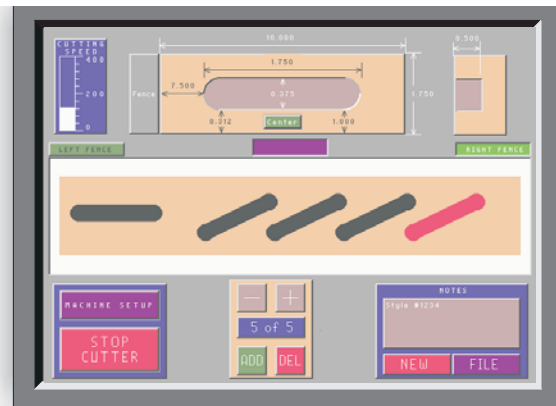


# MAXYM Mortiser

## Operating Manual



---

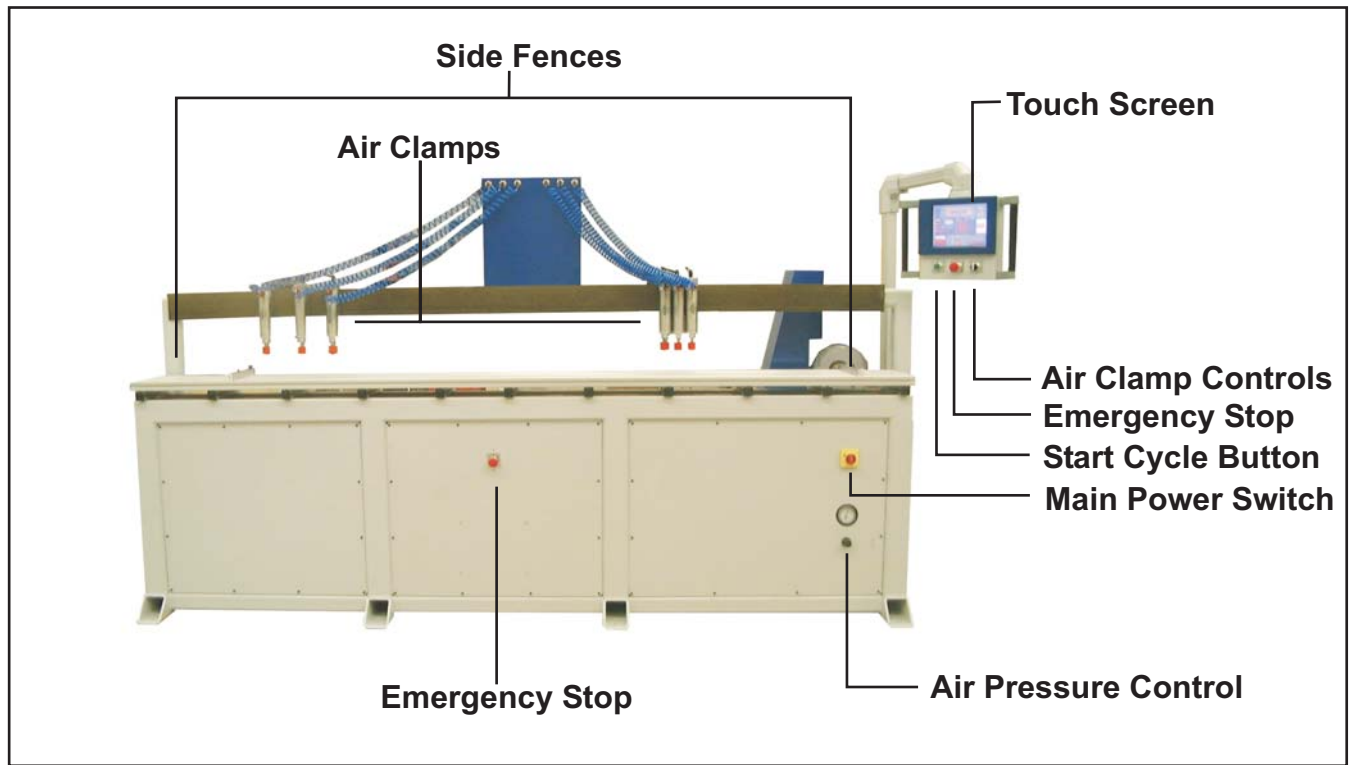
# Table of Contents

Visual Tour		1-2
Operating the Maxym Mortiser		3
Starting the Mortiser	3	
Touch Screen Description		3
Mortise Setup		4
Dimensions		5
Stock Dimension		5
Mortise Dimension		5
Mortise Cutting Speed		5
Left & Right Fence		6
Mortise Display Selection		6
Clamping the Stock		7
Mortise Setup Notes		8
File Menu		9
Save Current Settings		11
Load Saved Settings		11
Machine Setup		13
Calibrations		13
Fence		14
Jog Buttons		14
Tool Settings		15
Tool Table	16	
Moving the Fence		17

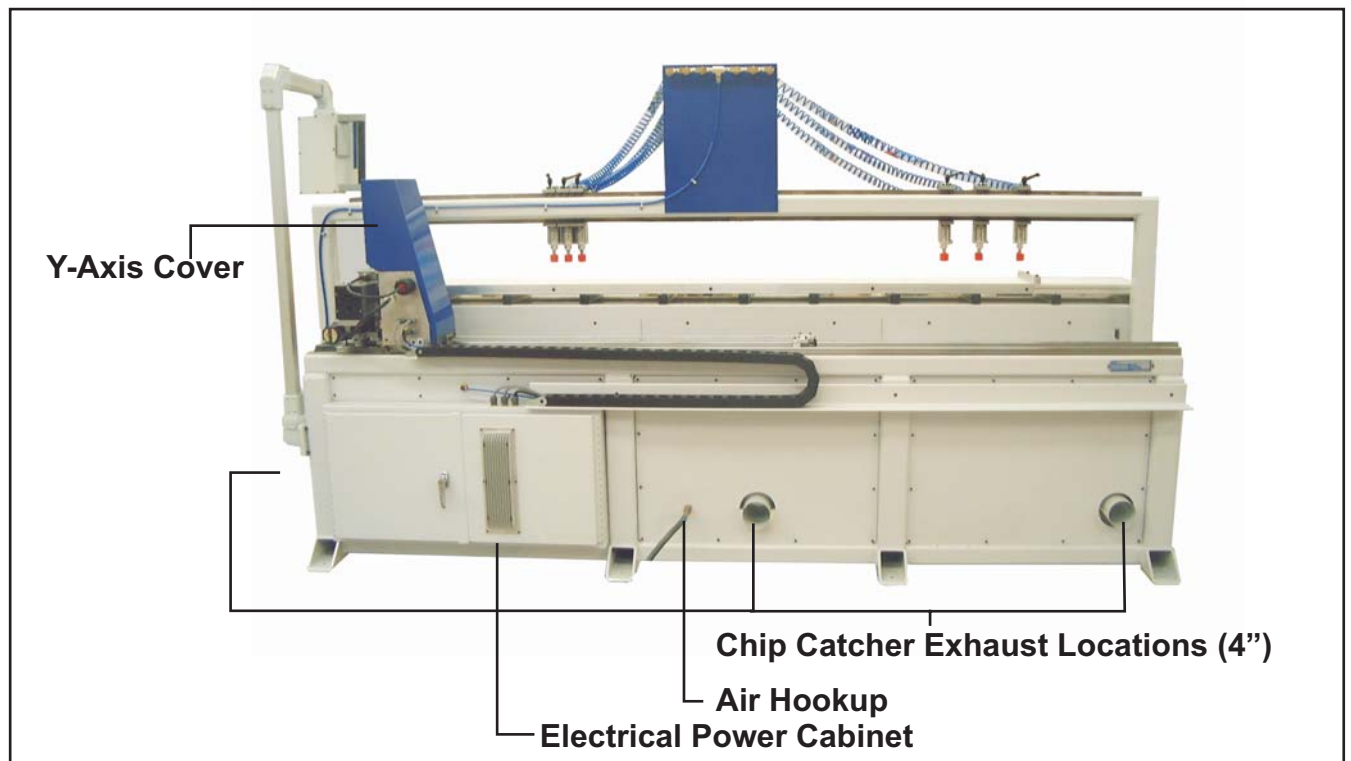
---

# Visual Tour

## Front View



## Rear View





# Operating the MAXYM Mortiser

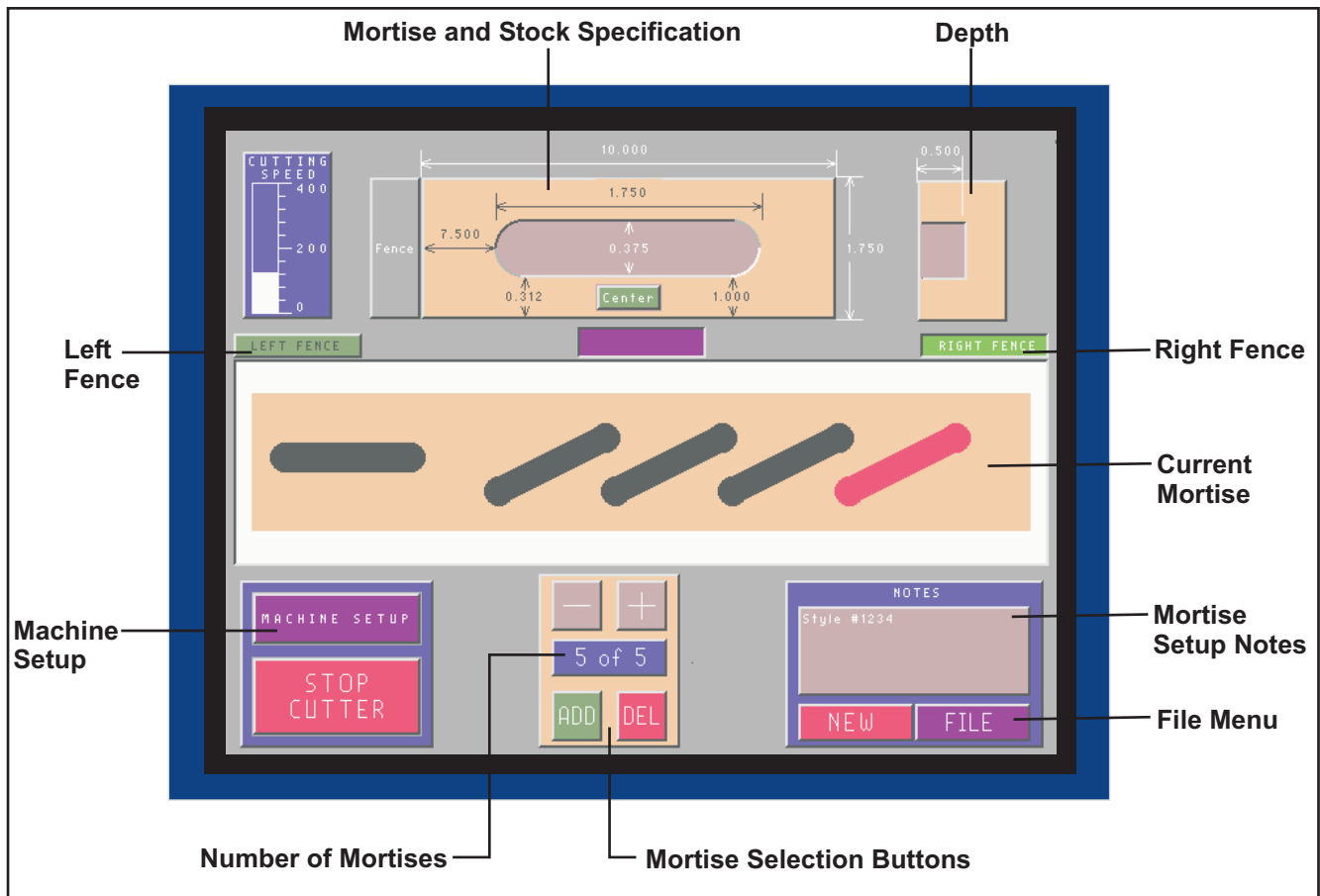
## Starting the Mortiser

Once power is applied, the mortiser moves to the start position with the cutter below the table and to the right of the right hand side fence. The touch screen briefly displays the mortise software title and version number before displaying the mortise setup menu. The figure below shows the mortise setup menu.

### ! Caution

The air clamps may extend briefly when power is applied.

## Touch Screen Description



## Mortise Setup

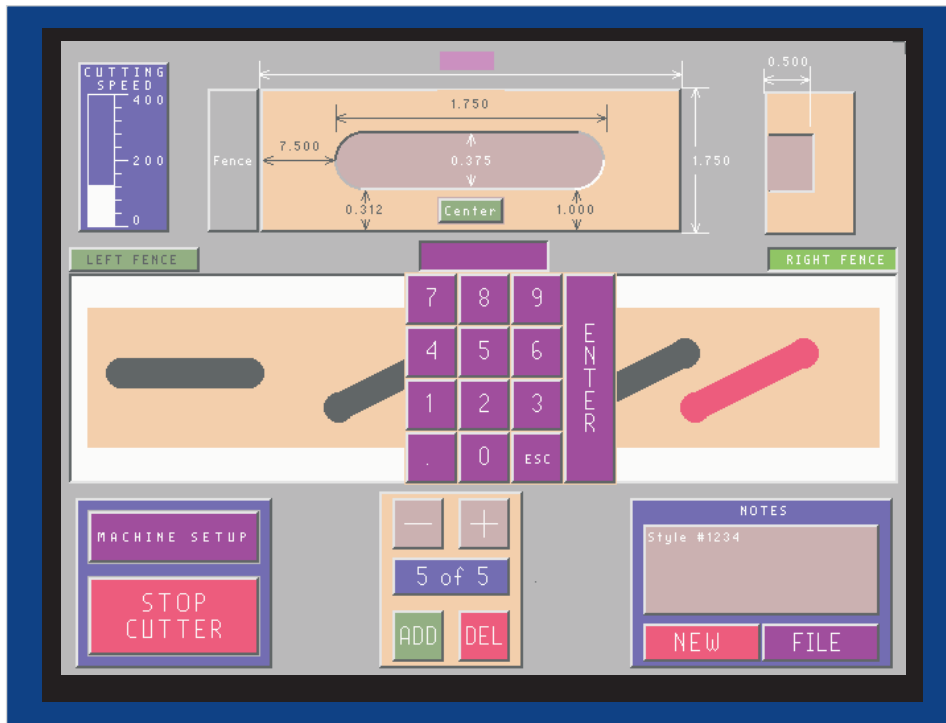
The mortise setup display shows a view of your stock with the mortise facing you. There is always one mortise on the screen. Before changing the dimensions on the screen, measure your stock and mortise locations.

To change any of the mortise settings, simply touch the dimension on the screen that you would like to change. A number pad will appear in the center of the screen, as shown below.

Type in your new dimension by touching the numbers on the keypad. The '<' key is the Back Space. If you make a mistake, use the Back Space to delete it. The numbers that you type will appear in a box on the dimension you touched. When you are finished typing, touch 'ENTER'.

### Tip

It is best to enter your stock dimensions first. Because a mortise will not be allowed outside of the stock. If you are reducing the stock size, you might have to move the mortise first.



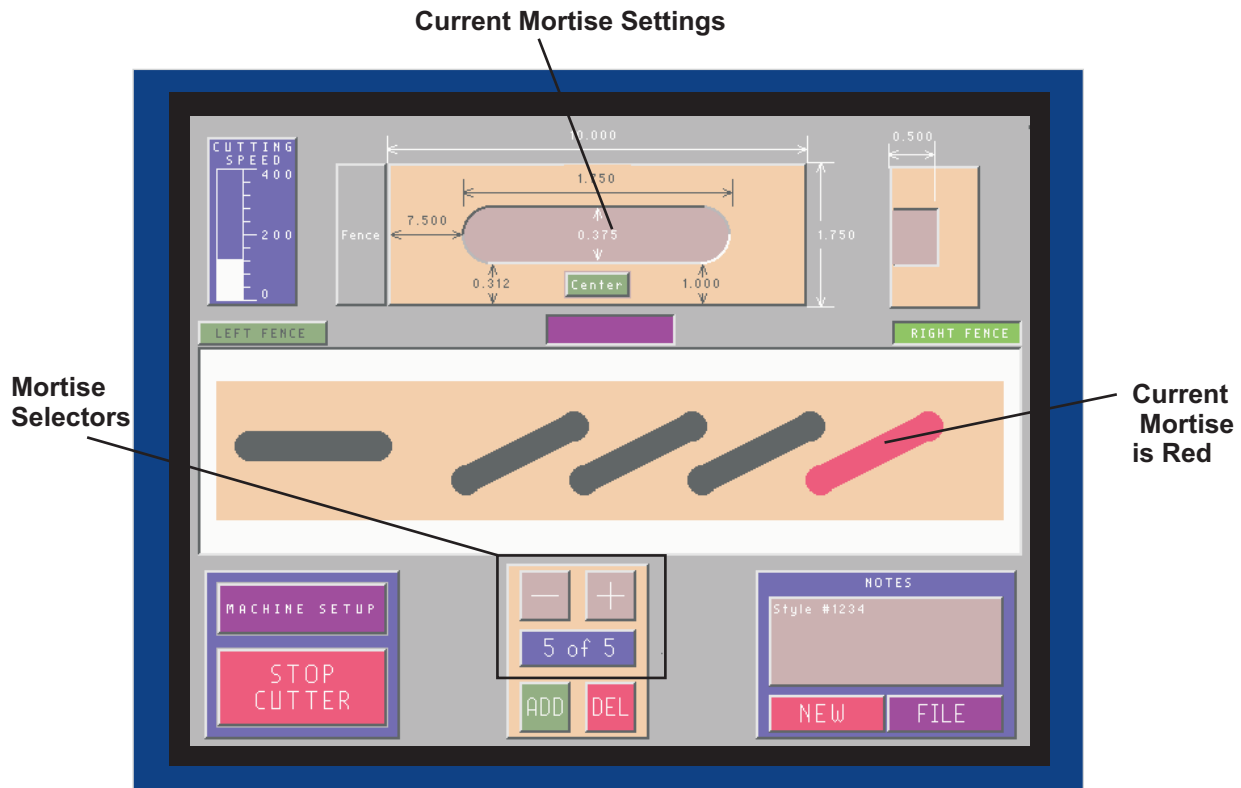
After entering each dimension, the '**Mortise Display**' shows a picture of the stock and mortise shape entered. Also, the touch screen updates the mortise controller with the current settings. Once you are satisfied with the mortise setup you can continue to add mortises or holes until your stock is finished. (See **Mortise Selection**, page 5)

The Maxym Mortiser can place a mortise anywhere on the stock, including over other mortises. (See **Mortise Techniques**, page 7)

## Mortise Selection

The mortise selection buttons change which mortise (and its settings) to display. The mortise number and red colored mortise indicate the mortise with the current settings.

Use the '-' and '+' buttons to toggle through mortises or press the mortise number to open a keypad. Press a number to change the displayed mortise.



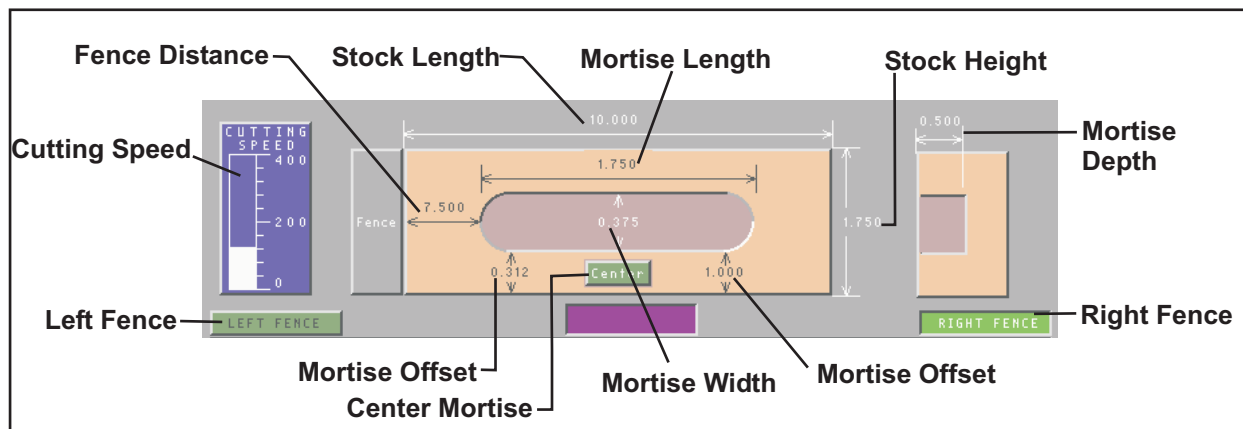
Use the '**ADD**' or '**DEL**' buttons to add or delete mortises.

The '**ADD**' button creates a new mortise defined with the same settings as the current mortise but with the Fence Distance set to zero. The '**ADD**' button always sequence the new mortise after the current mortise (red). This means the new mortise will be cut after the currently selected mortise. This allows you to control the cut order for your mortises by selecting a mortise before adding a new one

The '**DEL**' button will delete a mortise. All following mortises from that number on are renumbered sequentially. For example, if you delete mortise 3, then mortise 4 becomes 3 and 5 becomes 4... You can not delete the last mortise in a setup.

Use the '**NEW**' button to create a new mortise setup. The '**NEW**' button deletes all mortises except for the current mortise.

## Dimensions



## Stock Dimension

Two dimensions determine the stock size: **Length** and **Height**.

To change the dimensions, touch the individual dimensions to display the number keypad on the screen and enter the new value. After each change the **Mortise Display** will be updated with an approximate drawing of the new dimension. Also a message will appear telling you that the controller is being updated.

## Mortise Dimensions

Three dimensions determine the mortise location, **Fence Distance** and the two **Mortise Offsets**. The **Fence Distance** is the dimension from the mortise to the end of the stock against the fence. The two **Mortise Offsets** dimensions set the height from the table for each end of the mortise. The **Center** button sets both **Mortise Offset** settings to a value that centers the mortise in the stock.

Also, there are three dimensions to set the mortise size, **Mortise Length**, **Mortise Width** and **Mortise Depth**. The **Mortise Length** can not be set shorter than the **Mortise Width**. If the **Mortise Length** and **Mortise Width** are the same the mortise will be round. The **Mortise Depth** button sets the depth of the mortise from the surface of the stock.

To change the dimensions, touch the individual dimensions to display the number keypad on the screen and enter the new value. As with the stock dimensions, the **Mortise Display** and controller will be updated after each entry.

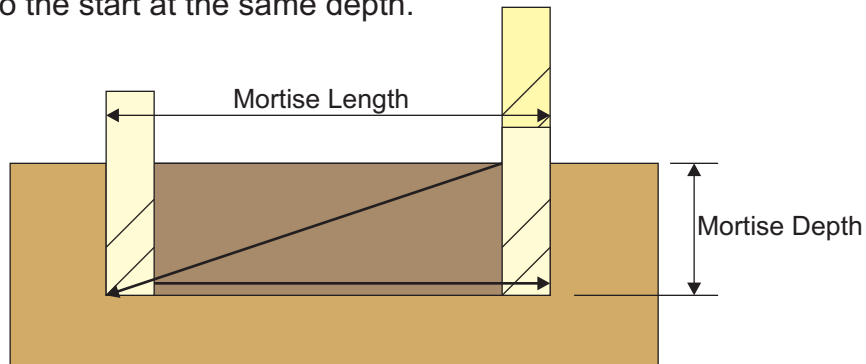
## Mortise Cutting Speed

Each mortise has its own **Cutting Speed**. The **Cutting Speed** for the current mortise can be set by sliding the white bar up or down. The speed range is from 0 to 400 inches per minute. Different mortise depths will require different cutting speed to prevent from overloading the cutter. The mortiser always travels at its maximum speed between cuts.

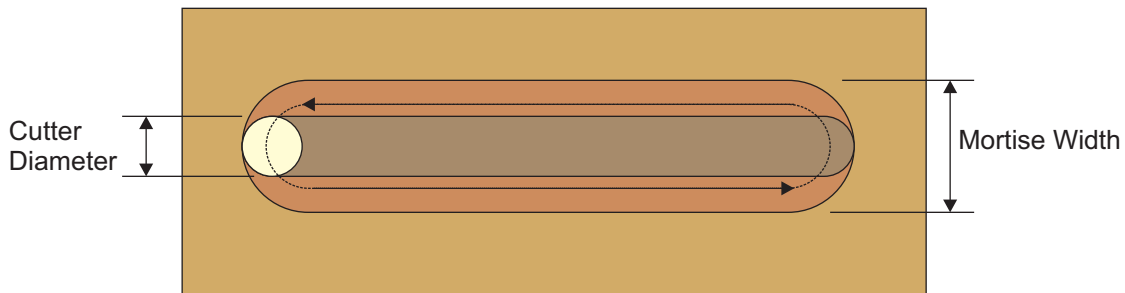


## Mortise Techniques

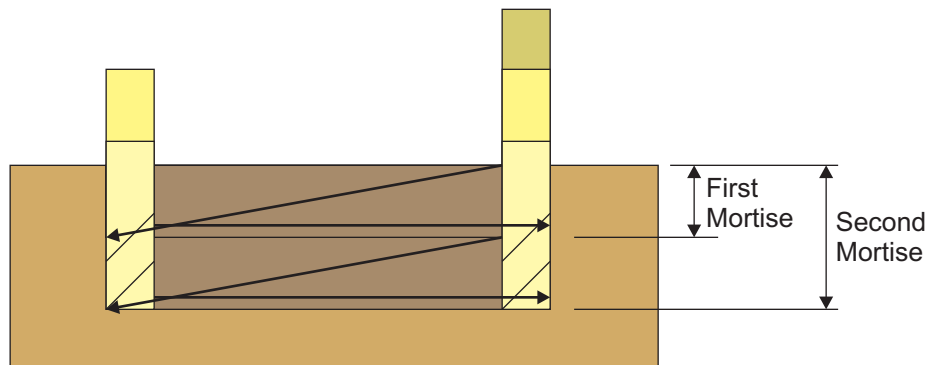
To machine the mortise the Maxym Mortiser ramps the cutter in from the surface of the stock to the mortise depth while moving from right to left. Then the cutter moves from left to right returning to the start at the same depth.



If the mortise width is larger than the cutter diameter, the cutter will then orbit the first cut enlarging the mortise to the correct width. The mortiser will never cut more than half of the cutter diameter in one orbit.



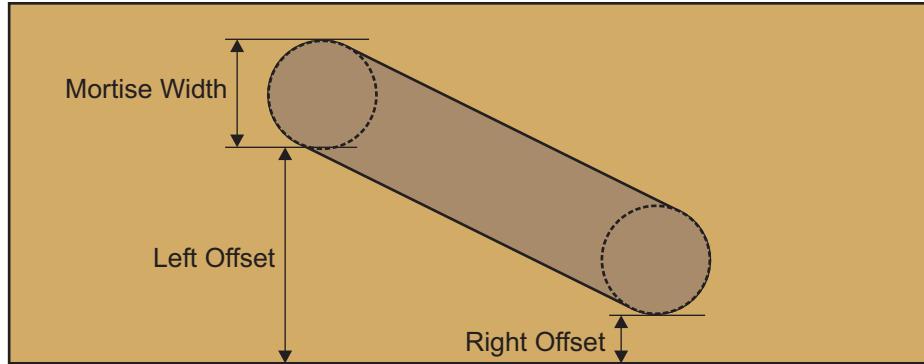
Sometimes you can't plunge the cutter all the way to the desired depth in one pass so you must step mill into the stock. This is done by placing two or more mortises in the same location but with increasing depth. The mortiser will then cut the first as described above then continue with the next mortise, plunging in to the next depth until the desired depth is reached.



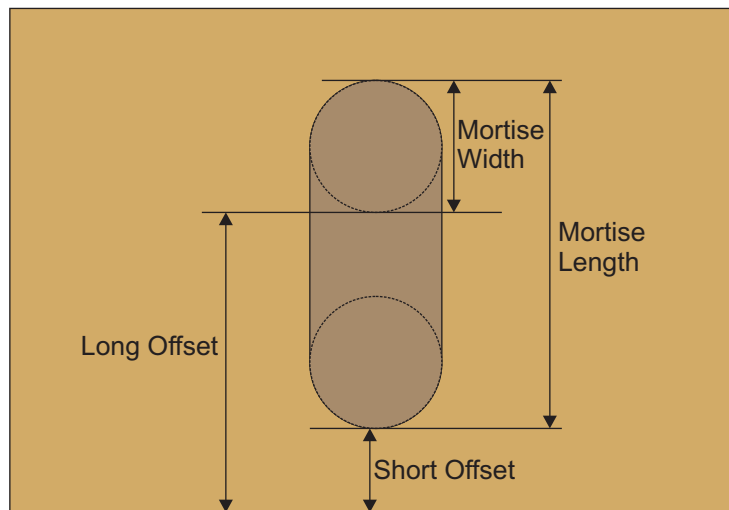
---

## Angled Mortise

An angled mortise is created by setting two different Mortise Offsets for a mortise. This method allows for accurate placement of the mortise relative to the edge of the stock. The Mortise Offset is always measured from the bottom of the circle that makes up the end of the mortise.



To create a vertical mortise, the long offset must be equal to;  
**Mortise Length - Mortise Width + Short Offset**



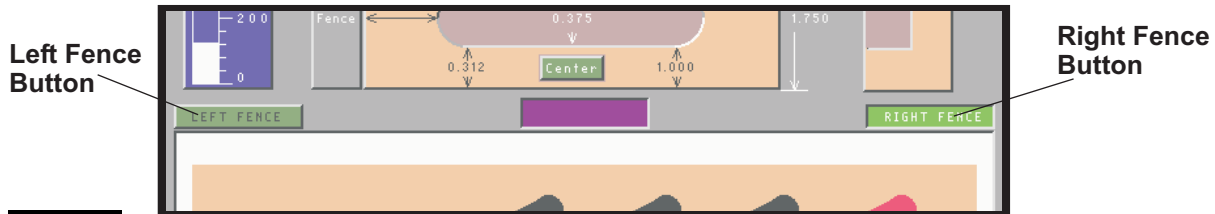
### Note

The long offset will not be allowed longer than the length determined by this equation. You must increase the Mortise Length first.

---

## Left Fence & Right Fence

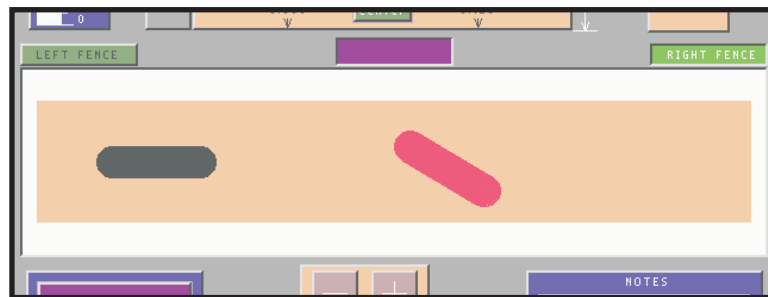
The **Left Fence** and **Right Fence** buttons are used to tell the mortiser which side fence to reference the stock from. The **Fence Distance** is measured from the fence that is currently active. Switching fences will flip or mirror your cut list from side to side. If the stock is less than half of the mortiser's length, both parts can be cut at the same time by selecting both Left and Right fences.



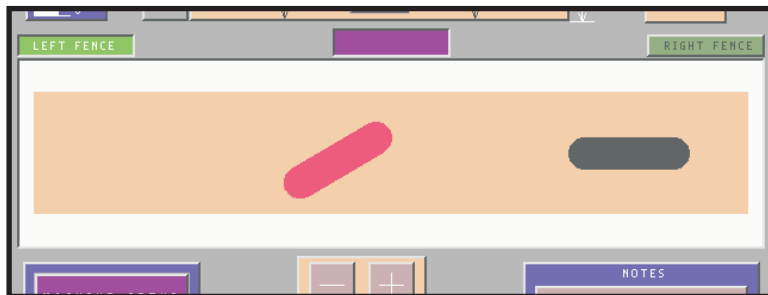
### Note

The first time you touch the opposite fence button you will have both selected. The second time you touch the same button, only that fence will be selected.

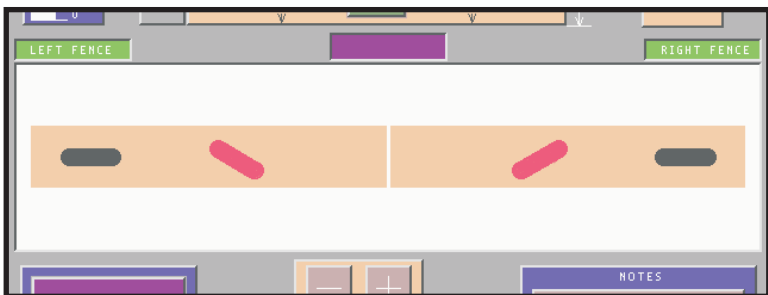
Right Fence



Left Fence



Both Fences



### Note

The fence icon at the top of the screen on the **Current Mortise Settings** will remain displayed on the left side of the screen regardless of the actual side fence location, indicated with the left or right fence button.

## Clamping the Stock

Once you have entered all of the stock and mortise dimensions, you are ready to clamp your stock to the table. Place your stock against the side fence and push it into the mortiser until it hits the rear fence. Then align the air clamps over your stock.

Next set the air clamp control under the touch screen to the '**AUTO**' position. If you would like to see if your work is secure before cutting, place the air clamp control in the '**HAND**' position to lower the clamps manually. The air clamp control must be in either the '**AUTO**' or '**HAND**' position or the mortiser will not start.

### **Caution**

If you are using the '**AUTO**' position, the manual clamp valve must be in the on position.

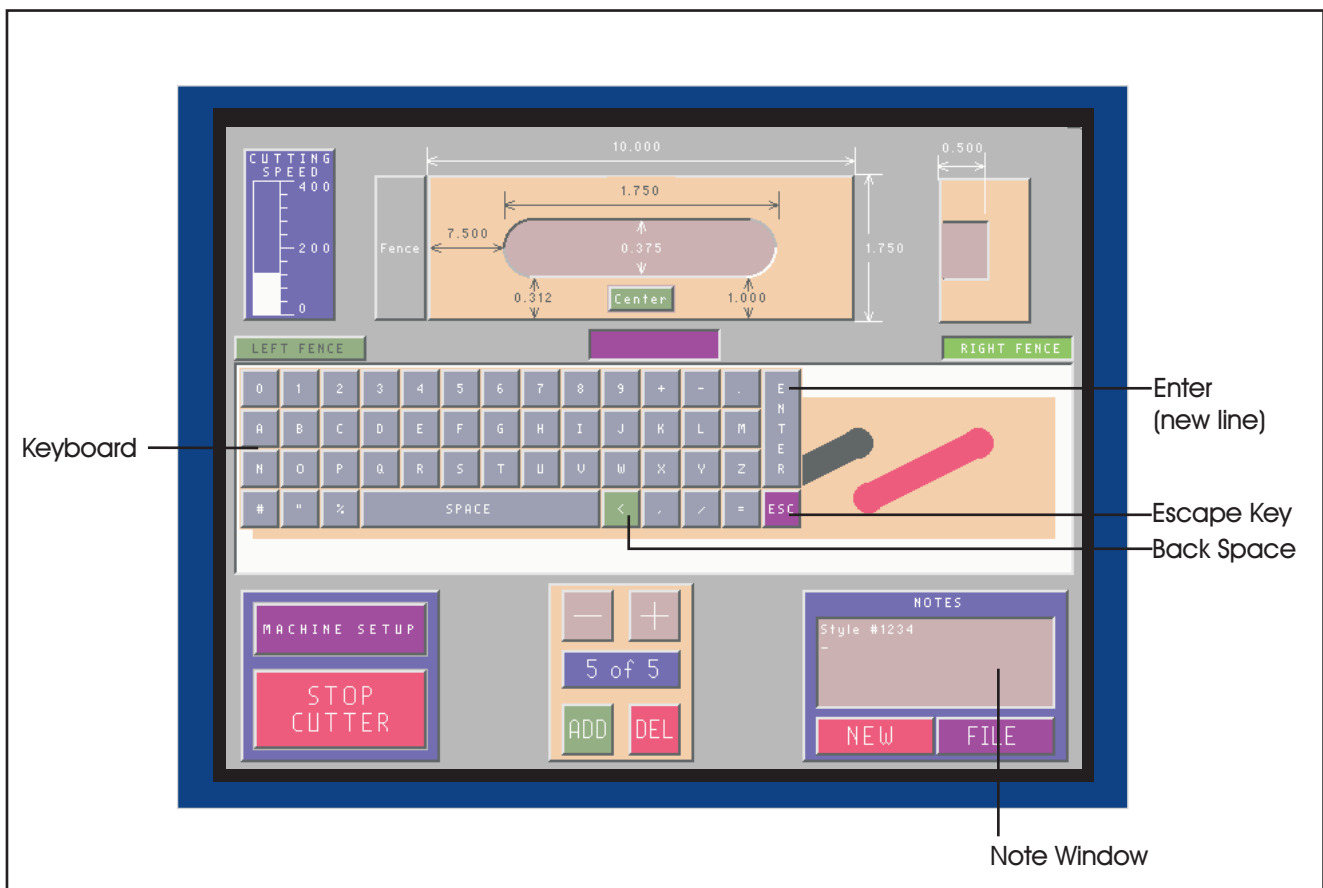


Once you are satisfied that your work is secure, clear your hands from the cutter and press the '**START**' button to begin cutting your mortises.

## Mortise Setup Notes

The notes window allows you to type information to explain your setup. You might want to describe the stock you are cutting using the current settings. Or you can explain some of your manual settings, such as fence angles, or air clamp locations.

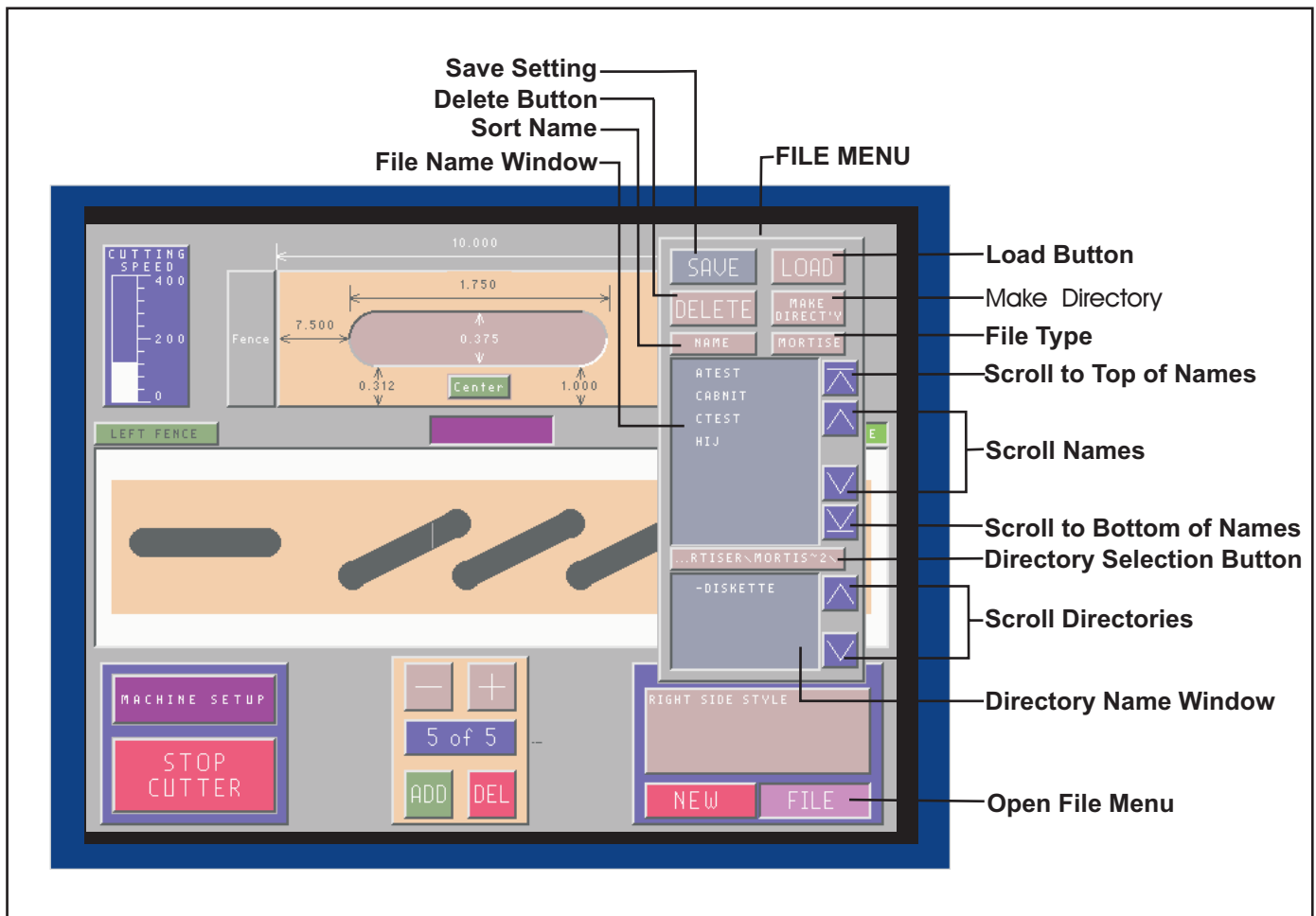
To enter notes, touch the window below the word '**NOTES**'. You will be asked to clear the note window. If you want to add to your existing notes, touch '**NO**'. If you want to start new notes, touch '**YES**'. A keyboard will appear over the mortise display window and a cursor will appear in the note window. You can type in letters using the keyboard. If you make a mistake, use the backspace ('<') to delete it. When you are finished typing, touch the escape key ('**ESC**') to end note entry.



## File Menu

The settings you have entered for your mortise will stay in the touch screen until you change it, even if the mortiser is powered off. When the mortiser is turned on it will have the last setting and will update the cutter computer automatically.

If you change the dimensions but would like to return to some previous settings, you can save your current settings and load previous settings from the **'File Menu'**. Touch the word **'FILE'** at the lower right corner of the screen to open the file menu.



The File Menu is comprised of two main windows, the **File Name Window** and the **Directory Name Window**. The **File Name Window** shows the name of the currently saved mortise setups. Below this window is the **Directory Selection Button**. On this button is the name of the directory that the files are in.

A directory is like a folder to group like files together. If there is only a '\' on the Directory Selection Button you are in the Main or Root directory. Below the **Directory Selection Button** is the **Directory Name Window**. This is a list of other directories or folders that are on the mortiser.

---

To open a directory just touch the directories name in the window and then touch the **Directory Selection Button**. The **File Name Window** will now show only the file(s) in that directory. The **Directory Name Window** will also change to only the directories in this directory. Like having a file folder in a file folder.

To go back to the previous directory just touch the **Directory Selection Button** before touching a directory name and it will jump back to the previous directory.

If you would like to make a directory to save setups in, just touch the **Make Directory** button and type in a name for your directory. You can only use eight letters for directory or file names.

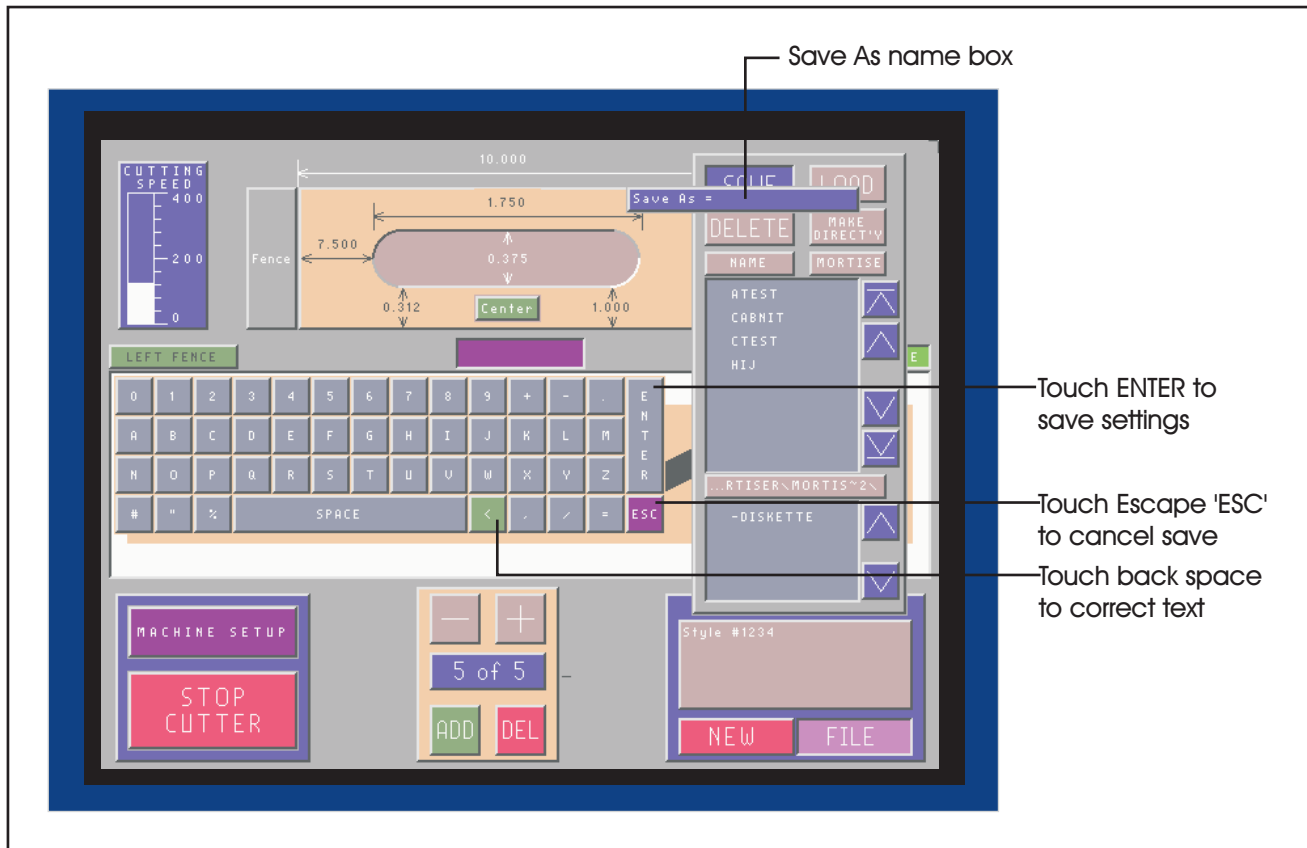
The file names can be sorted alphabetically (NAME) or by date (TIME) with the most recent file at the top. This is done by pressing the **Sort Name** button at the top left of the **File Name Window**.

The **File Type** button at the top right of the **File Name Window** allows you to select the two types of files that will show on the **File Name Window**. MORTISE files are the mortiser setups. This is the type you will be using the most. You can also list PATTERN files. These file are created with our Advanced Programming Option. Pattern files can only be loaded.

## Save Current Settings

To save your current settings, touch the **'SAVE'** button on the file menu. A box will appear with the words **'Save As ='** in it. Also, a keyboard will appear to allow you to type in a name for your file. As you type, the name will appear in the **'Save As'** box. You are limited to eight letters for your name. If you want to change the name in the box, touch the **'<'** key, to delete the letters. Once you have typed in the name, touch the **'ENTER'** button and the file will be saved. The file name will appear in the window above the mortise display.

All of the mortise settings are saved with the file. The cutter size and calibrations are not saved with the mortise settings. Those settings are machine related and are stored separately.



## Load Saved File

To load a saved file, simply touch the name in the file name selection window then touch the load button. If the name does not appear, touch the file navigation buttons until the name appears in the window.

Selecting a file name can serve other purposes. If you would like to save your settings over a previous file, touch the file name before touching **'SAVE'**. This will bring the name to the **'Save As'** box. Then touch **'ENTER'** to replace the old file. You will have to verify the file replacement. Also, if you are not sure which file you would like to load, touching the file name will display the notes for that file in the notes windows. You can make a more informed selection with the extra information in the notes.

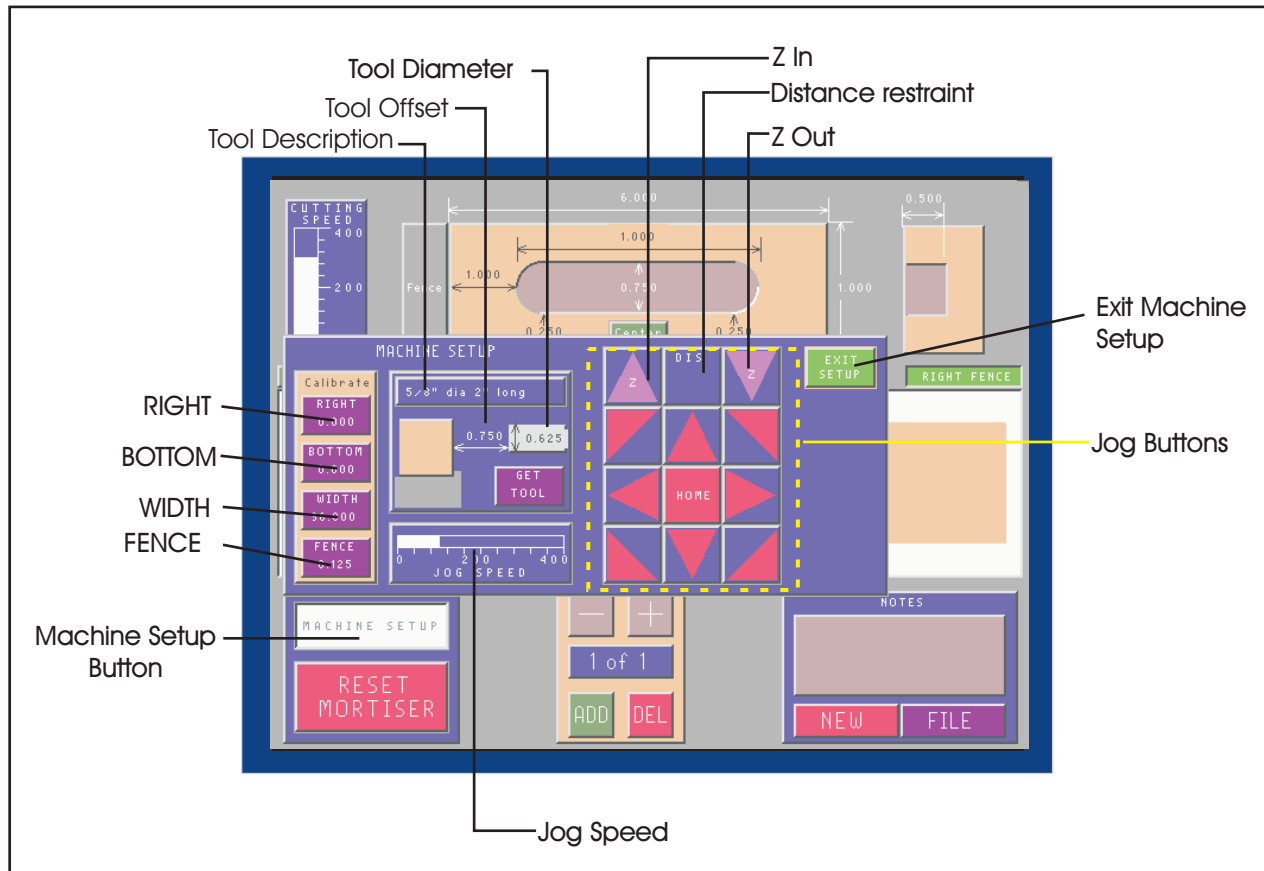


---

To **Delete** a file you need to select the file in the **File Name Window** and then press on the **Delete Button**. It will then come up with a prompt that shows you the file and a Yes/No selection. If you would like to delete it hit **Yes** or if you don't then hit **No**. To delete a directory you must only select the directory name and not open it. Also, before you delete the directory you must delete all files in that directory.

## Machine Setup

The machine setup window is opened by touching the **MACHINE SETUP** button on the main screen.



## Calibrations

The Maxym Mortiser ships calibrated with the side fence on the right side near the cutter. It is recommended that you cut and measure a test mortise to ensure that the machine is calibrated.

Three dimensions calibrate the mortiser: **RIGHT**, **BOTTOM** and **WIDTH**. In this discussion, right refer to the directions when facing the mortiser from the operator side.

**RIGHT** calibrates the machine to the location of the corresponding right fence. To determine what value to enter in the calibration, cut a test mortise and determine the amount of error by measuring the mortise. For example, if you cut a mortise 1" from the right fence and it measures 1.125", reduce the right calibration by .125". If the calibration is zero, you would type in -.125". If you use the left fence, you would use the **WIDTH** calibration button. The **WIDTH** sets the distance from the right to the left fence. Using the same example, if a 1" mortise measures 1.125" you would increase the **WIDTH** setting by .125"

To change a calibration dimension, touch the calibration button and enter the new value.

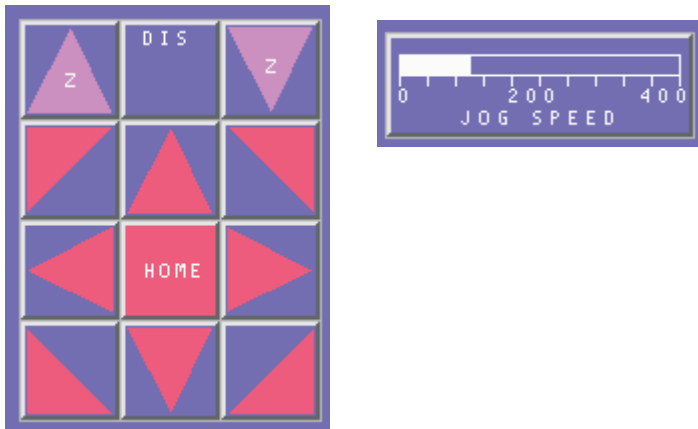
---

**BOTTOM** calibration refers to the vertical distance between the bottom of the stock (the side touching the table) to the closest mortise edge.

## Fence

The fence dimension sets a protection zone above the table preventing the cutter from coming down into the rear fence. To change the fence dimension, touch the fence button and enter the new value.

## Jog Buttons & Speed



The jog buttons are used to move the spindle manually. There are eight buttons around the Home button to move the spindle up, down, right, left and four diagonally. The buttons labeled **Z** are used to move the spindle in and out. These buttons can be used for better access to the spindle when changing cutters.

The **DIS** button is used to limit how far the spindle will move with each push of an arrow button. When you touch the **DIS**tance button a number pad will allow you to enter the limiting distance. To stop using the distance restriction, simply touch the distance button again.

The **HOME** button is used to return the spindle to its home position.

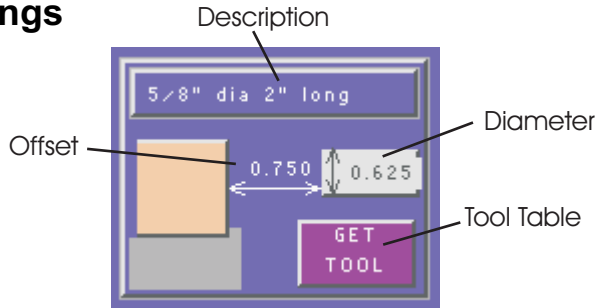
---

**! Caution**

**You must return the spindle to home for the mortiser to work properly.**

---

## Tool Settings



The tool settings include the tool **diameter** and the **offset** distance from the tool to the stock when the tool is back at the home position.

The tool **diameter** is an important dimension in creating the proper mortise size. You can use a tool from 1/8" to 1-1/2" diameter. To change the cutter diameter, touch the number on the tool diagram and enter the new value.

### Note

If you have a cutter sharpened it is important to measure it and enter the proper size.

The **offset** can be measured by using the jog buttons to reposition the tool. You can either measure the distance from the tool to the operator side of the fence or to the stock if it is not against the fence.

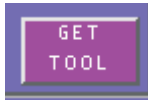
### Note

The mortiser has maximum travel of three inches. The sum of the **mortise depth** and the **tool offset** can **not exceed three inches**.

The settings for the tool are saved in a tool table. The **tool description** allows you to pick the correct tool from the table. To enter or change the description just touch the description box and a keyboard will appear with the description at the top.



You can add to the existing description or use the less than key '<' to delete the old description and start over. You are limited to 18 letters or symbols.



To access the tool table touch the **GET TOOL** button. This will show a table of tool descriptions with your current tool highlighted. Touching a tool description will make that tool be the current settings.

**Note**

If a table location does not have a tool diameter setting, you will be required to set the diameter before continuing.





**17Landry Street, Biddeford ME 04005**

**Phone: (800) 727-6268**

**Fax: (207) 283-8615**

**E-mail: [support@maxymtech.com](mailto:support@maxymtech.com)**

