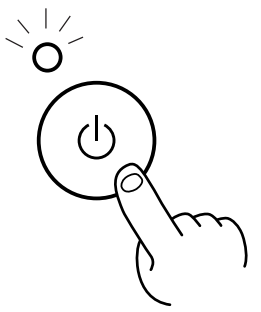
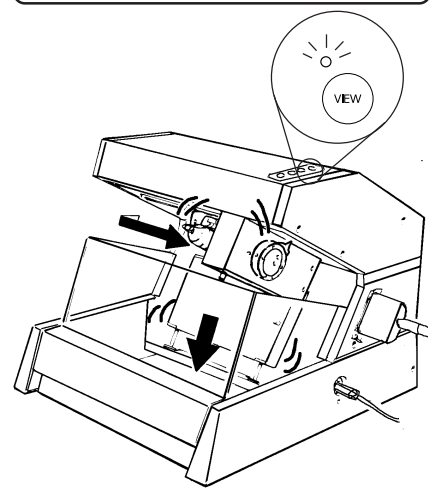


1 Power ON!

1 Pressing the STANDBY key makes the STANDBY LED light up.



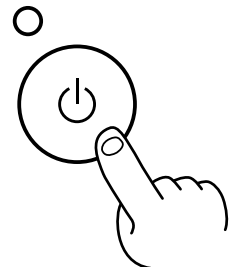
2 Initialization is performed, and the VIEW LED lights up.



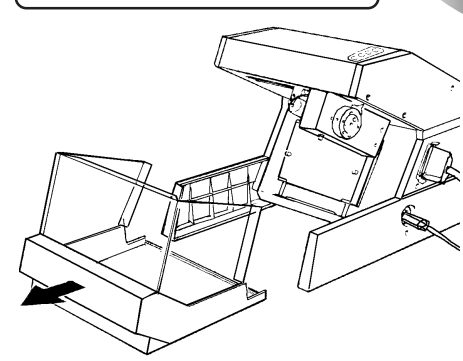
2 Install a blade and load material

Before Installation and Loading

1 Press the STANDBY key to turn off the power.

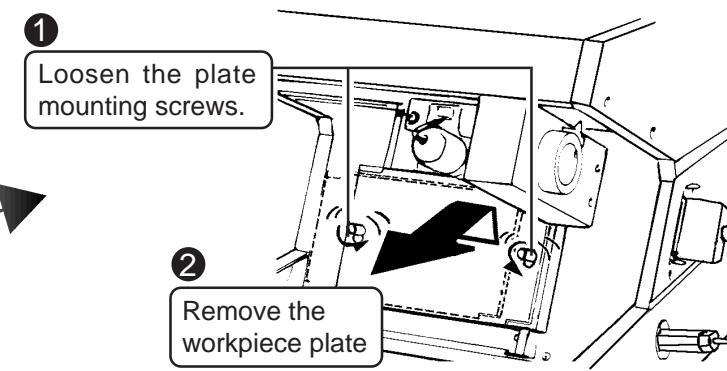


2 Pull the dust tray completely out.



Load the material

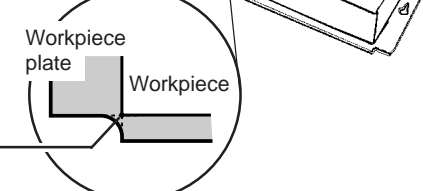
1 Remove the workpiece plate



2 Secure the material to the workpiece plate

1 Apply double-sided tape to the back of the material. Make sure that no double-sided tape sticks out beyond the material. Use material with a surface that is as even as possible.

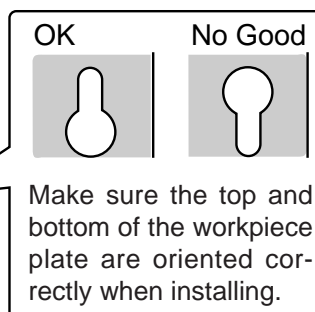
2 Align with the machining reference point (the XY origin point) and secure to the workpiece plate.



3 Secure the workpiece plate to the table

1 Attach the workpiece plate

2 Tighten the plate mounting screws securely.



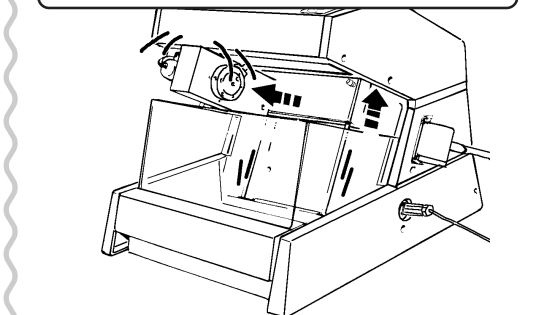
After Installation and Loading

1 Close the dust tray.

2 Press the STANDBY key to turn on the power.

3 Press the VIEW key.

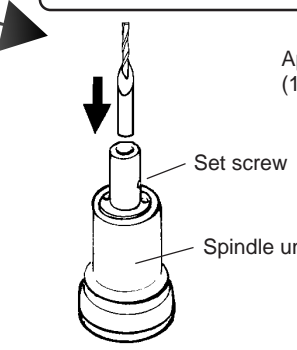
4 The spindle unit and workpiece plate return to the machining reference point.



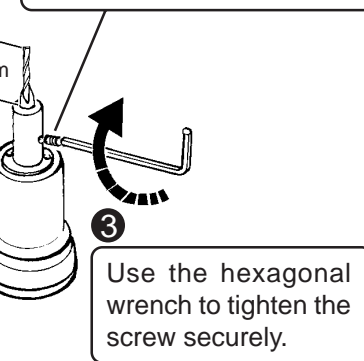
Install the blade

1 Install the blade

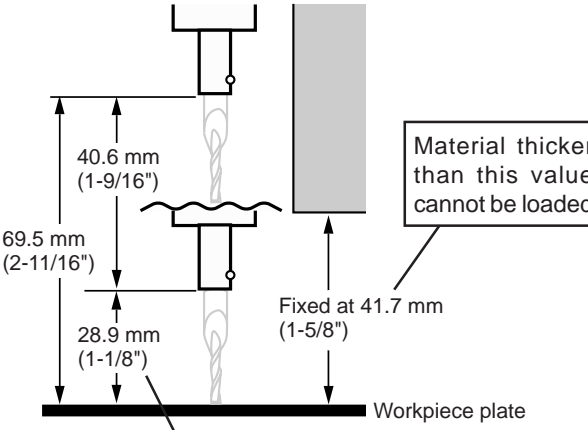
1 Insert the blade shank into the spindle unit.



2 Attach a mounting screw on one side only. Either side may be used.



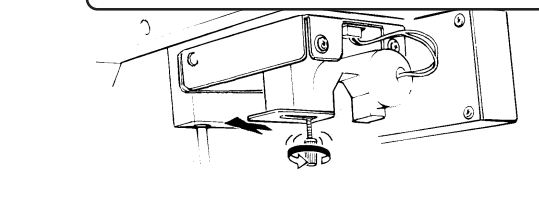
Positional relationship in the depth direction



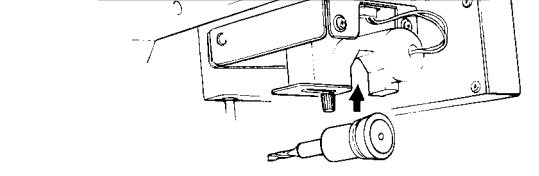
Normally a tool which is longer than this value is installed. If the tool is too short, it may not cut all the way through the material.

2 Securely fasten the spindle unit in place

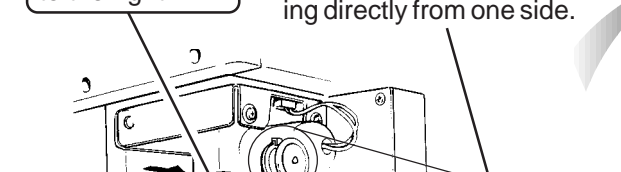
1 Loosen the spindle mounting screw by turning it counterclockwise, and move the plate to the left.



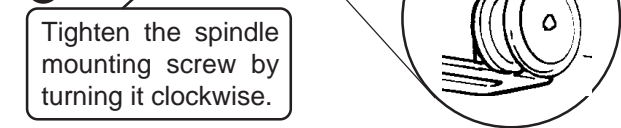
2 Fit the spindle unit into place.



3 Move the plate to the right.



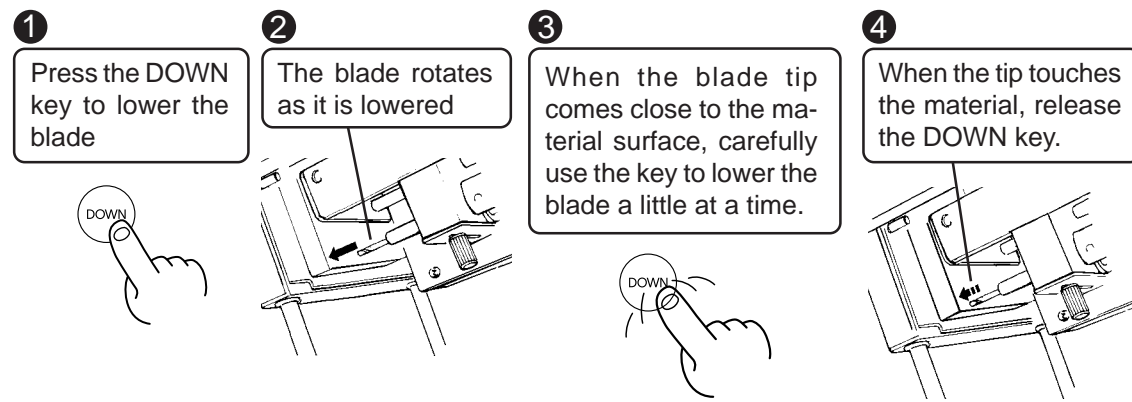
4 Tighten the spindle mounting screw by turning it clockwise.



The flange on the spindle unit fits in here. It is possible to check whether the flange is in place by viewing directly from one side.

3 Set the reference point for depth (the Z origin point)

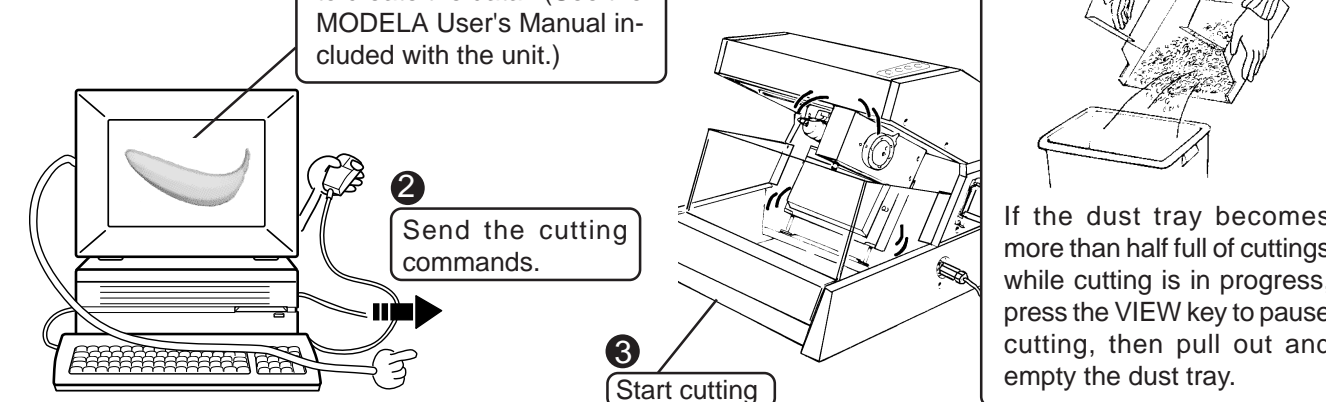
Be sure to do this before sending data from the computer. Loading is not possible while the VIEW LED is lit up or while cutting is in progress. One press of the DOWN key: 0.1 mm (0.00393") of movement. Hold down the DOWN key for 0.5 sec. or more to move at 3 mm (1/16")/sec.



The reference point for depth has now been set. The MDX-3 takes the position when data is sent from the computer as the depth-direction reference point for operation. After making the setting, do not press the UP or DOWN key.

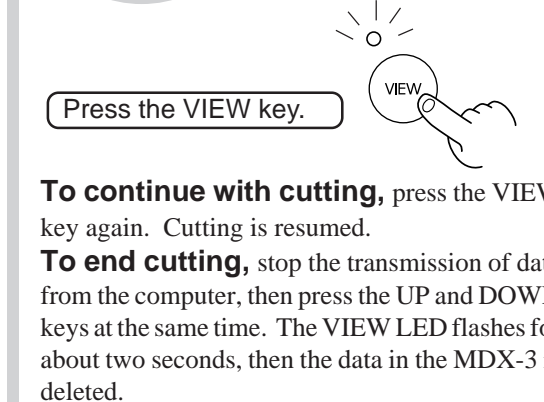
4 Perform cutting

NOTICE
Be sure the dust tray is closed before starting cutting.



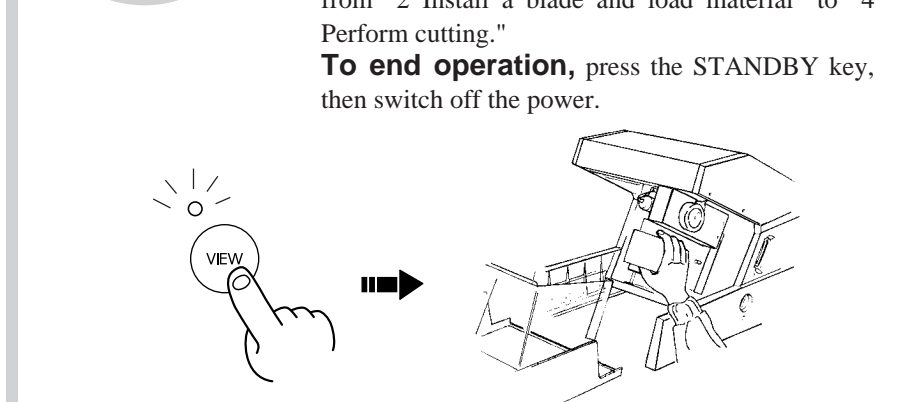
If the dust tray becomes more than half full of cuttings while cutting is in progress, press the VIEW key to pause cutting, then pull out and empty the dust tray.

5 Pausing or stopping operation



To continue with cutting, press the VIEW key again. Cutting is resumed.
To end cutting, stop the transmission of data from the computer, then press the UP and DOWN keys at the same time. The VIEW LED flashes for about two seconds, then the data in the MDX-3 is deleted.

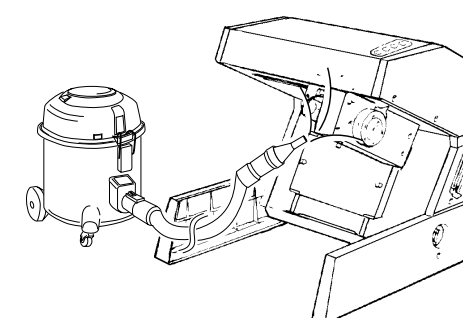
6 When cutting is finished



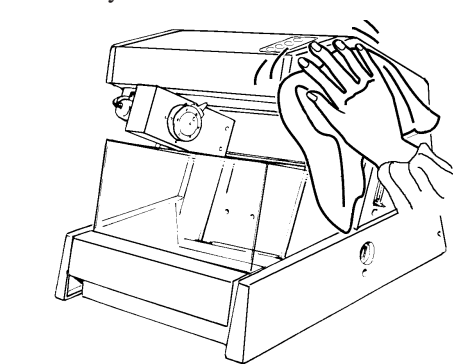
Press the VIEW key and pull out the dust tray. Remove the material that has been cut.
To continue with operation, repeat the steps from "2 Install a blade and load material" to "4 Perform cutting."
To end operation, press the STANDBY key, then switch off the power.

Care and cleaning

Use a vacuum cleaner to clean up cuttings.



If an exterior part becomes soiled, wipe gently with a dry cloth.



NOTICE
Do not use an air-gun. Never lubricate the mechanisms. Use a small amount of water or alcohol for cleaning. Never use solvents such as benzene or thinner can smooth out the material so that it sticks securely.

Option Lists

Name	Model No.	Specifications
Tool	ZHS-3015	Shank diameter: 6 mm, mill diameter 3 mm, overall length: 50 mm
	MS-3	Tool-mounting portion: 3 mm
Spindle unit	MS-6	Tool-mounting portion: 6 mm
	MS-8A	Tool-mounting portion: 1/8"
	MS-4A	Tool-mounting portion: 1/4"
Replacement spindle motor unit	MM-3	Exclusively for MDX-3

What to do if...

- The MDX-3 doesn't operate
Is the STANDBY key on (with the STANDBY LED lit up)?
Has operation not been paused by pressing the VIEW key (lighting up the VIEW LED)?
Are the cable connections correct?
Are the settings for the computer and software correct?
- Speed drops during cutting
When cutting a material of uneven hardness, such as wood, the MDX-3 may slow down automatically (to a minimum speed of 0.1 mm (0.00394")/sec.). Once the MDX-3 has gone beyond the hard area, cutting continues at normal speed.
- The STANDBY LED is flashing slowly (every 0.5 sec.)
The material cannot be cut, even when the speed is reduced. Switch the power off and back on. Switch the power off and back on again. Make sure the blade being used is appropriate for the hardness of the material in use. Modify the software settings to cut the material a little at a time.
- The STANDBY LED is flashing rapidly (every 0.1 sec.)
Switch off the power, and check the cable connections as well as the settings for the computer and software.
- Tool movement is different than the data
If an attempt is made to cut more deeply than the range of movement for the MDX-3 allows, the tool automatically rises to the uppermost point. Check to make sure that depth settings in the cutting data are not too deep, and that the tool extending from the spindle unit is not too short.
- Correct cutting is impossible
Are the blade, spindle, and workpiece all installed and loaded securely? Retighten the setting screw for the blade and the mounting screws for the spindle.
- Unusual noise is heard from the spindle
The spindle unit is a consumable part. Replace with a new spindle unit after 700 hours of use.
- The spindle motor does not run
The spindle motor is a consumable part. Replace with a new spindle motor after 700 hours of use.
- Pressing the STANDBY key does not switch off the power
Unplug the AC adapter from the unit.

Specification

XY table size	: X: 170 mm, Y: 110 mm (6-11/16" x 4-5/16")	Power consumption	: Exclusive AC adaptor (DC+12V 1.5A)
Max. cutting 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))	Acoustic noise level	: Standby mode : under 24 dB (A), Cutting mode (when not performing cutting) : under 52 dB (A) (According to ISO 7779)
Feed rate	: 0.1 mm/sec. — 15 mm/sec. (0.00393"/sec. — 9/16"/sec.)	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))
Software resolution	: 0.025 mm/step (0.000984"/step)	Weight (unit only)	: 7 kg (15.4 lb.)
Mechanical resolution	: X, Z-axis : 0.025 mm/step (0.000984"/step) Y-axis : 0.05 mm/step (0.00197"/step)	Acceptable tool	: Endmill, Drill
Spindle motor	: 5 W (DC motor)	Acceptable material	: Wood, Plaster, Resin (modeling wax, styrenefoam)
Revolution speed	: 4500 rpm (±10%)	Operation temperature	: 5—40°C (41—104°F)
Tool chuck	: 6 mm or 1/4" tool chuck included	Operation humidity	: 35%—80% (no condensation)
Interface	: Parallel (in compliance with the specification of Centronics)	Accessories	: MODELA INSTALLER 1/2, MODELA INSTALLER 2/2, MODELA DRIVER for Windows® 95, MODELA (MDX-3) Main unit User's Manual, MODELA User's Manual for Included Software, License agreement, AC adaptor, Tool, Spindle unit, Material for test cuts x 2, Hexagonal wrench, Set screw x 2, Double sided tape
Control keys	: STANDBY, VIEW, UP, DOWN, STANDBY LED, VIEW LED		

Interface Specification

[Parallel]	
Standard	: In compliance with the specification of Centronics
Input signal	: STROBE(1BIT), DATA(8BIT)
Output signal	: BUSY(1BIT), ACK(1BIT)
I/O signal level	: TTL level
Transmission method	: Asynchronous