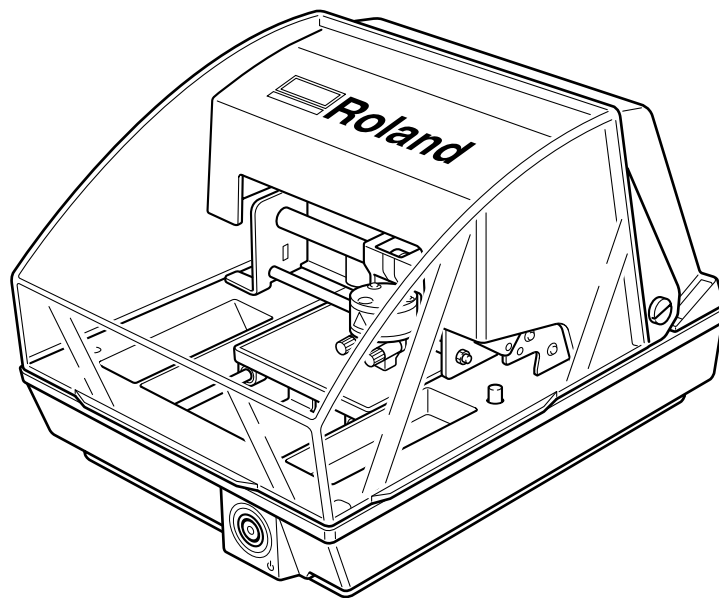


METAZA

MPX-80

User's Manual



- To ensure safe usage and full performance of this product, please be sure to read through this manual completely.
- To ensure immediate access whenever needed, store this manual in a safe location.
- Unauthorized copying, quotation, or translation of this manual, in whole or in part, without the written approval of Roland DG Corp., is prohibited.
- The contents of this document and the specifications of this product are subject to change without notice.
- Roland DG Corp. assumes no responsibility for any loss or damage relating to this product, regardless of any defect in this product or this manual. Such loss or damage, whether direct or indirect, includes, but is not limited to, that arising from the specifications or performance of this product, that due to failure of the product to perform, and that arising from any article made using this product.

For the USA

**FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE
STATEMENT**

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.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.

The I/O cables between this equipment and the computing device must be shielded.

For Canada

CLASS A NOTICE

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

CLASSE A AVIS

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

For California

WARNING

This product contains chemicals known to cause cancer, birth defects and other reproductive harm, including lead.

For EU Countries



Manufacturer:

ROLAND DG CORPORATION


1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN

The authorized representative in the EU:

Roland DG Corporation, German Office Halskestr.7 47877 Willich, Germany

Roland DG Corp. has licensed the MMP technology from the TPL Group.

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




To Ensure Safe Use

Improper handling or operation of this machine may result in injury or damage to property. Points which must be observed to prevent such injury or damage are described as follows.

About WARNING and CAUTION Notices

 WARNING	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
 CAUTION	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

	The  symbol alerts the user to important instructions or warnings. The specific meaning of the symbol is determined by the design contained within the triangle. The symbol at left means "danger of electrocution."
	The  symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. The symbol at left means the unit must never be disassembled.
	The  symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. The symbol at left means the power-cord plug must be unplugged from the outlet.



Incorrect operation may cause injury



WARNING



Keep children away from the machine.

The machine includes areas and components that pose a hazard to children and may result in injury, blindness, choking, or other serious accident.



Never attempt to disassemble, repair, or modify the machine.

Doing so may result in fire, electrical shock, or injury. Entrust repairs to a trained service technician.



CAUTION



Install in a location that is level and stable.

Installation in an unsuitable location may cause an accident, including a fall or tipover.




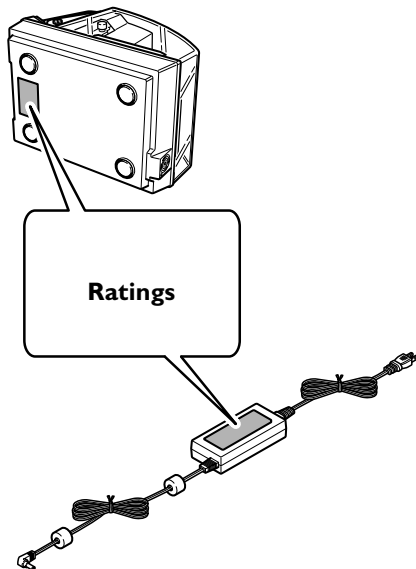
Be sure to follow the operation procedures described in this documentation. Never allow anyone unfamiliar with the usage or handling of the machine to touch it.


Incorrect usage or handling may result in unexpected injury.


 **Danger of electrical short, shock, electrocution, or fire**


 **WARNING**


-  **Connect to an electrical outlet that complies with this machine's ratings (for voltage, frequency, and current).**
Incorrect voltage or insufficient current may cause fire or electrical shock.





-  **Do not use with any power supply other than the dedicated AC adapter.**
Use with any other power supply may lead to fire or electrocution.


-  **Never use out of doors or in any location where exposure to water or high humidity may occur. Never touch with wet hands.**
Doing so may result in fire or electrical shock.


-  **Never allow any foreign object to get inside. Never expose to liquid spills.**
Inserting objects such as coins or matches or allowing beverages to be spilled into the ventilation ports may result in fire or electrical shock. If anything gets inside, immediately disconnect the power cord and contact your authorized Roland DG Corp. dealer.


-  **Never place any flammable object nearby. Never use a combustible aerosol spray nearby. Never use in any location where gases can accumulate.**
Combustion or explosion may be a danger.

-  **Handle the power cord, plug, and electrical outlet correctly and with care. Never use any article that is damaged.**
Using a damaged article may result in fire or electrical shock.

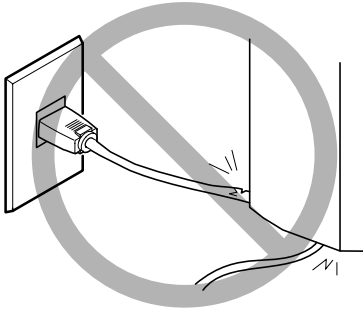
-  **When using an extension cord or power strip, use one that adequately satisfies the machine's ratings (for voltage, frequency, and current).**
Use of multiple electrical loads on a single electrical outlet or of a lengthy extension cord may cause fire.

-  **When the machine will be out of use for a prolonged period, disconnect the power cord.**
This can prevent accidents in the event of current leakage or unintended startup.

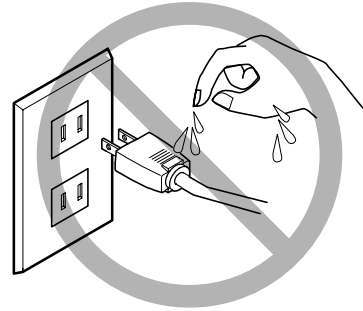
-  **Position so that the power plug is within immediate reach at all times.**
This is to enable quick disconnection of the power plug in the event of an emergency. Install the machine next to an electrical outlet. Also, provide enough empty space to allow immediate access to the electrical outlet.

-  **If sparking, smoke, burning odor, unusual sound, or abnormal operation occurs, immediately unplug the power cord. Never use if any component is damaged.**
Continuing to use the machine may result in fire, electrical shock, or injury. Contact your authorized Roland DG Corp. dealer.

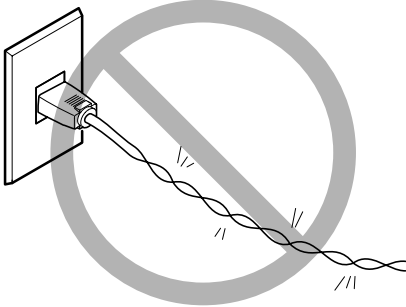
 Important notes about the power cord, plug, and electrical outlet



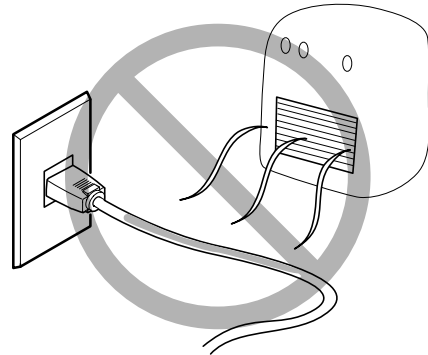
Never place any object on top or subject to damage.



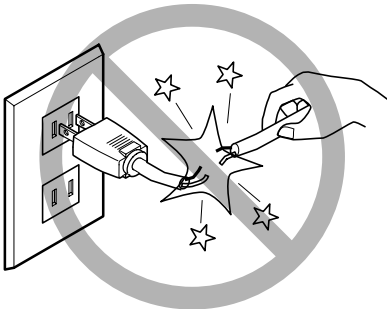
Never allow to get wet.



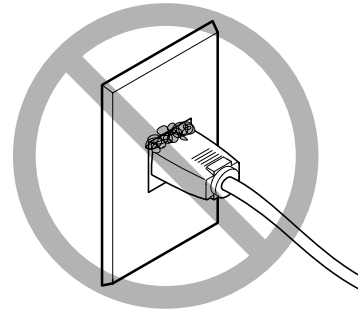
Never bend or twist with undue force.



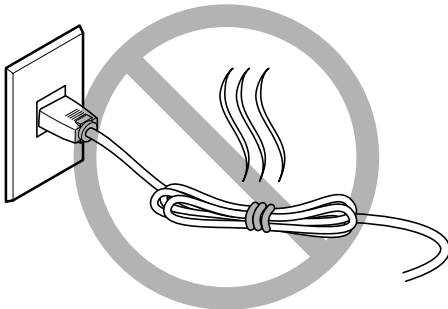
Never make hot.



Never pull with undue force.



Dust may cause fire.



Never bundle, bind, or roll up.

 The head area becomes hot

 **WARNING**

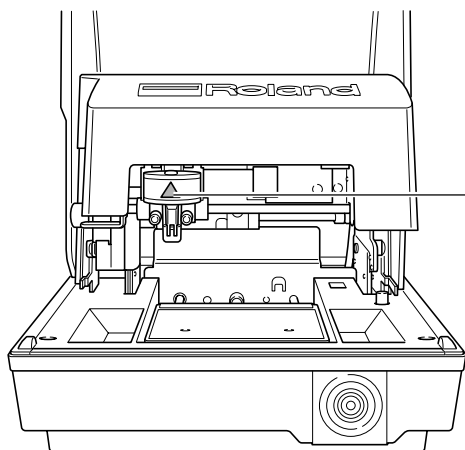


Never touch the head immediately after printing has finished.
Doing so may cause burns.

⚠ Warning Label

Warning label is affixed to make areas of danger immediately clear. The meaning of the label is as follows. Be sure to heed its warnings.

Also, never remove the label or allow it to become obscured.



Caution: High Temperature
Never touch immediately after printing.

Important Notes on Handling and Use

This machine is a precision device. To ensure the full performance of this machine, be sure to observe the following important points. Failure to observe these may not only result in loss of performance, but may also cause malfunction or breakdown.

This Machine is a Precision Device.

- Handle carefully, and never subject the machine to impact or excessive force.
- Never print material outside the range of specifications.

Install in a Suitable Location

- Install in a location having the specified temperature and relative humidity.
- Install in a quiet, stable location offering good operating conditions.

When Moving the Machine

- When moving the machine, be sure to support it at the bottom using two hands. Attempting to move the machine by holding it at a different location may result in damage.
- When moving the machine to another location, be sure to attach the retainers. Attempting moving without attaching the retainers may result in damage.

Printing

- Never attempt to perform printing on the edges or over holes in printing material.
- Printing results may vary according to the original data, the material printed, and the details of settings. Before you perform actual printing, we recommend carrying out test printing.
- Attempting printing with no material loaded may damage the pins or heads.

About the Documentation for This Machine

Documentation Included with the Machine

The following documentation is included with the machine.

MPX-80 User's Manual (this manual)

This describes important notes for ensuring safe use, and explains how to install and operate the machine. This also describes how to use the software, including the steps up through performing printing. Be sure to read it first.

Roland Software Package Software Guide

This explains how to install included program and other software and details.
Be sure to read this, when connecting the machine to a computer.

Windows Driver Online Help

Roland METAZASstudio Online Help

Roland SFEdit2 Online Help

You view this documentation on your computer screen. Installing the respective programs makes these available for viewing. They describe in detail the commands used in the programs. For more information about how to view these, refer to the Roland Software Package Software Guide.

Chapter I

Getting Started

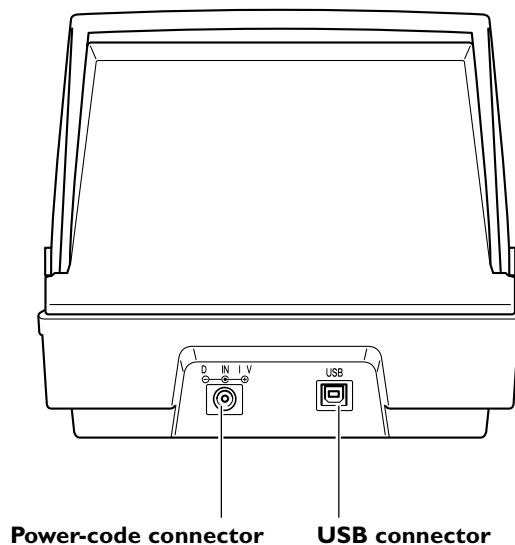
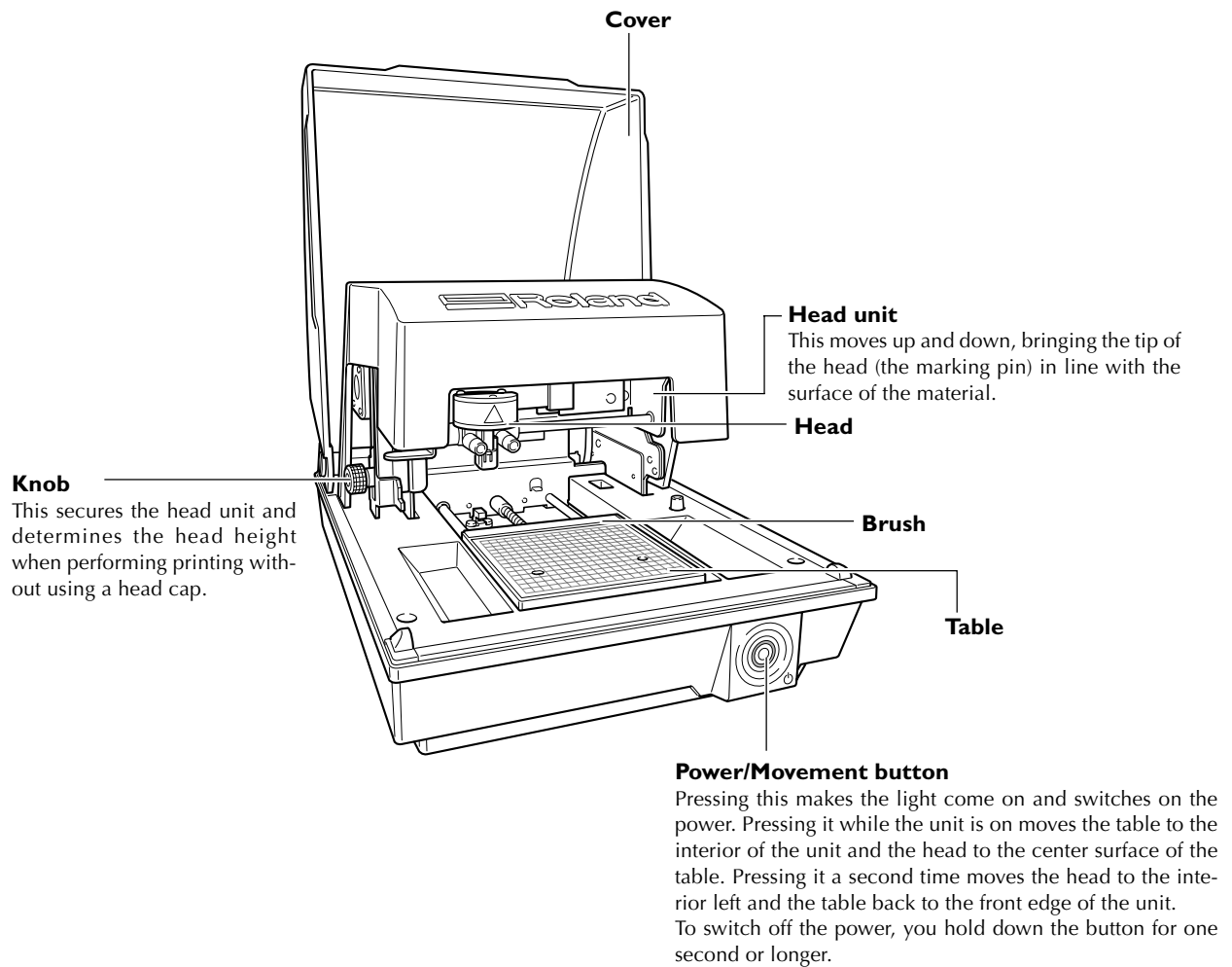
I-I About the Machine

Features

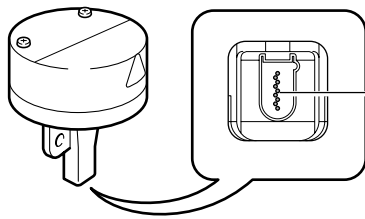
This machine is a metal printer. It prints images by striking detailed points using a marking pin mounted in a head.

Names and Functions

Main Unit



Head

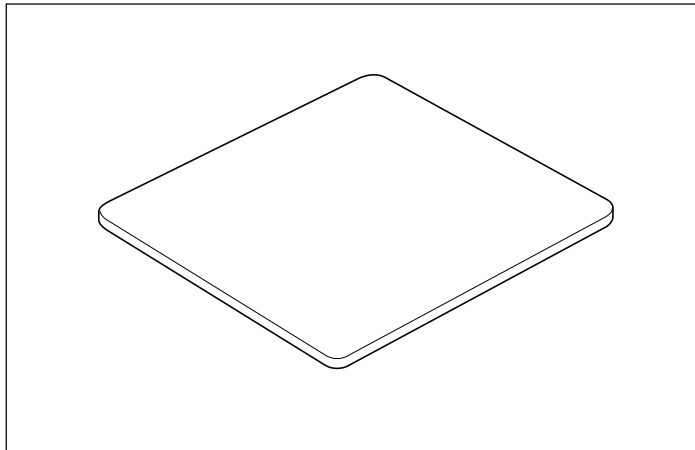


Marking pins

Nine pins are arranged in the head. Printing is performed using any single one of these.

Material Retainers

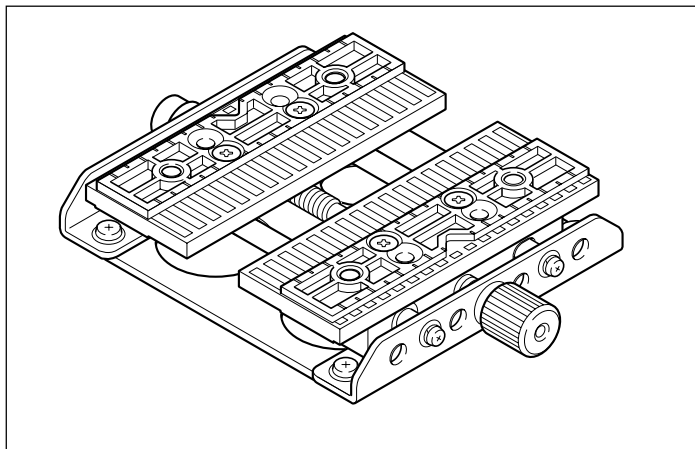
Adhesive sheet



Material is placed on the adhesive sheet, which then holds the material in place. This lets you immobilize objects without having to use commercially available tape or the like.

☞ P. 31, "Loading Material (Using the Adhesive Sheet)"

Center vise

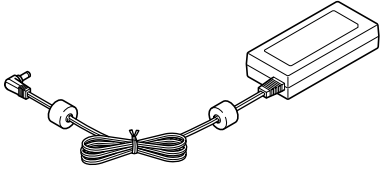
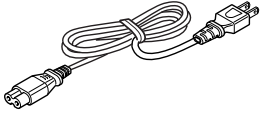
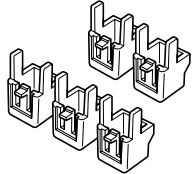
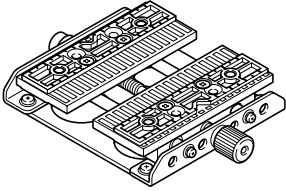
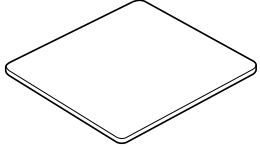
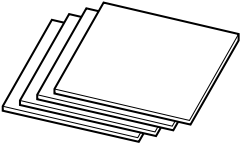
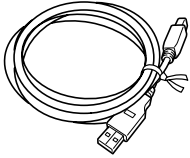
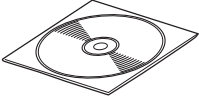
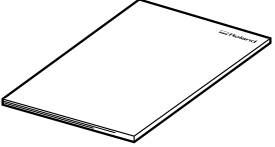
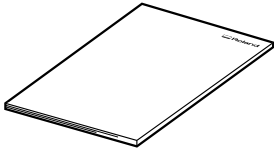


This is a vise made of plastic, and secures material in place by clamping it. This makes it possible to immobilize material that cannot be secured using the adhesive sheet, such as items having a curved bottom surface. The act of securing an item in place also accurately determines the center position in the horizontal direction.

☞ P. 33, "Loading Material (Using the Center Vise)"

I-2 Checking the Included Items

The following items are included with the machine. Make sure they are all present and accounted for.

 <p>AC adapter</p>	 <p>Power cord</p>	 <p>Head caps (one installed on the unit by default)</p>
 <p>Center vice</p>	 <p>Adhesive sheet (installed on the unit by default)</p>	 <p>Test-use printing material</p>
 <p>USB cable</p>	 <p>Roland Software Package CD-ROM</p>	 <p>User's manual (this document)</p>
 <p>Software Guide</p>		

Chapter 2

Getting Ready to Print

2-I Installation

Installation Environment

Install in a quiet, stable location offering good operating conditions. An unsuitable location can cause accident, fire, faulty operation, or breakdown.

WARNING

Install in a location that is level and stable.

Installation in an unsuitable location may cause an accident, including a fall or tipover.

- > Never install in a location subject to wide fluctuations in temperature or humidity.
- > Never install in a location subject to shaking or vibration.
- > Never install in a location where the floor is tilted, not level, or unstable.
- > Never install in a dusty or dirty location, or out of doors.
- > Never install in a location exposed to direct sunlight or near air-conditioning or heating equipment.
- > Never install in a location exposed to considerable electrical or magnetic noise, or other forms of electromagnetic energy.

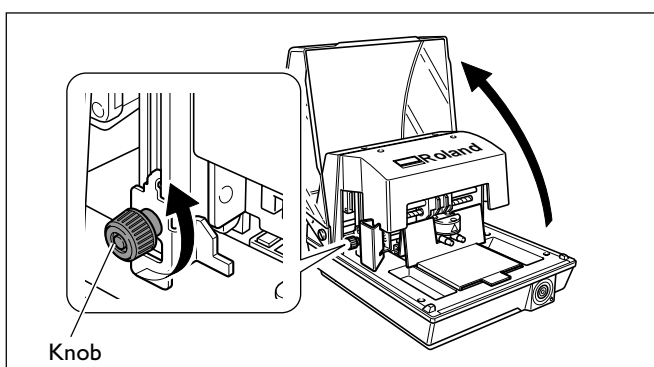
Unpacking

Retaining materials are attached to protect the machine from vibration during shipment. Remove these after emplacement.

- Remove all Retaining materials. Any that remain may cause faulty operation or breakdown when the power is switched on.
- The Retaining materials are required when moving the machine to a different location. Store them carefully so that they do not get misplaced.

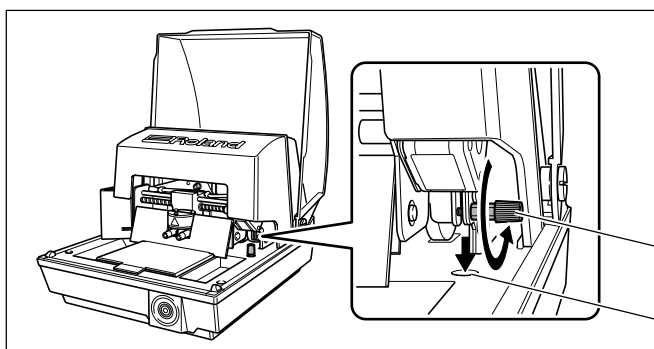
Procedure

1



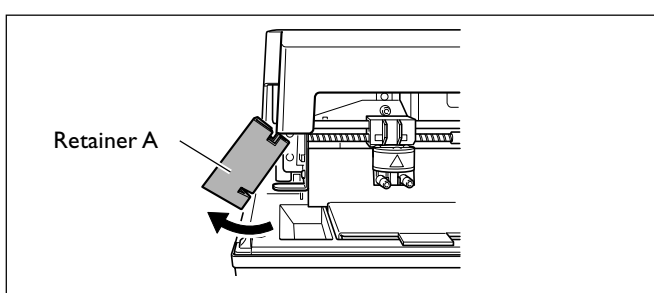
Open the cover.
Loosen the knob.

2



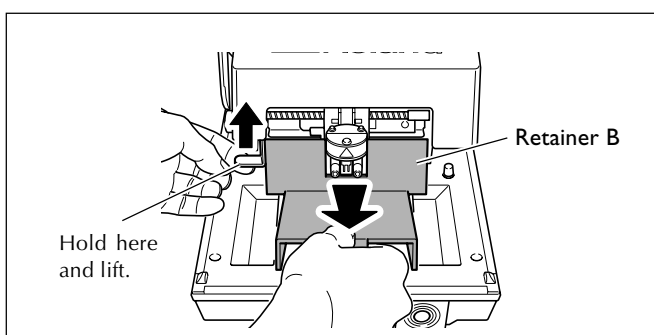
Remove the retaining screw and store it at the location shown in the figure.

3



Remove retainer A.

4

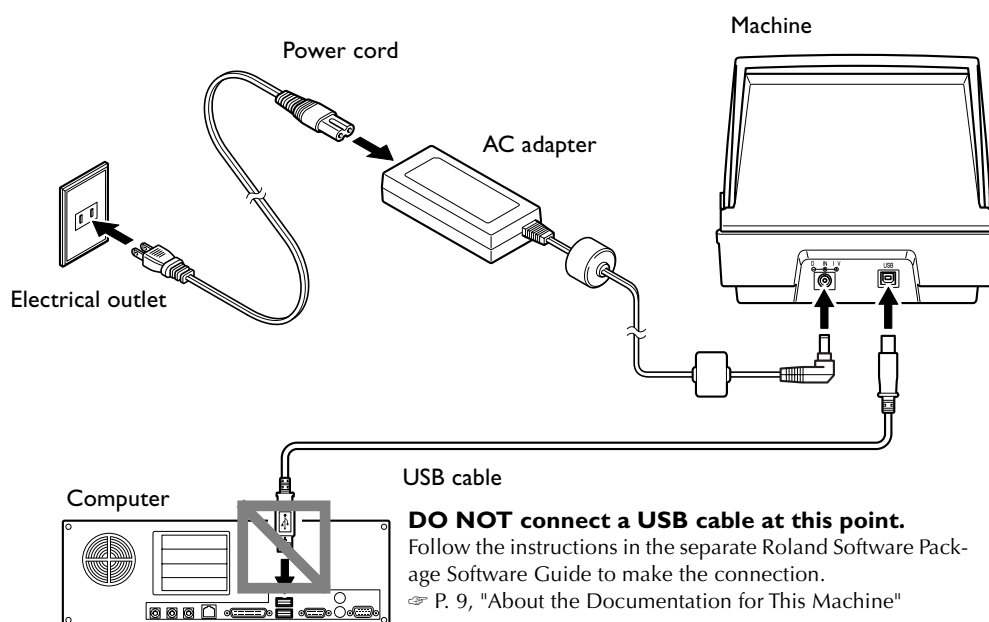


Holding the unit at the locations shown in the figure, lift the head unit and remove retainer B.

2-2 Cable Connections

Connecting the Cables

- ⚠ WARNING** Do not use with any electrical power supply that does not meet the ratings displayed on the AC adapter.
Use with any other power supply may lead to fire or electrocution.
- ⚠ WARNING** Never use any AC adapter and power cord other than the AC adapter and power cord included with the machine.
Doing so may lead to fire, electrical shock, or electrocution.
- ⚠ WARNING** Handle the power cord, plug, and electrical outlet correctly and with care. Never use any article that is damaged.
Using a damaged article may result in fire or electrical shock.
- ⚠ WARNING** When using an extension cord or power strip, use one that adequately satisfies the machine's ratings (for voltage, frequency, and current).
Use of multiple electrical loads on a single electrical outlet or of a lengthy extension cord may cause fire.



- Never connect two or more machines to one computer.
- For the USB cable, use the included cable.
- Never use a USB hub.

2-3 Installing the Software

Installing and Setting up the Included Software

You install and set up the following programs and other software on the included CD-ROM (Roland Software Package).

- Windows driver (METAZA driver)
- Roland METAZAStudio
- Roland SFEdit2
- MPX-80 Head Manager

For overviews of the programs and other software and more information on how to install them, refer to the separate Roland Software Package Software Guide.

For METAZAStudio, after installing the program, the setting for the printer to use must be made. For information on how to make the setting, refer to “METAZAStudio Settings” on the following page.

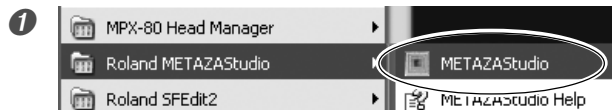
☞ P. 9, "About the Documentation for This Machine"

2-4 METAZAStudio Settings

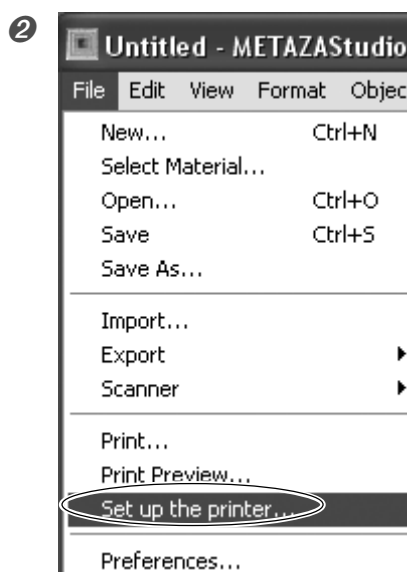
Making the Setting for the Printer

After you finish installing and setting up METAZAStudio, continue by making the setting for the printer. Be sure to make the setting before use.

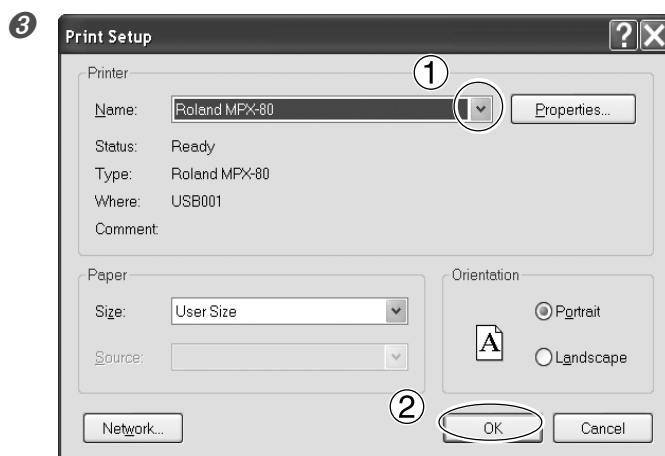
Procedure



Click [Start], then click [All Programs] (or [Programs]).
Click [Roland METAZASudio], then click [METAZASudio].



Go to the [File] menu and click [Set up the printer].
The [Print Setup] dialog box appears.



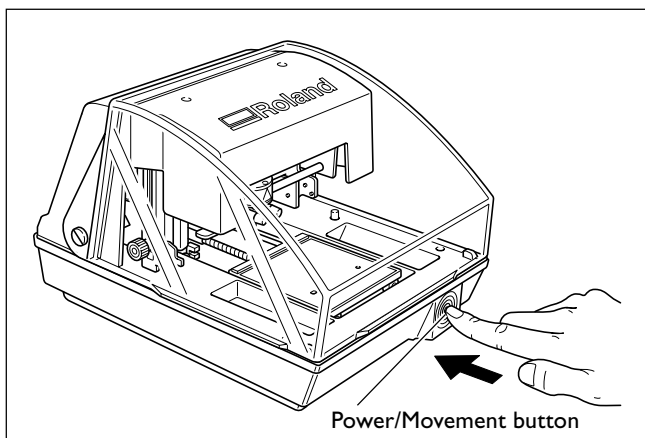
- ① Click the arrow shown in the figure, then select [Roland MPX-80].
- ② Click [OK].

Chapter 3

Performing Printing

3-I Switching the Power On and Off

Switching On the Power



Press the Power/Movement button.

The Power/Movement button lights up, and the head and table move as follows.

> Head:

This rises to the highest position, then moves to the left edge.

> Table:

This moves to the interior of the machine, then back to the front.

This operation is called initialization.

Switching Off the Power

Hold down the Power/Movement button for one second or longer.

The light goes dark and the power is switched off.

3-2 Starting METAZAStudio

Starting METAZAStudio

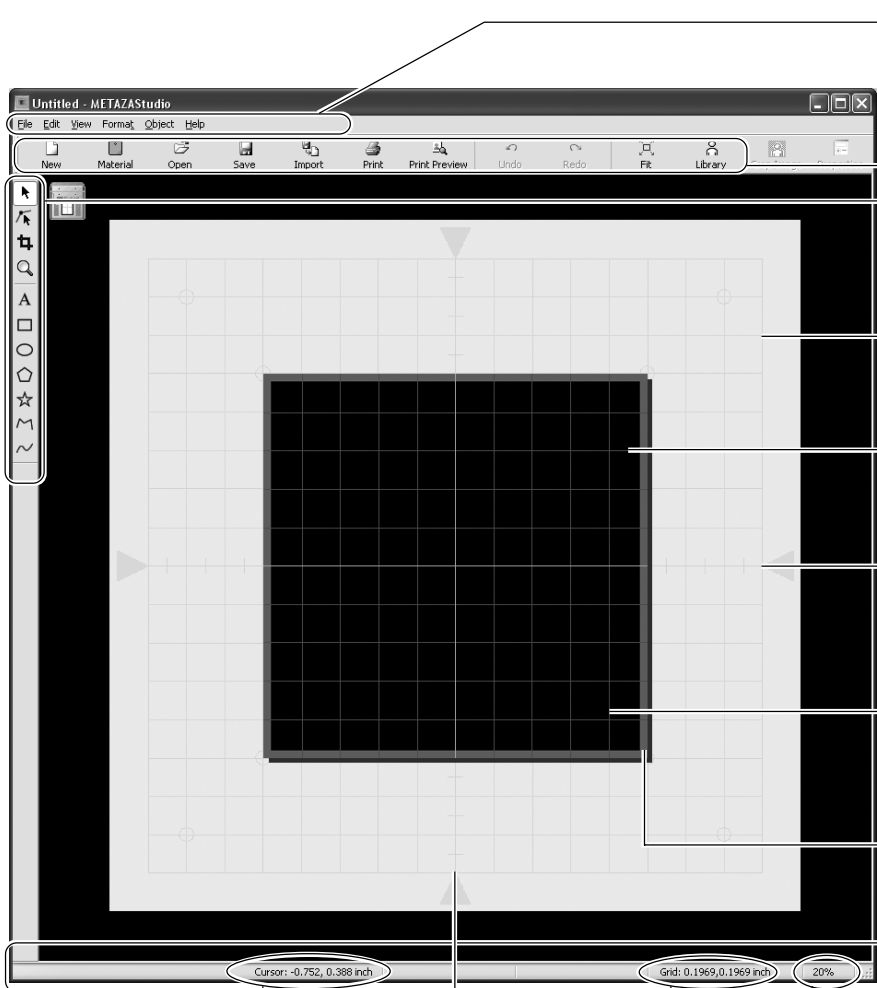


Click [Start], then click [All Programs] (or [Programs]).

Click [Roland METAZAStudio], then click [METAZAStudio].

After the opening screen, the screen for METAZAStudio appears.
For information on how to view this window, see the following page.

Names and Functions of METAZAStudio Screen Items



Menu Bar

Runs the various commands for METAZAStudio.

☞ METAZAStudio online help ("Commands")

Toolbar

The toolbar is provided with buttons for running METAZAStudio commands such as [Material] and [Open].

☞ METAZAStudio online help ("Commands" > "Toolbar buttons")

Table

The unit's table is shown here. The scale displayed represents the actual scale marks on the table.

Work Area

This is the area in which printing is possible. The workpiece size (printing area) set with the Windows-based driver is shown here.

☞ P. 64, "Driver settings"

Centerline

This indicates the vertical center location of the window.

Grid

This is a grid of lines displayed in the work area. It serves as a guide for positioning images and text.

Margin

This is a blank area where no printing is performed that lies inside the edges of the work area. It is set at 1 millimeter by default. You can change the size of the margin by going to the [File] menu and selecting [Preferences].

Settable range: 0 to 50 millimeters

☞ P. 36, "Step 1 : Decide on the Material," p. 58, "Step 1 : Decide on the Printing Area (Workpiece Size)"

Centerline

This indicates the horizontal center location of the window.

Present Cursor Position

This indicates the present location of the cursor. The position at the center of the window (where the two centerlines intersect) is (0, 0).

Grid Pitch

This displays the pitch (spacing) of the grid lines. Clicking the right mouse button over this displays menu items related to the appearance of the grid.

View Scaling Factor

This displays the present scaling factor for the screen view. Clicking the right mouse button over this displays a menu that lets you change the view scaling factor.

Status Bar

This shows the present location of the cursor, information about the shape, the grid, and the view magnification.

Moving the pointer to a toolbar button or pointing to a menu command makes a brief explanation of the button or command appear at the left edge.

Note : Shape Information

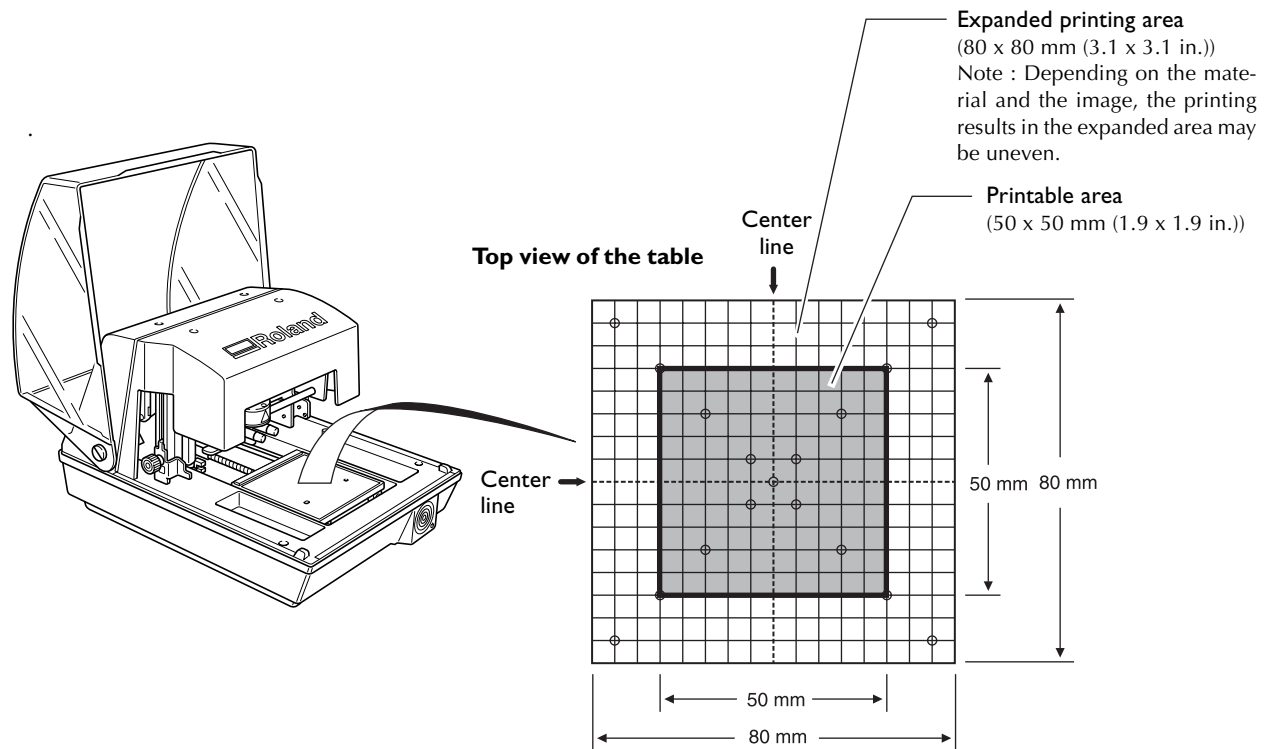
This appears when you click an on-screen object (image, text, or shape). The center position and size of the present shape are displayed, as shown in the figure below.

Center: -3.6, 2.1 mm Size: 27.4, 25.3 mm

3-3 Getting Ready to Print

The Printable Area

The machine's printable area is as follows.



Head Caps

Using the head cap is usually recommended.

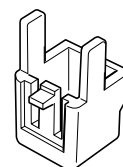
When you're using a head cap, the machine can detect the height position of the material, so setting the head height during printing is not necessary. Also, the head tracks the surface height of the material, so even cylindrical material can be printed. (Trackable height displacement is subject to an upper limit.) This means that it's usually a good idea to carry out printing using a head cap.

☞ P. 29, "Conditions for Material When Printing Curved Surfaces," p. 69, "The Replacement Cycle for the Head Cap"

If the material is damaged when using the head cap.

Some materials may be damaged by the head cap, and so the head cap cannot be used when printing such materials. In such cases, determine the head height while the head cap is attached and secure the head in place, then remove the head cap and carry out printing.

☞ P. 31, "Loading Material (Using the Adhesive Sheet)," p. 33, "Loading Material (Using the Center Vise)"



Head cap

Preparing Material to Print

Prepare material that meets all of the following conditions.

Loading material that is larger or thinner than this may cause the material to warp during printing and strike the head, damaging the marking pin.

Thickness

When using the adhesive sheet: 0.3 to 40 mm (0.012 to 1.5 in.)

When using the center vise: 0.3 to 20 mm (0.012 to 0.7 in.)

Size

When using the adhesive sheet: Length (or width) of 90 mm (3.5 in.) or less

When using the center vise: Width of 60 mm (2.3 in.) or less (subject to change depending on the orientation of the installed vise) Length of 100 (3.9 in.) mm or less
 ☞ P. 33, "Using the Center Vise"

* Note that even if thickness and size are within the range as described above, it may not be possible to perform printing correctly on materials that warp when struck. Refer to the table below, which provides a general guide to printable sizes according to thicknesses.

Material	Thickness	Printable material size (general guide)
Aluminium	2.0 mm (0.08 in.)	Length (or width) of 60 mm (2.3 in.) or less
	1.5 mm (0.06 in.)	Length (or width) of 40 mm (1.5 in.) or less
	1.0 mm (0.04 in.)	Length (or width) of 30 mm (1.1 in.) or less
	0.5 mm (0.02 in.)	Length (or width) of 20 mm (0.7 in.) or less
	0.3 mm (0.01 in.)	Length (or width) of 20 mm (0.7 in.) or less
Brass or copper	2.0 mm (0.08 in.)	Length (or width) of 60 mm (2.3 in.) or less
	1.5 mm (0.06 in.)	Length (or width) of 40 mm (1.5 in.) or less
	1.0 mm (0.04 in.)	Length (or width) of 30 mm (1.1 in.) or less
	0.5 mm (0.02 in.)	Length (or width) of 15 mm (0.5 in.) or less
	0.3 mm (0.01 in.)	Length (or width) of 15 mm (0.5 in.) or less
Stainless steel	2.0 mm (0.08 in.)	Length (or width) of 60 mm (2.3 in.) or less
	1.0 mm (0.04 in.)	Length (or width) of 40 mm (1.5 in.) or less

Hardness of surface to print

Vickers hardness (HV) of 200 or less

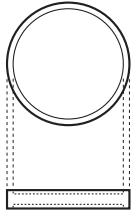
* Note that materials which may crack or split by printing (such as glass, stone, precious stones, china, and porcelain) cannot be printed even if hardness is within the preceding range. Attempting to print such materials may damage the machine.

Cross-section of printing material

When using an adhesive sheet or a centervice.

- Edge of the material must not be too high

Not OK



Edge of the material is too high.

When using an adhesive sheet.

- The back surface must be flat, with no difference in level.

Not OK



Back surface is curved.

Not OK

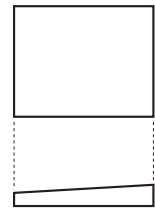


Back surface is uneven.

Without a head cap

- The printed surface must be level.

Not OK



Surface to print is not straight.

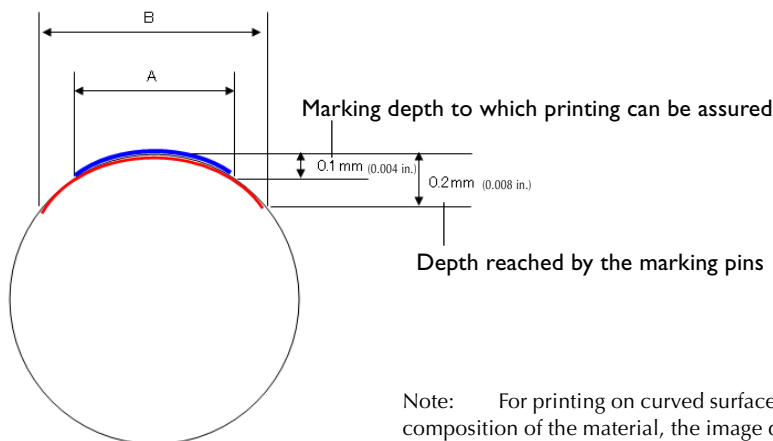
Conditions for Material When Printing Curved Surfaces

The table and figure below show the printing-assured area and the area reached by the marking pins with respect to the diameter of the cylinder. Note, however, that the following conditions are assumed.

- The head cap is used.
- The material has circularity.

When you're performing printing on curved surfaces, take these conditions into account when selecting the material.

Diameter	Printing-assured area (A)	Area reached by the marking pins (B)
10 mm (0.3 in.)	2.0 mm (0.079 in.)	2.8 mm (0.11 in.)
20 mm (0.7 in.)	2.8 mm (0.11 in.)	4.0 mm (0.16 in.)
30 mm (1.1 in.)	3.4 mm (0.14 in.)	4.8 mm (0.19 in.)



Note: For printing on curved surfaces, regardless of the shape or composition of the material, the image quality of photographic data cannot be assured.

Preparing the Image

Prepare an image (such as a photograph or drawing) for printing.

Data formats supported by METAZASudio

- Files in JPEG format
- Files in BMP (bitmap) format
- Files in AI or EPS format created by Illustrator version 7 or 8
- Files in AI or EPS format exported by CorelDRAW version 7 or 8

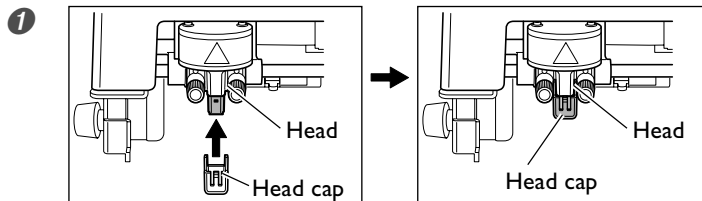
Note : Illustrator and CorelDRAW files are subject to a number of limitations. For details, see the online help for METAZASudio.

☞ METAZASudio online help ("Hints and Tips" > "Reusing Existing Data")

3-4 Loading Material (Using the Adhesive Sheet)

Loading Material Using the Adhesive Sheet

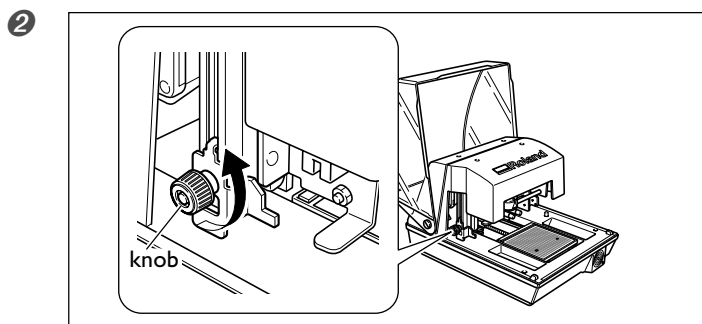
Procedure



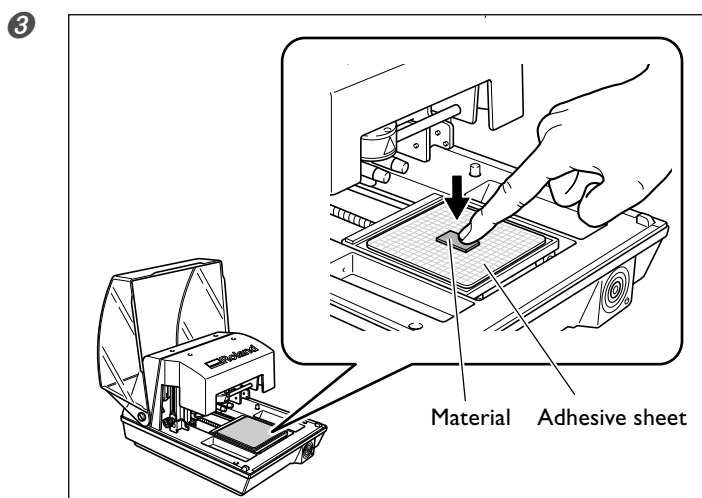
Attach a head cap.

Fit the head cap into place on the tip of the head. The head cap is attached correctly when its tab clicks into place in the hole in the head.

☞ P. 27, "Head Caps"



Loosen the knob.



Affix the adhesive sheet to the table, then mount the material on the sheet.

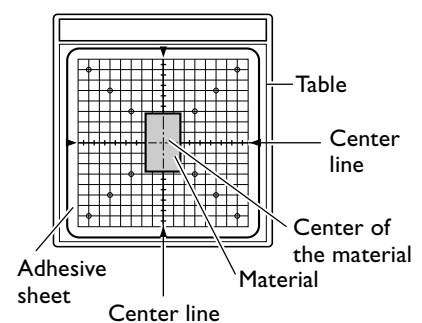
Press down lightly on the material to secure it in place.

Mounting the Adhesive Sheet

- Place it straight, aligned with the scale marks on the table.
- Place inside the table frame.
- Be careful not to allow any air bubbles to form between the adhesive sheet and the table.

How to Place Material

Place the material at the center of the scale on the table.



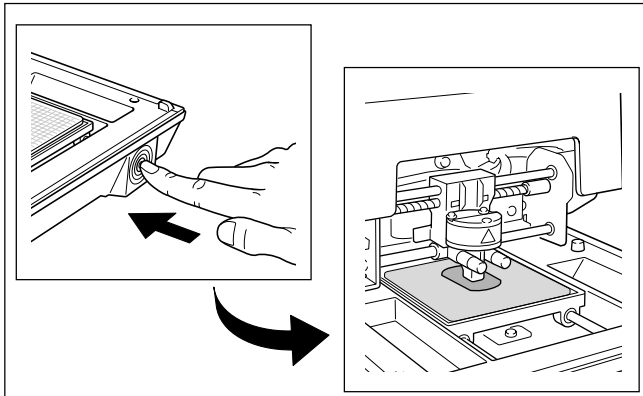
If you're performing printing with the head cap attached, this completes loading of the material.

If you're performing printing with no head cap attached, then go on to the following steps.

3-4 Loading Material (Using the Adhesive Sheet)

The procedure from this point on is for when you're not using the head cap.

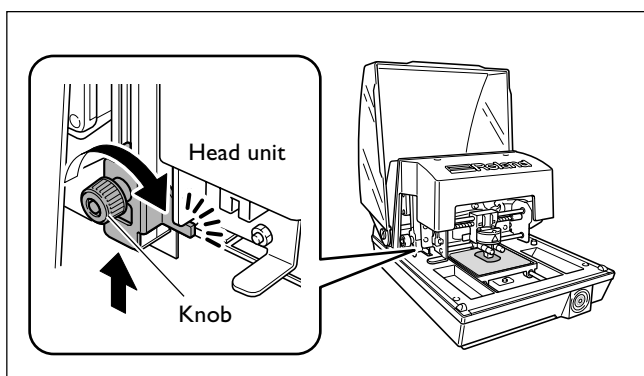
④



Press the Power/Movement button.

The table and head move, and stop at the location where the tip of the nose cap touches the surface of the material.

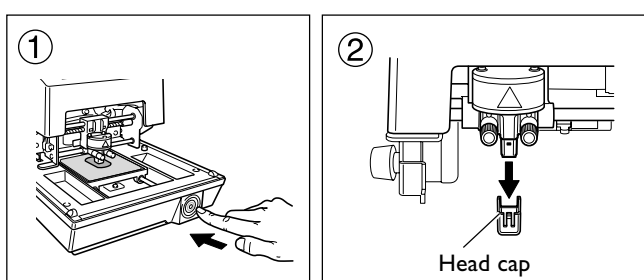
⑤



Lock the knob to set the head height.

Gently lift the knob, then secure it in place at a position flush against the head unit.

⑥



① Press the Power/Movement button.

② Wait for the movement of the head to stop, then detach the head cap.

Handling of the Adhesive Sheet

➤ Buildup of dust or the like on the adhesive sheet can reduce the sheet's adhesive force, making it difficult to secure material in place. If the adhesive force has been reduced, then wash the adhesive sheet.

☞ P. 68, "Cleaning the Adhesive Sheet"

➤ Never rub the surface of the adhesive sheet with force. Doing so may damage the surface and reduce its adhesive strength.

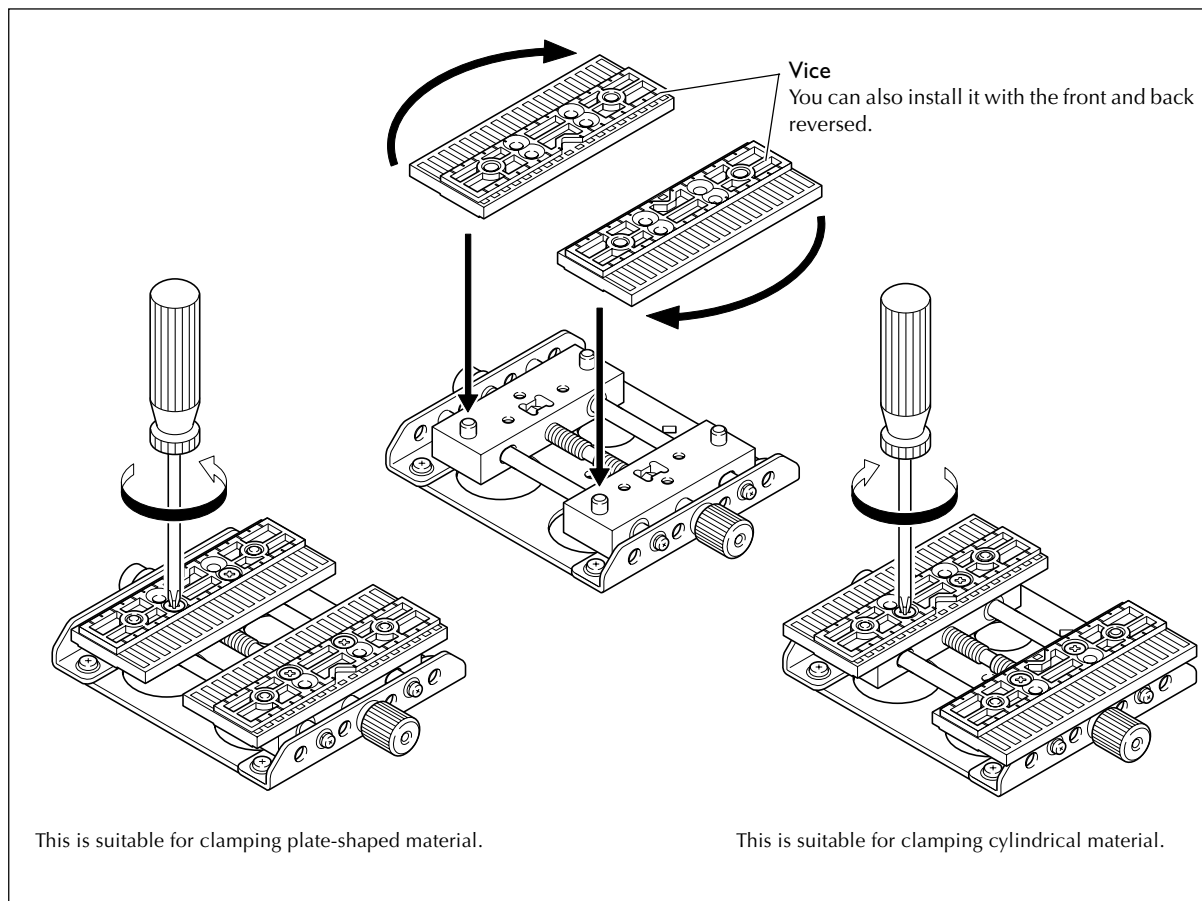
3-5 Loading Material (Using the Center Vise)

Using the Center Vise

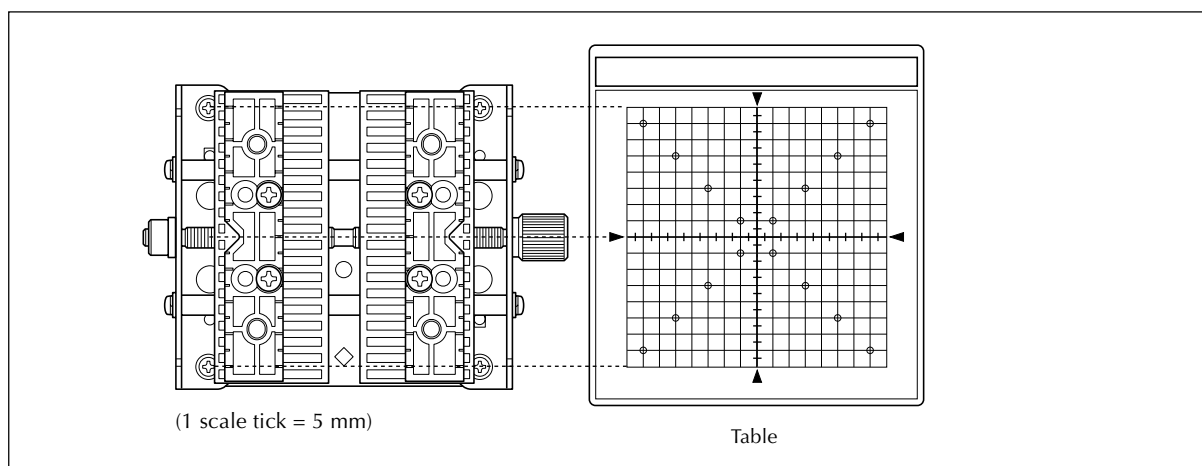
With the center vise, you secure material in place by clamping it in the vise. The act of securing material in place with the vise always determines the center position of the material in the horizontal direction at the horizontal center position of the machine's table. For the vertical center position, you perform adjustment using the scale on the vise as a guide.

You can also vary the orientation of the vise when using it. Use it in a way matched to the size and shape of the material.

☞ P. 28, "Preparing Material to Print"

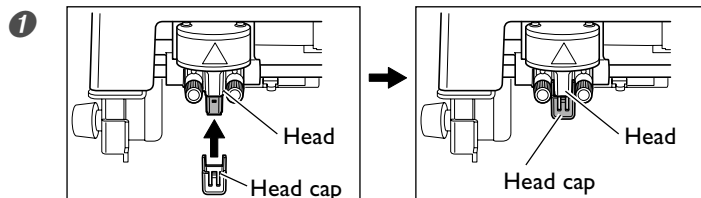


Correspondence Between the Center Vise Scale and the Table Scale



Loading Material Using the CenterVise

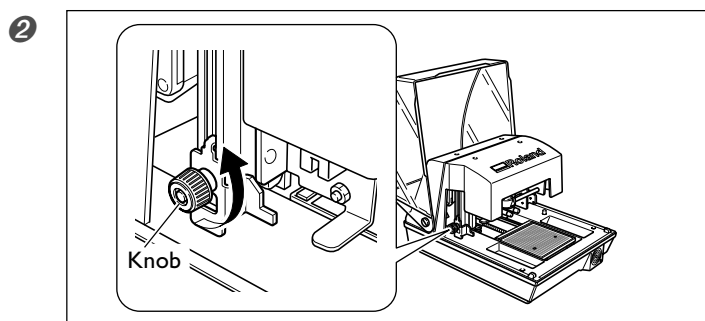
Procedure



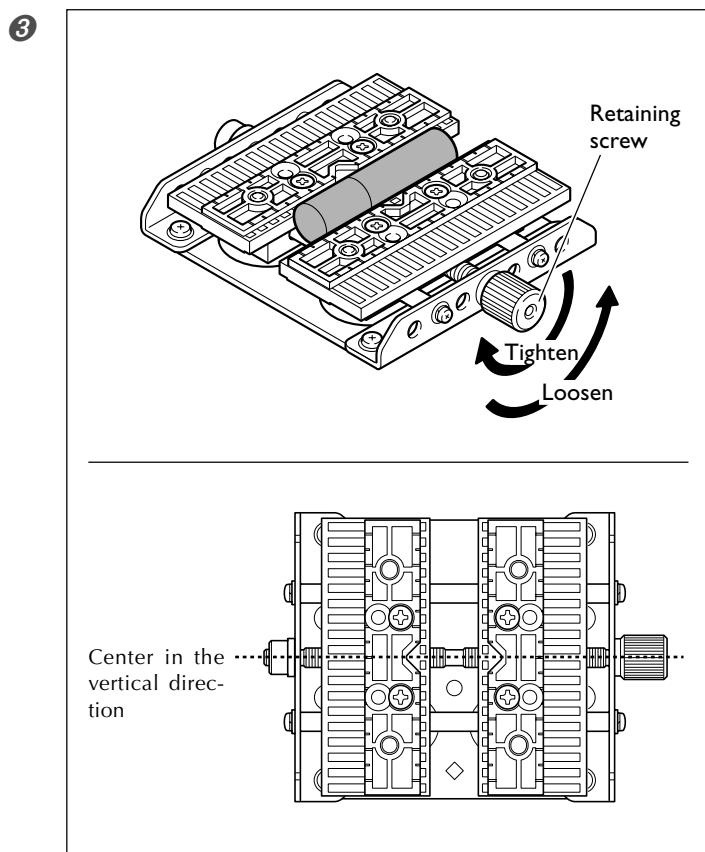
Attach a head cap.

Fit the head cap into place on the tip of the head. The head cap is attached correctly when its tab clicks into place in the hole in the head.

☞ P. 27, "Head Caps"



Loosen the knob.

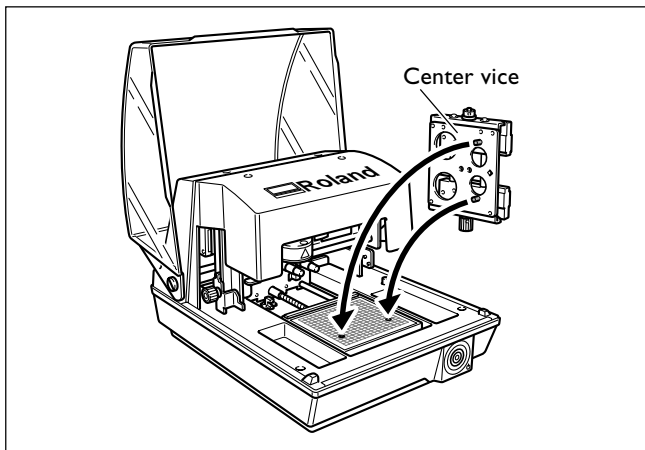


Load the material in the center vise.

Adjust the retaining screw to clamp the material in place in the vise. Tighten the retaining screw enough to keep the material from easily coming loose. Be careful not to overtighten, because doing so may damage the material.

☞ P. 33, "Using the CenterVise"

4



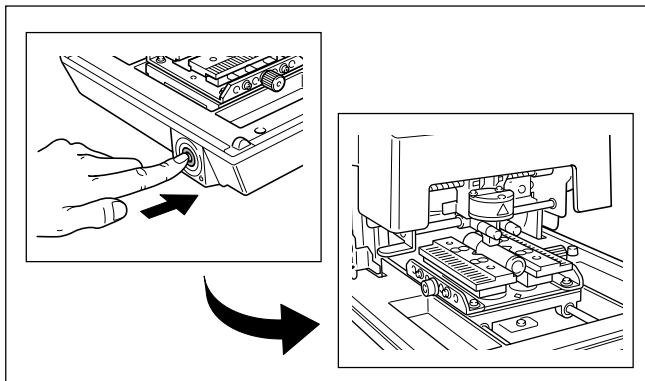
Mount the center vise.

Fit the tabs on the bottom of the center vise into the holes in the table on the unit.
(Remove the adhesive sheet first.)

If you're performing printing with the head cap attached, this completes loading of the material.
If you're performing printing with no head cap attached, then go on to the following steps.

The procedure from this point on is for when you're not using the head cap.

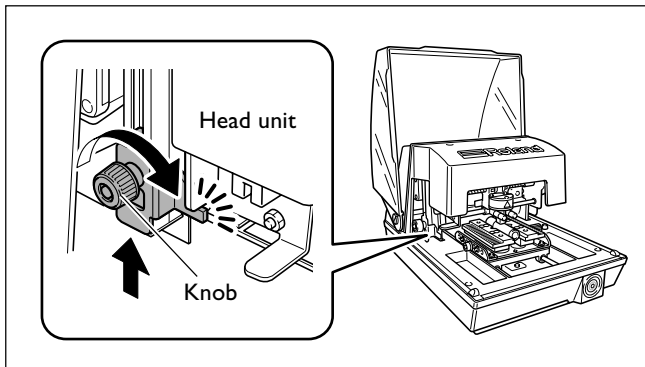
5



Press the Power/Movement button.

The table and head move, and stop at the location where the tip of the nose cap touches the surface of the material.

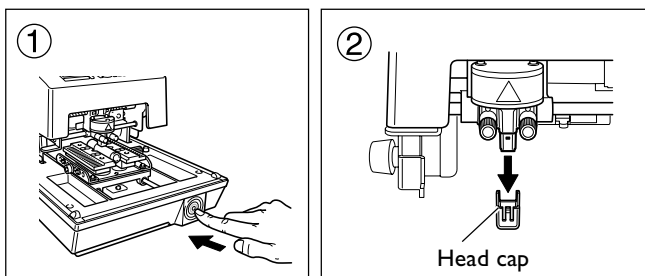
6



Lock the knob to set the head height.

Gently lift the knob, then secure it in place at a position flush against the head unit.

7



① Press the Power/Movement button.

② Wait for the movement of the head to stop, then detach the head cap.

3-6 Creating Printing Data (Printing on Flat Material)

This section describes how to create data, using printing of a plate like the one shown below as an example.

☞ P. 28, "Preparing Material to Print"



*There is a margin in the outside edge of the plate.

Information on how to create data for printing on cylindrical material and other curved surfaces is here: ☞ P. 58, "Creating Data for Printing on a Curved Surface"

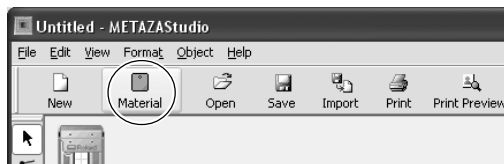
Step 1 : Decide on the Material

To start with, you decide on the material to print. METAZAStudio has a number of different types of material preregistered. Here, let's try using the material with the "tag" name, which has the same shape as the plate used in the example (a width of 25 millimeters and a height of 40 millimeters).

If you want to register new material, see here: ☞ P. 62, "How to Register New Material "

Procedure

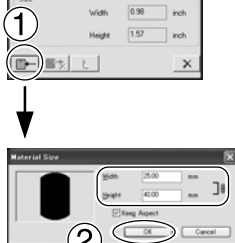
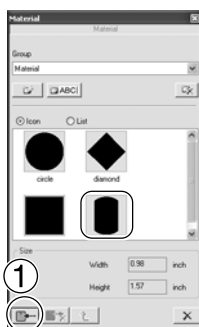
①



Click .

The [Material] window appears.

②

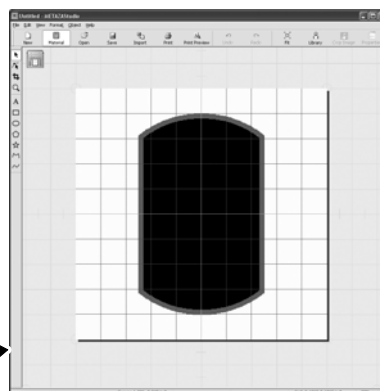


① Click the icon with the "tag" name, then click .

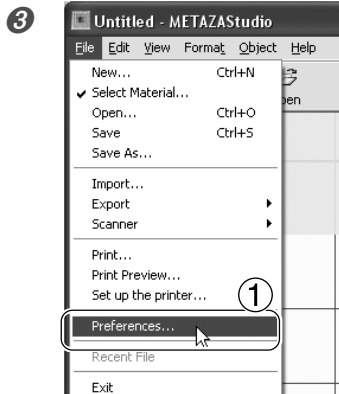
The [Material Size] dialog box appears.

② Enter the values for the width and height of the material (in this example, 25 millimeters for the width and 40 millimeters for the height), then click [OK].

The material you selected appears in the Edit window. The portion displayed as the material becomes the printing area without change.



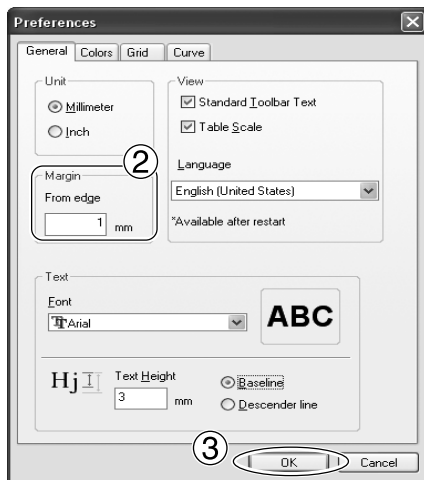
Edit window



Make the setting for the margins.

① Click [File], then click [Preferences].

The [Preferences] dialog box appears.



② Set “Margin” to “1 mm.”

(This is set at 1 millimeter by default.)

③ Click [OK].

Important !

For printing on a flat plate, make the margin at least one millimeter. Otherwise the marking pins may strike and damage the edge of the material.

Step 2 : Import the Image

Here you import the image to print. Prepare an image file to import.

☞ P. 30, “Preparing the Image”

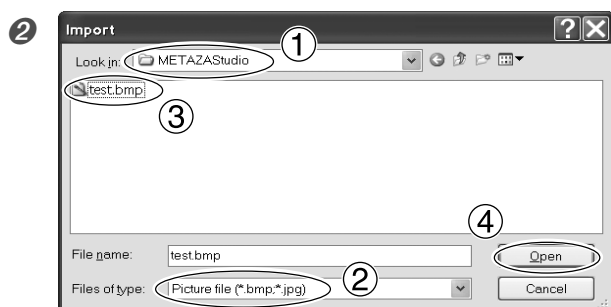
Procedure



Click .

The [Import] dialog box appears.

3-6 Creating Printing Data (Printing on Flat Material)



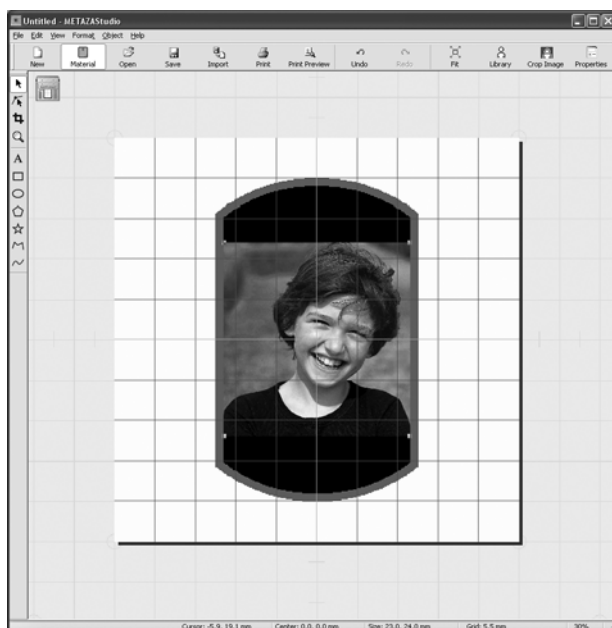
① At [Look in], select the location of the file.

② At [Files of type], select either [Picture file] or [Adobe Illustrator file].

③ Select the file you want.

④ Click [Open].

The specified image is imported and displayed with the margins you set.



You can vary the arrangement of the placed image, such as by changing its size or orientation or by adding borders around it.

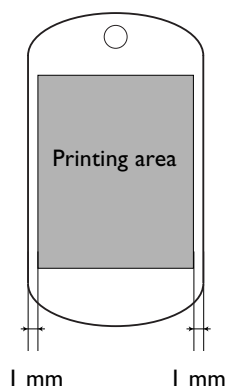
➤ P. 44, "Tips and Tricks for Image Layout"

Important !

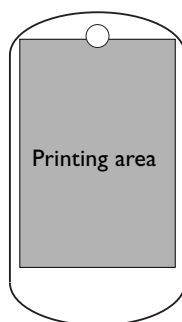
If the material has holes, take care to ensure that the image is not laid out over the holes. Making an area with a hole the printing area may cause the marking pins to strike and damage the edge of the material.

➤ P. 45, "Adjusting the Location, Size, or Angle of an Image"

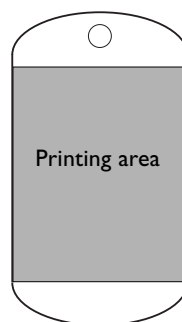
OK



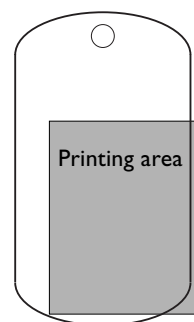
Not OK



The printing area lies over a hole.



No margins are present at the edges of the material.



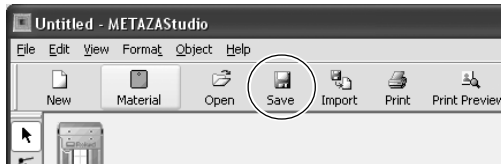
The printing area extends beyond the material.

Step 3 : Save the File

Save the printing data in a file.

Procedure

①



Click .

The [Save As] dialog box appears.

②



① For [Save in], specify where to save the file.

② Type in a file name.

③ Click [Save].

3-7 Starting Printing

Starting Printing

Important !

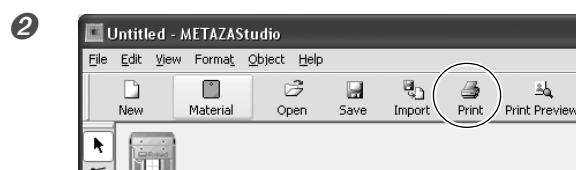
Never attempt printing in any of the following situations. Doing so may damage the pins or heads.

- When no material is loaded
- When the head unit is not set at a height matched to the thickness of the material

➤ P. 31, "Loading Material (Using the Adhesive Sheet)," p. 33, "Loading Material (Using the Center Vise)"

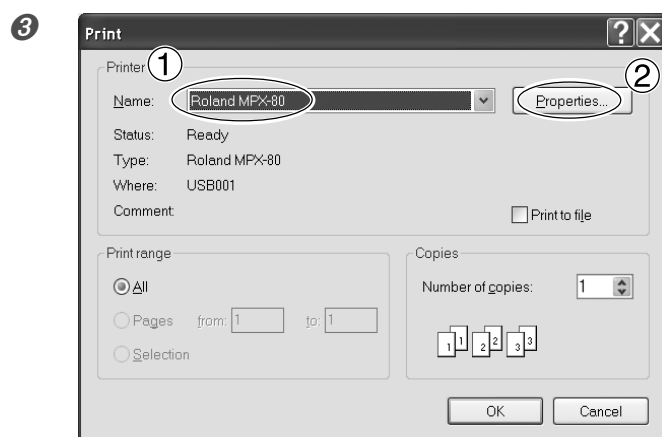
Procedure

① Close the cover.



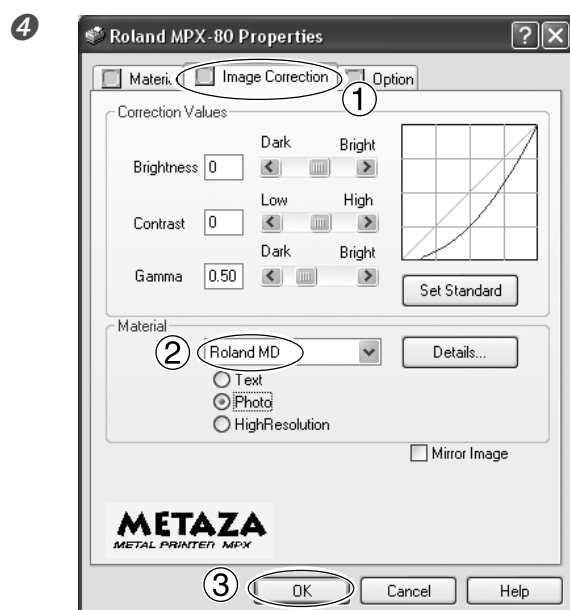
Click .

The [Print] dialog box appears.



① Make sure [Roland MPX-80] is chosen as the printer name.

② Click [Properties].



① Click the [Image Correction] tab.

② Select [Material].

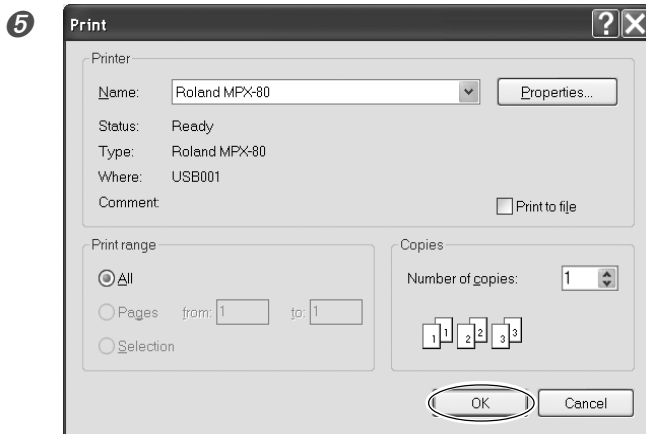
Select either the composition or the product code of the material.

③ Click [OK].

Selection of the Material

When you select the composition of the loaded material, printing is performed using an optimal striking force for the composition.

➤ P. 78, "Registering a Composition and Adjusting the Striking Force"



Click [OK].

The printing data is sent to the machine and printing starts.

⑥ After printing has finished, open the cover and detach the material.

If the Material Is Difficult to Detach When Using the Adhesive Sheet

If the material is difficult to detach, inserting a thin, flat object (such as a piece of stiff paper or cardboard) between the adhesive sheet and the material may make it easier to dislodge.

Stopping Printing Operations

Procedure

- ① Switch off the power.

☞ P. 24, "Switching Off the Power"

- ② **Windows Vista**

Click [Start], then click [Control Panel].

Click [Hardware and Sound], then click [Printers].

Windows XP

Click [Start], then click [Control Panel].

Click [Printers and Other Hardware], then click [Printers and Faxes].

Windows 2000

Click [Start].

Click [Settings], then click [Printers].

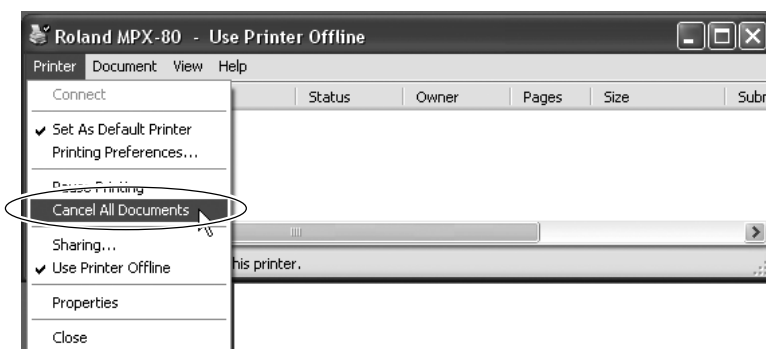
- ③



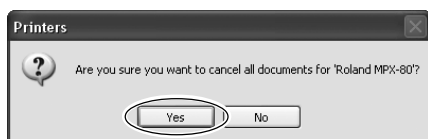
Roland MPX-80
0
Ready

Double-click the [Roland MPX-80] icon.

- ④ At the [Printer] menu, click [Cancel All Documents] (or [Purge Print Documents]).



- ⑤



If the message shown in the figure appears, click "Yes."

Chapter 4

More Advanced Operations

4-I Tips and Tricks for Image Layout

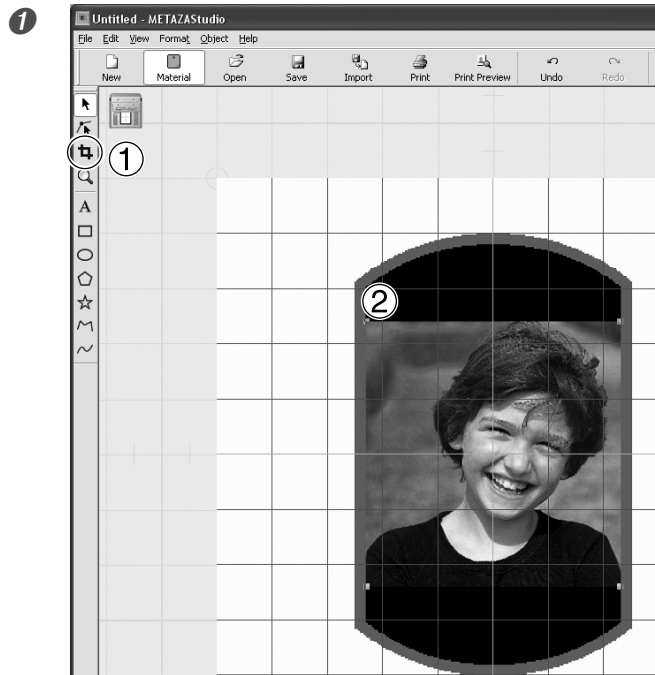
Keeping Only the Required Portion of an Image (Trimming)

You can cut an original image to remove unneeded areas and keep just the required portion. This operation is called “trimming.”

In this example, you use the printing data created at page 36, “Creating Printing Data (Printing on Flat Material).”

➤ P.36, “Creating Printing Data (Printing on Flat Material)”

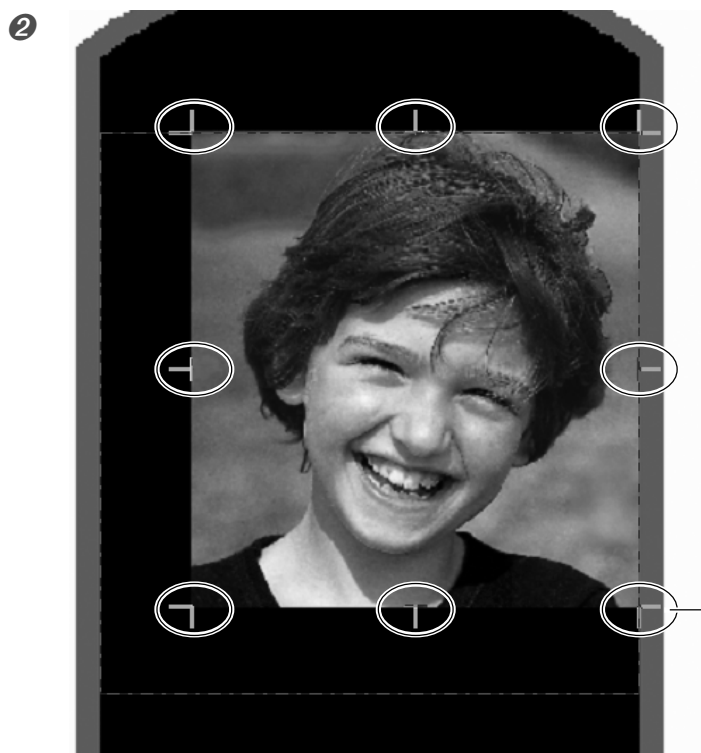
Procedure



① Click .

② Click the image.

Eight handles for trimming appear around the image.



Drag the trimming handles to determine the area to trim.

Adjust this to enable selection of the image area you want to keep.

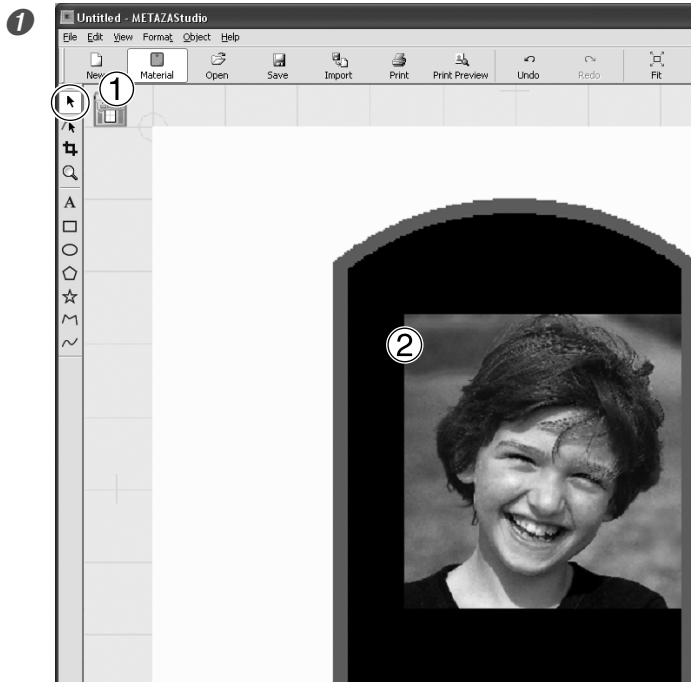
Trimming handle

Adjusting the Location, Size, or Angle of an Image


You can adjust the location, size, and angle of a placed image to achieve the layout you want.

In this example, you use the printing data created at page 44, “Keeping Only the Required Portion of an Image (Trimming).”

Procedure



Adjust the location.

- ① Click , then click the image.

Handles (■) appear at the four corners of the image.

- ② Drag the image to adjust its location.



Adjust the size.

Drag the handles at the four corners of the image to adjust the size.

Handles



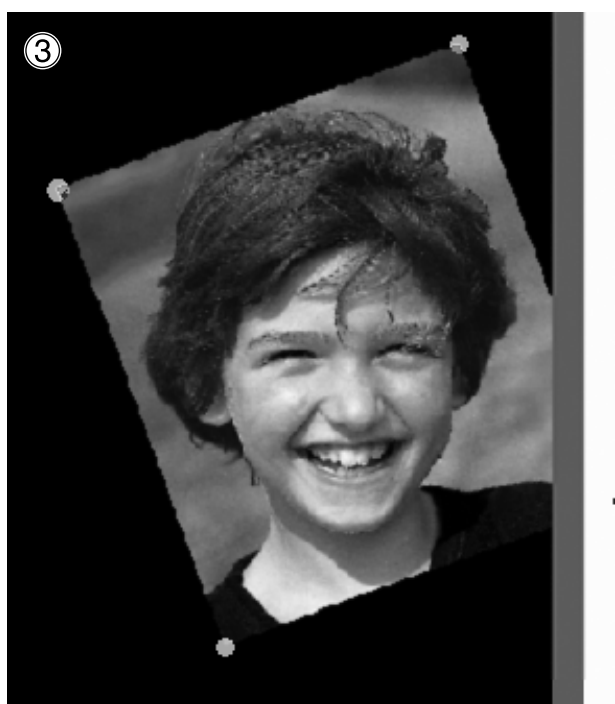
Adjust the angle.

- ① With the handles present at the four corners of the image, click the image a second time.

The shape of the handles at the four corners changes to (●).

- ② Line up the pointer with a handle.

The shape changes to a pointer for rotation.



- ③ Drag to adjust the angle (slant) of the image.

You can change the angle by up to 360 degrees.



Point

Holding down the keyboard's SHIFT key as you drag makes the angle change by 45 degrees at a time. Using this method can be convenient at times such as when you want to perform rotation by precisely 90 degrees.



Point

Trimming cannot be performed for an image whose angle has been changed. To perform trimming, first return the image to its original angle.

Enclosing an Image in a Frame

You can change the arrangement of printing data by placing a frame around an image. You use frames registered in what's called METAZASudio's "library." The library contains a number of preregistered frames, and you can also register new ones.

In this example, you add a frame to the printing data created at page 45, "Adjusting the Location, Size, or Angle of an Image."

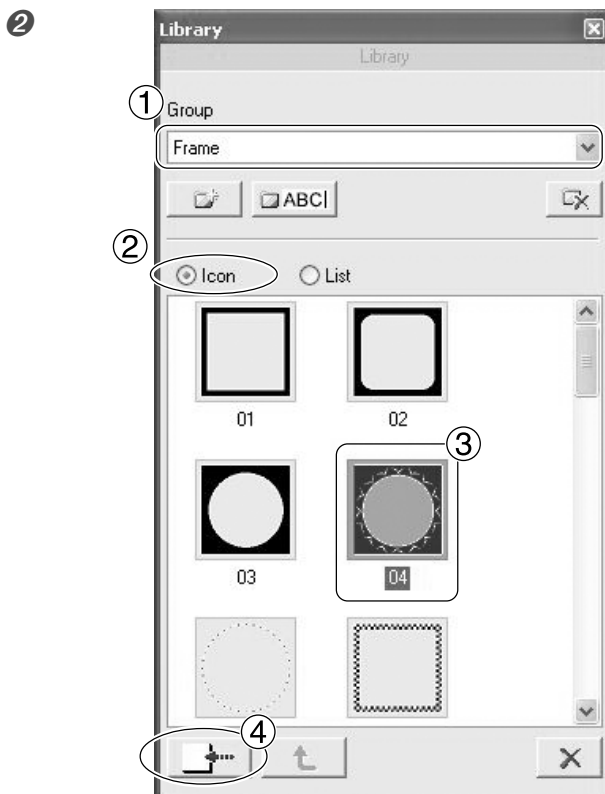
For information on how to use the library, see here: "Register often-used shapes and images in advance" on the page 63 "A Wide Variety of Operations You Can Accomplish with METAZASudio"

Procedure



Click .

The [Library] window appears.



① From [Group], select [Frame].

② Select [Icon].

③ Click the [04] frame.

④ Click .

A frame is inserted into the window.

3



Drag the Handles (■) around the frame to adjust its size and location.

Adjust the location and size so as to enclose the image. The adjustment methods are the same as the methods for adjusting the location and size of an image.

☞ P. 45 "Adjusting the Location, Size, or Angle of an Image"

Handles



Adjust the layout by changing the location or size of the image and the frame.

Frame

Completed data

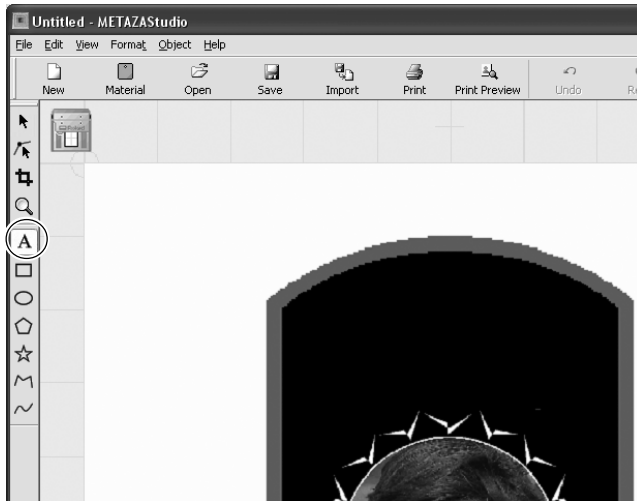
4-2 Tips and Tricks for Text Layout

Enter the Text

Here you type in the text to print.

Procedure

1



Click **A**.

2




Click somewhere on the material, then type in the text.

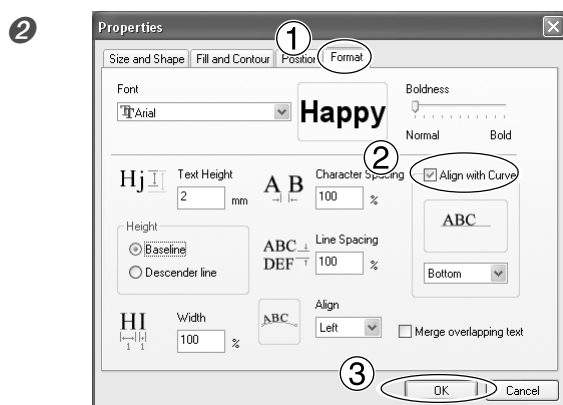
Landscape or Fan Layout

After arranging the text in landscape layout, you can change the arrangement to a fan layout.

Procedure



- ① Enter text.
P. 49, "Enter the Text"
Arrange the text horizontally.
- ② Click .
The [Properties] dialog box appears.



- ① Click the Format tab.
- ② Select the [Align with Curve] check box.
- ③ Click [OK].
The layout of the text changes to a fan shape.



You can adjust the size and position of the laid-out text, or change its format.
P. 51, "Adjusting Laid-out Text," p. 55, "Changing the Format of Text"

Adjusting Laid-out Text

For laid-out text, in the same way as for images, you can shift the location where it's placed and change its size and angle. You can also change the type of fill used.

➤ P. 45, "Adjusting the Location, Size, or Angle of an Image"

Procedure



① Enter text.

➤ P. 49, "Enter the Text"

② Click .

③ Click the laid-out text.

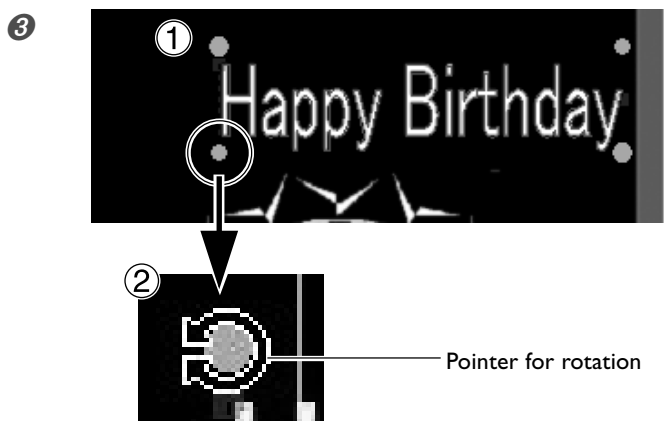
Eight handles appear around the text.

Handles



Adjust the size.

Drag the handles to adjust the size.



Adjust the angle.

① Click on the text.

The shape of the handles changes to [●].

② Line up the pointer with a handle.

The shape changes to a pointer for rotation.



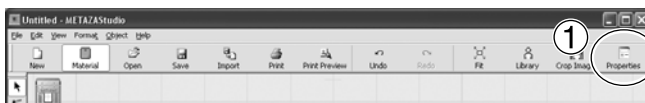
- ③ Drag to change the angle of the text. You can change the angle by up to 360 degrees.



Point

Holding down the keyboard's SHIFT key as you drag makes the angle change by 45 degrees at a time. Using this method can be convenient at times such as when you want to perform rotation by precisely 90 degrees.

④



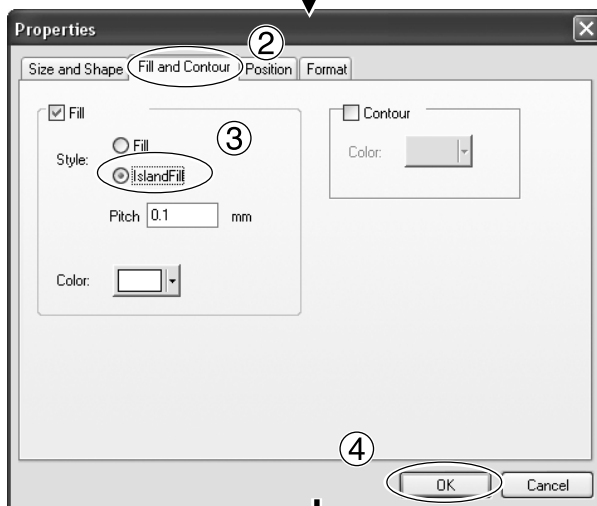
Change the type of fill for the text.

- ① Click .

The [Properties] dialog box appears.

- ② Click the [Fill and Contour] tab.

- ③ Select [Island Fill].



- ④ Click [OK].

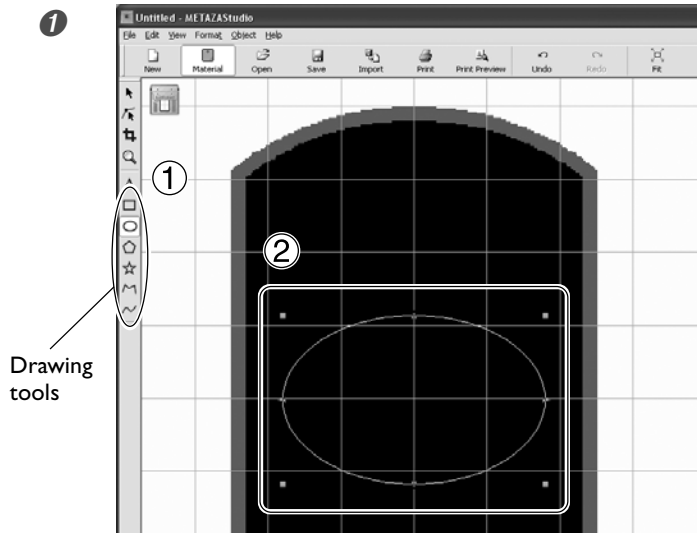
The way the text is filled changes to spaced lines instead of solid color. Increasing the value of [Pitch] enlarges the spacing between the lines.



Laying Out Text along a Shape

Here you lay out text along a shape you have made using the drawing tools.

Procedure

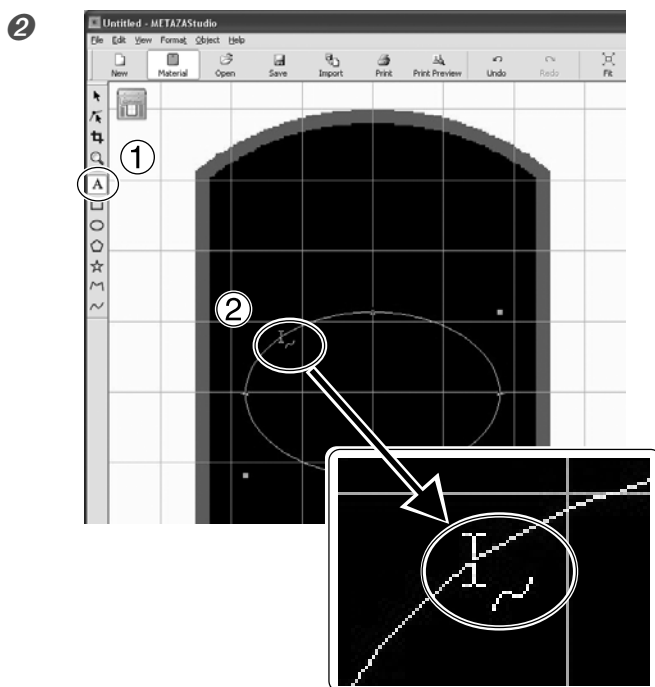


① Click a drawing tool.


In this example you use .

② In the editing window, create a shape on the material.

For detailed information about the drawing tools, see here:
[METAZAStudio online help \("Commands" > "Toolbar Buttons"\)](#)



① Click .

② Position the pointer near the outline of the shape you created, and when  appears under the pointer, then click.



Enter text.

☞ P. 49, "Enter the Text"

The text is laid out along the shape.

Important !

Layout on an integrated polyline is not possible.

☞ METAStudio online help ("Commands" > "[Object] menu" > "Convert to Polyline", "Integrate Polyline")

You can adjust the size and position of the laid-out text, or change its format.

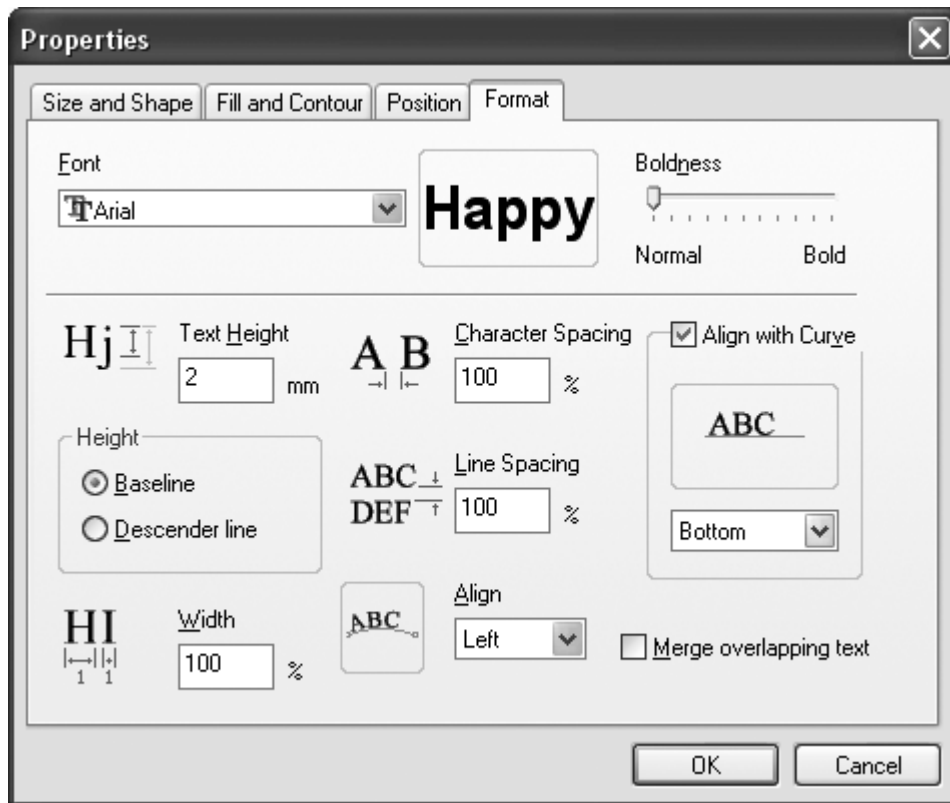
☞ P. 51, "Adjusting Laid-out Text," p. 55, "Changing the Format of Text"

Changing the Format of Text

In the [Properties] window, at the [Format] tab, you can change such properties as the font of laid-out text, as well the height and width of the characters.

For detailed information about the settings, refer to the online help for METAZAStudio.

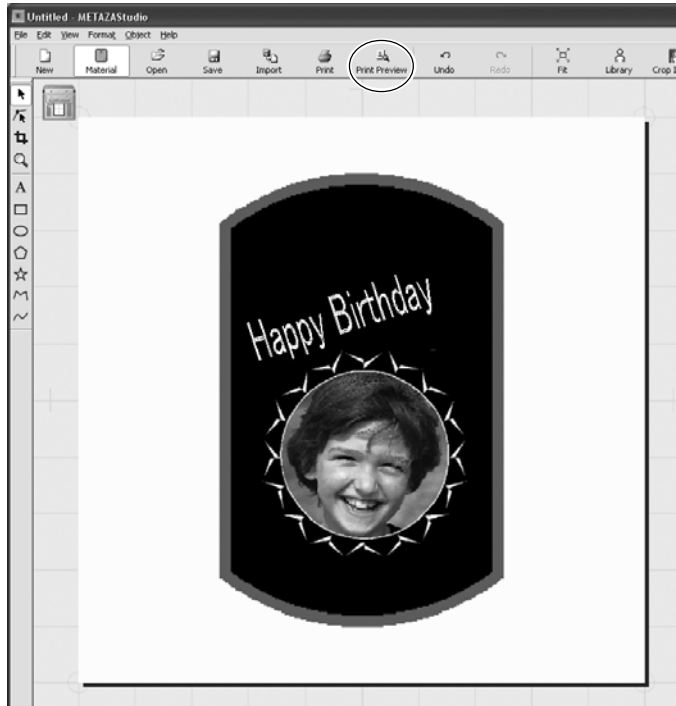
⇨ METAZAStudio online help ("Commands" > "[Format] menu")



4-3 Adjusting Brightness and Contrast

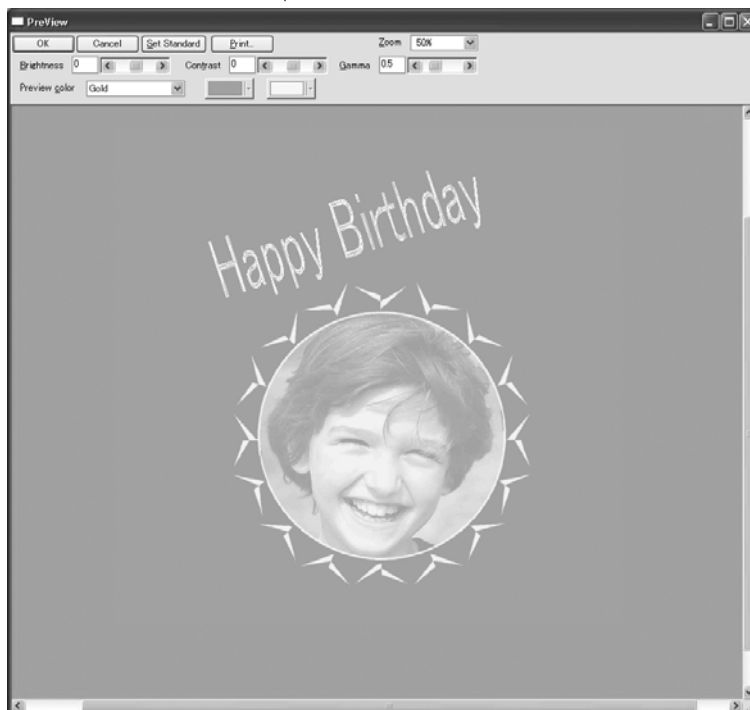
Checking the Finished Results in the Preview Window

At the preview window, you can adjust the brightness, contrast, and gamma correction. An image with clearly defined light and dark areas produces attractive printed results. Adjust to match the image.



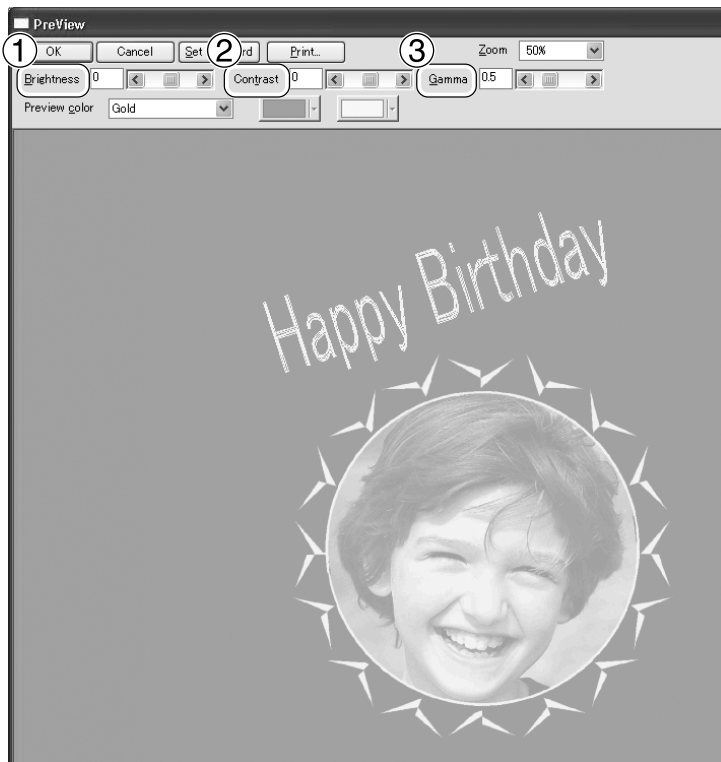
Click .

Preview window appears.



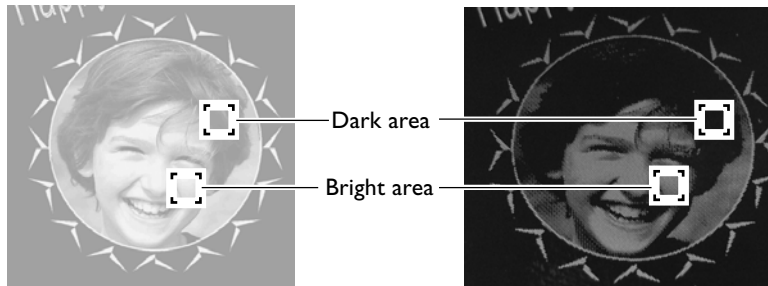
Preview window

Adjusting an Image in the Preview Window



Preview window

The dark and bright areas are printed as shown in the figure.
Dark-color areas are not struck, and light-color areas are struck forcefully.



Also, the printing results before and after adjustment are as shown below.

Before adjusting



After adjusting



① Brightness

This adjusts the overall brightness. Making the value too large can destroy the balance, so it may be a good idea to adjust it to the absolute minimum necessary.

② Contrast

This mainly adjusts highlights (the brightest areas) and shadows (the darkest areas). Using this can be effective when you want to achieve a sense of tension with a good balance of light and dark.

③ Gamma

This mainly adjusts the brightness of tones of intermediate brightness between bright and dark areas. Using it is effective in adjusting the overall brightness.

4-4 Creating Data for Printing on a Curved Surface

With this machine, using a head cap lets you perform printing on cylinders and other examples of material whose surface height is not uniform.

This section describes how to create data, using printing on a cylindrical material like the one shown below as an example.



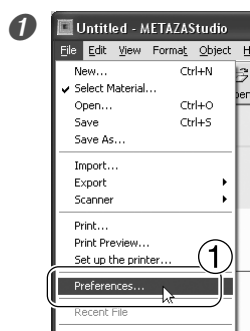
Step I : Decide on the Printing Area (Workpiece Size)

First, you make the settings for the printing area on the material. In the case of printing on cylindrical material, printing over the entire surface of the material (as on flat material) is not possible. For this reason, the METAZASstudio editing window displays the printing area instead of the material. The printing area is determined by the value of the material's diameter entered at the setting window for the driver.

For more information about the conditions of cylindrical material that this machine can print, refer to the page indicated below.

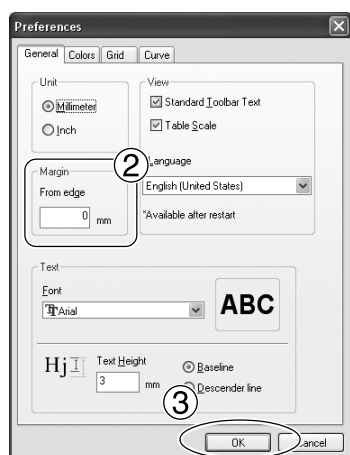
☞ P.29, "Conditions for Printable Cylindrical Material"

Procedure



Set the margins to 0 millimeters.

- ① Click [File], then click [Preferences].
The [Preferences] dialog box appears.

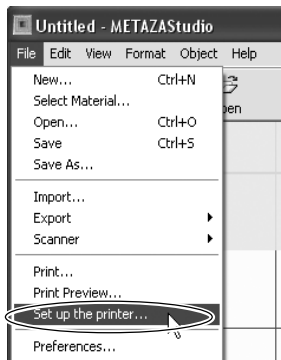


- ② Set "Margin" to "0 mm."
- ③ Click [OK].

Important !

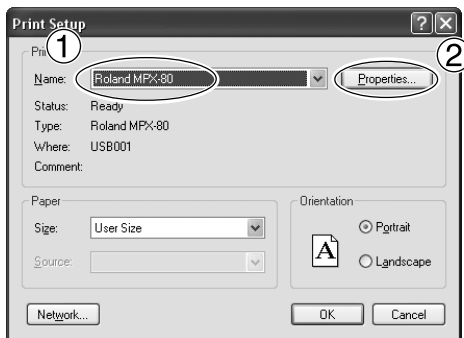
When you're printing on cylindrical material, set the margins to zero millimeters. When printing on cylindrical material, the markable area is limited, and so a sufficient printing area must be ensured by making the margins zero millimeters in size.

2



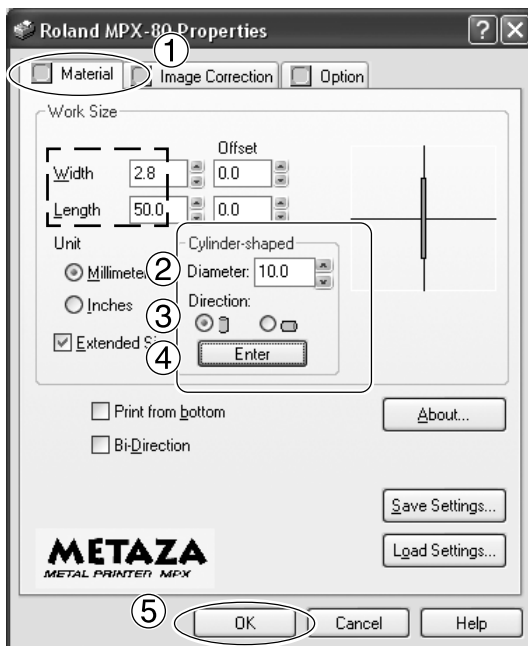
Click [File], then click [Set up the printer].
The [Print Setup] dialog box appears.

3



- ① Make sure [Roland MPX-80] is chosen as the printer name.
- ② Click [Properties].

4

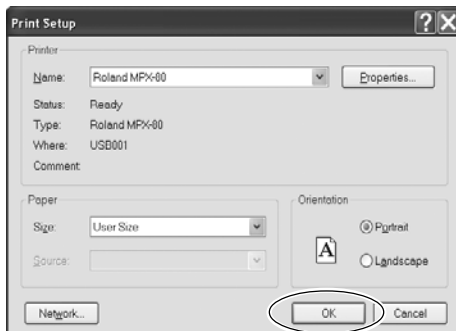


Make the [Diameter] and [Material Orientation] settings for the cylindrical material.

- ① Click the [Material] tab.
- ② Set [Diameter] to 10 millimeters.
- ③ Select [Direction].
In this example, select (vertical).
- ④ Click [Enter].
Under [Work Size], the value for [Width] is set automatically.
For [Length], in this example, make the setting of 50 millimeters.

- ⑤ Click [OK].

5

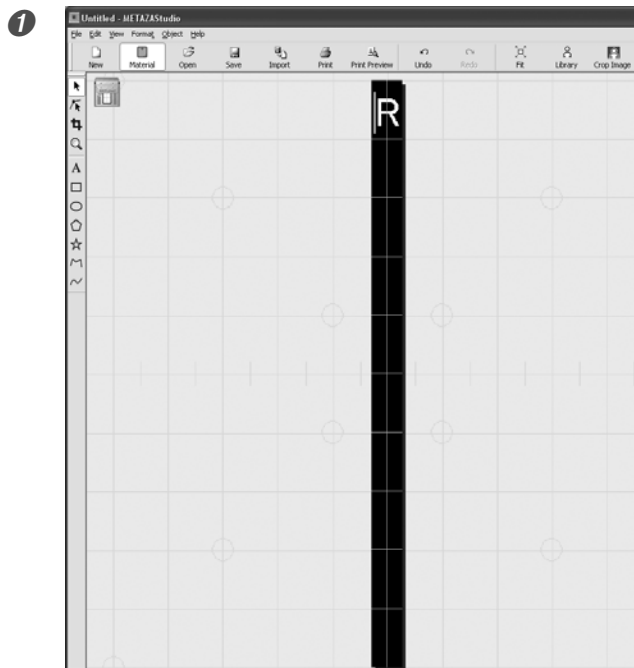


Click [OK].

Step2 : Enter Text and Adjust the Layout

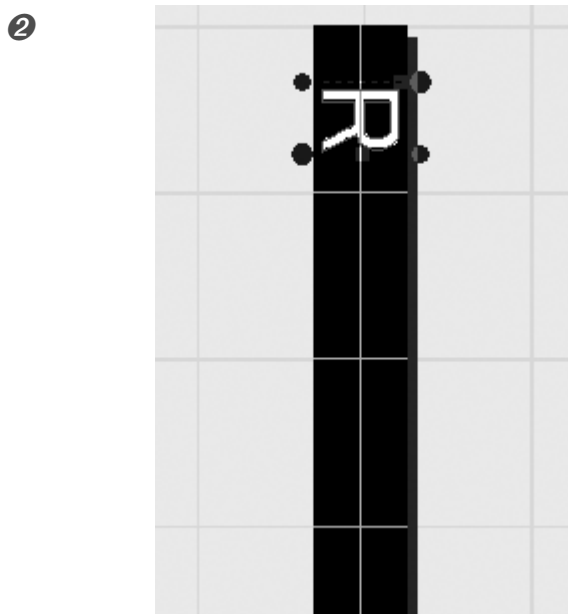
Type in the text to print, then adjust how it's laid out.

Procedure



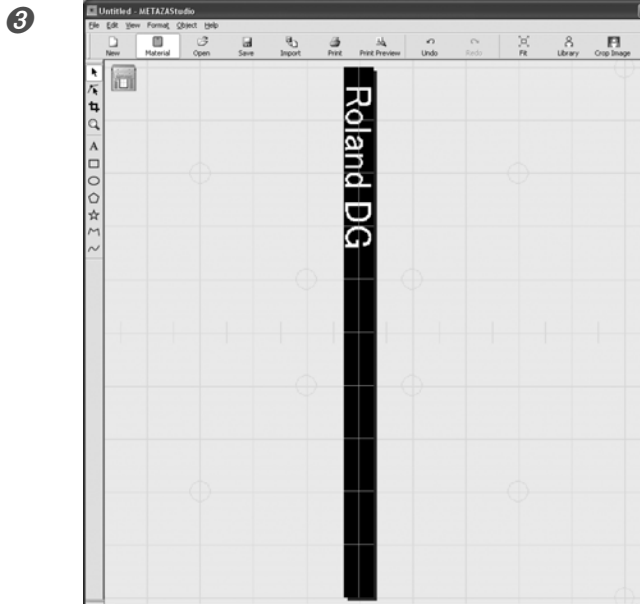
Enter a single character of text in the printing area.

☞ P. 49, "Enter the Text"



Arrange the text in a vertical orientation, then adjust it so that it fits within the printing area.

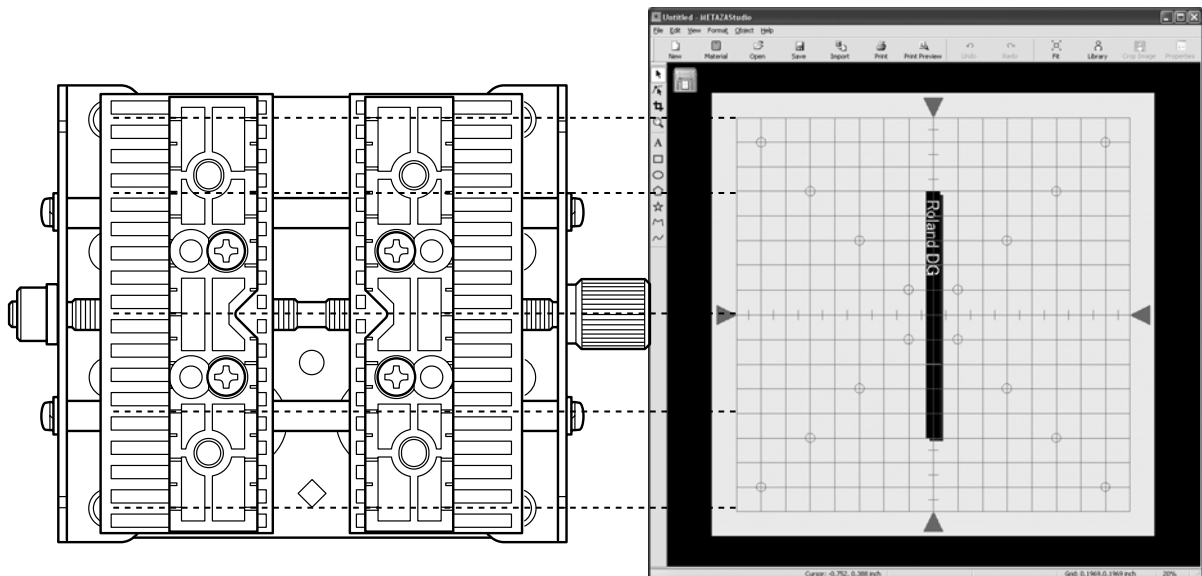
☞ P. 51, "Adjusting Laid-out Text"



Enter text remained, and adjust the position.

The on-screen table scale corresponds to the scale for the center vise as shown in the figure. Carefully adjust the positioning to enable the text to be printed at the location you want.

⇒ P. 33, "Loading Material (Using the Center Vise)"



4-5 Printing Materials of a Wide Variety of Shapes

How to Register New Material

METAZAStudio includes preregistered material of four shapes, and you can also register new material. Printing material without first registering it is possible, but in such cases the printing area is restricted, and the marking pins may be damaged by striking the edge of the material. To print material not registered in METAZAStudio, first register it as a new material. The following three methods are available for registering material. For detailed information about the procedures, refer to the online help for METAZAStudio.

☞ P.9, "About the Documentation for This Machine"

Registration Methods

➤ Importing a bitmap image

If an image of the material is available, you can import the image. Note, however, that only bitmap data can be used. Other requirements are as follows.

File format : Must be either BMP (bitmap) or JPEG

Number of colors : Binary (black and white — portions corresponding to the material must be black-filled)

➤ Scanning the material with a scanner

When no image of the material is available, or the shape of the material is complex, you can scan the material on a scanner and import the image produced. Use a scanner that supports TWAIN_32. Other requirements are as follows.

Number of colors : Binary (black and white — portions corresponding to the material must be black-filled)

➤ Drawing the shape of the material

If the material is a square, circle, or other such simple shape, either singly or in combination, you can use the drawing tools to draw the shape of the material, then register it.

☞ METAZAStudio online help ("Hints and Tips" > "Registering Favorite Materials")

4-6 Other Handy Features

A Wide Variety of Operations You Can Accomplish with METAZAStudio

METAZAStudio offers a wide variety of features for editing imported images and creating printing data. For more information on how to operate METAZAStudio, refer to the online help for the program.

☞ P. 9, "About the Documentation for This Machine"

➤ Make images of people more prominent

When the machine prints data created using METAZAStudio, light and dark are expressed by making colors close to white darker and colors close to black lighter. This means that dark hair or clothing may be printed light, making the outline of the person indistinct. (Depending on the data, such hair or clothing may not be printed at all.) In such cases, cropping the person and applying a border to the image enables you to make the image of the person stand out better when printed.

☞ METAZAStudio online help ("Operation Procedures" > "Step 3: Delete Unnecessary Parts from Image")

➤ Register often-used shapes and images in advance

You can register often-used and generic-use shapes in the library, which enables you call them up and add them to your data whenever you need them. Registering logos and other graphics can add convenience. You can also register images.

☞ METAZAStudio online help ("Hints and Tips" > "Making Use of Library")

➤ Create contour lines from images

You can print imported images with added contour lines. The data formats that you can import are JPEG and BMP (bitmap). To enable clean extraction of the contours, the data should meet the following conditions.

Gradations : Use images that do not contain continuous gradations and that have clearly defined borders between colors.

Number of colors : Binary (black and white [recommended])

Resolution : High (Note, however, that the optimal resolution may vary according to the complexity of the shape and the size when printed.)

☞ METAZAStudio online help ("Hints and Tips" > "Creating Contour Lines from an Image")

➤ Share files over the Internet

You can save images that contain material shapes as bitmap (BMP) files. You can then send the files over the Internet for confirmation of the finished results.

☞ METAZAStudio online help ("Hints and Tips" > "Creating Preview for Customers to Check Completion Image")

4-7 Driver Settings

Viewing the Documentation for the Driver Settings

At the setting window for the driver, you can make the settings for a wide variety of items, including the size of the material and the method used for printing.

Any changes you make at this window (the window displayed by using the procedure described here) remain in effect even after you restart METAZAStudio. To continue operations with the changes applied, follow the procedure below to display the setting window.

Procedure

1 Windows Vista

Click [Start], then click [Control Panel].

From the [Hardware and Sound] group, click [Printers].

Windows XP

Click [Start], then click [Control Panel].

Click [Printers and Other Hardware], then click [Printers and Faxes].

Windows 2000

Click [Start].

Click [Settings], then click [Printers].

2

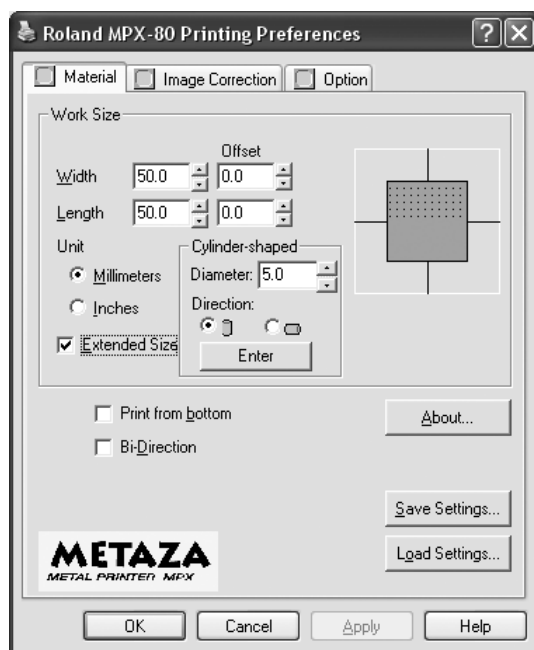


Roland MPX-80
Ready

Right-click [Roland MPX-80].

Click [Printing Preferences].

The setting window appears.



About the Setting Window

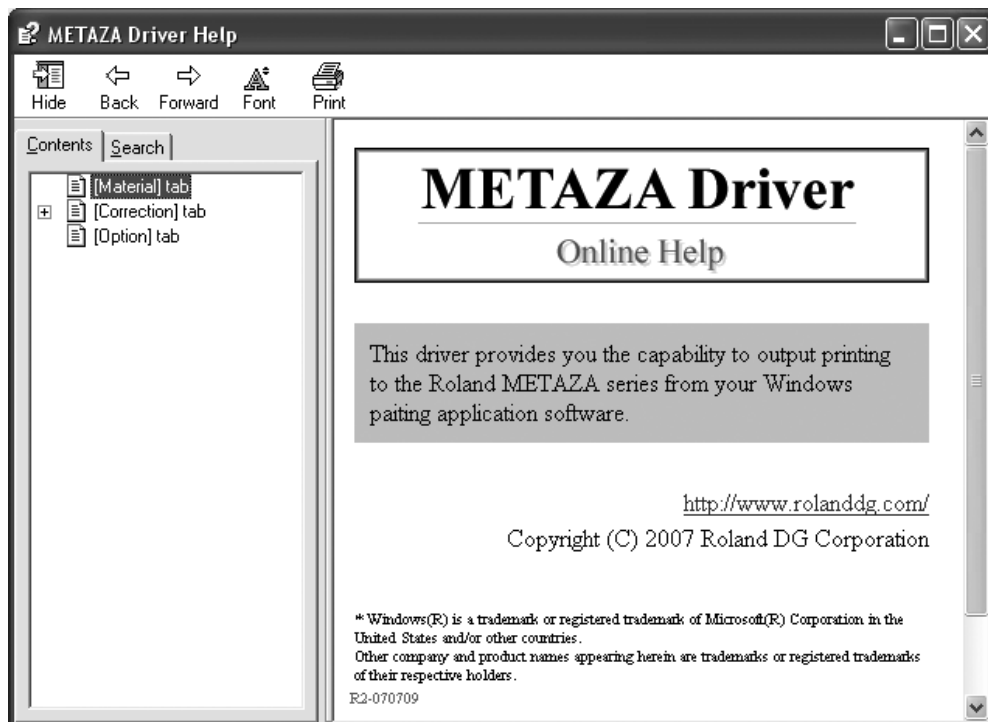
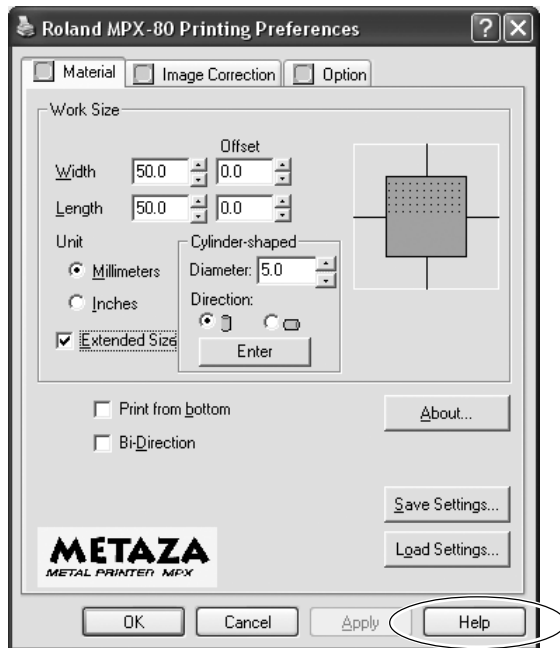
Going to the METAZAStudio [File] menu and clicking [Print Setup], then, in the [Print Setup] window, clicking [Properties], displays the same window as the one that appears using "Displaying the Setting Window," described above.

Any changes you make while at this window disappear when you restart METAZAStudio. When you want to make temporary changes in driver settings, display the setting window from METAZAStudio.

Viewing the Online Help for the Driver

For detailed information about the values you can set using the driver, see the online help for the driver. To view the online help for the driver, go to the driver's setting window, and click the [Help] button.

➤ P. 9, "About the Documentation for This Machine"



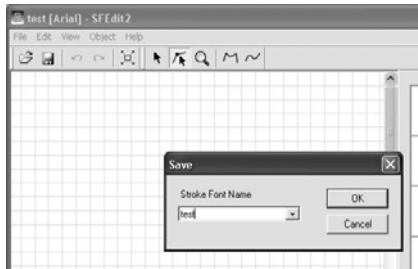
4-8 SFEdit2

What's SFEdit2 ?

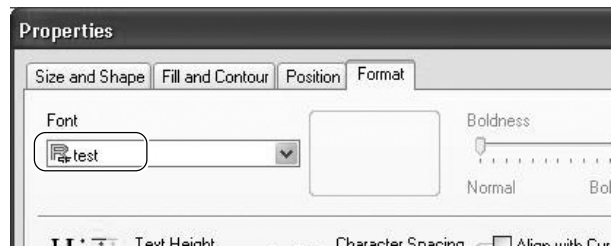
SFEdit2 is a program on the CD-ROM included with the machine (the Roland Software Package) that lets you create and edit stroke fonts. Stroke fonts are line drawings created by automatically extracting the centerlines from a TrueType font. Saving a created or edited stroke font with SFEdit2 registers the font with METAZAStudio, making it available for selection in METAZAStudio's setting window for the format.

For details about working with stroke fonts, including creating and editing them, refer to the online help for SFEdit2.

➤ P. 9, "About the Documentation for This Machine"



You save a stroke font created or edited using SFEdit2.



It is then registered as a font with METAZAStudio.

➤ P. 55, "Changing the Format of Text"

Starting SFEdit2

You can start SFEdit2 using either of two methods. One is to run it from the Start menu in Windows. The other method is to start it from the menu in METAZAStudio.

Running the Program from the Start menu in Windows



Click the [Start] button, then click [All Programs] or [Programs].
Click [Roland SFEdit2], then click [SFEdit2].
SFEdit2 starts.

Running the Program from METAZAStudio



In METAZAStudio, at the [Edit] menu, click [Stroke Fonts].
SFEdit2 starts.

Chapter 5

Maintenance and Adjustment

5-I Daily Care

Daily Care

⚠ WARNING Never use gasoline, alcohol, thinner, or any other flammable material. Doing so may cause fire.

⚠ CAUTION Never touch the heads immediately after printing has finished. Doing so may cause burns.

- This machine is a precision device, and is sensitive to dust and dirt. Be sure to carry out day-to-day cleaning.
- Never use solvents such as thinner, benzine, or alcohol.
- Never attempt to oil or lubricate the machine.

Cleaning the Adhesive Sheet

If the adhesive force of the adhesive sheet declines, then wash the sheet.

- Never scrub the adhesive sheet using a scrubbing pad or sponge.
- Never stretch or bend the adhesive sheet when washing it.

How to Wash and Dry

Immerse the adhesive sheet in water, and wash the sheet by gently stroking its surface. After washing, allow to dry completely, out of direct sunlight. It must not be mounted on the table while wet.

If the Adhesive Sheet Gets Extremely Dirty

If the soiling of the adhesive sheet is severe, wash it using diluted neutral detergent. Rinse thoroughly with water to remove all detergent completely.

Cleaning the Body and Cover

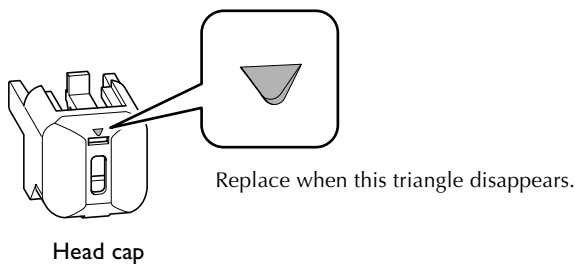
Use a cloth moistened with water then wrung well, and wipe gently to clean. The surface of the cover is easily scratched, so use a soft cloth.

The Replacement Cycle for the Head Cap

The head cap is due for replacement when the triangle at its tip (see the figure below) is worn away. Replace it with a new head cap.

The degree of wear may vary according to printing conditions. In particular, printing that makes extensive use of island fill and other line-drawing operations on materials such as aluminum results in especially rapid wear because of the extensive unevenness of the material surface. Periodically check the state of the head cap to ensure that it is replaced as often as needed.

☞ P. 31, "Loading Material (Using the Adhesive Sheet)," p. 33, "Loading Material (Using the Center Vise)"



5-2 Maintenance of the Head and the Marking Pins

You perform all head cleaning and maintenance of the marking pins using the included MPX-80 Head Manager program.

The machine's head has nine pins. Printing is performed using these pins one at a time. If the tip of the pin in use becomes worn, you can change the pin used for printing. You can also perform adjustment to ensure that each pin uses the same striking force.

Starting MPX-80 Head Manager

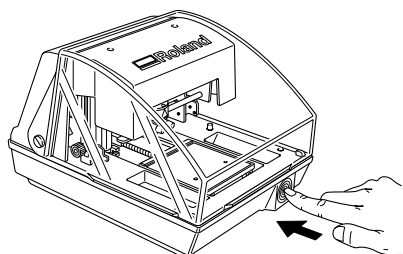
1



Click [Start], then click [All Programs] (or [Programs]).

Click [MPX-80 Head Manager], then click [MPX-80 Head Manager].

2



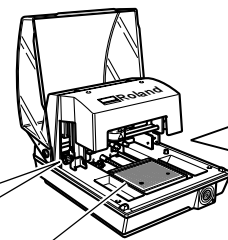
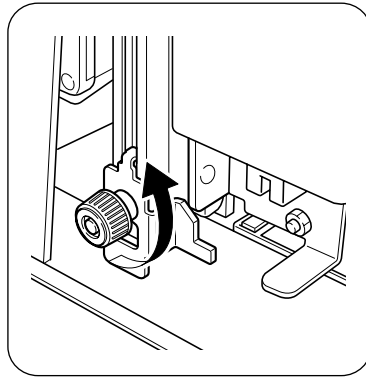
Switch on the power to the machine.

Head Cleaning

Clean away any fine grime around the head. Perform cleaning periodically.

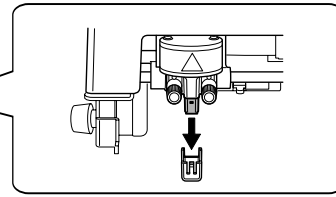
Procedure

1



Detach the center vise or adhesive sheet.

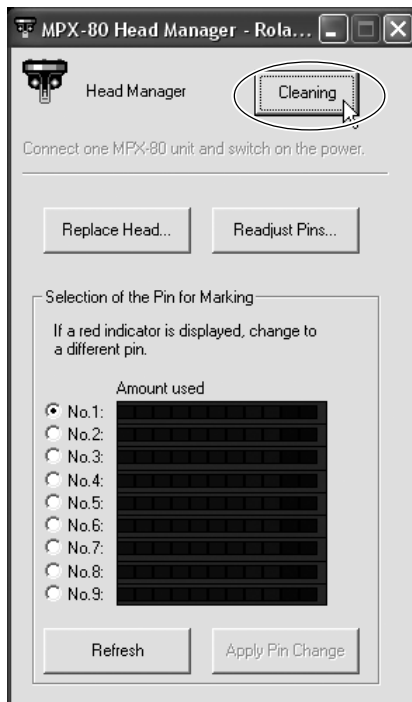
Detach the center vise or the adhesive sheet and loosen the knob.



2 Start MPX-80 Head Manager.

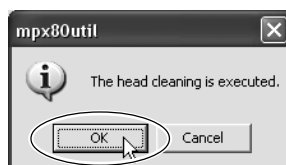
☞ P. 70, "Starting MPX-80 Head Manager"

3



Click [Cleaning].

4



Click [OK].

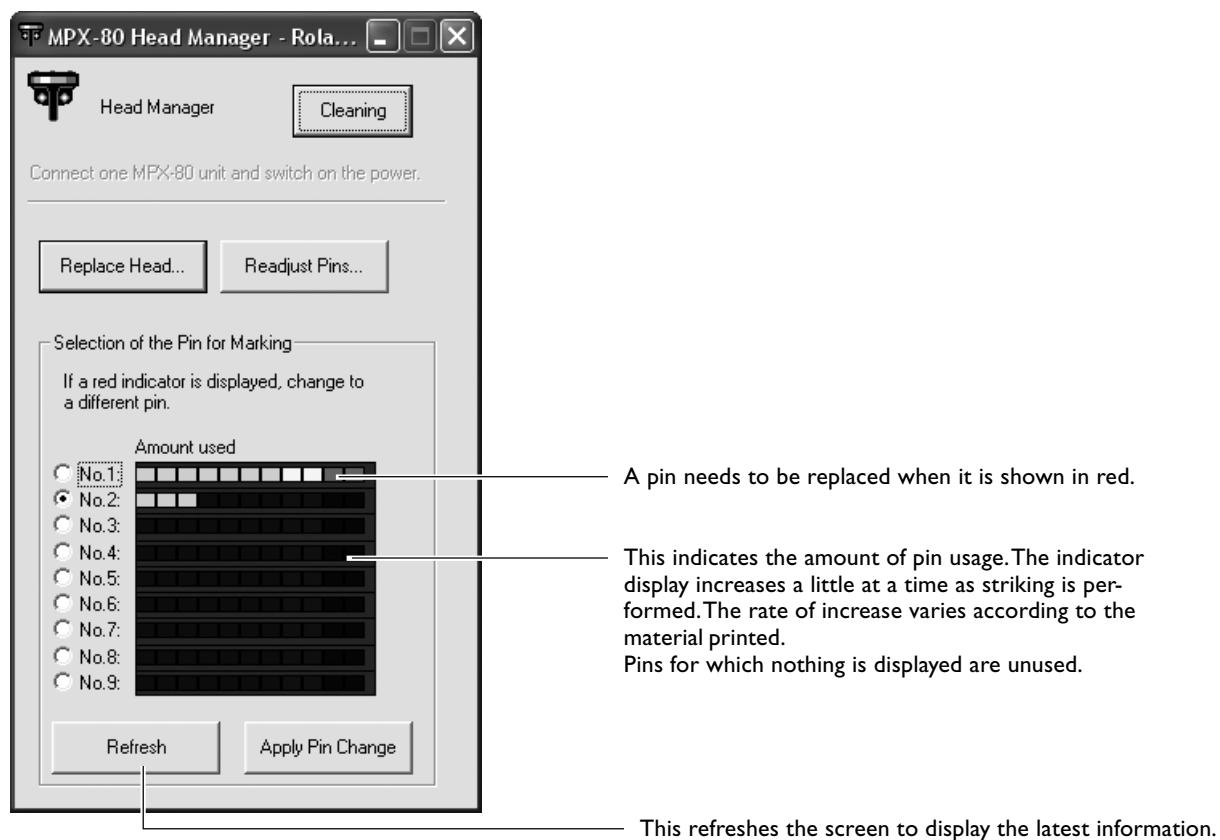
The head moves and cleaning is performed.

Checking the State of the Marking Pins

The state of each pin is shown.

If the indicator for the pin you're using is red, then replace it with a new pin.

If attractive printing is impossible or printed images are uneven even though the scale is not red, then change to a new pin.



Changing the Pin Used for Marking

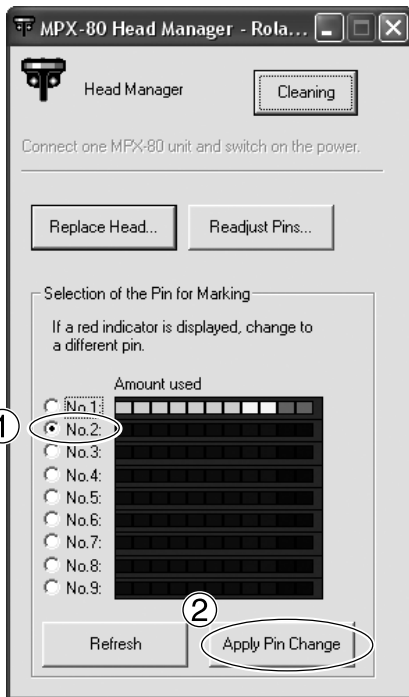
Follow the steps below to change the marking pin.

Procedure

- ① Start MPX-80 Head Manager.

☞ P. 70, "Starting MPX-80 Head Manager"

②

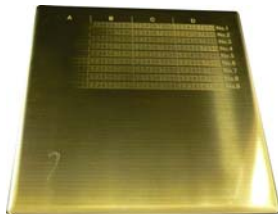


- ① Choose the number of the pin to use next.

- ② Click [Apply Pin Change].

Adjusting the Striking Force of the Pins

You can individually adjust the striking force of each separate pin. Pin adjustment involves striking the pattern shown in the figure. Prepare a piece of test-use printing material (brass) or other material measuring about 60 mm (2.3 in.) by 60 mm (2.3 in.).



Adjustment pattern

Procedure

1 Start MPX-80 Head Manager.

☞ P. 70, "Starting MPX-80 Head Manager"

2



Click [Readjust Pins].

Follow the on-screen instructions to perform adjustment for the pins.

3



When you have finished, click [X].

The window closes.

How to Determine the Adjustment Values

For the adjustment value, use the letter and number of the location where the value that can be read is lightest. If this is difficult to determine, decide on an appearance (darkness) to serve as a reference, and select a location having the same appearance. For instance, if the situation is like that shown in the figure, then select the following values.

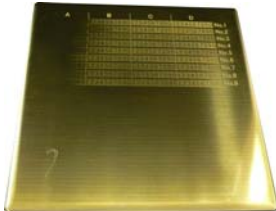
	B	C	D
B0	0	123456789012345678	12345678
C3		3	456789012345678
B0	0	123456789012345678	12345678
C2		2	3456789012345678
C2		2	3456789012345678
B9		9	0123456789012345678
C2		2	3456789012345678
C1		1	23456789012345678
C5			56789012345678

5-3 Head Replacement

Replacing the Head

When all nine marking pins wear out, replace the head. During replacement, you strike the pattern shown in the figure. Prepare a piece of test-use printing material (brass) included with the replacement head (MPH-70), or another piece of material measuring about 60 mm (2.3 in.) by 60 mm (2.3 in.).

The replacement head is sold separately. Consult your authorized Roland DG Corp. dealer.



Adjustment pattern

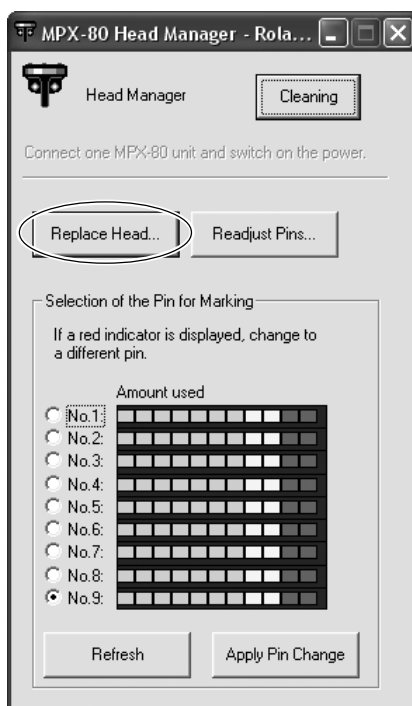
Procedure

- >Never quit the replacement operation while partway through.
- >The head is a consumable part. Never use a head whose marking pins are all worn out.
- >Never reuse a head once it has been removed. Never use it a second time, even if it contains unused pins.

1 Start MPX-80 Head Manager.

☞ P. 70, "Starting MPX-80 Head Manager"

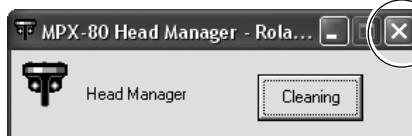
2



Click [Replace Head].

Follow the on-screen instructions to carry out head replacement.

3



When you have finished, click [X].

The window closes.

After you have finished the head-replacement operation, click [Readjust Pins] to check the state of the marking pins.

☞ P. 74 "Adjusting the Striking Force of the Marking Pins"

5-4 Adjustment of the Origin-point Location

Adjusting the Location of the Machine's Origin Point

The machine's printing origin point is at the center of the table's scale. When you want to adjust the origin-point location, output calibration data to verify the location of the origin point.

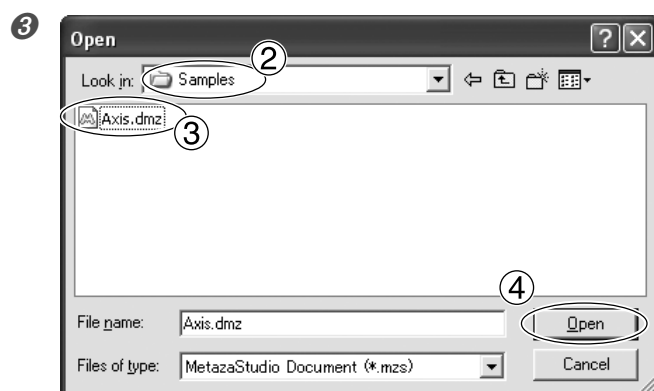
1. Print calibration data.

① Mount material on the center of the table.

Prepare material measuring at least 20 mm (0.8 in.) square.

☞ P. 31, "Loading Material (Using the Adhesive Sheet)," p. 33, "Loading Material (Using the Center Vise)"

② Start METAZAStudio.



① Go to the [File] menu and click [Open].

② For [Look in], select the [Samples] folder in the [METAZAStudio] folder*.

* The folder where METAZAStudio is installed

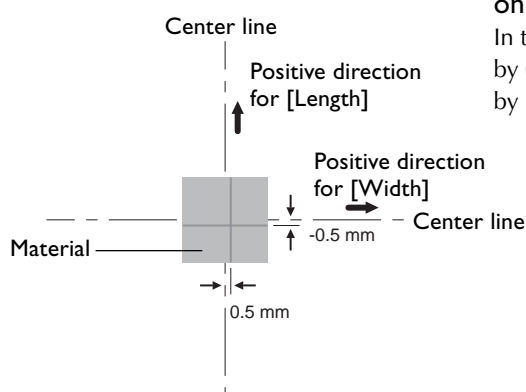
③ Select [Axis.dms].

④ Click [Open].

④ Start printing.

2. Measure and type in the correction values.

①



Measure and note down the offset between the centerline on the table scale and the crossed lines on the material.

In the example shown in the figure, the [Width] value is displaced by 0.5 mm in the positive direction and the [Length] value is offset by 0.5 mm in the negative direction.

2 Windows Vista

Click [Start], then click [Control Panel].
From the [Hardware and Sound], click [Printers].

Windows XP

Click [Start], then click [Control Panel].
Click [Printers and Other Hardware], then click [Printers and Faxes].

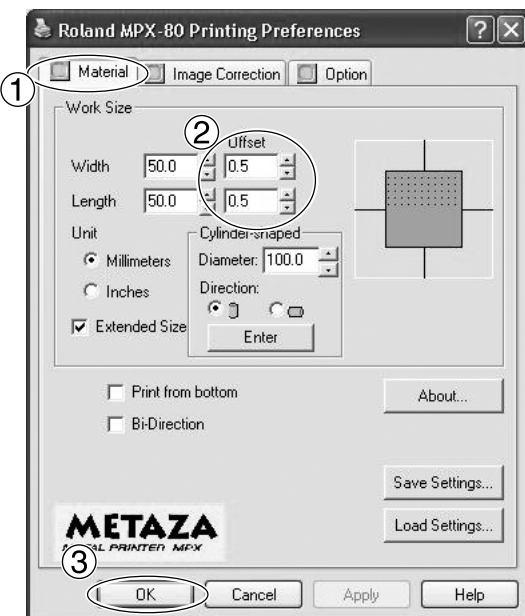
Windows 2000

Click [Start].
Click [Settings], then click [Printers].
The [Printers] folder opens.

3

Roland MPX-80
0
Ready

Right-click [Roland MPX-80].
Click [Printing Preferences].
The setting window appears.

4

① Click the [Material] tab.

② In the width and length fields for [Offset], enter the displacement values you noted in step 1.

③ Click [OK].

The window closes.

Entry of Correction Values

When the setting window for METAZAStudio is displayed, the values for any settings made there are temporary, and are not saved.

To save the values in the setting window, go into the [Printers] folder and display the setting window for the driver.

➡ P. 64, "Driver Settings"

5-5 Composition Registration and Striking-force Adjustment

Registering a Composition and Adjusting the Striking Force

Here you register a composition and adjust the striking force to match its hardness and other parameters.

With this machine, performing printing using a striking force appropriate to the composition of the material used can obtain printing results of even higher quality. The driver for the machine has premade settings for a number of compositions and their appropriate striking forces, but you can also register compositions and their optimal striking forces yourself. You can also carry out later adjustment of the striking force of compositions you've registered yourself, in order to obtain better printing results.

Procedure

① Windows Vista

Click [Start], then click [Control Panel].

From the [Hardware and Sound], click [Printers].

Windows XP

Click [Start], then click [Control Panel].

Click [Printers and Other Hardware], then click [Printers and Faxes].

Windows 2000

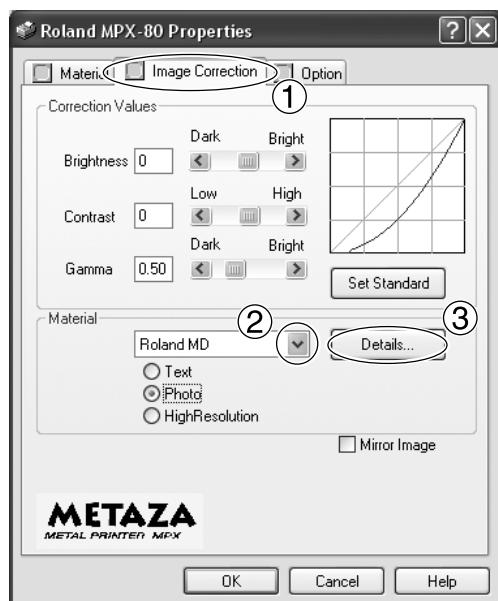
Click [Start].

Click [Settings], then click [Printers].

② Right-click [Roland MPX-80].

Click [Properties].

③

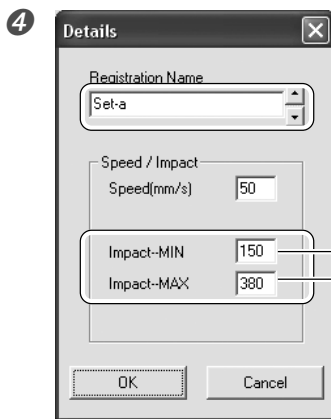


① Click the [Image Correction] tab.

② For [Material], select a custom material (settings a through d).

③ Click [Details].

The [Details] window appears.



① Enter a name for the composition you're registering.

② Adjust the impact values.

The printing results vary according to the hardness of the material. Adjust to match the material.

Raise

- When dark areas of the image are not struck

Lower

- When dark areas of the image are whitish (too bright)
- When overall striking is too forceful

Raise

- When bright areas of the image are struck with too little force (too dark)
- When overall striking is too weak

Lower

- When white areas of the image are struck with too much force

⑤ Click [OK].

The [Details] window closes.

⑥ Click [OK].

The setting window closes.

This completes registration of a composition and a striking force appropriate for it. To obtain printing result of even higher quality, carry out test printing and overprinting on the same material, and adjust the impact values while examining the printing results.

Chapter 6

Appendix

6-I What to Do If

The machine doesn't run even when printing data is sent.

Is the power switched on?

Make sure the Power/Movement button light is on. If it is dark, press the Power/Movement button to switch on the power.

Is the power cord connected correctly?

If it is not connected correctly, refer to the page indicated below and connect it properly.

☞ P. 20, "Connecting the Cables"

Is the cable used for the connection to the computer connected correctly?

If it is not connected correctly, refer to the page indicated below and connect it properly.

☞ P. 20, "Connecting the Cables"

Striking is performed, but nothing is printed.

Is the material loaded at the correct location?

If striking is being performed at a location other than where the material is loaded, then reload the material.

☞ P. 31, "Loading Material Using the Adhesive Sheet," p. 34, "Loading Material Using the Center Vise"

Is the material to be printed in line with the parameters for printable material?

Prepare and use printable material.

☞ P. 28, "Preparing Material to Print"

If you're not using a head cap, has the height of the head unit been adjusted to match the thickness of the material?

When you're not using a head cap, make sure the head unit has been secured in place at an appropriate height for the thickness of the material. Printing cannot be performed unless the head unit is at the appropriate height. Adjust the height of the head unit, then fasten it in place securely using the knob.

☞ P. 31, "Loading Material Using the Adhesive Sheet," p. 34, "Loading Material Using the Center Vise"

Is the marking pin bent or broken?

When nothing is printed, and changing the location where the material is loaded, the parameters for the material, or the height of the head unit does not correct the problem, then the marking pin may be bent or broken. Try changing to an unused marking pin and carry out test printing. If you can print with the new marking pin, it means the marking pin you had been using is bent or broken. Continue using the new marking pin.

☞ P. 73, "Changing the Pin Used for Marking"

The image is unattractive.

Are the settings for the material in the driver's setting window correct?

Choose the composition of the loaded material.

Even if the composition of the material is the same, the hardness of the printed surface may vary greatly depending on the casting method, the composition of impurities, the presence of plating, and so on. In such cases, perform fine adjustment of the striking force to match the material.

☞ P. 78, "Adjusting the Striking Force to Match the Material"

Is the image printed clearly?

If the image is not printed clearly, adjust the brightness of the image. Perform printing while increasing the brightness of [Gamma] or [Brightness] in the driver's setting window a little at a time.

At this time, leave the material loaded and perform overstriking at the same location. Continue changing settings and performing printing until you obtain the darkness you want.

☞ P. 64 "Driver Settings", driver Online Help "[Correction] tab"

Are grayscale tones printed clearly?

When grayscale tones are indistinct, go to the setting window for the driver ("Advanced" at the [Image Correction] tab) and adjust the force of striking. Perform printing while leaving the value for [Impact--MAX] unchanged and increasing the value for [Impact--MIN] a little at a time.

At this time, leave the material loaded and perform overstriking at the same location. Continue changing the settings in the driver's setting window and performing printing until you obtain the darkness you want.

☞ P. 78 "Registering a Composition and Adjusting the Striking Force"

More Information about Overstriking

The various setting values determined with overstriking are effective only when performing overstriking under identical conditions. The same results are not necessarily obtained when printing is performed with a new piece of material with only the conditions made the same, without performing overstriking.

Is the marking pin worn?

Attractive printing may be impossible if the marking pin becomes worn.

Adjust the pin or change it to a new one.

☞ P. 70, "Maintenance of the Head and the Marking Pins"

The image is uneven.

Is the printed surface slightly uneven?

If no head cap is attached, then attach a head cap and perform printing. If you're using material that can be damaged by printing with the head cap attached, then replace it with material that has a level printing surface.

☞ P. 27, "Head Caps," p. 28, "Preparing Material to Print"

Is the printed surface at an angle?

If no head cap is attached, then attach a head cap and perform printing. If you're using material that can be damaged by printing with the head cap attached, then replace it with material that has a level printing surface.

☞ P. 27, "Head Caps," p. 28, "Preparing Material to Print"

Is the image darkness uneven?

Performing overstriking with the material left loaded at the same location may improve the image quality. Try performing overstriking with different settings for [Gamma], [Brightness], or [Contrast] in the driver's setting window.

☞ P. 64, "Driver Settings", driver online help "[Correction] tab"

Was bidirectional printing performed?

Bidirectional printing can shorten the printing time, but the image quality may suffer. If this happens, go to the driver's setting window and clear the selection for [Bidirection], then redo printing.

☞ P. 64, "Driver Settings", driver online help "[Material] tab"

Is the marking pin worn?

Attractive printing may be impossible if the marking pin becomes worn.

Adjust the pin or change it to a new one.

☞ P. 70, "Maintenance of the Head and the Marking Pins"

The image is always faint at the same location.

If you're using a head cap

If the image is always faint at the same location even though you're performing printing using a head cap, the height displacement for the printed surface may be excessive. Re-check the parameters of materials that the machine can print and select material that meets the parameters. Also, image quality is not assured when printing photographic data on a curved surface with this machine.

☞ P. 28 "Preparing Material to Print"

If you're not using a head cap

If the image is often faint at the same location, such as near the front right area of the table, then adjusting the levelness of the machine may improve the image quality.

Please note that this is not effective when unevenness in

the image is unrelated to the printing location, such as when uneven areas vary from one piece of material or image to another. We recommend using a head cap whenever such use is possible.

☞ P. 27 "Head Caps"

Procedure

1. Using an adhesive sheet, load a piece of included test-use printing material at the center of the table.

If the included material has been used up, then prepare a piece of material that is larger than 60 mm (2.3 in.) and has a smoothness of 0.05 mm (0.002 in.) or less.

☞ P. 31, "Loading Material Using the Adhesive Sheet"

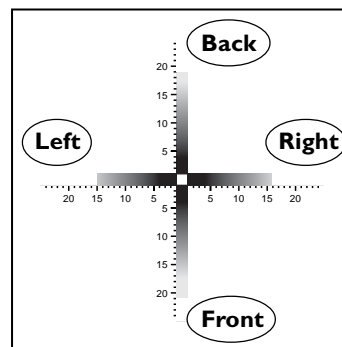
2. Go into the [Printers] folder. Right-click the [Roland MPX-80] and open the setting screen for the METAZA driver. Click [Printing Preferences].

3. Click the [Option] tab.

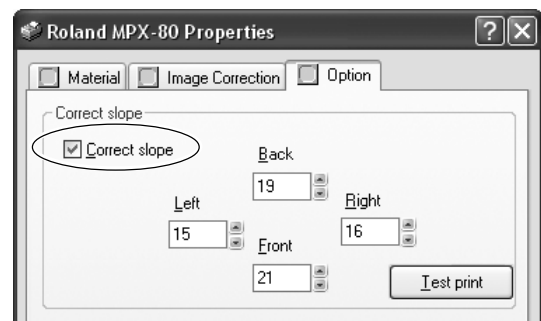
4. Click [Test print].

The test pattern is printed on the material.

5. Use the scale to read and note down locations where the test pattern is not continuous or not visible. Note down the values in all four directions (front, back, left, and right).



6. Select [Correct slope] and enter the scale values you noted into the driver.



The printed location isn't where desired

The center of the table scale may not coincide with the machine's printing origin point.

To correct displacement between the scale center and the printing origin point.

☞ P. 76, "Adjusting the Location of the Machine's Origin Point"

6-2 When Moving the Machine

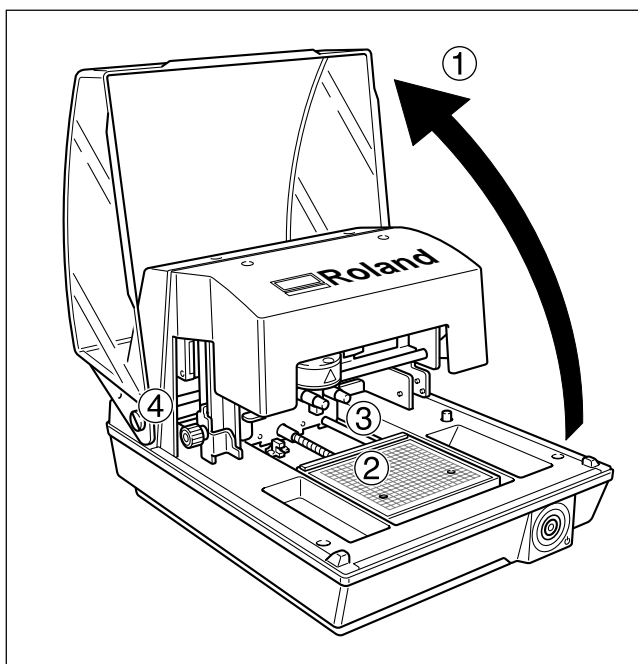
When moving the machine, be sure to attach the retaining materials. Moving the machine without attaching the retaining materials may result in damage to the machine.

Procedure

① Switch on the power.

☞ P. 24, "Switching On the Power"

②

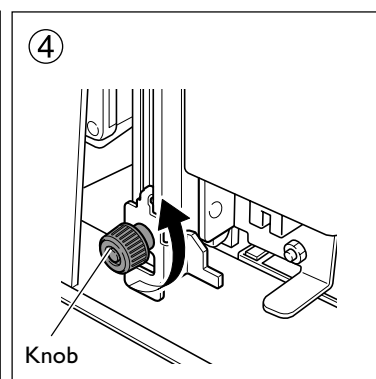
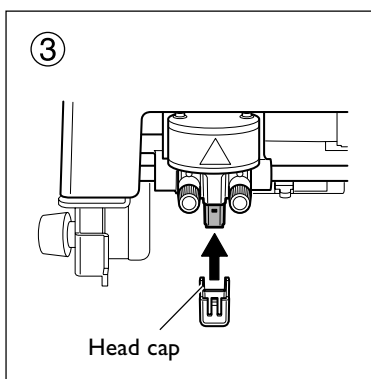
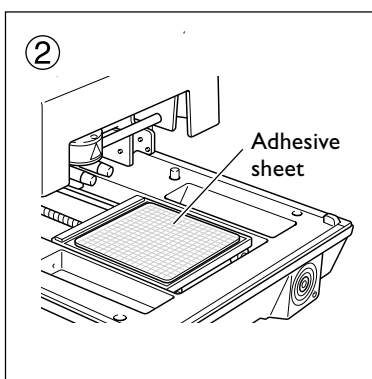


① Open the cover.

② Mount the adhesive sheet on the table.

③ Fit the head cap onto the head.

④ Loosen the knob.



③ Press the Power/Movement button.

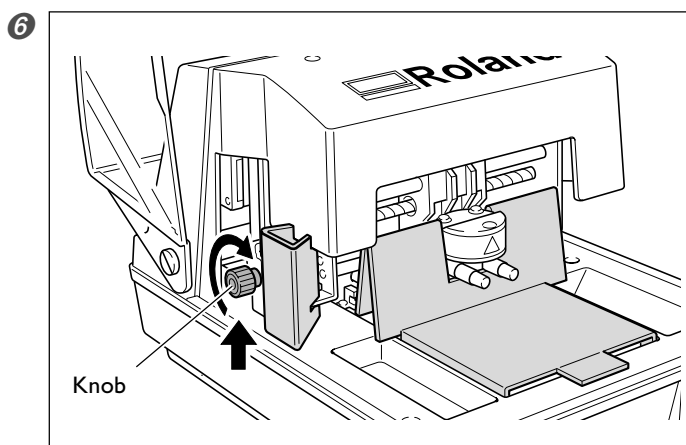
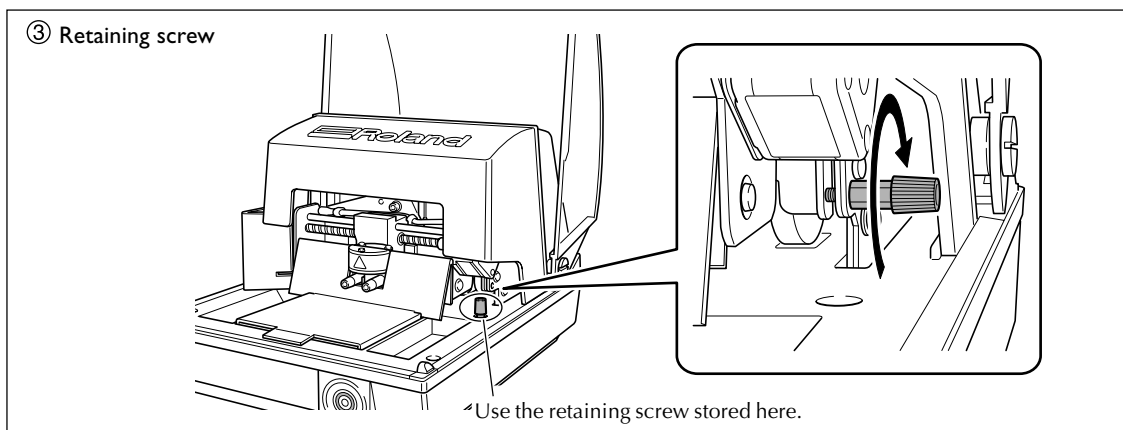
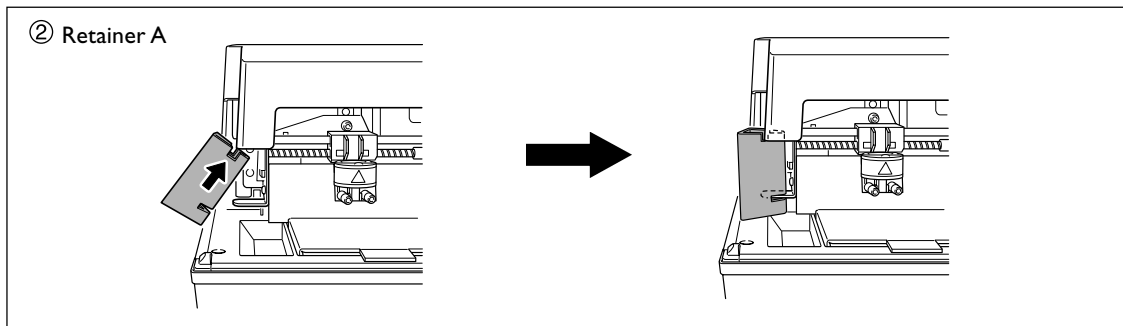
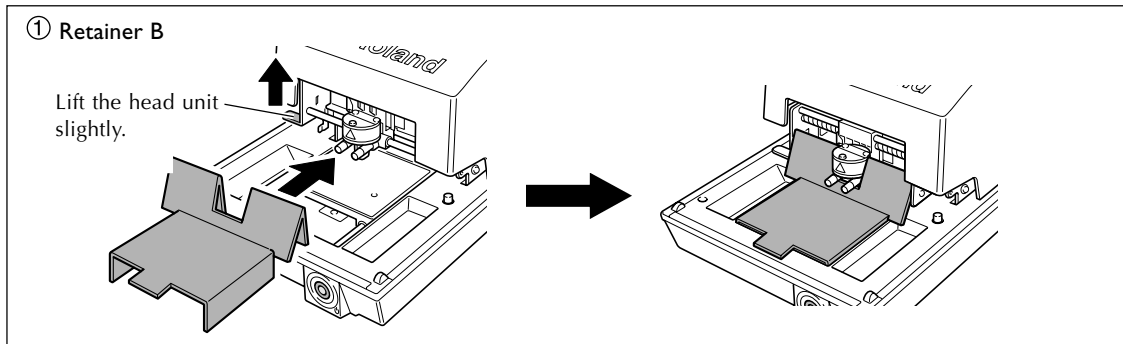
The table and head move, and stop at the location where the tip of the nose cap touches the surface of the center of the table.

④ Switch off the power.

Unplug the power cord and USB cable.

☞ P. 24, "Switching Off the Power"

- ⑤ Attach the retaining materials in the order shown in the figure.



Lift the knob and secure in place.

Lift the knob until it touches the head unit, then lift it up slightly more from that point, and secure it in place at a position where movement stops. After securing in place, make sure the head unit is immobilized

- ⑦ Close the cover.
- ⑧ Repack the machine in its original packing carton.

6-3 Head Life

The head used in this machine is a consumable part.

As a general guide to its useful life, about 3,600 plates can be printed under the following conditions.

Conditions of Use

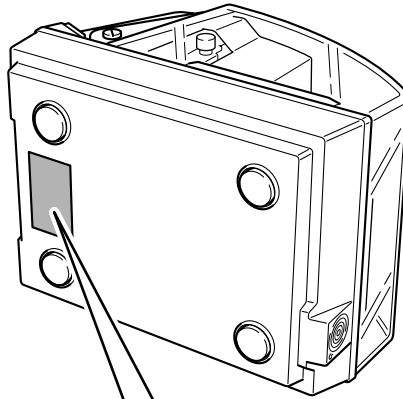
Material used : MD-NI (Roland nickel-plated plate)

Printing area : 30 mm (1.1 in.) X 23 mm (0.9 in.)

Print Mode : Photo

Printing rate : 35% (25,000 dots per plate)

6-4 Locations of the Power Rating and Serial Number Labels

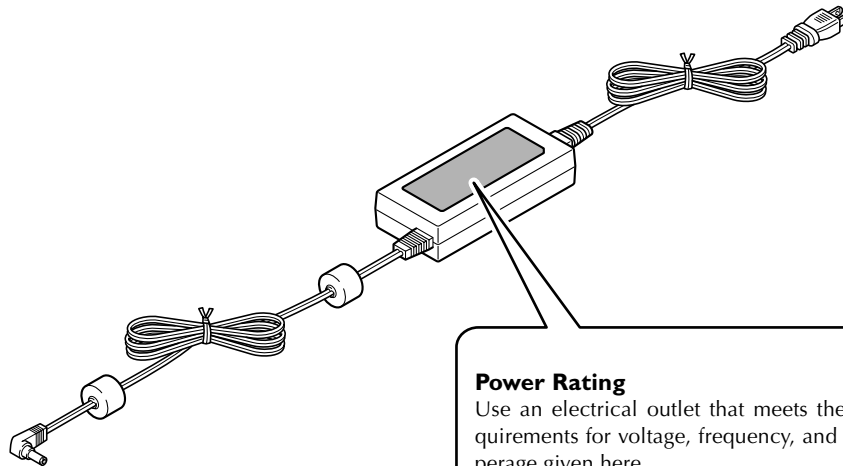


Serial Number

This is required when you seek maintenance, servicing, or support. Never peel off the label or let it get dirty.

Power Rating

Use an electrical outlet that meets the requirements for voltage, frequency, and amperage given here.



Power Rating

Use an electrical outlet that meets the requirements for voltage, frequency, and amperage given here.

6-5 Main Unit Specifications

Main Specifications

	MPX-80	
Printable material	Gold, silver, copper, platinum, brass, aluminium, iron, stainless steel, etc. (Vickers hardness [HV] of the printing surface must be 200 or less.)	
Loadable material size	Maximum 100 mm (width) x 100 mm (height) x 40 mm (thickness) (3.9 in. x 3.9 in. x 1.5 in.) (Maximum thickness when using the center vise: 20 mm (0.7 in.))	
Printing area	80 mm x 80 mm (3.1 in. x 3.1 in.)	
Resolution	529 dpi (High resolution), 353 dpi (Photo), 265 dpi (Text), 1058 dpi (Vector)	
Printing direction	Unidirectional printing or bidirectional printing (Selectable with Windows driver)	
Printing speed (Default)	50 mm/sec (1.9 in./sec)(Photo), 33 mm/sec (1.2 in./sec)(High resolution/Text), 16 mm/sec (0.62 in./sec)(Vector)	
Interface	USB interface (compliant with Universal Serial Bus Specification Revision 1.1)	
Power requirements	Dedicated AC adapter	AC 100 to 240V \pm 10% 50/60Hz
	Machine	DC 19 V 0.6 A
Power consumption	Approx. 15W	
Acoustic noise level	Under 70 dB (A) (According to ISO 7779)	
Operation temperature	10 to 30°C (50 to 86°F)	
Operation humidity	35 to 80% (no condensation)	
External dimensions	264 mm (W) x 325 mm (D) x 217 mm (H) (10.3 in. (W) x 12.7 in. (D) x 8.5 in. (H))	
Weight	5.1 kg (11.2 lb.)	
Packed dimensions	350 mm (W) x 440 mm (D) x 370 mm (H) (13.7 in. (W) x 17.3 in. (D) x 14.5 in. (H))	
Packed weight	7.0 kg (15.4 lb.)	
Accessories	AC adapter, power cord, test-use printing material, USB cable, CD-ROM, user's manual, Software Guide	

System Requirements for USB Connection

Computer	Model preinstalled with Windows Vista (32-bit edition), XP, 2000, or upgraded computer originally preinstalled with Windows 2000
USB cable	Use the included USB cable.



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