

Color Video Printer

Instructions for Use

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

UP-27MD



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Indications for Use/Intended Use

The Sony UP-27MD printer is a color printer with digital video interface. It is designed to be connected with medical imaging systems such as ultrasound, cardiac catheterization laboratory, endoscopy and other compatible medical imaging systems and produce hard copy prints of still images captured by these systems for referrals.

Notes

- Output images from this equipment cannot be used for diagnostic use.
- This equipment is for medical professionals.
- This equipment is intended for use in medical environments, such as clinics, examination rooms, and operating rooms.

Warning

To reduce the risk of fire or electric shock, do not expose this equipment to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

No modification of this equipment is allowed.

Warning

To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

Warning

To disconnect the main power, unplug the power plug.

When installing the unit, incorporate a readily accessible disconnect device in the fixed wiring, or connect the power plug to an easily accessible socket-outlet near the unit.

Do not position the ME equipment where it is difficult to unplug the power plug.

If a fault should occur during operation of the unit, operate the disconnect device to switch the power supply off, or disconnect the power plug.

Symbols on the product



Consult the instructions for use

Follow the directions in the instructions for use for parts of the unit on which this symbol appears.



This symbol indicates the manufacturer, and appears next to the manufacturer's name and address.



This symbol indicates the Importer, and appears next to the Importer's name and registered office address.



This symbol indicates the European Community representative, and appears next to the European Community representative's name and address.



This symbol indicates the UK Responsible Person, and appears next to the UK Responsible Person's name and address.



This symbol indicates the Swiss authorized representative, and appears next to the Swiss authorized representative's name and address.



This symbol indicates the medical device in the European Community.



This symbol indicates the date of manufacture.



This symbol indicates the serial number.



This symbol indicates the Unique Device Identifier (UDI), and appears next to the bar code representation of the Unique Device Identification.



This symbol indicates the equipotential terminal which brings the various parts of a system to the same potential.



Storage and transport temperature

This symbol indicates the acceptable temperature range for storage and transport environments.



Storage and transport humidity

This symbol indicates the acceptable humidity range for storage and transport environments.

**Storage and transport pressure**

This symbol indicates the acceptable atmospheric pressure range for storage and transport environments.

For accessories

This symbol indicates the batch code.



This symbol indicates "Do not reuse".

For customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of part 15 of FCC Rules.

If you have any questions about this product, you may call;

Sony Customer Information Service Center 1-800-222-7669 or <http://www.sony.com/>

Supplier's Declaration of Conformity

Trade Name	: SONY
Model	: UP-27MD
Responsible party	: Sony Electronics Inc.
Address	: 16535 Via Esprillo, San Diego, CA 92127 U.S.A.
Telephone Number:	858-942-2230

For customers in the U.S.A.**Caution**

Federal law (United States of America) restricts this device to sale by or on the order of a licensed healthcare practitioner.

Rx
ONLY

For customers in Canada

This unit has been certified according to Standard CAN/CSA-C22.2 No. 60601-1.

Important safeguards and notices for use in the medical environments

1. All devices connected to the unit must be certified or compliant according to IEC 60601-1, IEC 60950-1, and IEC 60065 standards and other IEC/ISO standards applicable to the devices.
2. Furthermore, the system as a whole must comply with IEC 60601-1 standards. All peripheral devices connected to the signal input/output sections of the unit constitute the medical-use system, and therefore, the user is responsible for ensuring that the system as a whole complies with IEC 60601-1 standards. If in doubt, consult qualified Sony service personnel.
3. Connecting the unit to other devices may increase the leakage current.
4. For all peripheral devices connected to the unit that operate on commercial power supplies and do not comply with IEC 60601-1 standards, incorporate an isolation transformer that complies with IEC 60601-1 standards and connect to the commercial power supply via the transformer.
5. The unit generates, uses, and may radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause interference on other devices. If the unit causes interference (which can be determined by disconnecting the power cord from the unit), try the following.
 - Relocate the unit with respect to the affected devices.
 - Connect the unit and the affected devices to different branch circuits.

For more information, consult qualified Sony service personnel.
(Applicable standard: IEC 60601-1-2)

Important EMC notices for use in medical environments

- The UP-27MD needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the instructions for use.
- The UP-27MD is intended for use in a professional healthcare facility environment.
- Portable and mobile RF communications equipment, such as cellular phones, can affect the UP-27MD.

Warning

- Portable RF communications equipment should be used no closer than 30 cm (12 inches) to any part of the UP-27MD. Otherwise, degradation of the performance of this equipment could result.
- If the UP-27MD will be used adjacent to or stacked with other equipment, normal operation of the UP-27MD under such configurations should be verified via observation.
- The use of accessories and cables other than those specified, with the exception of replacement parts sold by Sony Corporation, may result in increased emissions or decreased immunity of the UP-27MD.

Guidance and manufacturer’s declaration – electromagnetic emissions		
The UP-27MD is intended for use in the electromagnetic environment specified below. The customer or the user of the UP-27MD should assure that it is used in such an environment.		
Emission test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The UP-27MD uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11 CISPR 32	Class B	The UP-27MD is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer's declaration – electromagnetic immunity

The UP-27MD is intended for use in the electromagnetic environment specified below. The customer or the user of the UP-27MD should assure that it is used in such an environment.


Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, a relative humidity of at least 30% is recommended.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0% U_T (100% dip in U_T) for 0.5/1 cycles ^a 70% U_T (30% dip in U_T) for 25/30 cycles ^a (for 0.5 sec) 0% U_T (100% dip in U_T) for 250/300 cycles ^a (for 5 sec)	0% U_T (100% dip in U_T) for 0.5/1 cycles ^a 70% U_T (30% dip in U_T) for 25/30 cycles ^a (for 0.5 sec) 0% U_T (100% dip in U_T) for 250/300 cycles ^a (for 5 sec)	Mains power quality should be that of a typical commercial or hospital environment. If the user of the UP-27MD requires continued operation during power mains interruptions, it is recommended that the UP-27MD be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE: U_T is the a.c. mains voltage prior to application of the test level.

a For example, 10/12 means 10 cycles at 50 Hz or 12 cycles at 60 Hz.

Guidance and manufacturer's declaration – electromagnetic immunity

The UP-27MD is intended for use in the electromagnetic environment specified below. The customer or the user of the UP-27MD should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz outside ISM bands ^c	3 Vrms	<p>Portable and mobile RF communications equipment should be used no closer to any part of the UP-27MD, including cables, than the recommended separation distance calculated from the equation appliance to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1.2 \sqrt{P}$
Radiated RF IEC 61000-4-3	6 Vrms 150 kHz to 80 MHz in ISM bands ^c 3 V/m 80 MHz to 2.7 GHz	6 Vrms 3 V/m	$d = 2.0 \sqrt{P} \quad 80 \text{ MHz to } 2.7 \text{ GHz}$ <p>Where <i>P</i> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <i>d</i> is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, ^a should be less than the compliance level in each frequency range. ^b</p> <p>Interference may occur in the vicinity of equipment marked with following symbol:</p> 

NOTE 1: At 80 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

- a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the UP-27MD is used exceeds the applicable RF compliance level above, the UP-27MD should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the UP-27MD.
- b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.
- c The ISM (industrial, scientific and medical) bands between 150 kHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHz to 27.283 MHz; and 40.66 MHz to 40.70 MHz.

Recommended separation distances between portable and mobile RF communications equipment and the UP-27MD

The UP-27MD is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the UP-27MD can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the UP-27MD as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m	
	150 kHz to 80 MHz $d = 1.2 \sqrt{P}$	80 MHz to 2.7 GHz $d = 2.0 \sqrt{P}$
0.01	0.12	0.20
0.1	0.38	0.63
1	1.2	2.0
10	3.8	6.3
100	12	20

For transmitters rated a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

- NOTE 1: At 80 MHz, the separation distance for the higher frequency range applies.
- NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Guidance and manufacturer's declaration – electromagnetic immunity

The UP-27MD is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. Portable RF communications equipment should be used no closer than 30 cm (12 inches) to any part of the UP-27MD. Otherwise, degradation of the performance of this equipment could result.

Immunity test	Band ^a	Service ^a	Modulation	IEC 60601 test level	Compliance level
Proximity fields from RF wireless communications equipment IEC 61000-4-3	380 – 390 MHz	TETRA 400	Pulse modulation 18 Hz	27 V/m	27 V/m
	430 – 470 MHz	GMRS 460 FRS 460	FM ±5 kHz deviation 1 kHz sine	28 V/m	28 V/m
	704 – 787 MHz	LTE Band 13, 17	Pulse modulation 217 Hz	9 V/m	9 V/m
	800 – 960 MHz	GSM 800/900 TETRA 800 iDEN 820 CDMA 850 LTE Band 5	Pulse modulation 18 Hz	28 V/m	28 V/m
	1,700 – 1,990 MHz	GSM 1800 CDMA 1900 GSM 1900 DECT LTE Band 1, 3, 4, 25 UMTS	Pulse modulation 217 Hz	28 V/m	28 V/m
	2,400 – 2,570 MHz	Bluetooth WLAN 802.11 b/g/n RFID 2450 LTE Band 7	Pulse modulation 217 Hz	28 V/m	28 V/m
	5,100 – 5,800 MHz	WLAN 802.11 a/n	Pulse modulation 217 Hz	9 V/m	9 V/m

NOTE: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a For some services, only the uplink frequencies are included.

Caution

When you dispose of the unit or accessories, you must obey the laws in the relative area or country and the regulations in the relative hospital regarding environmental pollution.



Warning on power connections

Use a proper power cord for your local power supply.

1. Use the approved Power Cord (3-core mains lead) / Appliance Connector / Plug with earthing-contacts that conforms to the safety regulations of each country if applicable.
2. Use the Power Cord (3-core mains lead) / Appliance Connector / Plug conforming to the proper ratings (Voltage, Ampere).

If you have questions on the use of the above Power Cord / Appliance Connector / Plug, please consult a qualified service personnel.



Warning on power connections for medical use

Customers in the U.S.A. and Canada should use the following type of power cord.
Customers in other countries or regions should use the power cord prescribed by their country or region.

	U.S.A. and Canada
Plug type	HOSPITAL GRADE*
Cord type	Min. Type SJT
	Min. 18 AWG
Minimum rating for plug and appliance couplers	10 A / 125 V
Safety approval	UL Listed and CSA

* Note: Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked "Hospital Only" or "Hospital Grade".



Caution

Do not use the device in a MR (Magnetic Resonance) environment.
It may cause a malfunction, fire, and unwanted movement.

For the customers in the U.S.A.

SONY LIMITED WARRANTY - Please visit <http://www.sony.com/psa/warranty> for important information and complete terms and conditions of Sony's limited warranty applicable to this product.

For the customers in Canada

SONY LIMITED WARRANTY - Please visit <http://www.sonybiz.ca/pro/lang/en/ca/article/resources-warranty> for important information and complete terms and conditions of Sony's limited warranty applicable to this product.

For the customers in Europe

Sony Professional Solutions Europe - Standard Warranty and Exceptions on Standard Warranty. Please visit <https://pro.sony/support-services/primesupport/support-professional-solutions-europe-standard-product-warranty> for important information and complete terms and conditions.

For the customers in Korea

SONY LIMITED WARRANTY - Please visit <http://bpeng.sony.co.kr/handler/BPAS-Start> for important information and complete terms and conditions of Sony's limited warranty applicable to this product.

System Features

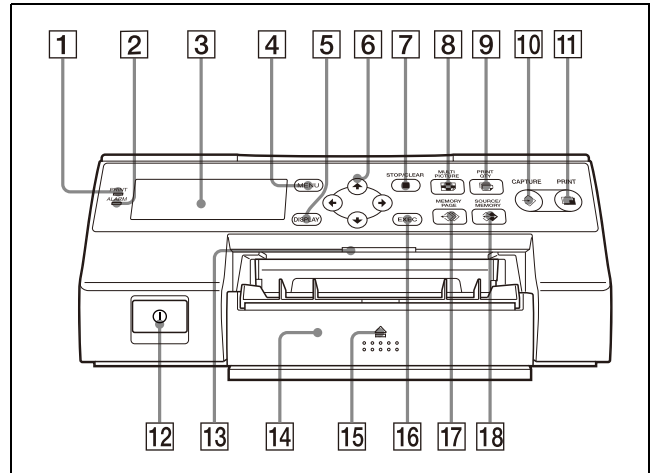
The UP-27MD is a color video printer that captures images from an imaging output device such as video equipment and prints the images at A6 size with simple operations. It prints images by pressing a thermal head, heated according to the input image data, against a dedicated ink ribbon coated with sublimation ink, transferring the ink onto special thermal printing paper.

The UP-27MD has the following features:

- High picture quality and high print resolution
The printer allows you to print out high resolution images in full color in high resolution print mode (approximately 423 dpi).
- Menu settings to meet your preferences
You can create a variety of prints including reduced images and images with captions. See "Making Variations of Printouts" (page 30) for details on operations.
Ordinary print operations can be performed using the buttons on the printer. Depending on the operation you want perform, you can use the window display on the printer or a connected monitor display to configure printer settings and perform various adjustments as necessary.
- SDI (SD/HD/3G) signal input/output support
SD, 1080i, and 1080p signal formats are supported. Signal formats are automatically detected via settings.
- High-definition display window
A high-definition display window on the front panel makes it easy to check the printer status and use the menu.

Part Names and Functions

Front



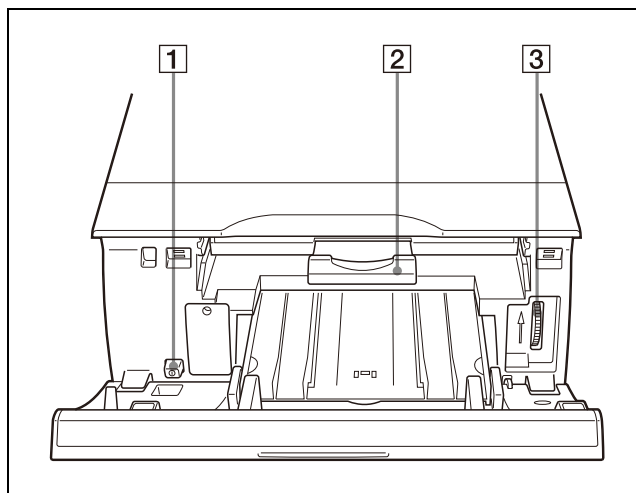
- 1 PRINT indicator**
Lights while printing is in progress.
- 2 ALARM indicator**
Lights when an error such as a paper jam occurs.
- 3 Printer window display**
Displays the normal printer status. When operating menus, the printer window also indicates the line on which the menu cursor is positioned. If errors occur, messages are displayed. The contrast and brightness of the printer window display can be adjusted. For details, see "Adjusting the printer window display" (page 73).
- 4 MENU button**
Switches between the menu and normal screen display.
- 5 DISPLAY button (see pages 26, 46)**
When the normal screen is displayed:
Pressing this button shows/hides the screen display (printer setting information and pointers displayed on the video monitor). When this button is pressed, the [Information Display] screen is displayed for a few seconds, allowing you to set whether or not to show the screen display. [Information Display] in the [Output Setup] tab of the [User Setup] menu also changes in conjunction with each press of this button.

When the menu screen is displayed: The screen display is hidden when this button is pressed and held.

- 6** **Directional buttons** (←, →, ↑, ↓)
Use these buttons to select menu items and change settings.
- 7** **■ STOP/CLEAR button (page 43)**
When printing is in progress: This button functions as the STOP button. Press this button during continuous printing operations to stop printing after the current item finishes printing.
When printing is not in progress: This button functions as the CLEAR button. Press this button to delete images captured in memory. The images deleted when the button is pressed depend on the [Clear Button] setting in the [Function Setup] tab of the [User Setup] menu. If the button is pressed while the setting is [Off], an error tone will sound.
- 8** **☒ MULTI PICTURE button (page 31)**
Repeatedly press this button during normal screen display to select the layout (full-size image, two reduced images, or four reduced images) in which images are captured to memory. Each press of this button displays the current image type for several seconds. [Multi Picture] in the [Print Setup] tab of the [User Setup] menu also changes in conjunction with each press of this button.
- 9** **🖨️ PRINT QTY button (page 27)**
Repeatedly press this button to set the print quantity. You can select up to nine copies, and the current selection is displayed for a few seconds when the button is pressed. [Print Quantity] in the [Print Setup] tab of the [User Setup] menu also changes in conjunction with each press of this button.
- 10** **⇄ CAPTURE button**
Capture images to memory for printing.
- 11** **🖨️ PRINT button**
Print the images that are captured to memory.
- 12** **Ⓜ POWER switch**
Use this switch to turn the printer on or off.
- 13** **Tray light**
Illuminates the output tray. Settings can be changed. For details, see "Setting the tray light" (page 73).

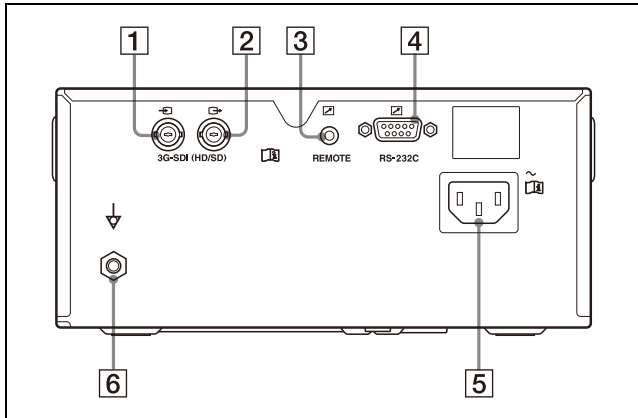
- 14** **Paper feed tray (page 20)**
Load paper in this tray. Printouts stack in the tray above.
- 15** **⬆ (eject) icon**
Press here to eject the paper feed tray.
- 16** **EXEC button**
Use to confirm a menu setting.
- 17** **⏪ MEMORY PAGE button (see pages 29, 30, 45)**
Select the appropriate memory page.
- 18** **⇄ SOURCE/MEMORY button**
Press this button to select the source for images that are output to the monitor. Each time you press this button, images are switched between the memory and input signal (source) images.

Inside the ribbon door panel



- 1** **Ⓜ POWER switch**
Use this switch to turn the printer on or off. This switch turns the printer on or off even while the ribbon door panel is open.
- 2** **Ribbon tray (page 18)**
Load the ink ribbon in this tray.
- 3** **Dial (page 86)**
Use this dial to clear paper manually when an internal paper jam occurs.

Rear



- 1** **3G-SDI (HD/SD) (SDI video signal) input connector (page 15)**
Connects to video equipment with SDI signal output connectors.
Both SD and HD signals are supported.
For details, see “Supported signal formats” (page 23).



Caution

Do not come into contact with this terminal and patients at the same time.
Doing so may result in a generation of voltage that can be harmful to patients if the unit is malfunctioning.
Always disconnect the power cord before connecting and disconnecting connectors.

- 2** **3G-SDI (HD/SD) (SDI video signal) output connector (page 16)**
Connects to video equipment with SDI signal input connectors.
Both SD and HD signals are supported.
For details, see “Supported signal formats” (page 23).



Caution

Do not come into contact with this terminal and patients at the same time.
Doing so may result in a generation of voltage that can be harmful to patients if the unit is malfunctioning.
Always disconnect the power cord before connecting and disconnecting connectors.

- 3** **REMOTE connector (stereo mini jack) (page 16)**
Connects to an FS-24 Foot Switch (not supplied).

- 4** **RS-232C connector (page 16)**
Connects to a computer for controlling the printer.



Caution

Do not come into contact with this terminal and patients at the same time.
Doing so may result in a generation of voltage that can be harmful to patients if the unit is malfunctioning.
Always disconnect the power cord before connecting and disconnecting connectors.

- 5** **AC IN connector (page 15)**
Connects to the power cord.
- 6** **Equipotential connector**
Brings the all devices connected to the printer to the same potential.

Information display

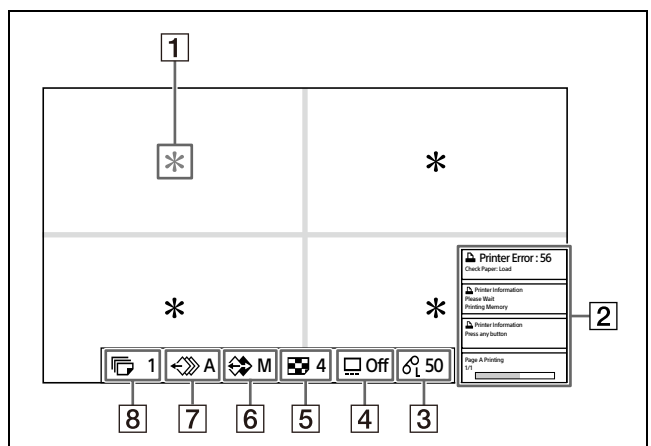
Once the ① POWER switch is turned on and operations are possible, the following screen is displayed.

Monitor display

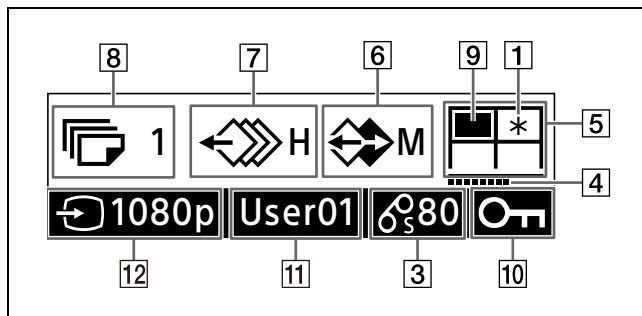
When the printer is connected to a video monitor the following information is displayed on the monitor display.

For detailed information on the menu, see “Menu Configuration” (page 48).

This manual mainly uses screen displays for explanations.



Printer window display



1 Image capture position

The current position of the pointer is indicated with an asterisk (*).

Monitor display: The captured image is displayed at the position of the blue pointer.

Printer window display: The captured image is displayed at the position where the asterisk (*) is displayed.

Once an image is captured, the pointer moves to the next position.

If [1] is set for the number of reduced images in [Multi Picture] on the [Print Setup] tab of the [User Setup] menu, the pointer will not be displayed.

2 Message display

Error messages and notifications are displayed here. Urgent messages are displayed at the top of the screen (monitor display). Messages are also displayed on the printer window display.

English or Japanese can be selected for the message display language. For setting instructions, see "Setting the Message Display Language" (page 24).

3 Ink ribbon type and remaining ink ribbon display

The ink ribbon type is displayed as follows:

[S]: UPC-21S (S size)

[L]: UPC-21L (L size)

[C]: Cleaning ribbon

[?]: There is no ribbon in the printer or an unidentified ribbon is in the printer (monitor display only)

4 Captions

Displays whether or not the printer is set to add a caption to the print.

Monitor display:

[On]: Adds a caption.

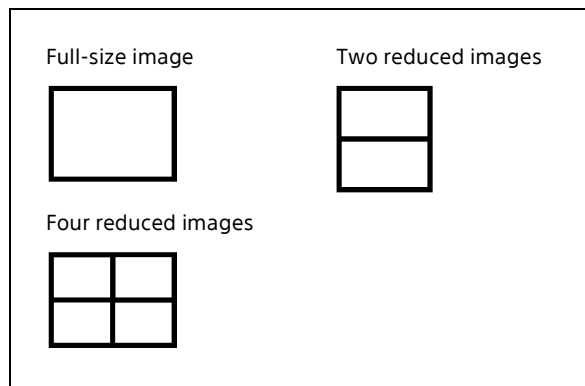
[Off]: Does not add a caption.

Printer window display: "-----" is displayed when the printer is set to add a caption.

5 Reduced image setting

Monitor display: Displays the number of reduced image screens.

Printer window display: Displays the type of reduced image screens.



6 Output image

Shows whether the image output on the video monitor is an input image (source) or memory image.

[S]: Source image

[M]: Memory image

7 Memory page display

Displays the currently selected memory page.

8 Print quantity display

Displays the number of copies to be printed.

9 Captured image (printer window display only)

Displayed filled in when there is a captured image present.

10 Control lock (printer window display only) (page 47)

Displayed when the printer button controls are locked.

11 User setting (printer window display only) (page 27)

Displays the currently selected user settings.

12 Input signal format display (printer window display only)

Displays the current input signal format.

For details on the printer window display and input signal, see "Input signal format and output signal relation" (page 80).

Preparation

Connections

To enable printing, video equipment acting as an input signal source must be connected along with a video monitor to display images or menus. The connection diagrams illustrate how to connect the input signal source to the printer, how to connect devices to receive signals output from the printer, and how to connect a foot switch. Connect the video equipment which will be used in actual printing, using the following diagram as a guide.

Notes

- Turn off the power of each device before attempting to make any connections.
- Connect the power cord last.



Warning

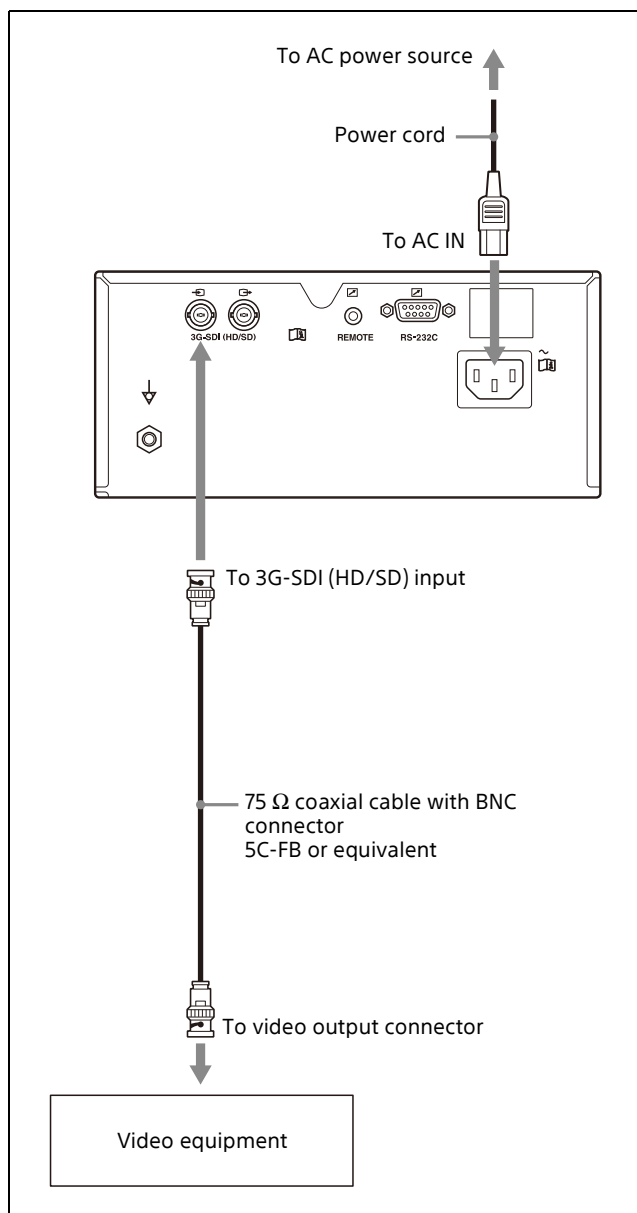
Using this unit for medical purposes

The connectors on this unit are not isolated. Do not connect any device other than one which conforms to IEC 60601-1 standards. When an information technology device or AV device that uses an alternating current is connected, current leakage may result in an electric shock to the patient or operator. If use of such a device is unavoidable, isolate its power supply by connecting an isolation transformer, or by connecting an isolator between the connecting cables. After implementing these measures, confirm that the reduced risk now conforms to IEC 60601-1 standards.

Connecting video equipment

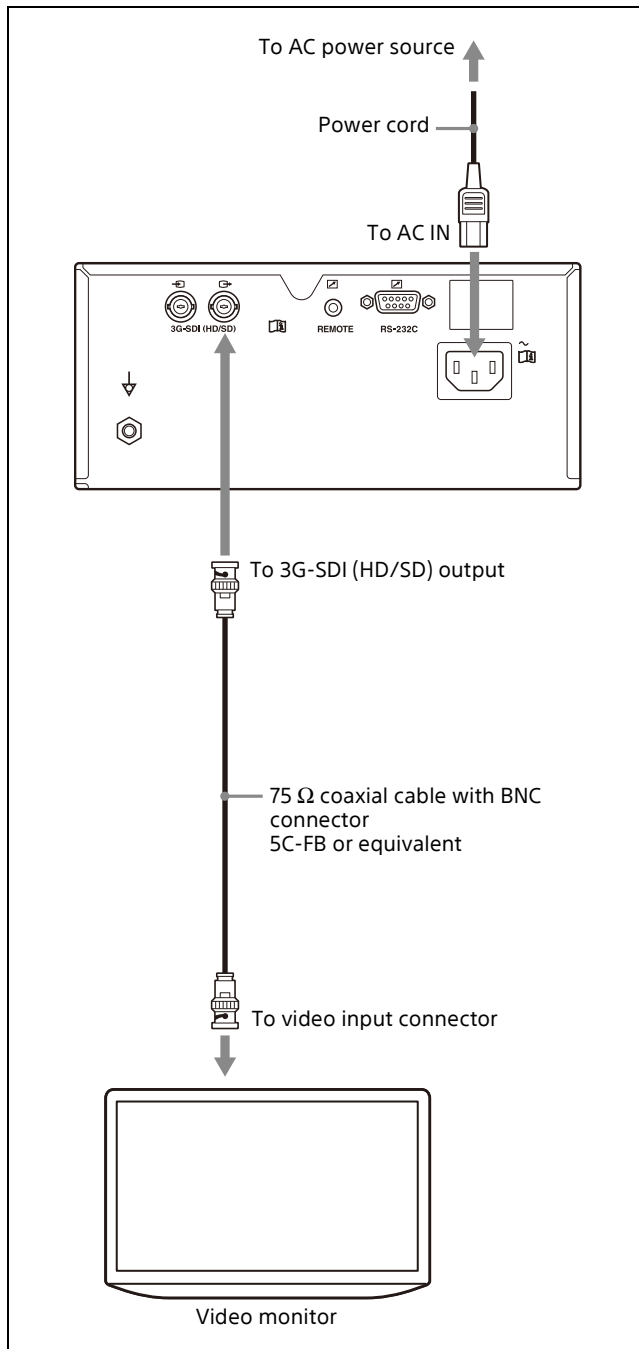
Note

The printer cannot accommodate 4K video signal or 3D video signal input.



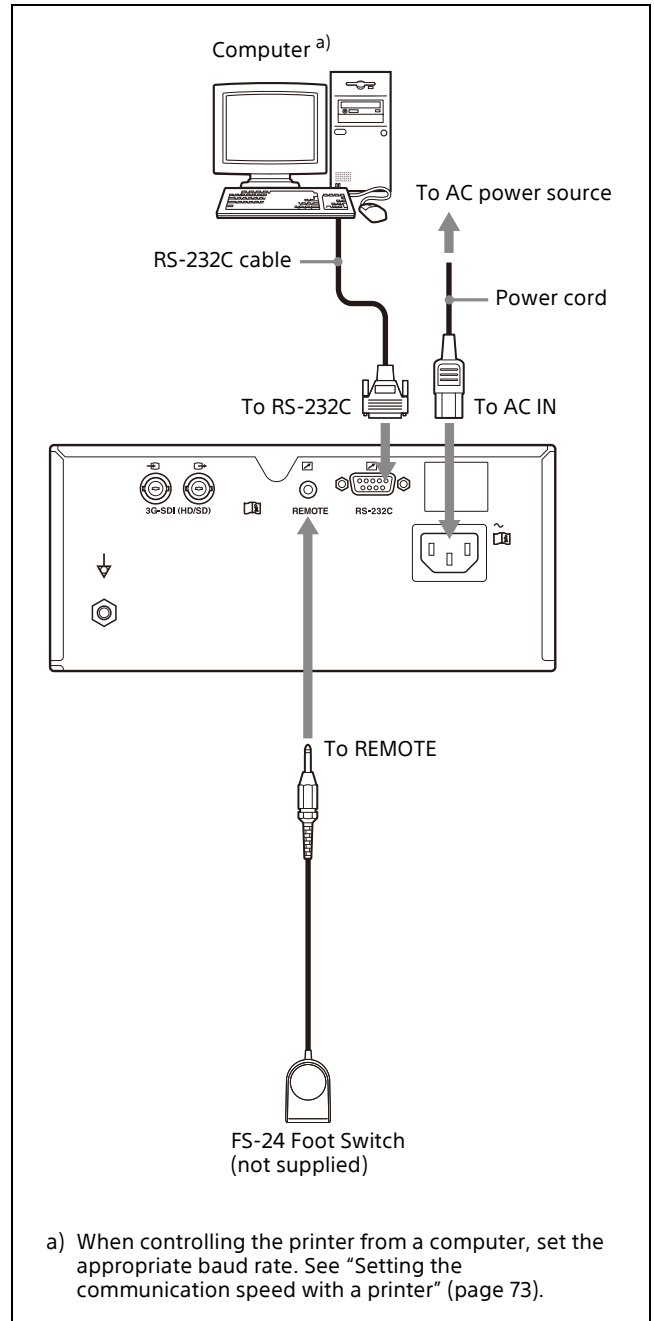
Connecting a video monitor

Connect a video monitor as follows to view captured images and to check those to be printed.



Connecting a foot switch

The printer can be controlled remotely by connecting the FS-24 Foot Switch (not supplied), or a computer.



Color Printing Pack

Compatible ink ribbon and paper



Do not re-use

Doing so may result in malfunction and negatively affect printing results.

Color Printing Pack UPC-21S

Contains color ink ribbons and paper for 240 sheets worth of high-speed, high-sensitivity printing, including:

- Three ink ribbons for 80 sheets worth of printing each
- Three reams of paper (90 × 100 mm) with 80 sheets each

Color Printing Pack UPC-21L

Contains color ink ribbons and paper for 200 sheets worth of high-speed, high-sensitivity printing, including:

- Four ink ribbons for 50 sheets worth of printing each
- Four reams of paper (100 × 144 mm) with 50 sheets each

Notes

- When the paper runs out, replace both the paper and the ink ribbon.
- Use the ink ribbon and the paper in the carton as a set.
- Since, like other color dyes, the dyes used in this ink ribbon may discolor over time, the product will neither be replaced nor be warranted against any color change.
- Do not replace the ink ribbon and paper roll when they are only partially used. Doing so can cause problems. The number of printouts indicated above is not guaranteed.

Storing paper

- Avoid storing paper in a location subject to high temperatures and humidity, excessive dust, or direct sunlight.
- Remove the partially used paper and ink ribbon from the printer, reseal them in their original bags, and store them in a cool, dark location. Before unsealing and reusing the stored paper and ink ribbon, allow them to return to room temperature to prevent condensation.

Notes for preserving your printouts

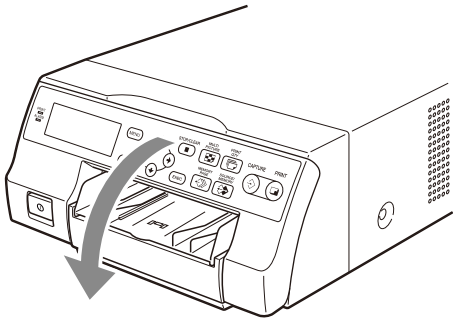
- Keep printouts in a dark and cool place.
- Avoid using tape on printouts, leaving an eraser on printouts, or putting the printout on objects which contain plastic (desk mat, etc.)
- Be sure not to spill alcohol or other volatile organic solvents onto the printouts.

Loading the Ink Ribbon

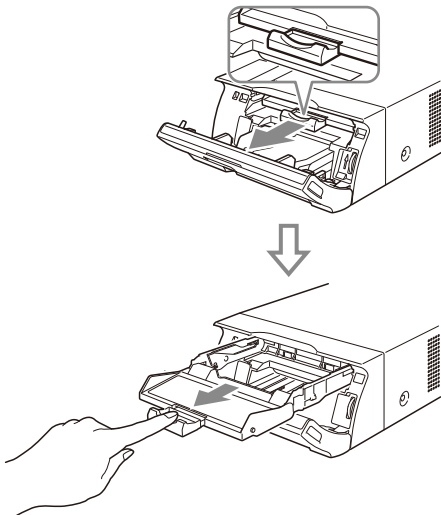
Note

When using the printer for the first time, the thermal head may be set to its transport position. Be sure to turn on the printer and release the thermal head from its transport position before removing the ribbon tray. Do not open the ribbon door panel if "Please Wait" appears on the printer window display.

- 1 Open the ribbon door panel.

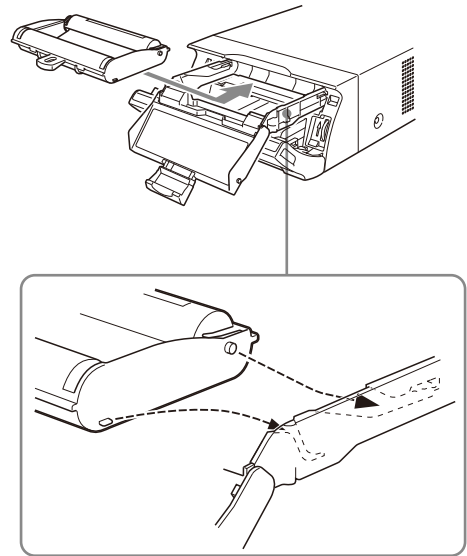


- 2 Pull the ribbon tray straight out of the printer.



- 3 Load the ink ribbon.

- ① Align the two pegs on each side of the ink ribbon with the slots on the ribbon tray.



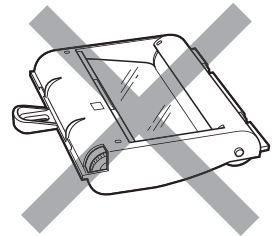
Notes

- Make sure to load the ink ribbon with the front and back oriented correctly.

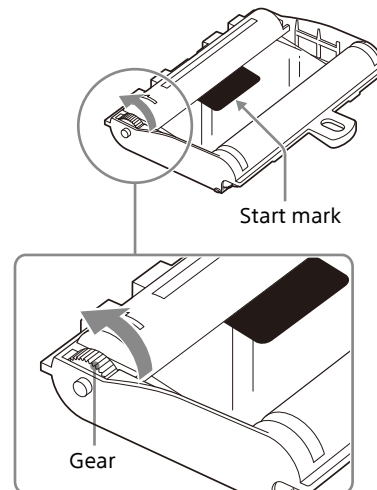
Correct



Incorrect



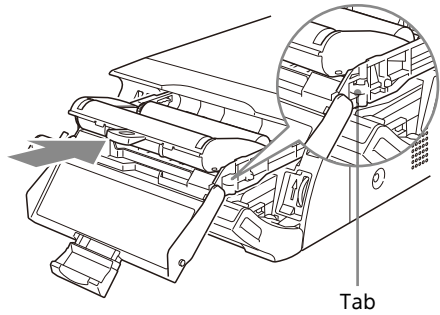
- Before loading the ink ribbon, make sure to position the start mark as shown in the illustration and remove any slack by turning the gear in the direction of the arrow.



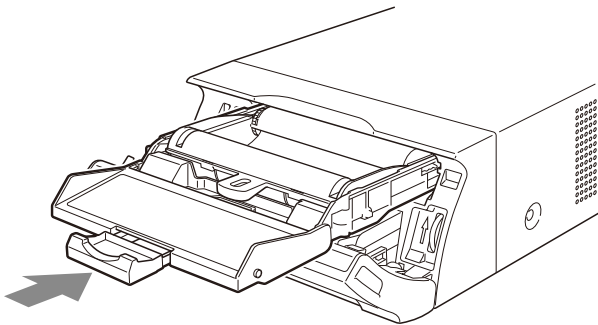
- ② Slide the ink ribbon straight into the ribbon tray until completely inserted.

Note

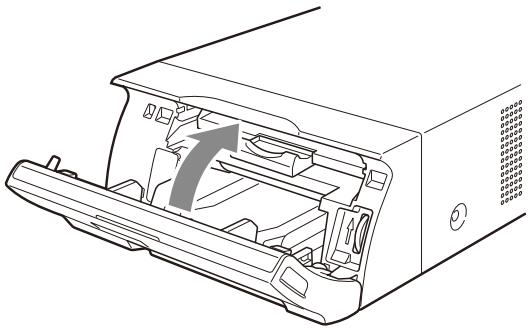
Do not touch the white tabs on the sides of the ribbon tray. Doing so may result in improper loading of the ink ribbon.



- 4** Slide the ribbon tray straight into the printer until completely inserted.



- 5** Close the ribbon door panel.

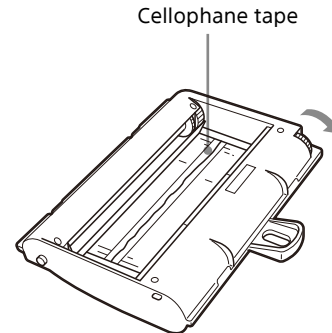


To remove the ribbon tray

To remove the ribbon tray when replacing the ink ribbon, for example, pull the tray straight out.

If the ink ribbon tears during use

Cellophane tape, etc., can be used to repair a torn ink ribbon so that the remainder of the ribbon can be used. Wind the ink ribbon until the cellophane tape is no longer visible by turning the black (or gray) gear at the winding end in the direction of the arrow. (Make sure the ink ribbon does not sag.)



Loading the Paper

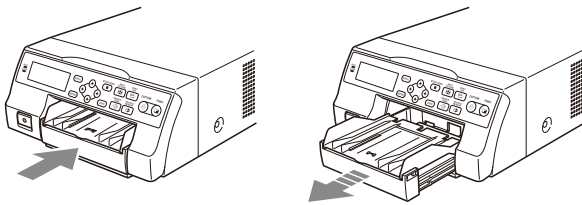
Follow the steps below to load paper into the paper feed tray and to insert the tray into the printer.

When using the printer for the first time, begin with step 2.

Notes

- Be careful not to touch the print side of the paper.
- Use only the recommended paper for this printer. Other types of paper may cause printer malfunctions, such as paper jams. For details about ink ribbons and paper, see "Compatible ink ribbon and paper" (page 17).
- When the message "Change Ribbon" appears on the printer window display, the ink ribbon is used up. Replace the ribbon and load the printer with new paper.
- Be careful when inserting and removing the paper feed tray, because it may cause the printer to shift position and fall.
- When the paper runs out, do not just add more paper. When the paper runs out, replace both the paper and the ink ribbon. Replenishing the paper midway may cause a paper jam.

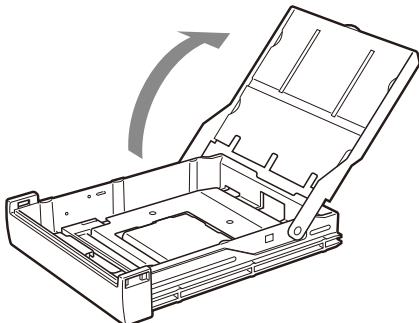
- 1 Press the ▲ mark on the paper feed tray to eject the tray.



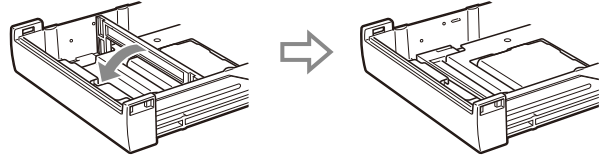
- 2 Open the lid of the paper feed tray, and load the paper and protective sheet together with the print side facing up.

When using printing pack UPC-21L:

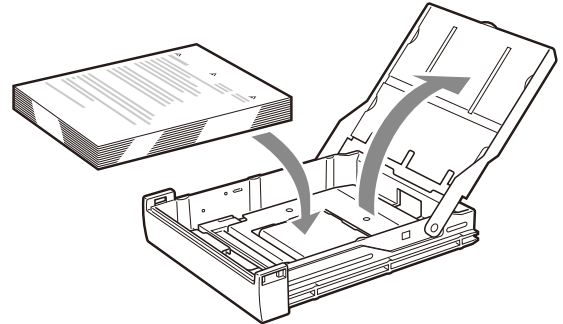
- 1 Open the paper feed tray.



- 2 If the paper feed tray partition is raised, lower it.

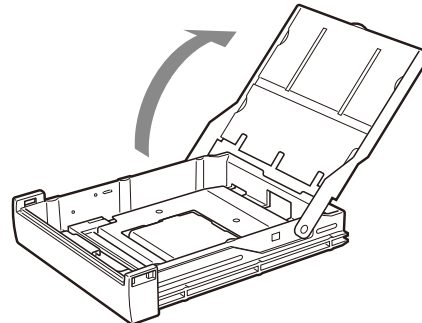


- 3 Neatly stack and load the paper in the paper feed tray, aligning the ▲ mark on the protective sheet with the Δ mark inside the tray.

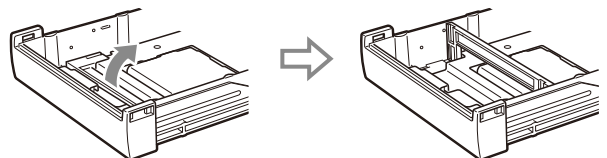


When using printing pack UPC-21S

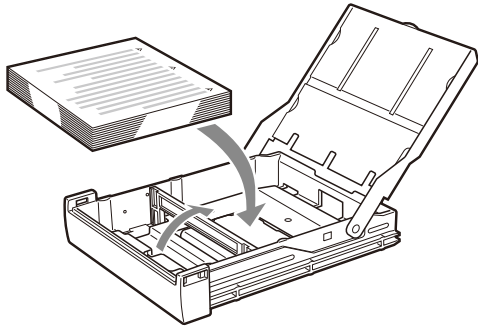
- 1 Open the paper feed tray.



- 2 If the paper feed tray partition is lowered, raise it.



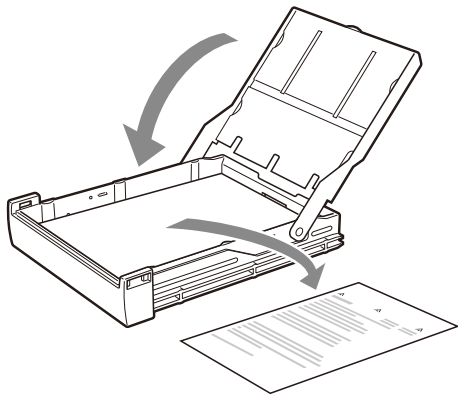
- ③ Neatly stack and load the paper in the paper feed tray, aligning the ▲ mark on the protective sheet with the Δ mark inside the tray.



Notes

- When handling the paper, do not touch the print side. Fingerprints and dust may adhere to the print side and soil it. To prevent the print side from becoming soiled, handle the paper with the protective sheet (with printed warnings) attached.
- Load the paper properly so that it fits completely in the paper feed tray. If the paper is bent, it will protrude from the paper feed tray and may not feed properly. Make sure to handle each ream of paper by the protective sheet and to remove any bends in the paper before using it.
- Do not put a mixture of different types of paper in the paper feed tray.

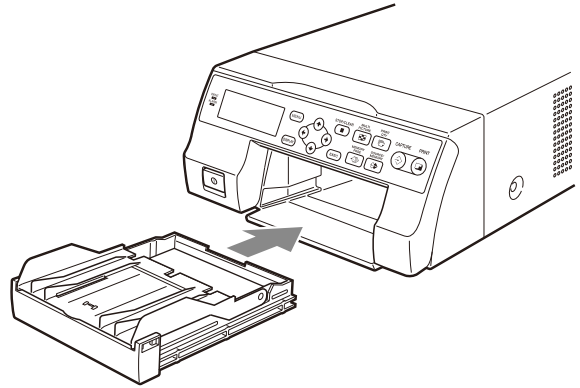
- 3 Remove the protective sheet and close the lid.



Note

Make sure to keep the protective sheet after removing it. The reverse side of the protective sheet (without printing), can be used as a cleaning sheet to clean the thermal head. For details, see "Cleaning the thermal head" (page 76).

- 4 Insert the paper feed tray into the printer until it clicks into place.



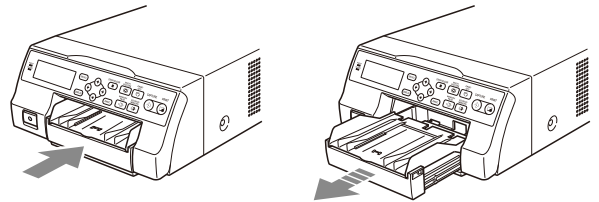
Notes

- If the paper feed tray cannot be completely inserted in the printer, check the tray insertion area and remove any paper found there.
- Do not allow more than 10 printouts to accumulate. Doing so could cause a paper jam.

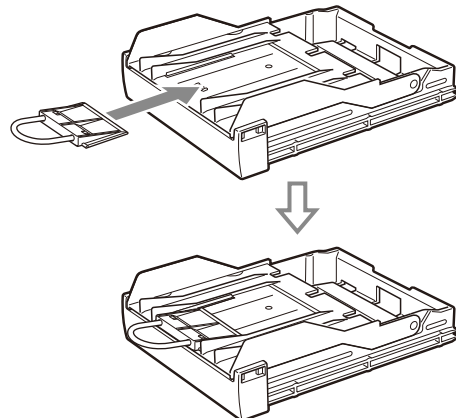
Attaching the Stopper

When multiple printouts are ejected, the printouts that accumulate on the paper feed tray may fall out. To prevent this, attach the stopper to the paper feed tray.

- 1 Press the ▲ mark on the paper feed tray to remove the tray.



- 2 Fit the stopper into the two slits on the lid of the paper feed tray, and insert it all the way in.



Note

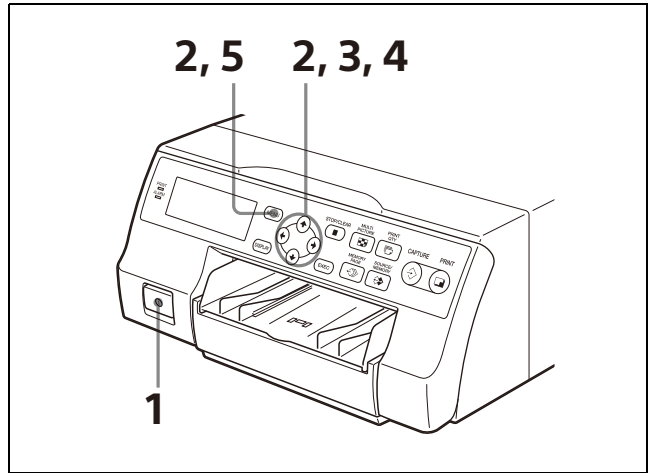
Do not pull on the metallic portion of the stopper.

Selecting the Input Signal

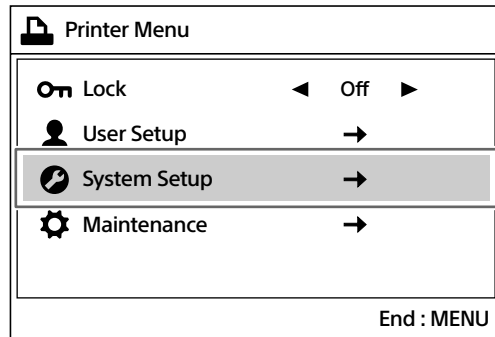
Select the appropriate input signal format according to the signal from the video equipment connected to the input connectors on the rear of the printer.

Note

When settings are changed, it may take several seconds to switch. Capturing is not available during switching.

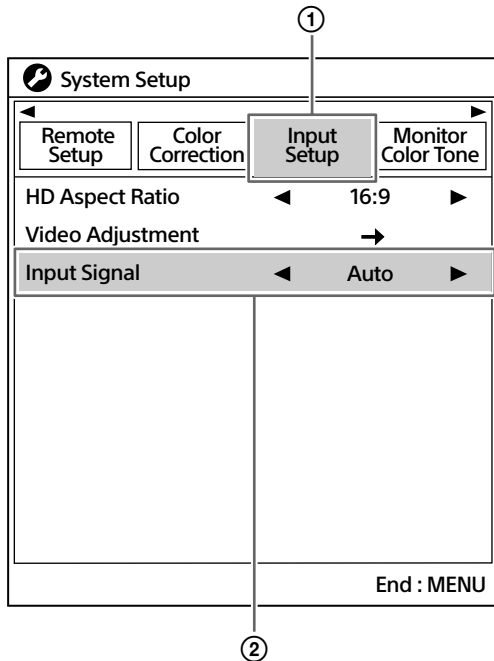


- 1 Turn on the video monitor and the printer.
- 2 Press the MENU button, use the ↑ or ↓ button to select the [System Setup] menu, and then press the → button.

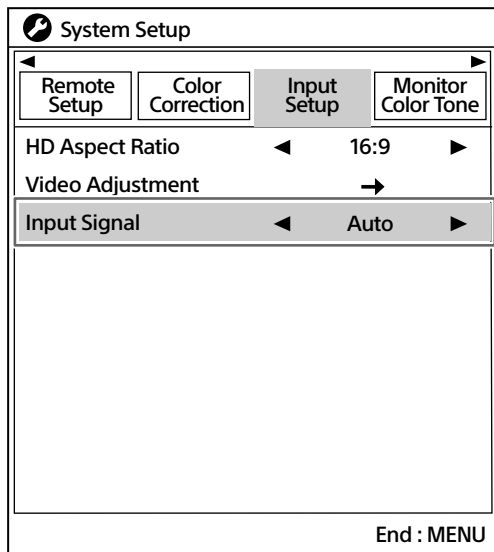


The [System Setup] screen appears.

- 3 Use the ← or → button to select the [Input Setup] tab (①), then the ↑ or ↓ button to select [Input Signal] (②).



- 4 Use the ← or → button to select the input signal format.



Option	Description
Auto (default value)	Automatically detects the input signal format. For details, see "Supported signal formats" (page 23).
1080p	Locks the source image to "1080p."
1080i	Locks the source image to "1080i."
SD	Locks the source image to "SD."

Notes

- You cannot mix an HD video signal image and SD video signal image on the same memory page.
- Before switching the input signal, make sure to check that there are no unprinted images. If you have captured an image before switching the input signal then capture a new image, the old image will be overwritten.

- 5 Press the MENU button. The [System Setup] screen is closed.

Supported signal formats

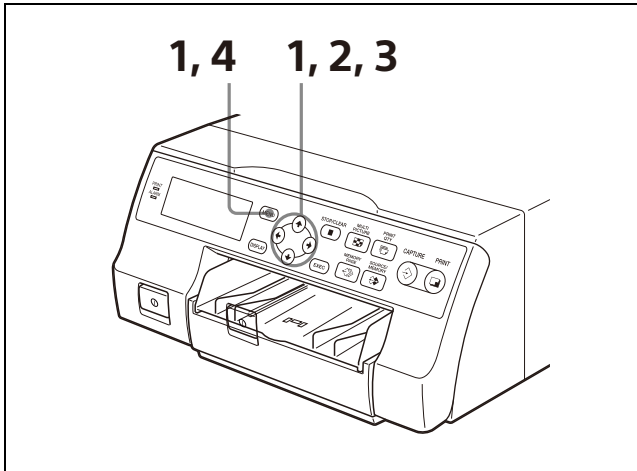
Supported signal formats	Input connector
480/59.94i	○
576/50i	○
720/59.94p	—
720/60p	—
720/50p	—
1080/59.94i	○
1080/60i	○
1080/50i	○
1080/59.94p	○
1080/60p	○
1080/50p	○

○: Supported
—: Not supported

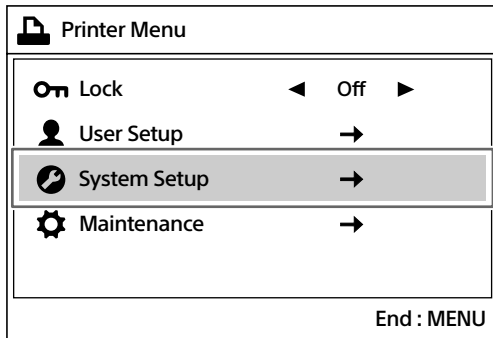
The SDI signal complies with SD: SMPTE ST 259/ HD: SMPTE ST 292-1/3G: SMPTE ST 424. For information on the relation between the input signal format and output signal, see "Input signal format and output signal relation" (page 80).

Setting the Message Display Language

You can select either English or Japanese for the message language displayed on the video monitor.

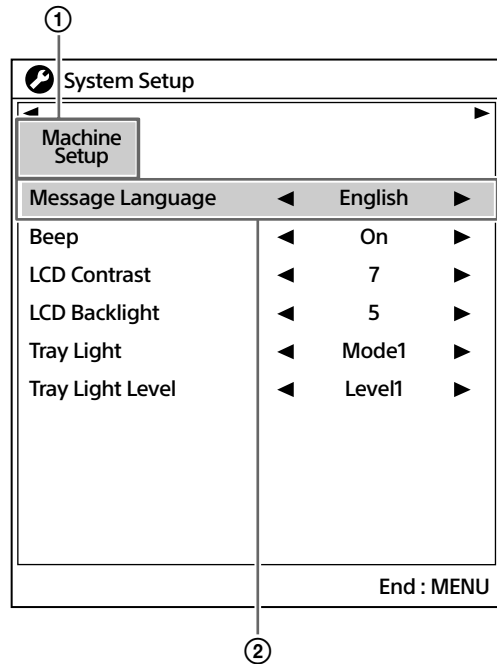


- 1 Press the MENU button, use the \uparrow or \downarrow button to select the [System Setup] menu, and then press the \rightarrow button.

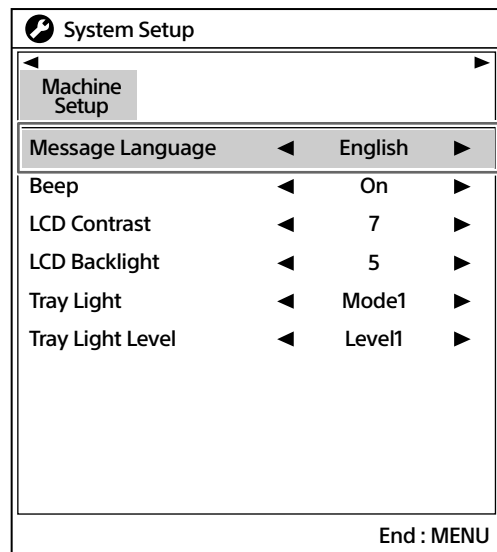


The [System Setup] screen appears.

- 2 Use the \leftarrow or \rightarrow buttons to select the [Machine Setup] tab (①), then the \uparrow and \downarrow buttons to select [Message Language] (②).



- 3 Use the \leftarrow and \rightarrow buttons to choose the language.



Option	Description	
Monitor display	Printer window display	
English (default value)	E (default value)	English
Japanese	J	Japanese

- 4 Press the MENU button. The [System Setup] screen is closed.

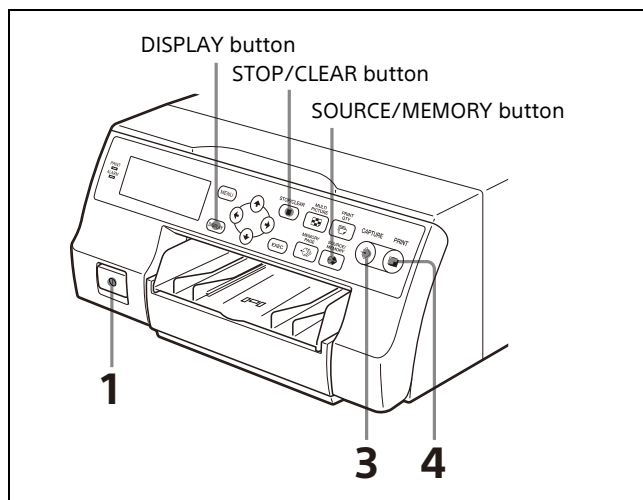
Making Full-Size Image Printouts

Print a full-size image on a single piece of paper. (This is known as “full-size image.”) The operations described here constitute the basic procedure for making a printout.

Check

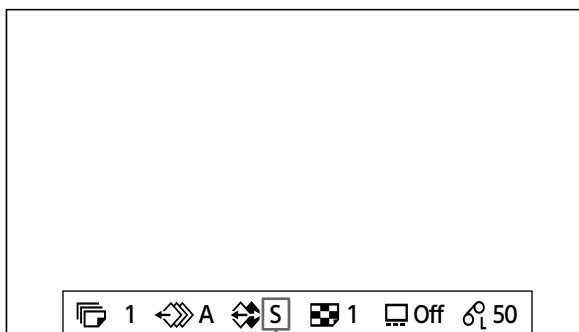
Make sure to complete the following before performing operations. If you have not, see the reference page. The settings are retained when the printer is turned off.

- All video equipment, etc. is connected. (page 15)
- Ensure that the appropriate ink ribbon/paper set is being used and that they are correctly loaded. (See pages 17, 18, and 20.)
- Select the input signal. (page 22)
- Set the printer to print full-size images. (page 31)
- Select the appropriate memory page. (page 30)
- Check the sharpness. (page 58)

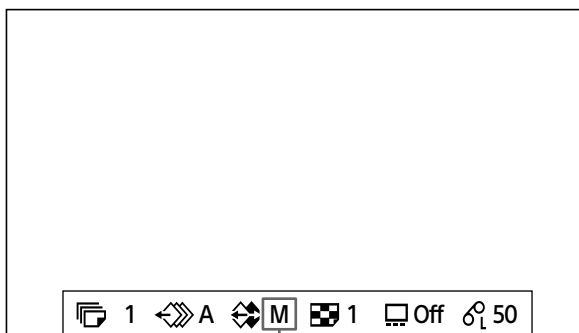


1 Turn on the video monitor and the printer.

2 Display the video from the video input source on the monitor.
This operation is done using the controls of the connected video equipment.



3 Press the CAPTURE button at the instant the image appears on the screen. The image is captured into memory. The memory image is displayed on the video monitor. You can select the mode for automatically switching source images to show on the video monitor. For details, see “Setting the image displayed on the video monitor after capture” (page 32).

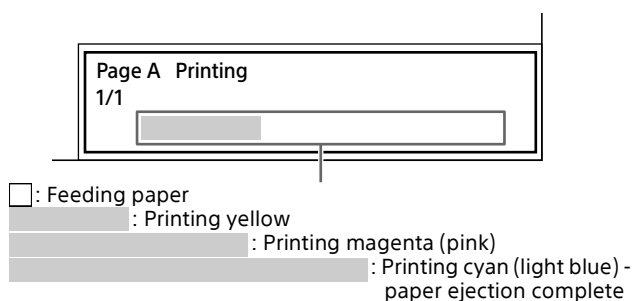


To change the image captured in memory

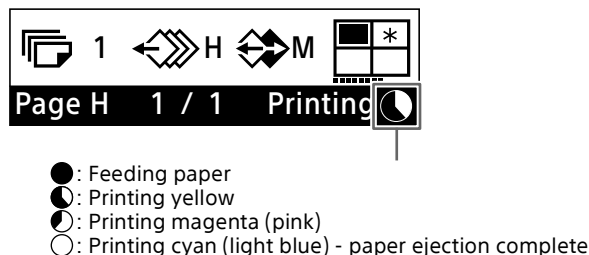
- ① To display the source image when the memory image is displayed on the screen, press the SOURCE/MEMORY button.
- ② Press the CAPTURE button at the instant the image you want to print appears on the screen. The previous image in memory is replaced with the new one.

4 Press the PRINT button. The printing time depends on the printer settings. The progress is displayed while printing.

On a video monitor



On the printer window display



Notes

- Do not turn off the power during printing. If you do so, paper may not be ejected and may jam in the printer.
- Do not open the front door and do not remove the paper tray during printing. If you do so, paper may not be ejected and may jam in the printer.
- Do not leave more than ten sheets of printouts on the paper tray. Doing so may cause a paper jam. Even if fewer than ten sheets of printouts have been accumulated on the paper tray, the printer may stop printing and "Remove Printed Paper" appears. In such a case, remove printouts accumulated on the paper tray. Printing will resume automatically.
- You can not change the operation mode or the settings in the [Print Area Setup] tab of the [User Setup] menu during printing.

To stop printing

When making one printout: You can not stop printing midway.

When making multiple copies: Press the STOP/CLEAR button. The printer stops printing when the page currently printing is completed. Also, any queued printing jobs are canceled.

For detailed information on setting the print quantity, see "Setting the printout quantity" (page 27).

If the printer does not print

If you cannot print even when pressing the PRINT button, an error message is displayed on the video monitor and printer window display. Proceed as described in "Error/Warning Messages" (page 84).

To change the printout speed

In the [Print Setup] tab of [User Setup] menu, configure [Print Speed].

Option	Contents
Normal	Makes a printout at normal speed. You can create printouts with high-density black.
High (default value)	Makes a printout at high speed.

For detailed information on how to operate the menu, see "Basic Menu Operations" (page 52).

When you want to see an image that is hidden under a screen

To erase information and messages displayed on the screen so you can view a hidden image, press the DISPLAY button. See "Hiding the Screen Display on the Video Monitor" (page 46). You can also erase the ink ribbon type and remaining print information. See "Displaying the ink ribbon or printer setting information" (page 71).

If a black frame or line appears on the printout

Sometimes, a black frame or line appears on the printout, although it does not appear on the video monitor. Settings can be adjusted so that this black frame or line is eliminated from the printout. See "When a black frame or lines show up on printouts" (page 59).

If the color quality of the printouts is not satisfactory

You can obtain satisfactory color quality of the printouts by adjusting the input signal according to the connected equipment and/or adjusting the color quality of the printouts. See "Adjusting the printout sharpness" (page 58), "Specifying colors for adjustment" (page 64) and "Compensating for source image brightness, etc." (page 55). Colors may change between each printing pack pair. It is recommended that you adjust the color balance each time you load a new ink ribbon and paper. See "Adjusting the color balance" (page 61).

Storing your printouts

- Store printouts in a dark and cool place.
- Avoid using tape on printouts, leaving an eraser on printouts, or putting the printout on objects which contain plastic (desk mat, etc.).

- Be sure not to spill alcohol or other volatile organic solvents onto the printouts.

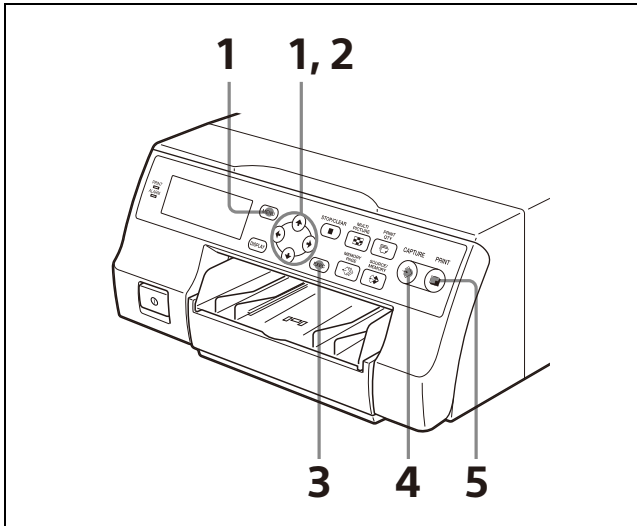
Making printouts with a user registered settings

You can register the printer menu settings and adjustments as user settings, saving up to ten profiles. ("Registering a user settings" (page 69)) By selecting a desired user setting number, the printer functions according to the corresponding settings.

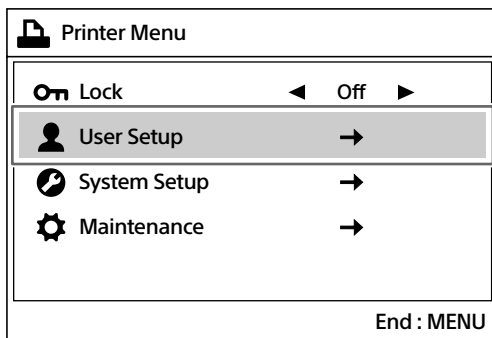
After selecting the desired user setting, you can change settings and adjustments to make printouts.

Tip

Adjustment values that can be registered to user settings are the items found in the [User Setup] menu.

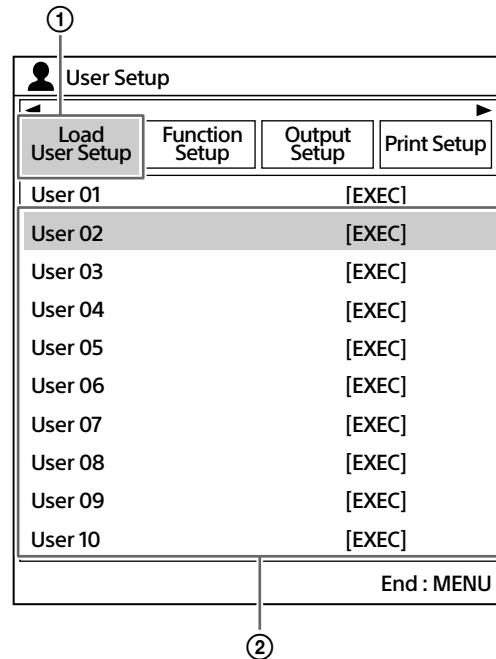


- 1 Press the MENU button, use the ↑ or ↓ button to select the [User Setup] menu, and then press the → button.



The [User Setup] screen appears.

- 2 Use the ← or → button to select the [Load User Setup] tab (①), then the ↑ or ↓ button to select the user setting (②).



- 3 Press the EXEC button. The printer switches to the user setting specifications selected in step 2, and the user settings selected on the printer window display appear.



- 4 Press the CAPTURE button at the instant the image appears on the screen. The image is captured into memory according to the user setting selected in step 2.
- 5 Press the PRINT button. The printer makes printouts according to the user setting selected in step 2.

Making multiple copies of identical printouts

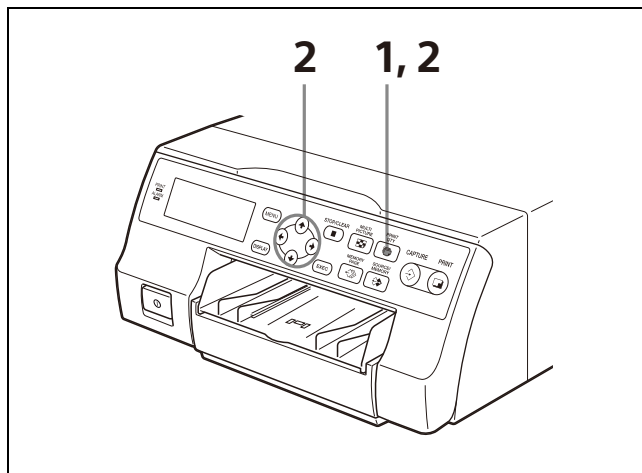
You can make up to nine copies of identical printouts.

Setting the printout quantity

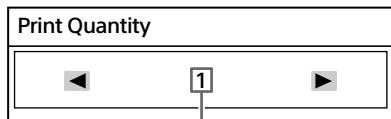
Set the print quantity using any of the following operations before printing.

- Using the PRINT QTY button
- Using the menu

To set the printout quantity by using the PRINT QTY button

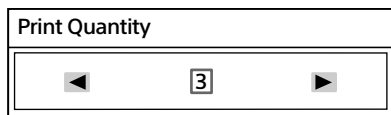


- 1 Press the PRINT QTY button. The [Print Quantity] screen appears for several seconds.



Currently selected number of copies

- 2 While the [Print Quantity] screen is displayed, press the PRINT QTY button or the → button repeatedly to set the print quantity. After reaching a print quantity of nine, the setting returns to one.



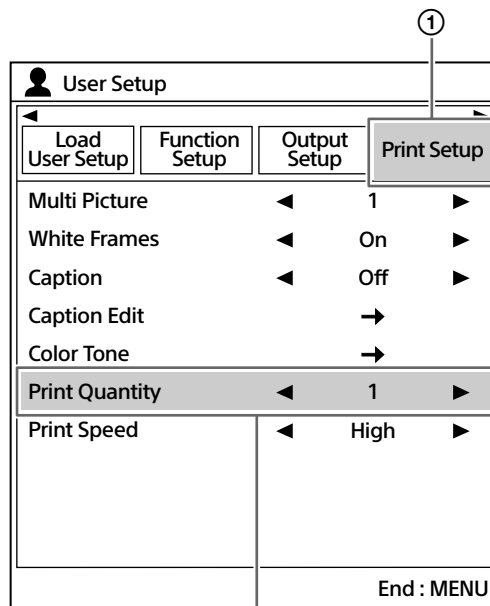
To decrease the number of copies

While the [Print Quantity] screen is displayed, each time you press the ← button, the number decreases. After reaching one, the setting returns to nine.

To set the printout quantity using the menu

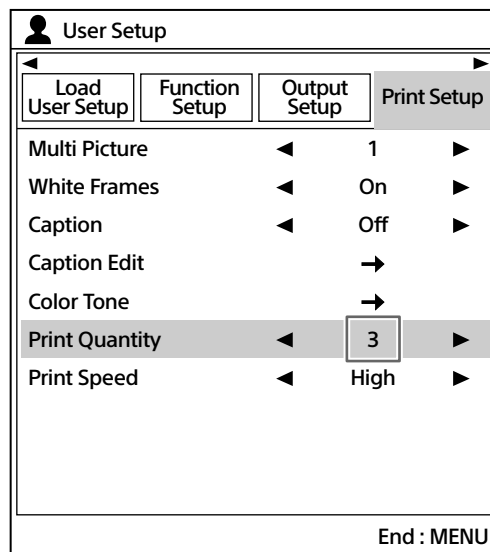
- 1 Display the [User Setup] screen according to the operations of step 1 described in “Making printouts with a user registered settings” (page 27).

- 2 Use the ← or → button to select the [Print Setup] tab (①), then the ↑ or ↓ button to select [Print Quantity] (②).



- 3 Use the ← or → button to set the print quantity.

Set print quantity	Button
Decrease the quantity.	←
Increase the quantity.	→



- 4 Press the MENU button. The [User Setup] screen is closed.

Note

When making multiple copies, the printer may stop printing due to printout conditions, and "Remove Printed Paper" appears. In such a case, remove printouts accumulated on the paper tray. The printer will resume printing the remaining copies automatically.

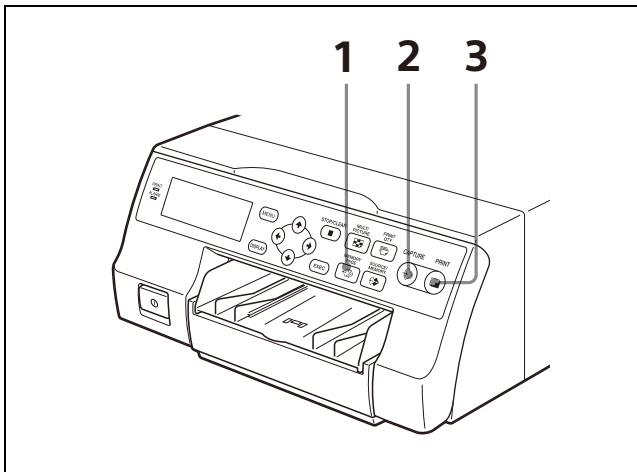
If the paper runs out during printing

The printer stops the printing operation. However, the printout quantity is reset to the original quantity requested before printing was stopped. For example, if the printout quantity is set to five, and the paper runs out when three copies are printed, the printout quantity is reset to five if you replenish the paper ("Loading the Paper" (page 20)) and press the PRINT button again. If you want to print the remaining printouts, reset the print quantity.

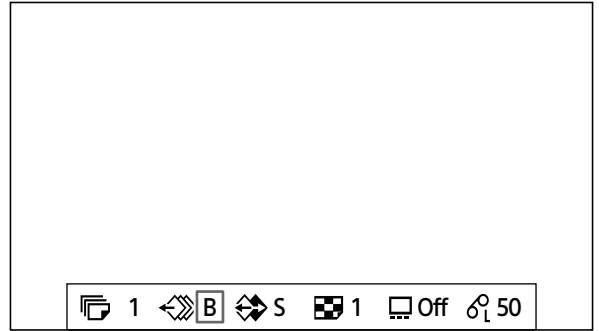
Queuing another image while printing

While the printing, you can queue printing jobs by capturing another image into another memory page.

The number of usable memory pages depend on the type of printouts and settings. See "Memory page" (page 30).



- 1 Repeatedly press the MEMORY PAGE button to select a memory page.



- 2 Press the CAPTURE button at the instant the image appears on the screen.
- 3 Press the PRINT button. The image captured is queued. The image is printed as soon as all previous printing jobs have been completed.

Note

Another image cannot be stored in a memory page in which an image has already been queued for printing. In this case "Printing memory. Please wait." appears.

- 4 To queue another memory page, repeat steps 1, 2 and 3.

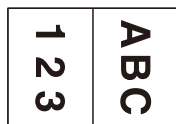
Making Variations of Printouts

You can import and store several types of images in printer memory. Also, changing the print method allows you to create various types of printouts.

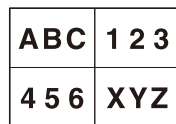
Full-size image



Two reduced images



Four reduced images



You can make printouts in the following ways:

- Zoom area of the image you need and print four reduced images on a single sheet. See “Zoom and Print Part of an Image” (page 38).
- Make printouts of multiple reduced images with white frames. See “To add white frames to reduced images” (page 34).
- Add captions to printouts. See “Making Printouts with a Caption” (page 36).

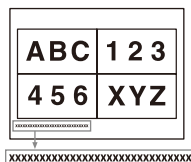
Printing captions

The caption position on printouts of two reduced images differs depending on whether SD signals or HD signals are used. The caption position also differs depending on the printing pack used.

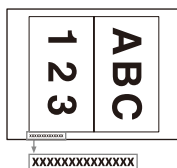
Full-size image



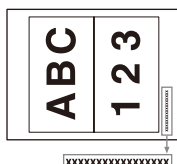
Four reduced images



Two reduced images
(SD signal, HD signal (4:3, 5:4))



Two reduced images
(HD signal (16:9, 16:10))



Selecting a memory page

Memory page

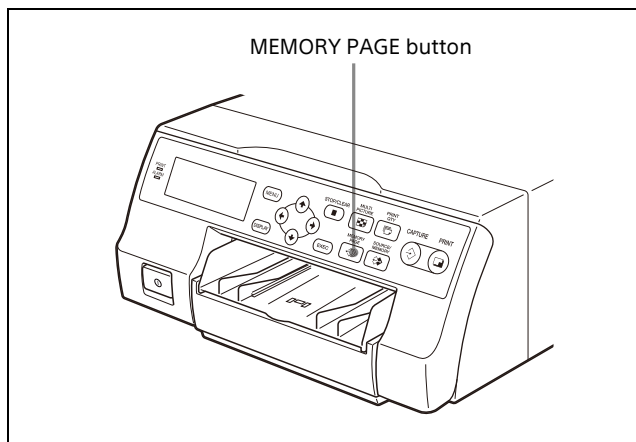
A memory area in which an image is captured is called a memory page in this manual. The number of usable memory pages depends on the type of the reduced images selected and on the connected equipment.

Number of reduced images	Usable memory page
1 (no reduction)	A, B, C, D, E, F, G, H
2	A, B, C, D
4	A, B

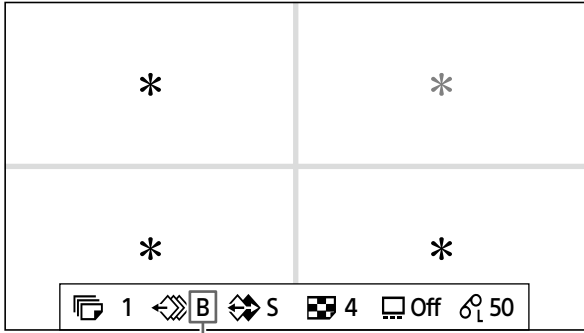
Note

Images of differing signal types (HD/SD (480i) or SD (576i)) cannot coexist on the same multiple reduced image screen. If you change the input signal type in [Input Signal] on the [Input Setup] tab of the [System Setup] menu, the images stored in the memory will be overwritten the next time you capture images.

Selecting a memory page



Press the MEMORY PAGE button repeatedly until the desired memory page appears.



Currently selected memory page

Making a Printout of Reduced Images – Multi Print

You can make a printout of different types of images (reduced images). This section explains how to make a printout of reduced images. Configure the following settings to make a printout of reduced images:

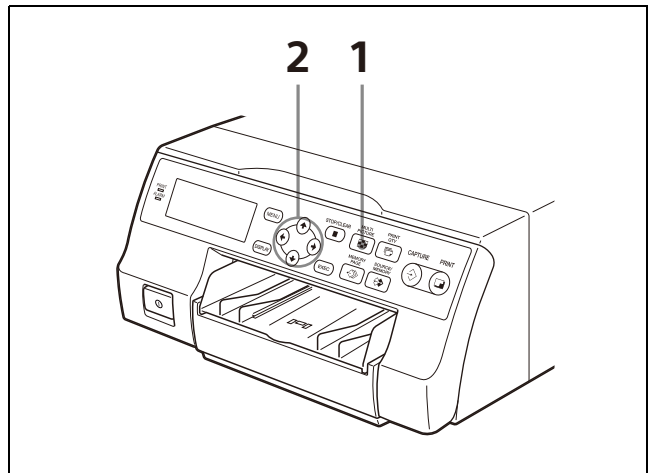
- Determine the number of reduced images. (page 31)
- Select the memory page. (page 30)

Selecting the number of reduced images to be captured in memory

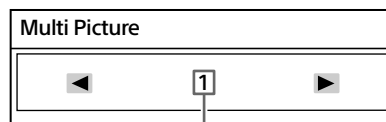
The following methods are available to select the number of reduced images:

- Using the MULTI PICTURE button
- Using the menu

To make a selection using the MULTI PICTURE button



- 1 Press the MULTI PICTURE button. The [Multi Picture] screen appears for several seconds.



Currently selected reduced images

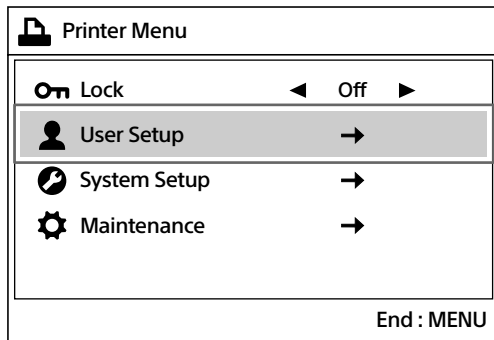
- 2 Use the ← or → button to select the type of reduced images.

Type	Number of reduced images (names in parentheses are used in this manual)
1 (default value)	One (Full-size image)
2	Two (Two reduced images)
4	Four (Four reduced images)

The [Multi Picture] screen is closed several seconds later.

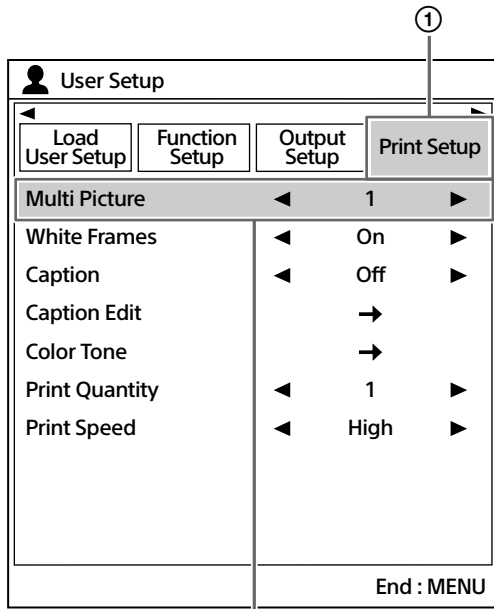
To select using the menu

- 1 Press the MENU button, use the ↑ or ↓ button to select the [User Setup] menu, and then press the → button.

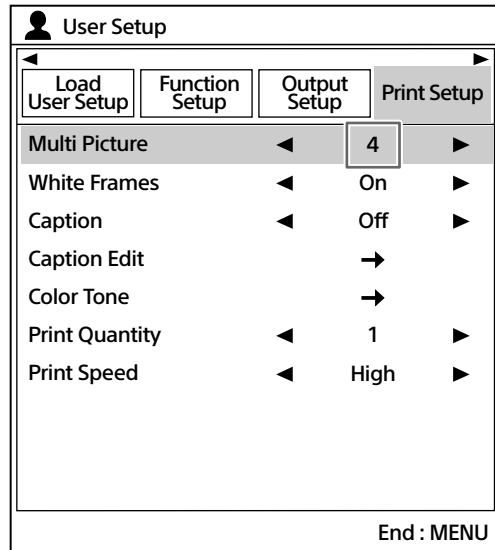


The [User Setup] screen appears.

- 2 Use the ← or → button to select the [Print Setup] tab (①), then the ↑ or ↓ button to select [Multi Picture] (②).



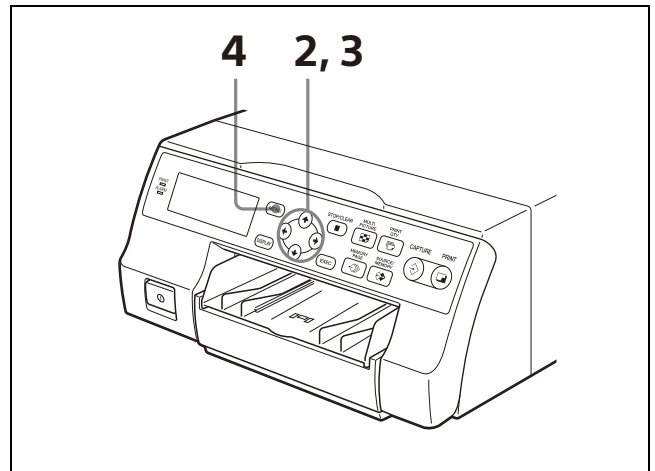
- 3 Select the type of reduced images to be captured in memory by pressing the ← or → button.



- 4 Press the MENU button. The [User Setup] screen is closed.

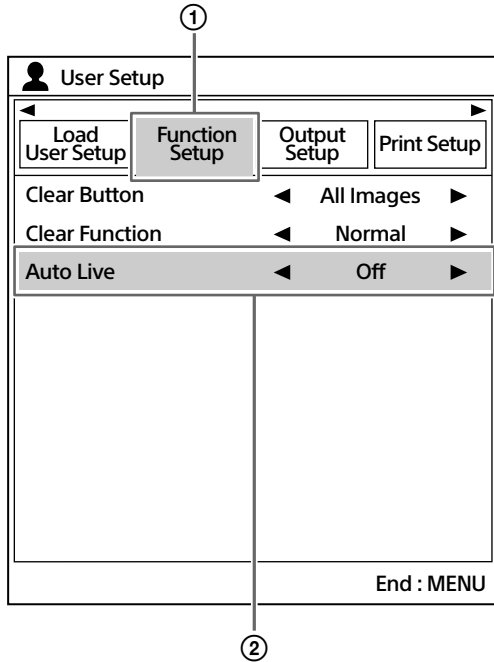
Setting the image displayed on the video monitor after capture

After capturing an image, you can set the image displayed on the video monitor as a source image or set a memory image.

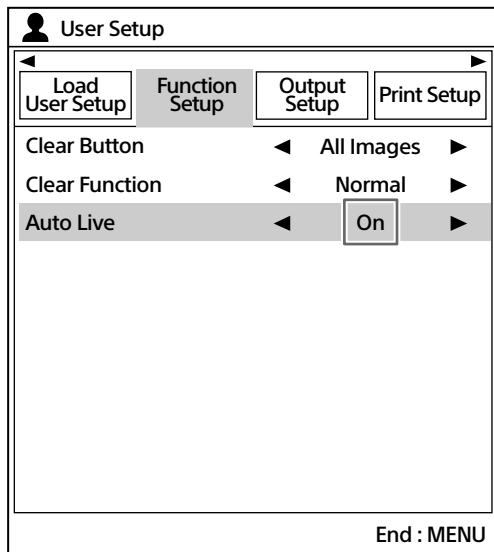


- 1 Display the [User Setup] screen according to the operations of step 1 described in "Making printouts with a user registered settings" (page 27).

- 2 Use the ← or → button to select the [Function Setup] tab (①), then the ↑ or ↓ button to select [Auto Live] (②).



- 3 Use the ← or → button to select which image appears after being captured to memory.



Option	Description
On	Displays the image captured in memory, then displays the source image on the video monitor several seconds later.
Off (default value)	Keeps the image captured in memory on the video monitor.

- 4 Press the MENU button. The [User Setup] screen is closed.

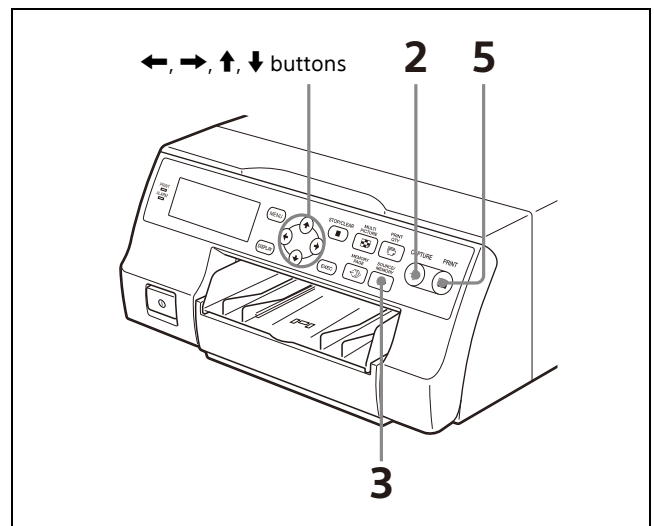
Making a printout with reduced images

This section explains how to make printouts of reduced images using a printout of four reduced images as an example. Printouts can be made with the same operations for other numbers of reduced images.

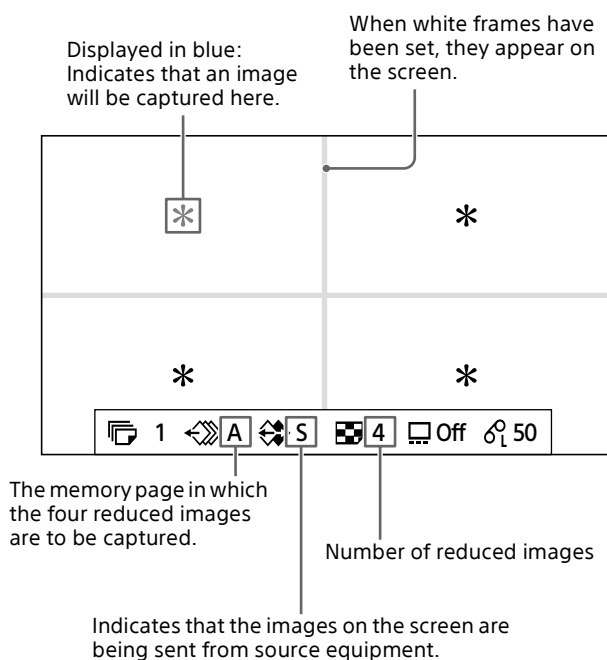
Check

Before making the printout of four reduced images, complete the following steps. If you have not, see the reference page.

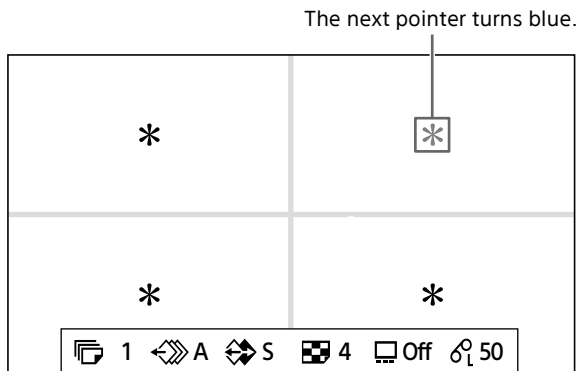
- Check the sharpness. (page 58)
- Set the layout to four reduced images. (page 31)
- Select the appropriate memory page. (page 30)
- Select which image will appear after the image has been captured into memory. (page 32)
- Select whether to add white frames. (page 34)
The white border setting for printouts of four reduced images can be made before or after the four images are captured to memory.



- 1 Output images from the video device (source images) onto the monitor.
This operation is done using the controls of the connected equipment.



- 2 Press the CAPTURE button at the instant the image appears on the screen.
The image is captured in the location indicated by the blue pointer on the video monitor or the position number displayed on the printer window display in step 1. The blue pointer moves to the next position where the image is to be captured. The number also changes on the printer window display.



At this time, the image captured in memory is displayed on the video monitor. However, the image to be displayed after depends on the [Auto Live] (page 33) setting in the [Function Setup] tab of the [User Setup] menu. When the source image is displayed, go to step 4.

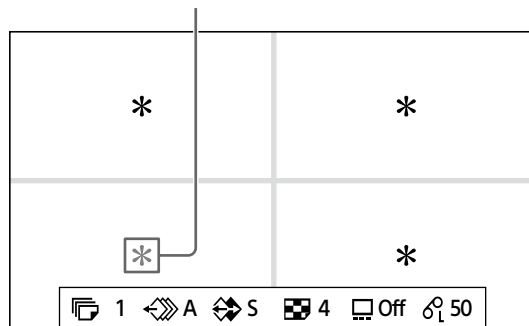
- 3 Press the SOURCE/MEMORY button.
The source image appears on the video monitor.
- 4 Repeat steps 2 and 3 until you have captured four images when the memory image remains on the video monitor.
Repeat step 2 until you have captured four images when the source image appears on the video monitor.

To replace a captured image

Example: When you want to change the image captured in the third position.

- ① Use the ←, →, ↑, or ↓ button to select the image in the third position.

Press the ←, →, ↑, or ↓ button until the pointer at the third image turns blue.



- ② Display the source image on the video monitor.
For further details, see step 3.
- ③ Press the CAPTURE button.
The previously captured image is replaced with the newly captured image.

To keep a previously captured image

Skip images that you want to keep by pressing the ←, →, ↑, or ↓ button.

- 5 Press the PRINT button.
The four reduced images are printed on one sheet of paper.
Whether or not white frames are added to a print depends on the [White Frames] (page 35) setting in the [Print Setup] tab of the [User Setup] menu.

To add white frames to reduced images

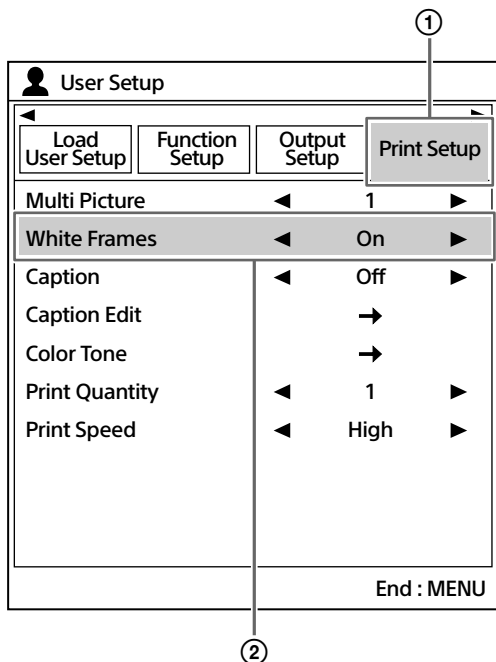
You can set whether or not reduced images are printed with white borders.

Note

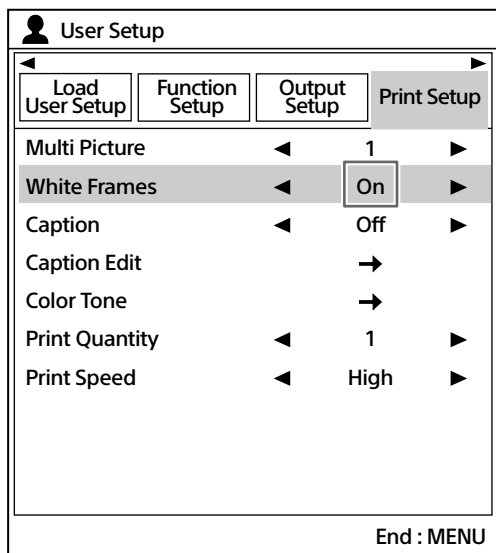
This setting is also effective for the images which have been captured.

1 Display the [User Setup] screen according to the operations of step 1 described in “Making printouts with a user registered settings” (page 27).

2 Use the ← or → button to select the [Print Setup] tab (①), then the ↑ or ↓ button to select [White Frames] (②).



3 Use the ← or → button to select whether or not to add white frames.



Option	Description
On (default value)	Print images with white frames.
Off	Print images without white frames.

4 Press the MENU button. The [User Setup] screen is closed.

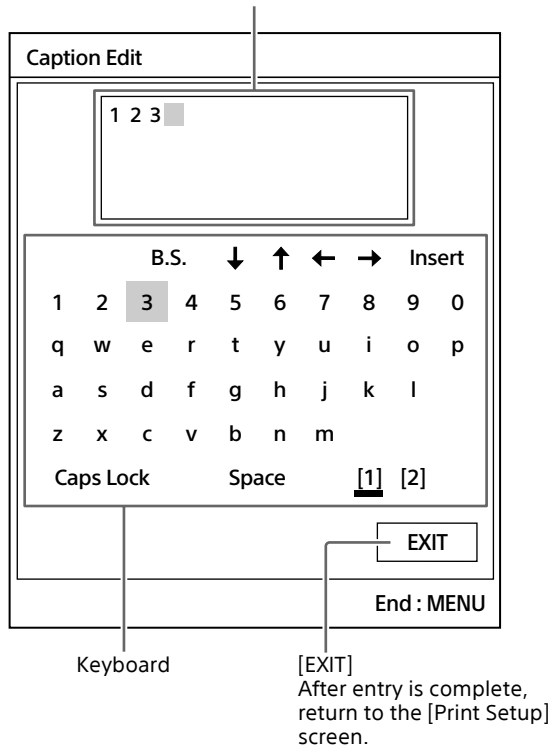
Making Printouts with a Caption

On-screen keyboard

A caption, such as comments, can be added to a printout below the image (up to 58 characters). Captions are entered using the on-screen keyboard in the [Caption Edit] screen on the [Print Setup] tab of the [User Setup] menu. This section explains how to use the keyboard.

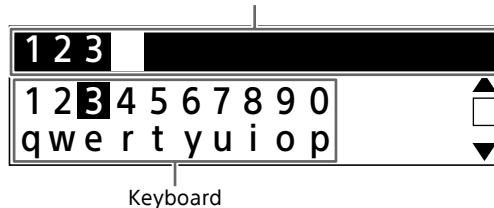
On a monitor display

Text input display area
Text input with the keyboard is displayed at the cursor position.



On the printer window display

Text input display area
When 58 characters are entered, the text is displayed in four lines.
One line with the cursor is also displayed.

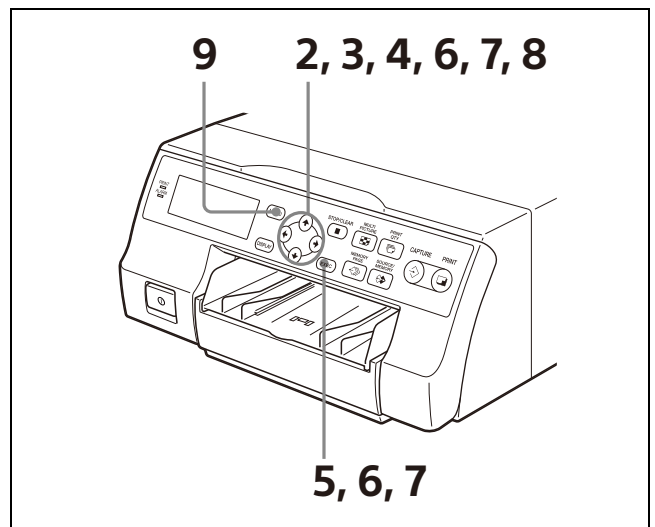


Non-text items

Key	Description
B.S.	Deletes one character in front of the cursor.
↓↑←→	Moves the cursor position.
Insert	Inserts a character at the cursor position. An underline appears when turned on.
Caps Lock	Switches between uppercase and lowercase letters. An underline appears when turned on (capital letters).
Space	Inserts a single space at the cursor position.
[1]	Switches to alphanumeric display. An underline appears when turned on.
[2]	Switches to symbol display. An underline appears when turned on. The following symbols can be entered. , . \ ' ; : ! ? @ ~ ^ _ / * + - = % # & \$ < > () { } []

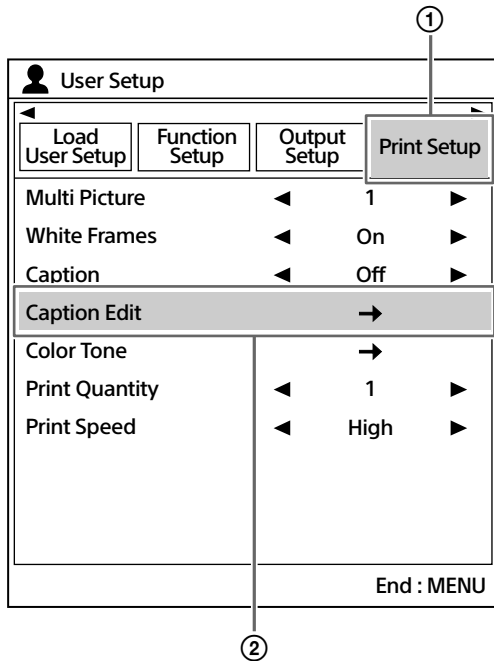
Entering text

The text saved in memory is saved even if you turn the power off.



- 1 Display the [User Setup] screen according to the operations of step 1 described in "Making printouts with a user registered settings" (page 27).

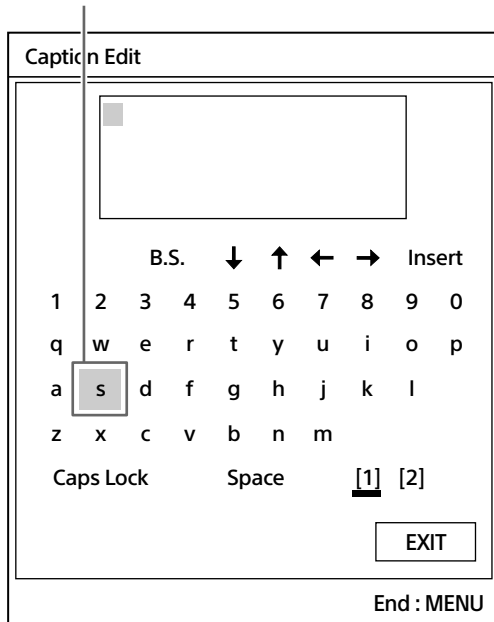
- 2 Use the ← or → button to select the [Print Setup] tab (①), then the ↑ or ↓ button to select [Caption Edit] (②).



- 3 Press the → button.
The [Caption Edit] screen appears.
- 4 Press the ←, →, ↑, or ↓ button to move the cursor to the character you want to enter.

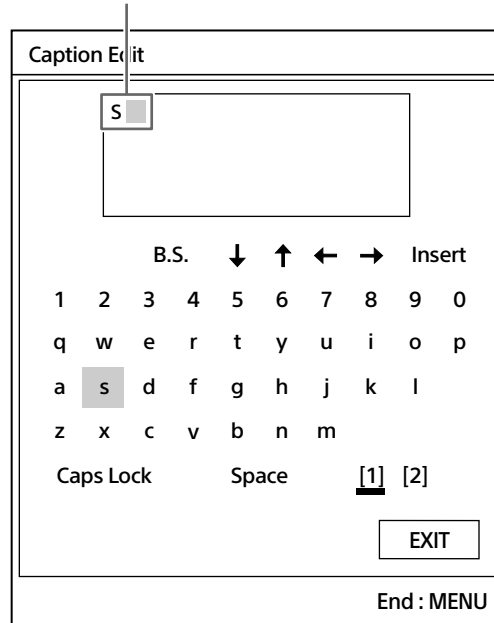
Example: Entering "S"

Press the ←, →, ↑, or ↓ button to move the cursor to "s".



- 5 Press the EXEC button.
The character selected in step 4 appears at the point where the cursor is positioned in the text input display area, after which the cursor moves to the next position.

The cursor moves to the next position when character is entered.



- 6 Repeat steps 4 and 5 to enter the remaining characters of the caption.

To change the character input location

Press the ←, →, ↑, or ↓ button to choose [↓], [↑], [←], or [→], then press the EXEC button. Each time the button is pressed, the cursor moves ahead one space in the text input display area.

To switch between uppercase/lowercase letters

Press the ←, →, ↑, or ↓ button to choose [Caps], then press the EXEC button. When entering uppercase letters, the selection changes to lowercase letter input. When entering lowercase letters, the selection changes to uppercase letter input.

Note

The text already entered in the text input display area will not change.

To delete character

Use the ←, →, ↑, or ↓ button to select [B.S.], then press the EXEC button. Each time the EXEC button is pressed, a single character is deleted before the cursor.

To enter a space

Move the cursor to the position where you want to enter a space, press the ←, →, ↑, or ↓ button to select [Space], then press the EXEC button.

Each the EXEC button is pressed, a single space is inserted.

To add characters midway

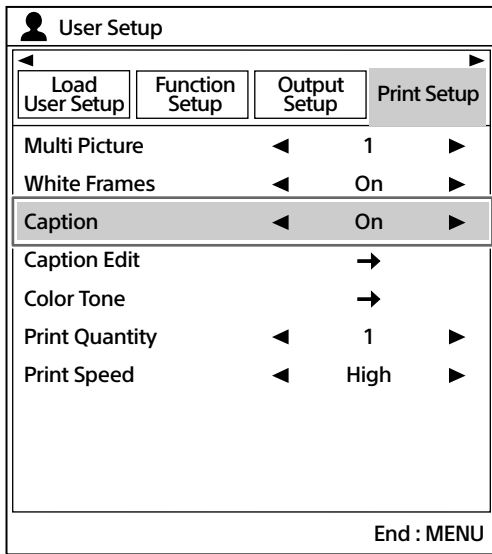
To add characters, move the cursor to the desired position, press the ←, →, ↑, or ↓ button to select [Insert], then press the EXEC button. You can now enter text.

- 7 When input is finished, use the ←, →, ↑, or ↓ button to select [EXIT], then press the EXEC button.

Close the [Caption Edit] screen and return to the [User Setup] screen.

- 8 Enable caption printing.

- ① Use the ↑ or ↓ button to select [Caption].



- ② Use the ← or → button to select [On].

Option	Description
On	Adds a caption.
Off (default value)	Does not add a caption.

- 9 Press the MENU button. The [User Setup] screen is closed.

Zoom and Print Part of an Image

You can zoom the area of an image you need and print four reduced images on a single sheet. You can also zoom part of the image such as text information from the top left of the four reduced images to create reduced images.

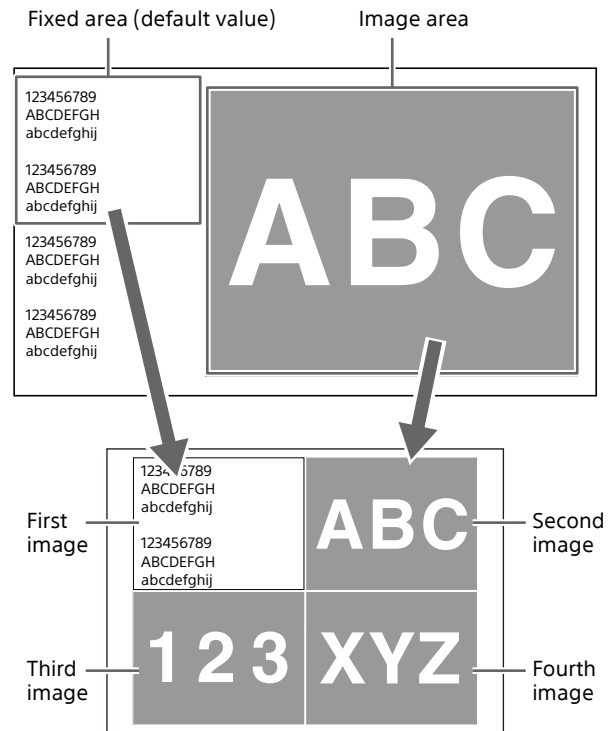
Tip

The zoom function is only available when the reduced images is set to four reduced images and using an HD video signal input.

The following modes are available when zooming:

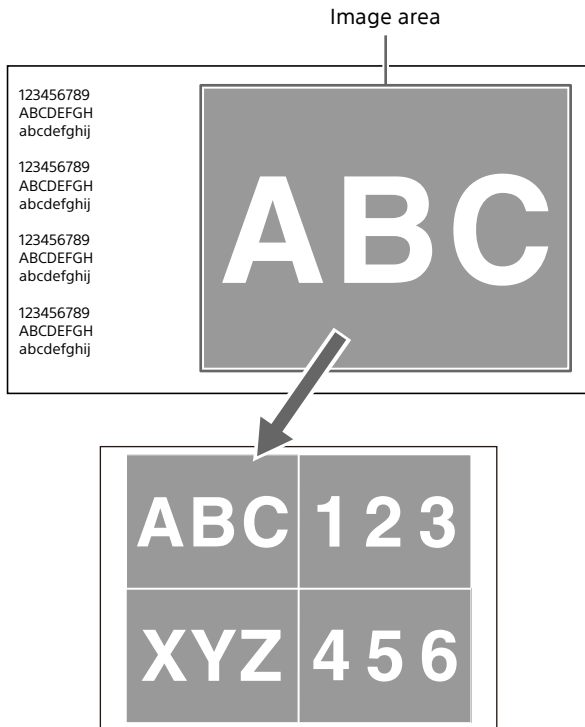
[Zoom Mode]: [Part]

The fixed area is zoomed on the first screen and the image area is zoomed and printed on the second, third, and fourth screens.



[Zoom Mode]: [All]

Zooms and prints the image area of all four screens.

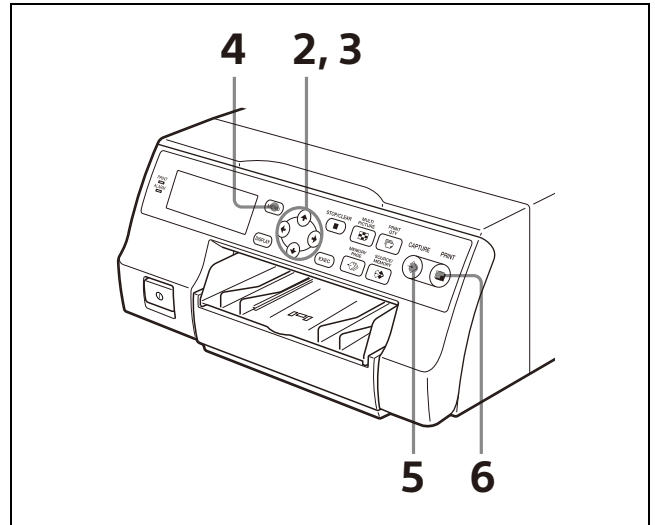


Notes

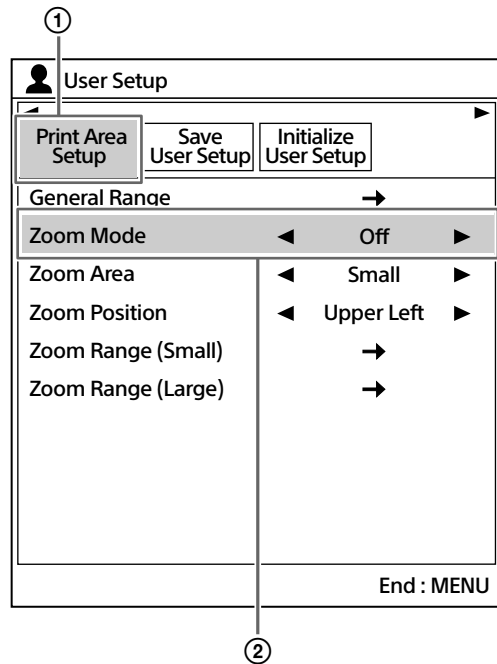
- Images are zoomed to a 4:3 aspect ratio regardless of the [HD Aspect Ratio] settings in the [Input Setup] tab of the [System Setup] menu.
- The zooming size of the fixed area cannot be changed. The zoom size for 1920 × 1080 HD images is 832 × 624 (fixed).

Tip

The image zoom position can be changed as the fixed area with [Zoom Position]. For details, see “To set the image zoom position as the fixed area” (page 42).



- 1 Display the [User Setup] screen according to the operations of step 1 described in “Making printouts with a user registered settings” (page 27).
- 2 Use the ← or → button to select the [Print Area Setup] tab (①), then the ↑ or ↓ button to select [Zoom Mode] (②).

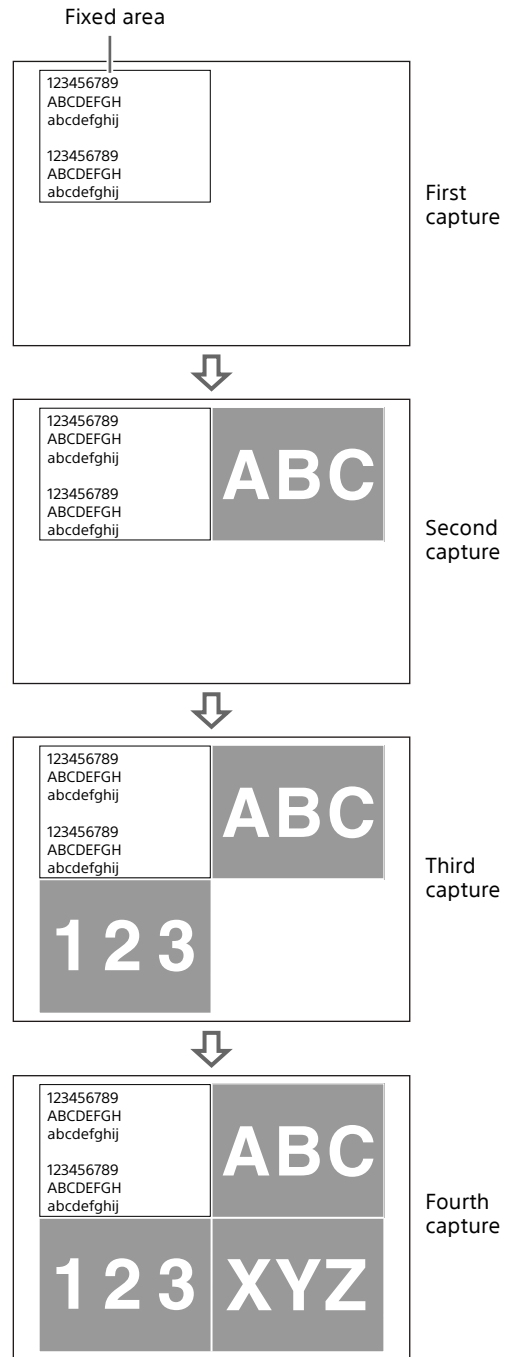


- 3 Use the ← or → button to select the zooming method.

Option	Description
Off (default value)	Creates a regular print without zooming.
Part	The fixed area is zoomed on the first screen and the image area is zoomed and printed on the second, third, and fourth screens.

Option	Description
All	Zooms and prints image area images in all screens.

- 4 Press the MENU button.
The [User Setup] screen is closed.
- 5 Press the CAPTURE button to capture an image.
Follow steps 1 to 4 in "Making a printout with reduced images" (page 33) to capture images four times, then create prints.
If [Zoom Mode] is set to [Part], the fixed area from the first screen is zoomed and captured in all pages, regardless of the number of captures or pages.



- 6 Press the PRINT button.
The printouts are created.

To set the image zoom area

In the [Print Area Setup] tab of the [User Setup] screen, select [Zoom Area], then use the ← or → button to select the zoom area.

The screenshot shows the 'User Setup' screen with the 'Print Area Setup' tab selected. The 'Zoom Area' is currently set to 'Small'. Other settings include 'Zoom Mode' set to 'Part' and 'Zoom Position' set to 'Upper Left'. The 'Zoom Range (Small)' and 'Zoom Range (Large)' options are visible at the bottom of the screen.

This screenshot shows the 'User Setup' screen with the 'Print Area Setup' tab selected. The 'Zoom Range (Small)' option is highlighted, indicating it is the current selection. The 'End : MENU' button is visible at the bottom right.

The [Zoom Range (Small)] or [Zoom Range (Large)] screen appears.

- Use the ↑ or ↓ button to select a setting item, then the ← or → button to set the image capture position and size.

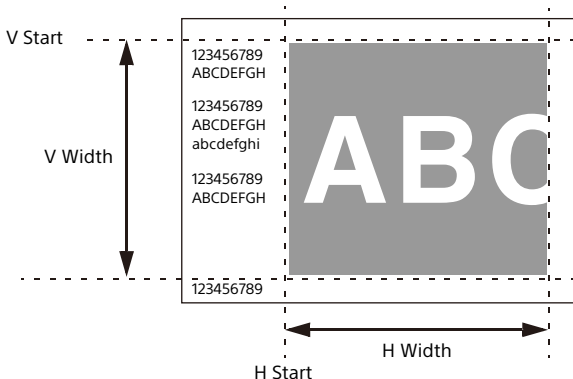
Option	Description
Small (default value)	Zooms the area set in [Zoom Range (Small)].
Large	Zooms the area set in [Zoom Range (Large)].

[Zoom Range (Small)]

The screenshot shows the 'Zoom Range (Small)' screen. It lists several settings: 'H Start (16:9/16:10)' set to 636, 'V Start (16:9/16:10)' set to 96, 'H Start (4:3/5:4)' set to 496, 'V Start (4:3/5:4)' set to 96, 'H Width (S)' set to 1228, and 'V Width (S)' set to 921. A 'Back' button is at the top left, and 'End : MENU' is at the bottom right.

To set the image zoom size

Set the image zoom size as follows:



- In the [Print Area Setup] tab of the [User Setup] screen, select [Zoom Range (Small)] or [Zoom Range (Large)], then press the → button. Choose [Zoom Range (Small)] or [Zoom Range (Large)] according to the [Zoom Mode] setting.

Setting item	Setting range (default value)	Description
H Start (16:9/16:10)	240 to 1000 (636)	Sets the image capture position (left edge) in the horizontal direction for an aspect ratio of 16:9 or 16:10.
V Start (16:9/16:10)	0 to 200 (96)	Sets the image capture position (top edge) in the vertical direction for an aspect ratio of 16:9 or 16:10.
H Start (4:3/5:4)	240 to 1000 (496)	Sets the image capture position (left edge) in the horizontal direction for an aspect ratio of 4:3 or 5:4.

Setting item	Setting range (default value)	Description
V Start (4:3/5:4)	0 to 200 (96)	Sets the image capture position (top edge) in the vertical direction for an aspect ratio of 4:3 or 5:4.
H Width (S)	600 to 1400 (1228)	Sets the image capture width in the horizontal direction. (Common to all aspect ratios)
V Width (S)	600 to 1000 (921)	Sets the image capture width in the vertical direction. (Common to all aspect ratios)

[Zoom Range (Large)]

Zoom Range (Large)		
← Back		
H Start (16:9)	◀ 480 ▶	
V Start (16:9)	0 ▶	
H Start (16:10)	◀ 384 ▶	
V Start (16:10)	0 ▶	
H Start (4:3/5:4)	◀ 240 ▶	
V Start (4:3/5:4)	0 ▶	
H Width (L)	◀ 1440 ▶	
H Width (L)	◀ 1080 ▶	
End : MENU		

Setting item	Setting range (default value)	Description
H Start (16:9)	0 to 1000 (480)	Sets the image capture position (left edge) in the horizontal direction for an aspect ratio of 16:9.
V Start (16:9)	0 to 200 (0)	Sets the image capture position (top edge) in the vertical direction for an aspect ratio of 16:9.
H Start (16:10)	0 to 1000 (384)	Sets the image capture position (left edge) in the horizontal direction for an aspect ratio of 16:10.
V Start (16:10)	0 to 200 (0)	Sets the image capture position (top edge) in the vertical direction for an aspect ratio of 16:10.
H Start (4:3/5:4)	0 to 1000 (240)	Sets the image capture position (left edge) in the horizontal direction for an aspect ratio of 4:3 or 5:4.

Setting item	Setting range (default value)	Description
V Start (4:3/5:4)	0 to 200 (0)	Sets the image capture position (top edge) in the vertical direction for an aspect ratio of 4:3 or 5:4.
H Width (L)	1000 to 1920 (1440)	Sets the image capture width in the horizontal direction. (Common to all aspect ratios)
V Width (L)	800 to 1080 (1080)	Sets the image capture width in the vertical direction. (Common to all aspect ratios)

To set the image zoom position as the fixed area

When [Zoom Mode] is set to [Part], set the image zoom position as the fixed area.

In the [Print Area Setup] tab of the [User Setup] screen, select [Zoom Position], then use the ◀ or ▶ button to select the image zoom position as the fixed area.

User Setup	
Print Area Setup	Save User Setup Initialize User Setup
General Range	→
Zoom Mode	◀ Part ▶
Zoom Area	◀ Small ▶
Zoom Position	◀ Upper Left ▶
Zoom Range (Small)	→
Zoom Range (Large)	→
End : MENU	

Option	Description
Upper Left (default value)	Zooms in on the upper left part of the image as the fixed area.
Upper Right	Zooms in on the upper right part of the image as the fixed area.
Lower Right	Zooms in on the lower right part of the image as the fixed area.
Lower Left	Zooms in on the lower left part of the image as the fixed area.

Note

The zooming size of the fixed area cannot be changed. The zoom size for 1920 × 1080 HD images is 832 × 624 (fixed).

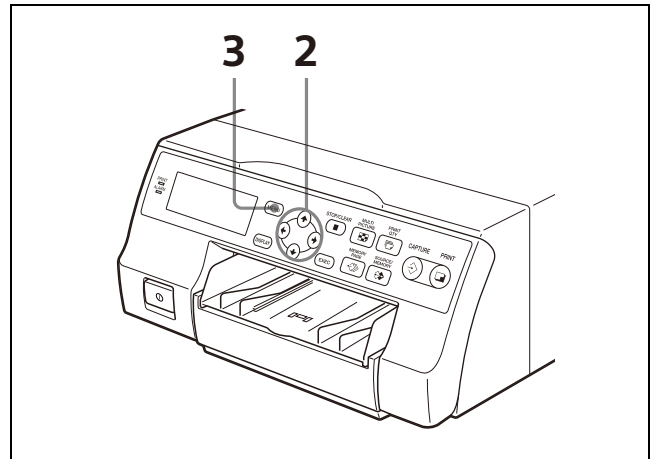
Deleting Images Stored in Memory

You can use the STOP/CLEAR button to delete individual reduced images captured to a memory page, or to delete all of the images from one or all of the memory pages. You can configure settings so the gaps are filled between images captured in memory when reduced images in memory are deleted.

The function for the STOP/CLEAR button is set in [Clear Button] on the [Function Setup] tab of the [User Setup] menu.

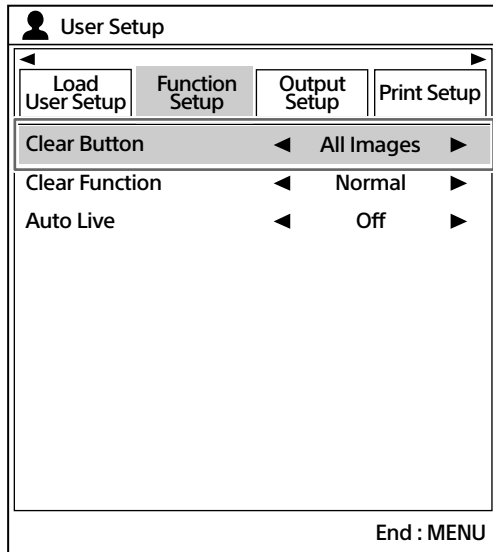
Because the STOP/CLEAR button functions as the STOP button when printing is in progress, images cannot be deleted while printing is in progress.

Setting the function of the STOP/CLEAR button



- 1** Display the [Function Setup] tab of the [User Setup] screen according to the operations in steps 1 to 2 described in "Setting the image displayed on the video monitor after capture" (page 32).

- 2 Use the **↑** or **↓** button to select [Clear Button], then the **←** or **→** button to select the STOP/CLEAR button function.



Option	Description
All Images (default value)	Deletes images in all memory pages simultaneously.
Selected Page	Deletes images of a single memory page.
Selected Part	Deletes only the reduced image at the location of the pointer.
Off	Inactivates the CLEAR button function.

- 3 Press the MENU button. The [User Setup] screen is closed. After you set the function of the STOP/CLEAR button, it remains the same until it is changed.

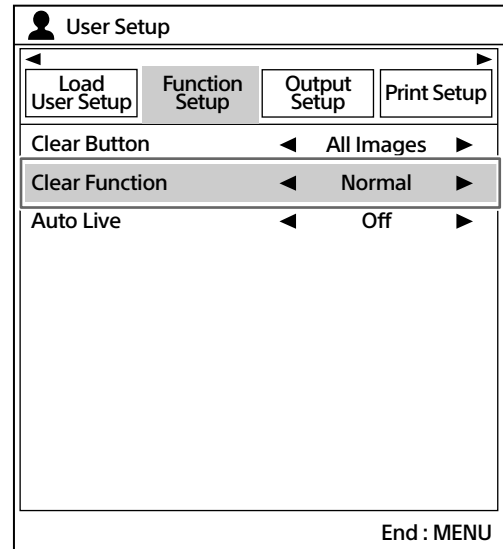
To fill in gaps between images captured in memory

When [Selected Part] is set, and a reduced image with a pointer is deleted from memory, you can fill in the gaps caused by deleting reduced images from memory.

Tip

Gaps between images captured in memory are filled in for the selected reduced images. This has no effect on other memory pages.

In the [Function Setup] tab of the [User Setup] screen, select [Clear Function], then use the **←** or **→** button to set whether or not to fill in gaps between images captured in memory.



Option	Description
Normal (default value)	Does not fill in gaps between images captured in memory.
Advance Image	Fills in gaps between images captured in memory.

Deleting images stored in memory

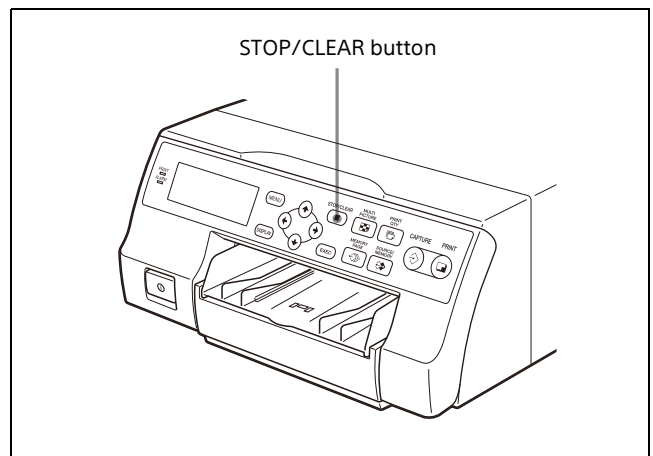
Note

You cannot restore images once they have been deleted.

To delete images in all memory pages

Check

Using [Clear Button] in the [Function Setup] tab of the [User Setup] menu, set the STOP/CLEAR button function to [All Images].



Press the STOP/CLEAR button. All images captured in the printer are cleared.

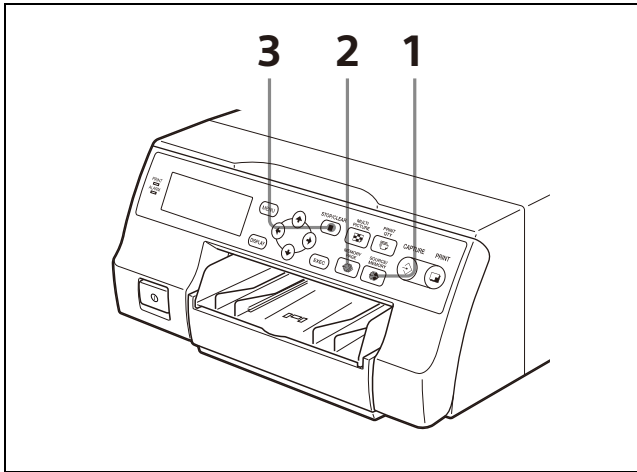
Notes

- Even if you press the STOP/CLEAR button when the source image is displayed on the video monitor, the memory image appears without deleting images. In this case, press the STOP/CLEAR button again. All images captured in the printer are cleared.
- An image which is being printed cannot be cleared.

To delete images in a single memory page only

Check

Using [Clear Button] in the [Function Setup] tab of the [User Setup] menu, set the STOP/CLEAR button function to [Selected Page]. For setting instructions, see "Setting the function of the STOP/CLEAR button" (page 43).

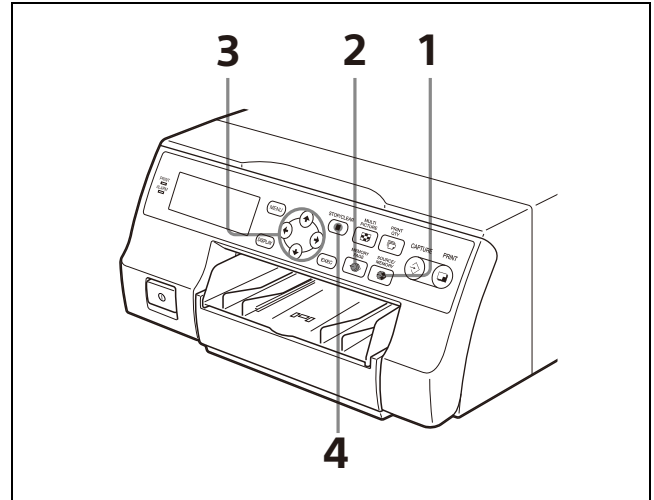


- 1** Press the SOURCE/MEMORY button when an image from the video equipment, etc., (source) is displayed on the video monitor. The image captured in memory is displayed on the video monitor.
- 2** Select the memory page from which images are to be deleted by pressing the MEMORY PAGE button.
- 3** Press the STOP/CLEAR button. The images in the memory page selected in step 2 are deleted.

To delete a single reduced image

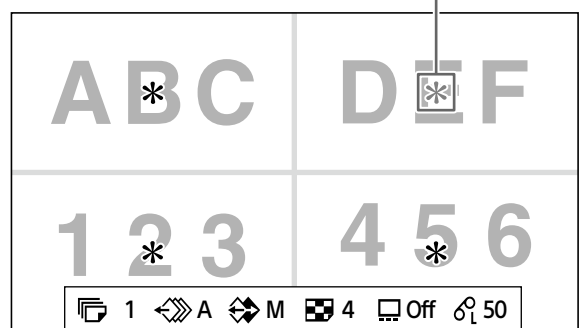
Check

Using [Clear Button] in the [Function Setup] tab of the [User Setup] menu, set the STOP/CLEAR button function to [Selected Part]. For setting instructions, see "Setting the function of the STOP/CLEAR button" (page 43).



- 1** Press the SOURCE/MEMORY button when an image from the video equipment, etc., (source) is displayed on the video monitor. The image captured in memory is displayed on the video monitor.
- 2** Select the memory page from which the reduced image is to be deleted by pressing the MEMORY PAGE button.
- 3** Use the ←, →, ↑, or ↓ to select the image you want to delete.

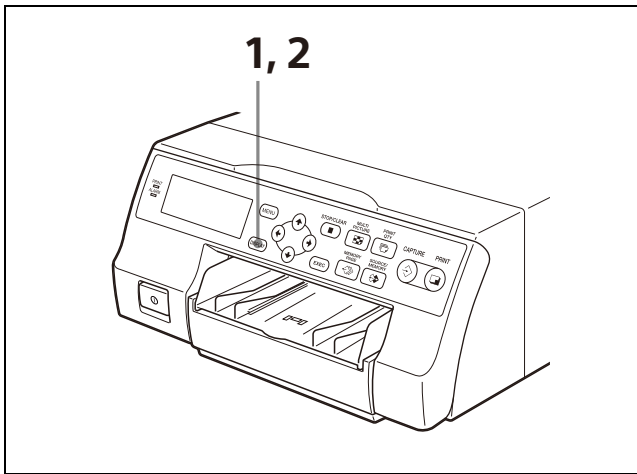
Turn the pointer at the reduced image to be deleted blue.



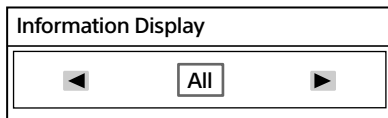
- 4** Press the STOP/CLEAR button. The reduced image selected in step 3 is deleted.

Hiding the Screen Display on the Video Monitor

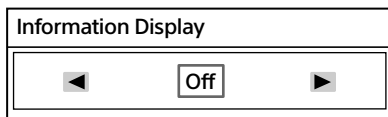
You can hide the screen display in order to see images hidden underneath setting information displayed on the video monitor. The printer operation is the same even when the display is hidden. In this case, check and perform operations using the printer window display. For detailed information on displaying the ink ribbon type and the remaining amount of the ink ribbon, see "Displaying the ink ribbon or printer setting information" (page 71).



- 1** Press the DISPLAY button. The current setting appears. The normal screen appears after a few seconds.



- 2** Select [Off]. If you press the DISPLAY button while the information in step 1 is displayed, [Off] appears. Each time you press the DISPLAY button, the setting switches between [All] → [Ribbon] → [Off].



To restore the screen display

Press the DISPLAY button and select [All] or [Ribbon].

To set the screen display from the menu screen
In [Information Display] on the [Output Setup] tab of the [User Setup] menu, you can hide setting information and configure settings to show the ink ribbon type and remaining ink ribbon. The setting of the DISPLAY button also changes according to menu settings.

When you want to hide a menu screen

You can temporarily hide the menu while holding the DISPLAY button down regardless of DISPLAY settings.

To delete messages

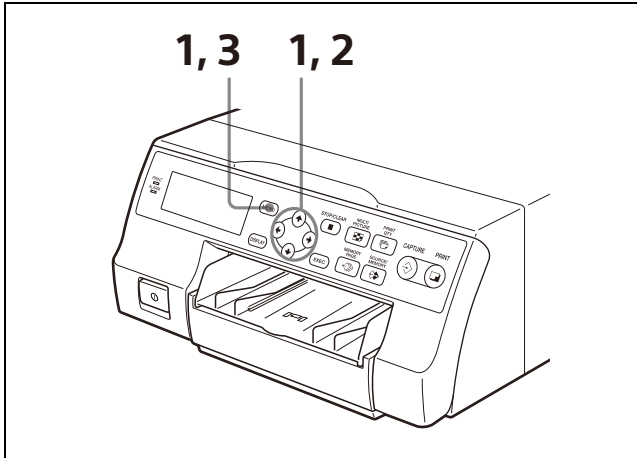
Set in "Disabling message display" (page 71).

Locking Controls

You can lock printer controls to prevent unintentional button presses and setting changes.

Tip

This setting has no effect on control from the REMOTE connectors.

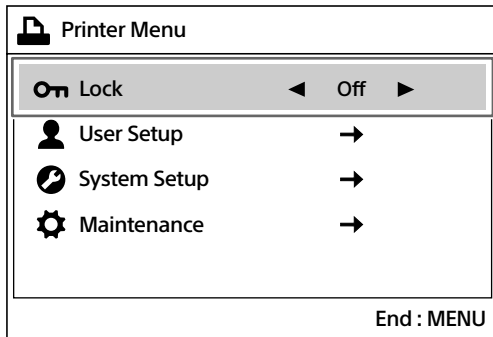


- Press the MENU button. The [Printer Menu] screen is closed. When turned [On], only the [Lock] menu is enabled, and all other items are unavailable.

Note

Even if controls are locked, they will be released when the printer is set to TRANSPORT MODE.

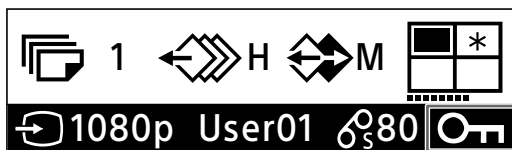
- Press the MENU button, then use the ↑ or ↓ button to select the [Lock] menu.



- Use the ← or → button to select whether or not to lock the controls.

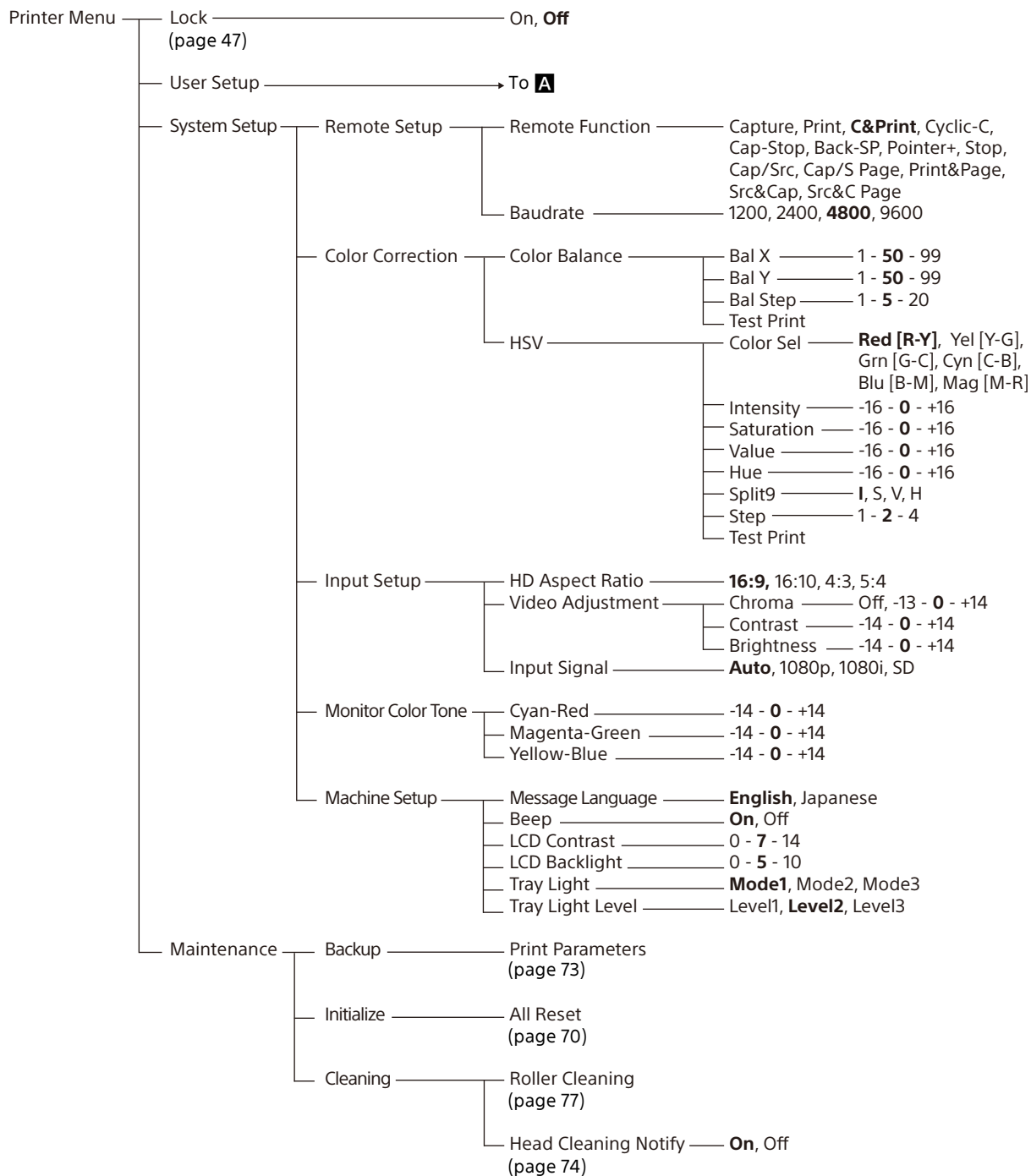
Option	Description
On	Locks printer button controls.
Off (default value)	Allows printer button controls.

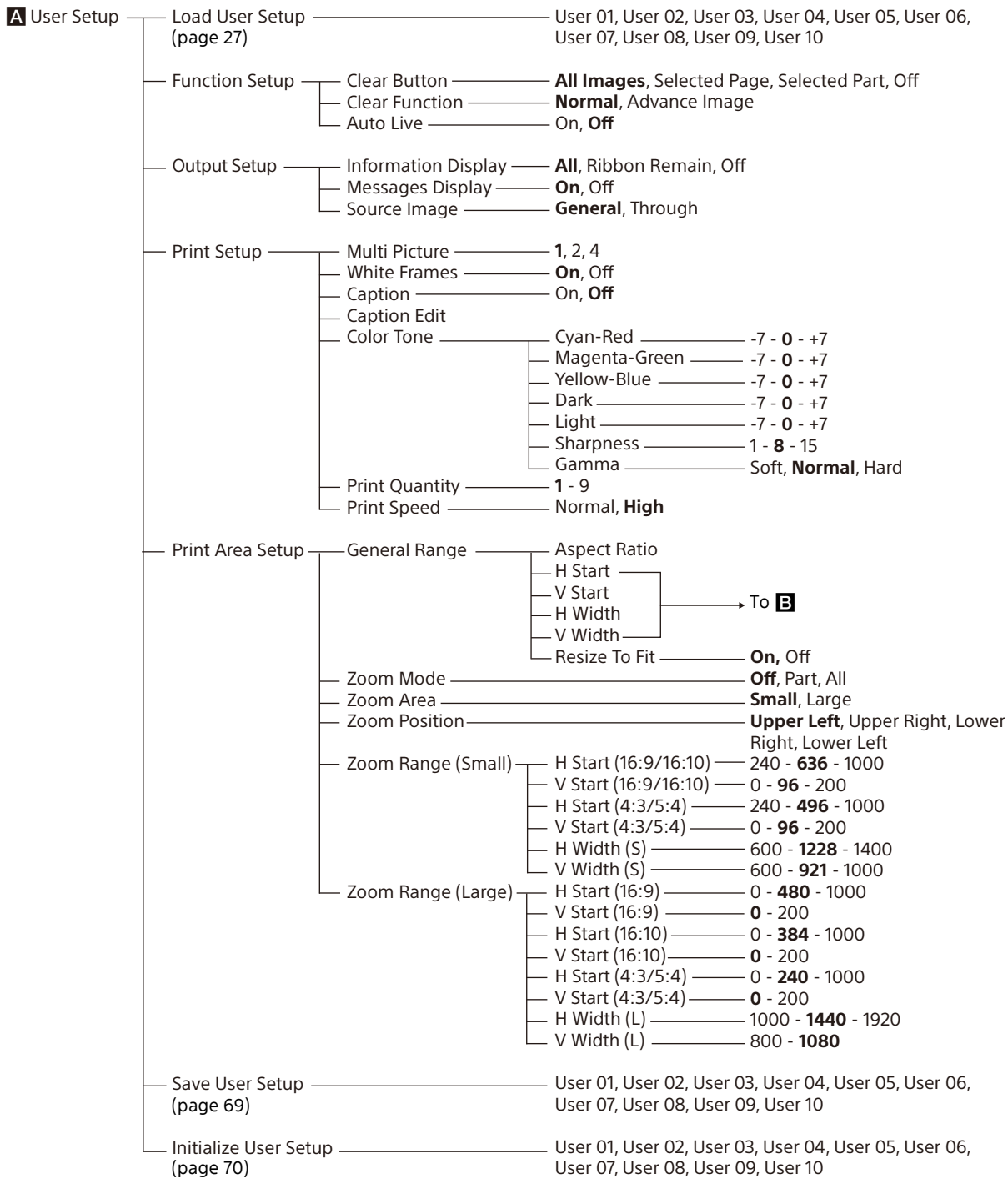
When turned [On], a lock icon appears on the printer window display.



Menu Configuration

The menu configuration on the printer is as follows. Bold text is the factory default setting. For further details, see the page indicated inside parentheses (). For details on the [User Setup] menu and [System Setup] items, see "Items That Can be Set on Menus" (page 51).





B When [Aspect Ratio] is set to [SD (480i)]

H Start _____ 0 - 72
V Start _____ 0 - 48
H Width _____ 560 - **720**
V Width _____ 400 - **480**

B When [Aspect Ratio] is set to [SD (576i)]

H Start _____ 0 - 72
V Start _____ 0 - 48
H Width _____ 560 - **720**
V Width _____ 496 - **576**

B When [Aspect Ratio] is set to [4:3]

H Start _____ 0 - **240** - 960
V Start _____ 0 - 540
H Width _____ 720 - **1440**
V Width _____ 540 - **1080**

B When [Aspect Ratio] is set to [5:4]

H Start _____ 0 - **320** - 960
V Start _____ 0 - **27** - 540
H Width _____ 720 - **1280** - 1440
V Width _____ 540 - **1026** - 1080

B When [Aspect Ratio] is set to [16:9]

H Start _____ 0 - 960
V Start _____ 0 - 540
H Width _____ 960 - **1920**
V Width _____ 540 - **1080**

B When [Aspect Ratio] is set to [16:10]

H Start _____ 0 - **96** - 960
V Start _____ 0 - 540
H Width _____ 960 - **1728** - 1920
V Width _____ 540 - **1080**

Items That Can be Set on Menus

You can use the menu screen to set up the print to meet various specifications. If you store the adjustments to memory, they are retained even after the printer is turned off, and will continue functioning at these settings until new adjustments are stored to memory. You can set up the printer according to connected equipment or your individual preferences. You can store up to 10 sets of user settings. Functions that can be set on the menu screen are as follows:

Tip

Adjustment values that can be stored to memory are the items found in the [User Setup] menu.

[User Setup] menu

Tab	Functions that can be set	Reference page
Function Setup	How to delete images stored to memory (Clear Button)	43
	Fill in memory page gaps when deleting images (Clear Function)	44
	Selecting the image which appears after storing the image into memory, the source image or the memory image (Auto Live)	32
Output Setup	Ink ribbon or printer setting information display (Information Display)	71
	Show/hide messages (Messages Display)	71
	Selecting the output signal from the printer (Source Image)	56

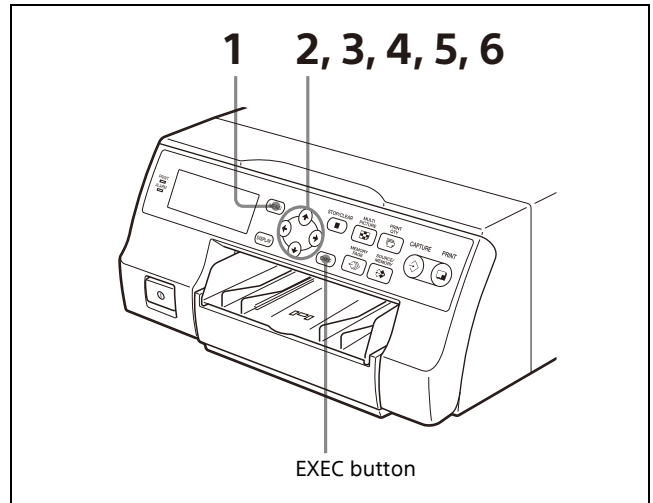
Tab	Functions that can be set	Reference page
Print Setup	Selecting the type of printout (Multi Picture)	31
	Selecting whether or not white frames are added to multiple reduced images (White Frames)	34
	Entering a caption (Caption, Caption Edit)	36
	Adjusting the printout color, contrast, sharpness, and tone (Color Tone)	58
	Setting the print quantity (Print Quantity)	28
	Selecting the print speed (Print Speed)	26
Print Area Setup	Adjusting the printed image area to eliminate black lines or frames produced on the printout (General Range)	59
	Zoom and print an image (Zoom Mode)	38
	Setting the image zoom range (Zoom Area)	41
	Setting the image zoom position (Zoom Position)	42
	Setting the image zoom size (Zoom Range)	41

[System Setup] menu

Tab	Functions that can be set	Reference page
Remote Setup	Setting the operation method of the device connected to the REMOTE connector (Remote Function)	71
	Setting the baud rate for computer communication with the printer (Baudrate)	73
Color Correction	Adjusting the color balance (Color Balance)	61
	Adjusting printout colors (specify colors for adjustment) (HSV)	64
Input Setup	Selecting the HD signal aspect ratio (HD Aspect Ratio)	69
	Compensating for source image color (Video Adjustment)	55
	Selecting the input signal (Input Signal)	22
Monitor Color Tone	Matching the video monitor color to the printout color (Cyan-Red, Magenta-Green, Yellow-Blue)	56

Tab	Functions that can be set	Reference page
Machine Setup	Setting the message display language (Message Language)	24
	Setting whether or not to allow operation sounds and alarms (Beep)	73
	Adjusting the contrast of the printer window display (LCD Contrast)	73
	Adjusting the brightness of the printer window display (LCD Backlight)	73
	Setting the tray light function (Tray Light)	73
	Setting the tray light brightness (Tray Light Level)	73

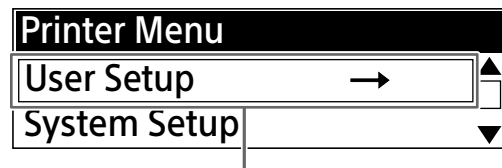
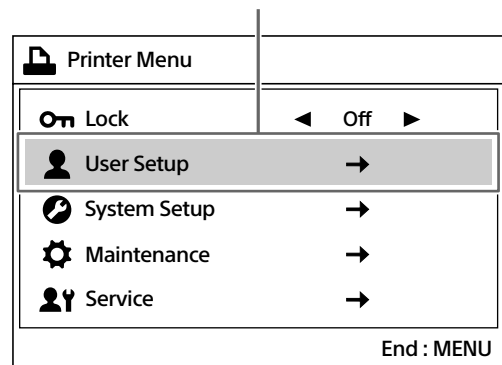
Basic Menu Operations



- 1 Press the MENU button.
The [Printer Menu] screen appears.
- 2 Press the **↑** or **↓** button to select the desired menu.

Example: Selecting the [User Setup] menu

Use the **↑** or **↓** button to highlight [User Setup].



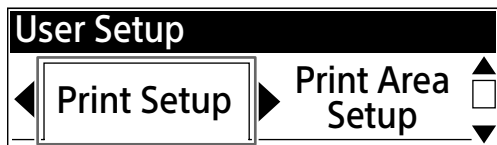
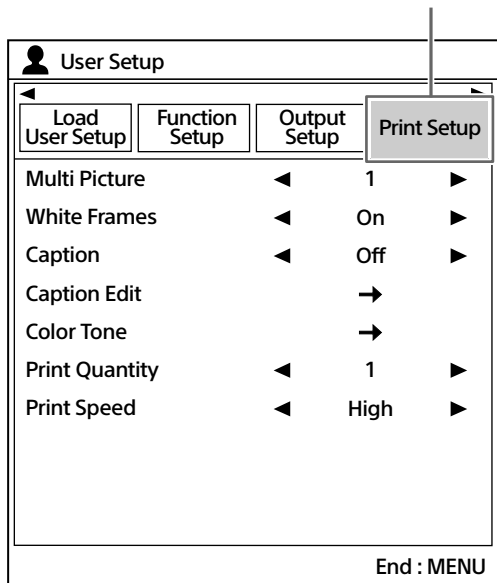
Use the **↑** or **↓** button to move the cursor box to [User Setup].

- 3 Press the **→** button.
The [User Setup] screen appears.

4 Press the ← or → button to select the desired tab.

Example: Selecting the [Print Setup] tab

Use the ← or → button to highlight the [Print Setup] tab.

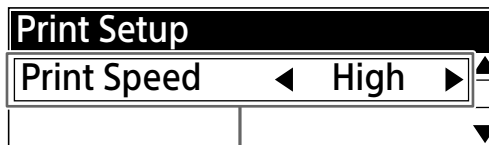
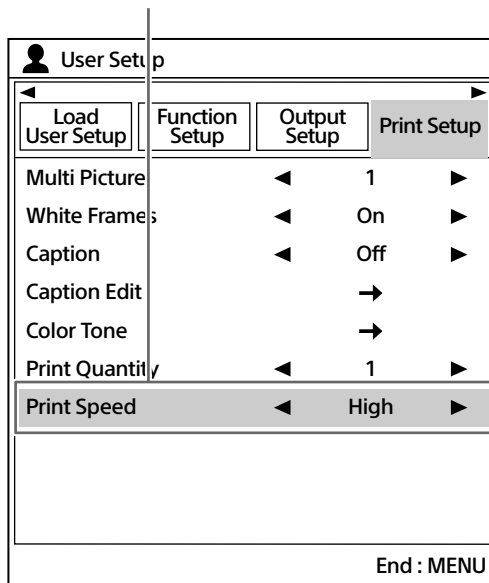


Use the ← or → button to display the [Print Setup] tab.

5 Press the ↑ or ↓ button to select the desired item.

Example: Selecting [Print Speed] in the [Print Setup] tab

Use the ↑ or ↓ button to highlight [Print Speed].



Use the ↑ or ↓ button to move the cursor box to [Print Speed].

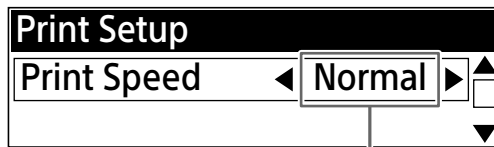
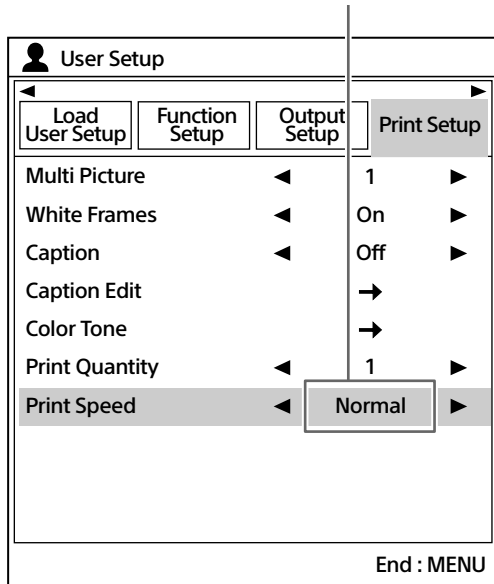
6 Use the ← or → button to change the setting.

To change the selection:

Press the ← or → button to select the desired option.

Example: Selecting [Normal] speed

Use the ← or → button to display [Normal].



Use the ← or → button to display [Normal].

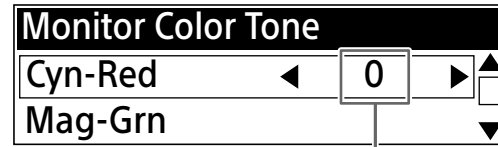
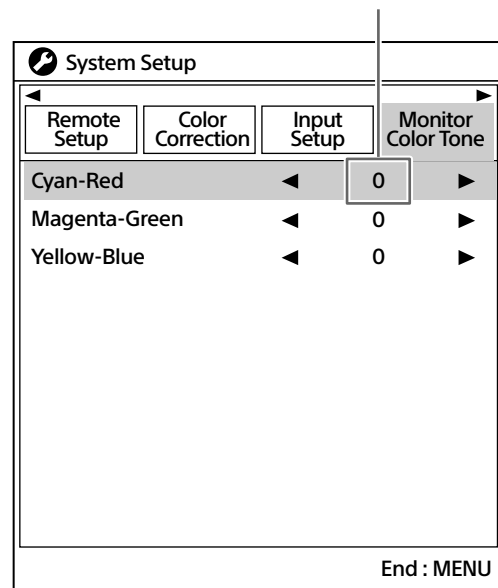
To change the adjustment values:

Press the ← or → button to change the setting values.

The setting value increases every time you press the → button and decreases every time you press the ← button.

Example: Changing the [Monitor Color Tone] adjustment value

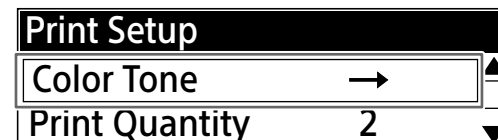
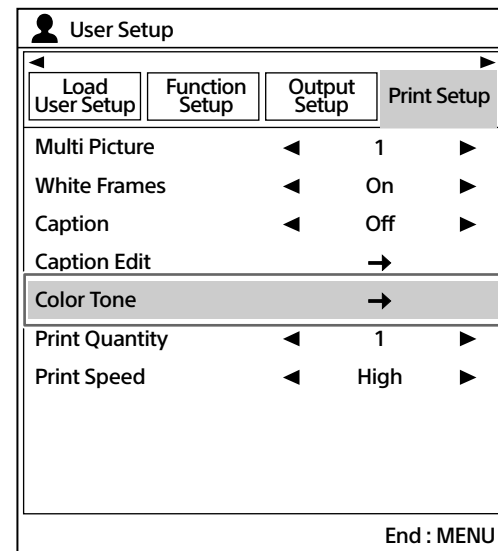
The current setting value



The current setting value

When there are sub menus:

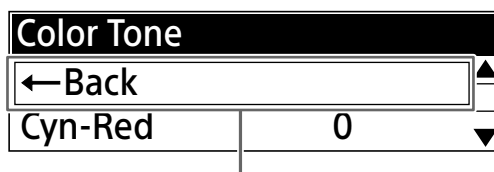
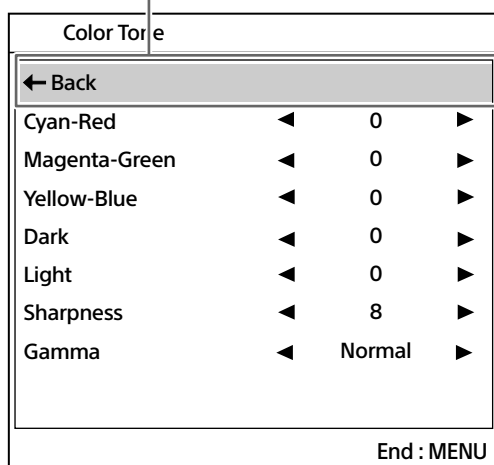
When there are sub menus, [→] is displayed on the screen. Use the ↑ or ↓ button to select the item, then press the → button.



To return from the sub menu:

Select [← Back] on the top, then press the ← button.

Use the ↑ or ↓ button to highlight [← Back], then press the ← button.



Press the ↑ or ↓ button to move the cursor box until [← Back] is displayed, then press the ← button.

To return the values to factory setting

Simultaneously press the ← and → buttons for the selected setting item in the screen display and printer window display to return the setting to factory default values.

Adjusting the Color and Sharpness

Compensating for source image brightness, etc.

If the screen brightness is inadequate due to an improper input signal level, you can compensate for the source image input signal.

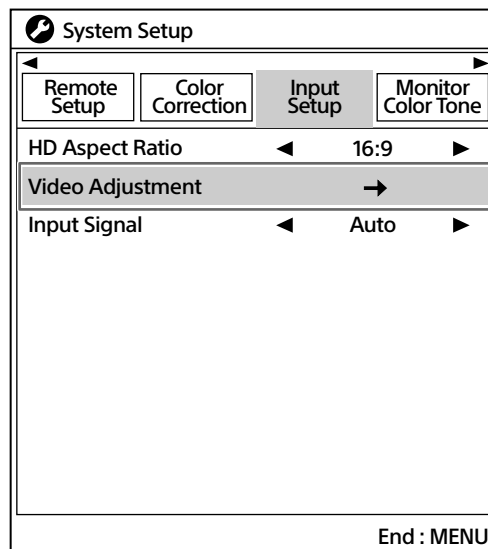
Note

You cannot correct images that have already been captured to memory. Capture the image to memory after compensation is complete.

Check

When the memory image is displayed on the video monitor, press the SOURCE/MEMORY button to display the image from the video source.

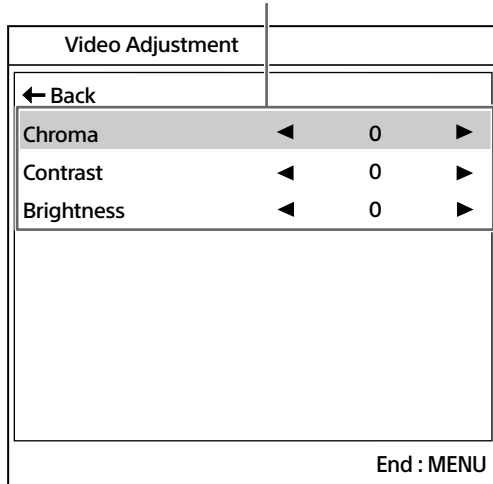
- 1 Display the [Input Setup] tab of the [System Setup] screen, use the ↑ or ↓ button to select [Video Adjustment], then press the → button.



The [Video Adjustment] screen appears.

2 Adjust the source image saturation, brightness, and contrast.

Select the desired item, then perform the adjustment.



Setting item	Setting range (default value)	Description
Chroma	Off, -13 to +14 (0)	Adjusts the source image saturation. The larger the value, the darker the source image color is. Press the ← button to make the color lighter, and press the → button to make the color darker.
Contrast	-14 to 14 (0)	Adjusts the source image contrast. The larger the value, the larger the difference in brightness between black and white becomes for the source image. Press the ← button to decrease the contrast, and press the → button to increase the contrast.
Brightness	-14 to 14 (0)	Adjusts the source image brightness. The larger the value, the brighter the overall source image is. Press the ← button to make the image darker, and press the → button to make the image brighter.

Matching the video monitor and printout color

If the video monitor and printout colors do not match and it is difficult to imagine what a printout of the video monitor will look like, compare the printout and video monitor and adjust the colors on the menu screen.

The printer outputs either of the following two kinds of source video signals based on the printer settings.

- EE (E to E): Input signals are output after being processed by the printer's circuitry.
- Through: Input signals are output without being processed by the printer's circuitry.

Monitor adjustment

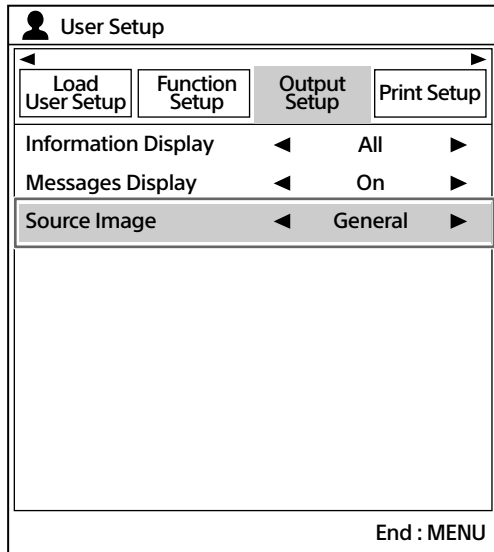
The monitor color may not be adjusted correctly even if the printer color is correctly adjusted. Check the color of the video monitor before adjusting the printout color. In this case, it is convenient to adjust the color with [Source Image] on the [Output Setup] tab of the [User Setup] menu set to [Through] (through signal) (not output when the power is off). After adjusting the video monitor, adjust the printer color.

Printer adjustment

Note

This adjustment is performed to adjust the printer video monitor output when it does not match the printout color. This adjustment does not affect the printout. To adjust the sharpness of the printout, see "Adjusting the color, contrast and sharpness" (page 58) and "Specifying colors for adjustment" (page 64).

- 1 Display the [Output Setup] tab of the [User Setup] screen and use the \uparrow or \downarrow button to select [Source Image].



- 2 Use the \leftarrow or \rightarrow button to select [General].

Option	Description
General (default value)	Outputs to the video monitor after compensating the source image color. (EE signal)
Through	Outputs to the video monitor without compensating the source image color. (Through signal)

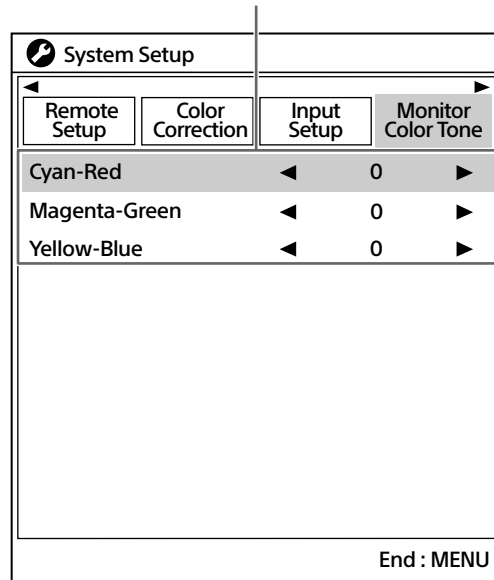
Note

Through signals are not output when the power is off.

- 3 Press the MENU button.
The [User Setup] screen is closed.
- 4 Capture a new image to memory and make a printout.
Adjust the settings on the printer side by comparing the printout with the image on the monitor, as follows.

- 5 Display the [Monitor Color Tone] tab of the [System Setup] screen and adjust the video monitor color to match the printout.

Select the desired item, then perform the adjustment.



Setting item	Setting range (default value)	Description
Cyan-Red	-14 to 14 (0)	Press the \leftarrow button to make the image cyan (light blue). Press the \rightarrow button to make the image reddish.
Magenta-Green	-14 to 14 (0)	Press the \leftarrow button to make the image magenta (pink). Press the \rightarrow button to make the image greenish.
Yellow-Blue	-14 to 14 (0)	Press the \leftarrow button to make the image yellowish. Press the \rightarrow button to make the image bluish.

Adjusting the printout sharpness

You can adjust the printout color, contrast, sharpness, and tone (gamma).

Adjusting the color, contrast and sharpness

Perform the adjustments while viewing the images captured in memory.

- 1 Display the [Print Setup] tab of the [User Setup] screen, use the \uparrow or \downarrow button to select [Color Tone], then press the \rightarrow button.

User Setup			
Load User Setup	Function Setup	Output Setup	Print Setup
Multi Picture	\leftarrow	1	\rightarrow
White Frames	\leftarrow	On	\rightarrow
Caption	\leftarrow	Off	\rightarrow
Caption Edit		\rightarrow	
Color Tone		\rightarrow	
Print Quantity	\leftarrow	3	\rightarrow
Print Speed	\leftarrow	High	\rightarrow

End : MENU

- 2 Adjusting the color, contrast, and sharpness.

Select the desired item, then perform the adjustment.

Color Tone		
\leftarrow Back		
Cyan-Red	\leftarrow	0 \rightarrow
Magenta-Green	\leftarrow	0 \rightarrow
Yellow-Blue	\leftarrow	0 \rightarrow
Dark	\leftarrow	0 \rightarrow
Light	\leftarrow	0 \rightarrow
Sharpness	\leftarrow	8 \rightarrow
Gamma	\leftarrow	Normal \rightarrow

End : MENU

Color adjustment

Adjust the color balance using [Cyan-Red], [Magenta-Green], and [Yellow-Blue]. The parameters can be adjusted in 15 steps. "0" is the standard value.

Setting item	Setting range (default value)	Description
Cyan-Red	-7 to +7 (0)	Press the \leftarrow button to make the image cyan (light blue). Press the \rightarrow button to make the image reddish.
Magenta-Green	-7 to +7 (0)	Press the \leftarrow button to make the image magenta (pink). Press the \rightarrow button to make the image greenish.
Yellow-Blue	-7 to +7 (0)	Press the \leftarrow button to make the image yellowish. Press the \rightarrow button to make the image bluish.

Contrast adjustment

You can adjust the printout brightness using [Dark] and [Light]. The parameters can be adjusted in 15 steps. "0" is the standard value.

Setting item	Setting range (default value)	Description
Dark	-7 to +7 (0)	Adjusts the dark area of an image. The larger the value, the darker the dark areas of the print become.
Light	-7 to +7 (0)	Adjusts the light area of an image. The larger the value, the brighter the bright areas of the printout become.

Adjusting the sharpness

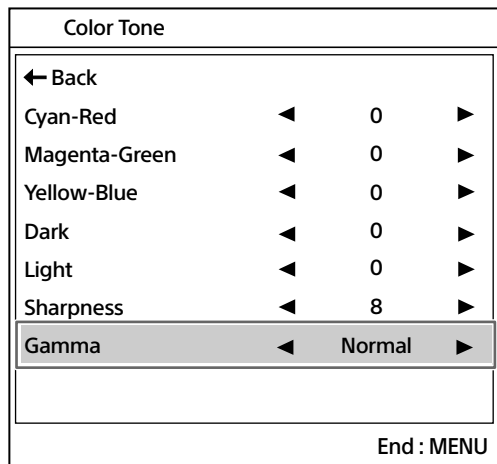
You can adjust the strength of the outlines in a printout using [Sharpness]. The parameters can be adjusted in 15 steps. "8" is the standard value.

Setting item	Setting range (default value)	Description
Sharpness	1 to 15 (8)	The larger the value, the stronger the outlines of the print become. Press \leftarrow to blur outlines. Press \rightarrow to emphasize outlines.

To adjust the tone of the printout

You can adjust the tone so that the details in the white or black areas of the source image are sharply defined in the print.

Display the [Print Setup] tab of [User Setup] screen, use the ↑ or ↓ button to select [Color Tone], then adjust the intermediate colors with [Gamma].



Option	Description
Soft	Select this to make a printout of a source image with a lot of white areas. (soft tone)
Normal (default value)	Select this to make a printout of a normal source image.
Hard	Select this to make a printout of a source image with a lot of black areas. (hard tone)

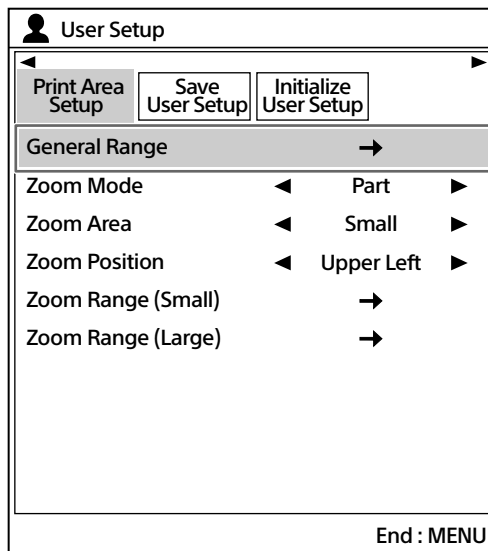
When a black frame or lines show up on printouts

When you print an image that is narrower or wider than the standard screen size, a black frame may be printed or the image may be partially cut. Or, a black line may show up on the printout even though it does not appear on the video monitor. This happens when areas without a video signal are captured to memory, and is caused by changing the connected equipment or changing the playback software.

If this happens, adjust the image position and size.

These adjustment change the printing area of images already captured to memory. You do not need to capture the images again.

- 1 Display the [Print Area Setup] tab of [User Setup] screen, use the ↑ or ↓ button to select [General Range], then press the → button.

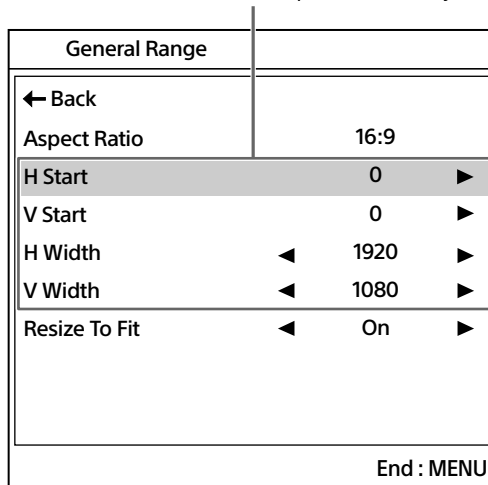


The [General Range] screen appears.

- 2 Adjust the captured image position according to the printout.

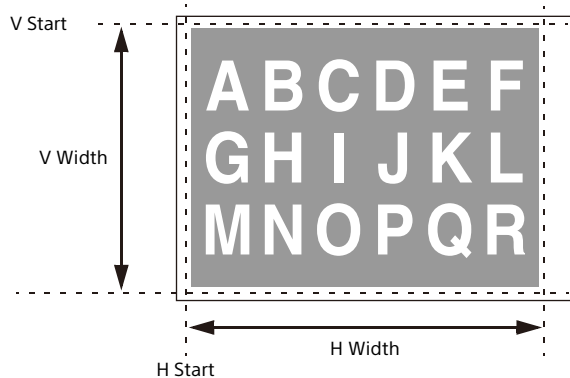
The selected range of the setting value may differ depending on the aspect ratio of the input signal.

Select the desired item, then perform the adjustment.



Aspect ratio	Setting item	Setting range	Default value
SD (480i)	H Start	0 to 72	0
	V Start	0 to 48	0
	H Width	560 to 720	720
	V Width	400 to 480	480

Aspect ratio	Setting item	Setting range	Default value
SD (576i)	H Start	0 to 72	0
	V Start	0 to 48	0
	H Width	560 to 720	720
	V Width	496 to 576	576
4:3	H Start	0 to 960	240
	V Start	0 to 540	0
	H Width	720 to 1440	1440
	V Width	540 to 1080	1080
5:4	H Start	0 to 960	320
	V Start	0 to 540	27
	H Width	720 to 1440	1280
	V Width	540 to 1080	1026
16:9	H Start	0 to 960	0
	V Start	0 to 540	0
	H Width	960 to 1920	1920
	V Width	540 to 1080	1080
16:10	H Start	0 to 960	96
	V Start	0 to 540	0
	H Width	960 to 1920	1728
	V Width	0 to 72	1080



To eliminate a horizontal black line on the top side:

Adjust the capture position at the top edge of the image to be printed using [V Start].

Note

A horizontal black line may appear at the bottom of the screen while adjusting the top edge. You can eliminate it using [V Width].

To eliminate a horizontal black line on the bottom side:

Adjust the capture position vertical direction of the image to be printed using [V Width].

To eliminate a vertical black line on the left side:

Adjust the capture position at the left edge of the image to be printed using [H Start].

Note

A black line may appear on the right side while adjusting the left side. You can eliminate it using [H Width].

To eliminate a vertical black line on the right side:

Adjust the capture position horizontal direction of the image to be printed using [H Width].

To reset the values to factory defaults

For [H Start], [H Width], [V Start] and [V Width], you can reset the values to factory defaults in pairs.

To reset the vertical settings to factory default values, position the cursor at either [V Start] or [V Width], then press the ← and → buttons simultaneously.

To reset the horizontal settings to factory default values, position the cursor at either [H Start] or [H Width], then press the ← and → buttons simultaneously.

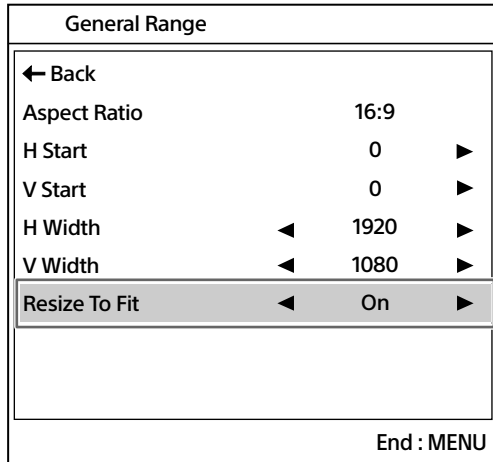
To check the adjustment result

Print to check that no black frame appears on the printout, that the image is not partially cut, and that no black line appears.

Printing to match paper size

- 1 Follow the step 1 in "When a black frame or lines show up on printouts" (page 59) to display the [General Range] screen.

- 2 Use the **↑** or **↓** button to select [Resize To Fit], then the **←** or **→** button to select [On].



Option	Description
On (default value)	Prints the adjusted image to fit to the paper size.
Off	Prints at the size adjusted in the [General Range] screen.

Adjusting the color balance

Use this function to adjust the colors in printouts to match the colors displayed on the monitor. Adjustments to the color balance are not reflected in the monitor display.

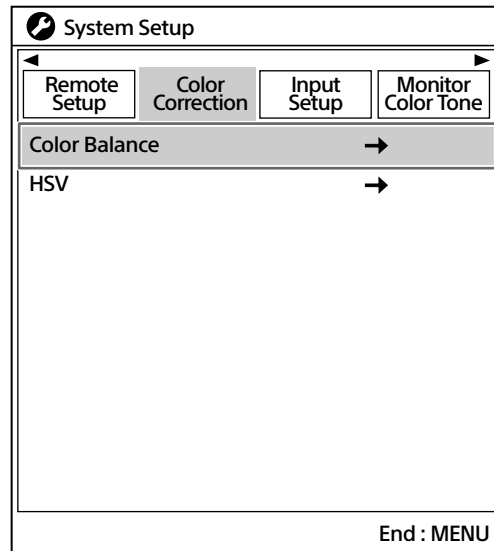
It is recommended that you adjust the color balance each time you load a new set of ink ribbon and paper. You should use the ink ribbon and paper that are contained in the same package as a pair. The color balance may differ depending on each pair.

If you capture the adjustments to memory, they are retained even after the printer is turned off and until new adjustments are captured to memory.

Before adjusting the color balance

Reset all setting values in [Color Balance] on the [Color Correction] tab of the [System Setup] menu to their center values.

- 1 Display the [Color Correction] tab of the [System Setup] screen, use the **↑** or **↓** button to select [Color Balance], then press the **→** button.

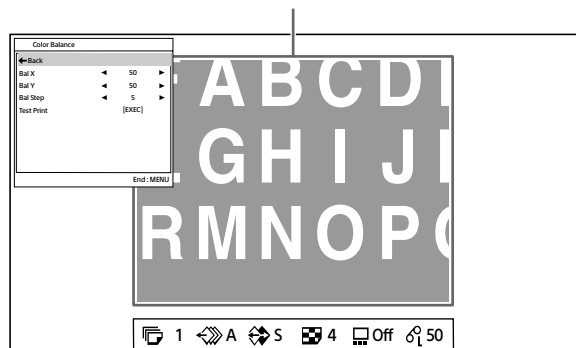


The [Color Balance] screen appears. The highlighted area on the screen will be printed to be used for adjusting the color balance. You can move this area.

Note

If the layout was set to two or four reduced image display, the page on which the pointer was positioned will be displayed at full-size image.

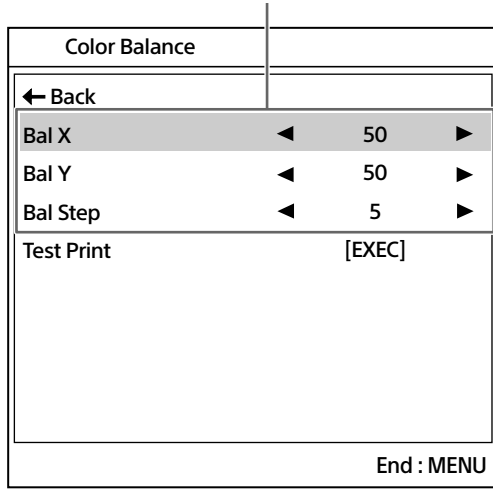
Area that will be captured to memory
(Highlighted: about 1/2 the size of the entire screen)



When you adjust the color balance for the first time, the values of [Bal X], [Bal Y] and [Bal Step] are set to the factory default settings 50, 50 and 5.

If you have already adjusted the color balance, the previously adjusted values are displayed.

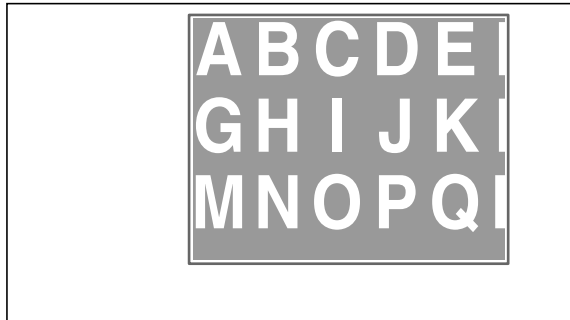
Currently setting values of X and Y axes and the amount of change between color balance items ([Bal Step]) (example is factory default settings)



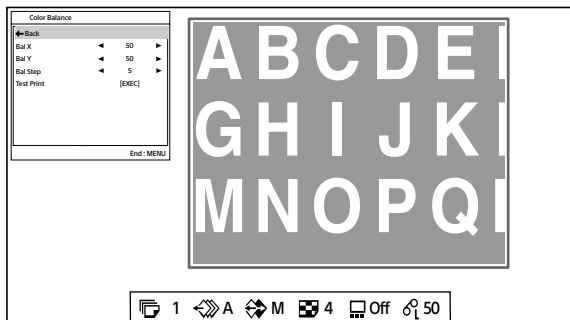
To reset the values to the factory default setting (50/50/5)

Align the cursor with each item and press the ← and → buttons at the same time.

- Press and hold the DISPLAY button and use the ←, →, ↑, or ↓ button to decide the area where you want to adjust the color balance. (The [Color Balance] screen disappears temporarily.)

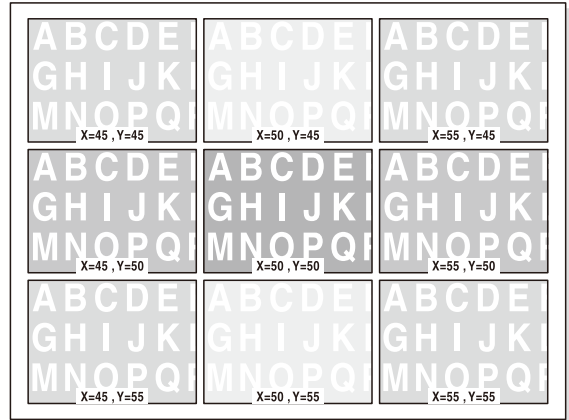


- Press the CAPTURE button. The image captured in memory appears.

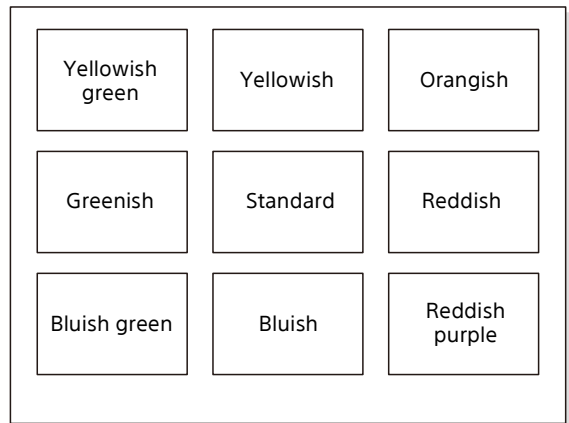


- Select [Test Print], then press the EXEC button. Nine identical images from the area selected in step 2 are printed.

Each image has a different color balance. (This print operation can also be performed by pressing the PRINT button while the [Color Balance] screen is displayed.)



Color changes in the test print are as follows.



- Select the image which has the best color balance from the printed results. If you want to change the color balance after you see the printout, adjust the color balance again, referring to "To readjust the color balance" (page 63).

- 6** Display the values of [Bal X] and [Bal Y] corresponding to the position selected in step 5 by using the ← or → button.
Example: When color balance 55 & 45 of the image printed on the top right is the best

Use the ← or → button to display "55" in [Bal X] and "45" in [Bal Y].

Color Balance	
← Back	
Bal X	◀ 50 ▶
Bal Y	◀ 50 ▶
Bal Step	◀ 5 ▶
Test Print	[EXEC]
End : MENU	

Setting item	Setting range (default value)	Description
Bal X	1 to 99 (50)	Adjusts the X axis (green-red) color balance.
Bal Y	1 to 99 (50)	Adjusts the Y axis (yellow-blue) color balance.

The color balance of the printout is adjusted to the values selected in step 5.

To readjust the color balance

When the desired color balance cannot be obtained from step 5 in "Adjusting the color balance," readjust the color balance. You can also fine tune adjustments.

- 1** Display the [Bal X] and [Bal Y] values that are most appropriate from the printed images using the ← or → button.
In this case, you can either fine tune or make coarse adjustments by changing the value of [Bal Step].

To make fine tune adjustments

To fine tune the color balance within the current range, reduce the current [Bal Step] value.

If you change it from 5 to 3, the test print color balances are changed as follows.

Color Balance	
← Back	
Bal X	◀ 50 ▶
Bal Y	◀ 50 ▶
Bal Step	◀ 3 ▶
Test Print	[EXEC]
End : MENU	

X=47 , Y=47	X=50 , Y=47	X=53 , Y=47
X=47 , Y=50	X=50 , Y=50	X=53 , Y=50
X=47 , Y=53	X=50 , Y=53	X=53 , Y=53

To make coarse adjustments

To coarsely adjust the color balance beyond the current range, increase the current [Bal Step] value.

If you change it from 5 to 10, the test print color balances are changed as follows.

Setting item	Setting range (default value)	Description
Bal Step	1 to 20 (5)	Adjusts the amount of change in the X and Y axis values.

- Repeat steps 2 to 4 in "Adjusting the color balance" (page 61) to make a printout.
- Select the most appropriate image from the printed images. If there are no appropriate images, repeat steps 1 and 2 until you have obtained the best color balance.
- Go back to step 6 in "Adjusting the color balance" (page 61).

Specifying colors for adjustment

Use the HSV function to select a specific color within printouts for adjustment. You can specify red, yellow, green, cyan, blue, or magenta for adjustment.

This function does not affect black and white data. In addition, the results of color adjustment will not be reflected on the video monitor.

If you capture the adjustments to memory, they are retained even after the printer is turned off, and will continue functioning at these settings until new adjustments are captured to memory.

Before performing HSV adjustment

In the [Monitor Color Tone] tab of the [System Setup] menu, set the values for all colors ([Cyan-Red], [Magenta-Green], and [Yellow-Blue]) to "0."

Note

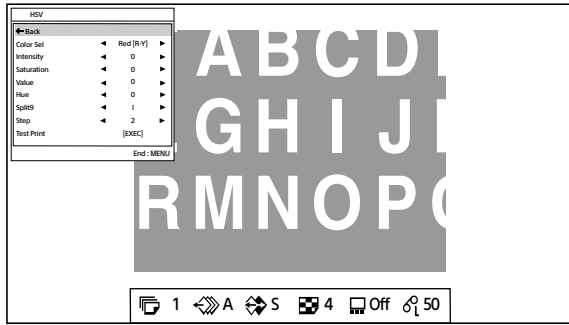
If black and white data is changed due to color or color balance adjustments, the adjustments of this function may affect the picture quality.

- Display the [Color Correction] tab of the [System Setup] screen, use the \uparrow or \downarrow button to select [HSV], then press the \rightarrow button.

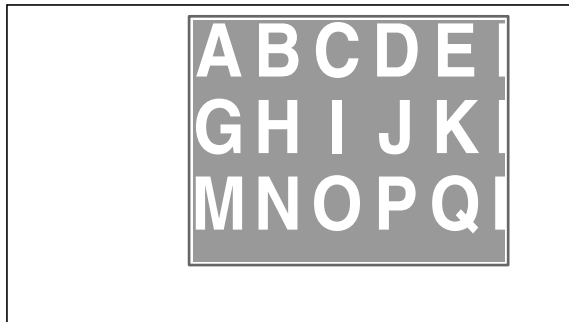
The [HSV] screen appears. The highlighted area on the image will be printed for adjusting HSV. You can move this area.

Note

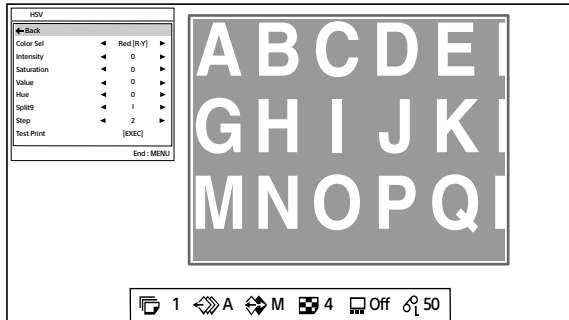
If the layout was set to two or four reduced image display, the page on which the pointer was positioned will be displayed at full-size image.



- 2 Press and hold the DISPLAY button and use the ←, →, ↑, or ↓ button to decide the area where you want to adjust HSV.
(The [HSV] screen disappears temporarily.)

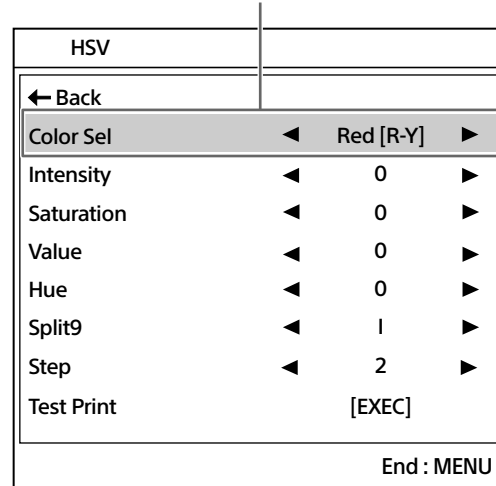


- 3 Press the CAPTURE button.
The image captured in memory appears.



- 4 Specify the color to adjust in [Color Sel].

Press the ↑ or ↓ button to select [Color Sel], then use the ← or → button to specify the color you want to adjust.



Option	Description
Red [R-Y] (default value)	Specifies red. The hues between red and yellow (R-Y) are specified for [Intensity]
Yel [Y-G]	Specifies yellow (Yel: abbreviation for yellow). The hues between yellow and green (Y-G) are specified for [Intensity].
Grn [G-C]	Specifies green (Grn: abbreviation for green). The hues between green and cyan (G-C) are specified for [Intensity].
Cyn [C-B]	Specifies cyan (Cyn: abbreviation for cyan). The hues between cyan and blue (C-B) are specified for [Intensity].
Blu [B-M]	Specifies blue (Blu: abbreviation for blue) for adjustment. The hues between blue and pink (B-M) are specified for [Intensity].
Mag [M-R]	Specifies magenta (Mag: abbreviation for magenta) for adjustment. The hues between pink and red (M-R) are specified for [Intensity].

5 Specify the parameter to adjust in [Split9].

HSV	
← Back	
Color Sel	◀ Red [R-Y] ▶
Intensity	◀ 0 ▶
Saturation	◀ 0 ▶
Value	◀ 0 ▶
Hue	◀ 0 ▶
Split9	◀ 1 ▶
Step	◀ 2 ▶
Test Print	[EXEC]
End : MENU	

Use the ↑ or ↓ button to select [Split9], then use the ← or → button to specify the parameter.

Option	Description
I (Intensity) (default value)	Specifies the hue range (ex. [R-Y]) selected in [Color Sel] as a parameter.
S (Saturation)	Specifies the color saturation selected in [Color Sel] as a parameter.
V (Value)	Specifies the color brightness selected in [Color Sel] as a parameter.
H (Hue)	Specifies the color hue selected in [Color Sel] as a parameter.

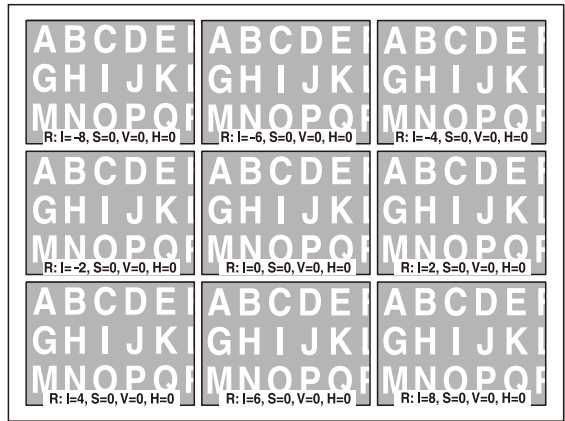
6 Specify the step width in [Step]. When printing HSV adjusted images, select the parameter step increment specified in [Split9].

HSV	
← Back	
Color Sel	◀ Red [R-Y] ▶
Intensity	◀ 0 ▶
Saturation	◀ 0 ▶
Value	◀ 0 ▶
Hue	◀ 0 ▶
Split9	◀ 1 ▶
Step	◀ 2 ▶
Test Print	[EXEC]
End : MENU	

Use the ↑ or ↓ button to select [Step], then use the ← or → button to specify the number of steps in the parameter.

Setting range (default value)	Description
1 to 4 (2)	Set a small value for fine tune adjustments, and a large value for coarse adjustments.

7 Select [Test Print], then press the EXEC button. Nine identical images from the area selected in step 2 are printed. The values for the parameter specified with [Split9] vary in each image. (This print operation can also be performed by pressing the PRINT button while the [HSV] screen is displayed.)



The specified color and the [Intensity], [Saturation], [Value], and [Hue] values of the specified color appear in order as captions in the image.

Specified color

R: [Red [R-Y]]

Y: [Yel [Y-G]]

G: [Grn [G-C]]

C: [Cyn [C-B]]

B: [Blu [B-M]]

M: [Mag [M-R]]

I = [Intensity] value of specified color

S = [Saturation] value of specified color

V = [Value] value of specified color

H = [Hue] value of specified color

The changes in the parameter specified with [Split9] that appear in the test print are as follows.

-STEP*4	-STEP*3	-STEP*2
-STEP*1	STANDARD	+STEP*1
+STEP*2	+STEP*3	+STEP*4

8 Select the image that has the best adjustments from among the printed results. If you want to change the adjustment values, refer to "To readjust parameter values" (page 68). To change the parameter for adjustment, follow step 5 in "Specify the parameter to adjust in [Split9]," and to change the color for adjustment, follow step 4 in "Specify the color to adjust in [Color Sel]," then reset the parameters.

9 Display the parameter values corresponding to the position selected in step 8 by using the ← or → button.

Example: When "8" is the best value for [Intensity] of [Red [R-Y]]

HSV		
← Back		
Color Sel	◀ Red [R-Y] ▶	
Intensity	◀ 8 ▶	
Saturation	◀ 0 ▶	
Value	◀ 0 ▶	
Hue	◀ 0 ▶	
Split9	◀ 1 ▶	
Step	◀ 2 ▶	
Test Print	[EXEC]	
End : MENU		

The HSV of printouts will be adjusted to the values selected in step 8.

Parameter adjustments

Adjustments can be made in the range from -16 to +16. "0" is standard.

Option	Description
I (Intensity)	Specifies the hue range selected in [] of [Color Sel]. If [Color Sel] is set to [Red [R-Y]], for example, the hue of colors between red and yellow is more red in the plus direction, and more yellow in the minus direction. This value is used as a base parameter for HSV adjustment printouts. Data is stored separately for each color selected with [Color Sel] ([R-Y], [Y-G], [G-C], [C-B], [B-M], [M-R]).
S (Saturation)	Adjusts the color hue selected in [Color Sel]. Saturation values increase in the plus direction and decrease in the minus direction. This value is used as a base parameter for HSV adjustment printouts. Data is stored separately for each color selected with [Color Sel] ([Red], [Yel], [Grn], [Cyn], [Blu], [Mag]).
V (Value)	Adjusts the color brightness selected in [Color Sel]. Brightness values increase in the plus direction and decrease in the minus direction. This value is used as a base parameter for HSV adjustment printouts. Data is stored separately for each color selected with [Color Sel] ([Red], [Yel], [Grn], [Cyn], [Blu], [Mag]).
H (Hue)	Adjusts the color hue selected in [Color Sel]. A value of -16 rotates the hue -30 degrees, and a value of +16 rotates the hue +30 degrees. This value is used as a base parameter for HSV adjustment printouts. Data is stored separately for each color selected with [Color Sel] (RED, YEL, GRN, CYN, BLU, MAG).

To reset the values to factory defaults

Align the cursor with each item, then press the ← and → buttons at the same time. As data is stored separately for each [Color Sel] color, make sure to perform the above procedure for each item while specifying the [Color Sel] order if you want to reset all settings to factory defaults.

10 If you want to adjust another parameter, repeat steps 5 to 9.

11 If you want to adjust another color, repeat steps 4 to 9.

To readjust parameter values

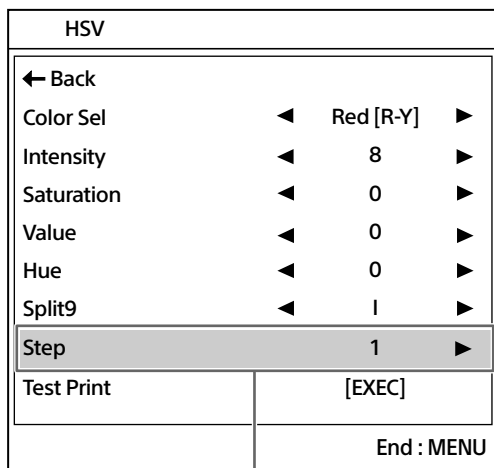
If the desired parameter values were not obtained in step 8 of "Specifying colors for adjustment" readjust the parameters.

You can also fine tune adjustment following the same procedures.

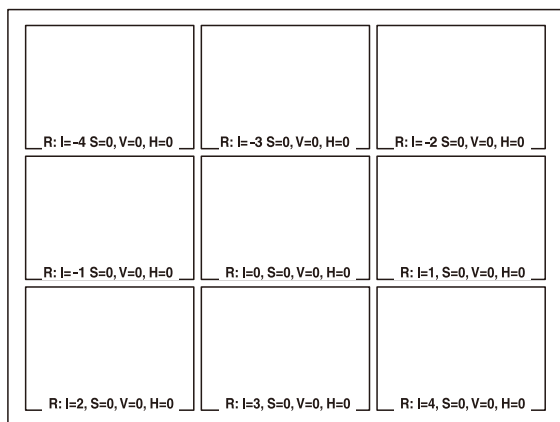
- 1 Display the parameter values that are most appropriate from the printed images using the ← or → button.
In this case, you can either fine tune or make coarse adjustments by changing the value of [Step].

To make fine tune adjustments

To make fine tune adjustments within the current parameter range, reduce the current [Step] value.

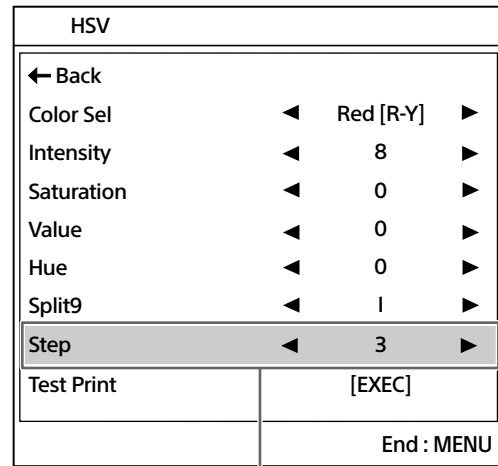


The HSV test print will appear as follows when [Step] is set to 1.

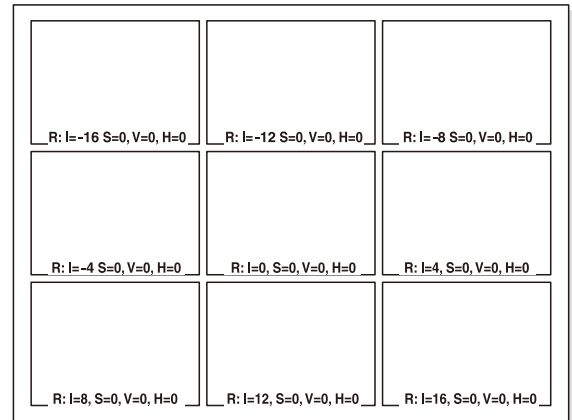


To make coarse adjustments

To make adjustments beyond the current parameter range, increase the current [Step] value.



The HSV test print will appear as follows when [Step] is set to 4.

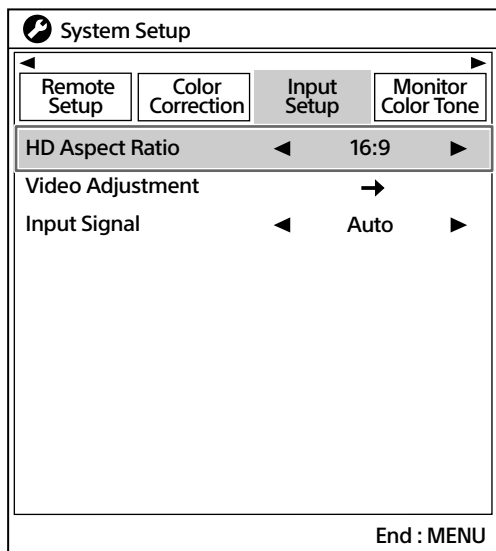


- 2 Repeat steps 2 to 7 in "Specifying colors for adjustment" to make a printout.
- 3 Select the most appropriate image from the printed images.
If there are no appropriate images, repeat steps 1 and 2 until you have obtained the best parameter.
- 4 Go back to step 8 in "Specifying colors for adjustment".

Setting the HD signal aspect ratio

Set the aspect ratio for the HD image signal input.

- 1 Display the [Input Setup] tab of the [System Setup] screen and use the **↑** or **↓** button to select [HD Aspect Ratio].



- 2 Use the **←** or **→** button to select the aspect ratio.

Option

16:9 (default value)

16:10

4:3

5:4

Configuring Various Settings

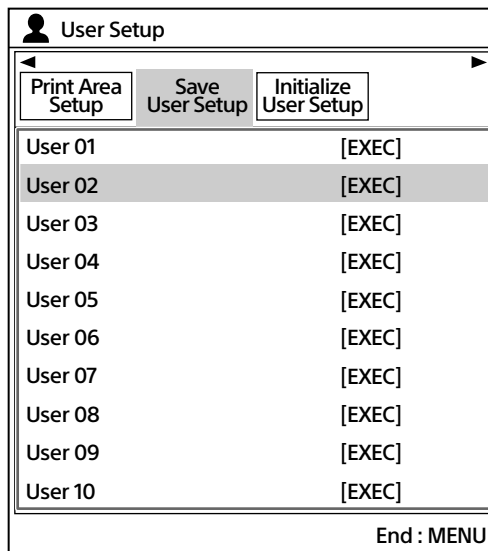
Registering a user settings

You can set print specifications in each menu screen then store up to 10 types in each user setting. Settings are saved even when the power is turned off. Simply choose user settings in everyday printer use to select the source image source or print at your favorite settings. If the activated user setting value is changed, the printer functions according to the changed setting. Unless the user settings are activated, the printer functions using the settings last selected before it is turned off. After configuring all settings to the user setting number in each menu screen, do the following.

Tip

Adjustment values that can be registered to user settings are the items found in the [User Setup] menu.

- 1 Display the [Save User Setup] tab of the [User Setup] screen.
- 2 Select the desired user setting number, then press the EXEC button.



All setting values are registered in the selected user setting number.

To make another user setting

Perform all required settings and adjustments using the menus, then register them with another user setting number.

To activate the user setting and print

Display the [Load User Setup] tab of the [User Setup] screen, select the desired user setting, and press the EXEC button.

The printer operates according to the activated user setting.

To retain the original adjustment values

Example: Adjust the setting values in user setting 1, leave them as-is, then save the adjusted setting values as user setting 2.

- 1 Display the [Save User Setup] tab of the [User Setup] screen.
- 2 Select [User 01], then press the EXEC button. User setting 1 is activated.
- 3 Reset the activated setting values as needed.
- 4 Display the [Save User Setup] tab of the [User Setup] screen.
- 5 Select [User 02], then press the EXEC button. Values adjusted in step 3 are registered as user setting 2 values.

To copy existing user settings

You can copy existing user settings to another user setting number.

- 1 Display the [Save User Setup] tab of the [User Setup] screen.
- 2 Select the user setting you want to copy, then press the EXEC button. The selected user setting is activated.
- 3 Display the [Save User Setup] tab of the [User Setup] screen.
- 4 Select the user setting number you want to copy, then press the EXEC button. The user setting values selected in step 2 are copied.

Returning user settings to factory defaults

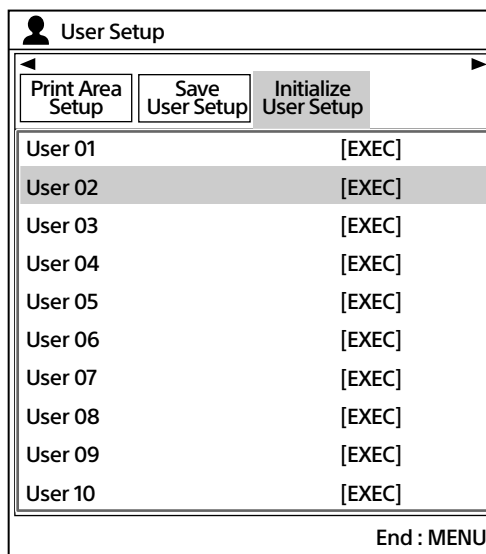
To return registered setting values to factory defaults

Individually return each user setting to factory defaults.

Note

If you return registered setting values to factory defaults, the caption set in [Caption Edit] on the [Print Setup] tab of the [User Setup] menu will be deleted.

- 1 Display the [Initialize User Setup] tab of the [User Setup] screen.
- 2 Select the user setting you want to return to factory defaults, then press the EXEC button.



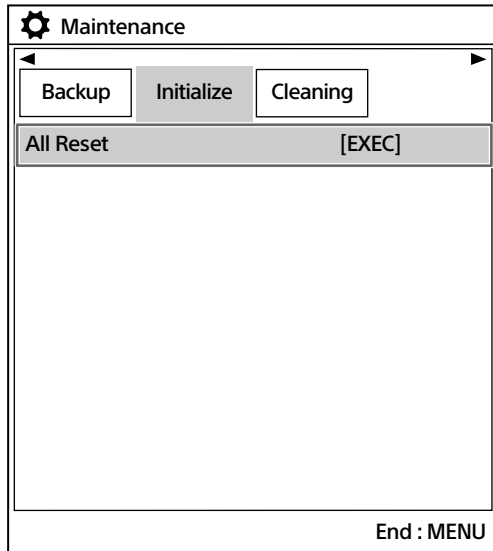
All menu registered setting values are returned to factory defaults.

To return all printer settings to factory defaults at once

Returns all printer settings to factory defaults.

- 1 Display the [Initialize] tab of the [Maintenance] screen.

- 2 Select [All Reset], then press the EXEC button.



“All Reset” appears and all setting values on the printer are returned to factory defaults.

Displaying the ink ribbon or printer setting information

You can keep information such as the ink ribbon type and remaining amount, set number of prints, and reduced image settings on the video monitor at all times.

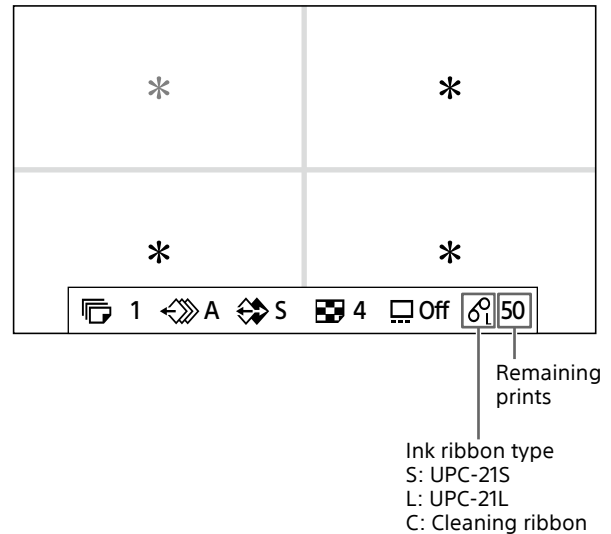
Note

Use the remaining ribbon display as a guideline.

- 1 Display the [Output Setup] tab of the [User Setup] screen.
- 2 Select [Information Display] and choose whether or not to display information.

Option	Description
All (default value)	Displays printer setting information (ink ribbon remaining prints, captions, number of prints, current memory pages, number of reduced images, source/memory), and the pointer (next position to capture).
Ribbon Remain	Displays only ink ribbon information (type and remaining level).
Off	Turns off all printer setting information.

Ink ribbon type and remaining prints



Disabling message display

You can configure settings so messages are not displayed on the video monitor.

- 1 Display the [Output Setup] tab of the [User Setup] screen.
- 2 Select [Messages Display] and choose whether or not to display messages.

Option	Description
On (default value)	Displays messages.
Off	Hides messages.

Selecting controls using the device connected to the REMOTE connector

You can control the printer remotely using the FS-24 Foot Switch (not supplied) connected to the REMOTE connector on the rear panel of the printer.

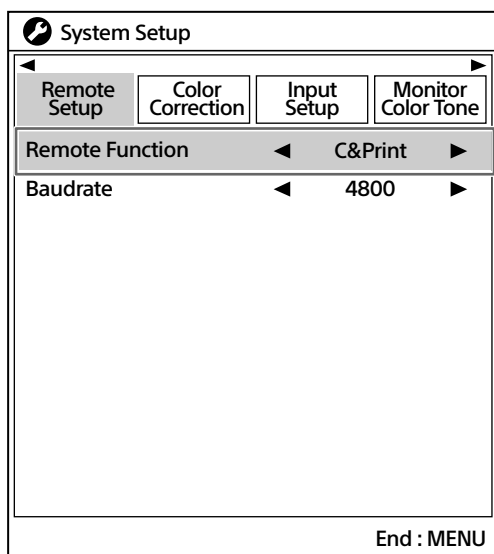
In [Remote Function] on the [Remote Setup] tab of the [System Setup] menu, assign controls to the foot switch connected to the REMOTE connector. In addition, the printer can be remotely controlled by a pulse signal input sent to the REMOTE connector (page 78).

You can also control the printer remotely by connecting a computer to the RS-232C connector.

Note

Although the REMOTE connector is compatible with the conventional REMOTE2 connector, RM-5500 Remote Control Unit cannot be used when connected.

- 1 Display the [Remote Setup] tab of the [System Setup] screen.
- 2 Select [Remote Function], then select the function to assign.



Operation type	Operation
Capture	Push the foot switch to capture images to memory. Has the same function as the CAPTURE button on the printer.
Print	Push the foot switch to begin printing. Has the same function as the PRINT button on the printer.
C&Print ^{a)} (Capture & Print) (default value)	Each foot switch push captures an image to a memory page that does not have a print queue, and starts a print operation. If you press the switch during printing, the current print operation is queued and will begin when the previous one completes.
Cyclic-C ^{b)} (Cyclic Capture)	Each foot switch push captures an image to a memory page that does not have an internal print queue, and starts a print operation. Once a full round of the memory is complete, a new image is captured to memory. Note that the previous image will be deleted.

Operation type	Operation
Cap-Stop ^{b)} (Capture Stop)	Each push of the foot switch captures an image to memory, and when the last memory page is reached, "Press any button" appears and image capturing is inactivated.
Back-SP ^{a)}	Each time you push the foot switch, the cursor on the reduced image screen moves to the previous screen.
Pointer+	Each time you push the foot switch, the cursor on the reduced image screen moves to the next screen.
Stop	Push the foot switch to end print operations once the current print is finished.
Cap/Src (Capture Source)	Push the foot switch while a memory image is displayed on the video monitor to switch to source image display. If you push the foot switch while a source image is displayed on the screen, it will be captured to memory. However, it will not switch memory pages. If you push the foot switch again, the next image will be captured to the same page.
Cap/S Page ^{b)} (Capture/ Source Page)	Push the foot switch while a memory image is displayed on the video monitor to switch to source image display. If you push the foot switch while a source image is displayed on the screen, it will be captured to memory. The unit switches to the next memory page after each capture operation. However, captured images are not printed.
Print&Page	Push the foot switch to start printing and move to the next memory page. The foot switch will only function properly when captured images exist on the current memory page.
Src&Cap (Source & Capture)	The source image appears while you hold down the foot switch, and an image is captured to memory the moment you release it. However, it will not switch memory pages.
Src&C Page ^{b)} (Source & Capture Page)	The source image appears while you hold down the foot switch, and an image is captured to memory the moment you release it. The unit switches to the next memory page after each capture operation. However, captured images are not printed.

a) When performing this operation, confirm that S (source image) is displayed on the video monitor.

If not, press the SOURCE/MEMORY button to display the source image. When multiple reduced images are being captured, after the last image is captured, the printer starts printing (or queues printing), then switches to the next memory page.

- b) When multiple reduced images are being captured, after the last image is captured, the printer goes to the next memory page.

Setting the communication speed with a printer

When controlling the printer with a computer connected to the printer's RS-232C connector, select the appropriate communication speed (baud rate).

- 1 Display the [Remote Setup] tab of the [System Setup] screen.
- 2 Select [Baudrate], then select the desired communication speed.

Option
1200
2400
4800 (default value)
9600

Setting the operation and alarm sounds

Activate or inactivate operation tone sounds (one time) whenever you press a button on the printer and alarm tone sounds (three times) when an error occurs.

- 1 Display the [Machine Setup] tab of the [System Setup] screen.
- 2 Select [Beep] and choose whether or not to allow the buzzer to sound.

Option	Description
On (default value)	Activates operation and alarm tones.
Off	Inactivates operation and alarm tones.

Adjusting the printer window display

When it is hard to read the contents of the printer window display, adjust the contrast and brightness.

- 1 Display the [Machine Setup] tab of the [System Setup] screen.
- 2 Adjust the printer window display view.

Setting item	Setting range (default value)	Description
LCD Contrast	0 to 14 (7)	Adjusts the contrast of the printer window display. The larger the value, the darker the display is.
LCD Backlight	0 to 10 (5)	Adjusts the printer window display brightness. The larger the value, the brighter the printer window display is.

Setting the tray light

Set the printer tray light function and brightness.

- 1 Display the [Machine Setup] tab of the [System Setup] screen.
- 2 Set the tray light function and brightness.

Setting item	Option	Description
Tray Light	Mode1 (default value)	The tray light shines for approx. 5 seconds after printouts eject.
	Mode2	The tray light is always on.
	Mode3	The tray light is always off.
Tray Light Level	Level1	Select the tray light brightness.
	Level2 (default value)	[Level1] is the darkest setting, and [Level3] is the brightest. [Level2] is the median brightness.
	Level3	

Printing the setting value list

You can print almost all menu setting values, with the exception of a few items.

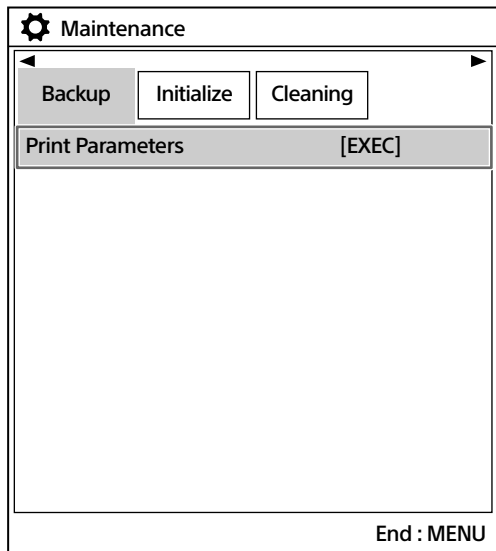
Notes

- The [Save User Setup] setting values in the [User Setup] menu are not printed.

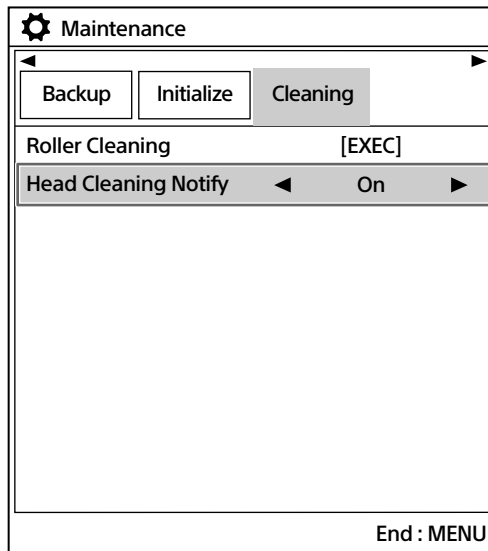
- Correctly load the ink ribbon and paper, and ensure no error message is displayed.

1 Display the [Backup] tab of the [Maintenance] screen.

2 Select [Print Parameters] and press the EXEC button.



2 Select [Head Cleaning Notify], then select whether to display the message.



Option	Description
On (default value)	Displays messages that recommend thermal head cleaning.
Off	Does not display messages that recommend thermal head cleaning.

Setting the cleaning message display function

Select whether to display a message recommending thermal head cleaning. This message appears for approximately 6 seconds after you press the ① POWER switch to turn on the printer.

1 Display the [Cleaning] tab of the [Maintenance] screen.

Maintaining Printer Functionality

In addition to the following precautions, be sure to refer to the safety warnings and notices at the beginning of this manual.

When “Clean Thermal Head” appears on the video monitor or printer window display

When the printer reaches a total of 1000 prints, “Clean Thermal Head” will appear on the video monitor or printer window display. In this case, perform thermal head cleaning. For details, see “Cleaning the thermal head” (page 76). The message appears for approximately 6 seconds after you press the ① POWER switch to turn on the printer. The message reappears each time you turn the printer on until cleaning has been performed. The thermal head cleaning message can be configured in [Head Cleaning Notify] on the [Cleaning] tab of the [Maintenance] menu. (page 74)

When “Clean Paper Feed Roller” appears on the video monitor or printer window display

When the last piece of paper in the paper feed tray is used during printing, the printer executes automatic paper feed roller cleaning. If the internal sensor detects more dust than expected on the paper feed roller, “Clean Paper Feed Roller” appears on the monitor or printer window display. In this case, perform manual paper feed roller cleaning. For details, see “Manual paper feed roller cleaning” (page 77). The message about roller cleaning appears at the end of printing if paper feeding power is lower than expected.

When not used for a long time

- Press the ① POWER switch to turn off the printer, and then disconnect the power cord.
- Remove the partially used paper and ink ribbon from the printer, reseal them in their original bags, and store them in a cool, dark location. Before unsealing and using them again, allow them to return to room temperature to prevent condensation.

Printer location

Avoid placing or storing the printer in the following locations:

- Direct sunlight
- Humid locations
- Extremely hot or cold locations
- Locations with significant vibration
- Dusty locations
- Unstable locations

For safety purposes, do not place anything on top of the printer, such as a monitor.

Caution

To prevent internal heat built-up, maintain sufficient space around the printer (at least 10 cm (4 in.)). Do not obstruct the ventilation holes on the sides of the printer.

Transportation

When transporting the printer, follow the steps below to remove all accessories and repack the unit in its original packaging. Transporting the printer with the accessories installed may damage the printer.

- 1 Remove the ink ribbon (page 18) and paper feed tray (page 20).
- 2 Lock the internal thermal head.
 - ① Press the ① POWER switch to turn on the printer, and wait for “Set Ribbon and Paper” to appear on the printer window display.
 - ② Simultaneously press ←, → and the MENU button.
The printer operation sound continues for approximately 4 seconds, and the message “PLEASE WAIT” appears on the printer window display.
 - ③ When the printer operation sound stops and the message “TRANSPORT MODE” appears in the display, press the ① POWER switch to turn off the printer. The thermal head is locked.

Notes

- If “Remove Ribbon” appears on the printer window display, remove the ink ribbon and perform the procedure again.
- If controls are locked, they will be released when the printer is set to TRANSPORT MODE.

To unlock the thermal head

Turn on the printer again. The thermal head moves, and the ink ribbon can be loaded.

On condensation

- If the unit is suddenly taken from a cold to a warm location, or if ambient temperature suddenly rises, moisture may form on the outer surface of the unit and/or inside of the unit. This is known as condensation. If condensation occurs, turn off the unit and wait until the condensation clears before operating the unit. Operating the unit while condensation is present may damage the unit.
- If the printing pack is subjected to wide and sudden changes in temperature, condensation may form on the ink ribbon or paper inside. This will cause the printer to malfunction. Also, if the printing pack is used in this state, spots are likely to appear on the printout.

LCD image display

- Due to the physical characteristics of LCD panels, there may be a decrease in brightness or change in color temperature over a long period of use. These problems are not a malfunction. In addition, these occurrences will not affect recorded data.
- The printer window display is made using advanced technologies, but may develop bright or dark spots if it is left on all the time. This does not indicate a malfunction.

Use with electrosurgical knives and similar devices

If this unit is used together with an electrosurgical knife, etc., the picture may be disturbed, warped or otherwise abnormal as a result of strong radio waves or voltages from the device. This is not a malfunction.

When you use this unit simultaneously with a device from which strong radio waves or voltages are emitted, confirm the effect of this before using such devices, and install this unit in a way that minimizes the effect of radio wave interference.

Cleaning the cabinet

Note

Before you clean the printer, be sure to turn off the power and disconnect the power cord.

When the cabinet becomes dirty

When solvents such as benzene or thinner, or acid, alkaline or abrasive detergent, or chemical cleaning cloths are used on the printer cabinet, the surface finish may be damaged. Take care with respect to the following:

- Clean the printer surface with a 50 to 70 v/v% concentration of isopropyl alcohol or a 76.9 to 81.4 v/v% concentration of ethanol.
- Stubborn stains may be removed with a soft cleaning cloth lightly dampened with mild detergent solution and then cleaned using the above chemical.
- Do not use unnecessary force to rub the printer surface with a stained cloth. The printer surface may be scratched.
- Do not keep the printer surface in contact with a rubber or vinyl product for a long period of time. The surface finish may deteriorate or the coating may come off.

Cleaning the thermal head

If white marks and stripes appear on printouts, clean the thermal head using the supplied cleaning cartridge and cleaning sheet.

Cleaning cartridge



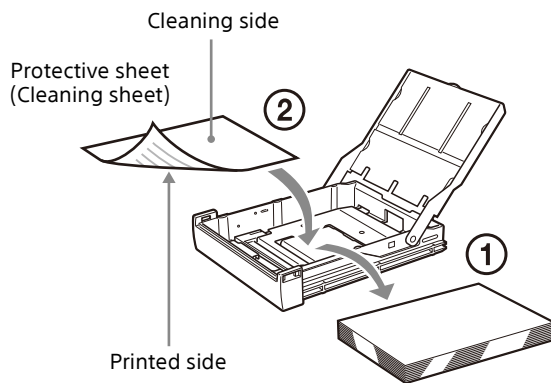
To maintain print quality, we recommend that you perform cleaning regularly and whenever you replace the printing pack (when the printing pack in use runs out).

To perform cleaning on the thermal head, the reverse side of the protective sheet supplied with printing packs UPC-21S/UPC-21L can be used as a cleaning sheet.

- 1 Eject the paper feed tray (page 20). Remove all paper from the feed tray. Remove any paper remaining in the tray insertion area. ①
- 2 Turn over the protective sheet (the cleaning sheet) that was removed in step 3 of "Loading the Paper" (page 20), and load it in the paper feed tray with the reverse side (the unprinted side) facing up. ②

Note

Once a protective sheet has been used as a cleaning sheet, do not use it again.



- 3 Insert the paper feed tray into the printer (page 21).
- 4 Load the cleaning cartridge into the printer. When an ink ribbon is loaded in the printer, remove it before loading the cleaning cartridge. The procedure is the same as loading an ink ribbon. For details, see "Loading the Ink Ribbon" (page 18). If you close the ribbon door panel, "Clean Thermal Head. Press [EXEC]." appears.

Note

If the paper feed tray is not inserted, the message "Clean Thermal Head. Set Cleaning Sheet." appears. In such cases, insert the paper feed tray.

- 5 Press the EXEC button. Cleaning starts and "Cleaning in Progress. Please Wait." appears. After the cleaning sheet is ejected, "Clean Thermal Head Finished." appears and the cleaning operation ends.

Note

Do not turn off the printer while "Cleaning in Progress. Please Wait." appears.

- 6 Remove the cleaning cartridge. The cleaning cartridge can be used for future cleanings, so keep it in a safe place and do not discard it.

Note

The cleaning cartridge is reusable. Store it in the package to protect it from dust and other particles.

Automatic paper feed roller cleaning

When the last piece of paper in the paper feed tray is used during printing, the printer executes automatic paper feed roller cleaning. During automatic cleaning, "Cleaning in Progress. Please Wait." appears. When the cleaning operation finishes, the paper feed tray is ejected automatically.

Note

Do not turn off the printer while "Cleaning in Progress. Please Wait." appears.

Manual paper feed roller cleaning

If "Clean Paper Feed Roller" appears on the monitor or printer window display, execute manual paper feed roller cleaning.

- 1 Eject the paper feed tray (page 20). Remove all paper from the feed tray. Remove any paper remaining in the tray insertion area.
- 2 Insert the empty paper feed tray into the printer (page 21).
- 3 Display the [Cleaning] tab of the [Maintenance] screen, then select [Roller Cleaning]. "Clean Paper Feed Roller. Press [EXEC]." appears.
- 4 Press the EXEC button. Manual paper feed roller cleaning begins, and "Cleaning in Progress. Please Wait." appears. When the manual cleaning operation finishes, the paper feed tray is ejected automatically.

Notes

- Do not turn off the printer while "Cleaning in Progress. Please Wait." appears.
- Insert the empty paper feed tray into the printer. If the paper feed tray is not inserted, the printer may be damaged.

Specifications

Power Requirements

100 V to 240 V \sim , 50/60 Hz

Input Current 1.7 A to 1.0 A

Operating Temperature

5 °C to 35 °C (41 °F to 95 °F)

Operating Humidity

20% to 80% (no condensation allowed)

Operating Pressure

700 hPa to 1060 hPa

Storage and Transport Temperature

-20 °C to +60 °C (-4 °F to +140 °F)

Storage and Transport Humidity

20% to 80% (no condensation allowed)

Storage and Transport Pressure

700 hPa to 1060 hPa

Dimensions

Approx. 212 × 98 × 398 mm
(8 ³/₈ × 3 ⁷/₈ × 15 ³/₄ inches)
(w × h × d) excluding largest protrusions.

Weight Approx. 5.7 kg (12 lb 9.1 oz)
(printer only)

Printing System

Dye transfer sublimation thermal printing, YMC 3-color layered printing

Thermal Head

423 dpi

Print Gradations

8-bit processing each for YMC
(yellow, magenta, cyan)

Picture Elements

Using UPC-21S: 1600 × 1260 dots

Using UPC-21L: 2132 × 1600 dots

Printing Time

Using UPC-21S:
Approx. 19 seconds (high speed print)

Using UPC-21L:
Approx. 29 seconds (high speed print)

AC IN Connector

Power input

SDI IN Connector

BNC type (1)

SD: SMPTE ST 259 compliant

HD: SMPTE ST 292-1 compliant

3G: SMPTE ST 424 compliant

SDI OUT Connector

BNC type (1)

SD: SMPTE ST 259 compliant

HD: SMPTE ST 292-1 compliant

3G: SMPTE ST 424 compliant

Control Connectors

REMOTE (stereo mini jack) (1)

For optional FS-24 Foot Switch connector

RS-232C (D-sub 9 pin) (1)

Supplied Accessories

Paper feed tray (1)

Stopper (1)

Before Using This Printer (1)

CD-ROM (instructions for use) (1)

Cleaning cartridge (1)

Service Contact List (1)

Information for Customers in Europe (1)

Optional Accessories

Color Printing Pack UPC-21S:

240 sheets (80 sheets × 3)

Color Printing Pack UPC-21L:

200 sheets (50 sheets × 4)

FS-24 Foot Switch

Caution

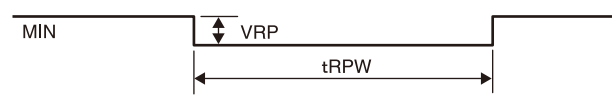
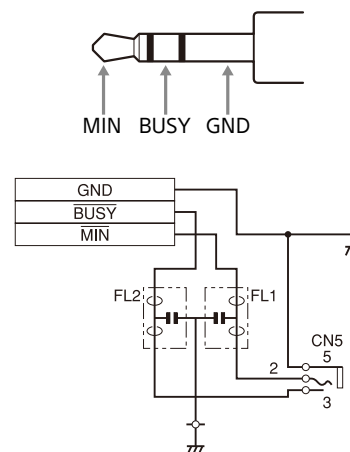
Do not use the FS-24 in a place (such as an operating room) exposed to liquids, etc., since the FS-24 conforms to IPX3 waterproof Ingress Protection Rating.

In such a place, use a product which conforms to IPX6 or higher.

Remote control via the REMOTE connector

If you send the following pulse signals to the REMOTE connector, the printer will function according to settings in "Selecting controls using the device connected to the REMOTE connector" (page 71).

Timing pulse for REMOTE connector input REMOTE pin alignment



Symbol	Item	MIN	TYP	MAX	Unit	Remark
tRPW	Remote control pulse width	100	-	-	mSEC	-
VRP	Remote control pulse level	-	-	5	V	TTL level

Design and specifications are subject to change without notice.

Medical Specifications

Protection against electric shock:

Class I

Protection against harmful ingress of water:

Ordinary

Degree of safety in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide:

Not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide

Mode of operation:

Continuous

Notes

- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF FAILURE TO PRINT CONTENT OF ANY TYPE DUE TO FAILURE OF THIS UNIT OR ITS PRINTING MEDIA.
- SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.
- SONY WILL NOT BE LIABLE FOR CLAIMS OF ANY KIND MADE BY USERS OF THIS UNIT OR MADE BY THIRD PARTIES.
- SONY WILL NOT BE LIABLE FOR THE TERMINATION OR DISCONTINUATION OF ANY SERVICES RELATED TO THIS UNIT THAT MAY RESULT DUE TO CIRCUMSTANCES OF ANY KIND.

Input signal format and output signal relation

The output signal format for the input signal is as follows according to settings.

For information on the input signal format selection method, see “Selecting the Input Signal” (page 22). For output signal setting instructions, see “Matching the video monitor and printout color” (page 56).

Input signal selection [Input Signal] setting	Input signal	Output signal			Printer window display
		Source image ([Source Image] settings)		Memory image	
		EE image [General] setting	Through image [Through] setting		
[Auto]	480i	480i	480i	480i	SD
	1080/59.94i	1080/59.94i	1080/59.94i	1080/59.94i	1080i
	1080/59.94p	1080/59.94p	1080/59.94p	1080/59.94p	1080p
	1080/60i	1080/60i	1080/60i	1080/60i	1080i
	1080/60p	1080/60p	1080/60p	1080/60p	1080p
	576i	576i	576i	576i	SD
	1080/50i	1080/50i	1080/50i	1080/50i	1080i
	1080/50p	1080/50p	1080/50p	1080/50p	1080p
	No signal	a)	None	a)	–
	Unsupported signal	a)	None	a)	–
[SD]	480i	480i	480i	480i	SD
	1080/59.94i	480i	1080/59.94i	480i	1080i
	1080/59.94p	480i	1080/59.94p	480i	1080p
	1080/60i	480i	1080/60i	480i	1080i
	1080/60p	480i	1080/60p	480i	1080p
	576i	576i	576i	576i	SD
	1080/50i	576i	1080/50i	576i	1080i
	1080/50p	576i	1080/50p	576i	1080p
	No signal	SD ^{b)}	None	SD ^{b)}	–
	Unsupported signal	SD ^{b)}	None	SD ^{b)}	–
[1080i]	480i	1080/59.94i	480i	1080/59.94i	SD
	1080/59.94i	1080/59.94i	1080/59.94i	1080/59.94i	1080i
	1080/59.94p	1080/59.94i	1080/59.94p	1080/59.94i	1080p
	1080/60i	1080/60i	1080/60i	1080/60i	1080i
	1080/60p	1080/60i	1080/60p	1080/60i	1080p
	576i	1080/50i	576i	1080/50i	SD
	1080/50i	1080/50i	1080/50i	1080/50i	1080i
	1080/50p	1080/50i	1080/50p	1080/50i	1080p
	No signal	1080i ^{b)}	None	1080i ^{b)}	–
	Unsupported signal	1080i ^{b)}	None	1080i ^{b)}	–

Input signal selection [Input Signal] setting	Input signal	Output signal			Printer window display
		Source image ([Source Image] settings)		Memory image	
		EE image [General] setting	Through image [Through] setting		
[1080p]	480i	1080/59.94p	480i	1080/59.94p	SD
	1080/59.94i	1080/59.94p	1080/59.94i	1080/59.94p	1080i
	1080/59.94p	1080/59.94p	1080/59.94p	1080/59.94p	1080p
	1080/60i	1080/60p	1080/60i	1080/60p	1080i
	1080/60p	1080/60p	1080/60p	1080/60p	1080p
	576i	1080/50p	576i	1080/50p	SD
	1080/50i	1080/50p	1080/50i	1080/50p	1080i
	1080/50p	1080/50p	1080/50p	1080/50p	1080p
	No signal	1080p ^{b)}	None	1080p ^{b)}	-
	Unsupported signal	1080p ^{b)}	None	1080p ^{b)}	-

- a) Previous input format or 1080/59.94i (factory default setting)
b) Previous input frame rate

Troubleshooting

Before requesting printer repairs, please check the following. If the printer still does not function normally, please contact your Sony dealer or local authorized Sony service facility.

Symptom	Causes and remedies
Nothing appears on the video monitor even when you press the operation buttons.	<ul style="list-style-type: none"> The Ⓜ POWER switch of the printer is set to OFF. →Set the Ⓜ POWER switch of the printer to ON. The Ⓜ POWER switch of the video monitor is set to OFF. →Set the Ⓜ POWER switch of the video monitor to ON. Connections may not be correct. →Check connections. (page 16)
Nothing appears on the normal screen.	The input signal is incorrect. →Select another input signal in [Input Signal] on the [Input Setup] tab of the [System Setup] menu (page 22) or set the connected video equipment to normal playback mode.
No images or other information appears on the normal screen.	<ul style="list-style-type: none"> If an image captured in memory appears when the SOURCE/MEMORY button is pressed, the output signal is set to [Through]. →In the [Output Setup] tab of the [User Setup] menu, change the [Source Image] setting to [General] (EE signal). See "Matching the video monitor and printout color" (page 56). If the menu is displayed by pressing the MENU button, the screen display on the video monitor is set to [Off]. →Set the screen display setting to [All] or [Ribbon Remain] by pressing the DISPLAY button. See "Hiding the Screen Display on the Video Monitor" (page 46).
Nothing appears on the printer window display.	The contrast of the printer window display is not set correctly. →In the [LCD Contrast] and [LCD Backlight] items on the [Machine Setup] tab of the [System Setup] menu, adjust the printer window display brightness. See "Adjusting the printer window display" (page 73).

Symptom	Causes and remedies
The printer does not print.	<ul style="list-style-type: none"> An error message appears on the video monitor or printer window display. →Check "Error/Warning Messages" and perform the appropriate steps. See "Error/Warning Messages" (page 84). Paper that cannot be used with this printer has been loaded. →Use only paper for this printer. See "Compatible ink ribbon and paper" (page 17). The paper is not loaded correctly. →Check the front and back of the paper, then load the it again. See "Loading the Paper" (page 20).
A black line appears on the printout.	Any portion for which there is no signal is printed in black. →Adjust the image area to be printed. See "When a black frame or lines show up on printouts" (page 59).
The printed image is partially cut out.	Only part of the video signal has been stored. →Adjust the image area to be printed. See "When a black frame or lines show up on printouts" (page 59).
The ink ribbon does not load.	<ul style="list-style-type: none"> You are trying to load an ink ribbon that is not compatible with this printer. →Load a compatible ink ribbon. (page 17) The thermal head is locked. →Turn on the printer. The thermal head moves, and the ink ribbon can be loaded. The ink ribbon is not inserted in the correct position. →Insert the ink ribbon in the correct position.
The paper does not feed.	<ul style="list-style-type: none"> The leading edge of the paper is folded. →Remove the paper with the folded leading edge from the paper feed tray. The paper is not correctly oriented in the paper feed tray. →Check the paper orientation. For S-size paper, use the paper feed tray with the partition raised. The paper feed rollers are dirty. →Perform manual paper feed roller cleaning. (page 77)
The printout color is too light.	The paper is not loaded correctly. →Check the front and back of the paper, then load the it again. See "Loading the Paper" (page 20).

Symptom	Causes and remedies
The printer ejects a blank sheet of paper, the ALARM indicator lights and the message "Change Ribbon". appears on the printer window display and the video monitor.	The ink ribbon has been used up. →Replace the ink ribbon. (page 18) Do not reuse the ejected paper.
There are marks and stripes on the print side.	The thermal head is dirty. →Perform thermal head cleaning. (page 76)

Error/Warning Messages

The following error messages and warning messages may be displayed on the video monitor or printer window display. Note the messages and act accordingly.

Error messages

If a problem occurs, the ALARM lamp lights in orange and an error message appears on the monitor video and printer window display.

Error message	Possible causes and remedies
Check Paper: Printing	<ul style="list-style-type: none">• Paper has jammed inside the printer. →Remove any jammed paper from the printer. (page 86) In some cases, this message may remain even after the jammed paper is removed. To clear the message, try removing the paper feed tray and reinserting it with paper loaded inside.
Check Paper: Load	
Check Paper: Eject	
Remove Paper	<ul style="list-style-type: none">• The base plate of the printer is detached. →Attach the base plate securely. (page 87)
Remove Paper Tray	The paper jams near the paper tray. →Remove any jammed paper from the printer. (page 86) In some cases, this message may remain even after the jammed paper is removed. To clear the message, try removing the paper feed tray and reinserting it with paper loaded inside.
Check Ribbon	<ul style="list-style-type: none">• The ink ribbon has torn. →Repair the torn ink ribbon. (page 19)• If this message appears even though the ink ribbon is not torn, contact your Sony service facility or your Sony dealer.
Remove Printed Paper	The maximum number of printouts has accumulated on the paper tray. →Remove the printouts. Once removed, printing will resume automatically.
Close Ribbon Door	The ribbon door panel is open. →Close the ribbon door panel.
Set Ribbon and Paper	Neither ink ribbons or paper are loaded. →Load the ink ribbon and paper. (See pages 18 and page 20.)
Set Ribbon	There is no ink ribbon loaded. →Load the ink ribbon. (page 18)
Set Paper	<ul style="list-style-type: none">• There is no paper. →Load the paper. (page 20)• There is no paper tray loaded. →Install the paper tray. (page 20)
Change Ribbon	The ink ribbon has been exhausted. →Replace the old ink ribbon with a new one. (The ink ribbon cannot be reused.) If a blank paper is ejected, do not reuse it. (page 18)
Ribbon and Paper Mismatch	The ink ribbon and paper are mismatched. →Use ink ribbons with paper from the same printing pack. (page 18) Do not reuse the ejected paper.
Mech. Trouble: Head Pos	The thermal head is malfunctioning. →Turn the printer off, and then on again. If the error message persists, consult your Sony service facility or your Sony dealer.
Mech. Trouble: Temp	The internal temperature of the printer is abnormal. →Turn the printer off, and then on again. If the error message persists, consult your Sony service facility or your Sony dealer.
Mech. Trouble: Fan	A malfunction occurred with the printer's internal fan. →Turn the printer off, and then on again. If the error message persists, consult your Sony service facility or your Sony dealer.

Warning and other messages

For warning or other messages, the message will be displayed and the ALARM indicator will remain off. Follow the instructions in the message.

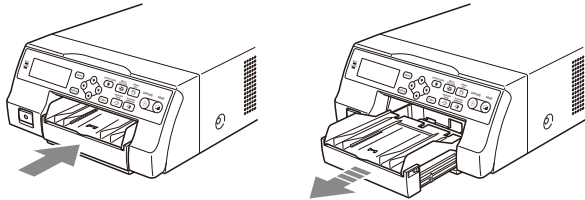
Message	Causes and remedies
Check Input Signal	<ul style="list-style-type: none"> The source image signals from the input device (VTR, video camera, etc.) do not match the [Input Signal] settings in the [Input Setup] tab of the [System Setup] menu. <ul style="list-style-type: none"> →Input a signal that matches the [Input Signal] settings. A signal other than a video signal (such as an audio signal, etc.) is input. <ul style="list-style-type: none"> →Input the correct video signal.
Check Input	<p>No signal is coming from the input signal device currently selected in [Input Signal] on the [Input Setup] tab of [System Setup] menu.</p> <ul style="list-style-type: none"> →Check the input signal currently selected in [Input Signal]. (page 22) →Check whether the input equipment (VTR, etc.) is in playback mode. →Check if the input equipment connection is correct. (page 15)
Capture Images	<p>The image is not captured in the memory page.</p> <ul style="list-style-type: none"> →Capture the image in memory then start printing. (page 25)
Please Wait	<p>The printer is starting or processing a job.</p> <ul style="list-style-type: none"> →Leave the printer until this message disappears.
PLEASE WAIT	Switching to TRANSPORT MODE.
Please Wait Printing Memory	<p>In the selected memory page, the captured image is being printed or queued.</p> <ul style="list-style-type: none"> →Retry the operation once the printer finishes printing.
Please Wait Adjusting Head Temp	<p>The temperature of the thermal head is being adjusted.</p> <ul style="list-style-type: none"> →Wait until this message disappears. The printer resumes printing automatically.
Clean Thermal Head	<p>The thermal head requires cleaning.</p> <ul style="list-style-type: none"> →Follow “Cleaning the thermal head” (page 76), and clean the thermal head. You can select whether to display this message in the [Head Cleaning Notify] setting on the [Cleaning] tab of the [Maintenance] menu. (page 74)
All Reset	All settings are returned to the factory default settings.
Remove Ribbon	<p>You attempted to enter “TRANSPORT MODE” with an ink ribbon loaded inside the printer.</p> <ul style="list-style-type: none"> →Remove the ink ribbon before entering TRANSPORT MODE. (page 75)
TRANSPORT MODE	Displayed when in “TRANSPORT MODE”.
Press any button	<p>This is displayed when [Remote Function] in the [Remote Setup] tab of the [System Setup] menu is set to [Cap-Stop], and when using remote control from a device connected to the REMOTE connector.</p> <ul style="list-style-type: none"> →Press any button. Printer operation is enabled.
Clean Thermal Head Press [EXEC]	<p>This is displayed after the cleaning cartridge is installed for thermal head cleaning.</p> <ul style="list-style-type: none"> →Press the EXEC button to start cleaning.
Clean Thermal Head Set Cleaning Sheet	<p>Displayed during thermal head cleaning. There is no paper tray loaded.</p> <ul style="list-style-type: none"> →Install the paper tray.
Clean Thermal Head Finished	<p>Thermal head cleaning is finished.</p> <ul style="list-style-type: none"> →Remove the cleaning cartridge.
Cleaning in Progress. Please Wait	<ul style="list-style-type: none"> Cleaning in progress. <ul style="list-style-type: none"> →Wait until thermal head cleaning is finished. Paper feed roller cleaning in progress. <ul style="list-style-type: none"> →Wait until paper feed roller cleaning is finished.
Clean Paper Feed Roller	<p>Perform manual paper feed roller cleaning.</p> <ul style="list-style-type: none"> →Follow “Manual paper feed roller cleaning” (page 77), and clean the paper feed roller. This message appears at the end of printing if the paper feeding power is lower than expected.
Clean Paper Feed Roller Remove Paper from Paper Tray	<p>Displayed during paper feed roller cleaning. Paper is in the paper feed tray.</p> <ul style="list-style-type: none"> →Remove the paper feed tray and paper, then re-install the empty paper feed tray.
Clean Paper Feed Roller Set Paper Tray	<p>Displayed during paper feed roller cleaning. There is no paper feed tray loaded.</p> <ul style="list-style-type: none"> →Load the empty paper feed tray.
Clean Paper Feed Roller Press [EXEC]	<p>Displayed during paper feed roller cleaning.</p> <ul style="list-style-type: none"> →Press the EXEC button to start cleaning.

Clearing a paper jam

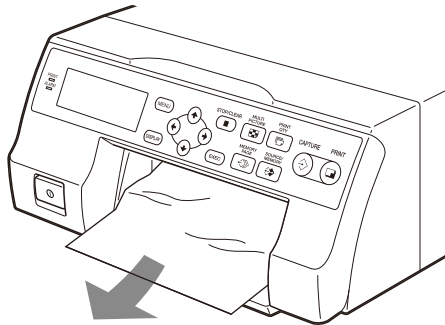
If the ALARM indicator on the ribbon door panel lights after printing starts, or if "Remove Paper" or "Check Paper" appears on the printer window display, a paper jam may have occurred inside the printer.

If the message does not disappear after removing the paper feed tray and reinserting it with paper loaded inside, perform the following to clear the jammed paper.

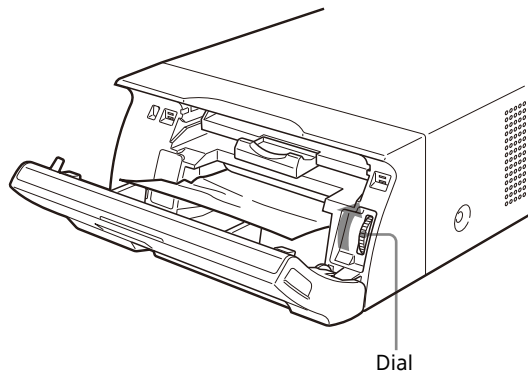
- 1 Press the ▲ mark on the paper feed tray to eject the tray.



- 2 Clear any paper that jammed part way through printing.

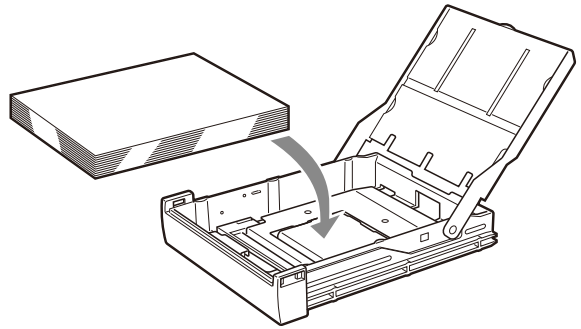


If the paper jam is deep inside the printer and cannot be cleared, open the ribbon door panel and turn the dial upward. This ejects the paper jammed deep inside.



If the paper jam cannot be cleared even by turning the dial, refer to "If a paper jam cannot be cleared" (page 86).

- 3 Load the paper properly.



Notes

- Do not reuse the paper removed in step 2.
- Only use paper from the printing packs recommended for this printer.

- 4 Insert the paper feed tray into the printer (page 21).

If a paper jam cannot be cleared

Follow the steps below to open the base plate on the printer and clear the paper jam.



Caution

Do not touch any unit circuitry and the patient at the same time.

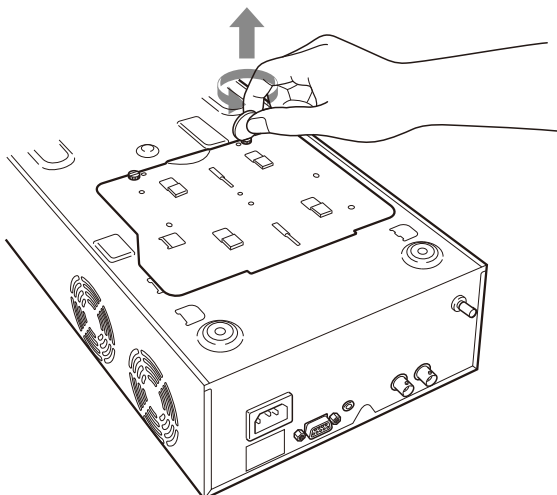
If the unit malfunctions, it may generate voltage that could be harmful to the patient.

Notes

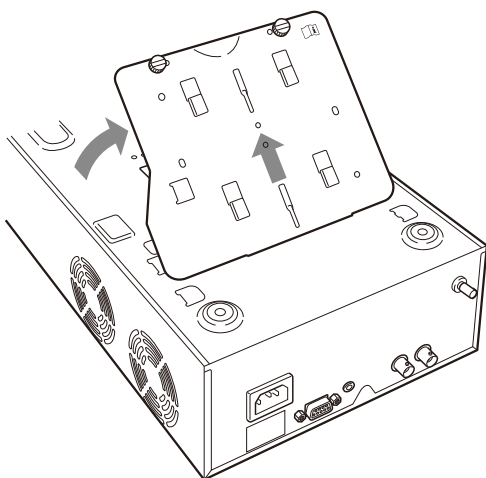
- Before clearing a paper jam with the following procedure, press the ⓐ POWER switch to turn off the printer and also unplug the power cord from the wall outlet.
- When turning the printer over, disconnect all cords. Bending or twisting cables can damage them and may cause a fire hazard or electric shock.
- If it is necessary to touch internal printer parts to remove a paper jam, be careful not to damage the internal parts.

- 1 Press the ⓐ POWER switch to turn off the printer, and then unplug the power cord and connecting cables.
- 2 Eject the paper feed tray from the printer.
- 3 Remove any connected cords, then turn the printer over.

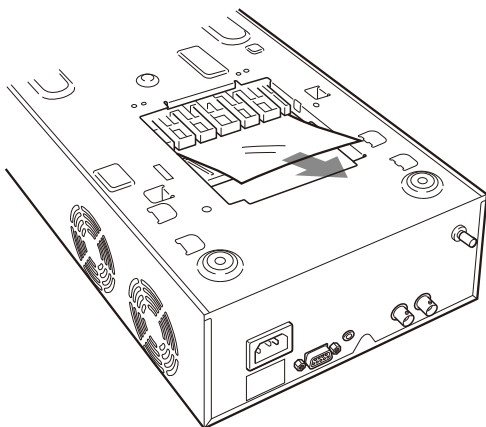
- 4** Use a flat tool such as a coin to remove the two screws securing the base plate.



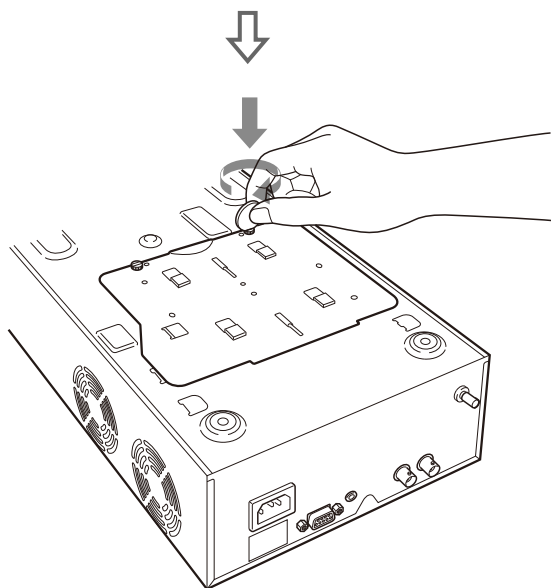
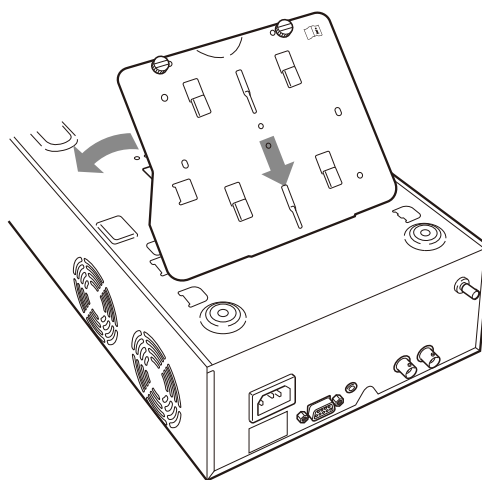
- 5** Lift up the base plate and remove it from the printer.



- 6** Carefully clear the jammed paper.



- 7** Reattach the base plate.



Caution

Be sure to reattach the base plate.
The printer cannot print with the base plate removed.

If a paper jam still cannot be cleared

Consult your Sony dealer or your Sony service facility. Do not attempt to remove the paper by force.

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