

Hybrid Graphic Printer

Instructions for Use

CE

UP-990AD

UP-970AD

Owner's Record

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

Model No. _____

Serial No. _____

WARNING

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

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

THIS APPARATUS MUST BE EARTHED.

To disconnect the main power, unplug the AC IN connector.



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

For the 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.

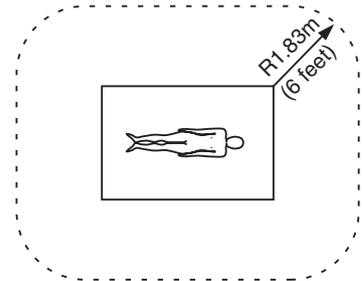
For the customers in Canada

This unit has been certified according to Standard CSA C22.2 No.601.1.

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

Both the UP-990AD and the UP-970AD Hybrid Graphic Printers are Non-Patient Equipment. These units cannot be used in the vicinity of patients.

* Patient Vicinity

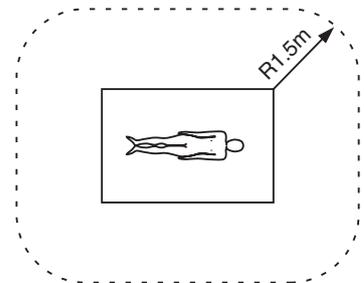


When you use this product connected to 240V single phase, be sure to connect this product to a center tapped circuit.

Important safeguards/notices for use in the medical environments

1. All the equipments connected to this unit shall be certified according to Standard IEC60601-1, IEC60950-1, IEC60065 or other IEC/ISO Standards applicable to the equipments.
2. When this unit is used together with other equipment in the patient area*, the equipment shall be either powered by an isolation transformer or connected via an additional protective earth terminal to system ground unless it is certified according to Standard IEC60601-1.

* Patient Area



3. The leakage current could increase when connected to other equipment.

4. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause interference to other equipment. If this unit causes interference (which can be determined by unplugging the power cord from the unit), try these measures: Relocate the unit with respect to the susceptible equipment. Plug this unit and the susceptible equipment into different branch circuit. Consult your dealer. (According to standard EN60601-1-2 and CISPR11, Class B, Group 1)

Caution

When you dispose of the unit or accessories, you must obey the law in the relative area or country and the regulation in the relative hospital.

Warning on power connection

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 connection for medical use

Please use the following power supply cord. With connectors (plug or female) and cord types other than those indicated in this table, use the power supply cord that is approved for use in your area.

	United States	Canada
Plug Type	HOSPITAL GRADE*	HOSPITAL GRADE*
Female end	E62405, E35708	LR53182, LL022442, LL088408
Cord type	E159216, E35496 Min.Type SJT Min.18 AWG	LL112007-1, LL20262, LL32121, LL84494 Min.Type SJT Min.18AWG
Minimum cord set rating	10A/125V	10A/125V
Safety approval	UL Listed	CSA

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

Table of Contents

Getting Started

Overview	5
Location and Function of Parts and Controls	5
UP-990AD	5
UP-970AD	7
Paper	9
Paper You Can Use	9
Loading Paper in the Unit	9

Analog Mode

Connections	12
Adjustments and Settings Using the Menu	13
Menu Flow	14
Menu List	16
Basic Menu Operations	19
Registering Menu Settings	21
Printing the Menu List	21
Printing	22
Starting a Print Job	22
Selecting the Printing Direction and Size	24
Adjusting the Contrast and Brightness	25

Digital Mode

Connections	26
Connecting to the USB Connector	26
Installing the Printer Driver	26
Adjustments and Settings Using the Menu	26
Menu Flow	27
Menu List	29
Basic Menu Operations	31
Registering Menu Settings	32
Printing the Menu List	32
Printing	33
Starting a Print Job	33
Adjusting the Contrast and Brightness	34

Others

Precautions	35
On Safety	35
On the Printer Carriage	35
On Installation	35
Maintenance	36
Cleaning the Cabinet	36
Cleaning the Thermal Head	36
Cleaning the Platen Roller	37
Specifications	37
UP-990AD	37
UP-970AD	38
Troubleshooting	40
Error Messages	41
Index	42

Overview

Stable, high-quality printing

- Capable of high-resolution images of 12.8 dots/mm.
- 8-bit processing provides monochrome printing with up to 256 shades of gradation.

A variety of printing modes

Single-picture mode



Side mode



Reverse mode



Multi-picture mode



A change of settings makes available an even greater number of print modes (see page 22).

Storing print modes

Store often used print modes as submenu values for subsequent instant recall.

Supports both analog and digital input

- Prints NTSC and PAL color video signals as well as EIA and CCIR monochrome video signals.
- Compatible with Hi-Speed USB (USB 2.0 compatible).

Auto cut function (UP-990AD only)

Automatically cuts the paper when printing completes.

Printing to film (UP-990AD only)

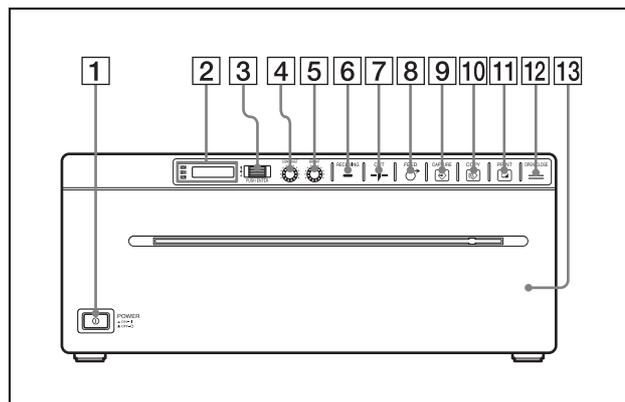
The UP-990AD can print on transparent film using UPT-210BL (separately sold).

Location and Function of Parts and Controls

For more details, see the referenced page numbers enclosed in parentheses ().

UP-990AD

Front Panel



- 1** **Power ON/OFF Switch (page 9, 19, 22, 31, 33, 36)**
Press to turn ON the printer. The LCD display backlight as well as the CUT, FEED, COPY, and PRINT buttons light.
* When set to digital mode, the PRINT button does not light.
- 2** **Printer window display (LCD: liquid crystal display) (page 14, 22, 27, 33)**
The back light lights in green when the unit operates normally. Also, in normal operation, the paper currently selected is indicated by the pointer on the LCD.
For detailed information on the paper, see “Installing the Printer Driver” on page 26 and “Paper currently selected” on page 22 and 33.
If an error occurs, a corresponding alarm message is displayed.
During menu operations, menu items and settings are displayed.
- 3** **Jog dial (page 20, 31, 36)**
Used to make menu operations.
- 4** **CONTRAST (contrast) control (page 25)**
Adjusts the contrast of the printouts.
- 5** **BRIGHT (brightness) control (page 25)**
Adjusts the brightness of the printouts.

- 6 RECEIVING lamp**
Lights when the printer receives print data from a PC.
- 7 -J-CUT button (page 22, 33)**
Press to cut the completed print using the internal paper cutter.
- 8 FEED button (page 10, 22, 33)**
Hold down to feed paper. While a print job is in progress, press to cancel the print job.
- 9 CAPTURE button (page 23)**
In the multi-picture mode, press to store the print image in memory.
This function is not available in the single-picture mode.

Note

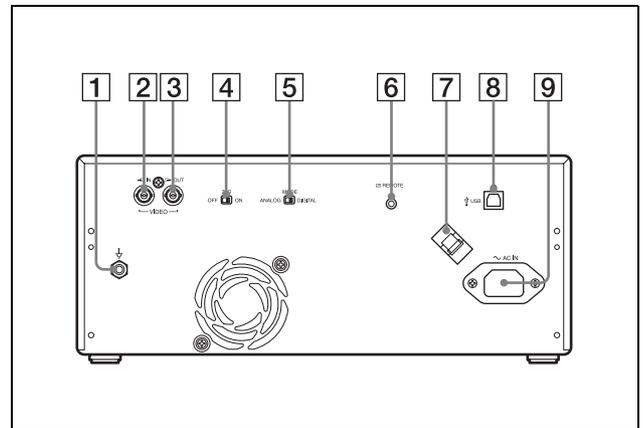
This function is available only in the analog mode.

- 10 COPY button (page 24)**
In the multi-picture mode, use this button to print images stored in memory (with the CAPTURE button) side by side on a single sheet.
In the single-picture mode, press to print another copy of the last printed image.
In either mode, press once to print only the number of prints set in the “QTY” menu.
- 11 PRINT button**
Prints the image currently displayed on the video monitor. The image displayed when you press the PRINT button is stored in memory.

Note

This function is available only in the analog mode.

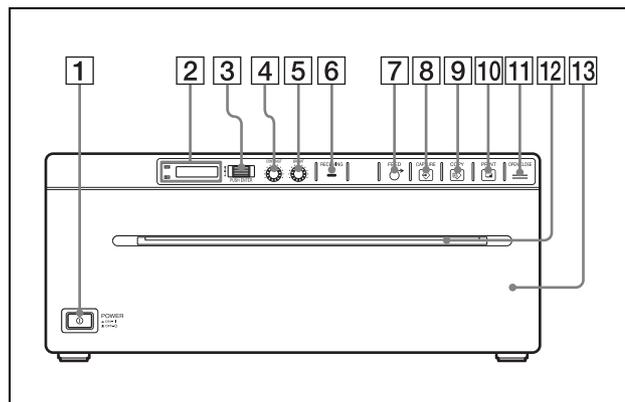
- 12 OPEN/CLOSE button (page 10, 22, 33)**
Press to open or close the paper door. While a print job is in progress, press to cancel the print job.
- 13 Paper door**
Open to install and replace printing paper, and to clean the head and platen roller. Use the OPEN/CLOSE button to open or close the paper door.

Rear Panel

- 1 Equipotential terminal**
Used to connect to the equipotential plug to bring the various parts of a system to the same potential. Refer to “Important safeguards/notices for use in the medical environments” on page 2.
- 2 VIDEO IN (input) connector (BNC type)**
Connect to the video output connector of the video equipment.
- 3 VIDEO OUT (output) connector (BNC type)**
Connect to the video input connector of the video monitor. The output signal depends on the setting of the “VIDEO” item of the menu.
- 4 75 Ω select switch**
ON: When nothing is connected to the VIDEO OUT connector, set the switch to this position.
OFF: When a video monitor or other video equipment is connected to the VIDEO OUT connector, set the switch to this position.
- 5 ANALOG/DIGITAL switch**
Press to switch between analog and digital modes. Turn the printer off before switching.
- 6 REMOTE connector (page 12)**
Connects the RM-91 remote control unit for controlling print operation from a distance.
- 7 USB Cable Clamber**
Holds and secures the USB cable connected to the USB port.
- 8 USB connector (4-pin connector)**
Use the supplied USB cable to connect a PC with a USB (USB 2.0 compliant) interface to this connector.

9 ~ AC IN connector

Use a proper power cord for your local power supply (not supplied).
Refer to “Warning on power connection” on page 3 and “Warning on power connection for medical use” on page 3.

UP-970AD**Front Panel**

- 1** **Ⓜ Power ON/OFF Switch (page 9, 19, 22, 31, 33, 36)**
Press to turn ON the printer. The LCD display backlight as well as the FEED, COPY, and PRINT buttons light.
* When set to digital mode, the PRINT button does not light.
- 2** **Printer window display (LCD: liquid crystal display) (page 14, 22, 27, 33)**
The back light lights in green when the unit operates normally. Also, in normal operation, the paper currently selected is indicated by the pointer on the LCD.
For detailed information on the paper, see “Installing the Printer Driver” on page 26 and “Paper currently selected” on page 22 and 33.
If an error occurs, a corresponding alarm message is displayed.
During menu operations, menu items and settings are displayed.
- 3** **Jog dial (page 20, 31, 36)**
Used to make menu operations.
- 4** **CONTRAST (contrast) control (page 25)**
Adjusts the contrast of the printouts.
- 5** **BRIGHT (brightness) control (page 25)**
Adjusts the brightness of the printouts.
- 6** **RECEIVING lamp**
Lights when the printer receives print data from a PC.
- 7** **Ⓜ FEED button (page 11, 22, 33)**
Hold down to feed paper. While a print job is in progress, press to cancel the print job.

- 8**  **CAPTURE button (page 23)**
In the multi-picture mode, press to store the print image in memory.
This function is not available in the single-picture mode.

Note

This function is available only in the analog mode.

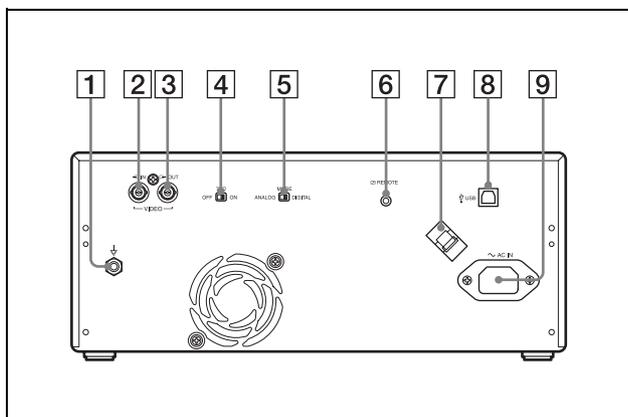
- 9**  **COPY button (page 24)**
In the multi-picture mode, use this button to print images stored in memory (with the CAPTURE button) side by side on a single sheet.
In the single-picture mode, press to print another copy of the last printed image.
In either mode, press once to print only the number of prints set in the “QTY” menu.

- 10**  **PRINT button**
Prints the image currently displayed on the video monitor. The image displayed when you press the PRINT button is stored in memory.

Note

This function is available only in the analog mode.

- 11**  **OPEN/CLOSE button (page 10, 22, 33)**
Press to open or close the paper door. While a print job is in progress, press to cancel the print job.
- 12** **Paper Cutter**
Cut the paper as each image is printed.
- 13** **Paper door**
Open to install and replace printing paper, and to clean the head and platen roller. Use the OPEN/CLOSE button to open or close the paper door.

Rear Panel

- 1**  **Equipotential terminal**
Used to connect to the equipotential plug to bring the various parts of a system to the same potential. Refer to “Important safeguards/notices for use in the medical environments” on page 2.
- 2**  **VIDEO IN (input) connector (BNC type)**
Connect to the video output connector of the video equipment.
- 3**  **VIDEO OUT (output) connector (BNC type)**
Connect to the video input connector of the video monitor. The output signal depends on the setting of the “VIDEO” item of the menu.
- 4** **75 Ω select switch**
ON: When nothing is connected to the VIDEO OUT connector, set the switch to this position.
OFF: When a video monitor or other video equipment is connected to the VIDEO OUT connector, set the switch to this position.
- 5** **ANALOG/DIGITAL switch**
Press to switch between analog and digital modes. Turn the printer off before switching.
- 6**  **REMOTE connector (page 12)**
Connects the RM-91 remote control unit for controlling print operation from a distance.
- 7** **USB Cable Clamper**
Holds and secures the USB cable connected to the USB port.
- 8**  **USB connector (4-pin connector)**
Use the supplied USB cable to connect a PC with a USB (USB 2.0 compliant) interface to this connector.
- 9**  **AC IN connector**
Use a proper power cord for your local power supply (not supplied).
Refer to “Warning on power connection” on page 3 and “Warning on power connection for medical use” on page 3.

Paper

Use only Sony UPP-210SE/210HD/UPT-210BL paper designed for use with this unit. High print quality cannot be guaranteed if any other paper is used with this unit, and such paper could damage the unit.

Paper You Can Use

Print paper characteristics are as follows.

Print Characteristics	Paper Type
TYPE I (Normal)	UPP-210SE
TYPE II (High Density)	UPP-210HD
TYPE III (Thermal film)	UPT-210BL

Note

The UP-970AD model cannot use UPT-210BL.

Notes on storing and handling paper

Storing unused paper

- Store unused paper at a temperature below 30°C (86°F) in a dry location that is not exposed to direct sunlight.
- Do not store unused paper near volatile liquids or allow the paper to contact any organic volatile liquid, cellophane tape, or any compound of vinyl chloride.

Loading paper

- Handle the paper carefully when loading to avoid touching the printing surface with your fingers. Perspiration or oil from your hands could cause pictures to blur.
- After removing the label from the leading edge of the paper, pull the paper out 15~20 cm (about 6~8 in.) before printing. Label adhesive remaining on the paper could spoil a picture.

Storing printouts

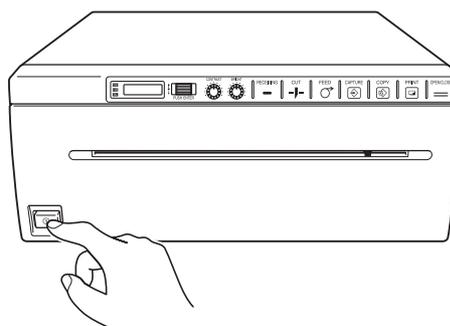
- To prevent printouts from fading or changing color, store them in a cool, dry location where the temperature is not higher than 30°C (86°F).
- Store printouts in a polypropylene pouch or between sheets of paper that contain no plastic.
- Do not store printouts where they will be exposed to direct sunlight or high humidity.
- Do not store printouts near volatile liquids or allow the prints to contact any organic volatile liquid, cellophane tape, or any compound of vinyl chloride.
- To prevent fading, do not stack printouts on or under a diazo copy sheet.
- To mount printouts on another sheet of paper, use double-sided tape or a water base adhesive.
- Do not incinerate waste printer paper.

Loading Paper in the Unit

Notes

- Do not touch the print surface of thermal printing paper when loading paper. The fingerprints, perspiration and creases that may result will lower the print quality.
- Use only UPP-210 series or UPT-210BL printing paper (page 9).
- Make the menu settings required by the loaded paper type (page 17, 30).

- 1 Press the power ON/OFF switch to turn on the printer.

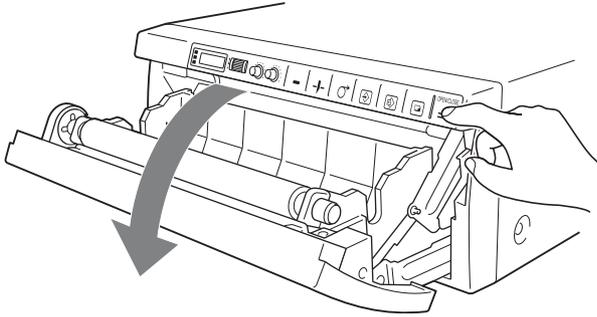


The LCD display shows the message “SONY UP-990AD” for the UP-990AD and “SONY UP-970AD” for the UP-970AD.

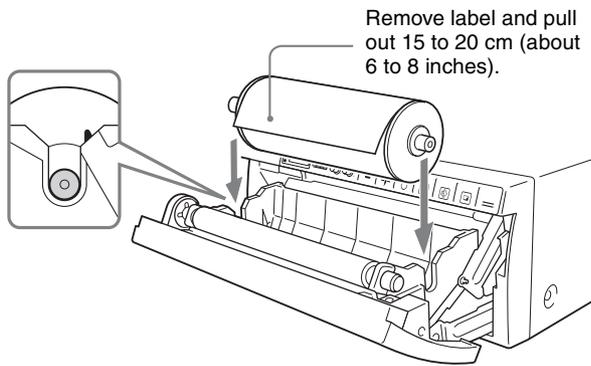
Notes

- The LCD display backlight lights in amber and shows the message “EMPTY” when no printing paper is loaded.
- The LCD display backlight lights in amber and shows the message “DOOR” when the paper door is open.
- When set to analog mode, the LCD display shows the message “NOINP” if there is no video signal input.

- 2** Press the OPEN/CLOSE button to open the paper door.



- 3** Place the printing paper roll on the tray.
Using UPP-210SE/210HD

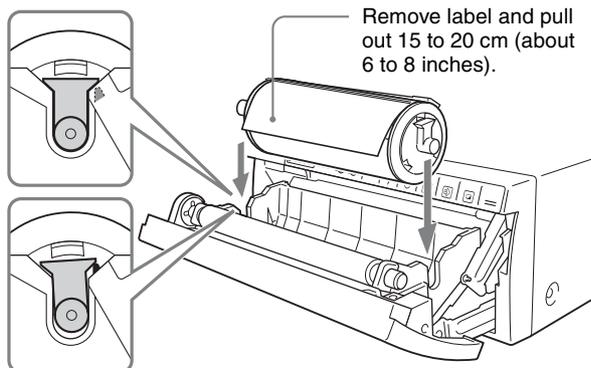


Place the paper with the heat sensitive side facing up. The printer will not print if the paper is reversed.

Using UPT-210BL thermal film

* Cannot be used with the UP-970AD. Doing so may cause a malfunction.

Correctly Inserted



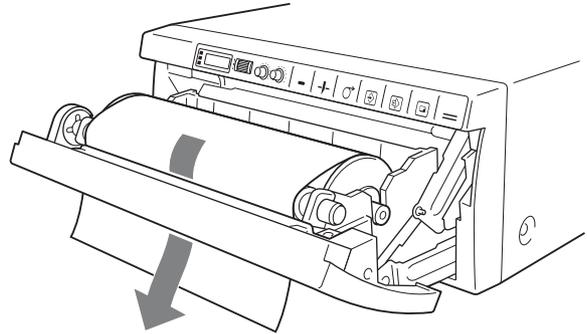
Incorrectly Inserted

Place the paper with the heat sensitive side facing up. The printer will not print if the paper is reversed.

- 4** Insert the paper into the groove of the paper tray and pull it out through the paper exit.

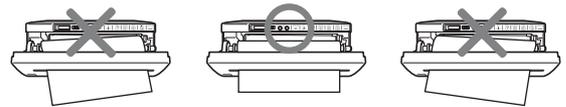
Note

Place the paper near the center of the groove of the paper tray (inside of the guide). Note that paper jams may occur if the paper is placed at the edge of the groove of the paper tray.



Note

Pull out the printing paper to remove any slack and possible creases.



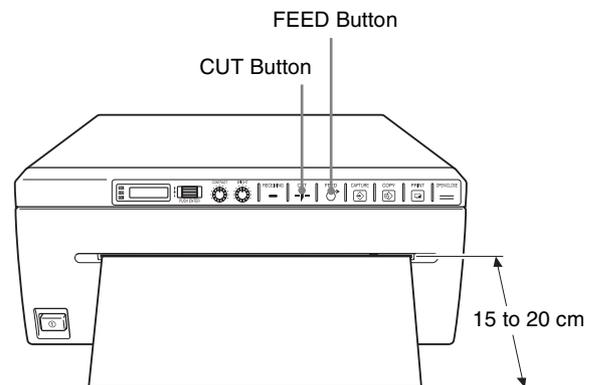
- 5** Press the OPEN/CLOSE button to close the paper door.

You can also push the paper door to close it.

- 6** Remove paper leading edge.

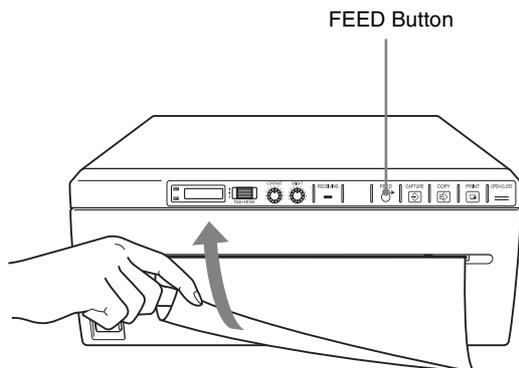
UP-990AD

After loading paper, press the FEED button to feed out 15 to 20 cm (6 to 8 inches) of paper and press the CUT button to remove it.



UP-970AD

After loading paper, press the FEED button to feed out 15 to 20 cm (6 to 8 inches) of paper. Then use the paper cutter to remove it. Be careful not to touch the paper cutter when cutting the paper.



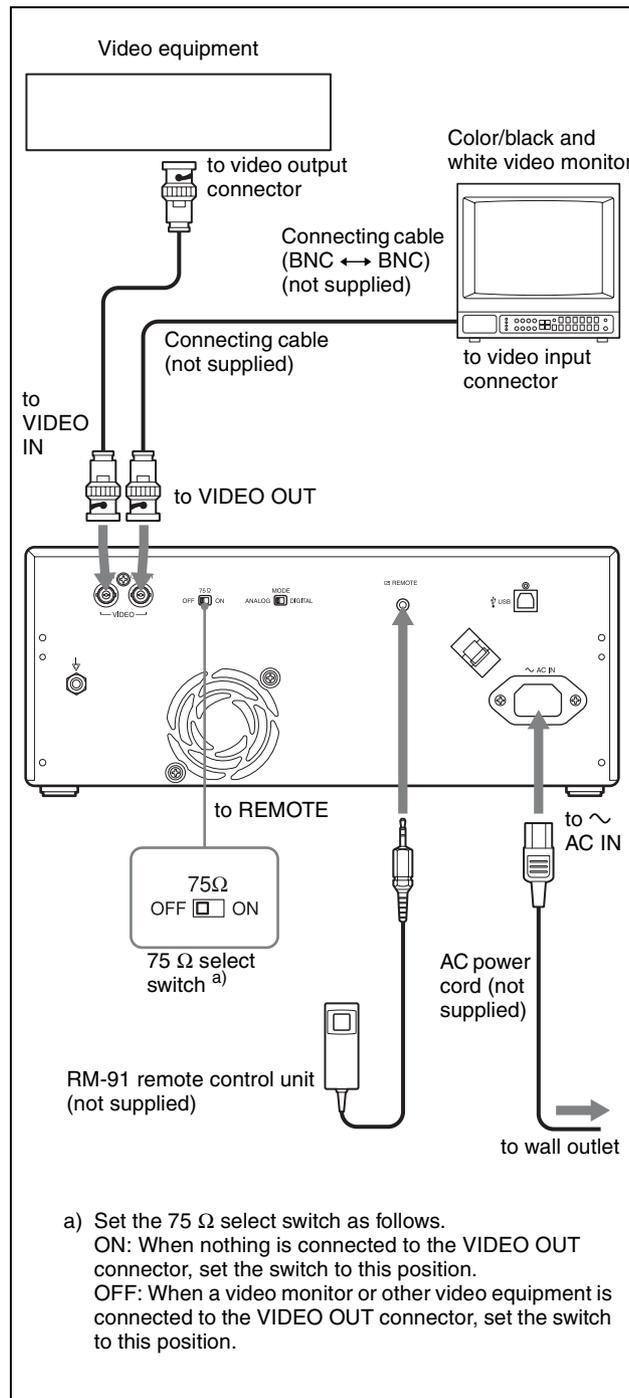
Note

To use UPT-210BL after printing with UPP-210SE/HD, clean the head before printing as fine horizontal stripes may otherwise appear on the paper.

Connections

Notes

- Turn off the power to each device before making any connections.
- Connect the AC power cord last.
- After completing connections, switch to the analog mode before turning on the printer.
- The printer will not print images imported via the USB terminal.



Adjustments and Settings Using the Menu

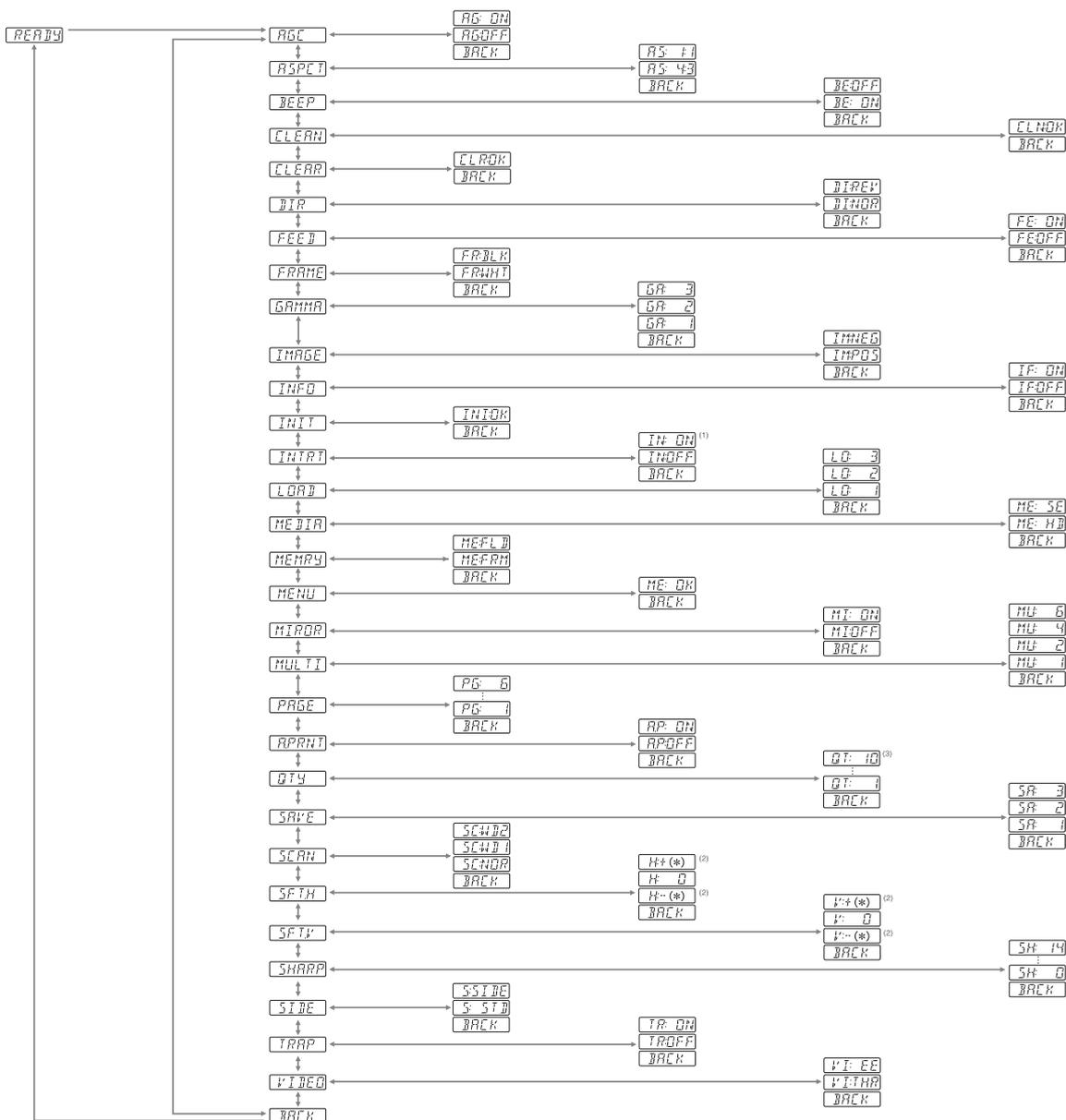
You can carry out adjustments and settings to meet your requirements. Those settings and adjustments are retained even if the unit is turned off.

You can set up the unit according to its intended purpose, connected equipments or your individual preferences.

You can store up to three settings as a set of user settings.



UP-970AD Menu Flow



- (1): The single picture mode and multi-picture mode provide different functions. For details, see "Menu List".
- (2): The "SCAN" settings and the signal system of the image to be captured determine the values you can set with the Jog dial.
- (3): The values you can set with the Jog dial in the analog mode are different from those in the digital mode.

Analog Mode

Menu List

This section describes the menus displayed as you turn the jog dial. The setting surrounded by indicates the factory setting.

Item	Function	Settings
AGC	To adjust the input signal to the optimum printing level	AG:ON: Adjusts the input signal to the optimum level, when the printout image appears too dark or too light. AG:OFF : Normally select this setting. BACK: Cancels the setting change and returns to the item selection column.
ASPCT ^{a)}	To select the aspect ratio	AS:1:1: Prints a video signal with an aspect ratio of 1:1. AS: 4:3 : Normally select this setting. BACK: Cancels the setting change and returns to the item selection column
BEEP	To turn operation tones ON and OFF. Error tones sound regardless of setting.	BE: OFF: The operation tone does not sound. BE: ON : The operation sounds. BACK: Cancels the setting change and returns to the item selection column.
CLEAN	To start head cleaning	CLN: OK : Starts the head cleaning. Be sure to use the supplied cleaning sheet. BACK: Cancels the head cleaning and returns to the item selection column.
CLEAR	To delete images stored in memory.	CLR: OK : Deletes all images stored in memory. BACK: Cancels CLEAR and returns to the item selection column.
AT.CUT (UP-990AD only function)	To turn on and off automatic cutting of completed prints.	CT:OFF: Cuts the paper when the CUT button is pressed. CT:ON : Cuts the paper automatically. BACK: Cancels the setting change and returns to the item selection column.
DIR ^{b)}	To select whether the top or bottom of the screen is to be printed first	DI: REV: Starts to print in the reverse direction (from the top of the screen). DI: NOR : Starts to print in the normal direction (from the bottom of the screen). BACK: Cancels the setting change and returns to the item selection column.

Item	Function	Settings
FEED (UP-990AD)	To set the top and bottom margin of a print.	FE: 0 to FE:15: Sets the margin to one of 16 steps from 0 to 15. An increase of one step increases the top and bottom margin by 5 mm. The top and bottom margin can be increased to 75 mm. The "0" setting is the default value, which still provides a narrow margin between two images. BACK: Cancels the setting change and returns to the item selection column.
FEED (UP-970AD)	To select the paper feed method used after printing.	FE: ON : Increases the margin between prints. FE:OFF: Sets when reducing the margin or when printing multiple images on the same sheet. This reduces the margin between images allowing you to print more images per roll. However, with this setting, the FEED button must be pressed before cutting the paper. BACK: Cancels the setting change and returns to the item selection column.
FRAME	To select the color of the frame between images in multi-picture mode.	FR:BLK: Sets the frame color to black. FR:WHT : Sets the frame color to white. BACK: Cancels the setting change and returns to the item selection column.
GAMMA	To select the tone of the printouts (density gradation)	GA:3: TONE 3 Hard gradation GA:2: TONE 2 Soft gradation GA:1 : TONE 1 Standard gradation BACK: Cancels the setting change and returns to the item selection column.
IMAGE	To set the printout to either positive printout or negative printout	IM:NEG: Makes negative printouts. IM:POS : Makes normal printouts. BACK: Cancels the setting change and returns to the item selection column.
INFO	To select whether or not the print conditions (such as contrast, bright, gammas and sharpness information) are printed under the image	IF:ON: Prints the information. IF:OFF : Does not print the information. BACK: Cancels the setting change and returns to the item selection column.

Item	Function	Settings
INIT	To return (initialize) all menu items to their factory defaults.	[INI:OK]: Returns all settings to their factory defaults. BACK: Cancels initialization and returns to the item selection column.
INTRT	To select operation performed when printing of the current image is interrupted.	In single picture mode IN:ON: Stops printing when the PRINT button is pressed during printing and starts printing the image captured at the instant you pressed the PRINT button. [IN:OFF]: Printing does not stop even if the PRINT button is pressed during printing. When printing of the current image ends, the unit prints the image captured at the instant you pressed the PRINT button. In multi-picture mode IN:ON: Stops printing when the CAPTURE button is pressed during printing. The image captured at the instant you pressed the CAPTURE button is inserted at the location indicated by flashing. [IN:OFF]: Disables the interruption of printing or image capture, even if the CAPTURE button is pressed during printing. BACK: Cancels the setting change and returns to the item selection column.
LOAD	To load the registered settings	LO:3: Loads the "SA:3" settings registered using the "SAVE" menu item. LO:2: Loads the "SA:2" settings registered using the "SAVE" menu item. [LO:1]: Loads the "SA:1" settings registered using the "SAVE" menu item BACK: Cancels the setting change and returns to the item selection column.
MEDIA	To select the type of paper	ME:HG: Uses UPP-210SE. [ME:HD]: Uses UPP-210HD. ME:BL: Uses UPT-210BL. However, the UP-970AD model cannot use UPT-210BL. BACK: Cancels the setting change and returns to the item selection column.

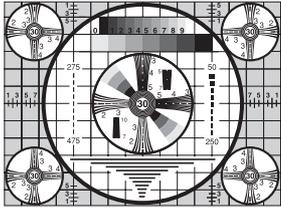
Item	Function	Settings
MEMRY	To select the memory mode	ME:FLD: When printing fast-moving images (such as a ball being thrown), the printout may be blue. If this happens, select this setting. [ME:FRM]: Normally select this setting. BACK: Cancels the setting change and returns to the item selection column.
MENU	To print the menu settings currently selected	[ME:OK]: Prints the menu list currently set. BACK: Cancels printing and goes back to its item column.
MIROR	To print mirror images.	MI:ON: Prints mirror images. [MI:OFF]: Prints normal images not mirror images. BACK: Cancels the setting change and returns to the item selection column.
MULTI	To specify the number of images to be printed on one sheet of the printout	MU:6: Prints six images on one sheet of the printout (six reduced images). MU:4: Prints four images on one sheet of the printout (four reduced images). MU:2: Prints two images on one sheet of the printout (two reduced images). [MU:1]: Prints one full-size image. BACK: Cancels the setting change and returns to the item selection column.
PAGE	Each time you press the PRINT button, the image is stored in memory. Up to 6 images can be stored. You can select the desired image from 6 kinds of images stored in memory and make a printout.	[PG:1] to PG:6: Prints by selecting the desired ONE image from among images 1 to 6 and pressing the COPY button. BACK: Cancels the setting change and returns to the item selection column.
A.PRNT	To turn on and off automatic printing in multi-picture mode.	A.P:ON: Automatically prints when all the images of the selected multi-picture mode are captured without the need to press the COPY button. [A.P:OFF]: Prints images when the COPY button is pressed. BACK: Cancels the setting change and returns to the item selection column.

Item	Function	Settings
QTY	To set the print quantity	[QT:1] to QT:10: Prints from one to ten copies of the same image. BACK: Cancels the setting change and returns to the item selection column.
SAVE	To register up to three kinds of settings	SA:3: Registers the menu settings as No.3. SA:2: Registers the menu settings as No.2. [SA:1]: Registers the menu settings as No.1. BACK: Cancels the setting change and returns to the item selection column.
SCAN (for the UP-970AD only)	To set the size of the captured image.	SC:WD2: Maximum size [SC:WD1]: Medium size SC:NOR: Minimum size BACK: Cancels the setting change and returns to the item selection column.
SFT.H (UP-990AD)	To specify the horizontal position of the image to be printed.	[S.H:192]: Moves the print area horizontally relative to the captured image. The numeric value displayed by turning the jog dial depends on the "SIZE.H" setting and the signal system. BACK: Cancels the setting change and returns to the item selection column.
SFT.H (UP-970AD)	To specify the position in the horizontal direction of the image to be printed.	[H:0]: Adjusts the horizontal position. The numeric value displayed by turning the jog dial depends on the signal system of the image to be captured and the range setting of images captured with "SCAN". BACK: Cancels the setting change and returns to the item selection column.
SFT.V (UP-990AD)	To specify the vertical position of the image to be printed.	[S.V:20]: NTSC signal input. [S.V:28]: PAL signal input. Adjusts the vertical position of the printing area relative to the captured image. The numeric value displayed by turning the jog dial depends on the "SIZE.V" setting and the signal system. BACK: Cancels the setting change and returns to the item selection column.

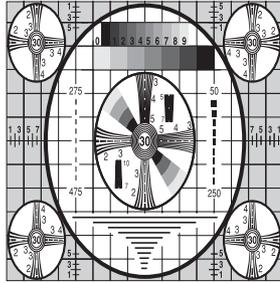
Item	Function	Settings
SFT.V (UP-970AD)	To specify the position in the vertical direction of the image to be printed.	[V:0]: Adjusts the vertical position. The numeric value displayed by turning the jog dial depends on the signal system of the image to be captured and the range setting of images captured with "SCAN". BACK: Cancels the setting change and returns to the item selection column.
SHARP	To adjust the sharpness of the printout	[SH:0] to SH:14: You can set the sharpness to any of 15 steps from 0 to 14. A higher number indicates greater sharpness. A setting of "0" indicates that the function is off, which is also the default value. BACK: Cancels the setting change and returns to the item selection column.
SIDE ^{c)}	To select the direction in which the image is to be printed	S:SIDE: Prints the image rotated by 90 degrees counterclockwise. [S:STD]: Prints the image in the same direction as that displayed on the monitor. BACK: Cancels the setting change and returns to the item selection column.
SIZE.H (for the UP-990AD only)	To set the number of dots in the horizontal direction of the printed image.	[H:1202]: NTSC signal input. [H:1202]: PAL signal input. Changing the value increases or decreases the number of horizontal dots to the right of the fixed left edge of the image. BACK: Cancels the setting change and returns to the item selection column.
SIZE.V (for the UP-990AD only)	To set the number of dots in the vertical direction of the printed image.	[V:480]: NTSC signal input. [V:574]: PAL signal input. Adjusts the vertical position of the bottom edge with respect to the fixed top edge of the image. BACK: Cancels the setting change and returns to the item selection column.
TRAP	To select the input signal to be printed	TR:ON: Prints the color signal. [TR:OFF]: Prints the black and white signal. BACK: Cancels the setting change and returns to the item selection column.

Item	Function	Settings
VIDEO	To select the video signal output from the VIDEO OUT connector on the rear panel	VI:EE: Outputs the signal after it is processed by the printer. [VI:THR]: Outputs the signal directly without processing. BACK: Cancels the setting change and returns to the item selection column.
BACK	To exit menu mode	Select this item and press the jog dial to exit the menu mode.

a) The aspect ratio is as follows.

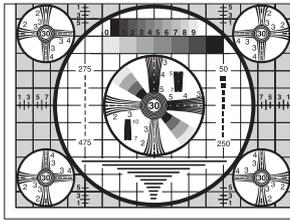


When AS:4:3 is selected

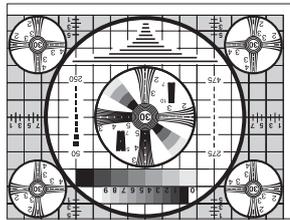


When AS:1:1 is selected

b) The printing direction is as follows.



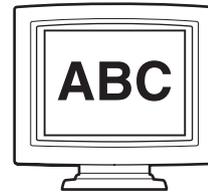
When DI:NOR is selected



When DI:REV is selected

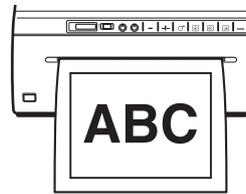
c) The print direction of the images printed is as follows.

Image displayed on the monitor

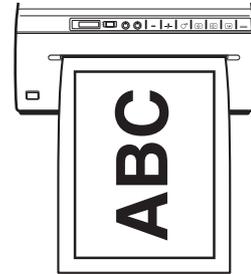


Printouts

When S:STD is selected.



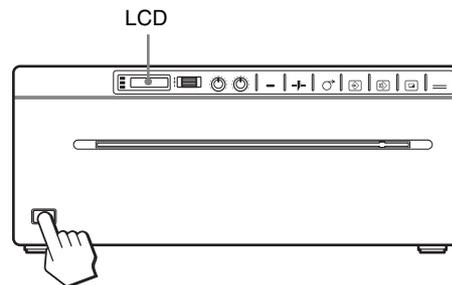
When S:SIDE is selected



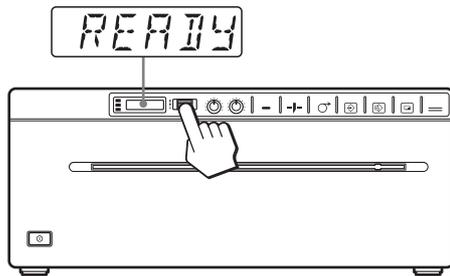
Basic Menu Operations

This section describes the basic menu operation which are common to each menu, taking “How to set the printing direction” as an example.

- 1 Press the power ON/OFF switch to ON to turn the unit on.
The back light on the LCD lights in green.

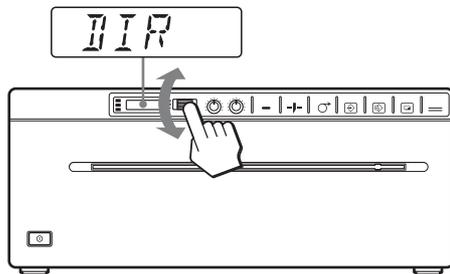


- 2** Confirm that “READY” is displayed on the LCD, and press the jog dial.

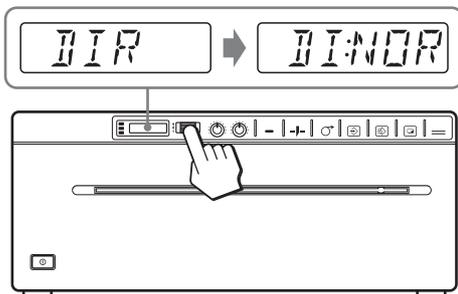


The unit enters the menu mode.
When you perform a menu operation for the first time after you purchase the unit, the top item of the “AGC” menu is displayed.
If you have performed a menu operation already, the item that you set last is displayed.

- 3** Display “DIR” by turning the jog dial up or down.

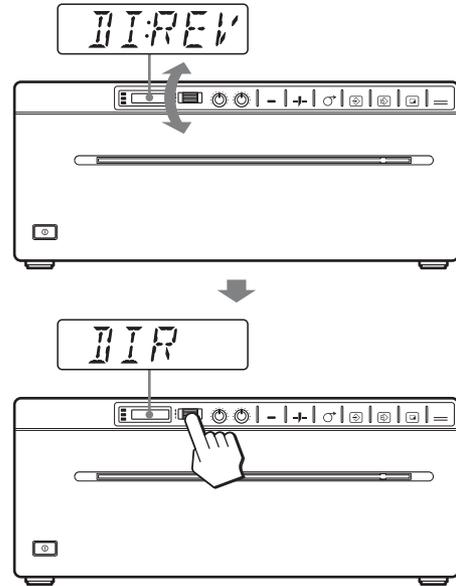


- 4** Press the jog dial.



The unit enters the mode in which you can select the printing direction.
“DI:NOR,” which is the factory setting, is displayed on the LCD. “DI:NOR” is the currently selected setting.
In this menu operation, you will change the setting to “DI:REV.”

- 5** Display “DI:REV” in the LCD by turning the jog dial up or down, and then press the jog dial.



“DI:REV” is registered as the printing direction.
“DIR” reappears on the LCD.

Note

If about 20 seconds elapse without making any menu operation after you have displayed the menu item or setting, the display returns to “READY” on the LCD and the unit exits the menu mode. In such a case, the setting of “DIR” is not changed.

To cancel the setting

- 1 Display “BACK” by turning the jog dial in step 5.
- 2 Press the jog dial.
The display on the LCD returns to “DIR.”

To continue menu operations

Make settings by repeating steps 3 to 5.

To end the menu operation

- 1 Display “BACK” by turning the jog dial after performing the operation of step 5.
- 2 Press the jog dial.
The unit exits the menu mode.

Menu lock function

If the message “LOCK” is displayed and you hear the alarm sound when you press the jog dial, the jog dial is disabled because the menu operation function is locked. If you want to perform a menu operation, contact the nearest authorized dealer.

Registering Menu Settings

You can store up to three sets of settings made using the menu, and you can load the desired setting when needed. The unit retains these settings even if you turn off the power.

Note

When you use the unit for the first time after you purchase it, factory settings are registered in all three of the stored selections.

Registering new settings

- 1 Make all of the required settings.
- 2 Display “SAVE” by turning the jog dial, and then press the jog dial.
- 3 Display the desired number by turning the jog dial, and then press the jog dial, again.
The settings made in step 1 are registered in the number selected in step 3.

Loading the desired settings

You can load the desired settings and make printouts with the loaded settings.

- 1 Confirm that “READY” is displayed on the LCD, and press the jog dial.
- 2 Display “LOAD” by turning the jog dial, and then press the jog dial again.
- 3 Display the number corresponding to the desired settings, and then press the jog dial.
Settings corresponding to the number selected in step 3 are loaded.

When you change the loaded settings

The unit operates according to the changed settings. In this case, the unit operates according to these settings until you load another set of settings, even if you turn off the unit. When you load another group of settings, the settings loaded previously are cleared.

To retain previously loaded settings

Example: Settings registered as “SA:1” are loaded and settings are to be changed. To retain the original settings of “SA:1” and to register the new settings as “SA:2,” proceed as follows.

- 1 Load the settings of “LO:1” following the procedure for loading the desired settings.
- 2 Change the loaded settings as required.
- 3 Select “SA:2” following procedure for registering the settings.
- 4 Press the jog dial.
The settings, changed in step 2, are registered as “SA:2” (No.2).

Printing the Menu List

You can make a printout of the current menu settings.

- 1 Press the jog dial.
The menu item you changed last is displayed.
- 2 Display “MENU” by turning the jog dial, and then press the jog dial.
- 3 Display “ME:OK” by turning the jog dial and then press the jog dial.
The unit starts printing the current menu settings. MENU is displayed on the LCD.
- 4 Display “BACK” by turning the jog dial, and then press the jog dial.
The unit returns to the normal printing mode.

Printing

Before Starting a Print Job

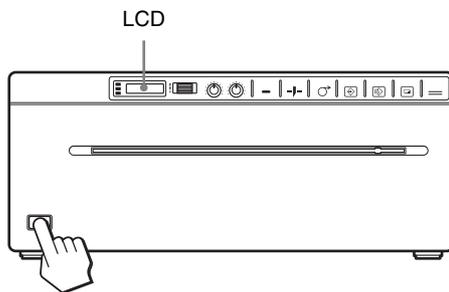
Always check the following points:

- Unit connected correctly? (page 12)
- Paper loaded correctly? (page 9)
- Menu settings and menu adjustments done correctly? (page 13)
- Video source being input?

Starting a Print Job

You can set up the printing direction, image size, all sorts of settings for printing, using the menu. This section describes operations after completing all sorts of settings using the menu.

- 1 Press the power ON/OFF switch to turn the unit on. The back light on the LCD lights in green, and “READY” is displayed on the LCD.



- 2 Start the video source. This operation is done using the controls of the video equipment which you are using as a source.
- 3 Press the PRINT button when the image you want to print is on the video monitor. The image displayed at the instant you press the PRINT button is captured into memory and is printed out immediately. Up to 6 captured images are stored in memory. When captured image exceeds 6, the oldest data is overwritten with the latest one in sequence.

When the message is displayed on the LCD

If a problem occurs, the back light on the LCD lights in amber and the error message stating the problem is displayed on the LCD.

Message	Cause and remedy
EMPTY	Paper is not loaded. Load paper.
DOOR	The paper door is open. Close the paper door.
NOINP	There is no video signal input. Input a video signal.

When the unit stops printing during printing

When printing almost black images continuously, the thermal head protection circuit may shut down the unit to prevent the thermal head from overheating. In such a case, the message “COOL” is displayed on the LCD. Leave the unit until the head cools down and this message disappears.

To cancel a print job in progress

To cancel a print job in progress, press the OPEN/CLOSE button, FEED button or CUT button.

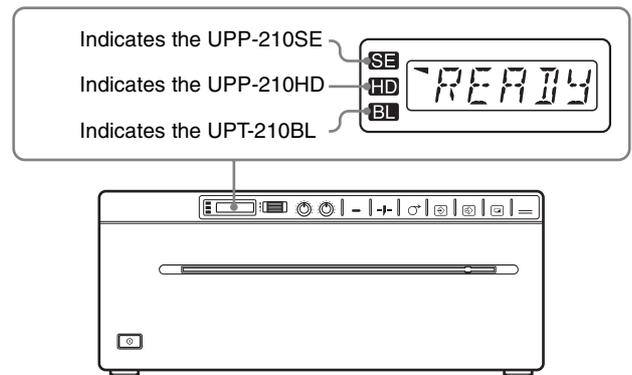
To feed paper

To feed paper, press the FEED button. The unit will continue to feed paper as long as you hold down the FEED button. Do not attempt to pull paper out of the unit with your hand.

Paper currently selected

You can confirm the paper currently selected on the LCD. The pointer points to the paper currently selected. In the following figure, the currently selected paper is the UPP-210SE paper.

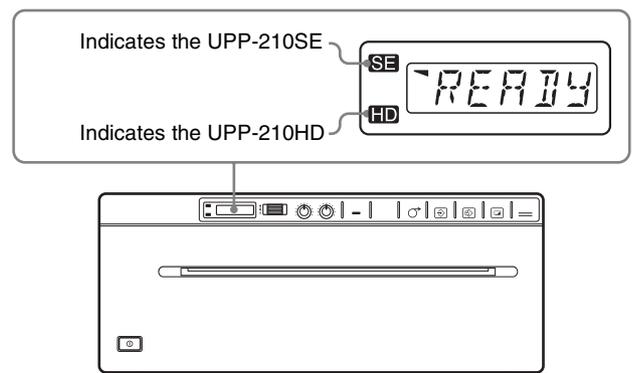
UP-990AD



Note

If “CT:ON” is selected in the “AT.CUT” menu, quickly remove the prints that have been cut. Otherwise, the cut prints may block the paper exit and cause a paper jam to occur.

UP-970AD



If the printout image is blurred

A rapidly moving image may be blurred when printed. Should this occur, make a printout with “ME:FLD” selected in the “MEMRY” menu item.

Printing images stored in memory

Each time you press the PRINT button, the image is stored in memory. After 6 images have been stored, the oldest image data is overwritten with the newest captured image in sequence. There are always 6 images stored in memory. You can load the desired one from among them and print it using the menu.

- 1 Select “PAGE” from among the menu items. For detailed information on menu operation, see “Basic Menu Operations” on page 19.
- 2 Press the jog dial. “PG:1” is displayed on the LCD, and the image printed last is displayed on the monitor.
- 3 Display the image that you want to print by turning the jog dial up or down.
- 4 Press the jog dial. The image selected in step 3 is loaded.
- 5 Press the COPY button. The image selected in step 3 is printed.

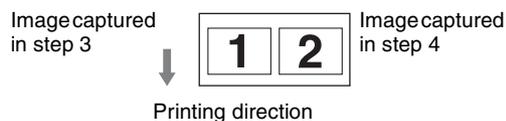
Printing two, four or six images on one sheet

Use “MULTI” item of the menu to capture and print two to six different images on one sheet.

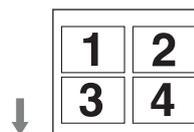
- 1 Set “MULTI” item of the menu to “MU:2” - “MU:6”, according to the number of images you want to print on one sheet.
- 2 Turn the Jog dial to display the BACK menu and press the Jog dial. The LCD display switches to the multi-picture mode.
When “MU:2” is selected:
M.2:1 2 : 1 indicates that “1” flashes.
- 3 Press the CAPTURE button in step 3 of “Starting a Print Job” in the section “Analog mode” (page 22). This captures the displayed image assigning it the flashing number. The next available number flashes in the LCD display.
When “MU:2” is selected:
M.2:1 2 : The captured image is assigned “1” and “2” starts flashing.

- 4 Press the CAPTURE button again to capture any displayed image. When the “A.PRINT” menu is ON, printing starts automatically as soon as the number of images specified by “MU:(2/4/6)” is captured. When the menu is OFF, press the COPY button to start printing.

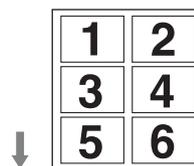
Capturing two images (“MU:2 selected in “MULTI”)



Capturing four images (“MU:4 selected in “MULTI”)



Capturing six images (“MU:6 selected in “MULTI”)



“IF:ON” selected in “INFO” menu

In multi-picture mode, if “IF:ON” is selected in the “INFO” menu, information about the last captured image is printed in the margin. Example: If “MULTI” is set to “MU:6” and six images are captured, “IMAGE:6” is printed in the margin as the information for that image.



Making Copies of the Last Printout

Press the COPY button. The unit makes a copy of the last printout. Each press of the COPY button prints the number of images set in the “QTY” menu.

Note

If you press the COPY button immediately after turning the power on, the alarm buzzer will sound as nothing is stored in memory.

To make multiple copies of the same printout

Press the COPY button as many times as necessary while copying the first printout. With each press of the COPY button, a buzzer sounds and the number of images set in the “QTY” menu is printed.

To interrupt copying

To cancel a print job in progress, press the OPEN/CLOSE button, FEED button or CUT button.

To make copies in different directions

You can copy the image stored last in a different direction. Before pressing the COPY button, select the printing direction.

To print from a remote location

If a Remote Control Unit RM-91 is connected to the REMOTE connector on the rear panel, you can make printing start at a short distance from the unit by pressing the remote switch.

Single-picture mode

When an image you want to print appears, press the remote switch.

A screenshot of that instant is printed and saved in memory. Up to six screenshots can be saved. Any new screenshots beyond six will overwrite one of the originally captured images.

Multi-picture mode

When an image you want to capture appears, press the remote switch to save a screenshot of that instant in memory.

Printing starts automatically when the number of images set in the “MULTI” menu have been captured.

Note

Even if “IN:ON” is selected in the “INTRT” menu, pressing the remote switch performs the same action as pressing the PRINT button or CAPTURE button in each mode.

Selecting the Printing Direction and Size

Use the following menu items to select printing direction and size.

- SIDE: Selects the printing direction of the image.
- SFT.H, SFT.V: Selects the horizontal or vertical printing position.
- SIZE.H, SIZE.V (for the UP-990AD only): Configures the width or height of the captured image.
- SCAN (for the UP-970AD only): Selects one of three available size settings for the captured image.

Selecting the printing direction

You can select the printing direction using the “SIDE” menu item.

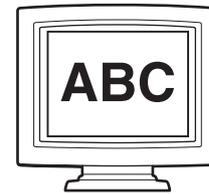
To print in the same direction as the one displayed on the video monitor

Select “S:STD” from “SIDE.”

To print the image rotated by 90 degree counterclockwise

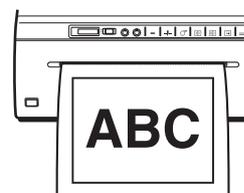
Select “S:SIDE” from “SIDE.”

Image displayed on the video monitor

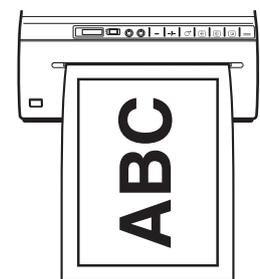


Printouts

When “S:STD” is selected



When “S:SIDE” is selected



Determining image size

(Model UP-990AD)

Change the value for the “SIZE.H” menu item to configure the width settings of the captured image, and change the value for the “SIZE.V” menu item to configure the height settings.

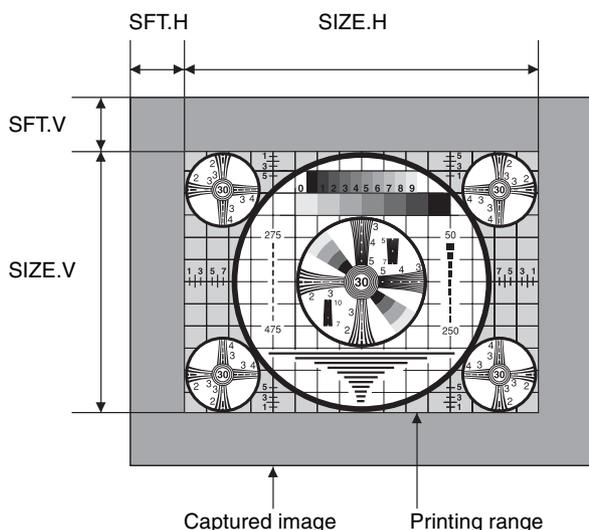
(Model UP-970AD)

Use the “SCAN” menu item to select one of three size settings for the captured image.

To set the range of the image to be printed

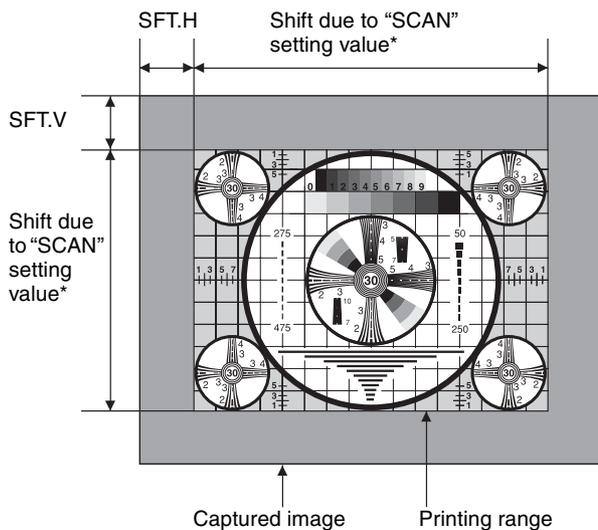
(Model UP-990AD)

Use “SFT.H” and “SFT.V” menu item to set the vertical and horizontal range of the image to be printed. A change in “SIZE.H” and “SIZE.V” values changes the upper limit of the “SFT.H” and “SFT.V” range. The approximate position of the printing range is shown on the monitor.



(Model UP-970AD)

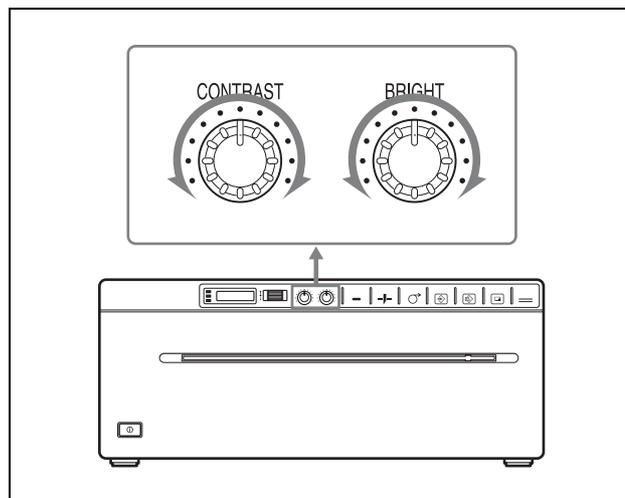
You can set the printing range vertically and horizontally using “SFT.V” and “SFT.H” menu items. Also, “0” is the default position when setting the shift with “SFT.H” and “SFT.V”. The value is negative when the default position is shifted to the left (i.e., when “SFT.V” is increased). And the value is positive when the default position is shifted to the right (i.e., when “SFT.V” is decreased). The approximate position of the printing range is shown on the monitor.



* Depending on the “SCAN” value, there are three possible printing ranges. For details, refer to “Menu List.”

Adjusting the Contrast and Brightness

You can adjust the contrast and brightness of the unit using the CONTRAST control and BRIGHT control on the front panel.



To adjust the contrast

You can adjust the contrast of printouts using the CONTRAST control.

To make the contrast stronger: Turn the CONTRAST control clockwise.

To make the contrast weaker: Turn the CONTRAST control counterclockwise.

To adjust the brightness

You can adjust the brightness of printouts using the BRIGHT control.

To make the image brighter: Turn the BRIGHT control clockwise.

To make the image darker: Turn the BRIGHT control counterclockwise.

Note

When the menu operation function is locked, CONTRAST and BRIGHT controls are also disabled in addition to the jog dial. If you want to use the CONTRAST and BRIGHT controls, contact the nearest authorized dealer.

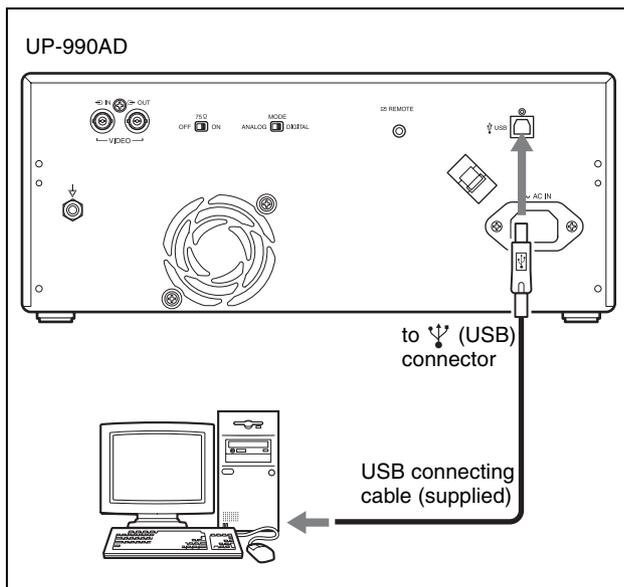
Connections

After connecting the USB connecting cable (supplied) to the unit and the computer, connect the power cord. For details about the unit connection, refer to the manuals for the computer or other peripheral devices.

Notes

- Before connecting the unit to the computer, turn off the unit, computer, monitor, and all peripheral devices connected to the computer.
- Before connecting the unit to the computer, disconnect the power cord from the unit. Connect the power cord to the unit only after connecting the unit and the computer.
- Follow the connection procedures described in the computer manual.
- Make sure that the cables are connected securely at both ends.
- After completing connections, switch to the digital mode before turning the power on.
- The printer will not print images imported via the VIDEO IN connector.
- The unit drive software provided with the unit is not suitable for using the unit connected to a network.
- Printer operation is not guaranteed when connecting to the computer using the USB cable via a hub.
- Two or more units cannot be connected to a single computer.

Connecting to the USB Connector



Installing the Printer Driver

Install the printer driver provided with the printer. For detailed instructions about how to install the unit driver, refer to the Readme.txt file included on the supplied CD-ROM disc.

Adjustments and Settings Using the Menu

You can carry out adjustments and settings to meet your requirements. Those settings and adjustments are retained even if the unit is turned off.

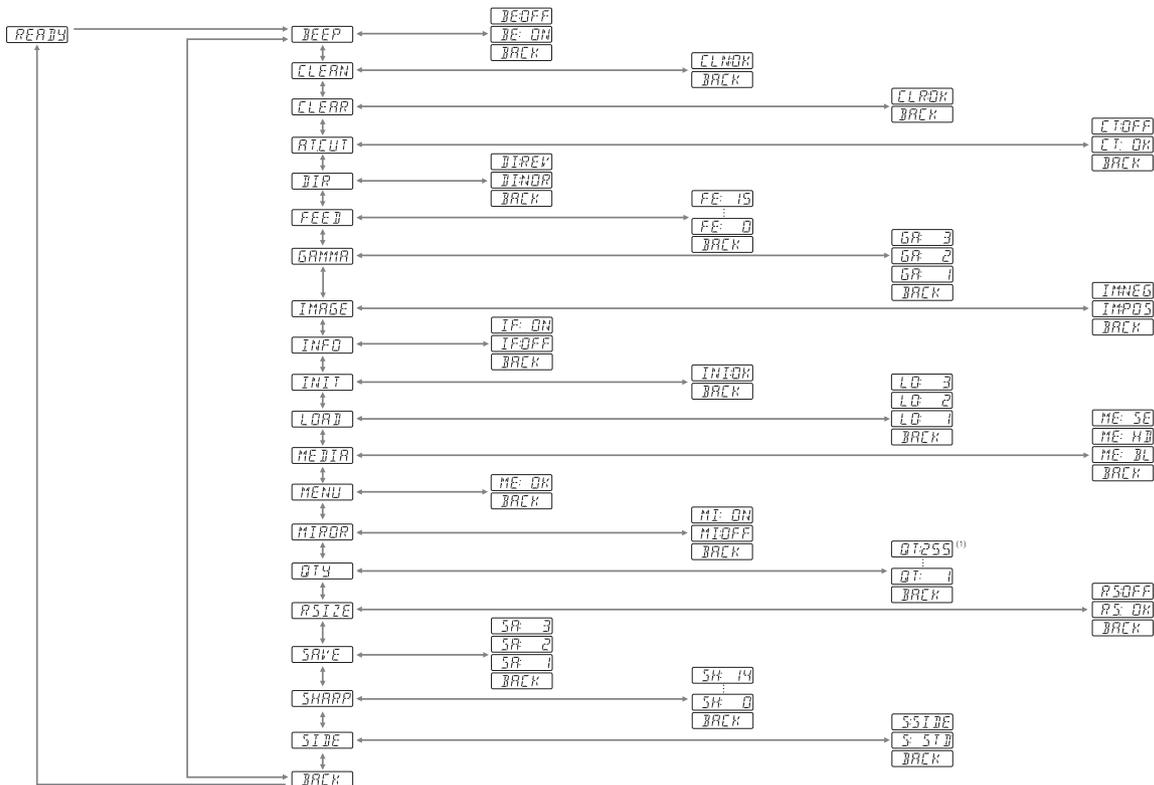
You can set up the unit according to its intended purpose, connected equipments or your individual preferences.

You can store up to three settings as a set of user settings.

Menu Flow

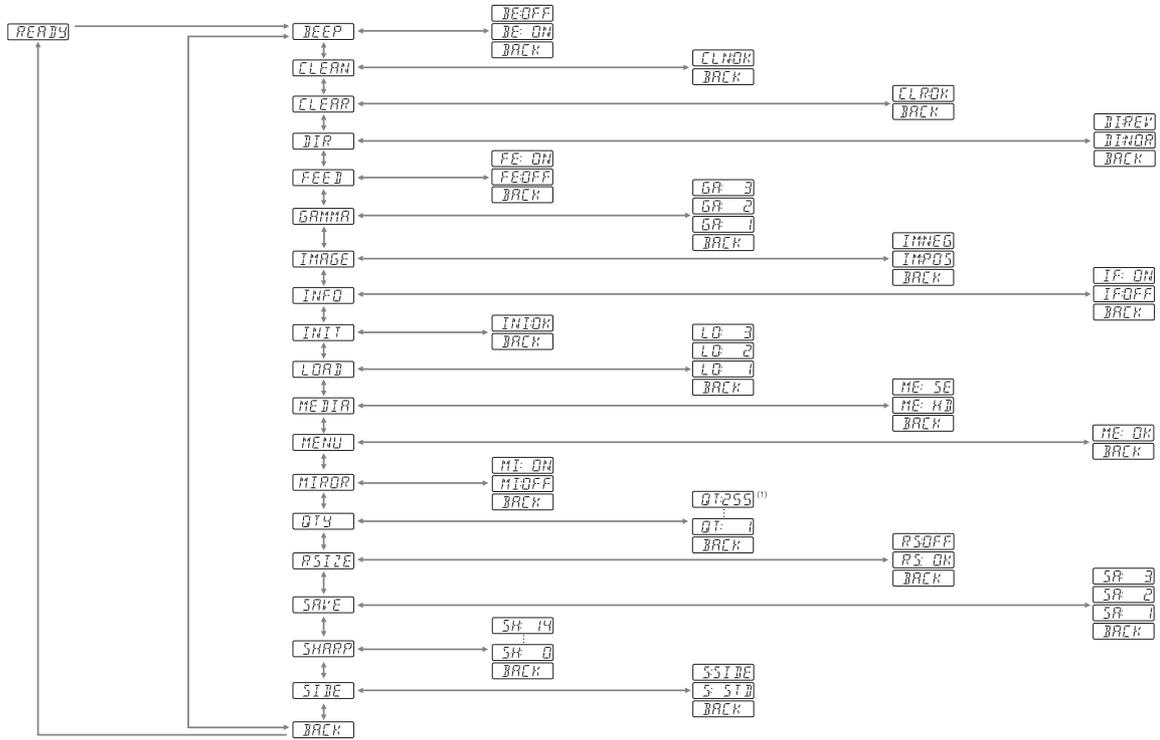
The contents displayed on the LCD changes in sequence as you turn the jog dial as shown in the following menu flow chart, and you can make the settings for each menu item.

UP-990AD Menu Flow



(1): The values you can set with the Jog dial in the analog mode are different from those in the digital mode.

UP-970AD Menu Flow



(1): The values you can set with the Jog dial in the analog mode are different from those in the digital mode.

Digital Mode

Menu List

This section describes the menus displayed as you turn the jog dial. The setting surrounded by indicates the factory setting.

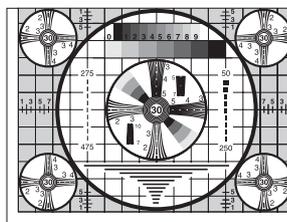
Item	Function	Settings
BEEP	To turn operation tones ON and OFF. Error tones sound regardless of setting.	BE: OFF: The operation tone does not sound. [BE: ON]: The operation sounds. BACK: Cancels the setting change and returns to the item selection column.
CLEAN	To start head cleaning	[CLN: OK]: Starts the head cleaning. Be sure to use the supplied cleaning sheet. BACK: Cancels the head cleaning and returns to the item selection column.
CLEAR	To delete images stored in memory.	[CLR: OK]: Deletes all images stored in memory. BACK: Cancels CLEAR and returns to the item selection column.
AT.CUT (UP-990AD only function)	To turn on and off automatic cutting of completed prints.	CT:OFF: Cuts the paper when the CUT button is pressed. [CT:ON]: Cuts the paper automatically. BACK: Cancels the setting change and returns to the item selection column.
DIR ^{a)}	To select whether the top or bottom of the screen is to be printed first	DI: REV: Starts to print in the reverse direction (from the top of the screen). [DI: NOR]: Starts to print in the normal direction (from the bottom of the screen). BACK: Cancels the setting change and returns to the item selection column.
FEED (UP-990AD)	To set the top and bottom margin of a print.	[FE: 0] to FE:15: Sets the margin to one of 16 steps from 0 to 15. An increase of one step increases the top and bottom margin by 5 mm. The top and bottom margin can be increased to 75 mm. The "0" setting is the default value, which still provides a narrow margin between two images. BACK: Cancels the setting change and returns to the item selection column.

Item	Function	Settings
FEED (UP-970AD)	To select the paper feed method used after printing.	[FE: ON]: Increases the margin between prints. FE:OFF: Sets when reducing the margin or when printing multiple images on the same sheet. This reduces the margin between images allowing you to print more images per roll. However, with this setting, the FEED button must be pressed before cutting the paper. BACK: Cancels the setting change and returns to the item selection column.
GAMMA	To select the tone of the printouts (density gradation)	GA:3: TONE 3 Hard gradation GA:2: TONE 2 Soft [GA:1]: TONE 1 Standard gradation BACK: Cancels the setting change and returns to the item selection column.
IMAGE	To set the printout to either positive printout or negative printout	IM:NEG: Makes negative printouts. [IM:POS]: Makes normal printouts. BACK: Cancels the setting change and returns to the item selection column.
INFO	To select whether or not the print conditions (such as contrast, bright, gammas and sharpness information) are printed under the image	IF:ON: Prints the information. [IF:OFF]: Does not print the information. BACK: Cancels the setting change and returns to the item selection column.
INIT	To return (initialize) all menu items to their factory defaults.	[INI:OK]: Returns all settings to their factory defaults. BACK: Cancels initialization and returns to the item selection column.
LOAD	To load the registered settings	LO:3: Loads the "SA:3" settings registered using the "SAVE" menu item. LO:2: Loads the "SA:2" settings registered using the "SAVE" menu item. [LO:1]: Loads the "SA:1" settings registered using the "SAVE" menu item BACK: Cancels the setting change and returns to the item selection column.

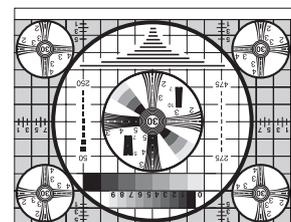
Item	Function	Settings
MEDIA	To select the type of paper	ME:HG: Uses UPP-210SE. [ME:HD]: Uses UPP-210HD. ME:BL: Uses UPT-210BL. However, the UP-970AD model cannot use UPT-210BL. BACK: Cancels the setting change and returns to the item selection column.
MENU	To print the menu settings currently selected	[ME:OK]: Prints the menu list currently set. BACK: Cancels printing and goes back to its item column.
MIRROR	To print mirror images.	MI:ON: Prints mirror images. [MI:OFF]: Prints normal images not mirror images. BACK: Cancels the setting change and returns to the item selection column.
QTY	To set the print quantity	[QT:1] to QT:255: Prints from 1 to 255 copies of the same image. BACK: Cancels the setting change and returns to the item selection column.
RSIZE	To adjust the size of the image to the size of the printing paper.	[RS:OFF]: prints the image as it appears on the display. RS:ON: Magnifies the image to the size of the printing paper. BACK: Cancels the setting change and returns to the item selection column.
SAVE	To register up to three kinds of settings	SA:3: Registers the menu settings as No.3. SA:2: Registers the menu settings as No.2. [SA:1]: Registers the menu settings as No.1. BACK: Cancels the setting change and returns to the item selection column.
SHARP	To adjust the sharpness of the printout	[SH:0] to SH:14: You can set the sharpness to any of 15 steps from 0 to 14. A higher number indicates greater sharpness. A setting of "0" indicates that the function is off, which is also the default value. BACK: Cancels the setting change and returns to the item selection column.

Item	Function	Settings
SIDE ^{b)}	To select the direction in which the image is to be printed	S:SIDE: Prints the image rotated by 90 degrees counterclockwise. [S:STD]: Prints the image in the same direction as that displayed on the monitor. BACK: Cancels the setting change and returns to the item selection column.
BACK	To exit menu mode	Select this item and press the jog dial to exit the menu mode.

a) The printing direction is as follows.



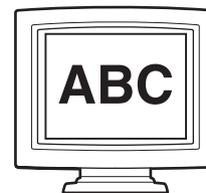
When DI:NOR is selected



When DI:REV is selected

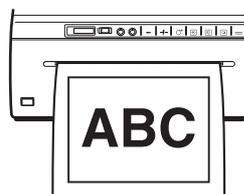
b) The print direction of the images printed is as follows.

Image displayed on the monitor

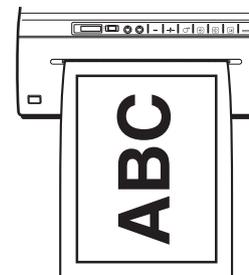


Printouts

When S:STD is selected.



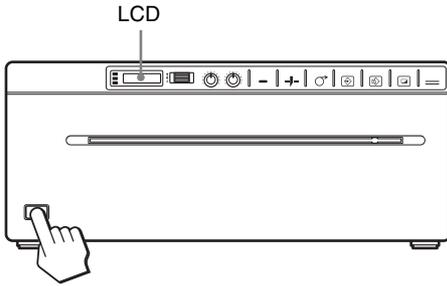
When S:SIDE is selected



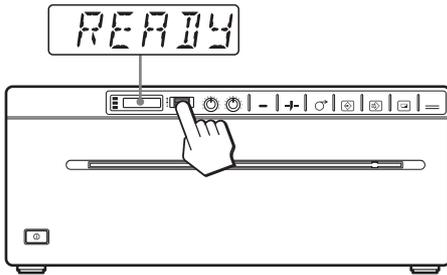
Basic Menu Operations

This section describes the basic menu operation which are common to each menu, taking “How to set the printing direction” as an example.

- 1 Press the power ON/OFF switch to ON to turn the unit on.
The back light on the LCD lights in green.

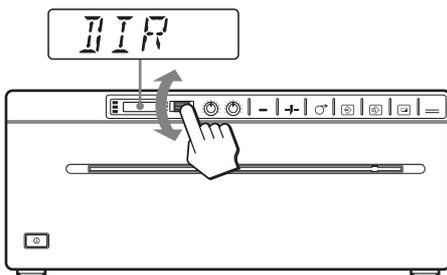


- 2 Confirm that “READY” is displayed on the LCD, and press the jog dial.

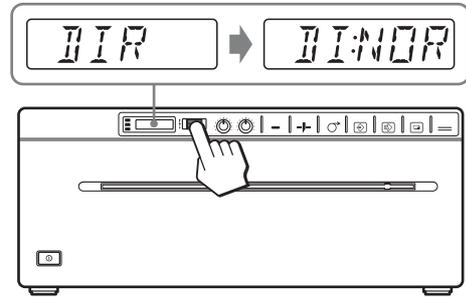


The unit enters the menu mode.
When you perform a menu operation for the first time after you purchase the unit, the top item of the “BEEP” menu is displayed.
If you have performed a menu operation already, the item that you set last is displayed.

- 3 Display “DIR” by turning the jog dial up or down.

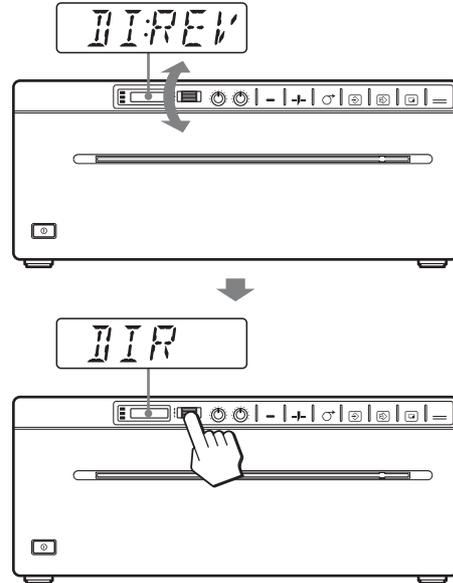


- 4 Press the jog dial.



The unit enters the mode in which you can select the printing direction.
“DI:NOR,” which is the factory setting, is displayed on the LCD. “DI:NOR” is the currently selected setting.
In this menu operation, you will change the setting to “DI:REV.”

- 5 Display “DI:REV” in the LCD by turning the jog dial up or down, and then press the jog dial.



“DI:REV” is registered as the printing direction.
“DIR” reappears on the LCD.

Note

If about 20 seconds elapse without making any menu operation after you have displayed the menu item or setting, the display returns to “READY” on the LCD and the unit exits the menu mode. In such a case, the setting of “DIR” is not changed.

To cancel the setting

- 1 Display “BACK” by turning the jog dial in step 5.
- 2 Press the jog dial.
The display on the LCD returns to “DIR.”

To continue menu operations

Make settings by repeating steps 3 to 5.

To end the menu operation

- 1** Display “BACK” by turning the jog dial after performing the operation of step 5.
- 2** Press the jog dial.
The unit exits the menu mode.

Menu lock function

If the message “LOCK” is displayed and you hear the alarm sound when you press the jog dial, the jog dial is disabled because the menu operation function is locked. If you want to perform a menu operation, contact the nearest authorized dealer.

Registering Menu Settings

You can store up to three sets of settings made using the menu, and you can load the desired setting when needed. The unit retains these settings even if you turn off the power.

Note

When you use the unit for the first time after you purchase it, factory settings are registered in all three of the stored selections.

Registering new settings

- 1** Make all of the required settings.
- 2** Display “SAVE” by turning the jog dial, and then press the jog dial.
- 3** Display the desired number by turning the jog dial, and then press the jog dial, again.
The settings made in step 1 are registered in the number selected in step 3.

Loading the desired settings

You can load the desired settings and make printouts with the loaded settings.

- 1** Confirm that “READY” is displayed on the LCD, and press the jog dial.
- 2** Display “LOAD” by turning the jog dial, and then press the jog dial again.

- 3** Display the number corresponding to the desired settings, and then press the jog dial.
Settings corresponding to the number selected in step 3 are loaded.

When you change the loaded settings

The unit operates according to the changed settings. In this case, the unit operates according to these settings until you load another set of settings, even if you turn off the unit. When you load another group of settings, the settings loaded previously are cleared.

To retain previously loaded settings

Example: Settings registered as “SA:1” are loaded and settings are to be changed. To retain the original settings of “SA:1” and to register the new settings as “SA:2,” proceed as follows.

- 1** Load the settings of “LO:1” following the procedure for loading the desired settings.
- 2** Change the loaded settings as required.
- 3** Select “SA:2” following procedure for registering the settings.
- 4** Press the jog dial.
The settings, changed in step 2, are registered as “SA:2” (No.2).

Printing the Menu List

You can make a printout of the current menu settings.

- 1** Press the jog dial.
The menu item you changed last is displayed.
- 2** Display “MENU” by turning the jog dial, and then press the jog dial.
- 3** Display “ME:OK” by turning the jog dial and then press the jog dial.
The unit starts printing the current menu settings. MENU is displayed on the LCD.
- 4** Display “BACK” by turning the jog dial, and then press the jog dial.
The unit returns to the normal printing mode.

Printing

Before Starting a Print Job

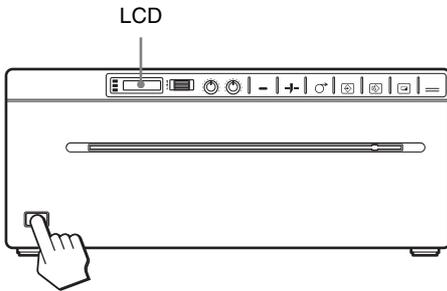
Always check the following points:

- Unit connected correctly? (page 26)
- Paper loaded correctly? (page 9)
- Menu settings and menu adjustments done correctly? (page 26)

Starting a Print Job

You can set up the printing direction, image size, all sorts of settings for printing, using the menu. This section describes operations after completing all sorts of settings using the menu.

- 1 Press the power ON/OFF switch to turn the unit on. The back light on the LCD lights in green, and “READY” is displayed on the LCD.



- 2 Print the image using the application software.

When the message is displayed on the LCD

If a problem occurs, the back light on the LCD lights in amber and the error message stating the problem is displayed on the LCD.

Message	Cause and remedy
EMPTY	Paper is not loaded. Load paper.
DOOR	The paper door is open. Close the paper door.

When the unit stops printing during printing

When printing almost black images continuously, the thermal head protection circuit may shut down the unit to prevent the thermal head from overheating. In such a case, the message “COOL” is displayed on the LCD. Leave the unit until the head cools down and this message disappears.

To cancel a print job in progress

To cancel a print job in progress, press the OPEN/CLOSE button, FEED button or CUT button.

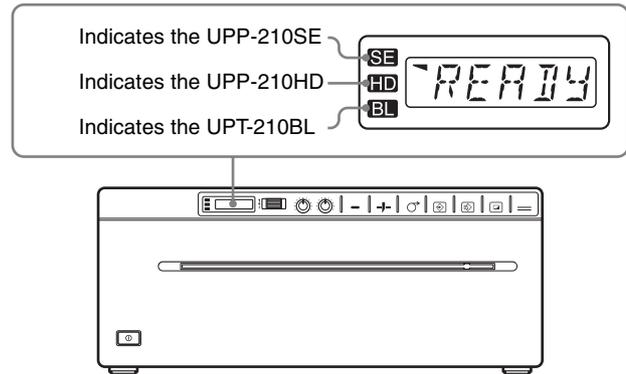
To feed paper

To feed paper, press the FEED button. The unit will continue to feed paper as long as you hold down the FEED button. Do not attempt to pull paper out of the unit with your hand.

Paper currently selected

You can confirm the paper currently selected on the LCD. The pointer points to the paper currently selected. In the following figure, the currently selected paper is the UPP-210SE paper.

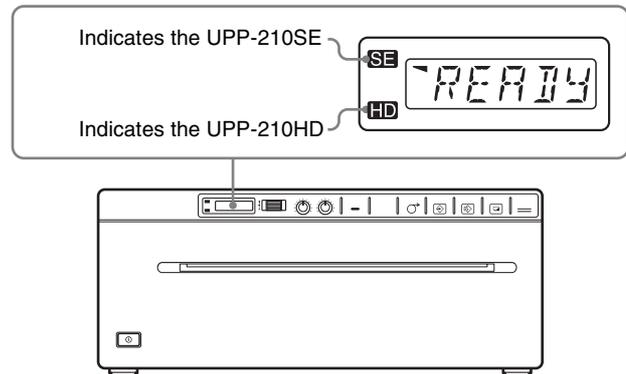
UP-990AD



Note

If “CT:ON” is selected in the “AT.CUT” menu, quickly remove the prints that have been cut. Otherwise, the cut prints may block the paper exit and cause a paper jam to occur.

UP-970AD



Making Copies of the Last Printout

Press the COPY button. The unit makes a copy of the last printout. Each press of the COPY button prints the number of images set in the “QTY” menu.

Note

If you press the COPY button immediately after turning the power on, the alarm buzzer will sound as nothing is stored in memory.

To make multiple copies of the same printout

Press the COPY button as many times as necessary while copying the first printout. With each press of the COPY button, a buzzer sounds and the number of images set in the “QTY” menu is printed.

To interrupt copying

To cancel a print job in progress, press the OPEN/CLOSE button, FEED button or CUT button.

To make copies in different directions

You can copy the image stored last in a different direction. Before pressing the COPY button, select the printing direction.

Selecting the printing direction

You can select the printing direction using the “SIDE” menu item.

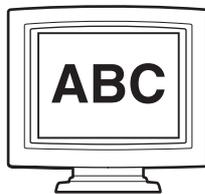
To print in the same direction as the one displayed on the video monitor

Select “S:STD” from “SIDE.”

To print the image rotated by 90 degree counterclockwise

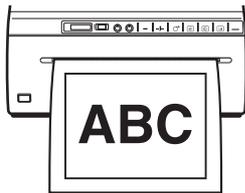
Select “S:SIDE” from “SIDE.”

Image displayed on the video monitor

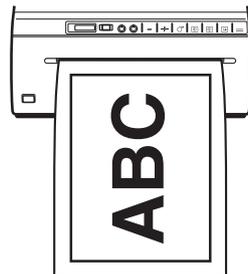


Printouts

When “S:STD” is selected



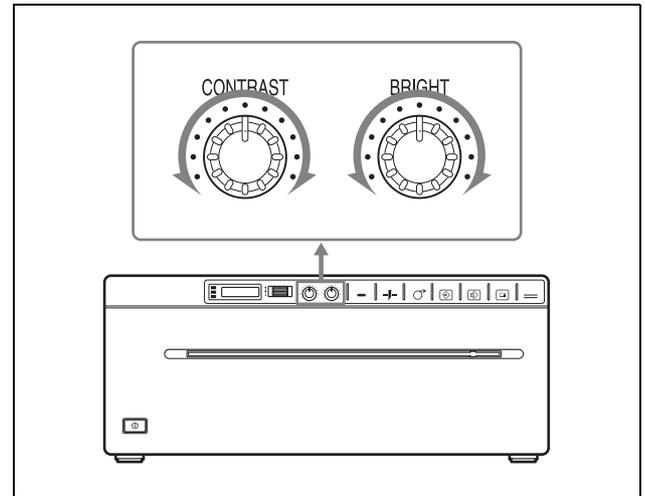
When “S:SIDE” is selected

**To print an enlarged copy of the captured image**

Set the “RSIZE” menu item to on to magnify the captured image to the size of the selected printing paper size.

Adjusting the Contrast and Brightness

You can adjust the contrast and brightness of the unit using the CONTRAST control and BRIGHT control on the front panel.

**To adjust the contrast**

You can adjust the contrast of printouts using the CONTRAST control.

To make the contrast stronger: Turn the CONTRAST control clockwise.

To make the contrast weaker: Turn the CONTRAST control counterclockwise.

To adjust the brightness

You can adjust the brightness of printouts using the BRIGHT control.

To make the image brighter: Turn the BRIGHT control clockwise.

To make the image darker: Turn the BRIGHT control counterclockwise.

Note

When the menu operation function is locked, CONTRAST and BRIGHT controls are also disabled in addition to the jog dial. If you want to use the CONTRAST and BRIGHT controls, contact the nearest authorized dealer.

Precautions

On Safety

- Check the operating voltage before operation. Operate the unit only with a power source specified in “Specifications”.
- Stop operation immediately if any liquid or solid object falls into the cabinet. Unplug the unit and have it checked by qualified personnel.
- Unplug the unit from the wall outlet if you will not be using it for a long time. Disconnect the power cord by grasping the plug. Never pull the cord itself.
- Do not disassemble the cabinet. Refer servicing to qualified personnel only.
- Connect the power plug of the unit to a wall outlet with a protective earth terminal. The safety earth should be properly established.

Caution on the paper cutter

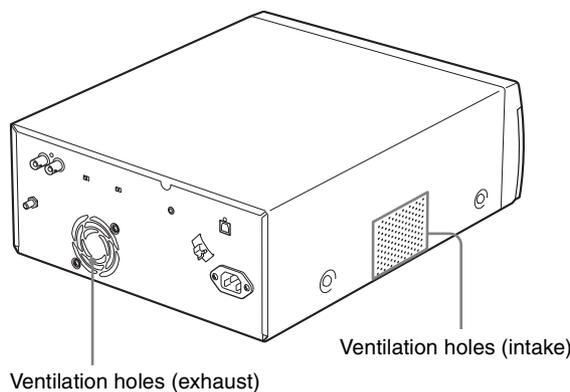
A paper cutter is mounted with the UP-970AD. When loading a paper or cleaning the UP-970AD, be careful not to touch the paper cutter. Touching the paper cutter may cause injury.

On the Printer Carriage

Do not carry or move the unit when the paper roll is placed in the unit. Doing so may cause a malfunction.

On Installation

- Place the unit on a level and stable surface. If you use the unit with placed on an uneven surface, malfunction of the unit is likely to occur.
- Do not install the unit near heat sources. Avoid locations near radiators or air ducts, or places subject to direct sunlight or excessive dust, humidity, mechanical shock or vibration.
- Provide adequate air circulation to prevent heat build-up. Do not place the unit on surfaces such as rugs, blankets, etc., or near materials such as curtains and draperies.
- To prevent internal heat built-up, leave enough room around the printer for air to circulate through the ventilation holes (intake) on the left hand side and the ventilation holes (exhaust) on the rear of the cabinet.



- If the unit is subjected to wide and sudden changes in temperature, such as when it is moved from a cold room to a warm room or when it is left in a room with a heater that tends to produce large amounts of moisture, condensation may form inside the unit. In such cases the unit will probably not work properly, and may even develop a fault if you persist in using it. If moisture or condensation forms, turn off the power and allow the unit to stand for at least one hour.

Maintenance

Cleaning the Cabinet

Use a wrung out damp cloth, or a damp cloth soaked in water and a mild detergent, to clean the cabinet surface. To avoid damaging the cabinet of the unit, never use alcohol, thinner, or any other type of organic solvent, or any type of abrasive cleaner, to clean the cabinet.

Cleaning the Thermal Head

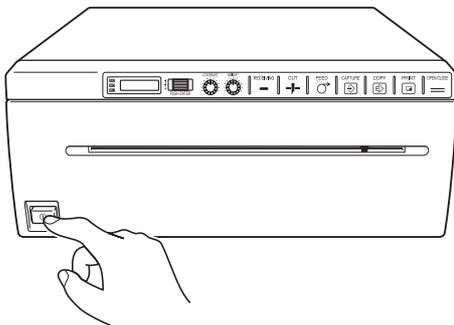
If the printout is dirty or white stripes appear on the printouts, clean the thermal head using the cleaning sheet supplied.

Carry out the head cleaning operation using the menu.

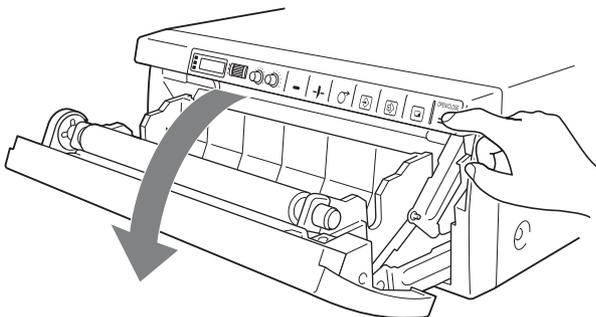
Note

A paper cutter is mounted with the UP-970AD. When cleaning the thermal head, be careful not to touch the paper cutter. Touching the paper cutter may cause injury.

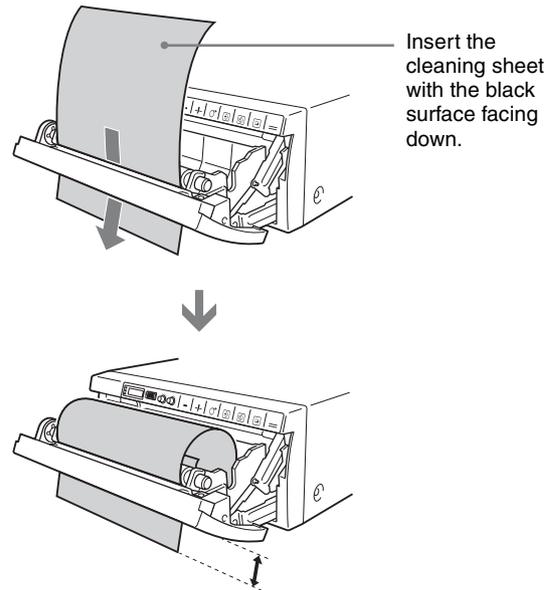
- 1 Press the power ON/OFF switch to ON to turn the unit on.



- 2 Press the OPEN/CLOSE button to open the paper door.



- 3 Insert the supplied cleaning sheet, with the black surface facing down, into the groove of the paper tray so that a small portion of the front edge of the sheet sticks out of the paper exit.



- 4 Press the OPEN/CLOSE button to close the paper door.
- 5 Press the jog dial. The menu item changed last is displayed.
- 6 Display "CLEAN" by turning the jog dial, and then press the jog dial.
- 7 Confirm that "CLN:OK" is displayed, and then press the jog dial. The unit starts cleaning the thermal head. "CLEAN" is displayed on the LCD. When the cleaning sheet stops and the alarm sounds, the cleaning is completed.
- 8 Press the OPEN/CLOSE button to open the paper door and remove the cleaning sheet.
- 9 Press the OPEN/CLOSE button to close the paper door.

Note

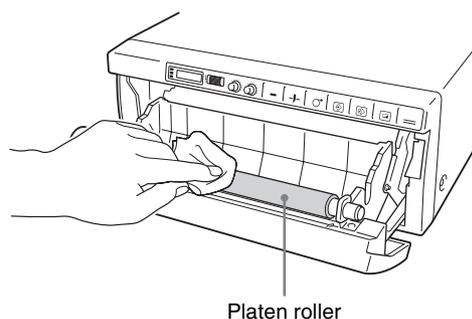
Clean the thermal head only when necessary. If you clean the thermal head too frequently, it may cause a malfunction.

Cleaning the Platen Roller

If the paper cannot be ejected smoothly after printing, the platen roller may be dirty.

In such a case, clean the platen roller with a soft cloth moistened with a damp clothe soaked in water and a mild detergent.

- 1 Press the power ON/OFF switch to ON to turn the unit on.
- 2 Press the OPEN/CLOSE button to open the paper door.
- 3 Clean the platen roller gently with a damp clothe soaked in water and a mild detergent.



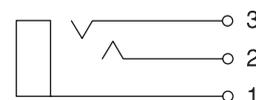
Notes

- After the surface of the platen roller wiped has been dried completely, turn the platen roller to clean another portion.
 - Turn the platen roller with hands.
 - The UP-970AD is provided with a paper cutter. Take proper care to avoid cutting yourself.
- 4 Press the OPEN/CLOSE button to close the paper door.

Specifications

UP-990AD

Power requirement	100 to 240 V AC, 50/60 Hz
Input current	2.4 A to 1.3 A max. at 25 °C
Operating temperature	5 °C to 35 °C (41 °F to 95 °F)
Operating humidity	20 % to 80 %
Operating pressure	700 hPa to 1,060 hPa
Storage and transport temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Storage and transport humidity	20 % to 80 %
Storage and transport pressure	700 hPa to 1,060 hPa
Dimensions	316 × 132.5 × 305 mm (w/h/d) (12 1/2 × 5/ 1/4 × 12 1/8 inches)
Mass	8 kg (17 lb 10 oz) (printer only)
Thermal head	Thin-film thermal head, 2,560 dots
Gradation	256-level gradation (8-bit)
Resolution	EIA: 1,280 × 508 dots CCIR: 1,280 × 612 dots
Picture size	When "S:STD" is selected from "SIDE" EIA: 188 × 143 mm CCIR: 188 × 140 mm When "S:SIDE" is selected from "SIDE" EIA: 249 × 190 mm CCIR: 252 × 188 mm
Printing speed	About 8 sec./image (at standard setting)
Picture memory	Analog mode: 6 frames (800 k × 8 bits per frame) Digital mode: 3,414 × 2,560 dots max.
Input connector	VIDEO IN (BNC type) EIA or CCIR composite video signals 1.0 Vp-p, 75 ohms/high-impedance (EIA/CCIR automatically discriminated)
Output connector	VIDEO OUT (BNC type) EIA or CCIR composite video signals 1.0 Vp-p, 75 ohm loop-through/EE switchable
REMOTE connector	(stereo mini jack)





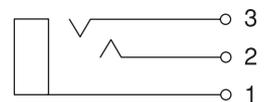
- 1 GND
- 2 PRINT SIGNAL (TTL)
Input of LOW pulse over 100 msec. initiates print.
- 3 PRINT BUSY (TTL)
Goes HIGH during printing.

- Addition of interface
USB (USB 2.0 compatible)
- Accessories provided
 - Print media (1)
 - USB Cable 1-824-211-41 (SONY) (1)
 - BNC Cable 1-551-475-32 (SONY) (1)
 - Thermal head cleaning sheet (1)
 - Media label (1)
 - CD-ROM (Operating Instructions, printer driver, printer driver install guide) (1)
 - Software License Agreement (1)
 - Getting Started (1)

- 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

UP-970AD

- Power requirement
100 to 240 V AC, 50/60 Hz
- Input current
2.4 A to 1.3 A max. at 25 °C
- Operating temperature
5 °C to 35 °C (41 °F to 95 °F)
- Operating humidity
20 % to 80 %
- Operating pressure
700 hPa to 1,060 hPa
- Storage and transport temperature
-20 °C to +60 °C (-4 °F to +140 °F)
- Storage and transport humidity
20 % to 80 %
- Storage and transport pressure
700 hPa to 1,060 hPa
- Dimensions
316 × 132.5 × 305 mm (w/h/d)
(12 1/2 × 5/ 1/4 × 12 1/8 inches)
- Mass
8 kg (17 lb 10 oz) (printer only)
- Thermal head
Thin-film thermal head, 2,560 dots
- Gradation
256-level gradation (8-bit)
- Resolution
EIA: 1,280 × 508 dots
CCIR: 1,280 × 612 dots
- Picture size
When "S:STD" is selected from "SIDE"
EIA: 190 × 147 mm
CCIR: 190 × 142 mm
When "S:SIDE" is selected from "SIDE"
EIA: 253 × 194 mm
CCIR: 257 × 190 mm
- Printing speed
About 8 sec./image
(at standard setting)
- Picture memory
Analog mode:
6 frames (800 k × 8 bits per frame)
Digital mode:
3,414 × 2,560 dots max.
- Input connector
VIDEO IN (BNC type)
EIA or CCIR composite video signals
1.0 Vp-p, 75 ohms/high-impedance
(EIA/CCIR automatically discriminated)
- Output connector
VIDEO OUT (BNC type)
EIA or CCIR composite video signals
1.0 Vp-p, 75 ohm loop-through/EE switchable
- REMOTE connector (stereo mini jack)



- 1 GND
- 2 PRINT SIGNAL (TTL)
Input of LOW pulse over 100 msec.
initiates print.
- 3 PRINT BUSY (TTL)
Goes HIGH during printing

Addition of interface

USB (USB 2.0 compatible)

Accessories provided

Print media (1)
USB Cable 1-824-211-41 (SONY) (1)
BNC Cable 1-551-475-32 (SONY) (1)
Thermal head cleaning sheet (1)
Media label (1)
CD-ROM (Operating Instructions,
printer driver, printer driver install
guide) (1)
Software License Agreement (1)
Getting Started (1)

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

The design and these specifications are subject to
change without prior notification.



Troubleshooting

Before you call for service, please check the problems and solutions described below. If you cannot solve the problem, contact the nearest authorized dealer.

Symptom	Causes/remedies
First few prints spotted with small dots.	New paper roll just installed? →If a new roll of paper has just been loaded, paper dust may cause white spots in printed images. Press the FEED button and hold it down to feed about 15~20 cm (6~8 in.) and then release. (page 10)
Pressing the PRINT button or the COPY button does not print the image.	<ul style="list-style-type: none"> Paper does not feed. →Power switched on? →Unit connected correctly? (page 12, 26) →Paper roll loose? (page 9) →Is an item other than “MU:1” selected in the “MULTI” menu? (page 17) →Is the ANALOG/DIGITAL switch position correct? Alarm sounds. →Paper loaded correctly? (page 9) →Has the thermal head overheated? The thermal head may overheat when the unit prints dark image continuously. Wait until the head cools down. →Is the video signal of the image input? →Is the “MEDIA” menu item set correctly? Paper feeds but printing does not start. →Paper loaded with the wrong side up? (page 9)
The PRINT and CAPTURE buttons do not light.	Is the ANALOG/DIGITAL switch set to the digital mode? →Switch to the analog mode.
Black borders or missing portions around the printout	Adjust the print area in the menu items.
Paper Jams	<ul style="list-style-type: none"> Jammed paper visible? →Press the OPEN/CLOSE button to open the paper door, remove the printout or the paper roll, and then gently pull the jammed paper out of the unit. Condensation collected in unit? →If the unit has just been brought into a warm room from a cold location, condensation may have formed inside the unit. Switch the unit off and let it set for 1 - 2 hours (until it warms to room temperature), then try printing again.

Symptom	Causes/remedies
Printouts dirty.	Thermal head dirty? →Use the head cleaning sheet provided with the unit to clean the thermal head. (page 36)
The unit stops printing while printing almost black images and the message “COOL” is displayed on the LCD.	When printing almost black images continuously, the thermal head protection circuit may shut down the unit to prevent the thermal head from overheating. →Stop printing and allow the thermal head to cool.
White lines or small letters on the screen are not printed clearly.	Is “TR:ON” selected in the “TRAP” menu item for black and white input signals? →Select “TR:OFF” in “TRAP” when the input signal is a black and white signal. (page 18)
Small squares appear over the whole screen.	Is “TR:OFF” selected in the “TRAP” menu item for color input signals? →Select “TR:ON” in “TRAP” when the input signal is a color signal. (page 18)
The printout is too dark or too light.	<ul style="list-style-type: none"> Is the 75 Ω select switch set correctly? Is the “MEDIA” menu item set correctly? (page 17, 30) Is the “GAMMA” menu item set correctly? (page 16, 29)
The printout seems stretched or enlarged.	Is “AS:1:1” selected in the “ASPCT” menu item? →Select “AS:4:3.” (page 16)
The printing paper does not feed smoothly.	Is the platen roller dirty? →Clean the platen roller (page 37)
Jog dial does not operate menu.	<ul style="list-style-type: none"> Is printing in progress? →Cancel printing, or wait until printing finishes. If set to digital mode, has the printing data been queued or paused on the computer end? →Cancel the queued print job, or wait until printing finishes.

Error Messages

Messages appear on the LCD under the following conditions. Take the remedial actions shown next to the messages to correct the problem.

Messages	Description and remedy
DOOR	The paper door is open. → Press the OPEN/CLOSE button or push the paper door to lock it.
EMPTY	<ul style="list-style-type: none">• There is no paper loaded.• Paper has been used up. → Load some paper.
COOL	The protection circuit that prevents the thermal head from overheating has been activated. → Wait for the message to disappear. Printing will then resume automatically.
LOCK	The menu operation function is locked. The jog dial, CONTRAST control and BRIGHT control are disabled. → If you want to perform menu operations or use those controls, contact the nearest authorized dealer.
ERROR	An internal problem has occurred. → Contact the nearest authorized SONY dealer.
NOINP	No video signal is input. → Input a video signal.
ME:NG	The “MEDIA” menu item settings are not correct. → Check whether the “MEDIA” settings suit loaded printing paper. → The UP-970AD cannot use UPT-210BL. Use UPP-210SE or UPP-210HD printing paper.

Index

A

Analog Mode 12

C

Connections 12, 26
 connecting to the
 USB connector 26
 installing the printer driver 26
 notes 12, 26

D

Digital Mode 26

E

Error messages 22, 33, 41

G

Getting Started 5

L

Location and function of parts and
 controls
 front panel 5, 7
 rear panel 6, 8

M

Maintenance
 cleaning sheet 36
 cleaning the cabinet 36
 cleaning the platen roller 37
 cleaning the thermal head 36

Menu

 basic operations 19, 31
 list 16, 29
 loading the menu settings 21, 32
 menu flow 14, 27
 printing the menu list 21, 32
 storing the menu settings 21, 32

O

Overview 5

P

Paper

 loading paper in the unit 9
 notes on storing and handling 9
 paper you can use 9

Precautions

 on installation 35
 paper cutter 35
 printer carriage 35
 safety 35

Printer driver 26

Printing

 adjusting the brightness 25, 34
 adjusting the contrast 25, 34
 cancelling 22, 33
 confirming paper 22, 33
 determining image size 24
 feeding paper 22, 33
 making copies 24, 33
 printing an enlarged 34
 printing images stored in
 memory 23
 printing multiple images 23
 selecting the printing
 direction 24, 34
 setting the range of the image 25
 staring a print job 22, 33

S

Specifications 37

T

Troubleshooting 40

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