Roland

PICZA 3D SCANNER

PIX-3

USER'S MANUAL

Included software

Dr. PICZA for Windows® 95	RWA-016
MODELA PLAYER for Windows® 95	RWA-017

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.

Operating environment for included software

● Computer
Personal computer with Windows® 95 installed

● CPU
i486SX or better (Pentium 100 MHz recommended)

● Memory
8 Mbytes or more (16 Mbytes or more recommended)

● Hard disk
A hard disk with at least 3 Mbytes of free space is required.

● Floppy-disk drive
A floppy-disk drive that can read 2HD disks is required.

● Operating system
Microsoft Windows® 95
(Windows 95 is not included on the installation disks. The correct version of Windows for the computer to be used must be obtained separately.)

Table of Contents

Roland DG Corporation

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)

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

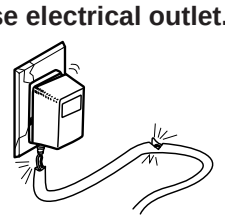
Do not disassemble, repair, or modify.(This does not include replacement of the sensor unit.)
Doing so may lead to fire or abnormal operation resulting in injury.

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

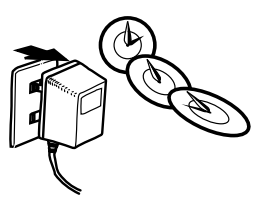
Do not use with any electrical power supply that does not meet the ratings displayed on the AC adapter.
Use with any other power supply may lead to fire or electrocution.

⚠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.



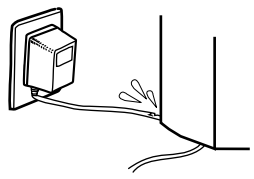
When not in use for extended periods, unplug the AC adapter from the electrical outlet.
Failure to do so may result in danger of shock, electrocution, or fire due to deterioration of the electrical insulation.



⚠CAUTION

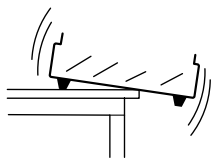
Do not injure or modify the electrical power cord, nor subject it to excessive bends, twists, pulls, binding, or pinching, nor place any object of weight on it.

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



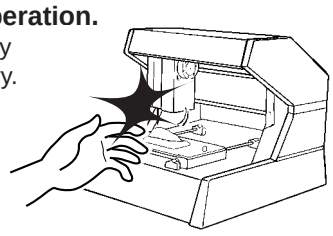
Install on a stable surface.

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

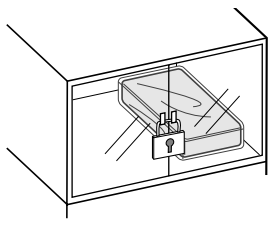


Do not place hands near the z unit while in operation.

Doing so may result in injury.

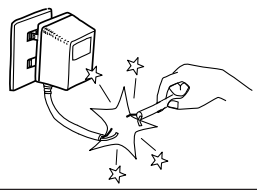


Store clay out of the reach of children.



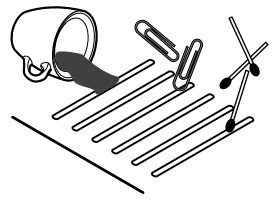
When unplugging the AC adapter from the power outlet, grasp the adapter unit or the plug, not the cord.

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



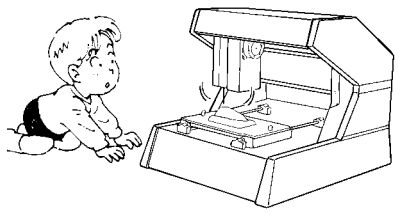
Do not allow liquids, metal objects or flammables inside the machine.

Such materials can cause fire.



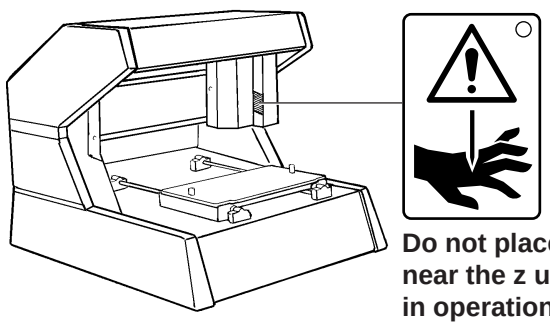
Do not allow children to operate without adult supervision or operate within reach of young children.

Doing so may result in injury.

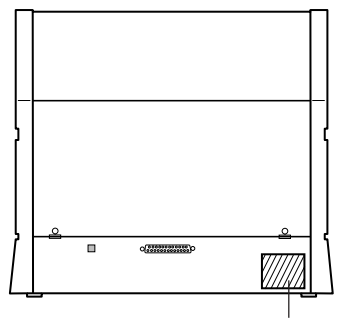


About the Labels Affixed to the AC Adapter and Unit

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.



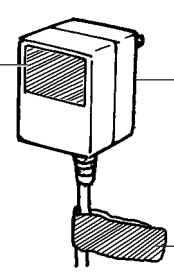
Do not place hands near the z unit while in operation.

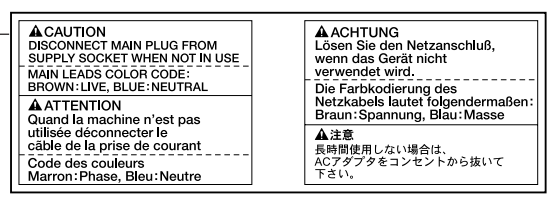


Model label

Rating label

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





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

In addition to the ⚠**WARNING** and ⚠**CAUTION** symbols, the symbols shown below are also used.

NOTICE : Indicates information to prevent machine breakdown or malfunction and ensure correct use.

: Indicates a handy tip or advice regarding use.

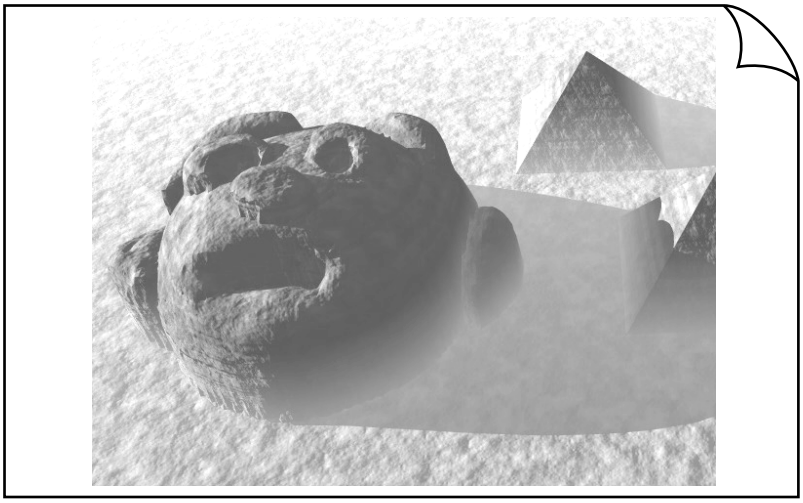
Using PICZA (Some Examples of Actual Use)

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

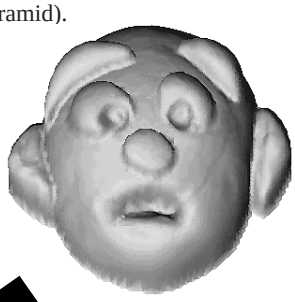
Creating Elements for 3D Computer Graphics Software

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.)

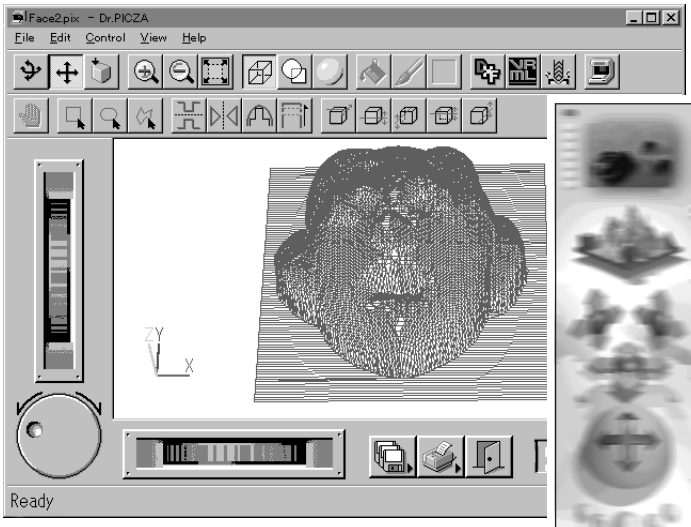
1 Visualize in detail the design illustration you wish to create. In this example, we'll make the illustration shown below.



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).

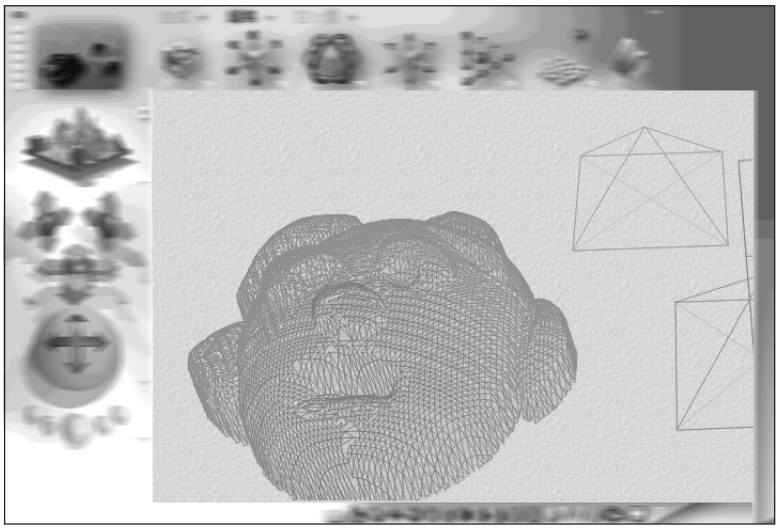


3 Scan the clay face and export the data in DXF format.



DXF-format file

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.

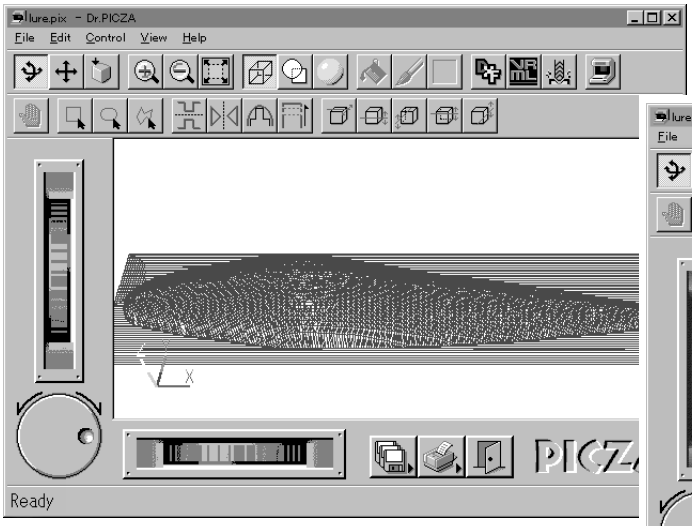


5 Use the 3D graphics software to color the illustration, then print it out.

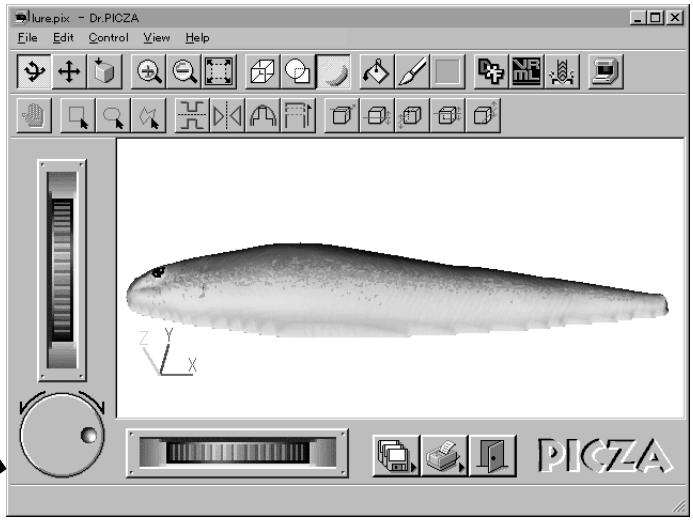
Adding 3D Graphics to an Internet Web Page

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 obtained from another source.)

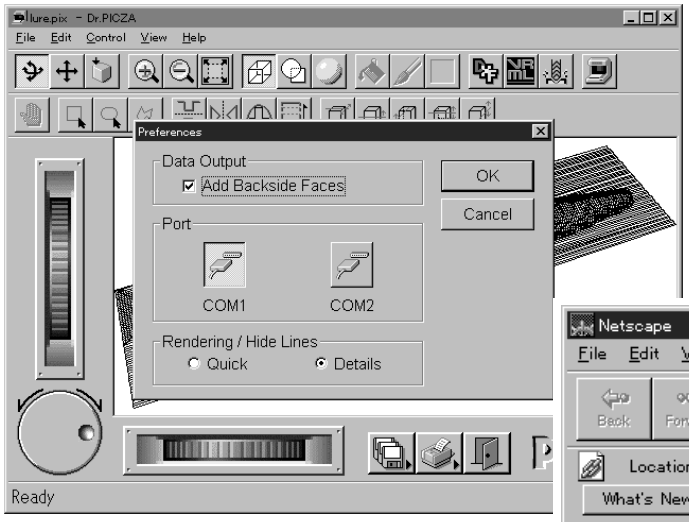
1 Set the lure in place on the workpiece table and scan it with the PIX-3. In this example, we'll scan only one side of the lure, and use Dr. PICZA's [Add Backside Faces] function to make a complete three-dimensional representation.

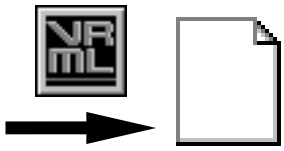


2 Use Dr. PICZA to color the scanned data. (For details on adding color, please refer to the help screens for Dr. PICZA.)

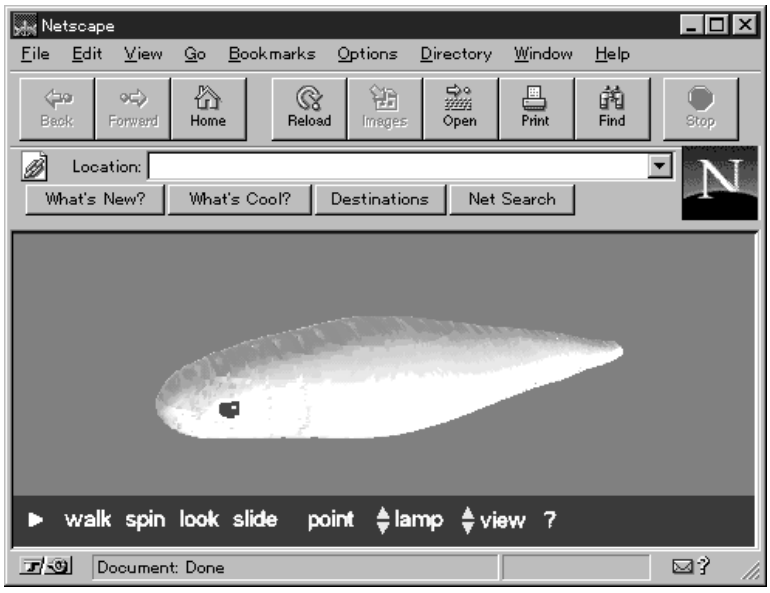


3 Under [File]-[Preferences...], click [Add Backside Faces] to turn it on, then export the data in VRML format.





VRML-format file

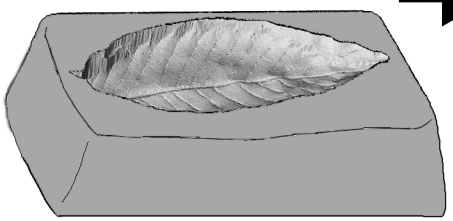


4 VRML files can be opened and viewed with a web browser that supports the VRML format. By adding a link to a VRML file from a web page, you can also display the VRML file on the World Wide Web. (For details on how to do this, please refer to the documentation for your web-page authoring software or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

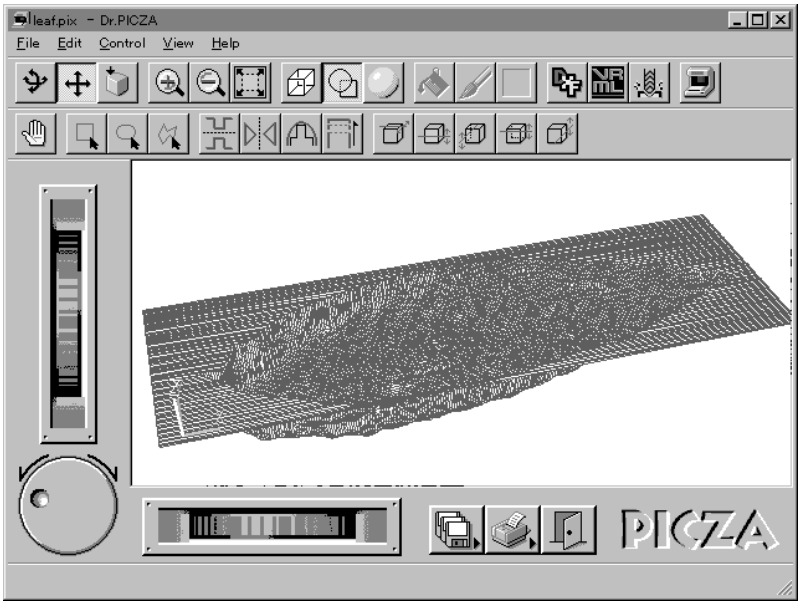
Cutting a Three-dimensional Object with a Modeling Machine

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.

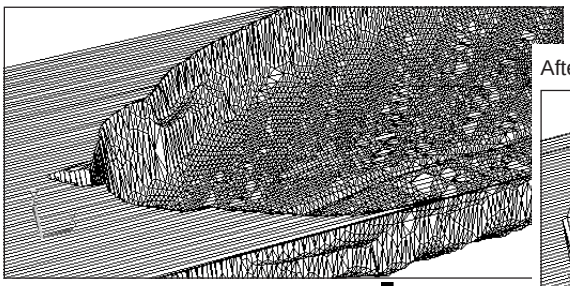


2 Set the piece of clay on the workpiece table and scan it with the PIX-3.

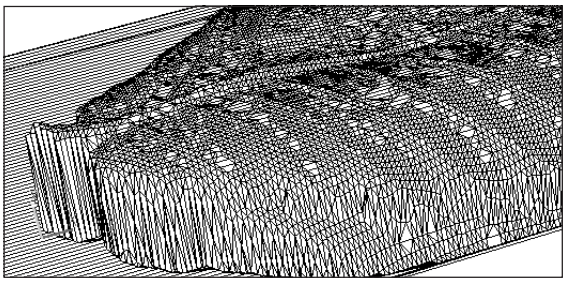


3 Use [Edit]-[Invert] to invert the scanned shape, then export the data to MODELA PLAYER.

Before inversion

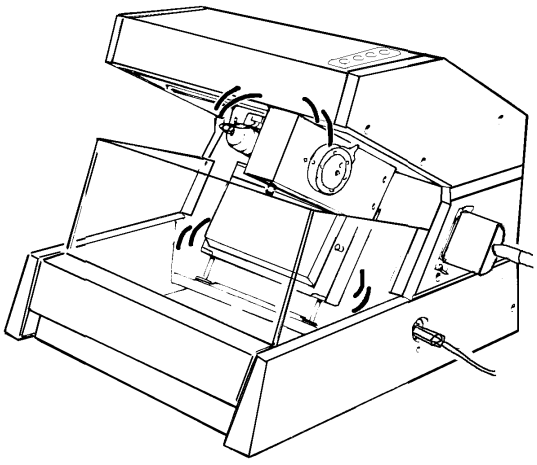


After inversion

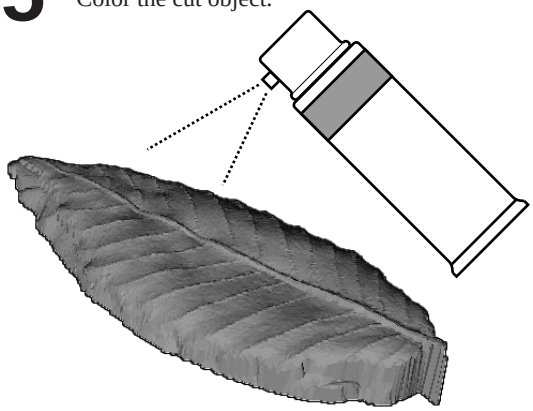


Export to MODELA PLAYER

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

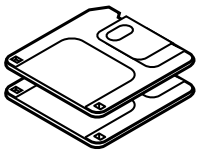


5 Color the cut object.

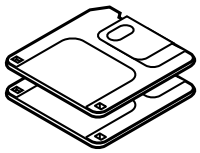


1 Check the included items

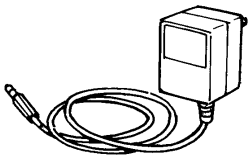
Dr. PICZA for Windows® 95 disks: 2



MODELA PLAYER for Windows® 95 disks: 2

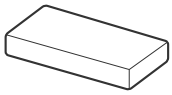


AC adapter: 1

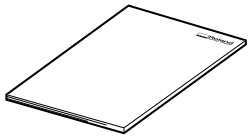


The configuration of the AC adapter varies according to regional differences in voltage. Please note that the descriptions in this manual are for the 117 V adapter.

Clay: 1

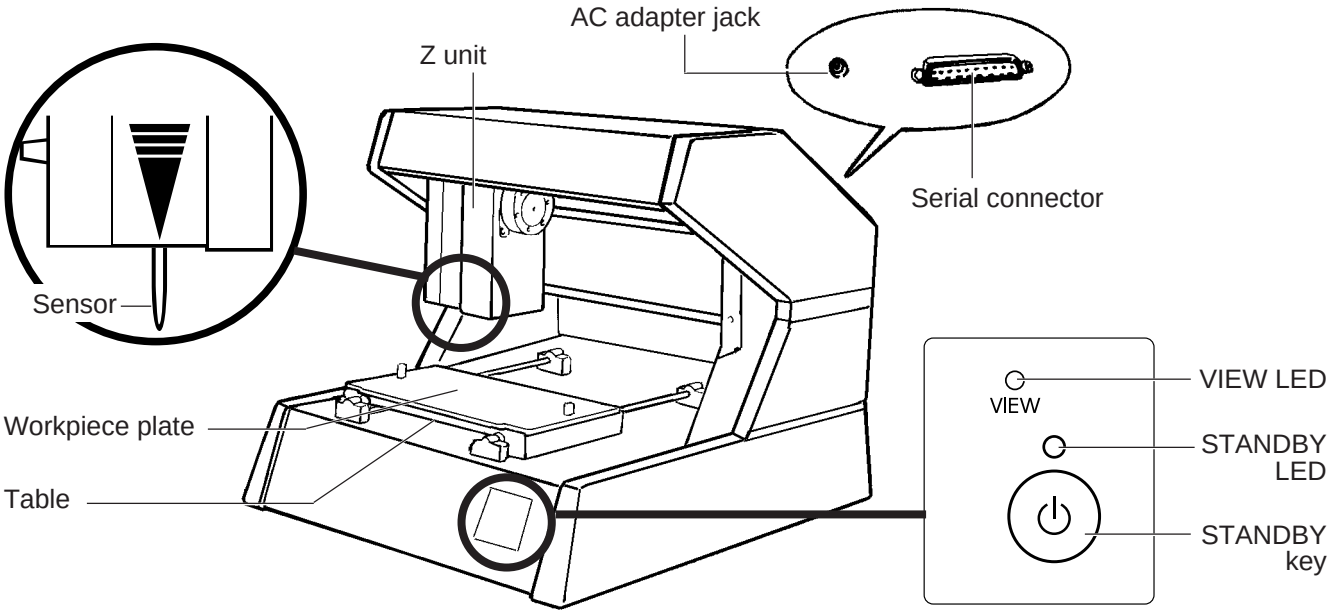


PIX-3 User's manual : 1



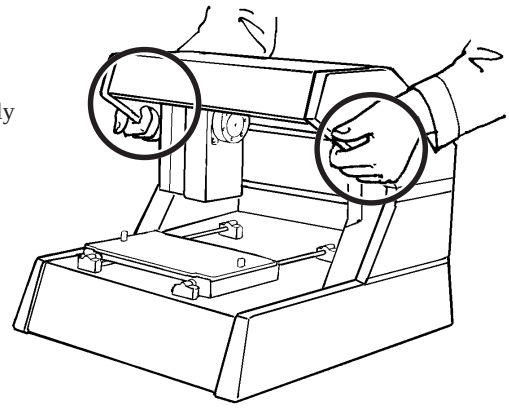
2 Part names

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

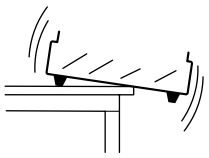
⚠WARNING

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

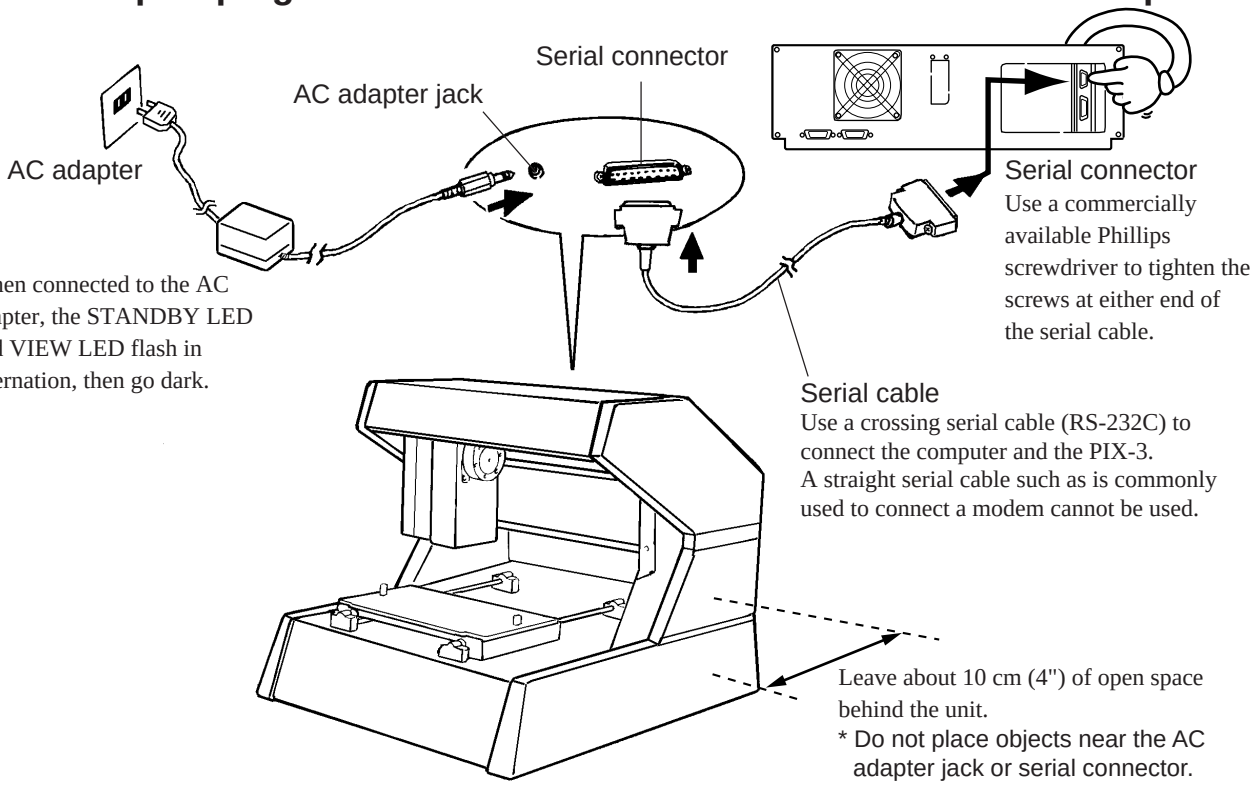
Never install this unit in any of the following situations, as it could result in damage:
- Places where the installation surface is unstable or not level.
- Places with excessive electrical noise.
- Places with excessive humidity or dust.
- Places with poor ventilation, because the PIX-3 generates considerable 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

Connect the unit to the computer



• The cable is available separately. Be sure to use the correct cable for the computer.

• Make sure the power to the computer and the PIX-3 is switched off before attempting to connect the cables.

4 Installing the Dr. PICZA and the MODELA PLAYER

Symbols used in the section on software

The explanations in this section may abbreviate the names of the included software as follows

Dr. PICZA for Windows® 95 = Dr. PICZA
MODELA PLAYER for Windows® 95 = MODELA PLAYER

The symbols used in this section are as follows.

 = An on-screen area to be clicked.

Dr. PICZA and MODELA PLAYER are software that run under Windows 95. The explanations in this manual assume that you are already familiar with the basic operation of Windows 95.

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	
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	

Overview of MODELA PLAYER

MODELA PLAYER is software for performing 3D modeling on the MODELA, CAMM-3, or CAMM-2 three-dimensional modeling machines from Roland DG Corp. Dr. PICZA can output 3D data directly to MODELA PLAYER. You should install MODELA PLAYER only if you will be using a three-dimensional modeling machine from Roland DG Corp. to machine data scanned with Dr. PICZA. For more information, please refer to the help screens for MODELA PLAYER.

Installing

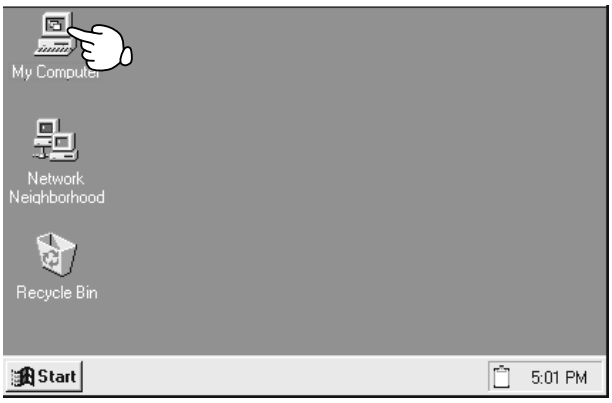
Hard disk : C
Floppy-disk drive : A

* If your drive-name assignments differ from the ones shown at left, make the appropriate changes.

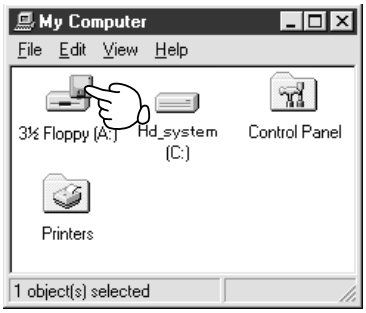
1. Switch on the computer and start Windows 95.

2. Dr. PICZA: Insert the Dr. PICZA disk 1/2 included with the unit.
MODELA PLAYER: Insert the MODELA PLAYER disk 1/2 included with the unit.

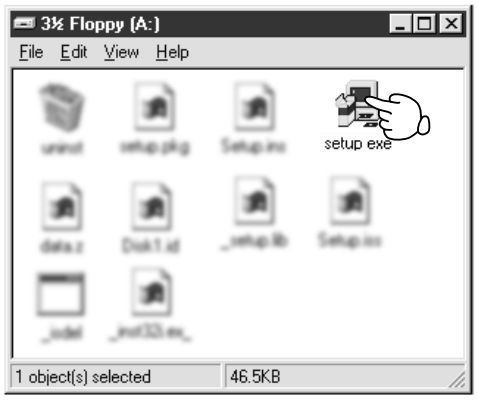
3. Double-click on the [My Computer] icon on screen.



4. Double-click on the [3-1/2 Floppy] icon.



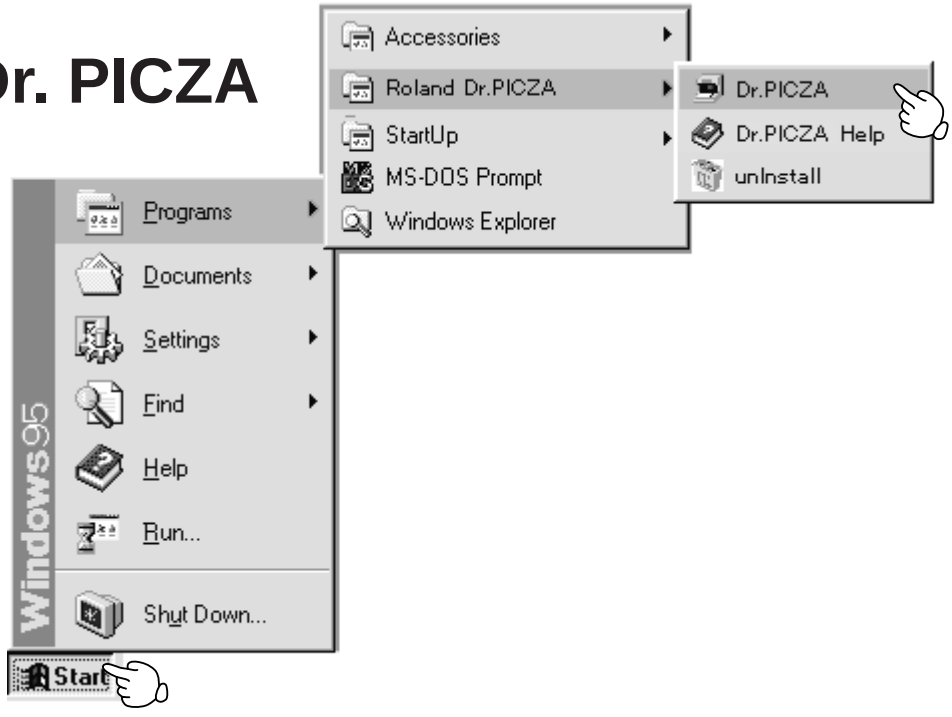
5. Double-click on the [setup.exe] icon.



This starts the setup program. Follow the messages to carry out setup. For MODELA PLAYER, at the screen for selecting the machine, make the setting for the Roland DG Corp.'s modeling machine you're using.

5 Starting Dr. PICZA

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

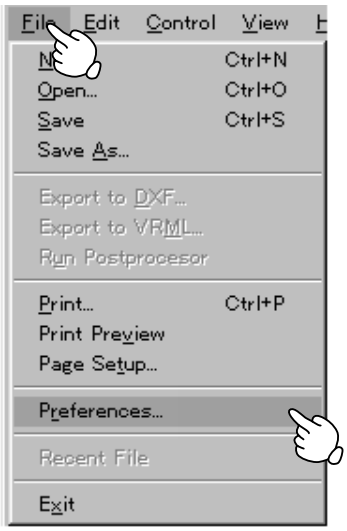


About Help

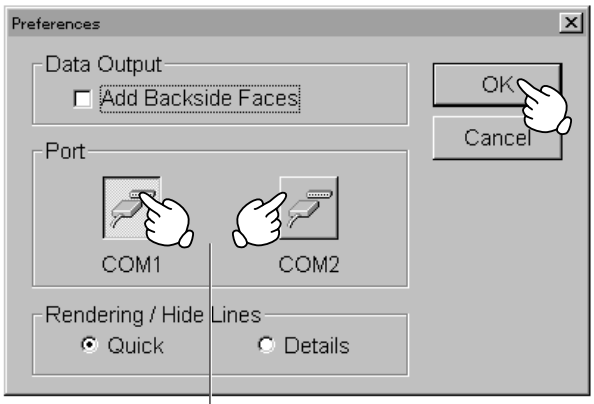
If you're unsure how perform an operation while you're working, taking a look at Help can find the answer. If you're using Dr. PICZA for the first time, please be sure to read the Help screens. You can call up Help from the software menus.

6 Selecting a communication port

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



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

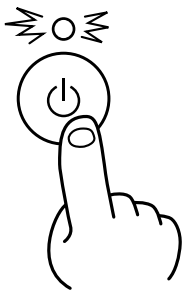


Click either one or the other

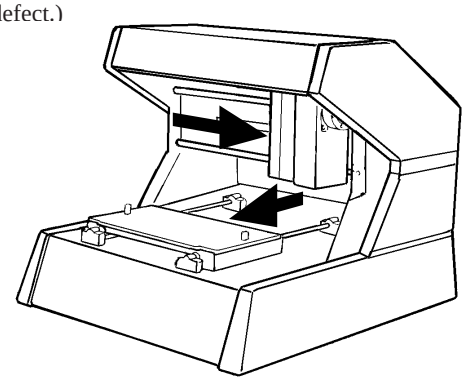
7 Powering ON

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

❶ Press the STANDBY key.
The STANDBY LED lights up.



❷ 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.)



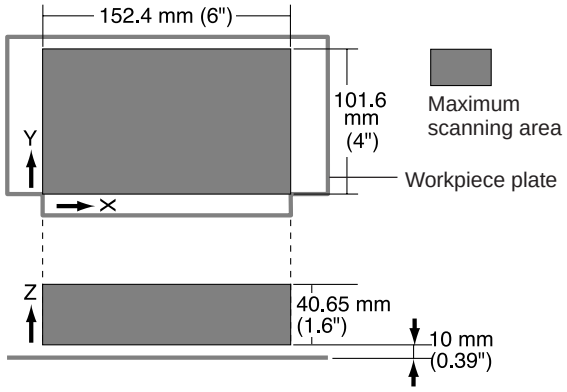
When the unit is in its initialized state immediately switching on the power, an error may be displayed if some object touches the sensor. (When an error has occurred, the STANDBY LED intermittently flashes twice.)
If this happens, switch off the power, remove the object touching the sensor, then switch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

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

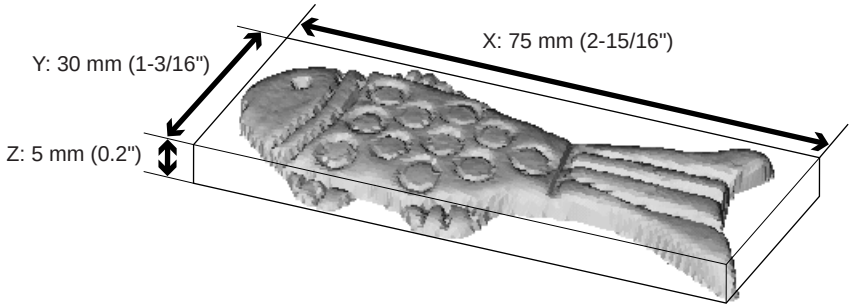
The sensors for the PIX-3 are highly sensitive, and can even scan three-dimensional objects made out of clay.
Any solid object made of material that can hold its shape can be scanned.

Maximum scanning area of the PIX-3

The maximum scanning area is shown in the figure.

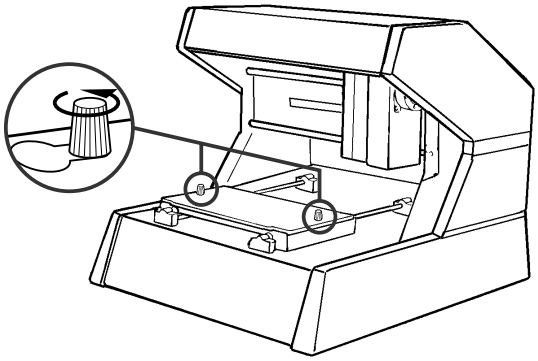


In this section, we'll prepare a three-dimensional object made out of clay, then carry out the steps from securing the object to the workpiece plate to saving the data. The explanation in this section is for a fish made with the clay that is included.

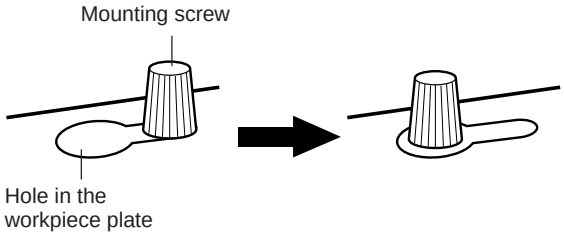


Securing in place with clay

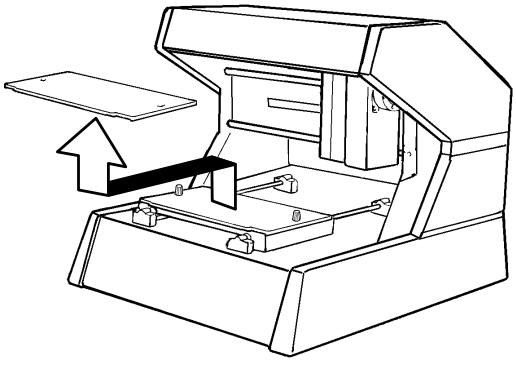
1 Loosen the plate mounting screws.



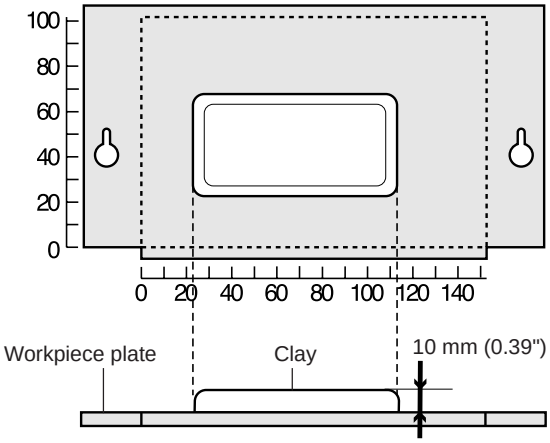
2 Slide the workpiece plate toward the rear.



3 Remove the workpiece plate.

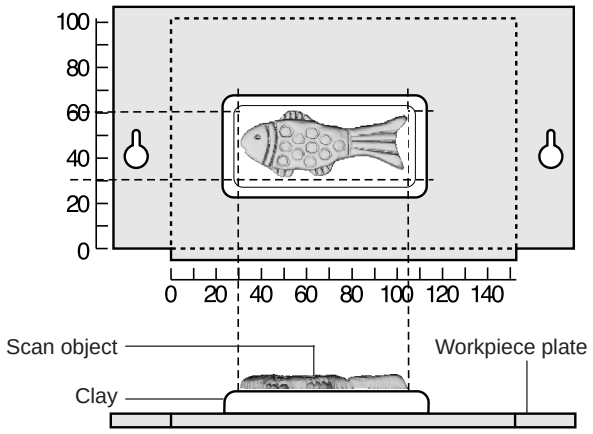


4 Use clay to fashion a base on the workpiece plate.

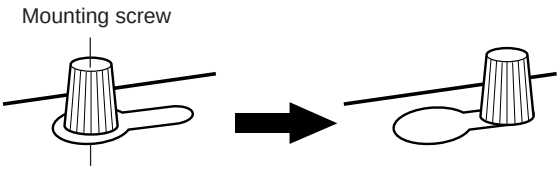


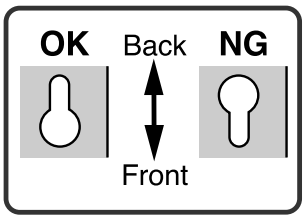
5 Press the scan object into the clay to hold it in place. Make sure the scan object is held securely so that it does not move during scanning.

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.



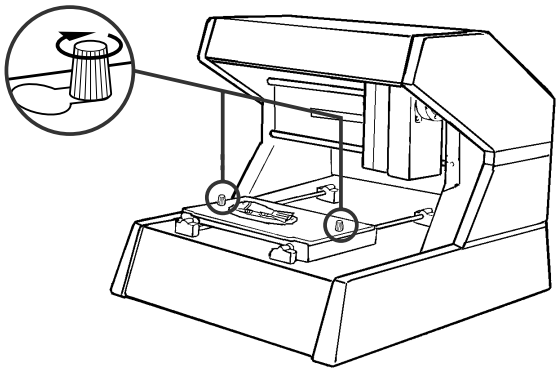
6 Mount the workpiece plate on the PIX-3.
Slide the workpiece plate toward the front, as shown in the figure.





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

7 Tighten the plate mounting screws securely.

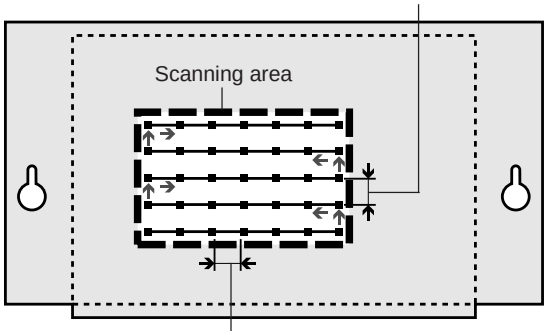


9 Starting scanning

About scanning conditions and the scanning area

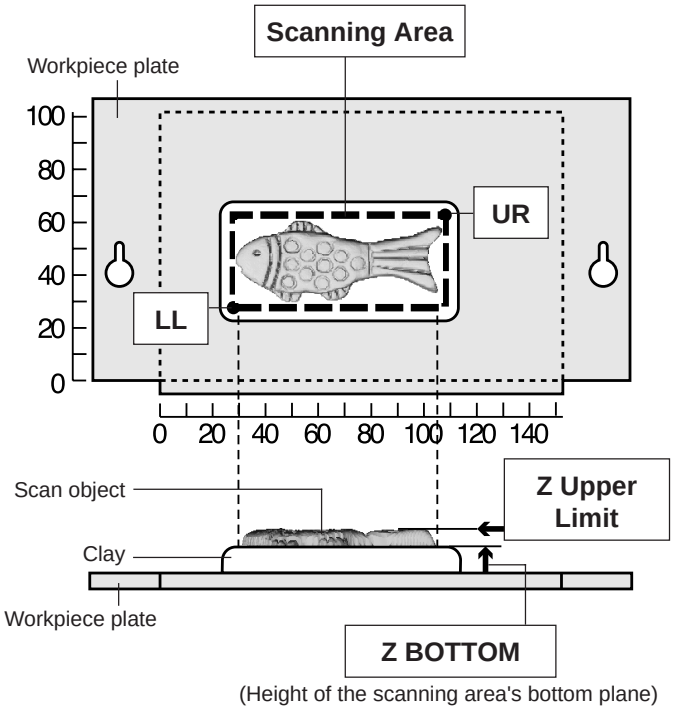
Please refer to the following figures to perform the steps for the tasks extending from "Setting scanning conditions and starting scanning".

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

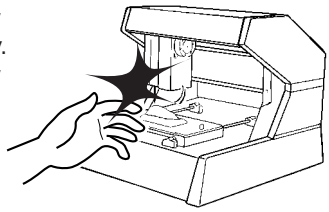


(Height of the scanning area's bottom plane)

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.

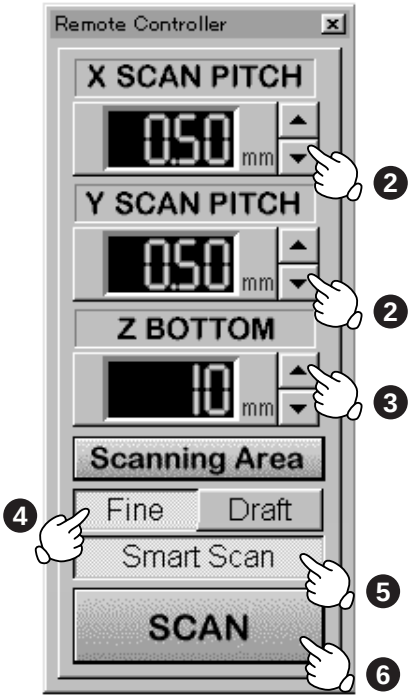
1 Click  on the Dr. PICZA.
The Remote Controller window opens.
When Dr. PICZA is started, the Remote Controller window is already open.

2 Make the settings for X scan pitch and Y scan pitch.
The setting in this example is for 0.50 mm (0.020").

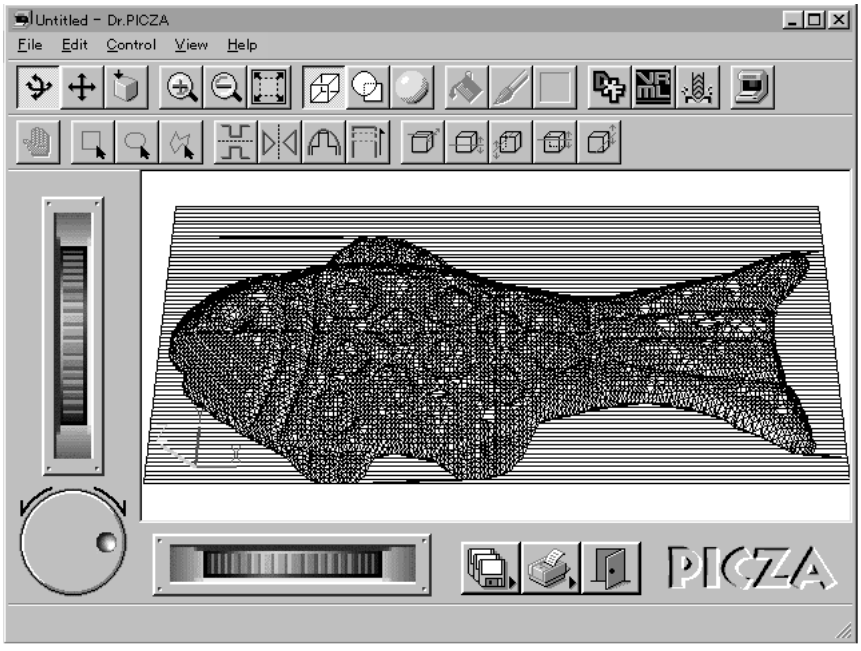
3 Make the setting for Z bottom.
The setting in this example is for 10 mm (0.394").

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



For detailed description of the available Remote 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 Remote 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.

   In this case, enter the following information.

UR:	X 107.5 (4.232")	Y 62.50 (2.461")
LL:	X 27.50 (1.083")	Y 27.50 (1.083")

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

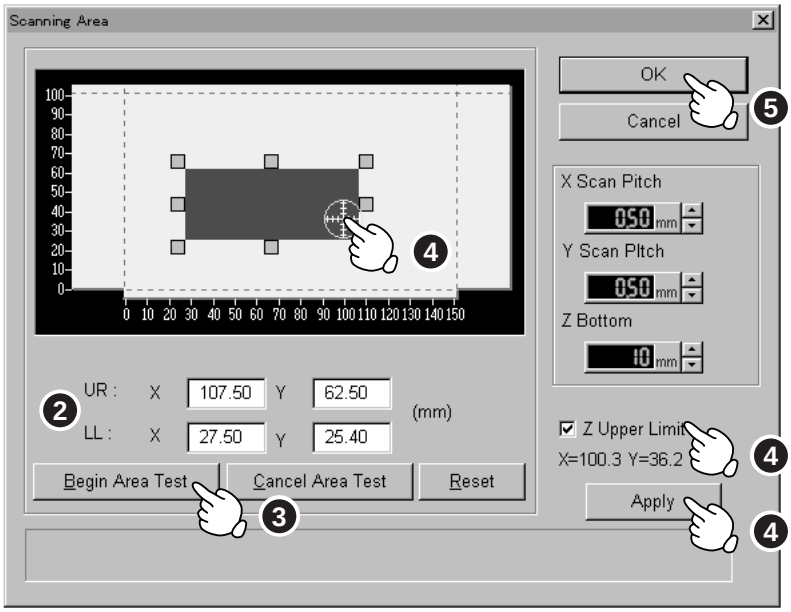
3. Click [Begin Area Test].
   The sensor moves to a position above an outer point on the scanning area that has been set.
   Make sure the scan object that has been secured in place lies within the area.

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 and click [Apply].
   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 Remote Controller window one more time, then click **SCAN**.

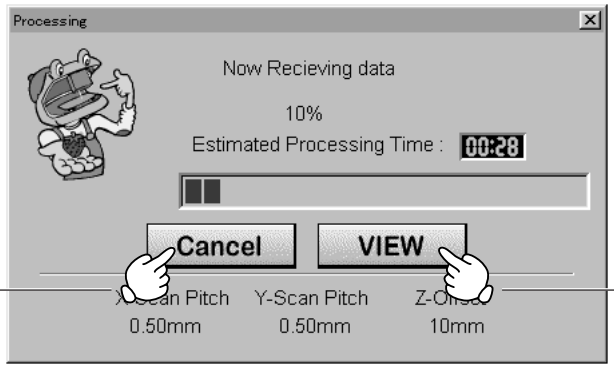
   Scanning starts. (During scanning, the sensor may emit a transmission sound, but this is normal.)

Cancels scanning

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

Pauses scanning

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.

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.

Cutting scan data with the modeling machine to make a 3D object

1. Click -

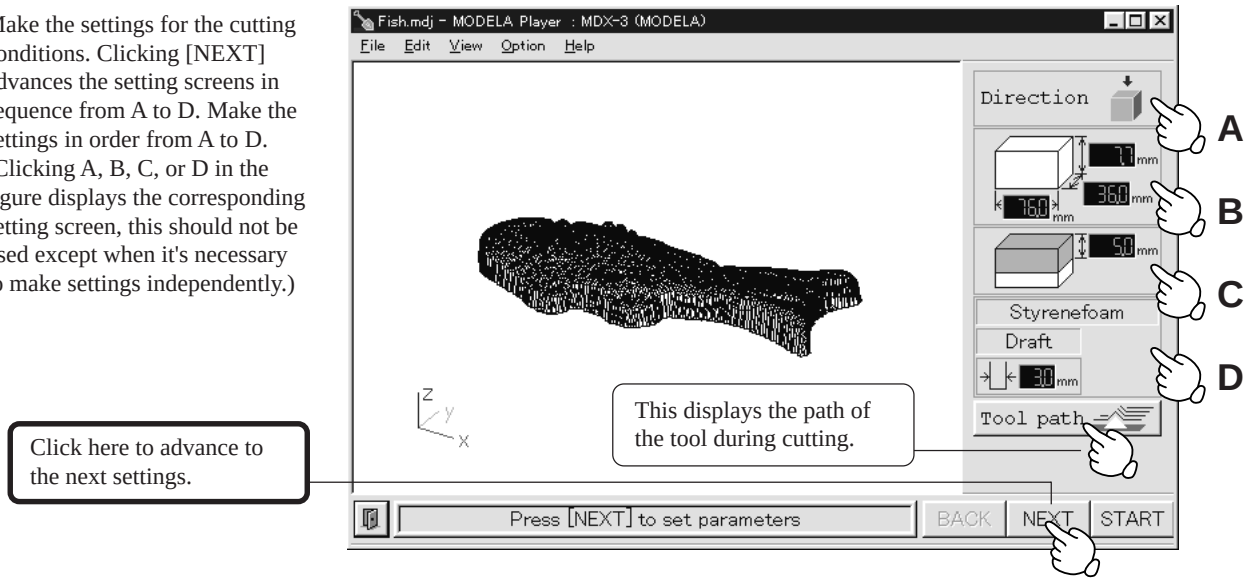
.
In the [Open] dialog box, open the file containing the scan data to be cut.

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.

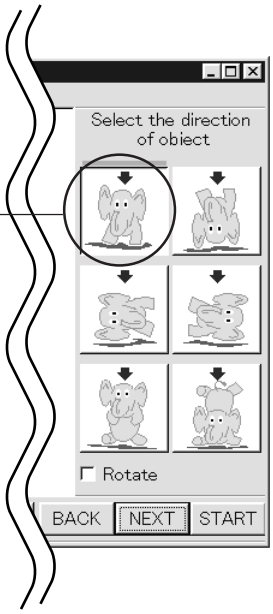
MODELA PLAYER screen

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.)



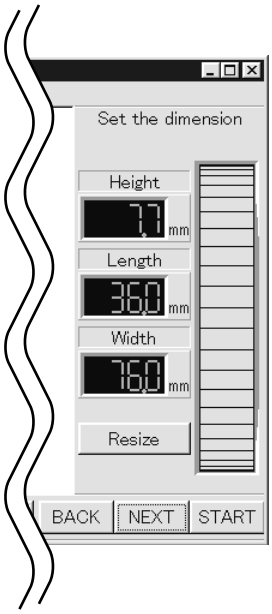
A Select the direction of the object

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



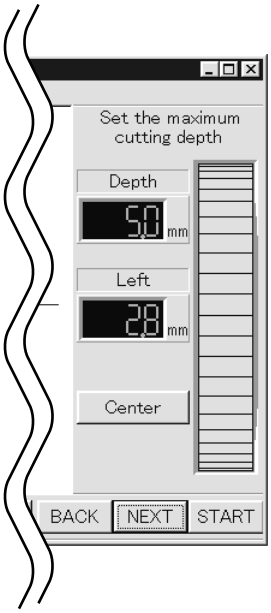
B Set the dimension

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

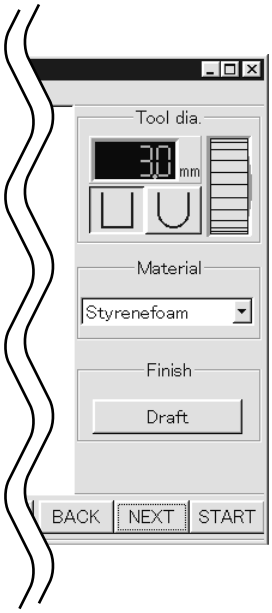
Set the type and diameter of the tool that is installed.

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.

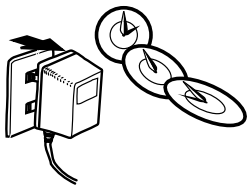
6 Choose the location for saving the file, enter a name for the file, then click [SAVE]. The extension [.mdj] is appended to the filename.

7 Click [START] to start cutting.

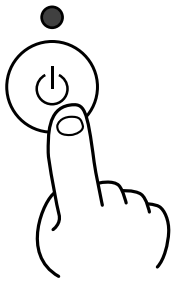
11 Powering OFF

⚠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

Crick the  button.

13 Items that may not be copied

Unauthorized reproduction of a copyrighted item for any purpose other than personal use may be a violation of copyright. Roland DG Corp. will not be responsible for any violation of third-party copyright by any article made through use of this product.

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

- When the unit is in its initialized state immediately switching on the power, the error may be displayed if some object touches the sensor.
  If this happens, switch off the power, remove the object touching the sensor, then switch the power back on.
- 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 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 and VRML
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	:	Dr. PICZA for Windows® 95 disks: 2, MODELA PLAYER for Windows® 95 disks: 2, AC adapter: 1, clay: 1, PIX-3 user's manual: 1

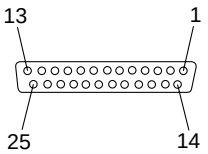
Interface Specification

[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	
NC	24	12	NC	
NC	23	11	NC	
NC	22	10	NC	
NC	21	9	NC	
DTR	20	8	NC	
NC	19	7	SG	
NC	18	6	DSR	
NC	17	5	CTS	
NC	16	4	RTS	
NC	15	3	RXD	
NC	14	2	TXD	
		1	FG	



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