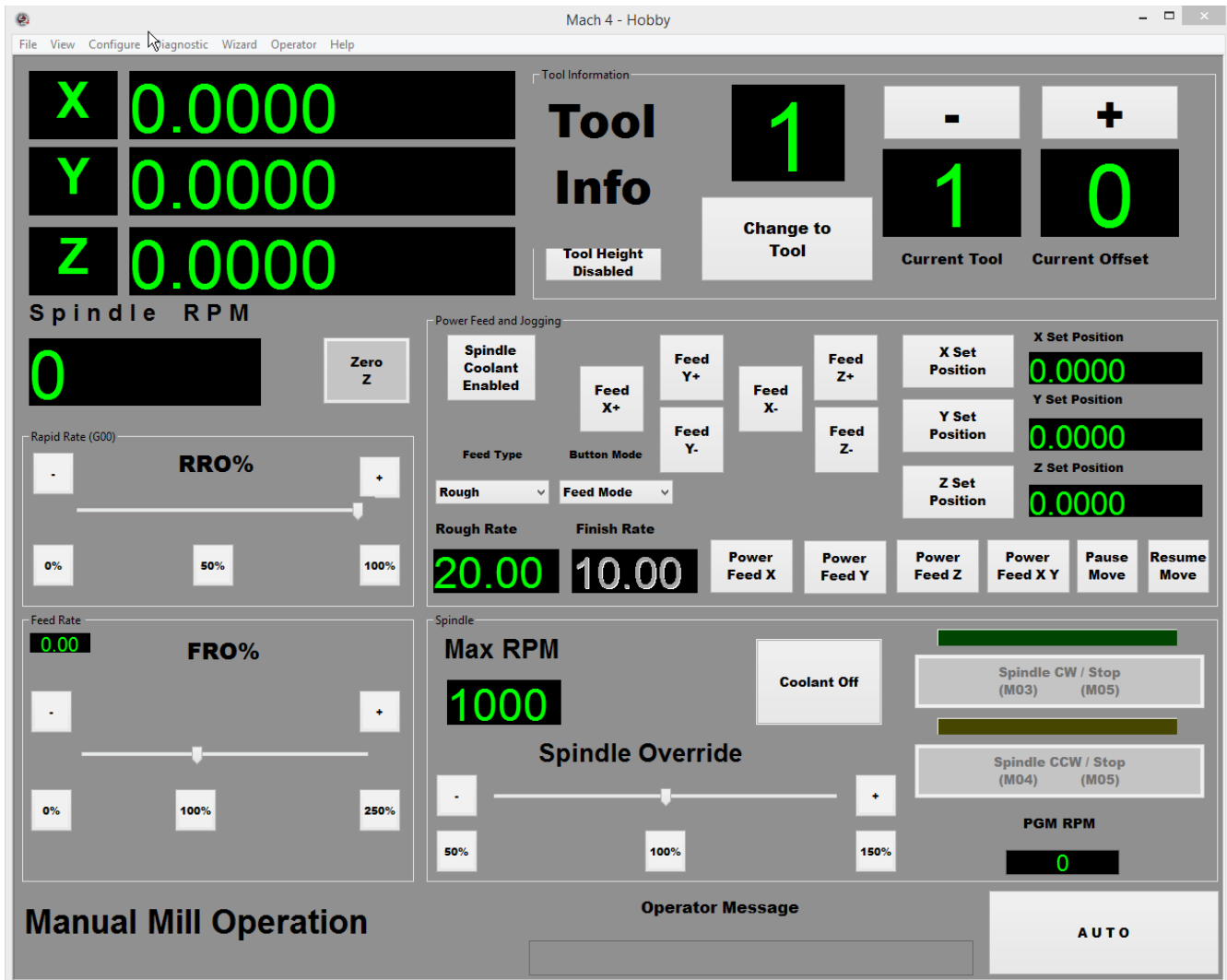


# Mach4 Manual Mill

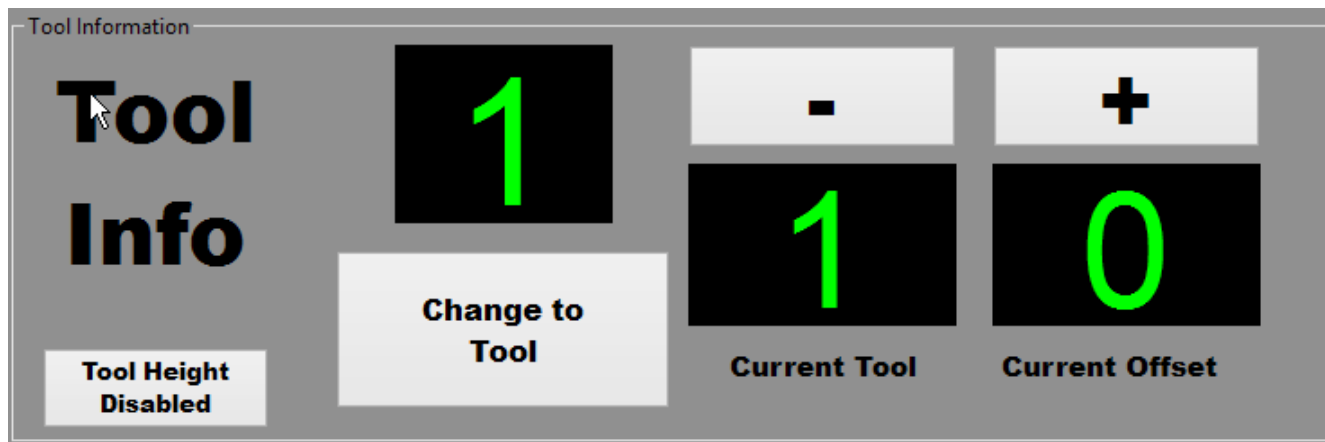


This document will explain the Mach4 Manual Mill screen and its functions.



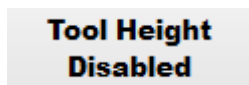
The DROS at the top left of the screen represent the current work coordinates. They are editable. The Spindle RPM DRO will display the current actual RPM of the spindle

## Tool Information:

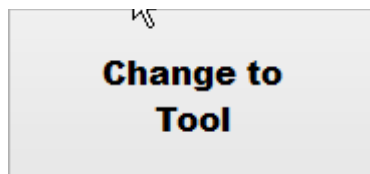


The Tool Information Group contains four buttons and three dros, that will execute a tool change, increment tools up and down, as well as activate the tool height for the current tool.

The Tool Height Enabled/Disabled button, when clicked, will enable or disable the Tool Length Offset for the current tool.



The Change to Tool Button will change to the tool that is entered in the DRO just above it.



The Change to Tool DRO is located just Below the Change to Tool Button. A tool number is entered in this DRO and when the Change to Tool Button is pressed, A tool change to that tool number will occur.  
\*\*Use Caution when using this feature with automatic tool changers!\*\*



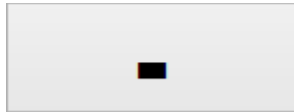
The Current Tool DRO is a read only DRO and will display the current tool.



The Current Offset DRO will display the current Tool Length Offset that is active. If the DRO displays Zero, there is not an active tool length offset active.



The Minus Button will perform a tool change down one tool down from the current tool.



The plus Button Will perform a tool change one tool up from the current tool.



## Rapid and Feed Rate Override:



The Rapid and Feed Rate over ride control Groups found on the manual pages are identical the those found on the main run page and will function as such.

There is a slider located in the middle of the group. Above he sliders there are incremental up and down buttons for fine adjustments.

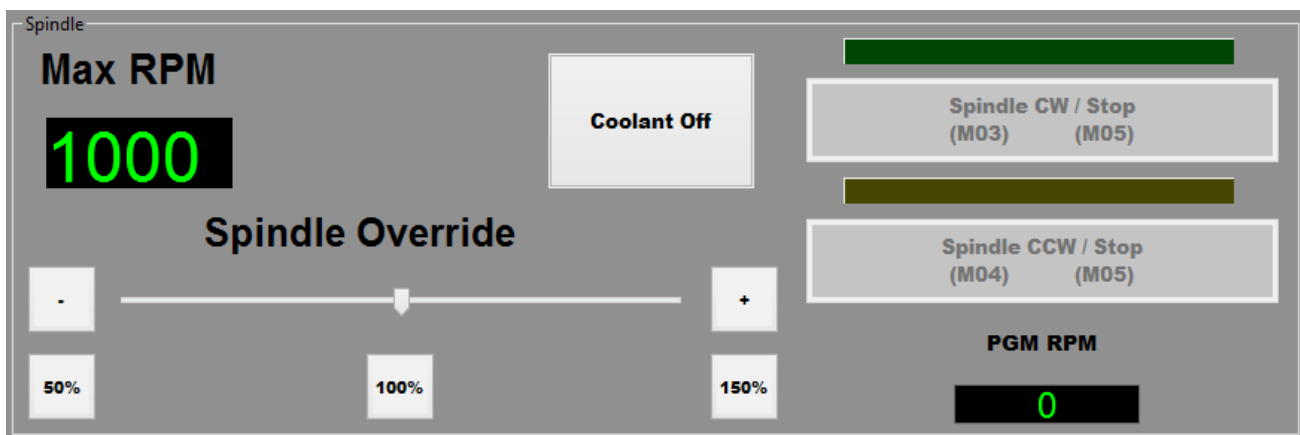
Below the sliders are large increment divestment buttons.

Both have a minimum value of Zero Percent.

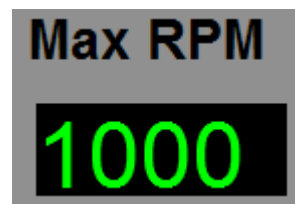
The default value for Rapid override is 100% and 50 % to cut the rapid rate in half.

The default Feed Ratae will be 100%. Options from 0% to 250% are available.

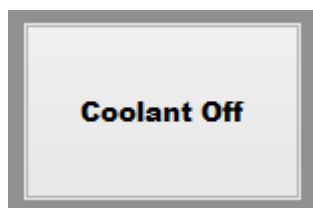
## Spindle Control:



The Spindle Group has many of the default controls, and some that are not.



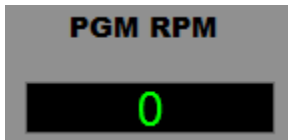
Entering a value in this DRO, will set the maximum RPM for the current Manual operation. It will not override the Main Spindle configuration setting for max RPM.



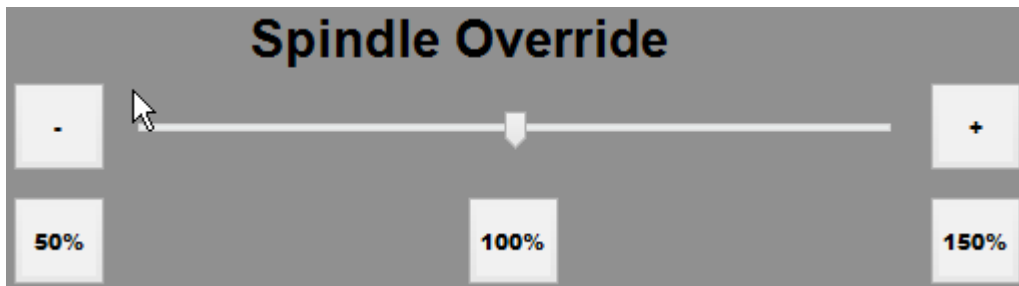
The Coolant Off / On Button is a Toggle Button that will tun the coolant on or off during Manual operations.



The Spindle CW / M03, and the Spindle CCW / M04 Are default toggle buttons for turning the spindle on and off.

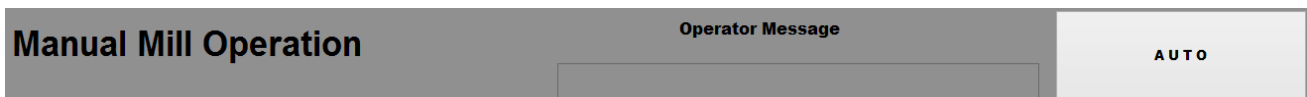


The PGM RMP DRO will be used to set the Rpm of the spindle for the current Manual Operation. This should be Set prior to turning the spindle on.



The Spindle Override slider will adjust the RPM of the Spindle during any Manual Operation. The plus and Minus Buttons will be

used for minor incremental RPM changes either up or down. Larger incremental changes can be made using the 50%, 100%, or the 150% Button under the Slider. The default Value for the spindle will be 100%.

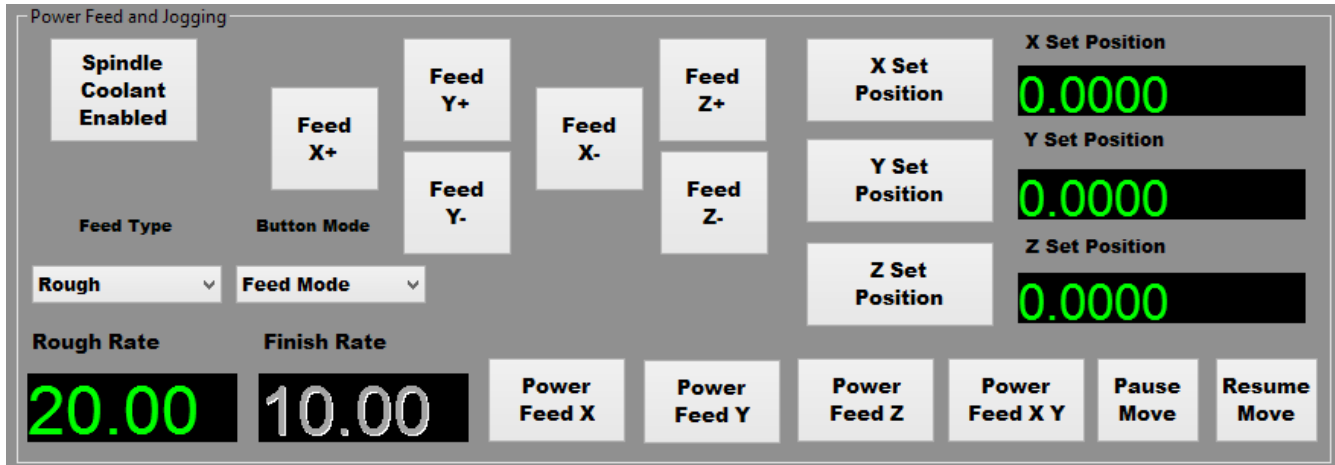


The Bottom of the Manual Mill Screen Contains the Screen Title, An operator Message Display, an an Auto Button.

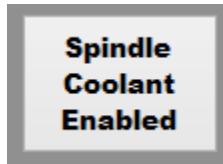
The Operator Display, will display Messages from the screen and or functions being performed and or any errors that occur.

The Auto Button will Navigate Mach back to the Main Run Page.

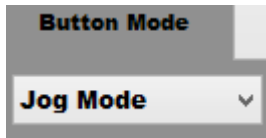
Power Feed and Jogging:



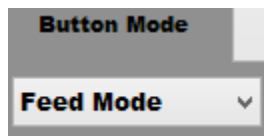
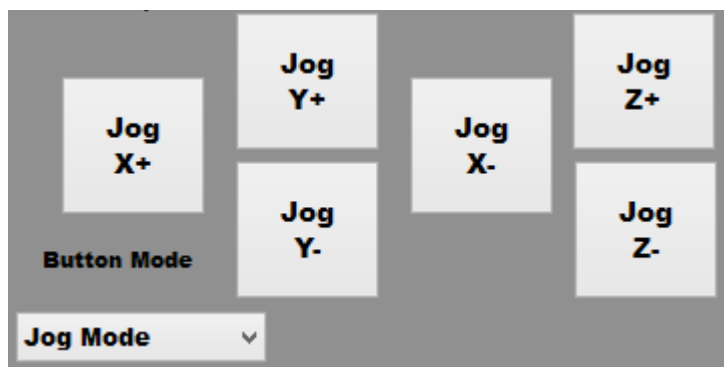
The Power Feed and Jogging Control contain the main settings and functions that will be used when performing Manual Operations.



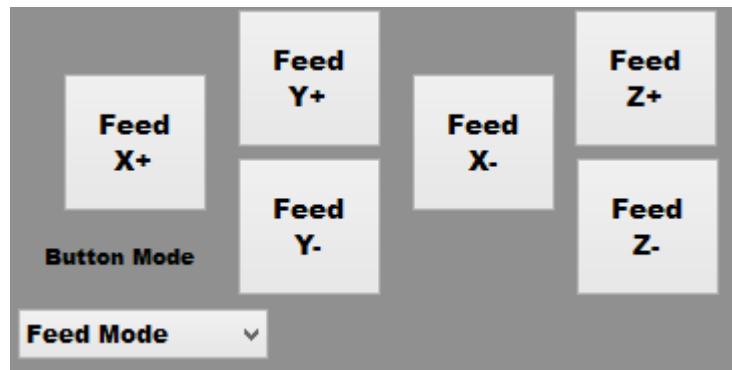
The Spindle Coolant Enable button is a toggle command that when enabled, will turn the coolant on with the spindle.



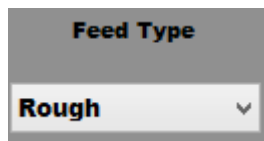
The button mode Drop Down, will toggle the control between Jog Mode and Feed Mode. When Jog Mode is selected the Buttons associated with the Axis' will act as Jog Buttons and they will be labeled as such.



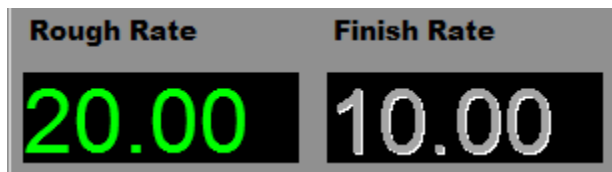
When Feed Mode is chosen, The Jog Buttons will become and act as feed buttons. The Axis' will feed at the rate that is enabled. Either Rough or Finish.



The Buttons Have changed to Feed buttons after Feed Mode has been selected.



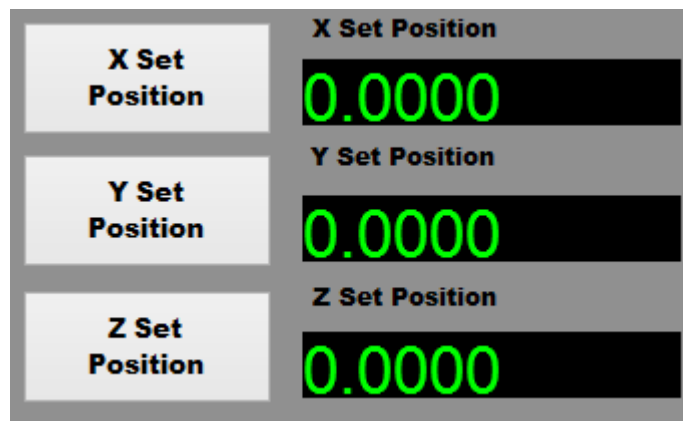
Mentioned above, the feed rates are selected by a Drop Down menu as well. There are two rates, Rough and Finish. Rough is chosen in the Drop Down, and the Rough Rate DRO is Enabled.



When Finish Feed is selected, The Finish Rate DRO is enabled.



Set Position Buttons and Set Position Dro's



Setting up a manual move on a machine can be done in one of two ways. There are X, Y, and Z Set Position Buttons. The Machine should be either at or moved to the end position of the Manual Operation. Once the desired position is obtained, the appropriate Set Button(S) can be clicked and Mach will record the position to perform the Move.

Once the positions are recorded, the machine should be moved to the desired starting position for the manual move.

The second Method for setting a manual Move, is to enter the desired end position in the X, Y, or Z Set Position Dro's. This method will be used when the Machine is already at the start point and the end positions are known. Entering the values will be much easier in this case.

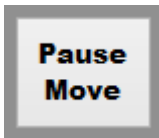
Prior to starting the move, an RPM should be entered in the PGM RPM DRO and the spindle started.

Once the spindle is on, the appropriate Power Feed Button should be pressed to start the move.



The Power Feed X, Y, Z, XY will start the Manual Move.

The Machine will move from where it is which was the start point discussed above, and will feed at the enabled rate chosen from the Feed Type Drop Down. This will either be Rough Rate, or Finish Rate.



During a Manual Move the Pause Move Button will put the machine into a Feed Hold State. The Spindle and coolant will stay on.



If the Pause Move Button has been pressed, Clicking the Resume Move Button will resume movements and complete the Manual Move.