

DICOM Color Printer

Instructions for Use Page 2

Setup Manual Page 24

This manual is comprised of the Instructions for Use and the Setup Manual.
The Instructions for Use gives the information on how to use the printer for the routine work.

The Setup Manual gives the system administrator the information needed to setup the printer and connect it to the network.



UP-D77MD

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.

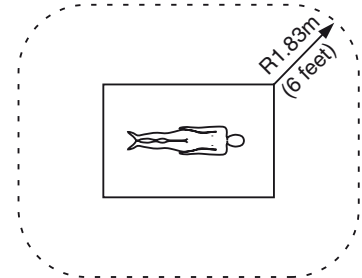
For the customers in Canada

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

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

Model UP-D77MD is Non-Patient Equipment. This unit can not be used in the vicinity of patients.

* Patient Vicinity

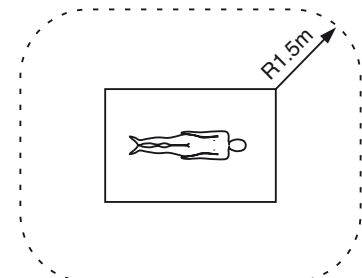


When you use this product connected to 240 V single phase, be sure to connect this product to a center tapped circuit.

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'.

For Customers in Taiwan only



廢電池請回收

Instructions for Use

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Features

The UP-D77MD DICOM Color Printer is a dye sublimation thermal transfer printer designed to reproduce image data in DICOM format sent via the network.

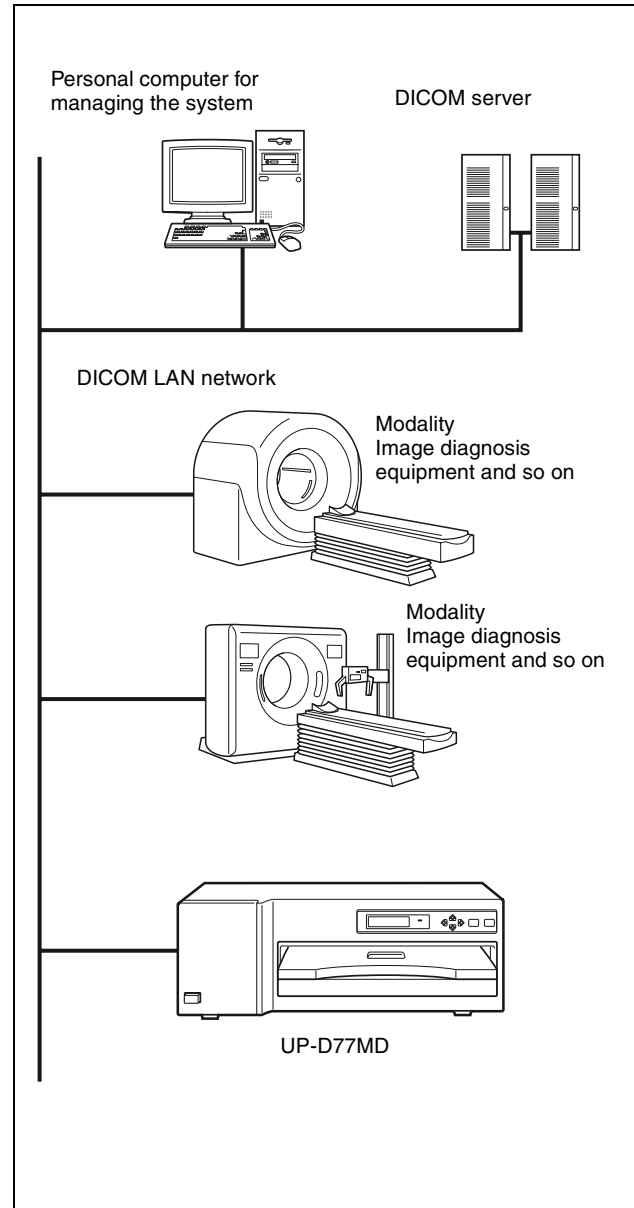
The UP-D77MD has the following functions:

- Equipped with DICOM (Digital Imaging and Communications in Medicine) features
The DICOM portion of the unit receives image data in DICOM format sent from the modality via the network, processes them in A4 size paper either by enlarging or reducing them.
- High quality and high print resolution
The unit allows you to print out in full color (256 gradations process for each color) and in high-resolution print mode (300 dpi).

System Configuration

The system allows you to make printouts of the data in DICOM format, sent from image diagnosis equipment such as CTs, NMs.

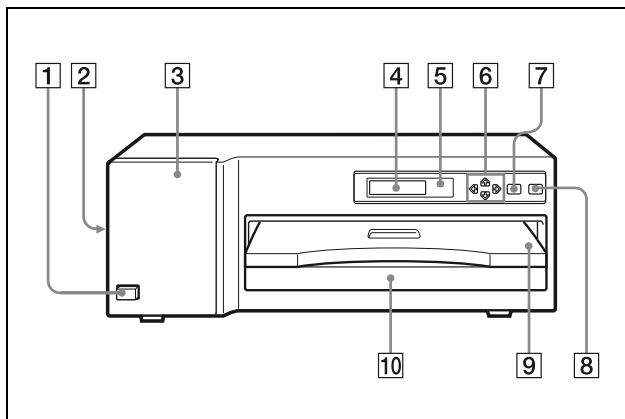
The following shows a system configuration example.



Location and Function of Parts and Controls

For details, refer to the pages indicated in parentheses.

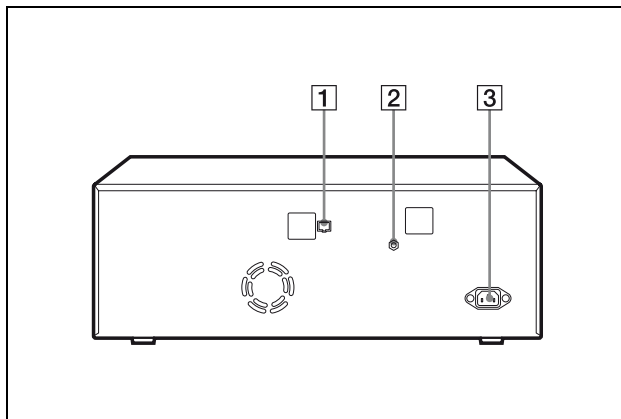
Front



- 1** **POWER switch**
Press to turn the printer on or off.
- 2** **Fan cover (7, 18)**
Provided to prevent the printer from dust.
- 3** **Ribbon door (9)**
Pull the tab (marked with PULL) on the top on the ribbon door to open it when loading an ink ribbon cassette.
- 4** **Printer window display (12)**
Displays the status messages. In menu operation, menu items are displayed.
If an error occurs, a corresponding error message is displayed.
- 5** **ALARM indicator (21)**
Lights in orange when the ink ribbon or paper is exhausted, the paper jams, or another problem occurs.
- 6** **Cursor control buttons (13)**
Use these buttons to increase or decrease a value and level shown on the menu, or scroll up and down through a menu.
- 7** **MENU button (13)**
Press this button to display or close the printout adjust menu in the printer window display.
- 8** **EXEC button (13)**
Use this button in menu operation.

- 9** **Paper cover (7)**
Printouts are ejected here.
- 10** **Paper tray (7, 10)**
Load paper here. Press the point marked with PUSH to remove the paper tray.

Rear



- 1** **Network connector (RJ-45 modular jack) (8)**
Conforms to the 100BASE-TX standard. Used to connect to the LAN.

When using a LAN cable:

CAUTION

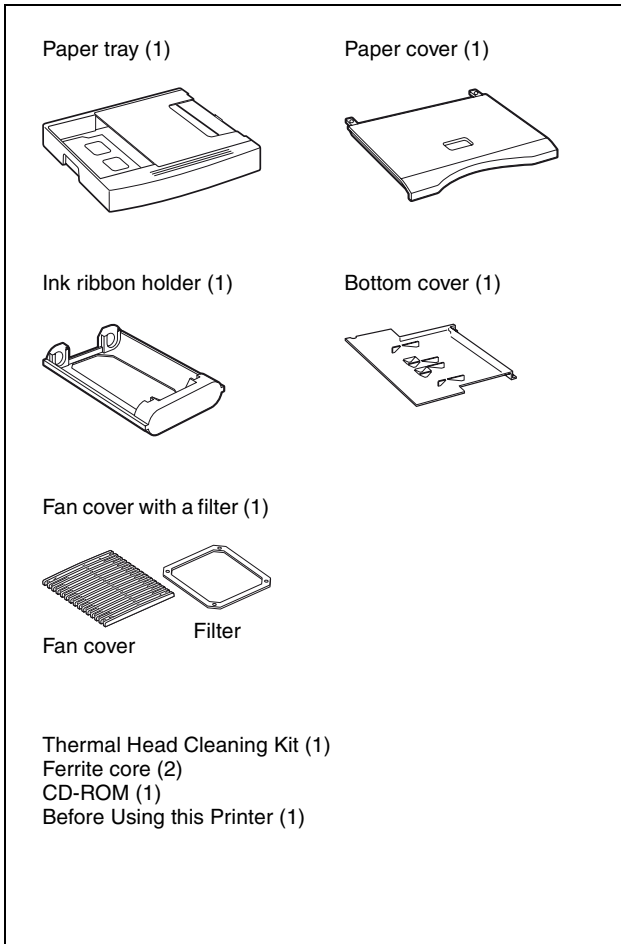
For safety, do not connect to the connector for peripheral device wiring that might have excessive voltage.

- 2** **⚡ Equipotential ground terminal connector**
Used to connect to a ground (equipotential) plug to bring the various parts of the system to the same potential.
Refer to "Important safeguards/notices for use in the medical environments" on page 2.
- 3** **~AC IN connector (8)**
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.

Preparation

Supplied Accessories

This printer is packed together with the following accessories. Check that nothing is missing from your package.



Note

Retain the original carton and packing materials in case you have to transport this unit in the future.

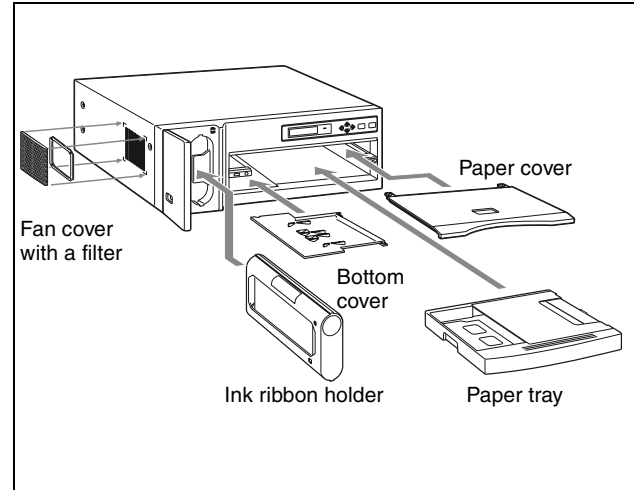
Assembly

Mount the supplied ink ribbon holder, paper tray, paper cover, bottom cover and fan cover.

Note

You cannot mount the ink ribbon holder when the thermal head is locked.

Before assembling, turn on the power of the printer. The thermal head is unlocked and you can mount the ink ribbon holder. (page 9)



Note on using the UP-D77MD

The unit is equipped with a hard disk which is used as the system region and for temporarily storing the image data. The hard disk is susceptible to shock, vibration, and so on.

Pay attention to the following when using the unit:

- Do not subject the printer to shock.
- Do not use the printer in a place that vibrates or is unstable.
- Do not move the printer while it is turned on.
- Do not turn the printer off while printing.
- Do not subject the printer to wide or sudden changes in temperature.

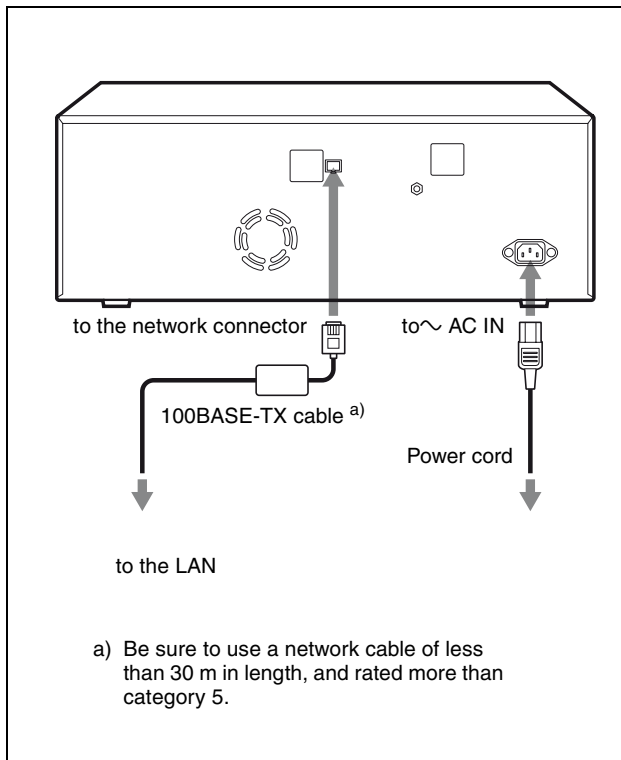
Note that the UP-D77MD may not be able to start, if the hard disk is damaged for some reason.

Connections

Connect the unit to the 100BASE-TX LAN.

Notes

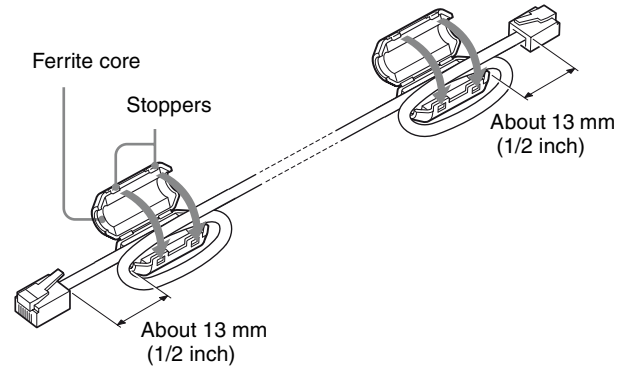
- Connect the AC power cord last.
- Before connecting to the LAN, be sure to set up the required IP address and sub-net mask.
For detailed information, refer to “Setup Manual” provided in the latter part of this manual, and also consult the system administrator.
- Before connecting the unit using a 100BASE-TX cable, attach the ferrite cores provided to both ends of the cable for noise prevention.
For detailed information on how to attach the ferrite cores, see “How to attach the ferrite cores” on page 8.



How to attach the ferrite cores

Before using the unit, attach the supplied ferrite cores for noise prevention.

To confirm to radiation standards, attach the supplied ferrite cores to both ends of the cable.



- 1 Release the two stoppers to open the ferrite core.
- 2 Make a loop at the end of the cable about 13 mm (1/2 inch) away from the connector, and then attach the ferrite cores.
- 3 Close the ferrite core until it clicks.

Before Printing

This section describes the operations that must be performed prior to starting printing. This explanation assumes that the printer has already been installed and that all connections have been made.

- Loading an ink ribbon cassette (on this page)
- Loading the paper (page 10)

Once these operations have been completed, there should be no need to perform them again during routine printing.

Notes

- When replacing the ink ribbon or paper, do not turn off the power. Turning off the power will cause the image stored in the memory to be lost.
- Use the ink ribbon suitable for the type of print material. Before attempting to load an ink ribbon, make sure that the combination of the ribbon and paper is compatible. (See “Ink Ribbon and paper” on page 19.)
- **Use only ink ribbon and paper designed for use with this printer. Failing to do so is likely to result in unsatisfactory printing or malfunctions.** (See “Ink Ribbon and paper” on page 19.)

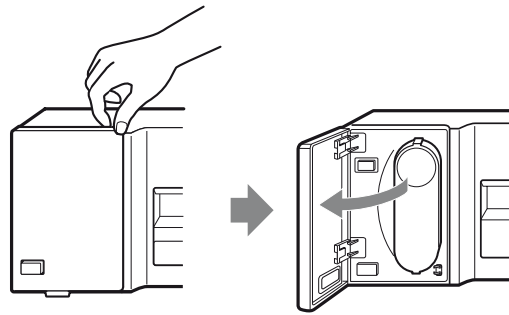
Loading an Ink Ribbon Cassette

Load the ink ribbon to the supplied ink ribbon holder, and load the ink ribbon cassette (referring to the ink ribbon holder loaded with the ink ribbon) to the printer's ribbon compartment.

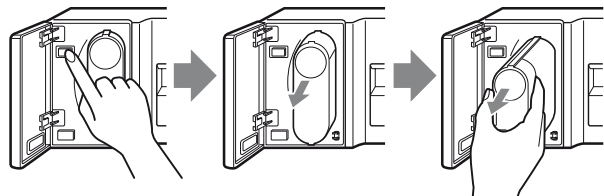
Notes

- When you use the printer at the first time, the thermal head was locked at the factory. Turn on the printer first to unlock the thermal head, then start to load an ink ribbon cassette.
- Once an ink ribbon has been completely used, replace it. Ink ribbons are not reusable.
- Do not rewind the ink ribbon for reuse.
- Do not touch the ink ribbon or place it in a dusty location. Finger prints or dust on ink ribbon will result in imperfect printing.

- 1 Open the ribbon door by pulling the tab on the ribbon door and marked with PULL.



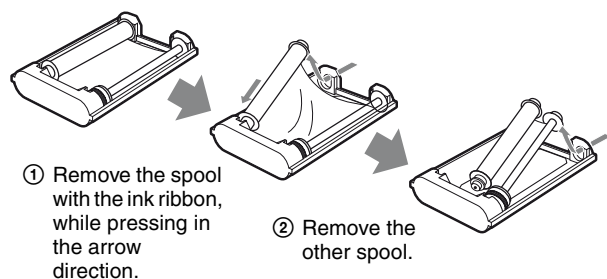
- 2 Remove the ink ribbon cassette by pressing the EJECT button. The ink ribbon cassette pops out.



Note

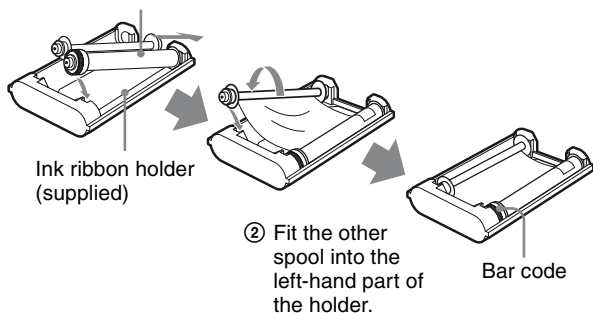
Never put your hand into the ink ribbon compartment. The thermal head becomes very hot. You may burn yourself if you touch it.

- 3 Detach the used ink ribbon from the ink ribbon holder.

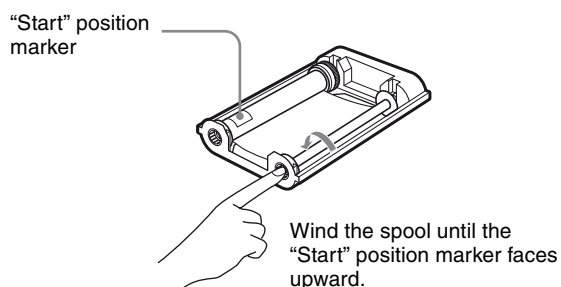


4 Load the ink ribbon to ink ribbon holder.

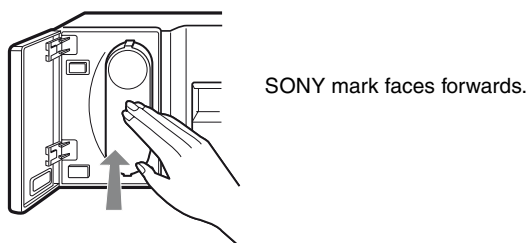
- ① Load the spool holding the ink ribbon into the right-hand part of the holder, while pressing in the arrow direction.



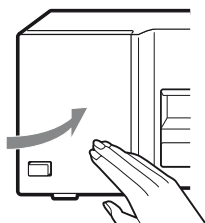
5 Remove any slack from the ink ribbon. If the ribbon is left slack, it may be crumpled and damaged when inserted.



6 Insert the ink ribbon cassette firmly until it stops.

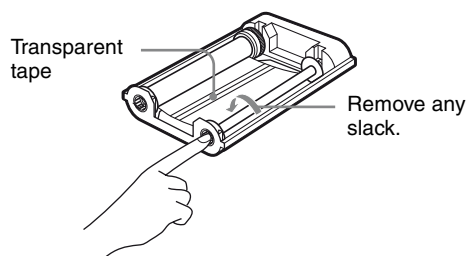


7 Close the ribbon door.



If your ink ribbon should tear

Repair the tear with transparent tape. There should be no problem with using the remaining portion of the ribbon.



Notes When storing ink ribbons

- Avoid placing the ink ribbon in a location subject to:
 - high temperatures
 - high humidity
 - excessive dust
 - direct sunlight
- Store partially used ink ribbon in its original package.

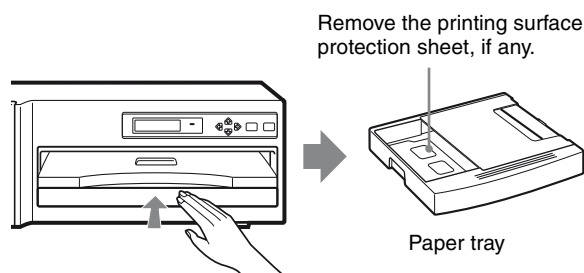
Loading the Paper

Load the paper by the following procedure. Be careful not to touch the printing surface of the paper.

Note

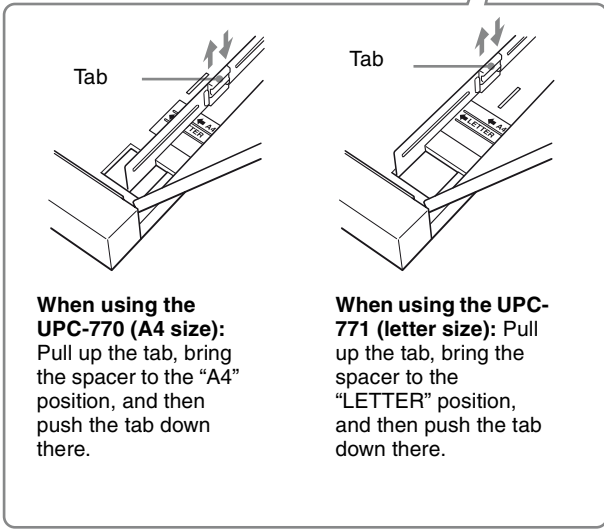
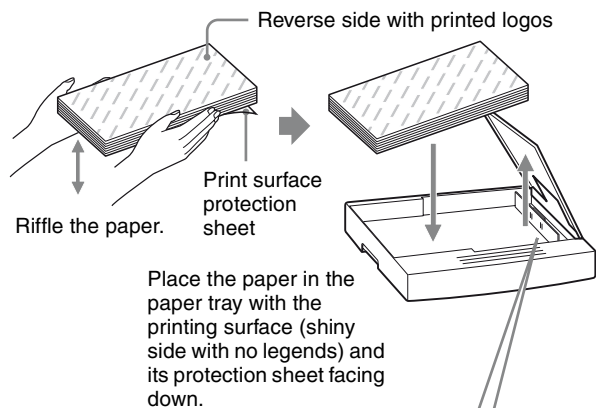
When loading the paper, do not turn off the power. If you turn off the power, the image data stored in the memory will be lost.

- 1 Press PUSH on the paper tray. The paper tray is ejected.

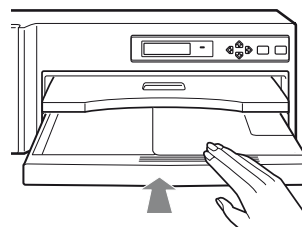


- 2 Open the tray cover and place the paper in the paper tray.

Be sure to set the spacer according to the size of the paper before placing the paper in the paper tray.



3 Close the tray cover and slide the paper tray into the printer until it clicks into place.



Notes on storing paper

- Avoid storing the paper in a location subject to:
 - high temperatures
 - high humidity
 - excessive dust
 - direct sunlight
- Use the original package for storing unused paper.

Notes

The number of the paper is the same as the number of the paper that one roll of the ink ribbon can afford. Usually the ink ribbon and paper have run out at the same time. However, even when either the ink ribbon or the paper has run out, replace both the ink ribbon and the paper with new ones. When you load the paper, pay attentions to the following.

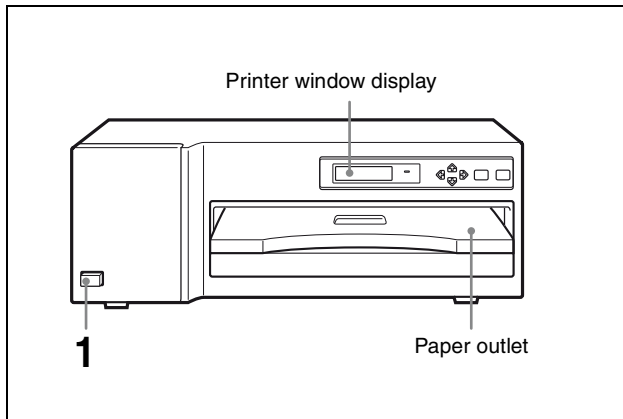
- The paper tray holds up to the total number of sheets contained in a package sheets of paper. If you exceed this limit, paper jams may occur. Also, do not place different types of paper in the tray. If you do, paper jams may occur.
- If you load the paper that is not compatible with the ink ribbon used, the gray balance may be changed.
- Load the paper so that it lays flat in the paper tray. If the paper is curled, it will overflow the paper tray and the printing position may shift. If this happens, load fewer sheets in the paper tray.

Printing

Before printing

- Ensure that the printer is properly connected (page 8).
- Ensure that the combination of the ink ribbon and paper is correct (pages 9 and 10).
- Ensure that the ink ribbon cassette and paper are properly loaded (page 19).
- Ensure that the desired color is loaded (page 12)

Starting to Print



- 1 Turn on the power of the printer. While the printer is starting up, "INITIALIZING" is displayed. After about two minutes, the following message appears in the printer window display, and the printer is in standby status. While "READY" is displayed, the printer is in standby mode.

READY
A4

The size of the paper being loaded

- 2 Send the image data from the computer (modality) to the printer.

- ① While the printer is receiving the image data from the computer, the following message appears:

PROCESSING

- ② The printer starts printing and the following message appears.

PRINTING
YELLOW

Color indication changes as color printing proceeds:
Laminate printing:
Starting → YELLOW →
MAGENTA → CYAN →
LAMI → Finishing

- ③ The printing time depends on the size of image, type of ribbon, and/or resolution mode. It takes about 85 seconds (A4 size paper) for a printout to emerge from the paper outlet. Once printing has been completed, the printer returns to standby status.

READY
A4

Notes

- Do not pull the paper out until the printer finishes printing.
- To prevent paper jamming, **do not allow more than 20 printouts on the paper cover.**

If the printer does not print

The printer will fail to print when an error message is displayed in the printer window display. Take remedies according to explanation of the message given in "Error Messages" on page 21.

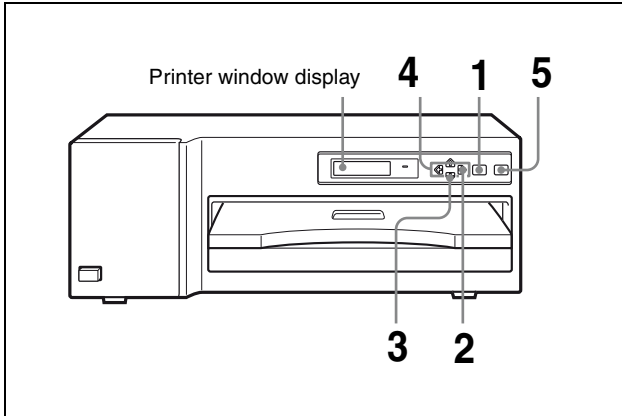
Notes on storing your printouts

- Avoid storing the printout in a location subject to high temperatures, high humidity, excessive dust, and direct sunlight.
- Do not stick tape on a printout. Also avoid leaving a plastic eraser on a printout or placing a printout in contact with materials which contain plasticizer (under a desk mat, for example).
- Do not allow alcohol or other volatile organic solvents to come into contact with the printouts.

Making Printouts with the Desired Color

You can register the desired color of printouts as a user setting. The printer allows you to register up to 9 sets of

settings. By selecting a desired user set number, you can make printouts in the desired color.



- 1 Press the MENU button.
"INFORMATION" appears.

< INFORMATION >

- 2 Press the ⇄ button.
"COLOR ADJUST" appears.

< COLOR ADJUST >

- 3 Press the ⇓ button.
"LOAD USER X" appears.

LOAD USER 1 /
[EXEC]

- 4 Select the desired user preset number by pressing the ⇄ or ⇆ button.

LOAD / USER 3 /
[EXEC]

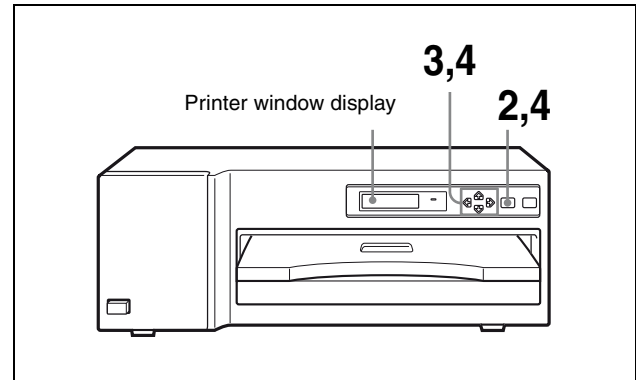
Display the desired user preset number by pressing the ⇄ or ⇆ button.

- 5 Press the EXEC button.
The user setting selected in step 4 is loaded.

Adjusting Printouts

You can adjust the gray first, then you can adjust colors based on the adjusted gray. You can store up to 9 color settings as a user set. The printer retains these settings even if you turn off the power. Thus, different operators can make printouts with different color settings by loading the appropriate user set. If the data of the loaded user set is modified, the printer operates according to the modified data. In such a case, the modified data remains effective until another user set is loaded, even if you turn off the power.

Adjusting Gray



- 1 Make a printout of image data which has a large amount of gray parts.
It is recommended that you make a printout of the full-size picture. If you make a printout composed of multiple reduced images, it may be difficult to check the color.
If you are satisfied with the gray in that printout, go to "Adjusting the Color" on page 14.
If you wish to adjust the gray further, proceed as follows.

- 2 Press the MENU button.
"INFORMATION" appears.

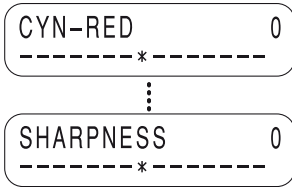
< INFORMATION >

- 3 Press the ⇄ button.
"COLOR ADJUST" appears.

< COLOR ADJUST >

4

Adjust the gray.
When you adjust the gray, the color intensity is also adjusted. However, adjust the gray first, then adjust the desired color.



- ① Select the item for adjustment by using the \updownarrow or \updownarrow button.
 \updownarrow : Scrolls up to the next item.
 \updownarrow : Scrolls down to the previous item.
- ② Adjust the level by pressing the \rightleftarrows or \rightleftarrows button. You can adjust the color level for CYN-RED, MAG-GRN, YEL-BLU, DARK and LIGHT for the tone, and GAMMA for the half tone between -32 to +32. The value 0 is the standard level.
 \rightleftarrows : Increases the level.
 \rightleftarrows : Decreases the level.
 When you keep the button pressed, the number changes quickly.

To adjust the color intensity (RED/GREEN/BLUE)

Item to be adjusted	Adjustment	Button to be pressed
CYN-RED	To make an image reddish	\rightleftarrows
	To make an image cyan	\rightleftarrows
MAG-GRN	To make an image greenish	\rightleftarrows
	To make an image magenta (pink)	\rightleftarrows
YEL-BLU	To make an image bluish	\rightleftarrows
	To make an image yellowish	\rightleftarrows

To adjust the contrast

Item to be adjusted	Adjustment
DARK	To adjust the dark area of an image
LIGHT	To adjust the light area of an image

To adjust the tone (density gradation)

Item to be adjusted	Adjustment
GAMMA	To adjust the half tone of printouts

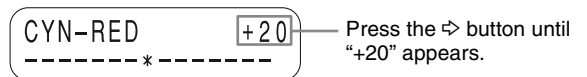
To adjust the sharpness

Item to be adjusted	Adjustment
SHARPNESS	To adjust the sharpness of printouts

The sharpness can be adjusted between 0 to 3.

Example: To set CYN-RED to +20 toward RED

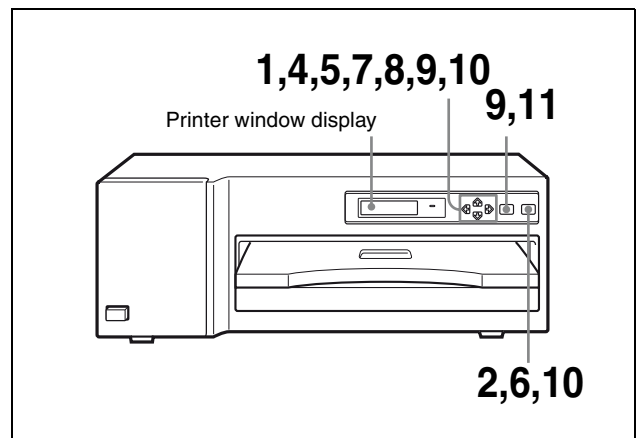
Press the \rightleftarrows button until "+20" appears. When you keep the button pressed, the number changes quickly.



- ③ After finishing the adjustment of ① and ②, press the MENU button to exit the adjustment mode.
- ④ Make a printout again. Repeat your adjustments until the desired gray level is obtained. When the desired gray is obtained, go to the next color adjustment.

Adjusting the Color

After finishing the gray, continue adjustment for the color. Before starting the color adjustment, make a full-size printout of the image which has the color you want to adjust.



- 1 Display "PRINT PATCH" by pressing the \uparrow or \downarrow button in menu mode.

PRINT PATCH
[EXEC]

- 2 Press the EXEC button.
25 identical images of the image last printed are printed on a sheet of paper as a patch print. Each image has a different color balance, but they have the same gray.

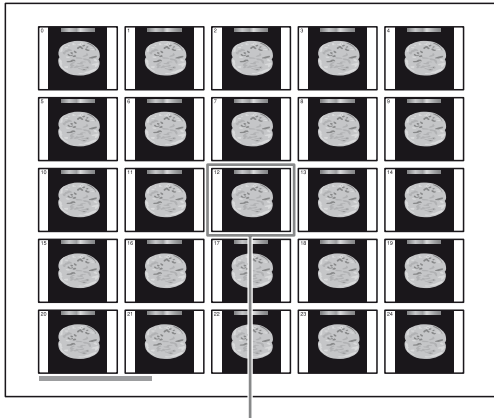


Image whose gray and color adjusted in "Adjusting Gray" on page 13

- 3 Select the image which has the best color balance among the 25 images, by looking at the printout.
- 4 Display "SEL PATCH" by pressing the \uparrow or \downarrow button.

SEL PATCH 12
[EXEC]

- 5 Display the number selected in step 3 by pressing the \leftarrow or \rightarrow button.

SEL PATCH 15
[EXEC]

Keep pressing the \leftarrow or \rightarrow button until the number selected in step 3 is displayed.

- 6 Press the EXEC button.
The color is determined according to the patch number selected in step 3. However, the gray adjusted in "Adjusting Gray" on page 13 is not changed.

When you are satisfied with the color balance selected in step 3, go to step 10.
If you are not satisfied with the color and want to adjust the hue, saturation, and value of the color, go to the next step.

- 7 Display "ADVANCED" by pressing the \uparrow or \downarrow button.

ADVANCED [↔]

- 8 Display "STANDARD" by pressing the \rightarrow button.

STANDARD [←]

- 9 Adjust the hue, saturation, and value of the color.
 - ① Select the item to be adjusted by using the \uparrow or \downarrow button.
 \downarrow : Scrolls up to the next item.
 \uparrow : Scrolls down to the previous item.
 - ② Adjust the level by pressing the \leftarrow or \rightarrow button. You can adjust each item between -32 to +32. The value 0 is the standard level.

Item to be adjusted	Adjustment
HUE	To adjust the hue of the color
SATURATION	To adjust the saturation of the color
VALUE	To adjust the value of the color

- ③ After adjusting the hue, saturation, and value of the color, press the MENU button to exit the adjustment mode, and make a printout to confirm the results of the adjustment.

When you are not satisfied with the results
Reset the printer to menu mode again, following the procedure in steps 2 and 3 in "Adjusting Gray" on page 13. The printer retains those adjusted values, even if you turn off the power. Proceed as follows to save them as a user set.

- 10 Store the adjusted values of the color as a user set.

- ① In menu mode, display “SAVE /USER X/” by pressing the ↕ or ⇩ button.

SAVE USER 1/
[EXEC]

- ② Display the desired user set number by pressing the ⇐ or ⇒ button.

SAVE /USER 3/
[EXEC]

Keep pressing the ⇐ or ⇒ button until the desired user number is displayed.

- ③ Press the EXEC button.
All values adjusted in “Adjusting Gray” on page 13 and here, “Adjusting the Color,” are registered in the user set number selected in step ②.
The printer operates according to this registered value set unless you load another user set. Also, if you modify the settings, the modified values remain effective until another user set is loaded, even if you turn off the power.

- 11** Press the MENU button to exit menu mode for adjusting gray and color.
The printer returns to standby status and “READY” appears in the printer window display.

Precautions

Safety

- Operate the printer using the power source specified in “Specifications” (page 20).
- Be careful not to damage the power cable by placing or dropping heavy objects on it; it is dangerous to use the unit with a damaged power cable.
- If you do not intend to use the unit for a long time, disconnect the power cable.
- Unplug the power cable by grasping the plug, not the cable itself.
- Do not disassemble the unit. There is a danger of electric shock from the internal parts.
- Be careful not to spill water or other liquids on the unit, or to allow combustible or metallic material to enter the cabinet. If used with foreign matter in the cabinet, the unit is liable to fail, or present a risk of fire or electric shock.
- If the unit malfunctions or if a foreign body falls into the cabinet, disconnect the power immediately and consult your Sony service facility or your Sony dealer.

Installation

- Avoid placing the unit in a location subject to:
 - mechanical vibration
 - high humidity
 - excessive dust
 - direct or excessive sunlight
 - extremely high or low temperatures
- Ventilation holes are provided on the both sides and the rear of the unit to prevent the unit from overheating. Be careful not to obstruct them with other objects or by covering the unit with a cloth etc.

On condensation

- If the printer 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 quantities of moisture, condensation may form inside the printer. In such cases the printer will probably not work properly, and may even develop a fault if you persist in using it. If moisture condensation forms, turn off the power and leave the printer standing for at least one hour.
- If the printing pack is subjected to wide and sudden changes in temperature, condensation may form on the ink ribbon or paper inside. This will cause the

printer to malfunction. Also if the printing pack is used in this state, spots are likely to appear on the printout.

- To store a half-used printing pack, replace it in its original packing and reseal the package. If possible, keep the sealed printing pack in a cool, dark location. To subsequently use the printing pack, place it, in its sealed package, in a warm room for several hours. Doing so prevents condensation from forming when the printing pack is removed from its package.

On Transportation

Do not transport the printer with the supplied accessories. Doing so may cause malfunction.

- 1 Remove the ink ribbon cassette and the paper tray.
- 2 Lock the thermal head.
 - ① Turn on the power of the printer.
 - ② Press the MENU, ⇐ and ⇒ buttons together and hold them for 2 seconds.
 - ③ Turn off the power of the printer.

Note

Never put your hand into the ink ribbon compartment, when locking the thermal head. Doing so may cause injury to your hand because it may be caught by the thermal head.

To unlock the thermal head

Turn on the power of the printer again. The thermal head moves and you can load the ink ribbon cassette again.

Cleaning

Note

Be sure to turn off the power of the printer before cleaning it. The ink ribbon and paper roll removed

When the cabinet becomes dirty

Clean the cabinet, panel and controls with a soft dry cloth, or a soft cloth lightly moistened with a mild detergent solution.

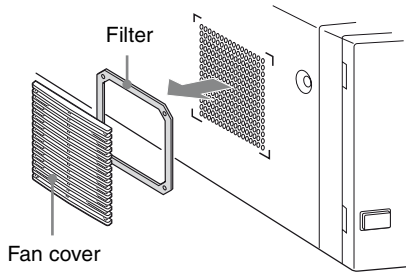
Do not use any type of solvent, such as alcohol or benzene or chemical cloth, which may damage the finish.

Cleaning the filter

Ventilation holes are provided to prevent the unit from overheating on the both sides and the rear of the printer. When the message “CLEAN FAN FILTER” appears on the printer window display, the filter of the ventilation holes on the left side has become dirty.

To clean the filter, proceed as follows.

- 1 Remove the fan cover, then filter.

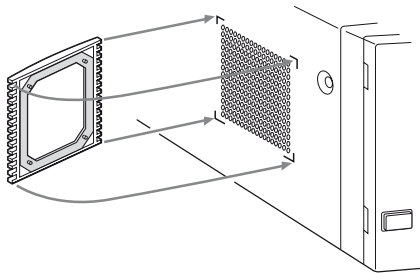


- 2 Clean the filter using the vacuum cleaner and the like.

Notes

- Be careful that the filter will be caught in the cleaner.
- Do not rub the net of the filter strongly.

- 3 Reset the filter and the fan cover on the side panel as they were.



Cleaning the thermal head

You should clean the thermal head in the following cases:

- When the vertical white stripe appears on the printout.
- When the scratch appears on the printout.

How to use the white tip and black tip

When using the white tip, the sponge roller wipes off the dust on the thermal head.

When using the black tip, the polishing material on the sponge roller scrapes off the dust on the head.

Use the white tip in the following cases

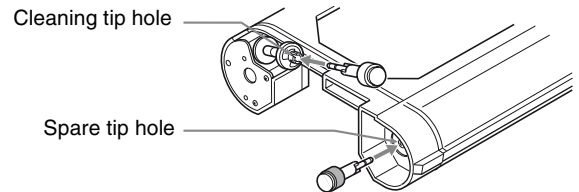
- When a vertical white stripe appears on the printout because of dirt on the thermal head.
- Ordinary head cleaning for preventing accumulation of dirt on the head

Use the black tip in the following cases

- When a scratch appears only on the printout, but no scratches appear on the spaces around the picture.
- When the use of the white tip has no effect.
- Periodic head cleaning

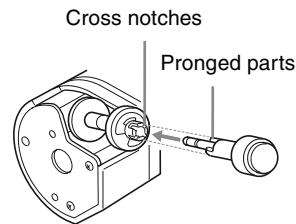
We recommend use of the black tip every month (or every 500 sheets of printout) to keep the thermal head clean.

Store the tips by inserting the white one into the cleaning tip hole on the holder, and the black one into the spare tip hole.



Attaching the tips on the cleaning kit holder

- 1 Align the pronged parts of the tip with the cross notches of the hole.



- 2 Insert the tip fully until it stops with a click.

Turning the tip to keep the cleaning effect

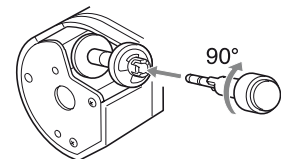
The cleaning effects decreases when the tip is used the following number of times:

White tip: Cleaning about 30 times

Black tip: Cleaning one time

To regain the original cleaning effect, reinsert the tip, as shown below, so that you can clean the head with the unused surface of the tip.

Pull out the tip, turn it 90°, then reinsert it.



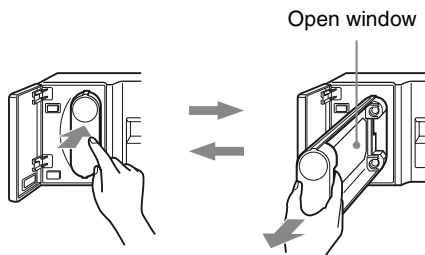
One tip provides four new surfaces. After using all unused surfaces, exchange the tip for a new one.

The cleaning tip set is available using part number A-8279-104 (at a charge).

Cleaning of the thermal head

To clean the thermal head, proceed as follows:

- 1 Remove the ink ribbon cassette from the printer.
- 2 Attach the cleaning tip to the cleaning tip holder, and install the cleaning tip holder in the printer. The cleaning tip holder can be mounted in the same way as that of the ink ribbon cassette.
- 3 Insert the cleaning tip holder fully until it stops, then pull the holder out until the open window of the holder fully appears. **Repeat the inserting/pulling-out of the holder about three times.**



Thermal head cleaning is finished.

- 4 Remove the cleaning tip holder from the printer, and remount the ink ribbon cassette in the printer.

Notes

- Don't moisten the tip with the cleaning liquid or water. A moistened tip may deteriorate the performance of the thermal head.
- Especially when using the black tip, be careful not to insert/pull-out the holder too many times at one cleaning. The lifespan of the head may be decreased.
- Be careful not to swallow the cleaning tips. Store them out of the reach of children.

Ink Ribbon and paper

You need paper and ink ribbon cassette for printing. ("Ink ribbon cassette" stands for the supplied ink ribbon holder loaded with ink ribbon.) Use the ink ribbon and paper contained in the same package. If the printer detects an incompatible combination, an error message appears in the printer window display and you cannot make printouts.

Self-laminating Color Printing Pack UPC-770

Contains an ink ribbon and paper for automatic laminate coating.

Color ink ribbon 1 roll

A4 size paper 72 sheets

Self-laminating Color Printing Pack UPC-771

Contains an ink ribbon and paper for automatic laminate coating.

Color ink ribbon 1 roll

Letter size paper 72 sheets

Notes

- Use only ink ribbon and paper for this printer. If you use a different type, the printer may not print properly or malfunction.
- Ink ribbon and paper are not reusable. After you finish with them, replace them with new ones.

Specifications

- Power requirements
100 – 240 V AC, 50/60Hz
- Input current 3.5 A to 1.5 A
- Operating temperature
10°C to 30°C (50°F to 86°F)
- Operating humidity
20% to 80% (no condensation allowed)
- Storage and transport temperature
–20°C to +60°C (–4°F to +140°F)
- Storage and transport humidity
20% to 90% (no condensation allowed)
- Dimensions Approx. 493.8 × 176 × 468.8 mm
(w/h/d)
(19 ½ × 7 × 18 ½ inches)
- Mass Approx. 21 kg. (46 lb 5 Oz)
- Printing system
Dye transfer sublimation thermal printing
- Thermal head 2,560 elements, 11.8 dot/mm (300dpi)
- Gradations 256 levels each for yellow, magenta and cyan
- Picture size Maximum
Letter size: 254.0 × 203.2 mm (w/h)
(10 × 8 inches)
A4 size: 271.6 × 203.2 mm (w/h)
(10 ¾ × 8 inches)
- Picture elements Maximum
Letter size: 3,000 × 2,400 dots (w/h)
A4 size: 3,208 × 2,400 dots (w/h)
- Printing time Approx. 85 seconds per page (A4 size)
- Digital interface
Network port × 1
(RJ-45 Modular jack), Conforming to 100BASE-TX standard
- Accessories supplied
Ink ribbon holder (1)
Paper tray (1)
Paper cover (1)
Fan cover (1)
Bottom cover (1)
Ferrite core (2)
Thermal Head Cleaning Kit (1)
CD-ROM (1)
Before Using this Printer (1)
- Optional accessories
Self-Laminating Color Printing Pack
UPC-770
Self-Laminating Color Printing Pack
UPC-771
- Medical Specifications
Protection against electric shock:
Class I

Protection against harmful ingress of water: Ordinary
Degree of safety in the presence of flammable anesthetics or oxygen:
Not suitable for use in the presence of flammable anesthetics or oxygen
Mode of operation:
Continuous

Design and specifications are subject to change without notice.

SOP and Meta SOP Classes

SOP Class Name	SOP Class UID
Verification SOP Class	1.2.840.10008.1.1
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18
Basic Film Session SOP Class	1.2.840.10008.5.1.1.1
Basic Film Box SOP Class	1.2.840.10008.5.1.1.2
Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1
Print SOP Class	1.2.840.10008.5.1.1.16
Basic Annotation Box SOP Class	1.2.840.10008.5.1.1.15

Troubleshooting

If a problem appears, check the following trouble shooting guide first and perform whatever action is necessary to solve the problem. If the problem persists, turn off the printer and consult with your Sony dealer.

Symptom	Possible causes and remedies
Nothing appears in the printer window display.	The POWER switch of the printer is not set to ON. →Set the POWER switch of the printer to ON. If the POWER switch is set to ON, once set it to OFF, then to ON again. (page 6)
	Connections may not be correct. →Make connections correctly. (page 8)
The printer does not print.	An error message appears on the printer window display. →Take remedies according to "Error Messages."(page 21).
	An ink ribbon cassette and paper are not loaded. →Load an ink ribbon cassette and paper. (pages 9 and 10)

Error Messages

If a problem occurs, the ALARM indicator lights and an error message stating the problem appears in the printer window display. Note the message and perform whatever action is necessary to solve the problem.

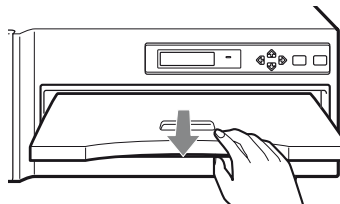
Error messages	Possible causes and remedies
END OF RIBBON	The ink ribbon has been completely used. →Replace with the new ink ribbon. (Ink ribbons cannot be reused.) (page 9)
HEAD IN COOLING	The thermal head has overheated. →Leave the printer until the head cools down and this message disappears.
HEAD IN HEATING	The thermal head is warming up. →Leave the printer until the head has warmed up and this message disappears.
NO RIBBON	Ink ribbon cassette is not fitted properly. →Ensure that the ink ribbon is loaded properly in the ink ribbon holder, and the ink ribbon cassette in the printer. (page 9)
NO IMAGE DATA	No image data for the patch print is stored in the printer memory. →Transfer the image data from your computer to make a printout before making a patch print by pressing the EXEC button in the adjustment mode. (page 14)

Error messages	Possible causes and remedies
NO PAPER	<ul style="list-style-type: none"> The paper has run out. →Load the paper into the paper tray. (page 10) The spacer of the paper tray is not set correctly. →Set the spacer to the correct position according to the size of the currently used printing pack. (page 11)
PLEASE WAIT	The printer is carrying out processing which requires time. →Wait for a while.
REMOVE PAPER AND PRESS [↵]	The paper has jammed. →Remove jammed paper from the printer and press ↵ button. (page 21)
RIBBON ERROR	The ink ribbon develops some trouble. →Ensure that the ink ribbon does not tear and the ink ribbon cassette and paper tray are loaded properly. (pages 7, 9 and 10) →Check that the currently used printing pack is the UPC-770 or UPC-771. (page 19)
MECHA TROUBLE	The mechanical trouble occurs in the printer. →Turn off the power once and then turn it on. If the message will still remain in the printer window display, turn off the power immediately and contact your Sony dealer.

If the Paper Jams

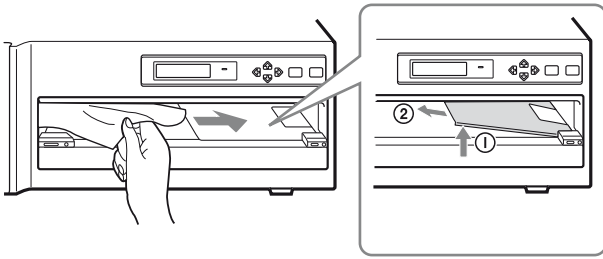
If the paper jams, printing stops and the error message stating "REMOVE PAPER AND PRESS [↵]" appears on the printer window display. Follow the steps below to remove the jammed paper.

- 1 Remove the paper cover.
If any printouts have been ejected on the paper cover, remove them first before removing the paper cover.



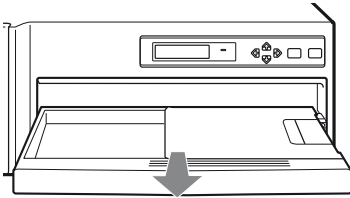
- 2 Check where any paper is jammed inside the printer.
If you find a jammed sheet around the paper outlet, slowly pull it out starlight to the right.

If you find a jammed sheet on the way inside the printer, slowly pull it out to the right. If the tray cover is in the way, remove it.

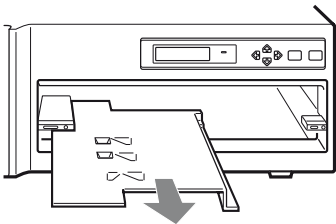


If the tray cover is in the way, remove it by lifting it up ①, and then pulling it out to the direction of arrow ②.

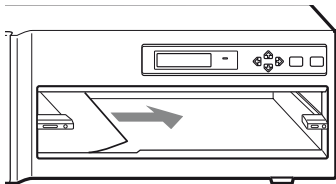
- 3** Press PUSH on the paper tray.
The paper tray pops out.



- 4** Remove the bottom cover.

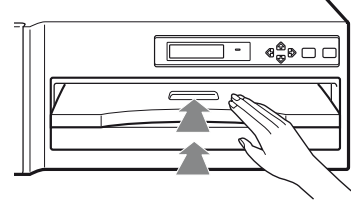


- 5** Check whether any paper is found on the bottom of the printer. If you find one, remove it.



- 6** Ensure that the paper is properly loaded.
Discard the sheets removed in steps 2 and 5

- 7** Re-insert the removed bottom cover, paper tray, tray cover and/or paper cover into the printer.



- 8** Press the ⇄ button.
The error message disappears and the printer returns to the standby status.

READY
A4

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Setup Manual

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Overview

This setup manual gives the system administrator information needed to setup the unit on the network or to reset the IP address and so on.

This setup manual describes the preparation for the setup, gives an overview of the setup window, explains how to perform setup related to IP address and so on, and explains how to setup an E-mail warning to tell automatically when any trouble occurs.

Requirements

The following hardware and Web browser software are necessary to perform the setup.

- Computer: A computer which can be connected to the network connector of the UP-D77MD
- Operating system ^{a)}: Microsoft Windows 95, Windows 98, Windows NT 4.0, Windows 2000, or Windows XP

- LAN cable: 100BASE-TX cross cable
- Web browser software: Internet Explorer ^{a)} 5.5 or later, or Netscape ^{a)} 4 or later

Set the Web browser software as follows:

No proxy

A blank page is opened when the Web browser software is started.

- a) Microsoft, Windows, Windows NT, and Internet Explorer are registered trademarks of Microsoft Corporation in the United States and/or in other countries.

Netscape and Netscape Navigator are registered trademarks of Netscape Communications Corporation in the United States and/or in other countries.

Other system names and product names mentioned in this manual are also trademarks and registered trademarks.

IP Address

When you use the unit for the first time immediately after you purchase the unit, it is necessary to set up the DICOM part placed inside the unit, adding an IP address and so on.

Before starting the setup, confirm the following with the network administrator.

- The IP address the UP-D77MD will use on the network
- Sub-net mask of the network
- Gateway address, if a gateway is included in the network

To confirm the IP address

The IP address assigned to the UP-D77MD can be confirmed.

- 1** Turn the UP-D77MD on.
- 2** Press the MENU button.
- 3** Display INFORMATION on the LCD by pressing the ⇐ or ⇒ button.
- 4** Display IP ADDRESS on the LCD by pressing the ⇕ or ⇓ button.
The IP address assigned to the UP-D77MD appears on the LCD.

Setting up the Personal Computer to be Used for Setup

- 1 Start the personal computer to be used for setup.
- 2 Open the TCP/IP setting page.
- 3 Enter the IP address of the computer and the sub-net mask.
 IP address of the computer: NNN.NNN.NNN.nnn
 NNN.NNN.NNN.NNN: IP address assigned to the UP-D77MD on the network
 nnn: Arbitrary numbers (from 1 to 254, should not be the same as those of the fourth NNN of the UP-D77MD IP address.)
 Sub-net Mask:255.255.255.0
- 4 Restart the personal computer.
- 5 Connect the UP-D77MD and the personal computer to be used for setup using the **network cross cable**.

About the Setup Window

The UP-D77MD can be set up on the setup window displayed on the Web browser of the personal computer to be used for setup.

The setup window has the following pages:

- Summary/Print Job page
 Displays the summary and print job status of the UP-D77MD.
- DICOM Settings page
 Sets up the IP address, DICOM AE title, and so on.
- Printer Status page
 Displays the status of the UP-D77MD.
- E-Mail Settings page
 Sets up the items related to E-Mail.

Opening the Setup Window

- 1 Start the personal computer to be used for setup, and then start the Web browser software.
- 2 Enter the following address.
 http://NNN.NNN.NNN.NNN
 This is the IP address assigned to the UP-D77MD on the network.

Page selection area

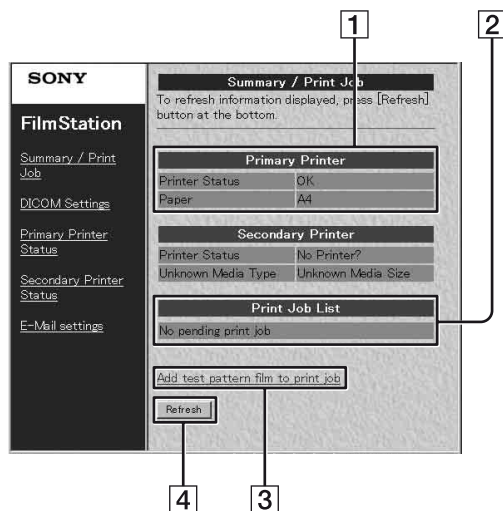
The screenshot shows the 'DICOM Settings' web page. On the left is a 'Page selection area' with a menu containing 'Summary / Print Job', 'DICOM Settings', 'Primary Printer Status', 'Secondary Printer Status', and 'E-Mail settings'. The main content area is titled 'DICOM Settings' and includes a description: 'This page allows you to setup IP address and DICOM AE title(s) of the printer(s)'. It is divided into three sections: 'TCP/IP', 'Primary Printer', and 'Secondary Printer (Optional)'. Each section contains fields for 'Setup Software Version', 'IP Address', 'Subnet Mask', 'Default Gateway', 'DICOM Software Version', 'DICOM Software Serial #', 'AE Title', 'Port ID', and 'Status'. There are also checkboxes for 'Record Log'. A 'Save settings' button is located at the bottom of the page.

- 3 Click the desired page in the page selection area. The desired page opens.

Components of Pages

Summary/Print Job Page

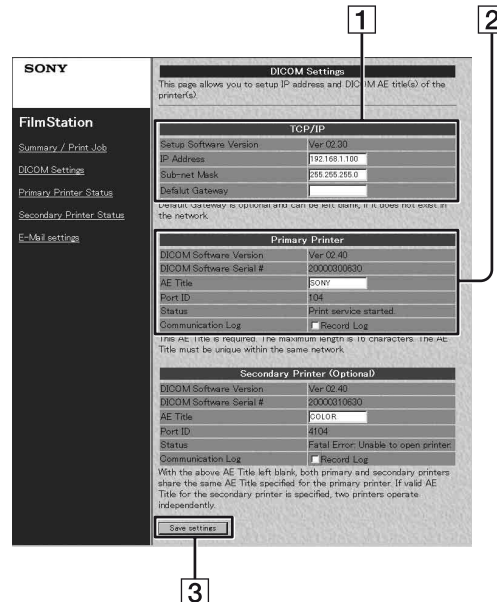
This page displays information on the UP-D77MD.



- 1 Printer (printer status) display section**
Printer Status: Displays the printer status.
Paper: Displays the type of paper in use.
A4: Displays the size of the paper in use (A4 is always displayed when either A4-size paper or letter-size paper is used in the UP-D77MD.)
- 2 Printer Job List display section**
Displays when a job is waiting to be printed.
- 3 Add test pattern film to print job**
Push this button to print the test pattern.
- 4 Refresh button**
Click this button to update the window.

DICOM Settings Page

This page allows you to set up the IP address and DICOM AE title.



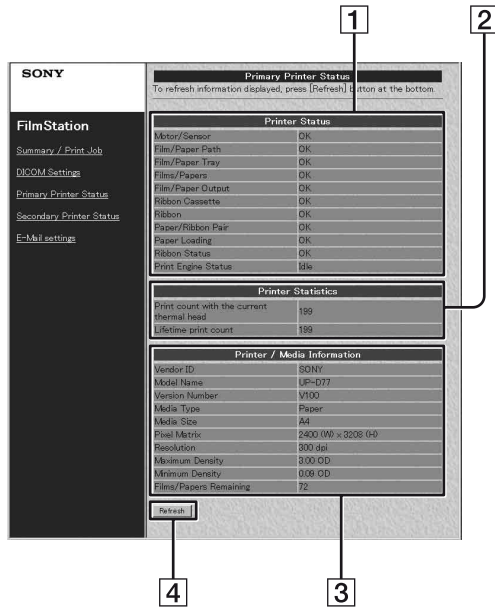
- 1 TCP/IP section**
Setup Software Version: Displays the version of the setup window.
IP Address: Sets the IP address and displays it.
Sub-net Mask: Sets the Sub-net mask and displays it.
Default Gateway: Sets the default gateway and displays it.
- 2 Printer section**
DICOM Software Version: Displays the version of the DICOM software.
DICOM Software Serial #: Displays the serial number of the DICOM software.
AE Title: Sets the AE title and displays it.
Port ID: Displays the port number.
Status: Displays the status of the DICOM software.
Communication Log: Keeps a communication log if a checkmark is placed here.
- 3 Save settings button**
Click this button to save the settings performed on this page. If you move to another page without pushing this button, the settings will be lost.

Note

The “Secondary Printer (optional)” section is not used currently.

Printer Status Page

This page displays the status of the UP-D77MD.



1 Printer Status display area

- Motor/Sensor: Displays the error status or the motor/sensor system.
- Film/Paper Path: Displays whether or not the paper has jammed in the printing path.
- Film/Paper Tray: "OK" is always displayed in case of UP-D77MD.
- Films/Papers: Displays whether or not paper is loaded on the paper tray. If the paper tray is not loaded, "Error" is displayed.
- Film/Paper Output: "OK" is always displayed in case of the UP-D77MD.
- Ribbon Cassette: Displays whether or not the ink ribbon cassette is loaded.
- Ribbon: Displays whether or not the ink ribbon remains.
- Paper/Ribbon Pair: "OK" is always displayed in case of the UP-D77MD.
- Paper Loading: "OK" is always displayed in case of the UP-D77MD.
- Ribbon Status: Displays whether or not the correct ink ribbon is loaded.
- Printer Engine Status: Displays the printer operating status (idling, printing and so on)

2 Printer Statistics display area

- Displays the total printings performed by the unit.
- Print count with the current thermal head: Displays the total prints after the thermal head has been replaced.
- Lifetime print count: Displays the total prints since the unit has been shipped.

3 Printer/Media Information display area

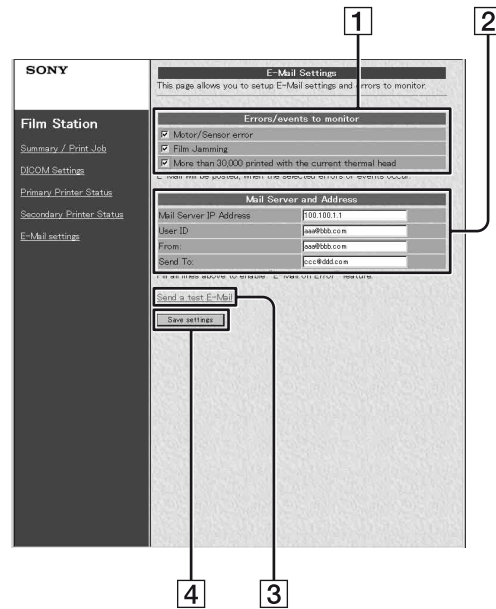
Vendor ID, Model Name, Version Number, Media Type, Media Size, Pixel Matrix, Resolution, Maximum Density, Minimum Density: Displays various information on the unit status.
Film/Paper Remaining: "Unknown" is always displayed in case of the UP-D77MD.

4 Refresh button

Click this button to update the window.

E-Mail Settings Page

This page allows you to perform settings related to E-mail.



1 Errors/events to monitor setting area

Sets the criteria for sending the E-mail.

2 Mail Server and Address setting area

Performs the setup of E-mail service.

3 Send a test E-Mail button

Press this button to send an E-mail message for testing purposes.

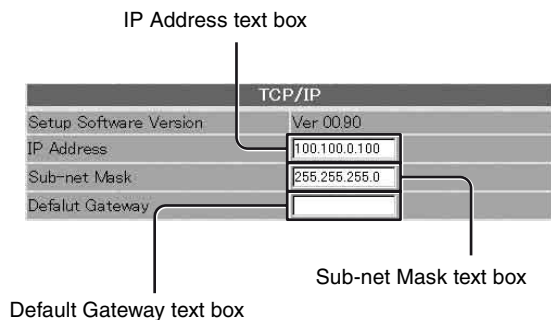
4 Save settings button

Click this button to save the settings performed on this page. If you move to another page without pushing this button, the settings will be lost.

Setup of the Unit

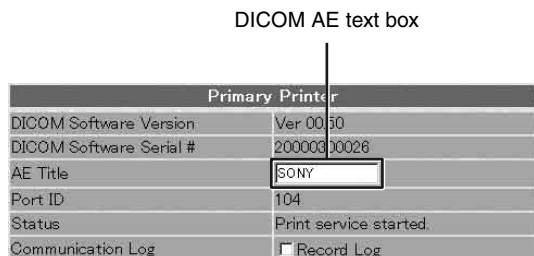
Perform the following settings when the unit is used for the first time after being purchased, or when the IP address assigned to the UP-D77MD is changed.

- 1 Open the DICOM Settings page.
For detailed information on how to open the page, see “Opening the Setup Window” (on page 27).
- 2 Perform the required settings related to TCP/IP.



- ① Enter the IP address of the UP-D77MD on the network in the IP Address text box.
- ② Enter the sub-net mask in the Sub-net Mask text box.
- ③ Enter the IP address of the default gateway if a gateway is used on the network.

- 3 Enter the DICOM AE title in the AE Title text box.
Up to 16 characters can be entered.

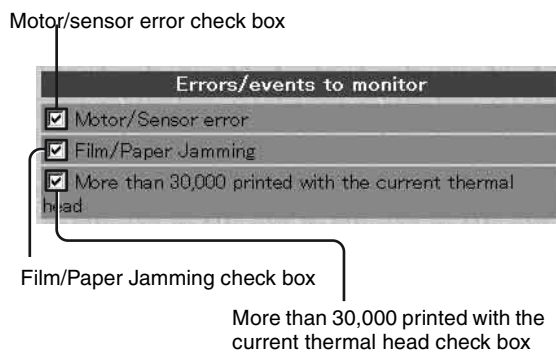


- 4 Click the [Save settings] button.
The settings are saved.

Setup of E-Mail

The E-Mail settings page allows you to set up E-mail service so that an e-mail message will be sent automatically when an error occurs in the UP-D77MD.

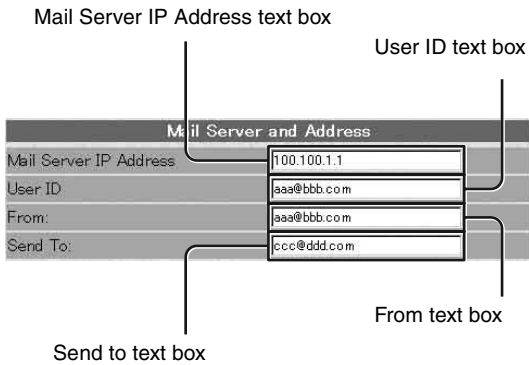
- 1 Open the E-Mail settings page.
For detailed information on how to open the page, see “Opening the Setup Window” (on page 27).
- 2 Set criteria determining when an e-mail message should be sent.



Place the check marks on the check box corresponding to an error that requires notification via an e-mail message.

Error item	Content
Motor/Sensor error	When an error occurs in the motor/sensor system.
Film/Paper Jamming	When a paper has jammed.
More than 30,000 printed with the current thermal head	When the total number of prints with the current thermal head exceeds 30,000.

3 Perform the settings related to e-mail.



Enter addresses in the corresponding text boxes.

Enter item	Content
Mail Server IP Address	IP address of the mail server ^{a)}
User ID	User ID
From	Return address of the E-mail notification when an error occurs and an e-mail message is sent.
Send to	Destination address of the E-mail.

a) Use only numerical characters for the IP address.

4 Click the [Save settings] button. The settings are saved.

Confirmation After Setup

After all of settings have been completed

Turn off the power of the UP-D77MD and disconnect the UP-D77MD and the personal computer for setup. Proceed as follows to confirm the operation of the UP-D77MD.

- 1 Connect the UP-D77MD to the network.
- 2 Turn on the power of the UP-D77MD.
- 3 Insert a paper tray in which the paper has been placed and the ink ribbon cassette.
- 4 Send the image data from a modality. The unit starts printing.

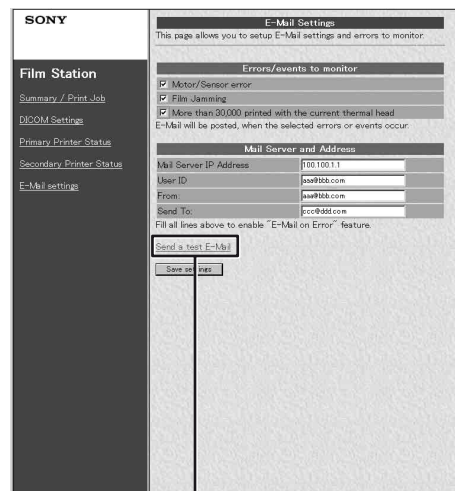
When the image data is not sent

Check whether or not the IP address of the modality side is correct.

When setting up an E-mail

Confirm the settings for an E-mail as follows.

- 1 Click E-mail settings in the page selection area to open the E-mail settings page. When this page is opened after E-mail settings have been completed, the Send a test E-Mail button appears.
- 2 Click the [Send a test E-Mail] button. A test e-mail message is sent if settings have been correctly performed.



Send a test E-Mail button

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