced level of the resulting system.
Consideration relating to the choice shall include:
- use of the accessory in the PATIENT VICINITY.
- evidence that the safety certification of the ACCESSORY has been performed in accordance to the appropriate EN60601-1 and/or EN60601-1-1 harmonized national standard.

The transportation and storage environmental conditions are:
Temperature : -20°C - +60°C (-4°F - +140°F)
Humidity : 90% RH or less at 40°C (104°F)
Note: The above transportation environmental conditions indicate the storage environmental conditions during transport.

OTHER CAUTIONS

Dust or other foreign matter adhering to the print paper or the ink cassette, or deformation resulting from exposure to extremely low or high temperatures could cause loss of colour, uneven colour or lines, or wrinkles in the print images.

If there is noise or vibration in the VCR still-image or playback picture, the print image may be distorted or the upper part may be crooked.

NOTE:
YOUR UNDERSTANDING IS REQUESTED FOR THE LOSS OF IMAGES IN MEMORY DUE TO THE SUDDEN OCCURRENCE OF A MALFUNCTION.

As for paper sheet set, refer to Page 17, “Paper sheet set”.

THERMAL PAPER

- When the remaining length of the paper is about 25cm (10"), a color belt appears at the paper end. Prepare for replacement of the paper. If the remaining paper length is less than 25cm (10’), printing becomes uneven due to the uneven paper core surface.
- When the printed paper is touched by wet hand, the print may be discoloured.
- When the paper runs out during printing, the printing operation stops and “CHANGE PAPER” is displayed by the LCD on the front panel. Install new paper at this time.
- Store the printed paper in a place with low humidity free from a direct sunlight.
- If the paper absorbs nonvolatile organic solvents (alcohol, ester, ketone, etc.) the print may be discoloured. Particularly, if the paper comes in contact with soft vinyl chloride such as a transparent tape, it quickens discoloration.
- Do not use paper other than the specified one.
- Immediately after the paper is replaced, 2-3 images may be printed with a blank part due to hand’s dust or oil.
- Avoid a direct sunlight or a place near a heater, and store the paper in a place with 30°C (86°F) or lower temperature and 35-80% RH.
- When the paper is rapidly transferred from a cool place to a hot place, a vapour or a dew is generated on the paper surface causing paper jam or degraded printing quality.
- A finger print or dust on the paper surface may degrade the printing quality.

Note:
Mitsubishi brand thermal paper is specially treated with an antistatic coating against thermal head damage caused by static-electricity discharge.
The use of non-treated paper may cause premature head failure in your product.

This product is to be employed with medical equipment, just for reference purpose, not for medical diagnostic purpose.
SPECIAL FEATURES

AVAILABLE IN VARIOUS MEDICAL FIELDS, INCLUDING ENDOSCOPY DIAGNOSIS
3 kinds of colouring characteristics (gamma curve) are employed, which are the best for medical diagnostic devices, including endoscope requiring precise images and ultrasound diagnostic equipment etc. The colour is reproducible for each diagnostic equipment with easy operation. Each gamma curve is adjustable for each user flexibly.

2 PRINT SIZES ARE AVAILABLE ACCORDING TO THE PURPOSE
2 printing sizes, L size (max. 110 x 160 mm) and S size (max. 110 x 105 mm), are selectable.

MULTI PRINT FUNCTION BY THE CAPACIOUS FRAME MEMORY
As this unit has 3 frame memories, it can store an image during its printing. So the time of diagnosis will be shorten remarkably.

HIGH SPEED PRINTING
Printing speed is approx. 12 seconds (in S size print). Using a rollpaper shortens the time for installing and removing.

LARGE CAPACITY OF PRINTING
Maximum number of printing (S size) is 200 printings per a roll paper. The large capacity of rollpaper printing reduces a time of exchanges.

POSSIBLE OF PRINTING IN HIGH QUALITY
High quality print is available in sublimation dye thermal method which is superior in repeatability of images. It also employs 256 gradients and about 16,700,000 colours in each YMC.

325 PPI HIGH RESOLUTION
325 PPI (Pixel Per Inch) high resolution clears the image data. Precise illustrations and photo images can be printed sharply.

MULTI PRINT FOR VARIOUS DEMANDINGS
2, 4, and 16 images of multi print are available. Several multi print modes are selectable according to demanding.

UNIQUE COLOUR IMAGE CONTROL SYSTEM WITH THE IC CHIP BUILT IN INK SHEET ROLLS
By setting the supplied IC chip to ink cassette, the remaining of ink sheet can be displayed. It also controls the colours of the printing images.

WIDE COMPATIBILITY WITH A VARIETY OF INTERFACE AND SYSTEMS
(1) Input and output control signals from RS-232C/Rear remote interfaces
(2) Fixing function to internal sync. signal avoiding the loop phenomena of sync. signal
(3) Stroboscope sync. function responding to fundus camera system
(4) Image adjusting function such as contrast, brightness, depth etc. of printing image
(5) Capable of storing 3 kinds of setting and adjustment according to each using condition.
UNPACKING

Take the unit out of the box by the following procedures. Make sure to check the contents.

1  Open the top of the box.

2  Remove the cushion with contents.
   Be careful not to drop the contents.

3  Take the unit out of the box carefully.
   Make sure to keep the unit horizontally.

4  Unwrap the packing.

CONTENTS
   Make sure to check the supplied contents on the cushion.

- Power cord
- Attachments for thermal paper
- Ink cassette
- Wired remote control unit
- Operation manual
- Spacers (4)
- Screws (4)
**FEATURES & FUNCTIONS**

**FRONT PANEL**

1. **POWER BUTTON (INDICATOR)**
   - Press to turn on power. Press again to turn off power. When the power is turned on, the indicator illuminates.

2. **LCD (LIQUID CRYSTAL DISPLAY)**
   - Indicates input signal settings and various function modes and settings. Use Menu on the monitor or LCD for setting functions. See pages 36 - 37.

3. **MENU BUTTON**
   - Press for colour adjustment. The item will be switched in order of:
   - To go back to the normal screen, press PLUS(+) button while SET[+] is selected. The above menu is displayed on the monitor screen. See page 40.

4. **MINUS(-) BUTTON**
   - Press to decrease the value of each setting item. To set the value, select SET[+] with MENU button and press PLUS(+) button.

5. **PLUS(+) BUTTON**
   - Press to increase the value of each setting item. To set the value, select SET[+] with MENU button and press this button.

6. **MONITOR BUTTON**
   - Switches the display on the monitor. When this button is pressed, the picture on the monitor screen switches between the picture of the input signal (source image) and the memorized image.
   - When pressing MEMORY button while holding this button, print paper will be fed and cut automatically, and the mechanism will be initialized. Make sure to press MONITOR button first, or a new image will be memorized.

7. **MEMORY BUTTON**
   - Press to memorize the image to be printed. When signal is not inputted, memory is not available.

8. **PRINT BUTTON**
   - Press to print the image memorized by the MEMORY button. The image on the monitor screen switches to Source image when printing starts. When image is not memorized, printing is not available.

9. **PRINT OUTLET**
   - The printed paper comes out here.
   - Do not put any objects in front of the outlet.

10. **OPEN BUTTON**
    - Press to slide out the printing mechanism. Make sure to unlock PRINTING UNIT LOCK SWITCH. When it is not working, turn off the power once. Then try to press this button again. Open the mechanism to load paper and ink cassette or to clear a paper jam.

11. **TRAY**
    - Holds the printed paper which was come out from the print outlet. Press down the knob to pull the tray. Make sure to pull it out before using this unit.

12. **REMOTE TERMINAL**
    - Connects the remote control unit supplied.

13. **PRINTING UNIT LOCK SWITCH**
    - Locks the printing unit.
    - Shift the switch to the left (LOCK side) to lock and to the right (UNLOCK side) to unlock.
    - This unit is locked when shipping. When transporting this unit, make sure to lock the unit.
REMOTE TERMINAL 2 (MINI DIN 8 PIN)
Memorizing images and printing is available by the remote signal inputted through this terminal. It is necessary to make a circuit for remote control unit to use the function. See pages 32-33.

REMOTE TERMINAL 1 (STEREO JACK)
Memorizing images is available by the remote signal inputted through this terminal. It is necessary to make a circuit for remote control unit to use the function. See page 31.

RS-232C PORT
Use these terminals to connect this unit to a device equipped with RS-232C interface. See pages 15-16 for connection.

VIDEO SIGNAL INPUT/OUTPUT TERMINAL
Use these terminals to connect this unit to VIDEO signal equipment. See pages 13.

IMPEDANCE SWITCH
[IMPEDANCE RGB SYNC.]
This is a 75Ω HIGH/75Ω HIGH impedance selection switch for RGB or Sync. signal.

S-VIDEO INPUT/OUTPUT TERMINAL
Use these terminals to connect to S-VIDEO signal equipment. See pages 13.

RGB ANALOG INPUT TERMINALS
[R G/G+SYNC B H+V-SYNC]
This is a BNC type input terminal for a RGB analog signal. The sync. signal can be automatically selected between H/V composite and SYNC. ON GREEN (sync. signal imposed on the green video signal) signals. See page 14.

RGB ANALOG OUTPUT TERMINALS
[R G/G+SYNC B H+V-SYNC]
This is a monitor output terminal for a RGB analog signal. The sync. signal can be selected between 0.3V (H+V-SYNC) and TTL (H+V-SYNC) signals. See page 14.

AC LINE SOCKET
Connects to the provided power cord. Insert the cord firmly.
COLOR ADJUST BUTTON
Press to display the COLOR ADJUST menu. See page 40.

FIELD/FRAME BUTTON
Press to switch FRAME and FIELD mode of input signals. The selected mode is displayed on the monitor screen and LCD. FRAME is good for high quality printing of still images, and FIELD is good for printing fast movement images. See page 22.

DISPLAY BUTTON
Press to display the set condition on the monitor screen. Press again to switch off the display.

PRINT QUANTITY ▲, ▼ BUTTONS
Use to set the number of copies to be printed. The set number of copies is displayed on the monitor and on the front LCD. Press ▲ to increase the number and ▼ to decrease the number. When pressing ▲ or ▼ button during printing, the counter becomes “1” and continuous printing is cancelled. It also cancels the reserved printing. See page 27.

SET BUTTON
Press to go to SAVE PRG. Repress to memorize the values and exit the MENU mode. See page 34-35.

STOP BUTTONS
Press to cancel the printing process and start mechanical initializing. When pressing these buttons during displaying MAIN MENU, SERVICE MENU will be displayed.

MEMORY PAGE BUTTON
Use to select the image memorized. The memory page is switched every time this button is pressed. The selected memory page mark illuminates.

PRINT BUTTON
Press to print the image memorized by the MEMORY button.

PROGRAM BUTTON
Press the PRG. button to select between 3 types of user presets. Functions previously set with the MENU can be stored into 1 of 3 memories and recalled. Programs cannot be changed during printing. It may take longer to change the program.

▲, ▼, ◄, ► BUTTONS
Use to set the MENU display. Values are increased/decreased and the cursor position is changed with these four buttons. These buttons are also used to select one of memorized images. See page 38 and 45.

MENU BUTTON
Press to display MAIN MENU used for various settings. See pages 34-35.

CLEAR BUTTONS
Press to eliminate all or a part of memorized images.

MONITOR BUTTON
Press to switch the image of the input signal and the memorized image being displayed.

MEMORY BUTTON
Use to memorize the image to be printed. The memorized image is displayed on the monitor screen for one second, then the image of the input signal is displayed.
The functions of this unit can be set by the menu screens displayed on the monitor.
- Connection with a monitor
- Connection with VIDEO/S-VIDEO signal equipment
- Connection with RGB analog signal equipment
- Connection with RS-232C equipment

Connect this unit with a monitor to check the images to be printed and the images stored in memory. The following examples show the connections with a video signal, S-video signal, RGB analog signal and RS-232C equipment. Connect with the necessary signal equipment.

Make sure to turn off the power of the unit and connecting equipment before connection.

**CONNECTION WITH A MONITOR**

Make sure to turn off the power before setting.

*(EXAMPLE)*

When the sync. polarity or sync. signal of a monitor to be connected is not adjusted to the initial setting of this unit, the image may not be displayed correctly. In this case, adjust the sync. polarity and sync. signal output to the monitor. When the image is displayed correctly, the setting is not required. (Refer to the operation manual of the monitor as for the sync. polarity and sync. signal of the monitor.)

- The sync. polarity and sync. signal is set by the menu displayed on LCD.

1. Press **MENU** button.
   MAIN MENU is displayed.

2. Press **STOP** button on remote control unit.
   SERVICE MENU is displayed.
3. Press ▼ button to select INPUT menu.

4. Press ► button.
   INPUT menu is displayed. Set the monitor polarity with “IN SYNC” on this menu.

5. Press ▲ or ▼ button to select “IN SYNC”.
   The sync. signal level being selected, for example, “ttl” is displayed.

6. Set the signal level according to the equipment to be connected. Press ◀ or ► button to select “ttl”, “sog” or “0.3v”.
   - ttl Inputs the TTL level sync signal.
   - sog Inputs the Sync. On Green level sync signal.
   - 0.3v Inputs the 0.3Vp-p level sync signal.

7. Press SET button.
   The function is set, and SERVICE MENU is displayed.

8. Press ▲ or ▼ button to select OUTPUT menu.

9. Press ► button.
   OUTPUT menu is displayed. Set the signal output with “OUT SYNC” and “RGB SOG” on this menu.

10. Press ▲ or ▼ button to select first “OUT SYNC”. Press ◀ or ► button to select “auto” or “user”.
    The sync. signal setting being selected, for example, “auto” is displayed.
    - auto Outputs the same sync signal as IN SYNC setting.
    - user Sets the signal output.

11. When setting “user” on 10, select second “OUT SYNC,” and set the sync.signal level according to the equipment to be connected. Press ◀ or ► button to select “0.3v” or “ttl.”
    - 0.3v Outputs the 0.3Vp-p sync signal.
    - ttl Outputs the TTL level sync signal.

12. Press ▲ or ▼ button to select third “OUT SYNC”.

13. Set the monitor’s polarity according to the equipment to be connected. Press ◀ or ► button to select “nega” or “posi.”
**CONNECTION WITH VIDEO OR S-VIDEO SIGNAL EQUIPMENT**

Make sure to turn off the power before setting.

14. Press ▲ or ▼ button to select “RGB SOG”.

15. Press ◀ or ▶ button to select “on” or “off”.
   You can select whether Sync. ON Green signal is added to the output signal or not. When “on” is selected, Sync. ON Green signal is output and when “off” is selected, only Green signal is output. Select “on” or “off” according to the monitor to be connected.
   - off: Only Green signal is output.
   - on: Sync. On Green signal is output.

16. Press SET button.
   SERVICE MENU is displayed and “SAVE” is indicated.

17. Press ◀ or ▶ button to memorize the setting in prg.1, 2, or 3. Select “CANCEL” to cancel the setting.

18. Press SET button.
   The source image (input signal from the equipment) is displayed.

The setting of the sync. polarity and signal is completed.
CONNECTION WITH RGB ANALOG SIGNAL EQUIPMENT

Make sure to turn off the power before setting.

(EXAMPLE)

This unit is designed to accept RGB video at the PAL frame rate, nominally 15.75kHz horizontal and 50Hz at vertical.

1. Connect this unit and RGB analog signal equipment with a BNC cable.

2. Set the RGB IMPEDANCE switch to “75Ω/HIGH”. Set the sync. signal IMPEDANCE switch to “HIGH”.

**IMPEDANCE SWITCH**

<table>
<thead>
<tr>
<th></th>
<th>RGB</th>
<th>75Ω/HIGH</th>
<th>Power ON: 75Ω termination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75Ω</td>
<td>Power ON/OFF: 75Ω termination</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HIGH</td>
<td>Power ON/OFF: High impedance - No termination</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>SYNC</th>
<th>75Ω/HIGH</th>
<th>Power ON: 75Ω termination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75Ω</td>
<td>Power ON/OFF: 75Ω termination</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HIGH</td>
<td>Power ON/OFF: High impedance - No termination</td>
<td></td>
</tr>
</tbody>
</table>

The normal settings are: RGB 75Ω/HIGH and SYNC : HIGH

When the printer is between the RGB video source and the monitor the normal settings should be used. If the 75Ω termination is not set correctly, the video will be either too dark or too bright.
CONNECTION WITH RS-232C EQUIPMENT

This unit can be controlled through a RS-232C port with custom software. (Image data cannot be input.) For the protocol, consult your dealer.

Make sure to turn off the power before setting.

1. Connect this unit and RS-232C equipment with a crossover cable.

2. Set the baud rate according to the equipment to be connected.
   Press the MENU button, then press the STOP button on the remote control unit.
   SERVICE MENU is displayed.

3. Press the ▼ button to select “RS232C.”
4 Press ▶ button.
RS232C menu is displayed.
Set “BAUD RATE” on this menu.

5 Press ▲ or ▼ button to select “BAUD RATE”.
The setting BAUD RATE (e.g. 1200) will be displayed.

6 Press ◀ or ▶ button to select “1200”, “2400”, “4800” or “9600” (bit/s).

7 Press ▲ or ▼ button to select “COMMAND TYPE”.

8 Press ◀ or ▶ button to select “a”, “b” or “c”.
Select “a” for normal setting. Depending on the connected equipment, select “b” or “c”.

9 Press SET button.
SERVICE MENU is displayed.
“SAVE” is indicated.

10 Press ◀ or ▶ button to memorize the setting in “prg.1”, “prg.2” or “prg.3.”
Select “CANCEL” to cancel the setting.

11 Press SET button.
The source image (input signal from the equipment) is displayed.

The setting of BAUD RATE and COMMAND TYPE is completed.

12 Set the communication format of the computer with a computer connected.
Synchronizing system : Asynchronous communication
Data bit length : 8 bits
Parity bit : Nothing
Stop bit length : 1
Transmission order : Sent from LSB
Baud rate (bit/sec.) : 1200, 2400, 4800, 9600
BEFORE OPERATION

Before printing,
1. Unlock the printing unit. (See below)
2. Install the print paper and ink cassette. (pages 17-21)

### PAPER SHEET SET

When using this unit for printing, make sure to use the following types of paper sheet and ink sheet set.

**PAPER SHEET SET**

<table>
<thead>
<tr>
<th>Product name</th>
<th>Ink sheet size</th>
<th>No. of prints</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CK900S</td>
<td>S size</td>
<td>200</td>
<td>Colour print</td>
</tr>
<tr>
<td>CK900L</td>
<td>L size</td>
<td>130</td>
<td>Colour print</td>
</tr>
<tr>
<td>CK900S4P</td>
<td>S size</td>
<td>130</td>
<td>Surface-laminated colour print</td>
</tr>
<tr>
<td>CK900L4P</td>
<td>L size</td>
<td>90</td>
<td>Surface-laminated colour print</td>
</tr>
<tr>
<td>CK900S4P(HX)EU</td>
<td>S Size</td>
<td>130</td>
<td>Surface-laminated colour print for ID photo</td>
</tr>
<tr>
<td>CK900L4P(HX)EU</td>
<td>L Size</td>
<td>90</td>
<td>Surface-laminated colour print for ID photo</td>
</tr>
</tbody>
</table>

**THERMAL PAPER**

<table>
<thead>
<tr>
<th>Product name</th>
<th>Print size</th>
<th>No. of prints</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>K65HM-CE</td>
<td>S/L size</td>
<td>S size Approx.200</td>
<td>Thermal print</td>
</tr>
</tbody>
</table>

**PAPER INK SHEET CASSETTE**

<table>
<thead>
<tr>
<th>Product name</th>
<th>Ink sheet size</th>
<th>No. of prints</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PKC900S</td>
<td>S size</td>
<td>200</td>
<td>Colour print</td>
</tr>
<tr>
<td>PKC900L</td>
<td>L size</td>
<td>130</td>
<td>Colour print</td>
</tr>
</tbody>
</table>

### UNLOCK THE PRINTING UNIT

**RELEASING THE PRINTING UNIT LOCK**

1. Press down the knob to pull out the tray.

2. Shift the printing unit lock switch to the right (UNLOCK). (See page 8.)

### INSTALLATION OF PRINT PAPER

When using the thermal paper, prepare the following steps first.

1. Set the supplied paper attachments to both sides of the thermal paper.

   **NOTE**
   Set the attachment with gear on the left side.
   Make sure to set them correctly.

2. Pull out the thermal paper about 20cm and cut it.
   Remove the part with seal paste, dust and fingerprints.

3. Cut the both corners of the paper.

Installation for the thermal paper is completed.
INSTALLATION OF PRINT PAPER

Do not remove the seal on the print paper yet.
When using thermal paper, remove the seal as shown on the previous page.

1. Insert the print paper roller with gear on the left.
   Press the folder 1 as shown right, and set the print paper roller.

2. Set the other side of roller without gear.

3. Remove the seal, and insert the edge of the print paper right below the roller cover with arrow marks towards the front panel.
   Make sure to insert the paper straight.

4. Feed the print paper through the paper outlet with your hand.

5. Pull the both side of the print paper to eliminate slack.

   INCORRECT  CORRECT  INCORRECT
PRECAUTIONS ON SETTING THERMAL PAPER

When setting the thermal paper, observe the following precautions to prevent paper jam.

- **Do not use defective paper.**
  Do not use the bent or wrinkled paper.

- **Adjust the paper position correctly.**
  When the paper is fed out skewed from the print exit, adjust the paper position so that it is fed out straight.

- **Do not slack the roll paper.**
  Set the paper tightly to remove any slack.

- **Make the paper side even.**
  If the side of the print paper is uneven or the core is sticking out, the amount of paper feeding after printing may vary.
  When the side of paper is uneven or the core is sticking out, install the print paper after making the paper side even.

- **Other cautions**
  - Keep the high-density paper away from fingerprint, dust or moisture when storing it.
  - Do not touch the rubber roller. Do not stain or damage the roller surface.
  - Do not touch the thermal head (located inside the unit). When printing, the thermal head is heated to high temperature.
  - Do not touch the cutter blade.

INSTALLATION OF INK SHEET

INSTALLING THE INK SHEET
Load the ink sheet roll to the ink cassette before inserting the ink cassette into the printer.

1. **Put the ink sheet rollers with flat tops into the holes of ink cassette.**
   Put the white roller (rolled with ink sheet) to the ink cassette first.
   Then, put the colored roller (without ink sheet) to the ink cassette.

2. **Put the other sides of rollers. Set IC at this time.**
   IC chip with the IC holder is attached to the ink sheet.
   Set the IC holder to the ink cassette as shown right.
BEFORE OPERATION

NOTE

- Do not remove the IC chip or IC holder from the ink sheet. Removal of the IC will stop the printer from functioning correctly.
- Set the projected part of the IC holder to the correct position as shown below.

![Projected part of IC holder]

INSTALLING THE INK CASSETTE

1 Eliminate any slack of the ink sheet.
   Hold the colored roller and turn the white roller.

2 Insert the ink cassette with the ink sheet into its compartment.
   Put the ink cassette of the ink sheet with flat top side to each ①. Then, set the other side (with handle) as shown right. When exchanging the ink cassette and so on, remove it by holding the handle. (See page 57.)

![Inserting ink cassette]

NOTE

Do not install the ink cassette when printing with thermal paper, otherwise printing may be failed.

INSERT THE PRINTING UNIT

1 Push the printing unit until it is locked into place.

2 After plugging the power cord, press POWER button on the front panel.

3 After the set conditions are displayed on the monitor, press MEMORY button about 1 second with holding MONITOR button on the front panel.
   The print paper is automatically cut after feeding about 10 cm (4 inches).

4 Repeat the above step ③ once or twice.
   Fingerprints and dust can be removed by feeding the print paper. The printing unit is initialized.
**NOTE**

- Make sure to press MONITOR button first for operating [3] and [4]. Pressing MEMORY button first operates to memorize the images. When exchanging the printing paper or ink cassette during using the unit, the recorded images may be erased by pressing MEMORY button first.
- Do not feed the print paper more than 2 times. Doing so will not allow the number of prints indicated on page 17 to be printed.
- When thermal paper is running out, red lines appear on both sides of the paper. Install a new roll of paper, otherwise printing may be failed.

The installation of print paper and ink cassette is completed.

**NOTE**

- An IC is built in the ink sheet. This is the IC chip, not a battery. This IC can be thrown away as normal waste.

**NOTE**

- If the power is turned on and AUTO FEED&CUT on SYSTEM SETUP menu is set to ON, “SET PAPER” on the monitor and LCD disappear when print paper is inserted under the roller. (For AUTO FEED&CUT setting, refer to page 46.) After inserting ink sheet and closing the printing mechanism, the print paper is automatically fed and cut twice.

**NOTE**

- Take the print paper one by one after completing printing. Pull out the tray completely when using it. If you fail to do so, paper jamming may occur. Put the tray back when finishing printing.

### USAGE AND KEEPING OF PAPER SHEET SET

#### BEFORE PRINTING

- Fingerprints or dust on the paper’s surface may degrade print quality and cause paper jams. Immediately after the paper is replaced, 2 images may be printed with a blank part due to hand’s dust or oil. Refer to Pages 17 - 18.
- When print paper is rapidly transferred from a cool place to a hot place, vapor or dew will be generated on the paper’s surface causing paper jams or degraded print quality. Leave the print paper in the room to stabilize its temperature before using it.
- When print paper and ink sheet run out during printing, the printing operation stops and the error messages such as “CHANGE PAPER” and “CHANGE INK” lamp on the monitor and LCD display are lit. Set new ink sheet or print paper. Refer to Pages 17-20.

#### AFTER PRINTING

- When the printed paper is touched by a wet hand, the print may be discolored.
- Fading may occur if the print-face is exposed to organic chemical agents which may affect print paper (e.g. alcohol, ester, ketone based).
- Fading will be accelerated upon contact with PVC-based materials (e.g. adhesive tapes, rubber erasers, etc.).
- Avoid storing prints in direct sunlight or places with high humidity.

#### STORAGE

- Leaving the print paper in contact with PVC-based materials causes color of print paper to come off and to be stained.
- Never store print paper in places that are close to heater, hot humid or dusty.
- Keep print paper in a place where:
  - Temperature : 5°C - 30°C (41°F - 86°F)
  - Humidity : 20 - 60%RH
### Before Printing

#### Selecting Field/Frame

Press FIELD/FRAME button on the remote control unit to select “FIELD” or “FRAME”.

- Select “FRAME” for a high resolution still image printing.
- Select “FIELD” for a picture of quickly moving objects.
- When “FIELD” is selected, the print image will be lower in resolution.
- The selected mode is displayed on the monitor screen and LCD of this unit.
- A video picture is normally composed of two slightly lower resolution images (FIELD images) to form a single image (FRAME image).

#### Selecting Input Signal

- Select VIDEO, S-VIDEO or RGB according to the input signal.
- The appropriate input signal may already be selected through the RS-232C control software.
- The input signal can be set on the menu displayed on the monitor screen and LCD.
- Unless the input signal is changed, it is not necessary to select the input signal every time.

1. Press MENU button.
   MAIN MENU is displayed.

2. Press ▲, ▼ button to select “INPUT”.

3. Press ◀, ▶ button to select “VIDEO”, “S-VIDEO”, or “RGB”.

4. Press SET button.
   - “SAVE PRG 1/2/3/CANCEL” is selected.
   - This menu let you select a program memory (1-3) to store your new settings.
5 Press ◀, ► button to select one of the program number (1-3) to memorize the setting.
   The program is replaced. In case of keeping the stored program, do not select the program number in which the setting is stored.

6 Press SET button.
   The source image is displayed.

   The selecting of input signal is completed.

SELECTING PRINT SIZE

- “AUTO” is selected for initial setting. “S” is selected when THERMAL is set to “ON”.
- Select “AUTO” or “S” according to the print size.
  AUTO: Selects print size automatically according to the installed ink sheet.
  S: Selects S size regardless of the installed ink sheet.

When selecting THERMAL:ON,
L: Prints with L size.
S: Prints with S size.

- The print size can be set on the menu displayed on the monitor screen and LCD.
- Unless the ink sheet size is changed, it is not necessary to select the print size every time.

1 Press MENU button and MAIN MENU is displayed.

2 Press ▲, ▼ button to select “LAYOUT”.

3 Press ► button.
   - LAYOUT is displayed.
   - Normally, “MODE” is selected when opening LAYOUT. When other item is selected, press ▲ or ▼ button to select “MODE”.

4 Press ◀, ► button to select “AUTO” or “S”.
   (Select “L” or “S” when THERMAL is set to ON.)
   - Select “AUTO” for normal setting. Select “S” to print S size with L size ink sheet.
   - When printing with thermal paper, L or S size printing is available by selecting “L” or “S.”
5 Press SET button.
   • MAIN MENU is displayed.
   • “SAVE PRG 1/2/3/CANCEL” is selected.
   • This menu lets you select a program memory (1-3) to store your new settings.

6 Press ◀, ▶ button to select one of the program memory (1-3) to memorize the setting.
   The program is replaced. In case of keeping the stored program, do not select the memory number in which the setting is stored.
   When “CANCEL” is selected, the settings are not memorized.

7 Press SET button.
   The source image is displayed.

The print size setting is completed.

**MEMORY PRINT**

In the single image mode, this unit has 3 FRAMES of image memory and the following functions are available.

- Each time the FIELD/FRAME button is pressed, the display changes to show the Field or Frame mode.
- Frames are shown as [ABC]FRAME, and since one Frame consists of two Fields, the Frame letter is shown (in green) along with the Field display as “1” or “2” (in green) as [ABC]FIELD1/[ABC]FIELD2.
- Press MEMORY PAGE button to advance the Memory Page to the next Field or Frame. The selected page number is shown in green. The memory page in which the next image will be memorized is shown in yellow. If the selected page number and the next memory page are the same, the number will be shown in yellow.
- The image will be stored in the selected memory page when MEMORY button is pressed.
- When pressing MONITOR button, the image of memory page which is currently selected is displayed on the monitor.
   When displaying a memory image, “MEMORY” is shown on the monitor. When displaying the image from the connected equipment, “LIVE” is shown. When pressing MEMORY PAGE button, the selected memory page is displayed.
- An image can be stored into memory while printing, but not in the memory currently being printed.
MEMORIZING AND PRINTING AN IMAGE

1. Display the image which you wish to print.
   - The memory page can be changed by pressing MEMORY PAGE button on the remote control unit.

2. Press MEMORY button.
   - The selected page is shown in yellow.
   - When pressing MONITOR button to show “MEMORY” on monitor display, the image on the selected memory page will be displayed on monitor.

3. Press PRINT button.
   - The image displayed on the monitor will be printed.
   - The memory page which is print stand-by is shown as “_”, and it goes on and off during printing.

   **NOTE**
   When selecting OFF(PRN SELECT) in MULTI, 4 memory pages are displayed on the monitor. However, only selecting page can be printed.

IMAGE MEMORIZING WITH PAGE INCREMENT SET TO PAGE

When INCREMENT is set to “PAGE” (automatic memory page advance system), the followings are the memory operations.

- Every time pressing MEMORY button, the memory page is switched in order of A→B→C, and image will be memorized in it.
- To memorize an image on a memory page you selected, press MEMORY PAGE button first to select the memory page. Then, press MEMORY button to memorize the image.
- When selecting OFF(PRN SELECT) in MULTI, the memory page is switched in order of A→B→C→D→A→B... by pressing MEMORY button.

For FIELD, the memory page is switched in order of A1→B1→C1→D1→A2→B2→C2→D2→A1→B1... by pressing MEMORY button.
**NUMBER OF MEMORY PAGES**

As this unit has 1280 pixel x 600 lines x 3 frames of memory, the following memory operations are available.

---

### MODE : DIFF

(Multi printing the different images)

<table>
<thead>
<tr>
<th>MULTI</th>
<th>FRAME</th>
<th>FIELD</th>
<th>PRINT EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1 page</td>
<td>2 pages</td>
<td></td>
</tr>
<tr>
<td>2S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1 page</td>
<td>2 pages</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>2 pages</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### MODE : SAME

(Multi printing the same images)

<table>
<thead>
<tr>
<th>MULTI</th>
<th>FRAME</th>
<th>FIELD</th>
<th>PRINT EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3 pages</td>
<td>6 pages</td>
<td></td>
</tr>
<tr>
<td>2S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3 pages</td>
<td>6 pages</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>3 pages</td>
<td>6 pages</td>
<td></td>
</tr>
</tbody>
</table>

### MODE : PHOTO1

(S size print)

<table>
<thead>
<tr>
<th>MULTI</th>
<th>FRAME</th>
<th>FIELD</th>
<th>PRINT EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARD</td>
<td>3 pages</td>
<td>6 pages</td>
<td></td>
</tr>
<tr>
<td>3 x 4</td>
<td>3 pages</td>
<td>6 pages</td>
<td></td>
</tr>
<tr>
<td>5 x 5</td>
<td>3 pages</td>
<td>6 pages</td>
<td></td>
</tr>
<tr>
<td>3 x 35</td>
<td>3 pages</td>
<td>6 pages</td>
<td></td>
</tr>
</tbody>
</table>

### MULTI : OFF

<table>
<thead>
<tr>
<th>MULTI</th>
<th>FRAME</th>
<th>FIELD</th>
<th>PRINT EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>3 pages</td>
<td>6 pages</td>
<td></td>
</tr>
<tr>
<td>OFF (PRN SELECT)</td>
<td>4 pages</td>
<td>8 pages</td>
<td></td>
</tr>
</tbody>
</table>

- Because the FIELD mode has half the vertical resolution of the FRAME mode, the printed image may be low in quality.
MULTIPLE COPY OR CONTINUOUS PRINTING

Multiple copies of a memorized image can be made by setting the number of prints to more than one. The print quantity can be set for up to 200 prints or for continuous printing until the paper or ink sheet is used up. Multiple quantity printing can be cancelled if needed.

1 Press PRINT Q’ty ▲,▼ button to set the number of sheets to be printed.
   • The number of prints is displayed on the monitor screen.
   • The number will increase by pressing PRINT Q’ty ▲ and decrease by pressing PRINT Q’ty ▼.
   • The number switches in the order of:
     1 ←→ 2 ←→ 9 ←→ 10 ←→ 20 ←→ 30 ←→ 40 ←→ 50 ←→ 100 ←→ 200 ←→ C ←→ 1
     When you set to ‘C’, continuous printing will be done until the paper or ink sheet is used up.

2 Press PRINT button.
   • The number of prints you set is printed.
   • During continuous printing (except for selecting “C”), the set number on the monitor or LCD will be counted down every time one sheet is printed. When printing is completed, the counter will be reset to the original set number. This will not reset when turning off the power (it will not be reset to “1”).
   • If you wish to stop printing;
     • Press PRINT Q’ty ▲ and ▼ buttons. After printing the current page, the counter will be reset to “1.” Pressing PRINT Q’ty ▲ and ▼ buttons are also available to cancel the reserved printing.
     • If you wish to stop printing without completing the current page, press STOP button. The image will be printed incompletely and come out from the print outlet.

NOTE
If a blackish image is continuously printed, the internal temperature may rise and cause the unit to switch to a stand-by condition during printing. In this case, an error message “OVER HEAT” will be displayed on the monitor and LCD. Wait until the error message goes off. When temperature drops and the message goes off, printing resumes.
Various types of printing are available by setting on the menu screen (MAIN MENU and SERVICE MENU). In this section, some examples of special prints are given. For each setting, see pages 34-37.

## MULTI PRINT

MULTI PRINT is the function which 2, 4 or 16 images can be printed on a sheet. Use LAYOUT of MAIN MENU for setting. For the setting, refer to page 40-41. For PHOTO1 setting, refer to “Photo print” on page 30.

### MODE: SAME, DIFF

<table>
<thead>
<tr>
<th>Size prints</th>
<th>2</th>
<th>2S</th>
<th>4</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>S size prints</td>
<td><img src="image1.png" alt="Image Layout" /></td>
<td><img src="image2.png" alt="Image Layout" /></td>
<td><img src="image3.png" alt="Image Layout" /></td>
<td><img src="image4.png" alt="Image Layout" /></td>
</tr>
<tr>
<td>L size prints</td>
<td><img src="image5.png" alt="Image Layout" /></td>
<td><img src="image6.png" alt="Image Layout" /></td>
<td><img src="image7.png" alt="Image Layout" /></td>
<td><img src="image8.png" alt="Image Layout" /></td>
</tr>
</tbody>
</table>

- **MODE : DIFF**
  - When setting IMAGES to “2 (2S),” 2 images are available to be stored in each FRAME: Page A, or each FIELD1,2: Page A.
- **MODE : DIFF**
  - When setting IMAGES to “4,” 4 images are available to be stored each FRAME: Page A, or each FIELD1,2 :Page A.
- **MODE : DIFF**
  - When setting IMAGES to “16,” memory is not available in FRAME: Page A. 16 images are available to be stored in FIELD:Page A.
- **MODE : SAME**
  - 1 image is available to be stored in each FRAME: Page A-C or in each FIELD1,2: A-C.

### NOTE

- When printing 2 images on S size sheet, some characters of the comment will be clipped.
- When printing 2 images on L size sheet, the images may be partially clipped. In this case, adjust the image position by “PRN V AREA” of LAYOUT2 in SERVICE MENU so that the image moves to the proper position, or use 2S mode. See page 41,48.
WHEN SETTING TO MODE : DIFF, IMAGES : 4;
Repeat the following procedure to store the set number of images in memory.

1. Press DISPLAY button to display the set condition.

2. Press MONITOR button and select the source image (“LIVE” is displayed on the monitor.) to display the image to be stored.

3. Press MEMORY button to store the image to be printed.
   • For normal setting, when the image is stored, the source image (LIVE image) is displayed after displaying the stored image about 1 second.

4. When selecting the position to store the image, press MEMORY PAGE button to select the memory page.
   • Press ▲, ▼, ◀, ▶ button to determine the position to store the image.
   • The image is stored in the selected memory page.
   • The position number where the image can be stored is indicated in yellow.

WHEN SETTING TO MODE : SAME, IMAGES : 4;
Only one image will be displayed on the monitor screen.

1. Press DISPLAY button to display the set condition.

2. Press MONITOR button and select the source image (“LIVE” is displayed on the monitor.) to display the image to be stored.

3. Press MEMORY button to store the image to be printed.
   • When the image is stored, the source image (LIVE image) is displayed after displaying the stored image about 1 second. (When MEM&MONI:OFF in SERVICE MENU)

4. When selecting the memorizing page (A, B, C), press MEMORY PAGE button to select.
   • The position number where the image can be stored is indicated in yellow.
**SEPARATE PRINT**

- The SEPARATE print is a function to insert a white frame between 2 or more images.
- Use LAYOUT2 of SERVICE MENU for setting. See page 48.

**NOTE**

The amount of white frame in multi print is different between on the monitor and the printed image.
The image size changes according to “SIZE” of LAYOUT menu.
The setting just before printing applies to all the multi print images.

---

**PHOTO PRINTS**

- PHOTO print is a function to print the images on the photo size (3 x 4 cm, 5 x 5 cm, 3 x 3.5cm) and CARD (2 x 1.5cm) size.
- CARD size print is suited to stick on a business card.
- Use LAYOUT of MAIN MENU for setting. Refer to page 46 for setting.
- The following prints are available.

**MODE: PHOTO1**

<table>
<thead>
<tr>
<th>S size print</th>
<th>CARD</th>
<th>3 x 4</th>
<th>5 x 5</th>
<th>3 x 3.5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 x 4 cm</td>
<td>5 x 5</td>
<td>3 x 3.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 x 1.5 cm</td>
<td>2 x 1.5 cm</td>
<td>2 x 1.5 cm</td>
<td></td>
</tr>
</tbody>
</table>

---

---

---

---
### EXTERNAL REMOTE TERMINAL SIGNAL ALLOCATION (STEREO JACK)

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td>Earth</td>
</tr>
<tr>
<td>2</td>
<td>MEMORY</td>
<td>Memory: When the signal becomes “LOW” from “HIGH”, the image is stored in memory. (When the signal has been “LOW” for 15ms or more, the image is stored in memory. See page 51, 52.)</td>
</tr>
<tr>
<td>3</td>
<td>BUSY1</td>
<td>Refer to the BUSY LEVEL setting of REMOTE SET in SERVICE MENU. See page 52.</td>
</tr>
</tbody>
</table>

- When the signal from BUSY terminal is received with TTL level, keep the following. 
  \[ |I_{OL}| = 2mA \text{ or less}, \ |I_{OH}| = 1mA \text{ or less} \]
  \[ |I_{OL}| \text{ means the current flowing into the unit at Low output}, \ |I_{OH}| \text{ means the current flowing out of the unit at High output.} \]
- Just after completing printing, there is a period that memory signal is not accepted.
## EXTERNAL REMOTE TERMINAL 2

The image can be stored in memory and printed by sending the remote signal through the external remote terminal on the rear panel.

- Make out the necessary circuit to use this function by referring to the following.

### EXTERNAL REMOTE TERMINAL SIGNAL ALLOCATION (MINI DIN8PIN)

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
<td>Earth</td>
</tr>
<tr>
<td>2</td>
<td>MEMORY</td>
<td>Memory: When the signal becomes &quot;LOW&quot; from &quot;HIGH&quot;, the image is stored in memory. (When the signal has been &quot;LOW&quot; for 15ms or more, the image is stored in memory. See page 51, 52.)</td>
</tr>
<tr>
<td>3</td>
<td>BUSY2</td>
<td>Refer to the BUSY LEVEL setting of REMOTE SET in SERVICE MENU. See page 52.</td>
</tr>
<tr>
<td>4</td>
<td>BUSY1</td>
<td>Refer to the BUSY LEVEL setting of REMOTE SET in SERVICE MENU. See page 52.</td>
</tr>
<tr>
<td>5</td>
<td>PRINT</td>
<td>When the signal becomes &quot;LOW&quot; from &quot;HIGH&quot;, the image is stored in memory. (When the signal has been &quot;LOW&quot; for 15ms or more, the image is stored in memory.)</td>
</tr>
<tr>
<td>6</td>
<td>REMOTE</td>
<td>The same functions as the supplied remote control can be controlled.</td>
</tr>
<tr>
<td>7</td>
<td>Unused</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>DC3V</td>
<td>Power supply for the remote control DC 1mA Max.</td>
</tr>
</tbody>
</table>

- When the signal from BUSY terminal is received with TTL level, keep the following.  
  \[ |I_{OL}| \leq 2mA \text{ or less} , \quad |I_{OH}| \leq 1mA \text{ or less} \]  
  \[ |I_{OL}| \text{ means the current flowing into the unit at Low output, } \quad |I_{OH}| \text{ means the current flowing out of the unit at High output.} \]
- Just after completing printing, there is a period that memory signal is not accepted.
**PIN NO. 6 REMOTE TERMINAL**

By sending the following remote control codes from pin No.6, the same functions as the wired remote control unit supplied can be controlled.

- 01: ▼ button
- 02: ▲ button
- 03: ◀ button
- 04: ◁ button
- 08: PRINT Q'ty ▲ button
- 09*: 0A*: MENU button
- 0B*: CLEAR button
- 0C*: PRINT Q'ty ▼ button
- 0D*: 0E*: SET button
- 0F*: STOP button
- 12*: PROGRAM button
- 13*: PRINT button
- 15*: FIELD/FRAME button
- 16*: COLOR ADJ button
- 17*: MEMORY button
- 18*: DISPLAY button
- 1C*: MEMORY PAGE button
- 1D*: MONITOR button

In case of the codes with * mark, 5 words are sent.

**TIMING CHART**

- Input signal level: TTL
- Input timing: 1 word 38.4 ms (Reference)
  - \( T_1 \geq 0.4 \text{ ms} \)
  - \( 1.5 \text{ ms} < T_2 < 2 \text{ ms} \)
  - \( 2 \text{ ms} < T_3 < 4.2 \text{ ms} \)
  - \( 13 \text{ ms} < T_4 < 90 \text{ ms} \)

(Example) Print code

\[
13 = 010011
\]
### SETTING THE FUNCTIONS (MENU CHART)

#### OPERATION
- **COLOR ADJ**
  - **SELECT** COLOR/B&W
  - **BRT** = 0
  - **CONT** = 0
  - **R-SUB** = 0 (C, R)
  - **G-SUB** = 0 (M, G)
  - **B-SUB** = 0 (Y, B)

- **CENTER**
- **CANCEL**

Press **↓, ↑** button to change the value, select the mode or switch the item.

Select an item with **△, ▽** button.

Monitor display

### MONITOR DISPLAY CHART

- **Front panel**
  - **POWER**
  - **ON**

- **Set conditions display**

- **Source Image**

### MAIN MENU display

- **PRG. 1**
- **DISPLAY**
- **MEMORY**
- **SET**

### LAYOUT setting display

- **MODE** AUTO/S
- **MULTI** OFF/PRN SELECT/ON
- **SIZE** W/M/N/USER
- **COPY** OFF/W/M/USER
- **TOP** 0.01 - 48.0
- **BOTTOM** 0.01 - 48.0
- **LEFT** 0.01 - 63.0
- **RIGHT** 0.01 - 63.0

### Print setting display

- **PRINT**
- **GRAD** ECHONOR
- **APT** SR/W/H2
- **DIR** NOR/REV
- **MIRROR** OFF/ON
- **PRN SPEED** FAST/NORMAL

### Comment making display

- **COMMENT** OFF/(SET)/ADJ/DATA

### Memory and Position setting display

- **MEMORY POSITION**
- **H-START** NOR/FRONT

---

*1 When going back to MAIN MENU or SERVICE MENU without saving the setting, press MENU button.

*2 When selecting MODE:DIFF, IMAGES 2/2S/4/16 are available.
When selecting MODE:PHOTO1, IMAGES CARD/3*4/5*5/3*3.5 are available.

---

<table>
<thead>
<tr>
<th>Page</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>34</td>
</tr>
</tbody>
</table>
OPERATION

The menus in the broken lines are indicated by { } button.

Press ▲, ▼ buttons to change the value, select mode or switch the item. (The item indicated by switching is shown in light character in this chart.)

LCD display

When going back to MAIN MENU or SERVICE MENU without saving the setting, press MENU button.

Front panel

is reference page.

is the name of button on remote control unit.

is the name of button on front panel.

*1 When going back to MAIN MENU or SERVICE MENU without saving the setting, press MENU button.

To Set Conditions display

*2 When selecting MODE:diff, IMAGES 2/2s/4/16 are available.

When selecting MODE:photo1, IMAGES: card/3*4/5*5/3*3.5 are available.
ADJUSTMENTS & SETTINGS (MAIN MENU)

MAIN MENU ITEMS

MAIN MENU is used to open sub-menus. The functions are set with the following 6 menus. The settings can be saved by SAVE PRG.

**INPUT**
- **VIDEO**: Selects the input signal through the terminal on the rear panel
- **S-VIDEO**: Signal from S-video signal input terminal
- **RGB**: Signal from RGB signal input terminal

**COLOR ADJ**
- Adjusts colour of printing image

**LAYOUT**
- Adjusts the image layout setting

**PRINT**
- Adjusts gamma characteristic, image outline, selects print direction, mirror print (left/right inverted) and printing speed

**COMMENT**
- Making a comment

**MEMORY POSITION**
- Selects print position

**SAVE PRG**
- Stores the above settings in 1 of 3 program memories

OPERATING MAIN MENU

Use buttons on the remote control unit to display MAIN MENU and select and set functions.

1. Press MENU button to display MAIN MENU.

2. Select your desired item by pressing ▲ or ▼.

3. Press ► button to open a sub menu.

4. Select an item you wish to adjust by pressing ▲ or ▼.
5. Press ◄ or ► button to select an item or change value.
   If you press MENU button, the settings will be cancelled and MAIN MENU is displayed.

6. Press SET button.
   “SAVE PRG 1/2/3/CANCEL” is displayed.
   This menu lets you select a program memory (1-3) to store your new settings.

7. Press ◄ or ► button to select the program memory numbers of 1, 2 or 3 to store the setting.
   The program is replaced. In case of keeping the stored program, do not select the program memory number in which the setting is stored.
   If you wish to cancel the setting, select CANCEL and press SET button.

8. Press SET button again.
   When selecting “PRG1” to set, “1” is chosen. When memorizing in a different program memory number, select the number of the program.

   • As the program is replaced, it is recommended not to choose the program number which has been selected in the step 7.
   • The memorized program will be selected by pressing PROG button, and the image which follows each setting is displayed. However, you cannot change the setting of selected program during printing. You can store only 1 kind of program set in COMMENT menu. The setting values of TOP, BOTTOM, LEFT and RIGHT in LAYOUT MENU can be memorized in each 2, 2S, 4, and 16 of IMAGES.
   • The image will be printed according to the selected memory program.

   **NOTE**
   The settings can be stored in each program number 1~3 in MAIN MENU and SERVICE MENU. When selecting the program number in which the setting is stored, the same program numbers of MAIN MENU and SERVICE MENU are automatically selected. (When selecting Program 1 in MAIN MENU, Program 1 in SERVICE MENU is also selected automatically.)
COLOR ADJ Colour adjustment display

- The colour of the source image and memorized image can be adjusted.

**SELECT**

**COLOR**
- Colour print

**B&W**
- Black and white print (The monitor shows in colours.)

**BRT** (Bright)
- Adjusts brightness of the printing image. (The whole image will be adjusted.)

**CONT** (Contrast)
- Adjusts contrast of the printing image. (The image will be adjusted based on the black level.)

**R-SUB**
- Adjusts red-subcontrast of the printing image. Red is added with ▲ and blue is added with ▼.

**G-SUB**
- Adjusts green-subcontrast of the printing image. Green is added with ▲ and pink is added with ▼.

**B-SUB**
- Adjusts blue-subcontrast of the printing image. Blue is added with ▲ and yellow is added with ▼.

**CENTER**
- When pressing ▲, the values of BRT, CONT, R-SUB G-SUB and B-SUB will be reset to 0.

**CANCEL**
- Cancels the change of COLOR ADJ and resets to the stored setting.

- When selecting B&W, R-SUB, G-SUB and B-SUB change to Y-SUB, M-SUB, C-SUB. When selecting THERMAL : OFF (colour print), each value of Y-SUB, M-SUB and C-SUB is available to adjust the colour of the printed image. When selecting THERMAL : ON (thermal print), only Y-SUB value is available and function as the density of gray colour of the printed image.

- When SELECT is changed from COLOR to B&W, the set values of R-SUB, G-SUB and B-SUB function as the density of gray colour.

LAYOUT Layout setting display

**MODE**
- Selects the print size. Normally select the ink sheet size which is installed in this unit. (See page 17 for the print paper.)
  - **AUTO**
    - L size ink sheet.
    - When S size ink sheet is installed, S size is automatically set.
  - **S**
    - S size ink sheet or S size printing with L size ink sheet, and S size printing with thermal paper.
  - **L**
    - L size printing with thermal paper.

**MULTI**
- Selects ON or OFF for printing 2, 4, or 16 images on a sheet.
  - **OFF**
    - Multi-image print is not available. 1 image mode
  - **OFF(PRIN SELECT)**
    - 4 memory pages display. 1 image mode
  - **ON**
    - Multi-image print is available.
    - When selecting OFF or OFF(PRIN SELECT), MODE: SAME/DIFF/POTO1 and IMAGES: 2/2S/4/16 are not displayed.
    - OFF(PRIN SELECT) is not available for RS-232C equipment.
    - When setting AUTO CLEAR to MEM or AFTER PRN in OFF(PRIN SELECT), only selecting page is cleared.
MODE Selects print mode
SAME Prints images of the same scenes on a sheet.
DIFF (Different) Prints images of different scenes on a sheet.
PHOTO1 Prints images in Photo mode.
  • This menu is displayed only when MULTI : ON is selected.

IMAGES Selects the number of images on a sheet. Is displayed when setting
MULTI to “ON”.
2 2-images on a sheet. (2 S-size images can be printed in L size print.
  However, the top and bottom of the image will be clipped.)
2S 2 reduced images on a sheet. (For L size print, the image can be
  printed without clipping by reducing S size images. In that case, the
  printing speed (PRN SPEED) becomes NORMAL. For S size print, 2
  images can be printed as the same result as 2 mode.)
4 4-images on a sheet
16 16-images on a sheet
  • 2S is not displayed when selecting THERMAL:ON.
  • When selecting “MODE:PHOTO1”, the following sizes are available.
    CARD Print size 20 mm x 15 mm
    3*4 Print size 30 mm x 40 mm
    5*5 Print size 50 mm x 50 mm
    3*3.5 Print size 30 mm x 35 mm

SIZE Sets the print area of the image. Choose one from 3 preset print areas
  and a user select area.
  Printed image size of 1 image mode (mm)
  (S size) (L size)
  W 100 x 75 125 x 94
  M 94 x 70 118 x 89
  N 90 x 68 113 x 85
  USER Optional size by user
  • Part of the image may be clipped from the print depending on the print size.

COPY Copies a printed image size which is set W, M, or N in size. The
  selected setting level is displayed as TOP, BOTTOM, LEFT and
  RIGHT. These levels become the changing base.

TOP/BOTTOM/LEFT/RIGHT Sets the printing area of the image. Adjust the size with
  button.
  TOP Shifts the upper end of the image (setting area : 0 to -48)
  BOTTOM Shifts the lower end of the image (setting area : 0 to -48)
  LEFT Shifts the left end of the image (setting area : 0 to -63)
  RIGHT Shifts the right end of the image (setting area : 0 to -63)

NOTE
  • When monochrome signal is input, colours may not be added to the characters
    displayed on the monitor. In that case, set SELECT of ANALOG COLOR ADJ MENU
    to “B&W” in SERVICE MENU.
  • When SIZE is set to “W” or the minus value is increased on H-POSI, the monitor
    screen may get darker according to the monitor connected. However, the image
    will be printed correctly.
ADJUSTMENTS & SETTINGS (MAIN MENU)

PRINT  Print setting display

GRAD (Gradation) Adjusts the gamma curve of images.
Selects the gamma curve among 3 kinds of the settings.
ES  Mainly when connecting to endoscope
ECHO  Mainly when connecting to ultrasound diagnostic equipment
NOR  Mainly when connecting to other equipment
• Only NOR is available when using CK900S4P, CK900L4P, CK900S4P(HX)EU or CK900L4P(HX)EU or selecting THERMAL : ON.

APT (Aperture) Controls apertures and reinforces or softens the contour of image.
S (SOFT) Softens the contour.
N (NORMAL) Does not perform APT.
H1 (HARD 1) Reinforces the contour.
H2 (HARD 2) Reinforces the contour more.

DIR (Print Direction) Selects printing direction. The left and right margin sizes will be different on L size paper.
NOR  The margin is made on the lower position.
REV  The margin is made on the upper position.

MIRROR Selects the mirror (left/right inversed) prints.
OFF  Normal print
ON  Mirror print

PRN SPEED (PRINTING SPEED) Sets the printing speed.
FAST  High speed printing (S size: 1280 dots (100 mm) x 600 lines (75 mm))
NORMAL  Prints lines in double density. (S size: 1280 dots (100 mm) x 1200 lines (75 mm))
• Only NORMAL is available when using CK900S4P(HX)EU or CK900L4P(HX)EU or selecting IMAGES : 2S.
Only FAST is available when selecting THERMAL : ON.

Example of SIZE, DIR and MIRROR setting
(This image is limited in printing with white by SIZE setting.)

P
Standard print

P
When the values of TOP and RIGHT are small

P
When the values of BOTTOM and LEFT are small

When the values of TOP and RIGHT are small and MIRROR is ON

When the values of TOP and RIGHT are small and DIR is REV

When the values of TOP and RIGHT are small and MIRROR is ON and DIR is REV
COMMENT  Comment making display

This menu is used to enter a comment.

1 Comment mode Selects to display the comment or not.
   OFF  Does not display the comment.
   ON[SET]  Displays the comment.
   When pressing SET button during selecting ON, the editing display
           will be shown.
   ADJ  Prints the set value made on APT, COLOR ADJ and ANALOG COLOR
          ADJ menu.
   DATA  Prints total number of prints, each setting(AFC, AGC, GRAD, APT),
          image size, etc.

2 Comment display  Displays the comment in this part.  48 letters (24 letters x 2 lines)
                   are available to input.  Choose LEFT or RIGHT by { , },
                   buttons, and select the position to input a letter.

3 Character table  Selects the character to input with { , },
                   buttons.

4 Editing mode  Edits the letter and inputting position with { , },
               buttons.
   INS  Select INS and press SET button to insert a space.  When the cursor
        is on a letter, a space is inserted at the cursor position and the letters
        shift to right.
   DEL  Select DEL and press SET button to delete the selected letter.  The
        letters shift to left.
   CANCEL  Select CANCEL and press SET button go back to the previous
           comment which has been memorized.
   SAVE  Select SAVE and press SET button to memorize the comment.

MAKING A COMMENT

1 Select ON with ► button and press SET button.
   The comment editing display appears.

2 Select the position where the letter is inputted.
   Choose LEFT or RIGHT with { , } buttons, and move the cursor.

3 Move the cursor to the character table with { , } buttons.
   Then, select a desired letter.
   The selected letter will go on and off in red.

4 Press SET button.
   The selected letter is inputted into the comment display block.
   The cursor in the comment display block will move to right.
Repeat steps 2 to 4 to complete a comment.

- Skip 2 if you do not change the cursor position.
- Only one comment can be stored regardless of the program number you chose in SAVE PRG. Same comment will be stored in PRG.1 through PRG3. Different comments cannot be stored in each program.
- When printing in FIELD mode, the comment is a little lower in quality.

MEMORY POSITION Memory and Position setting display

- The print area settings made with this menu can be memorized as a user program setting.

**LINE**

Selects whether showing a frame of print area or not.

**OFF**
A frame of print area is not shown.

**ON**
A frame of print area is shown.

- When LINE is set to “ON”, the monitor colour may be changed, or the image may become unstable horizontally, depending on the H-POSI setting. In this case, set LINE to “OFF”.
- When the frame becomes over the setting area, the frame colour turns black.
- The frame is not displayed on the memory image.

**H-POSI**
Changes the horizontal start position of input signal

The whole data image can be moved horizontally by changing the setting number.

Setting area -8 ~ +8

- When setting minus value too large, the right side of the memory image is clipped on the monitor. However, it is printed normally.

**V-POSI**
Changes the vertical start position of input signal

The whole data image can be moved vertically by changing the setting number.

Setting area -10 ~ 0

**H-START** (H-Position)

Sets H-Position to special signal timing. Select “FRONT” when the image is unbalanced and cannot be corrected by H-POSI on basic printing. When selecting FRONT, AFC in SERVICE MENU does not work and the top part of the printing image may curved during VTR special play back.

**NOR** (Normal) When inputting PAL input signal

**FRONT** When inputting special input signal
ADJUSTMENTS & SETTINGS (SERVICE MENU)

SERVICE MENU ITEMS

SYSTEM
Sets page increment, buzzer and remaining of ink sheet, selects thermal paper.

GAMMA ADJ
Sets gamma curve level.

LAYOUT2
Adjusts print layout setting.

ANALOG COLOR ADJ
Adjusts analog input signal image.

INPUT
Sets even/odd number of FIELD, adjusts display, input signals, etc.

OUTPUT
Sets sub-contrast of the monitor, sync. signal.

KEY SET
Selects the functions of the buttons and function of remote terminal.

RS232C
Selects baud rate.

REMOTE
Selects remote signal.

PREVIOUS ERROR
Shows error history.

SAVE PRG
Stores the above settings in 1 of 3 program memories.

OPERATING SERVICE MENU

1. Press MENU button on the remote control unit.

   MAIN MENU is displayed.

2. Press STOP buttons on the remote control unit at the same time.

   SERVICE MENU is displayed.

3. Select your desired item by pressing ▲ or ▼ on the remote control unit.

4. Press ▶ button to open a sub menu.

5. Select an item you wish to adjust by pressing ▲ or ▼.

6. Press ◄ or ▶ button to select an item or change value.

7. Press SET button.

   SERVICE MENU is displayed.

   “SAVE PRG 1/2/3/CANCEL” is selected.

   This menu lets you select a program memory (1-3) to store your new settings.

8. Press ◄ or ▶ button to select the program memory numbers of 1, 2 or 3 to store the setting.

   The program is replaced. In case of keeping the stored program, do not select the program memory number in which the setting is stored.

   If you wish to cancel the setting, select “CANCEL”.

9. Press SET button.

   When selecting PRG1 to set, “1” is chosen. When memorizing in a different program memory number, select the number of the program.

   The setting is completed and the normal screen is displayed.
### SYSTEM SETUP System setting display

**INCREMENT**
- **OFF**  
  Page increment is not available.
- **PART**  
  Every time pressing MEMORY button, memory part goes to the next part and image will be memorized on it. The memory page does not go to the next. When MULTI:OFF, this mode works and same as PAGE mode.
- **PAGE**  
  Every time pressing MEMORY button, memory page goes to the next page and image will be memorized on it.

**BUZZER**
- **OFF**  
  Does not sound the buzzer.
- **T1**  
  Sounds the buzzer (Tone1).
- **T2**  
  Sounds the buzzer (Tone2).

**REMAINING Q’ty**
- Sets the number of ink sheet to inform the remaining.
  - **0 ~ 20**  
    Informs by setting of REMAIN NOTICE when 0 to 20 ink sheet are left.

**REMAIN NOTICE**
- Sets the way to inform when the number of ink sheet is less than the set number in REMAINING Q’ty.
  - **OFF**  
    Does not inform the remaining.
  - **BZ**  
    The buzzer sounds three times when turning on the power, completing printing and closing the door. If the door is open when turning on the power, the buzzer sounds when closing the door.
  - **PRN**  
    Informs by printing a red mark under the comment area on the print.
  - **B&P**  
    The buzzer sounds three times and a red mark is printed under the comment area on the print.
    - When selecting SELECT : B&W in COLOR ADJ, the red mark is printed in black-and-white.

**REMAINING SCREEN**
- Selects displaying the remains of ink sheet on the monitor or not.
  - **OFF**  
    Does not display the remains of ink sheet on the monitor.
  - **ON**  
    Displays the remains of ink sheet on the monitor.
    - If a paper jam occurs, the remains of the ink sheet may be different from the indication on the monitor.

**NOTE**
- When THERMAL is set to ON, REMAINING Q’ty, REMAIN NOTICE and REMAINING SCREEN are not displayed.

**ERROR SCREEN**
- Selects displaying the error on the monitor.
  - **OFF**  
    When DISPLAY off is selected, the error is not displayed on the monitor.
  - **ON**  
    Even if DISPLAY off is selected, the error is displayed on the monitor.

**AUTO FEED& CUT**
- Selects automatically feeding and cutting the print paper or not.
  - **OFF**  
    Does not feed and cut the print paper.
  - **ON**  
    When power is on and setting the print paper, this unit automatically feeds and cuts it twice after closing the front door.
    - Only OFF is displayed when selecting THERMAL : ON.

**THERMAL**
- Selects the type of printing paper.
  - **OFF**  
    Colour print paper.
  - **ON**  
    Monochrome thermal paper.
    - The image may not be printed correctly depending on the set of actual paper type, installation of ink sheet and condition of selecting menu. (Refer to the next page.)
    - When using thermal paper, do not install the ink cassette.
PAPER HOLD
Sets to hold the printed paper or not.
OFF
Printed paper is cut and released.
ON
Printed paper is held at the print outlet after cut. Pull the paper out when necessary.
• When selecting THERMAL : ON, this menu changes to AUTO CUT.
• It is recommended not to leave the printed paper holding at the print outlet. Some malfunction may occur.
• Do not turn off the power while holding paper.
• When PAPER HOLD is set to ON, MENU button and COLOR ADJ button on the remote control unit are not available.

AUTO CUT
Selects cutting the printed thermal paper automatically or not.
ON
Cuts the printed thermal paper automatically.
OFF
Does not cut the thermal paper. Press MEMORY button while pressing MONITOR button.
• This menu is displayed only when THERMAL : ON is selected.

INIT PROG (Initialize program)
ALL
Mode to initialize the program in MAIN MENU and SERVICE MENU.
MAIN
Mode to initialize the program in MAIN MENU.
SERVICE
Mode to initialize the program in SERVICE MENU.

INITIALIZE
OFF
Does not initialize.
GO[SET]
Starts initializing. When SET button is pressed, initializing starts.

Setting and type of print paper / Print result

<table>
<thead>
<tr>
<th>Setting</th>
<th>Type of print paper</th>
<th>Colour print paper</th>
<th>Monochrome thermal paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>THERMAL</td>
<td>AUTO CUT MARGIN CUT</td>
<td>With ink cassette</td>
<td>With ink cassette</td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>Normal colour print</td>
<td>Printing is not available.</td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>Normal colour print with Margin cut</td>
<td>Does not print</td>
</tr>
<tr>
<td>ON</td>
<td>OFF</td>
<td>Normal colour print with Paper hold</td>
<td></td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>Normal colour print with Paper hold after margin cut</td>
<td></td>
</tr>
<tr>
<td>ON</td>
<td>OFF</td>
<td>Printing is not available.</td>
<td></td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>REMOVE CASS TML 2</td>
<td>Does not print</td>
</tr>
</tbody>
</table>

*1 This error is displayed when turning the power on, and closing the door.
*2 In this case, remove the therm paper and install the colour print paper.
*3 In this case, remove the colour print paper and install the thermal paper.

NOTE
• When setting THERMAL to OFF after thermal printing with setting AUTO CUT to OFF, “PUSH FEED&CUTS” is displayed on the monitor and LCD. In this case, press MEMORY button with holding MONITOR button to cut the printed paper.
• When selecting AUTO CUT : OFF, make sure to cut the printed paper before turning off the power.

GAMMA ADJ Gamma level setting display

INIT:[CLEAR]
Initializes each setting.

COLOR
Selects the adjusting gamma level.
ALL
Adjusting gamma level for all colours.
EACH
Adjusting gamma level for each colour of R, G, B.

SELECT
Is displayed when selecting “EACH” in COLOR.
R
Adjusting gamma level for red.
G
Adjusting gamma level for green.
B
Adjusting gamma level for blue.

Changing gamma curve:
Use the ▲, ▼ buttons on the remote control unit to select the Hi/Mid/Low gamma point to set.
Also Use ◀, ► buttons to input setting level.
ADJUSTMENTS & SETTINGS (SERVICE MENU)

Hi/Mid/Low Adjusts the colour depth of image by selected point.

POIN(THi/Mid/Low) Selects the point to adjust the colour depth.
(EXAMPLE) Pointing lighter colour much lighter;
Set the setting level for POINT(Hi) and Hi higher.

NOTE
It takes time to set the gamma value by CPU. Wait until the normal display is shown after pressing SET button.
It may also take time to switch the program when the value of gamma setting is changed.

LAYOUT2 Layout setting display 2

PRN V AREA Adjusts the vertical position of memory image.
Setting area -10 ~ 10 (adjusts 2 lines each)
• This menu is displayed only when IMAGES is set for 2 in L size paper.
• PRN V AREA permits adjustment of the vertical position of the image so that the clipped part of the image can be moved higher and lower.

SEPARATE
OFF Prints without white frame. (A white frame appears according to the settings of LAYOUT)
ON Prints with white frame.

MARGIN CUT Cuts the margin of the printed paper.
• This function is very convenient to stick the printed image on the card. The figure shows S size print paper setting.
OFF Margin is not cut.
ON Margin is cut.
• Only OFF is displayed when selecting THERMAL : ON.

ANALOG COLOR ADJ Analog colour adjustment display

• This menu is used to adjust the image of analog input signal before storing in the memory.

INPUT Selects processing of video signal.
COLOR Processes as colour video signal.
B&W Processes as monochrome video signal. (The image is shown in black and white.) Select B&W when inputting monochrome signal.
BRT(Bright) Adjusts the brightness of the printing image.
CONT(Contrast) Adjusts the contrast of the printing image.
R-SUB Adjusts red-subcontrast of the printing image. Red is added with ▶ and blue is added with ◀.
G-SUB Adjusts green-subcontrast of the printing image. Green is added with ▶ and pink is added with ◀.
B-SUB Adjusts blue-subcontrast of the printing image. Blue is added with ▶ and yellow is added with ◀.
COLOR Adjusts density of the printing image. The colour of the image gets deeper with ▶ and lighter with ◀.
APT(Aperture) Adjusts the contour of image. The contour is reinforced with ▶ and softened with ◀.
CENTER Initializes each setting. When pressing ▶, the values of BRT, CONT, R-SUB, G-SUB, B-SUB, COLOR, and APT will be reset to the centre value.
CANCEL Initializes each setting in ANALOG COLOR ADJ.
INPUT Input signal setting display

• Set this menu before memorizing image.

FIELD The odd and even field lines will be reversed depending on the input interlaced signal. Printing image is not clear so that the odd and even field lines may be reversed depending on the input interlaced signal. In this case, FIELD is set to “REV”. (The image disorder cannot be seen in monitor display.)

NOR(Normal) Does not reverse FIELD as remaining the input interlaced signal.
REV(Reverse) Reverses the even and odd numbers of FIELD.

AFC (Automatic frequency control)
The image distortion on the top may occur when the VCR image is special input such as in pause, field-by-field playback, or FF playback mode. Also, the image is not printed correctly because of a weak TV signal. In this case, set the AFC function to “ON”.

• The image distortion on the top may occur by the special signal when AFC is set to “ON”. In this case, set to “OFF”.
• This function menu is invalid when selecting “FRONT” on H-START of MEMORY POSITION in MAIN MENU.

OFF AFC is invalid.
ON AFC is available.

AGC (Automatic gain control)
This function is to automatically adjust a dark picture in brightness and print with sharp contrast. Peak level of an input signal is detected and signal width is standardized to the appropriate value.

OFF AGC is invalid.
ON AGC is available.
• This function is not displayed when selecting RGB signal.

DCF This function selects whether separating the composite video signal or not. When inputting the monochrome signal, set this function to OFF. Input signal is not through DCF circuit, so that this function is for high quality of monochrome image. When inputting the colour composite signal, this function is set to “ON”. Input signal is through DCF circuit and the composite video signal is separated.

OFF When inputting monochrome signal
ON When inputting colour signal
• This function is not available when selecting RGB or S-VIDEO.

IN SYNC Selects the level of input sync.signal.
TTL Composite Sync.of TTL level
SOG Composite Sync.on Green
0.3V Composite Sync.of 0.3Vp-p level
### OUTPUT  Output signal setting display

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MONI R-SUB</td>
<td>Adjusts red-subcontrast on the monitor. Red is added with ▶️ and blue is added with ◄.</td>
</tr>
<tr>
<td>MONI B-SUB</td>
<td>Adjusts blue-subcontrast on the monitor. Blue is added with ▶️ and yellow is added with ◄.</td>
</tr>
<tr>
<td>LIVE SEL</td>
<td>Switches the monitor display routes of input signal at LIVE mode with DISPLAY OFF. Selects to display input signal, or the reflection of image and adjustment on the monitor.</td>
</tr>
<tr>
<td>ANA (Analog)</td>
<td>Displays the image of input signal on the monitor.</td>
</tr>
<tr>
<td>DIG (Digital)</td>
<td>Displays the reflection of image and adjustment.</td>
</tr>
<tr>
<td>CONVERT</td>
<td>This function is to output the signals which selected at INPUT in MAIN MENU to Video output terminal/RGB output terminal/S-video output terminal.</td>
</tr>
<tr>
<td>OFF</td>
<td>Outputs to the same output terminal as the input terminal.</td>
</tr>
<tr>
<td>ON</td>
<td>Outputs to Video output terminal/RGB output terminal/S-video output terminal.</td>
</tr>
<tr>
<td>MEMORY SYNC</td>
<td>Selects the Sync. signal for displaying memory image.</td>
</tr>
<tr>
<td>INT</td>
<td>Selects Sync.input signal, and displays memory image.</td>
</tr>
<tr>
<td>EXT</td>
<td>Selects Sync.output signal, and displays memory image.</td>
</tr>
<tr>
<td>AUTO</td>
<td>Selects depending on the output of Sync signal.</td>
</tr>
<tr>
<td>USER</td>
<td>Selects the same signal as the one selected in IN SYNC.</td>
</tr>
<tr>
<td>0.3V</td>
<td>Selects the output level of H+V Sync signal of RGB signal.</td>
</tr>
<tr>
<td>TTL</td>
<td>0.3 Vp-p</td>
</tr>
<tr>
<td>OUT SYNC</td>
<td>Selects the polarity of H+V Sync. output signal of RGB signal. Set the polarity according to the monitor connected.</td>
</tr>
<tr>
<td>NEGA</td>
<td>Negative polarity</td>
</tr>
<tr>
<td>POSI</td>
<td>Positive polarity</td>
</tr>
<tr>
<td>RGB SOG OUT</td>
<td>Selects the sync.signal output from RGB analog output terminal on the rear panel.</td>
</tr>
<tr>
<td>OFF</td>
<td>Outputs Composite sync. signal only.</td>
</tr>
<tr>
<td>ON</td>
<td>Outputs Sync. On Green signal.</td>
</tr>
</tbody>
</table>

### KEY SET  Button function setting display

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEY LOCK</td>
<td>Makes the function on the remote control unit buttons invalid. All buttons on the remote control unit are available. The function on the remote control unit buttons, except MEMORY, PRINT, MONITOR and MEMORY PAGE are not available. When pressing MENU button, KEY SET menu is displayed. When pressing MENU button, only selecting OFF/ON of KEY LOCK is available.</td>
</tr>
<tr>
<td>OFF</td>
<td>Prints</td>
</tr>
<tr>
<td>ON</td>
<td>Prints</td>
</tr>
<tr>
<td>MEM&amp;PRN</td>
<td>Prints</td>
</tr>
<tr>
<td>MEM&amp;STOP</td>
<td>Prints</td>
</tr>
<tr>
<td>KEEP&amp;MONI</td>
<td>Prints</td>
</tr>
<tr>
<td>AUTO CLEAR</td>
<td>Prints</td>
</tr>
<tr>
<td>KEEP MONI</td>
<td>Prints</td>
</tr>
<tr>
<td>KEEP&amp;STOP</td>
<td>Prints</td>
</tr>
<tr>
<td>KEEP&amp;MONI</td>
<td>Prints</td>
</tr>
<tr>
<td>AUTO CLEAR</td>
<td>Prints</td>
</tr>
<tr>
<td>CLEAR KEY</td>
<td>Prints</td>
</tr>
<tr>
<td>PAGE&amp;ALL</td>
<td>Prints</td>
</tr>
</tbody>
</table>
MEM&PRN (Memory and Print)

When pressing MEMORY button, the image is automatically printed after the image is stored in the memory. In case of multi image of different scenes, printing will be done after the last image is stored in memory.

- **OFF**
  - MEMORY button functions individually. The image is memorized without printing.
- **ON**
  - Automatically prints after memorizing.
- **R1**
  - When a signal inputted through a memory key (pin No.2) of the remote terminal on the rear panel is switched to “low” level from “high” for the first time, a memory image is displayed. Then at the second time, a source image is displayed without printing the memory image.
- **R2**
  - On the KEEP MONI OFF status, when a signal inputted through a memory key (pin No.2) of the remote terminal is switched to “low” level from “high” for the first time, a memory image is displayed. Then at the second time, a source image is displayed and the memory image is printed. Do not change MULTI setting after memorizing an image.

MEM&STOP (Memory and Stop)

- **OFF**
  - The next image is overlaid in the memory.
- **PART**
  - The next image can not be overlaid in the memory when all parts of a page become full. To overlay a new image, print the memorized image.
- **PAGE**
  - The next image can not be overlaid in the memory when all pages become full. To overlay a new image, print the memorized image.

MEM&MONI (Memory and Monitor)

Switches the monitor display between the source image and memory image after memorizing.

- **OFF**
  - Displays the source image.
- **ON**
  - Displays the memory image. (Initial setting)
  - When KEEP MONI is set to OFF, the source image will be displayed when starting printing.

KEEP MONI

Selects the image displayed on the monitor during printing.

- **OFF**
  - Displays the source image after starting printing.
- **ON**
  - Displays the source image after starting printing, when indicating it before printing. Displays the memory image after starting printing, when indicating it before printing.

AUTO CLEAR

- **OFF**
  - The printed memory image is not cleared.
- **MEM**
  - When MULTI is set to ON, the memory image is cleared after memorizing on the printed memory page again.
- **AFTER PRN**
  - The printed memory image is cleared after completing printing.
  - For continuous printing, the stored image are cleared by above settings after completing printing the setting numbers of print.

CLEAR KEY

- **PART**
  - Pressing CLEAR button on the remote control unit, the selected one MULTI image is cleared.
- **PAGE**
  - Pressing CLEAR button on the remote control unit, images of the memorized page being selected are cleared.
- **ALL**
  - Pressing CLEAR button on the remote control unit, all of the stored images are cleared.
RS232C SET  RS-232C signal setting display

- This menu does not work when selecting THERMAL : ON or MULTI : OFF(PRINT SELECT).

BAUD RATE  Set the baud rate of RS-232C.
Set the baud according to the connecting device.

COMMAND TYPE  Sets the command type of RS-232C.
Selects the command type of RS-232C to control this unit.
- Select “A” for normal setting. Depending on the connected equipment, select “B” or “C”.

RESPONSE  Selects whether this unit sends RS-232C response to the host computer or not.
OFF  Does not send response.
ON  Sends normal response.

ERR RES OK  Selects the response code when an error occurs.
NOR  Sends the regular response.
ILL  Sends “job end” even if ILLEGAL error occurs.
INV  Sends “job end” even if INVALID error occurs.
ALL  Sends “job end” when any error occurs.

NO DSR  Sets to use 232C, DSR and DTR.
OFF  Uses NO DSR.
ON  Does not use NO DSR.

REMOTE SET  Remote signal setting display

BUSY LEVEL  Selects the level of BUSY signal from the remote terminals 1 and 2 on the rear panel.
LOW  The VCP cannot accept the remote input signal when the signal is “LOW”.
HIGH  The VCP cannot accept the remote input signal when the signal is “HIGH”.
- The default setting is “HIGH”.

BUSY 1,2 SELECT  Selects when the BUSY signal is outputted from the remote terminals 1 and 2 on the rear panel.
PRINTING  Outputs BUSY signal during printing.
MECHA ERR  Outputs BUSY signal when a mechanical error occurs in this unit or IC chip is not installed. BUSY signal is also outputted when the printing mechanism is pulled out or the menu is displayed on the monitor.
MEDIA ERR  Outputs BUSY signal when an error for paper or ink sheet occurs.
MEMORY STOP  Outputs BUSY signal when MEMORY button is not functioning.
STROBE 1V  After outputting BUSY signal, memory is taken in by waiting to 1 vertical period.
STROBE 2V  After outputting BUSY signal, memory is taken in by waiting to 2 vertical periods.
REMAINING  Outputs BUSY signal while the remains of ink sheet becomes the value set in REMAINING Q’ty.
- When either STROBE 1V or STROBE 2V is set to OFF, the other is available for setting.
SYNCHRONOUS SETTING FOR MEMORY

STROBE : 1V, BUSY LEVEL: HIGH in REMOTE SET of SERVICE MENU

STROBE : 2V, BUSY LEVEL: HIGH in REMOTE SET of SERVICE MENU

The numbers in the above figures are just references. The timing may be different according to the setting.

PREVIOUS ERROR  Error display

This function displays the most recent types of error.
ERROR MESSAGES & COUNTERMEASURES

If for some reason printing is not possible or error occurs during printing, the error message will be displayed on the monitor screen or LCD.
In this case, follow the procedure described below.

<table>
<thead>
<tr>
<th>Error messages</th>
<th>Causes</th>
<th>Countermeasures</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOOR OPEN</td>
<td>The printing mechanism is not locked completely.</td>
<td>• Insert the printing mechanism until it is locked in the unit.</td>
</tr>
<tr>
<td>CHANGE PAPER</td>
<td>Paper is used up.</td>
<td>• Set a new roll of paper. Refer to pages 17-18.  *Note : 1</td>
</tr>
<tr>
<td>CHANGE INK</td>
<td>The ink sheet is used up.</td>
<td>• Replace the ink sheet with a new one. Refer to pages 18-19.</td>
</tr>
<tr>
<td>SET CASSETTE</td>
<td>The ink cassette is not installed.</td>
<td>• Install the ink cassette. Refer to pages 18-19.</td>
</tr>
<tr>
<td>CHECK CASSETTE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REMOVE CASS TML</td>
<td>Ink cassette is installed when selecting THERMAL : ON.</td>
<td>• Remove the ink cassette.</td>
</tr>
<tr>
<td>SET PAPER</td>
<td>Paper is not installed.</td>
<td>• Set paper correctly.</td>
</tr>
<tr>
<td>OVER HEAT</td>
<td>The temperature of the thermal head becomes too high.</td>
<td>• Wait until the message goes off.  *Note : 2</td>
</tr>
<tr>
<td>CHECK INK 1* (*: 1~7)</td>
<td>IC chip is not installed. The data in IC chip cannot be read correctly.</td>
<td>• Use an ink sheet with the attached IC chip. • Set the attached IC chip on an ink sheet. • User the correct ink sheet with IC chip.</td>
</tr>
<tr>
<td>CHECK INK 4</td>
<td>IC chip and the ink mark are not the same. A wrong media type is set.</td>
<td>• Use correct IC chip and ink sheet.</td>
</tr>
<tr>
<td>REMOVE PAPER 11</td>
<td>Paper jam occurs.</td>
<td>• Refer to page 57 “Overcoming paper jams”. Press MEMORY button for more 1 second while pressing the MONITOR button.  *Note : 3</td>
</tr>
<tr>
<td>REMOVE PAPER 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REMOVE PAPER 13</td>
<td>Paper jam occurs when selecting THERMAL : ON.</td>
<td></td>
</tr>
<tr>
<td>CHECK EXIT *Note : 4</td>
<td>Paper is left in the paper outlet.</td>
<td>• Remove the paper.</td>
</tr>
<tr>
<td>MECHA ERROR 20</td>
<td>Other defects.</td>
<td>• Press MEMORY button for more 1 second while pressing the MONITOR button.  *Note : 3</td>
</tr>
</tbody>
</table>
| MECHA ERROR 30          |                                                    | In case of paper jam, refer to page 57 “Overcoming paper jams”.
| MECHA ERROR 40          |                                                    | If the status is not improved by carrying out this measure, consult your dealer. |
| OTHERS                  | Other defects.                                   | • Consult your dealer.           |

*Note : 1 The image may not be printed completely.
*Note : 2 When setting the continuous printing, the continuous printing is carried out after the error message goes off.
*Note : 3 This is an operation for initialization. **Make sure to press the MONITOR button first.** If MEMORY button is pressed first, a new image will be stored in memory erasing any previously stored image.
*Note : 4 During error status, the buzzer keeps sounding.

Other messages

<table>
<thead>
<tr>
<th>Messages</th>
<th>Causes and countermeasures</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUSH FEED&amp;CUT</td>
<td>Indicated when the power is turned on after turning off during printing. Press MEMORY button for more than one second while pressing MONITOR button. This is initializing. <strong>Make sure to press MONITOR button first.</strong></td>
</tr>
<tr>
<td>MECHA INITIALIZE</td>
<td>Indicated during initializing.</td>
</tr>
<tr>
<td>PRINT STOP</td>
<td>In the case of pressing STOP button on the remote control during printing, this unit is initialized. This message is indicated during initializing.</td>
</tr>
</tbody>
</table>

**NOTE**

- FEED&CUT (paper feeding and cutting) may not work when “PUSH FEED&CUT” or “MECHA ERROR” is displayed. In this case, pull the printing unit out to remove the print paper and re-install it. Then, close the printing unit and press MEMORY button while pressing MONITOR button again.
- If turning off the power during printing or stand-by, and turn on the power again with THERMAL : ON and AUTO CUT : OFF, “PUSH FEED&CUT” is displayed. In this case, make sure to remove the printed part with scissors etc, and press MEMORY button while pressing MONITOR button to feed & cut.
### BEFORE CALLING FOR SERVICE

Use the following troubleshooting chart to try to resolve any apparent defect in operation. If you are unable to resolve the problem, unplug the power cord and contact your dealer.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Check and Remedy</th>
</tr>
</thead>
</table>
| No power (when POWER lamp does not illuminate) | Is the power cord plug disconnected from the outlet?   
→ Connect the power cord plug to the outlet firmly.  
   After tuning the power off, wait for approx. 2 minutes. Then turn on the power. |
| No image appears on the monitor. | Are the IN SYNC, the OUT SYNC and the RGB SOG OUT set correctly?  
→ Check the current setting. Refer to pages 11-16.  
Are the video signal and sync. signal inputted to this unit?  
→ Check the connection. Refer to pages 11-16.  
Is the input signal on the menu screen (INPUT : VIDEO, S-VIDEO, RGB) selected correctly?  
→ Check the current setting. Refer to pages 22-23.  
Is the image stored in memory displayed on the monitor screen?  
→ Press MONITOR button to display the source image (LIVE). |
| The image on the monitor screen vibrates when characters are indicated on the monitor screen or LIVE SEL is set to “DIG”. (Refer to page 49.) | Are the sync. polarity of the monitor (OUT SYNC: NEGA POSI), the output level of the sync. signal (OUTPUT SYNC) and the RGB output sync. signal (RGB SOG OUT) set correctly?  
→ Check the current setting. Refer to pages 11-16. |
| The image is not stored in memory. | Are the images being printed with full memorized memory page?  
→ Press the CLEAR button on the remote control unit after printing.  
Then, store the image in the memory again.  
Is the memory full in the status of “INCREMENT : OFF” or “AUTO CLEAR : OFF”?  
→ Store the image in the memory after pressing the CLEAR button on the remote control unit.  
(According to the setting conditions, the image can be stored in the memory by setting INCREMENT to “PART” or “PAGE”, AUTO CLEAR to “AFTER PRN” or pressing the PRINT button.)  
Is the memory full in the status of “MEM & STOP : ON”?  
→ Press CLEAR button on the remote control, and store the image again. |
| The image is not printed. | Is the image stored in memory?  
→ Confirm that the image is stored in memory.  
Is the print paper or ink sheet used up?  
→ Check the status.  
Is the printing mechanism set correctly?  
→ Set the printing mechanism correctly. |
<table>
<thead>
<tr>
<th>Symptom</th>
<th>Check and Remedy</th>
</tr>
</thead>
</table>
| The stored image in the memory cannot be enlarged to fill the maxim print area. | Is the S size ink sheet installed when selecting “S” in MODE : AUTO/S? Or is the L size ink sheet installed when selecting “AUTO” in MODE : AUTO/S?  → Check the current setting. Refer to pages 23-24.  
   Is the paper size set to “N” in the size setting in LAYOUT menu?  → Set the size to “M” or “W”. Refer to pages 34, 41.  
   Is the print area set correctly in LAYOUT menu?  → Check the setting of the print area. Refer to pages 40-42. |
| The colour or picture quality is different between the memorized image and the printed image. | Is the colour of the image stored in the memory adjusted?  → Adjust the colour of the image stored in the memory with Colour adjustment display (COLOR ADJ). Refer to page 40. |
| When inputting monochrome image signal (without burst signal), sync. becomes unstable. | Is INPUT in ANALOG COLOR ADJ set to “COLOR”?  → Set INPUT to “B&W”. Refer to page 48. |
| The colour or picture quality is different between the image on the monitor screen and the printed image. (When the colour and picture quality are same between the image stored in the memory and the printed image.) | Is the image on the monitor screen adjusted?  → Adjust the image on the monitor screen with “MONI R-SUB” and “MONI B-SUB” in the OUTPUT menu. Refer to page 50. |
| The set comments do not appear on the print paper. | Is the COMMENT set to “OFF”?  → Set COMMENT to “ON”. Refer to page 43.  
   Is the comment inputted?  → Input the comment on the menu. Refer to pages 43-44. |
| Wired remote control unit cannot be operated. | Is the plug of the remote control unit disconnected from its terminal on the unit?  → Connect the plug of the remote control unit to the REMOTE terminal on the unit.  
   The supplied remote control unit can not be used by connecting to the external remote terminal on the rear panel of this unit.  
   Is the wired remote control unit for this unit (accessory) used?  → Use the remote control unit for this unit.  
   Is PAPER HOLD set to “ON”, and is printed paper kept at the print outlet?  → Remove the printed paper from the print outlet.  
   Is KEY LOCK set to “ON”?  → Set KEY LOCK to “OFF”. |
| The printing unit cannot be opened. | Is the paper cut after printing with THERMAL : ON and AUTO CUT : OFF?  → Press MEMORY button while pressing MONITOR button to cut the printed paper. |
OVERCOMING PAPER JAMS

1. Press OPEN button to pull out the printing mechanism. When it is not working, turn off the power once. Then try to press OPEN button again.

2. Remove the ink cassette with ink sheet.

3. Remove the print paper as shown right.

4. Cut the defective part of the print paper with scissors.

5. Cut both edges of the print paper.

6. Install the print paper. (Refer to pages 17-18.)

NOTE

To feed the print paper, press MEMORY button while pressing MONITOR button. When carrying out this procedure, make sure to press MONITOR button first. If MEMORY button is pressed first, a new image will be stored in memory and the previously memorized image will be erased.
Cleaning as indicated below will help maintain stable printer operation and extend the printer’s life.

**Preparations**
- Alcohol (isopropyl alcohol)
- Tissue paper (Fold in half about 4 times, and use the folded side to clean.)
- Cotton buds
- Cleaning kit (Option)*

Other : Cleaner pen (Option)*
*Please ask the dealer about options.

Make sure to turn off the power before cleaning.

1. **Press OPEN button to pull the printing mechanism out.**

2. **Remove the ink cassette and print paper.**

3. **Wipe the ink sheet sensor.**
   - Clean the parts circled in the right figure.
   - Wipe with tissue paper etc. which is soaked in a small amount of alcohol carefully.

4. **Wipe the ink sheet sensor reflection plate.**
   - Clean the metal reflection plate.
   - Wipe with tissue paper etc. which is soaked in a small amount of alcohol carefully.

5. **Wipe the head.**
   - Cleaning the part under the thermal head which develops heat.
   - Wipe the head cleaning part carefully with tissue paper etc. which is soaked in a small amount of alcohol carefully.

   **NOTE**
   - Do not damage the thermal head.
   - When the symptom of the poor print quality is not corrected even if the head is cleaned, replacing the thermal head is required. Contact your dealer.
   - Thermal head is hot right after printing. Wait until the head temperature is low when cleaning the thermal head.

6. **Clean the rubber roller.**
   - The seal paste and dust etc. are stuck on the rubber roller if you use it for a long time.
   - Wipe with tissue paper etc. which is soaked in a small amount of alcohol carefully.
## SPECIFICATIONS

<table>
<thead>
<tr>
<th>Class</th>
<th>Colour Video Copy Processor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>CP900E</td>
</tr>
<tr>
<td>Printing method</td>
<td>Sublimation Dye Thermal</td>
</tr>
<tr>
<td></td>
<td>3 colour faces progressive printing (yellow, magenta and cyan) and surface lamination</td>
</tr>
<tr>
<td>Print quality</td>
<td>Dot resolution Max. 1280 x 600 pixels (S size / FAST mode)</td>
</tr>
<tr>
<td></td>
<td>Number of grades 256 (8 bits) for each colour (About 16.7 million colours)</td>
</tr>
<tr>
<td>Printing time*</td>
<td>L size Approx. 22 sec./sheet (When using CK900L / 1-image/FAST mode)</td>
</tr>
<tr>
<td></td>
<td>S size Approx. 12 sec./sheet (When using CK900S / 1-image/FAST mode)</td>
</tr>
<tr>
<td>Ink sheet</td>
<td>Special cartridge method</td>
</tr>
<tr>
<td>Print paper</td>
<td>Special roll paper</td>
</tr>
<tr>
<td>(1 image mode)</td>
<td>L size 160 x 110mm</td>
</tr>
<tr>
<td></td>
<td>Printing area</td>
</tr>
<tr>
<td></td>
<td>Wide mode 125 x 94mm</td>
</tr>
<tr>
<td></td>
<td>Middle mode 118 x 89mm</td>
</tr>
<tr>
<td></td>
<td>Narrow mode 113 x 85mm</td>
</tr>
<tr>
<td></td>
<td>Special roll paper</td>
</tr>
<tr>
<td></td>
<td>S size 110 x 105mm</td>
</tr>
<tr>
<td></td>
<td>Printing area</td>
</tr>
<tr>
<td></td>
<td>Wide mode 100 x 75mm</td>
</tr>
<tr>
<td></td>
<td>Middle mode 94 x 70mm</td>
</tr>
<tr>
<td></td>
<td>Narrow mode 90 x 68mm</td>
</tr>
<tr>
<td>Supply method</td>
<td>Automatic (roll paper)</td>
</tr>
<tr>
<td>Input terminal</td>
<td>RGB analog (4 BNC type connectors)</td>
</tr>
<tr>
<td></td>
<td>Composite video (1 BNC type connectors)</td>
</tr>
<tr>
<td></td>
<td>S-VIDEO (1 S-VIDEO terminal)</td>
</tr>
<tr>
<td>Output terminal</td>
<td>RGB analog (4 BNC type connectors)</td>
</tr>
<tr>
<td></td>
<td>Composite video (1 BNC type connectors)</td>
</tr>
<tr>
<td></td>
<td>S-VIDEO (1 S-VIDEO terminal)</td>
</tr>
<tr>
<td>Input/Output terminal</td>
<td>RS-232C (D-SUB 25 pin)</td>
</tr>
<tr>
<td></td>
<td>Remote terminal (Mini Din 8 pin, stereo mini jack)</td>
</tr>
<tr>
<td>Input frequency</td>
<td>H frequency 15.75 kHz</td>
</tr>
<tr>
<td></td>
<td>V frequency 50Hz</td>
</tr>
<tr>
<td>Power supply</td>
<td>AC 220-240V, 50Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>1.2A (AC220-240V, 50Hz) during printing (0.3A when not printing)</td>
</tr>
<tr>
<td>Installation conditions</td>
<td>Temperature : 5°C - 40°C (41°F - 104°F)</td>
</tr>
<tr>
<td></td>
<td>Humidity : 20% - 80% (No dewing)</td>
</tr>
<tr>
<td>Operation altitude</td>
<td>Within Horizontal ±5°</td>
</tr>
<tr>
<td>Outside dimensions</td>
<td>280(W) x 150(H) x 400(D) mm</td>
</tr>
<tr>
<td>Weight</td>
<td>11kg</td>
</tr>
<tr>
<td>Accessories</td>
<td>Power cord (1), Ink cassette (1), Operation manual (1), Remote control unit(1), Spacer (4), Screw(4), Attachments for thermal paper (1 set)</td>
</tr>
</tbody>
</table>

*Printing time : time between pressing PRINT button and sounding buzzer which informs the print end

## OPTIONS

### PAPER SHEET SET

<table>
<thead>
<tr>
<th>Product name</th>
<th>Ink sheet size</th>
<th>No. of prints</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CK900S</td>
<td>S size</td>
<td>200</td>
<td>Colour print</td>
</tr>
<tr>
<td>CK900L</td>
<td>L size</td>
<td>130</td>
<td>Colour print</td>
</tr>
<tr>
<td>CK900S4P</td>
<td>S size</td>
<td>130</td>
<td>Surface-laminated colour print</td>
</tr>
<tr>
<td>CK900L4P</td>
<td>L size</td>
<td>90</td>
<td>Surface-laminated colour print</td>
</tr>
<tr>
<td>CK900S4P(HX)EU</td>
<td>S size</td>
<td>130</td>
<td>Surface-laminated colour print for ID photo</td>
</tr>
<tr>
<td>CK900L4P(HX)EU</td>
<td>L size</td>
<td>90</td>
<td>Surface-laminated colour print for ID photo</td>
</tr>
</tbody>
</table>

### THERMAL PAPER

<table>
<thead>
<tr>
<th>Product name</th>
<th>Print size</th>
<th>No. of prints</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>K65HM-CE</td>
<td>S/L size</td>
<td>S size</td>
<td>Approx. 200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L size</td>
<td>Approx. 125</td>
</tr>
</tbody>
</table>

### PAPER INK SHEET CASSETTE

<table>
<thead>
<tr>
<th>Product name</th>
<th>Ink sheet size</th>
<th>No. of prints</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PKC900S</td>
<td>S size</td>
<td>200</td>
<td>Colour print</td>
</tr>
<tr>
<td>PKC900L</td>
<td>L size</td>
<td>130</td>
<td>Colour print</td>
</tr>
</tbody>
</table>
Mitsubishi Electric Europe B.V.

**UK Branch**
Travellers Lane, Hatfield, Herts. AL10 8XB, England, U.K.
Phone (1) 707 276100    FAX (1) 707 278755

**German Branch**
Gothaer Strasse 8, Postfach 1548, 40880 Ratingen 1, Germany
Phone (2102) 4860    FAX (2102) 486-732

**French Branch**
25, Boulevard des Bouvets - 92741 NANTERRE cedex
Phone (01) 55.68.55.00    FAX (01) 55.68.57.31

**Italian Branch**
Centro Direzionale Colleoni, Palazzo Perseo-Ingresso 2,
Via Paracelso 12, 20041 Agrate Brianza, (Milano) Italy
Phone (039) 60531    FAX (039) 6057694

**Benelux Branch**
Nijverheidsweg 23 A, 3641 RP. Postbus 222, 3640 AE Mijdrecht
Phone 02972-82461    FAX 02972-83936

**Spanish Branch (Barcelona)**
Sucursal en españa
Polígono Industrial "Can Magí", Calle Joan Bucallà 2-4,
Apartado de Correos 420, 08190 Sant Cugat del Vallès,
Barcelona, España
Phone 93.5653154    FAX 93.5894388

Manufactured by Mitsubishi Electric Corporation
1 Zusho Baba, Nagaokakyo-city, Kyoto Japan

Made from recycled paper
PRINTED IN JAPAN 871C592D0