

PIX-3

USER'S MANUAL

Thank you very much for purchasing the PIX-3.

- To ensure correct and safe usage with a full understanding of this product's performance, please be sure to read through this manual completely and store it in a safe location.
- Unauthorized copying or transferral, in whole or in part, of this manual is prohibited.
- The contents of this operation manual and the specifications of this product are subject to change without notice.
- The operation manual and the product have been prepared and tested as much as possible. If you find any misprint or error, please inform us.

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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.



ROLAND DG CORPORATION

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

MODEL NAME : See the MODEL given on the rating plate.

RELEVANT DIRECTIVE : **EC MACHINERY DIRECTIVE (89/392/EEC)**

EC LOW VOLTAGE DIRECTIVE (73/23/EEC)

EC ELECTROMAGNETIC COMPATIBILITY DIRECTIVE (89/336/EEC)

Windows® and Windows NT® are registered trademark or trademark of Microsoft® Corporation in the United States and/or other countries.
i486 and Pentium are registered trademarks of Intel Corporation in the United States.



AutoCAD® is registered trademark of Autodesk, Inc.

Mac OS, Macintosh, Power Macintosh, PowerBook, and AppleTalk are registered trademarks or trademarks of Apple Computer, Inc. in the USA and other countries.




PowerPC is trademark of International Business Machines Corporation.

To Ensure Safe Use

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.

⚠ WARNING



Do not disassemble, repair, or modify. (This does not include replacement of the sensor unit.)

Doing so may lead to fire or abnormal operation resulting in injury.



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.



Do not use with any power supply other than the dedicated AC adapter.

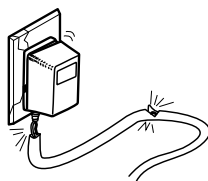
Use with any other power supply may lead to fire or electrocution.

⚠ CAUTION



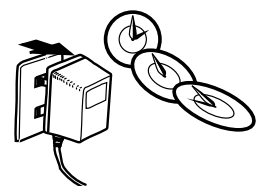
Do not use with a damaged AC adapter, power cord, or power-cord plug or with a loose electrical outlet.

Use with any other power supply may lead to fire or electrocution.



When not in use for extended periods, unplug the AC adapter from the electrical outlet.

Failure to do so may result in danger of shock, electrocution, or fire due to deterioration of the electrical insulation.

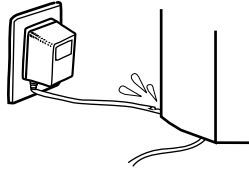


⚠ CAUTION



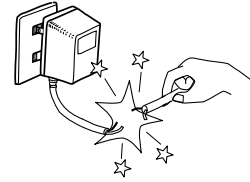
Do not injure or modify the electrical power cord, nor subject it to excessive bends, twists, pulls, binding, or pinching, nor place any object of weight on it.

Doing so may damage the electrical power cord, leading to electrocution or fire.



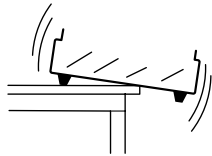
When unplugging the AC adapter from the power outlet, grasp the adapter unit or the plug, not the cord.

Unplugging by pulling the cord may damage it, leading to fire or electrocution.



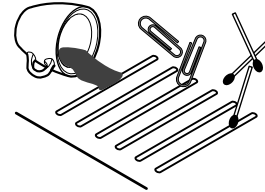
Install on a stable surface.

Failure to do so may result in falling of the unit, leading to injury.



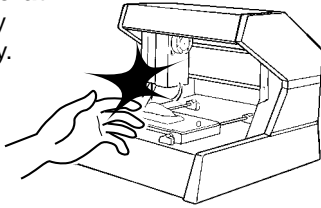
Do not allow liquids, metal objects or flammables inside the machine.

Such materials can cause fire.



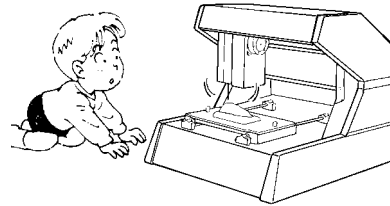
Do not place hands near the z unit while in operation.

Doing so may result in injury.

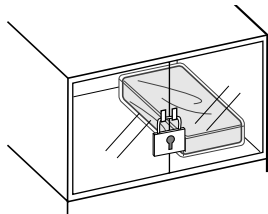


Do not allow children to operate without adult supervision or operate within reach of young children.

Doing so may result in injury.

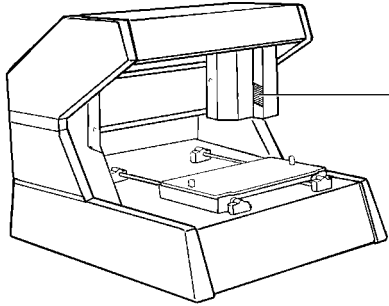


Store clay out of the reach of children.

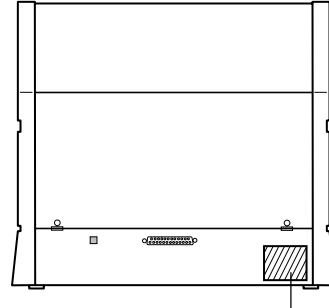


About the Labels Affixed to the AC Adapter and Unit

These labels are affixed to the body of this product and the AC adapter. The following figure describes the location. The configuration of the AC adapter varies according to regional differences in voltage. Please note that the descriptions in this manual are for the 117 V adapter.



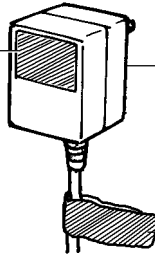
Do not place hands near the z unit while in operation.



Model label

Rating label

Do not use with any electrical power supply that does not meet the ratings displayed on the AC adapter.



CAUTION
INDOOR USE ONLY
PRECAUTION
DOMESTIQUE
USAGE SEULEMENT

▲ CAUTION
DISCONNECT MAIN PLUG FROM SUPPLY SOCKET WHEN NOT IN USE
MAIN LEADS COLOR CODE:
BROWN: LIVE, BLUE: NEUTRAL
▲ ATTENTION
Quand la machine n'est pas utilisée déconnecter le câble de la prise de courant
Code des couleurs
Marron: Phase, Bleu: Neutre

▲ ACHTUNG
Lösen Sie den Netzanschluß, wenn das Gerät nicht verwendet wird.
Die Farbkodierung des Netzkabels lautet folgendermaßen:
Braun: Spannung, Blau: Masse
▲ 注意
長時間使用しない場合は、ACアダプタをコンセントから抜いて下さい。

When not in use for prolonged periods, unplug the AC adapter from the electrical outlet.

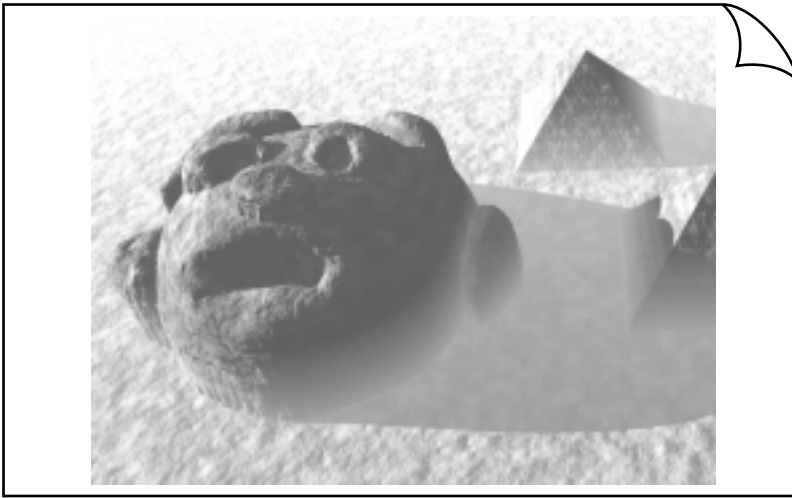
Using PICZA (Some Examples of Actual Use)

This section presents some actual examples of how PICZA can be put to use.

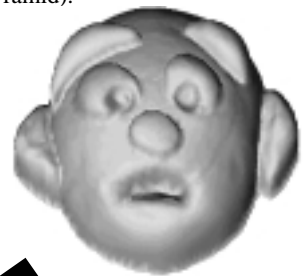
Creating Elements for 3D Computer Graphics Software

Dr. PICZA offers a function for exporting files in three-dimensional DXF format (AutoCAD® Release 12 format). This section explains how to use a commercially available 3D computer-graphics software application that can import DXF-format files to create your own original illustrations. (This product does not include 3D computer-graphics software, which must be obtained from another source.)

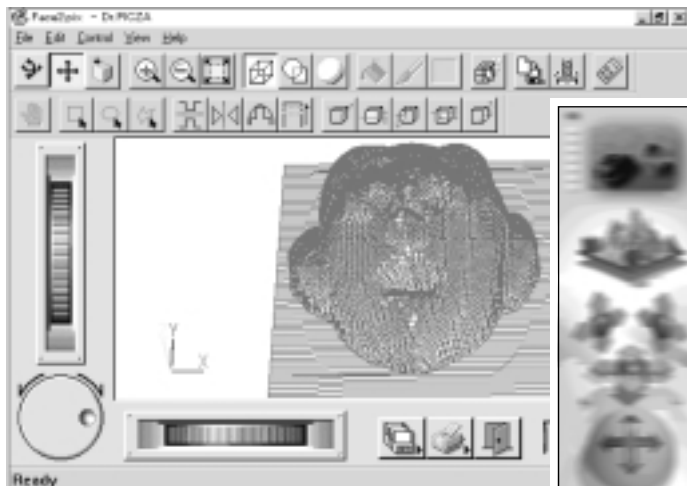
1 Visualize in detail the design illustration you wish to create. In this example, we'll make the illustration shown below.



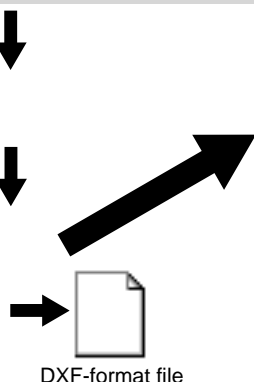
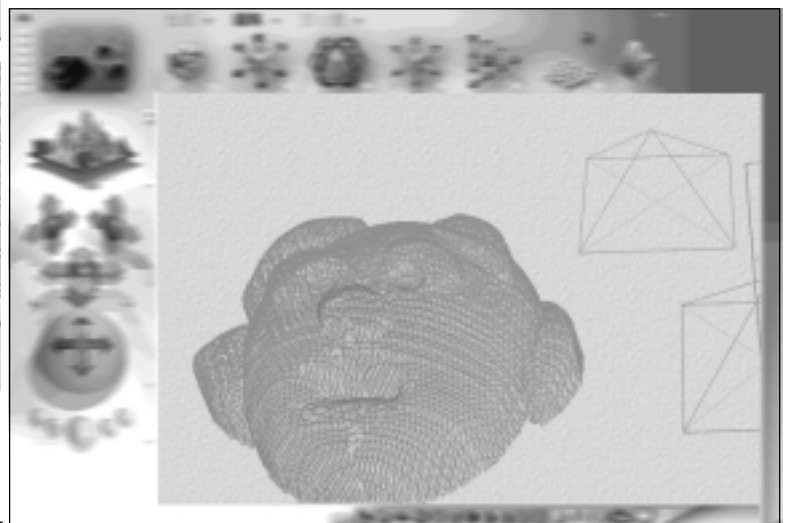
2 Create the elements that make up the illustration. In this example, we'll use the clay included with the product to make the face, and the graphics software to make the other element (the pyramid).



3 Scan the clay face and export the data in DXF format.



4 Launch the 3D graphics application and import the DXF file. Make the pyramid and arrange the face and the pyramid using the layout shown below.

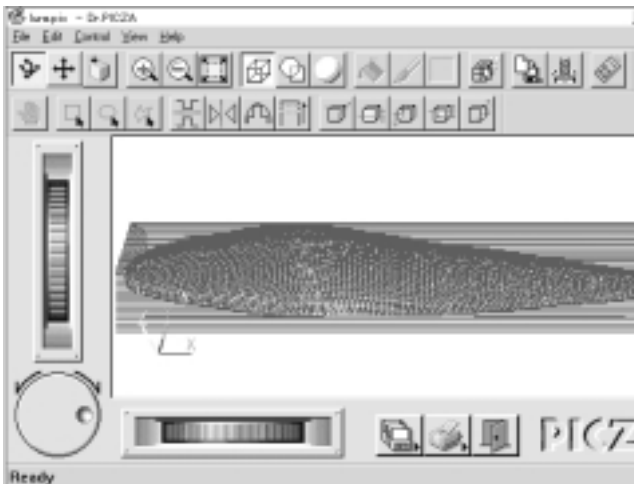


5 Use the 3D graphics software to color the illustration, then print it out.

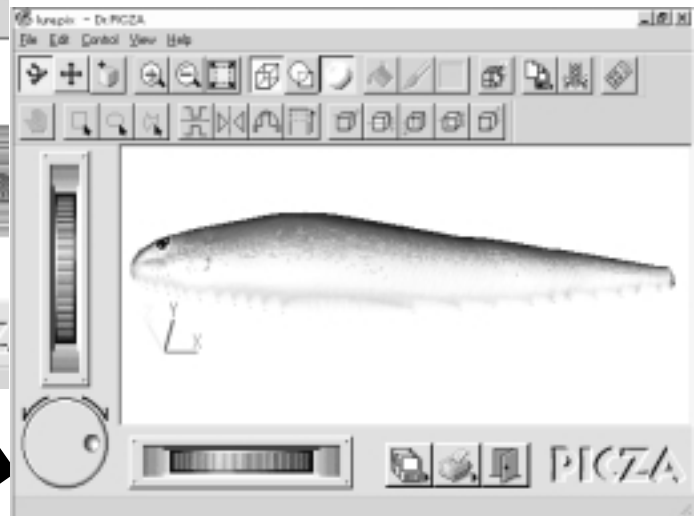
Adding 3D Graphics to an Internet Web Page

Dr. PICZA comes with a function for exporting files in VRML format (Ver.1.0). VRML (Virtual Reality Modeling Language) is a language used to display 3D graphics on the World Wide Web, where they can be viewed using a web browser capable of displaying VRML files. Color data from Dr. PICZA is also preserved in these VRML files. In this example, we'll add the image of a original fishing lure scanned with the PIX-3 to a web page. (This product does not include a web browser or web-page authoring software, which must be be obtained from another source.)

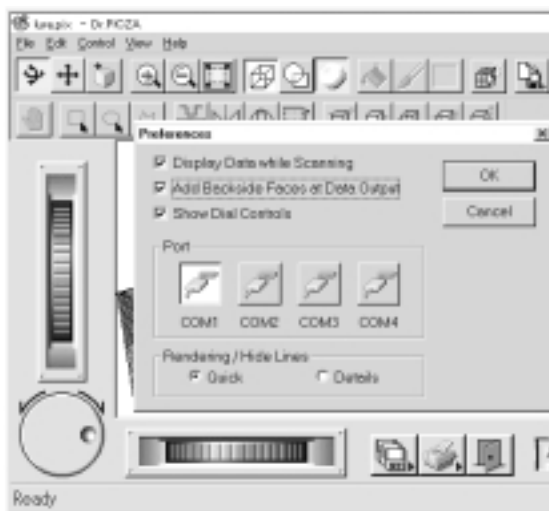
- 1 Set the lure in place on the workpiece table and scan it with the PIX-3. In this example, we'll scan only one side of the lure, and use Dr. PICZA's [Add Backside Faces] function to make a complete three-dimensional representation.



- 2 Use Dr. PICZA to color the scanned data. (For details on adding color, please refer to the help screens for Dr. PICZA.)



- 3 Under [File]-[Preferences...], click [Add Backside Faces] to turn it on, then export the data in VRML format.



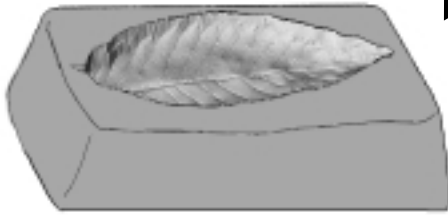
- 4 VRML files can be opened and viewed with a web browser that supports the VRML format. By adding a link to a VRML file from a web page, you can also display the VRML file on the World Wide Web. (For details on how to do this, please refer to the documentation for your web-page authoring software or a third-party guide to HTML.)



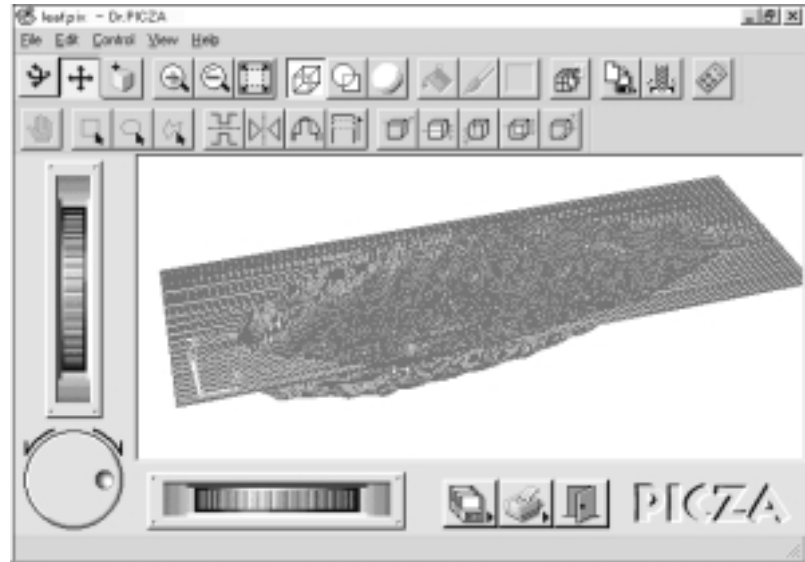
Cutting a Three-dimensional Object with a Modeling Machine

Dr. PICZA has a function for exporting data to MODELA PLAYER. MODELA PLAYER is software for cutting three-dimensional objects on the MODELA, CAMM-3, or CAMM-2, three-dimensional modeling machines made by Roland DG Corp. Dr. PICZA can output 3D data directly to MODELA PLAYER. In this example, we'll use the MODELA in combination with Dr. PICZA to make a paperweight in the shape of a leaf. The explanation assumes that you already have the MODELA installed and set up.

- 1** Get a suitable leaf from a tree, and press it into a piece of clay to transfer the image of the leaf to the clay.

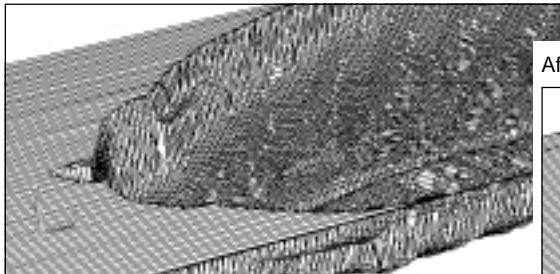


- 2** Set the piece of clay on the workpiece table and scan it with the PIX-3.

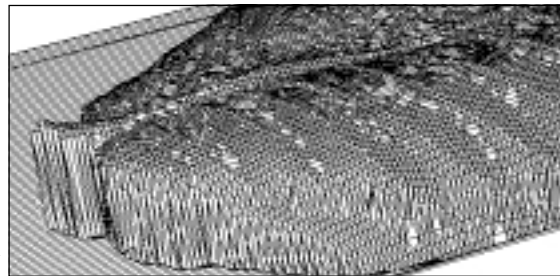


- 3** Use [Edit]-[Invert] to invert the scanned shape, then export the data to MODELA PLAYER.

Before inversion

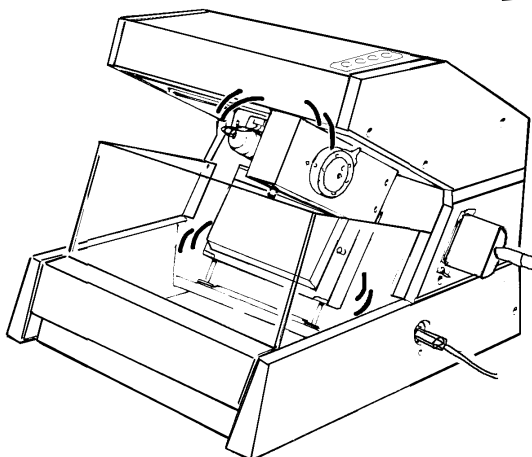


After inversion

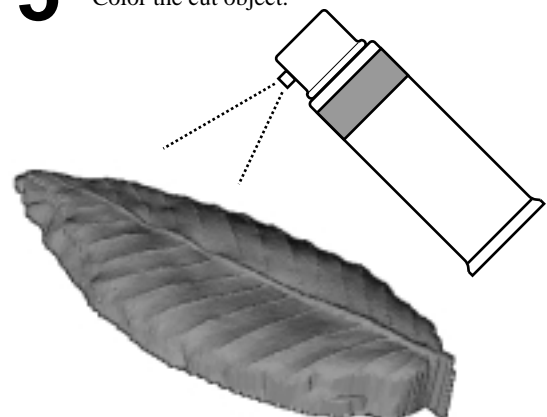


Export to
MODELA
PLAYER

- 4** Use MODELA PLAYER to cut the shape on the MODELA.

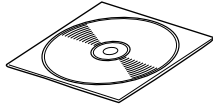


- 5** Color the cut object.

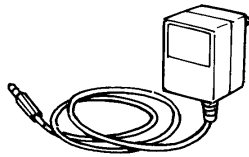


1 Check the included items

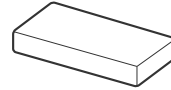
Roland Software Package CD-ROM: 1



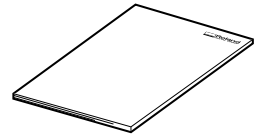
AC adapter: 1



Clay: 1



PIX-3 User's manual : 1

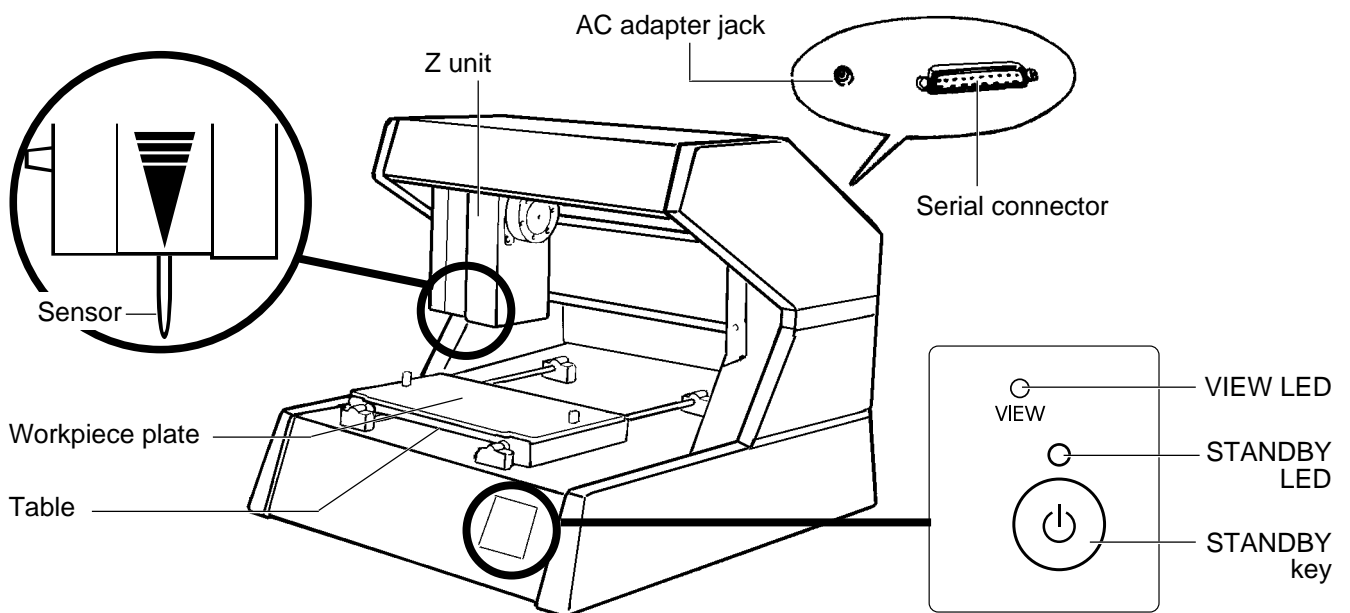


The configuration of the AC adapter varies according to regional differences in voltage. Please note that the descriptions in this manual are for the 117 V adapter.

2 Part names

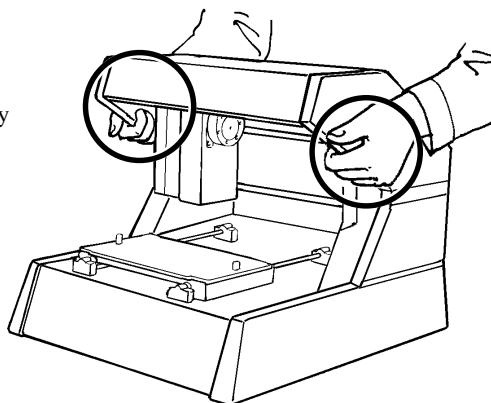
NOTICE

Except when repacking the unit, do not attempt to move the table or Z unit by hand.




How to carry the PIX-3


Use two hands to securely grip this area on the left and right sides.




3 Setting up and connection

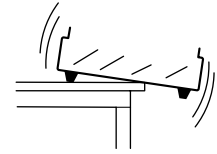
WARNING

 **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.

 **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.

CAUTION

 **Install on a stable surface.**
Failure to do so may result in falling of the unit, leading to injury.



NOTICE

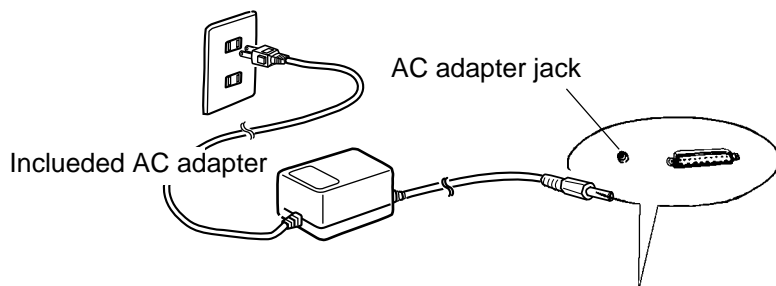
Never install this unit in any of the following situations, as it could result in damage:

- Places where the installation surface is unstable or not level.
- Places with excessive electrical noise.
- Places with excessive humidity or dust.
- Places with poor ventilation, because the PIX-3 generates considerable heat during operation.
- Places with excessive vibration.

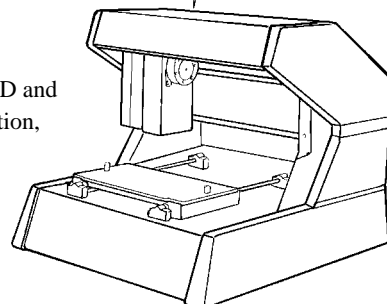
Use within a temperature range of 5 to 40°C (41 to 104°F) and within a humidity range of 35 to 80%.

Securely connect the power cord, computer I/O cable and so on so that they will not be unplugged and cause failure during operation. Doing so may lead to faulty operation or breakdown.

The AC adapter plugs in here



When connected to the AC adapter, the STANDBY LED and VIEW LED flash in alternation, then go dark.

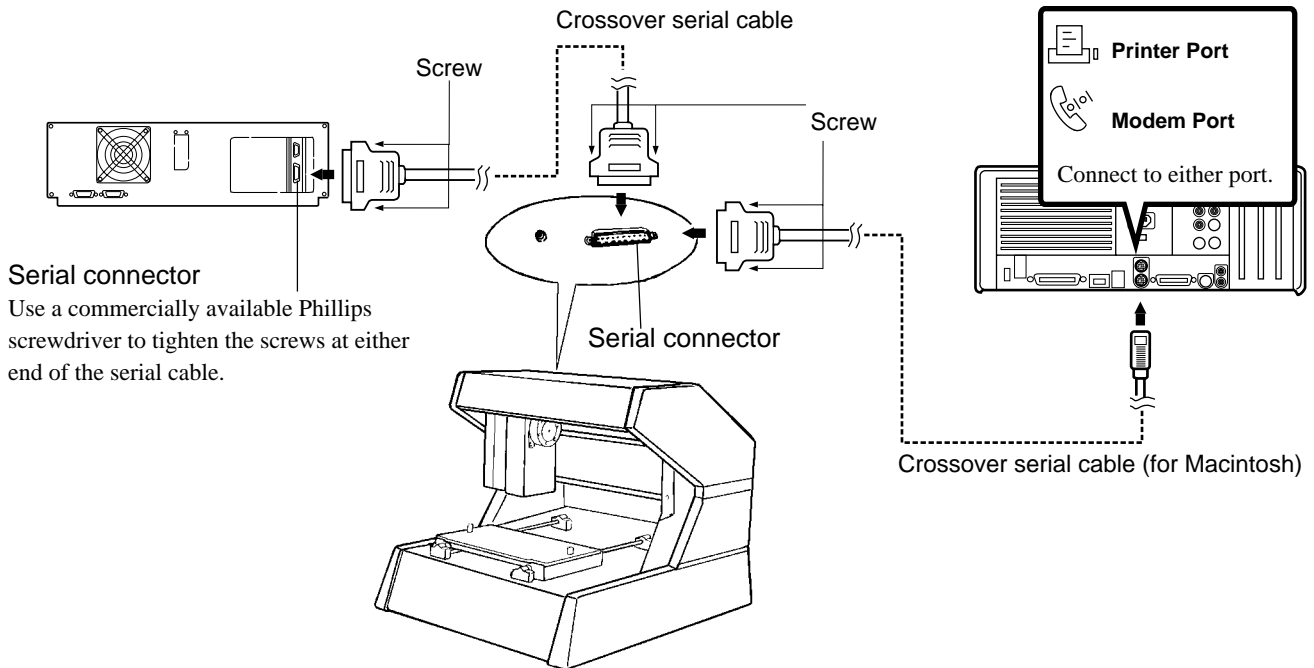


Leave about 10 cm (4") of open space behind the unit.
* Do not place objects near the AC adapter jack or serial connector.

Connect the unit to the computer

For IBM PC or PC compatible

For Macintosh



Serial connector

Use a commercially available Phillips screwdriver to tighten the screws at either end of the serial cable.

- For the cable, use a commercially available crossover serial cable (RS-232C rating). A straight serial cable such as is commonly used to connect a modem cannot be used. For more on how to connect a serial cable for Macintosh, see "15 Specifications -- Serial Cable for Macintosh."
- Make sure the power to the computer and the PIX-3 is switched off before attempting to connect the cables.

4 Installing a Software

Scanning three-dimensional objects using PIX-3 requires setting up Dr. PICZA.











The included CD for the Roland Software Package contains a Windows-based version of Dr. PICZA and a Macintosh-based version of Dr. PICZA. Set up the appropriate version for the operating system you're using.

Symbols used in the section on software

When the procedures for Windows and for the Mac OS are different, both are described. When the procedures are similar, the explanations use the screens for the Windows version. In such cases, the screen images may differ from those for the Mac OS version, but the procedures do not change.

Overview of Dr. PICZA

* For details, please refer to the help screens for Dr. PICZA.

A Quick Overview of Available Functions	Toolbar button
Set scanning conditions and perform scanning	
View scanned 3D data from various angles	
Zoom in or out on the on-screen view of scanned data	
Make settings for how scanned 3D data is displayed	
Displays the coordinates of the scanned object	
Color the faces of scanned 3D data	
Edit scanned 3D data	
Adjust the slant of scanned 3D data	
Specify the data format and save the scanned 3D data	
Launch the MODELA PLAYER	

Installing

Setting Up the Windows Version of the Program

Operating environment

Dr.PICZA	
Computer	Personal computer running Windows 95, Windows 98, or Windows NT 4.0
CPU	If you're using Windows 95: i486SX or better (Pentium 100 MHz recommended) If you're using Windows 98 or Windows NT 4.0: i486DX or better (Pentium 100 MHz recommended)
System Memory	If you're using Windows 95: 8 MB or more (10 MB or more recommended) If you're using Windows 98 or Windows NT 4.0: 16 MB or more (32 MB or more recommended)
Hard Disk	3 MB or more of free space

Setup

* When setting up the software under Windows NT 4.0, log on as the member of a group other than [Guest].

- 1 Switch on the computer and start Windows.
- 2 Place the CD from the Roland Software Package in the CD-ROM drive.
- 3 Click the Dr. PICZA [Read Me] button and read the displayed information. Click the [Install] button.
- 4 The Setup program starts. Follow the messages to carry out setup and finish setting up the program. When installation is completed, remove the CD-ROM from the CD-ROM drive.



Setting Up the Mac OS Version of the Program

Operating environment

	Dr.PICZA
Computer	A Power Macintosh, or PowerBook with a PowerPC processor.
System	Mac OS 7.5 or higher
System Memory	20 MB or more (40 MB or more recommended)
Hard Disk	3 MB or more of free space

Setup

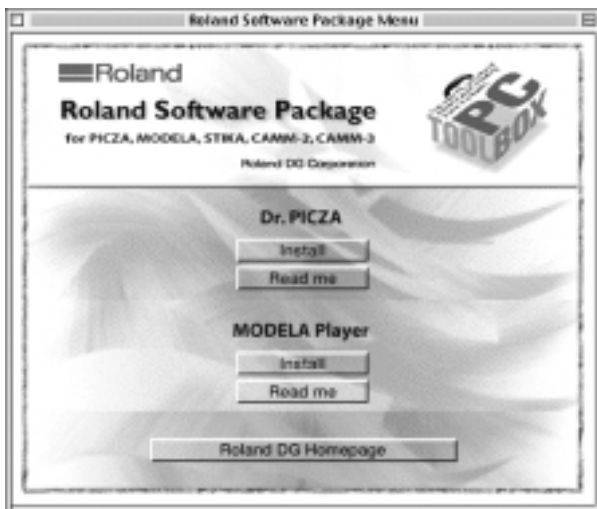
- 1 Turn off any virus-detection software. Insert the included CD-ROM into the CD drive.
- 2 Double-click the [Roland Software Package] icon to open.



- 3 Double-click the [Menu] icon.



- Click the Dr. PICZA [Read Me] button and read the displayed information. Click the [Install] button.



- When the Installer's start screen appears, click [Continue...].

- Choose where to install the program and click [Install].



- Installation starts. When installation finishes, click [Quit].

When installation is completed, remove the CD-ROM from the CD-ROM drive.

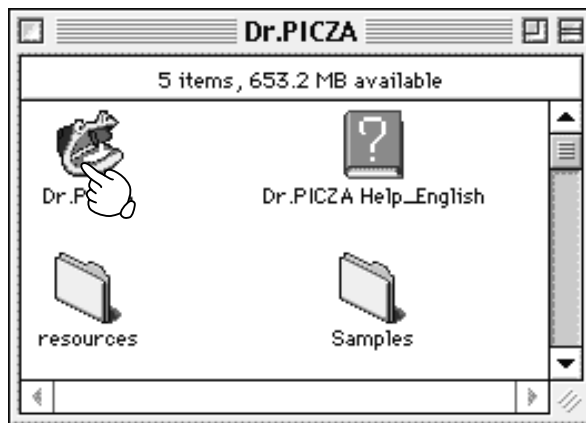
5 Starting Dr. PICZA

For Dr. PICZA for Windows OS

Press the Start button and select [Dr. PICZA].



For Dr. PICZA for Mac OS



About Help

If you're unsure how perform an operation while you're working, taking a look at Help can find the answer. If you're using Dr. PICZA for the first time, please be sure to read the Help screens. You can call up Help from the software menus.

For Dr. PICZA for Windows OS



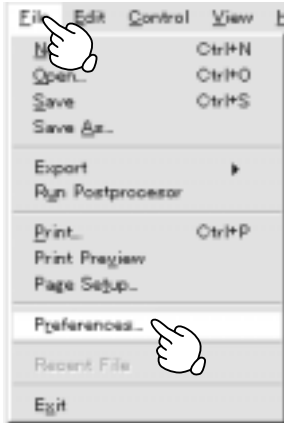
For Dr. PICZA for Mac OS



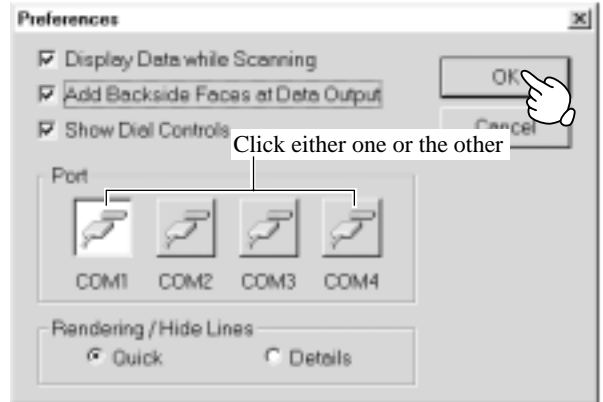
6 Selecting a communication port

For Dr. PICZA for Windows OS

1 From the [File] menu, click [Settings].



2 Select the port where the cable is connected, then click [OK].

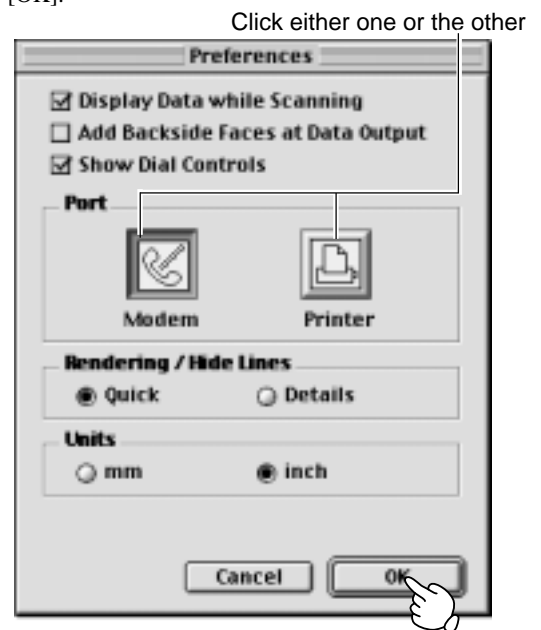


For Dr. PICZA for Mac OS

1 Press the File button and select [Preferences...].



2 Select the port where the cable is connected, then click [OK].



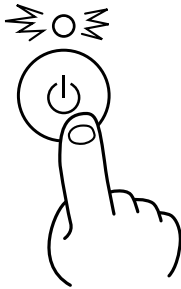
If Dr. PICZA selects the same communication port as AppleTalk, the scanning cannot be processed. In this case, please change the setting of Dr. PICZA so as to use another port. Or, disable the AppleTalk.

7 Powering ON

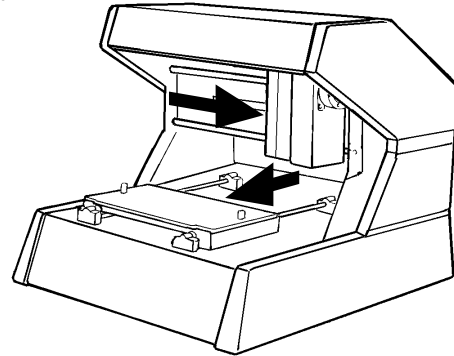
NOTICE

Before switching on the power to the PIX-3, turn on the computer.

- 1 Press the STANDBY key. The STANDBY LED lights up.



- 2 The unit performs its initialization routine, then stops. (During initialization, the sound of the moving table and Z unit may be somewhat loud. This is not a defect.)



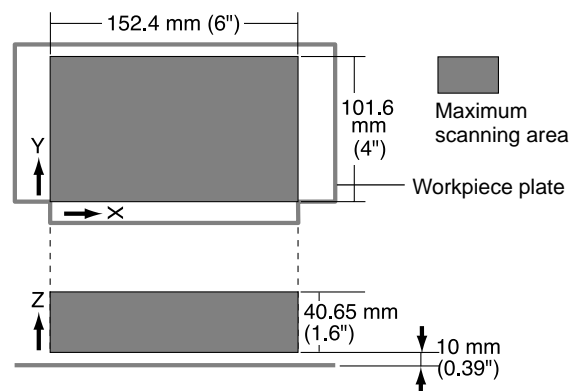
When the unit is in its initialized state immediately switching on the power, an error may be displayed if some object touches the sensor. (When an error has occurred, the STANDBY LED intermittently flashes twice.) If this happens, switch off the power, remove the object touching the sensor, then switch the power back on.

8 Load the object to be scanned on the PIX-3

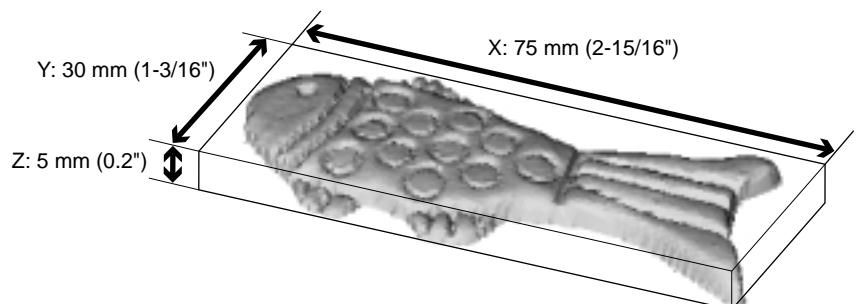
The sensors for the PIX-3 are highly sensitive, and can even scan three-dimensional objects made out of clay. Any solid object made of material that can hold its shape can be scanned.

Maximum scanning area of the PIX-3

The maximum scanning area is shown in the figure.

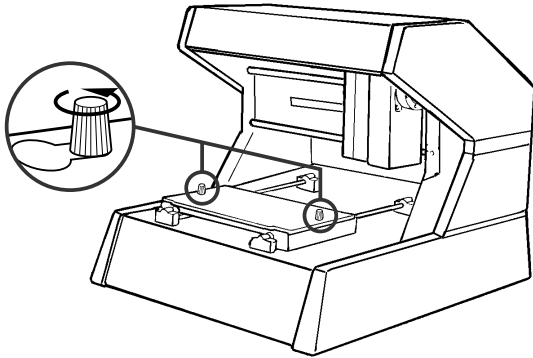


In this section, we'll prepare a three-dimensional object made out of clay, then carry out the steps from securing the object to the workpiece plate to saving the data. The explanation in this section is for a fish made with the clay that is included.

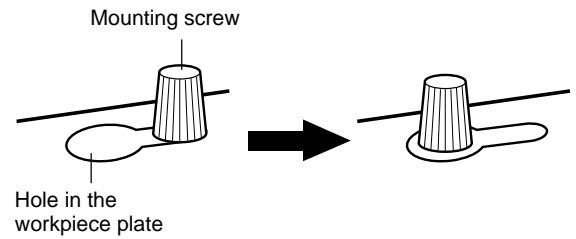


Securing in place with clay

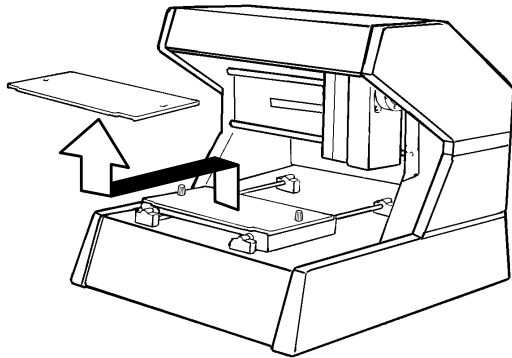
- 1 Loosen the plate mounting screws.



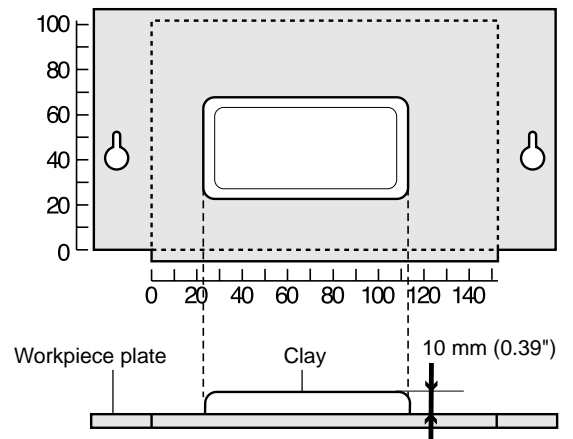
- 2 Slide the workpiece plate toward the rear.



- 3 Remove the workpiece plate.



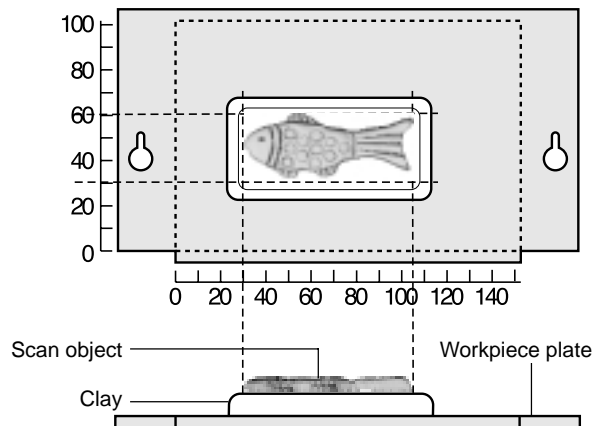
- 4 Use clay to fashion a base on the workpiece plate.



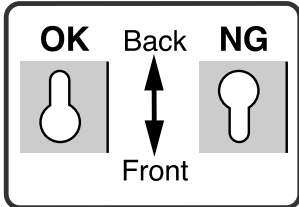
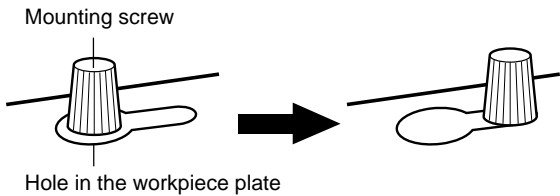
- 5 Press the scan object into the clay to hold it in place. Make sure the scan object is held securely so that it does not move during scanning.



The PIX-3 can scan objects with a height of up to 10 mm (7/16") from the top surface of the workpiece plate. If the height is insufficient, make the base higher. The mounting method is described in detail in the help files for Dr. PICZA. Please refer to the Dr. PICZA help screens.

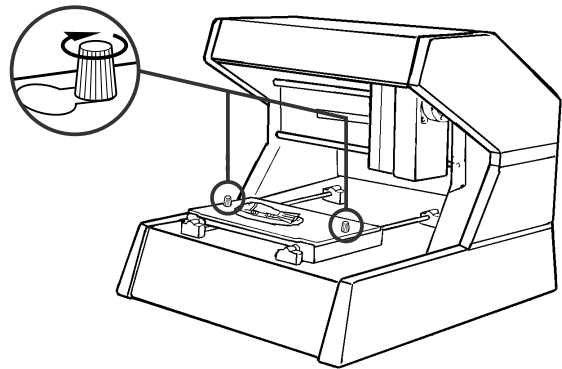


- 6** Mount the workpiece plate on the PIX-3.
Slide the workpiece plate toward the front, as shown in the figure.



Make sure the back and front of the workpiece plate are set up correctly.

- 7** Tighten the plate mounting screws securely.



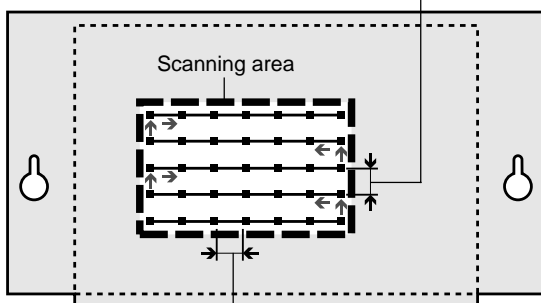
9 Starting scanning

About scanning conditions and the scanning area

Please refer to the following figures to perform the steps for the tasks extending from "Setting scanning conditions and starting scanning".

Y SCAN PITCH

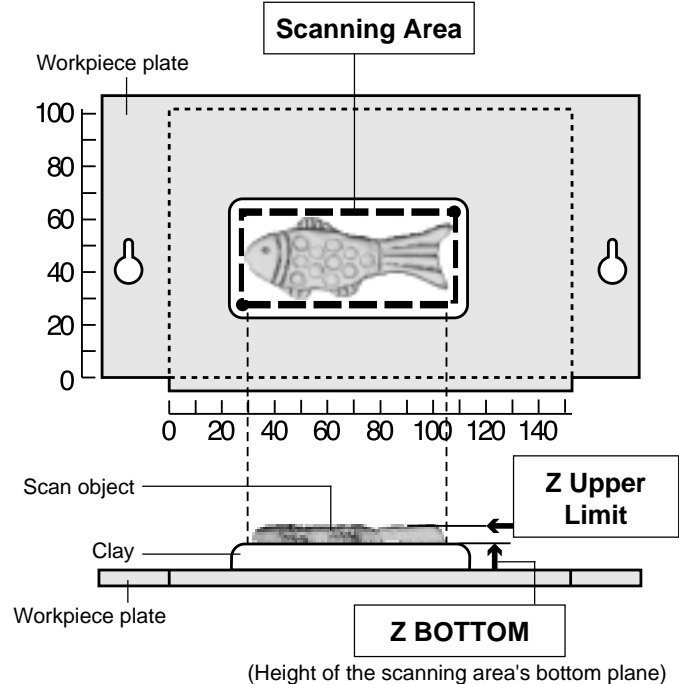
(Spacing of adjacent scan points along the Y axis)



X SCAN PITCH

(Spacing of adjacent scan points along the X axis)

— : Scan path (bidirectional scanning)
▪ : Scan points



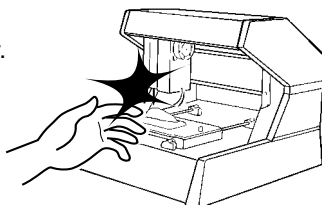
Setting scanning conditions and starting scanning

CAUTION



Do not place hands near the z unit while in operation.

Doing so may result in injury.
Doing so may lead to faulty operation or breakdown.



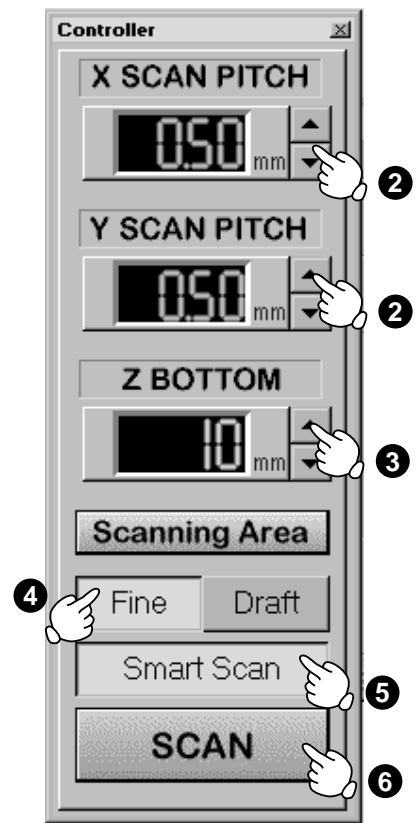
Make the settings for scanning resolution, the minimum height of the surface to be scanned, and the scanning quality.


- 1 Click  on the Dr. PICZA.

The Controller window opens.
When Dr. PICZA is started, the Controller window is already open.

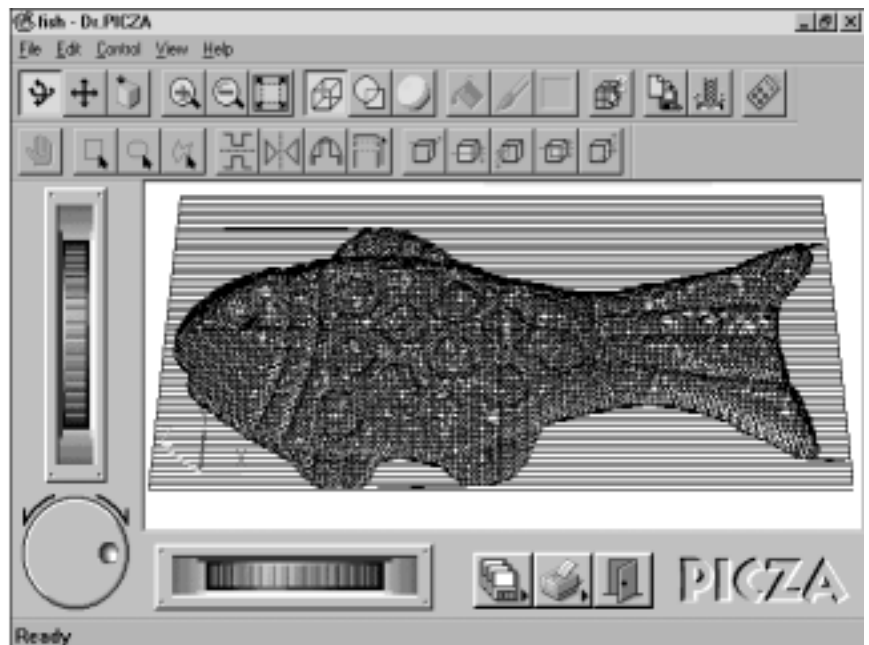
(For Dr. PICZA for Mac OS)
Open the [File] menu and choose [New].

- 2 Make the settings for X scan pitch and Y scan pitch.
The setting in this example is for 0.50 mm (0.020").
- 3 Make the setting for Z bottom.
The setting in this example is for 10 mm (0.394").
- 4 Make the selection for scanning quality.
Here, click [Fine] to activate this setting.
- 5 Here, click [Smart Scan] to activate the setting.
When the [Smart Scan] setting is on, clicking [Scan] makes the PIX-3 automatically restrict the scanning area (on the X-Y plane only) before scanning is performed.
To specify the scanning area, turn off [Smart Scan] and refer to "Setting the scanning area" to make the desired settings.



- 6 Click .
Scanning starts.
(During scanning, the sensor may emit a transmission sound, but this is normal.)

For detailed description of the available Controller buttons, please refer to the help screens for Dr. PICZA.



Setting the scanning area

If you wish to limit the scanning area, such as in cases where you wish to scan only a portion of an object, make the settings as described below.

1 Click **Scanning Area** in the Controller window. The [Scanning Area] dialog box appears.

2 Make the settings for the scanning area.

Make the settings to match the location where the scan object is secured in place.

Either of the following two methods can be used to make the settings.

- Use the mouse to move the blue frame on screen. - Enter the numerical values for the upper-right and lower-left points.


The size of the on-screen scanning area (shown in blue) changes to match the values that are entered.

3 Click [Begin Area Test].

The sensor moves to a position above an outer point on the scanning area that has been set.

Make sure the scan object that has been secured in place lies within the area.

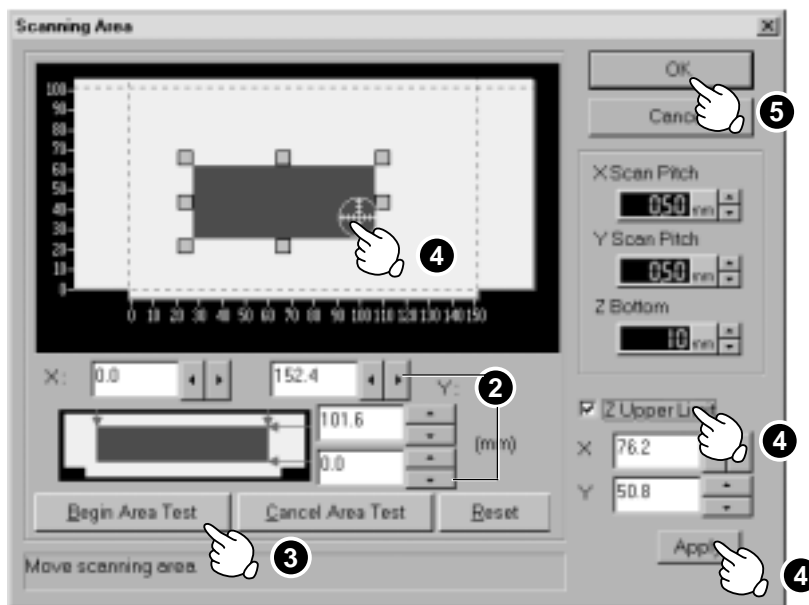
4 Click [Z Upper Limit].

The cursor  is displayed on the Z upper-limit setting on screen.

Specify the highest position of the scan object. Clicking [Apply] or double-clicking on the target lowers the sensors to the target's center position.

If the target is displaced, redo the settings.

5 After determining the scanning area, click [OK].



• For the scanning area and Z upper limit, please refer to "About scanning conditions and the scanning area".

• For details about the buttons on the scanning-region setting screen, please refer to the help screens for Dr. PICZA.

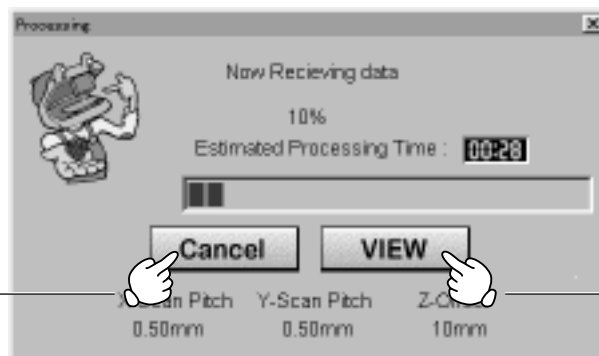
6 Check the scanning conditions in the Controller window one more time, then click

SCAN

Scanning starts. (During scanning, the sensor may emit a transmission sound, but this is normal.)

Cancels scanning

Cancels scanning.
Any data scanned before being canceled remains in memory.




Pauses scanning and moves the sensor to the VIEW position.
Click [VIEW] again to resume scanning.

10 Saving scanned data

- ① Click  - .

The [Save As] dialog box appears.

- (For Dr. PICZA for Mac OS)
Click  and choose [Save]. The dialog appears.

- ② Choose the desired location for saving the file, enter a file name, and click [SAVE].
The extension ".pix" is appended to the file name.

If you want to export the data as a file in DXF or VRML format, please refer to the help screens for Dr. PICZA.

Edit the scanned data

The shape of an object can be edited. It is possible to vary the height, adjust the slant, or perform concave/convex inversion (height inversion) for a desired surface.

You can use the toolbar button or select [Edit] on the menu bar.

Please refer to the help screens for Dr. PICZA for detailed explanations of the various functions that are available.

Be sure to save the scanned data before starting to edit.

When you're done editing, be sure to save your file.

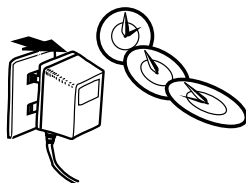
11 Powering OFF

CAUTION

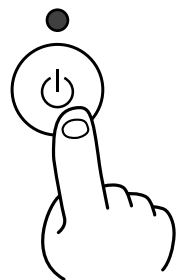


When not in use for extended periods, unplug the AC adapter from the electrical outlet.

Failure to do so may result in danger of shock, electrocution, or fire due to deterioration of the electrical insulation.



Press the STANDBY key.
The STANDBY LED goes out.



When not in use

- Remove the scan object from the table.
- Remove any clay from table, and store the clay so that it will not dry out.
- Unplug the AC adapter from the electrical outlet.

12 Ending Dr. PICZA

Click the  button.

13 Items that may not be copied

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14 What to do if...

If you want to completely stop the operation of the PIX-3, detach the AC adapter from AC outlet.

The PIX-3 doesn't operate

Check the following.

- Is the STANDBY key on (with the STANDBY LED lit up)?
- Are the settings for the computer and software correct?
- Are the cable connected correctly?

Pressing the STANDBY key does not switch off the power.

Unplug the AC adapter from the unit.

The STANDBY LEDs repeatedly flashes once

This may indicate a hardware error. Try switching the power off and back on, then repeating the desired operation. If the same error display occurs, consult your authorized Roland dealer or service center.

The STANDBY LEDs repeatedly flashes twice

Something touched the sensor during initial operation immediately after switching on the power, or a hardware error occurred.

If there is an obstruction, then switch off the power, remove the obstruction, and switch the power back on.

If there was a hardware error, then switch the power off and back on and repeat the same operation.

If the same error display occurs, consult your authorized Roland dealer or service center.

The STANDBY LEDs repeatedly flashes three times

This indicates a communications error.

Switch off the power and check the following.

- Are the communications port settings made for Dr. PICZA correct?
- Are the connections for the AC adapter and the cable connecting the unit to the computer secure?
- Are the AC adapter and the cable connecting the unit to the computer free of any internal broken wires?
- Is the operation of the computer correct?
- Was the power to the computer switched on before the PIX-3 was turned on? (Be sure to power up the computer first, then switch on the power to the PIX-3.)

The tip of the sensor was inadvertently bent

Please purchase a sensor unit APS-1 (sold separately).

15 Specifications

Main unit specifications

Max. scanning area	: 152.4 mm (X) x 101.6 mm (Y) x 40.65 mm (Z) (6" (X) x 4" (Y) x 1-9/16" (Z))
Max. scan-object weight	: 400 g (0.9 lb.)
Sensor	: Roland Active Piezo Sensor (R.A.P.S.) Probe length 40 mm (1-9/16"), tip bulb diameter 0.08 mm (0.00315")
Scanning method	: Contacting, mesh-point height-sensing
Scanning pitch (Dr. PICZA)	: X/Y-axis directions -- 0.05 to 5.00 mm (0.002" to 0.20") (settable in steps of 0.05 mm (0.002")) Z-axis direction -- 0.025 mm (0.000984")
Scanning speed	: 4—15 mm/sec. (1/8"/sec.—9/16"/sec.)
Exportable file formats	: DXF, VRML, STL, 3DMF, Grayscale, PICT (for Mac OS) and BMP (for Windows)
Interface	: Serial (RS-232C)
Control keys	: STANDBY key
LED	: STANDBY LED, VIEW LED
Power consumption	: Exclusive AC adapter (DC+12V 1.5 A)
Acoustic noise level	: Standby mode: under 24 dB (A) Scanning mode: under 40 dB (A) (According to ISO 7779)
External dimensions	: 350 mm (W) x 380 mm (D) x 310 mm (H) (13-13/16" (W) x 15" (D)) x 12-1/4" (H))
Weight (unit only)	: 8 kg (17.6 lb.)
Operation temperature	: 5—40°C (41—104°F)
Operation humidity	: 35—80 % (no condensation)
Accessories	: Roland Software Package CD-ROM: 1, AC adapter: 1, clay: 1, PIX-3 user's manual: 1

Interface Specification

[Serial]

Standard	: RS-232C specifications
Transmission method	: Asynchronous, duplex data transmission
Transmission speed	: 9600 bps
Parity Check	: None
Data Bits	: 8 bits (fixed)
Stop Bits	: 1 bits (fixed)
Handshake	: Hardwire

Serial connector (RS-232C)

Signal number	Terminal number	Signal number	Pin connection
NC	25	13	
NC	24	12	
NC	23	11	
NC	22	10	
NC	21	9	
DTR	20	8	
NC	19	7	
NC	18	6	
NC	17	5	
NC	16	4	
NC	15	3	
NC	14	2	
	1	FG	

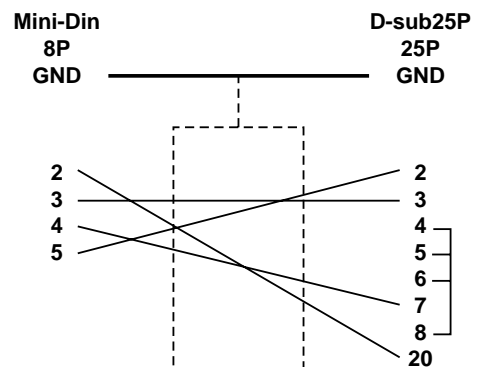
Serial Cable for Macintosh

Prepare a crossover cable with the following specifications to connect the Macintosh and the PIX-3.

Crossover serial cable

Mini-DIN 8-pin male connector - D-sub 25-pin male connector

Apple crossover cable (JCRC01 compliant)



Appendix

Creating a Three-dimensional Object from Data Scanned with Dr. PICZA

The included CD for the Roland Software Package contains the MODELA PLAYER program for performing cutting with the MODELA, CAMM-3, and CAMM-2 modeling machines from Roland DG Corp.

If you already have a modeling machine, setting up MODELA PLAYER lets you create three-dimensional objects from data scanned with Dr. PICZA.

For more information about MODELA PLAYER, see the help screens.

Setting Up MODELA PLAYER

The operating environment for MODELA PLAYER for Windows is the same as for Dr. PICZA, except for the required amount of free hard-disk space (7 MB).

To set up the program, read "4 Setting Up the Program -- Setup" and replace Dr. PICZA with MODELA PLAYER.

Cutting Procedure

For Dr. PICZA for Windows OS, MODELA PLAYER for Windows OS

- 1 Click   .

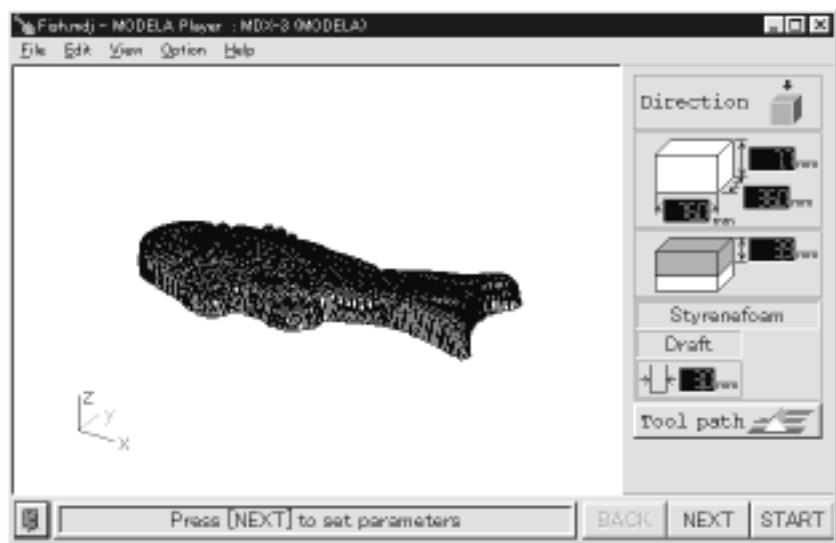
In the [Open] dialog box, open the file containing the scan data to be cut.

- 2 Click  .

MODELA PLAYER starts, and the 3D data in the file you opened in step 1 appears on screen.

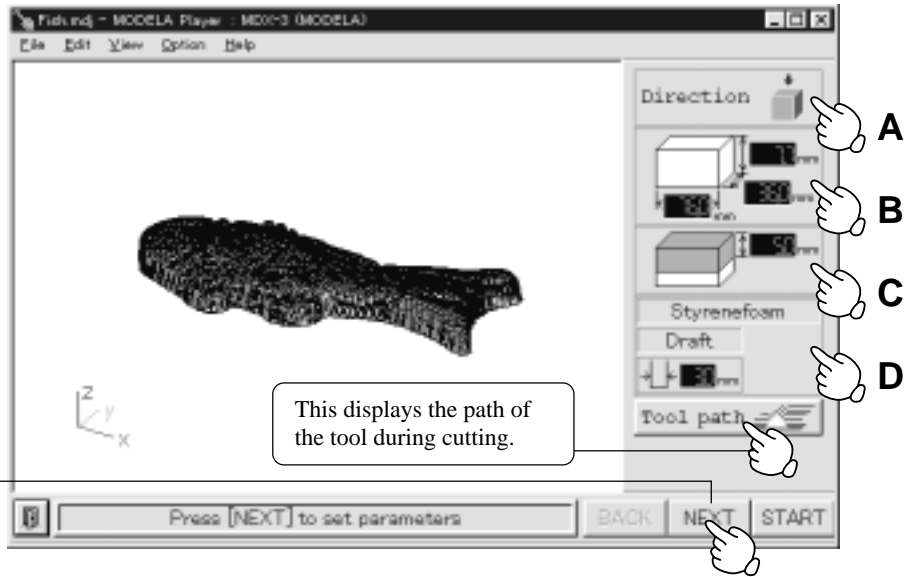
- 3 Load the material and install the blade on the modeling machine. For more information, refer to the manual for your modeling machine.

MODELA PLAYER screen



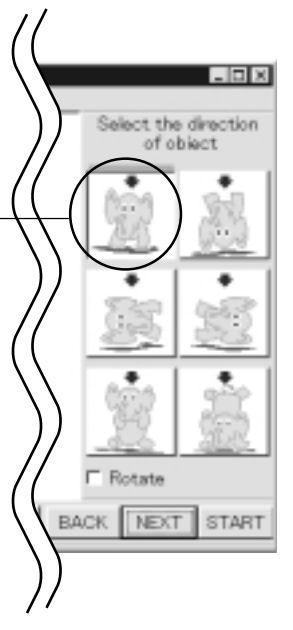
- 4 Make the settings for the cutting conditions. Clicking [NEXT] advances the setting screens in sequence from A to D. Make the settings in order from A to D. (Clicking A, B, C, or D in the figure displays the corresponding setting screen, this should not be used except when it's necessary to make settings independently.)

Click here to advance to the next settings.



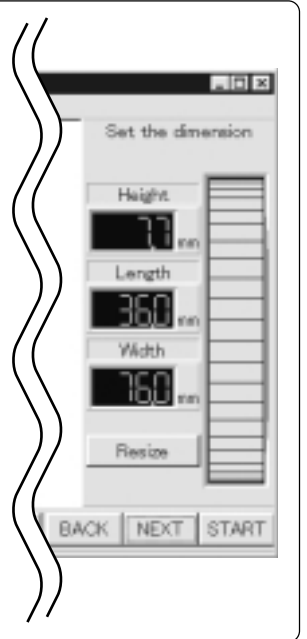
A Select the direction of the object

Select the direction to be used for cutting the object. In the figure at right, cutting from above is selected.



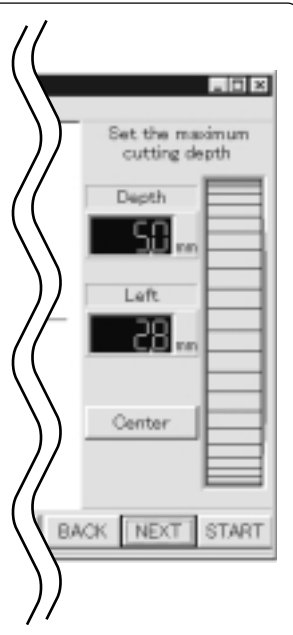
B Set the dimension

Make the setting for object's size. Drag the spin dial up or down, or click on a number and enter a value from the keyboard. Clicking [Resize] makes it possible to specify a ratio for the dimensions.



C Set the maximum cutting depth

Make the setting for the maximum cutting depth. Drag the spin dial up or down, or click on a number and enter a value from the keyboard. Clicking [Center] sets the depth at a location proportional to the height.



D

Tool diameter

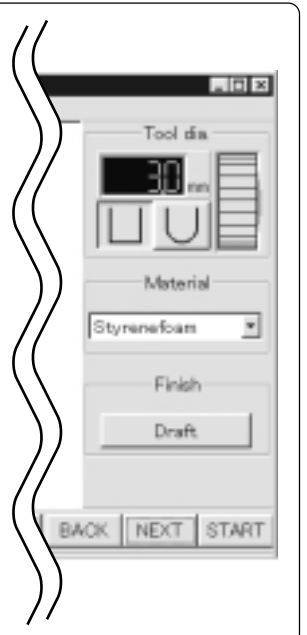
Set the type and diameter of the tool that is installed.

Material

Choose the composition of the loaded material.


Finish

When cutting a solid object on a modeling machine, an attractive finish can be obtained by first performing rough (draft) cutting, then performing fine cutting. Set to [Draft] for the first pass, and to [Fine] for the second pass.



- 5 On the menu bar, click [File], then click [SAVE]. The [Save As] dialog box opens.
- 6 Choose the location for saving the file, enter a name for the file, then click [SAVE]. The extension [.mdj] is appended to the filename.
- 7 Click [START] to start cutting.

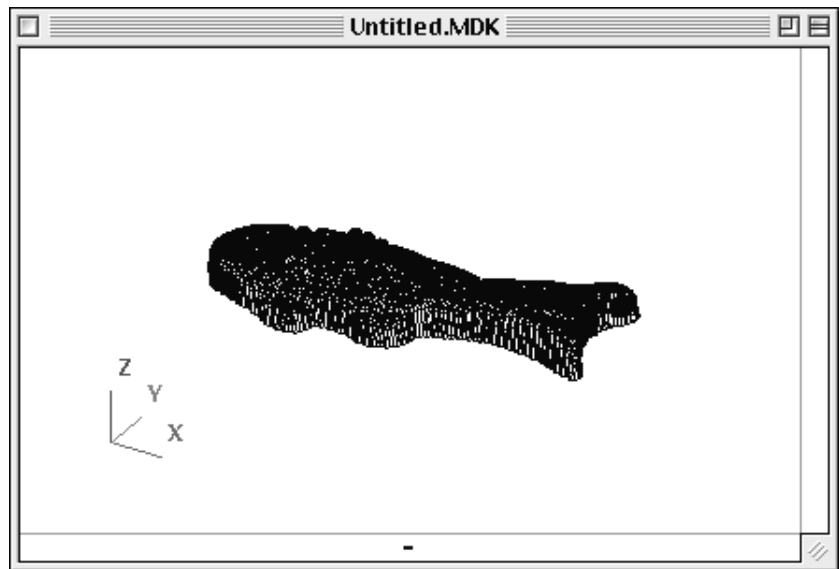
For Dr. PICZA for Mac OS, MODELA PLAYER for Mac OS

- 1 Click  and choose [Open].
Open the file containing the scan data to be cut.

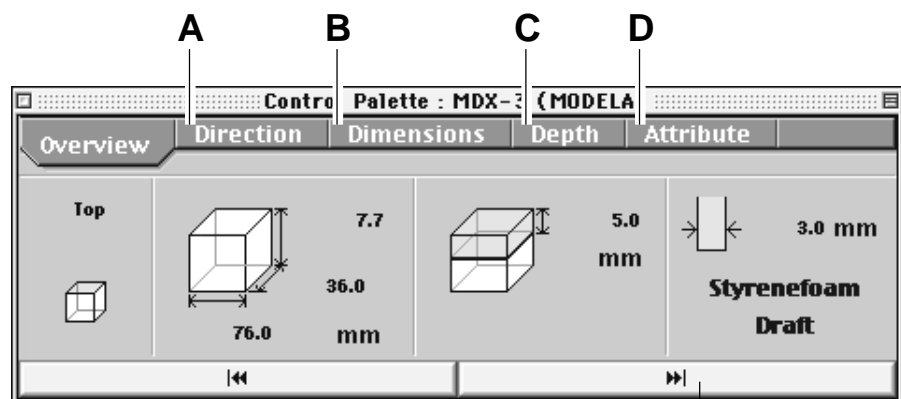
- 2 Click .
MODELA PLAYER starts, and the 3D data in the file you opened in step 1 appears on screen.

- 3 Load the material and install the blade on the modeling machine. For more information, refer to the manual for your modeling machine.

MODELA PLAYER screen



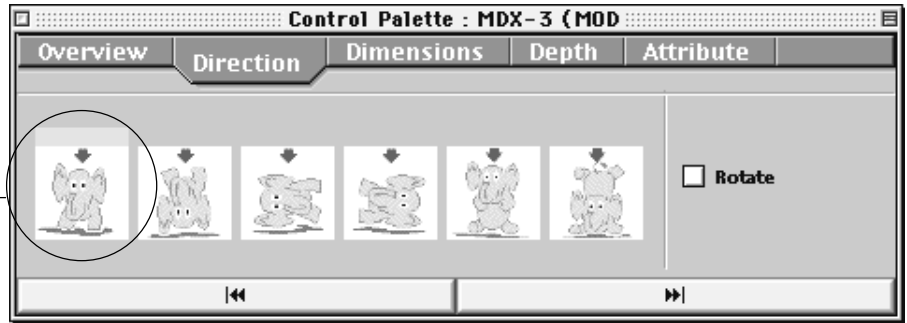
- 4 Make the settings for the cutting conditions. Clicking [▶▶] advances the setting screens in sequence from A to D. Make the settings in order from A to D. (Clicking A, B, C, or D in the figure displays the corresponding setting screen, this should not be used except when it's necessary to make settings independently.)



Click here to advance to the next settings.

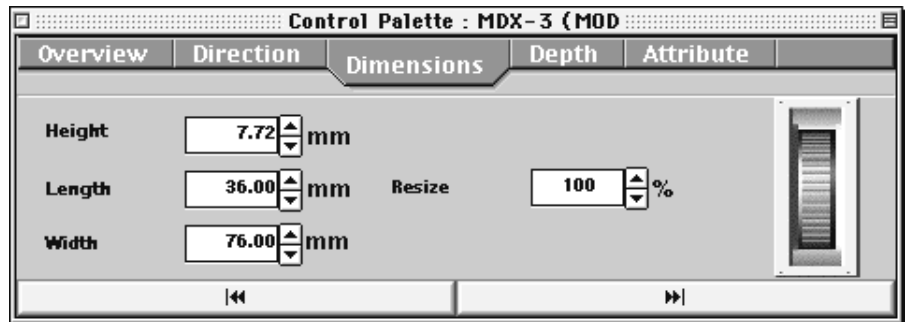
A Select the direction of the object

Select the direction to be used for cutting the object.
In the figure, cutting from above is selected.



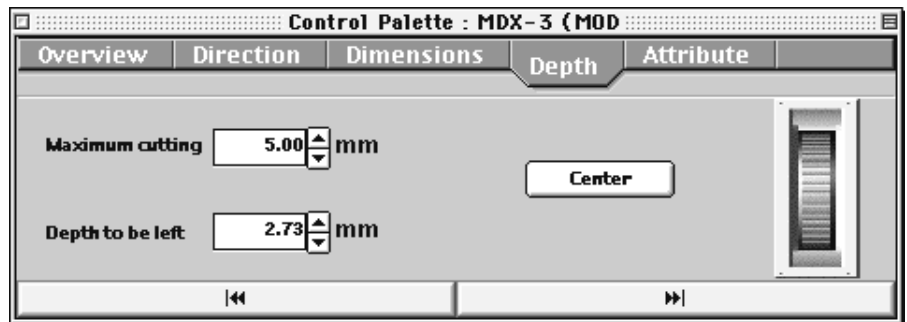
B Set the dimension

Make the setting for object's size.
Drag the spin dial up or down, or enter a numerical value.
You can also specify a scale for the size.



C Set the maximum cutting depth

Make the setting for the maximum cutting depth.
Drag the spin dial up or down, or enter a numerical value.
Clicking [Center] sets the depth at a location proportional to the height.



D

Tool diameter

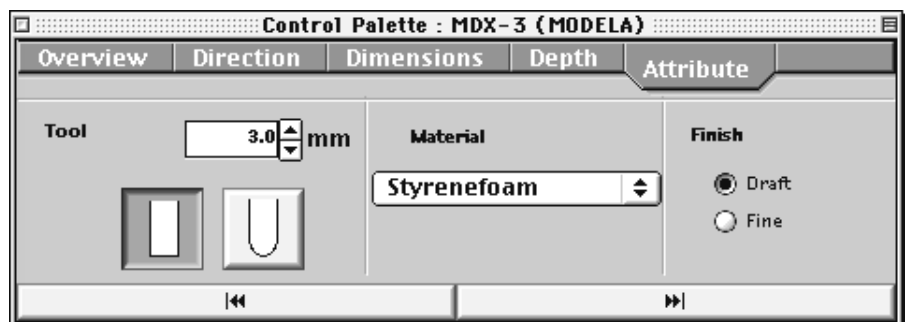
Set the type and diameter of the tool that is installed.

Material

Choose the composition of the loaded material.

Finish

When cutting a solid object on a modeling machine, an attractive finish can be obtained by first performing rough (draft) cutting, then performing fine cutting. Set to [Draft] for the first pass, and to [Fine] for the second pass.



- 5 Open the [File] menu and choose [Save As].
- 6 Choose the location for saving the file, enter a name for the file, then click [SAVE].
- 7 Open the [File] menu and choose [START] to start cutting.

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