RazorGage

POSITIONERS ● SOFTWARE ● SYSTEMS

RazorOptimal

RazorOptimal User Manual

Table Of Contents

Parts List Processor

Before any file can be used with the RazorOptimal software, it must be run through the Parts List Processor. See your Parts List Processor manual for further instruction

First Use Setup

Home Offset

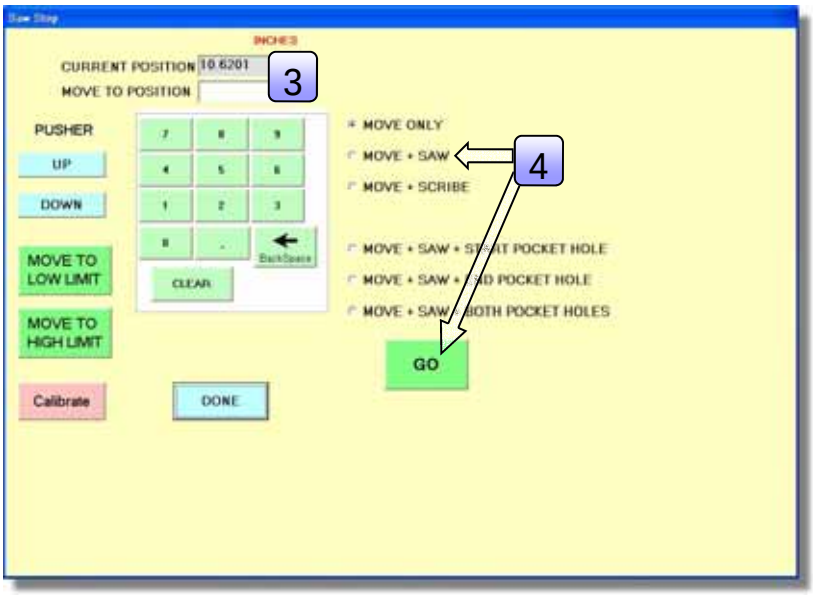
Before using your RazorOptimal system, the home offset must be adjusted. This only has to be done the first time you operate your machine. With the pusher in Home position, follow these steps:

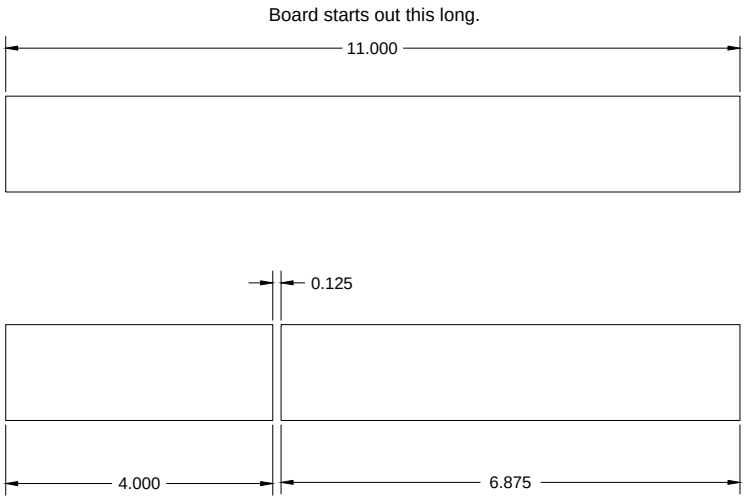
1. From the main screen, press Saw Stop
2. Place a piece of stock with one square trimmed end against the pusher, with the trimmed end against the pusher.
3. Enter the Current Position in the Move to Position box
4. Choose the Move + Saw option and press GO. The pusher will not move, but the saw will cycle.
5. Measure the part cut as accurately as you can.
6. Cut 3-4 more boards and measure, and write down the average length.
7. This length will be entered as the Home Offset. **(PG #)**

Saw Kerf

The saw kerf refers to the amount of material the saw removes in a cycle. Using the Saw Stop screen, follow the steps below to obtain the saw kerf.

8. Cut a board to some length. Measure it precisely.
9. Cut the same board into two pieces.
10. Precisely measure the two pieces.
11. Subtract the length of the two pieces from the length of the original board. This quantity is the saw kerf. **(PG #)**

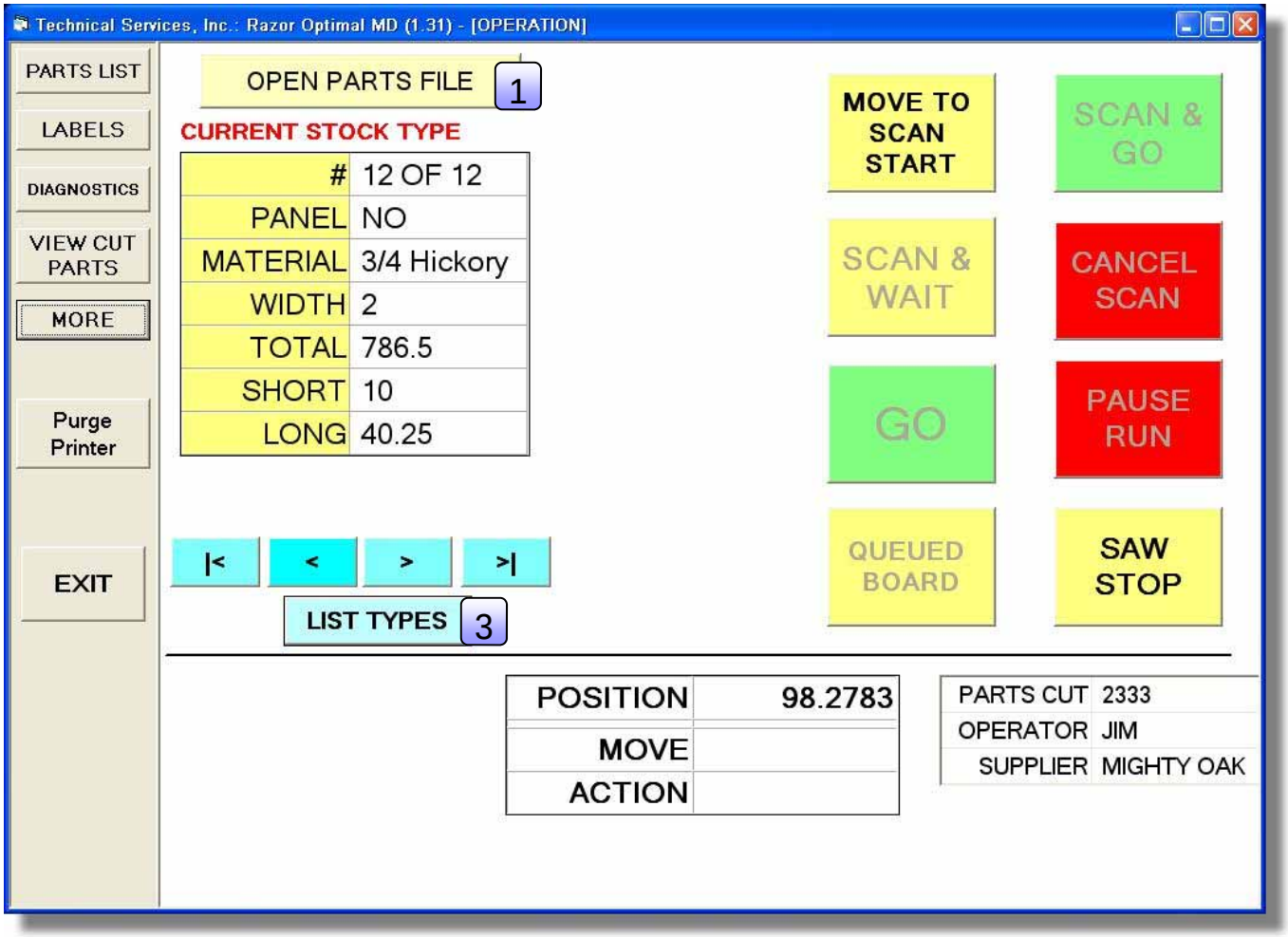




Cut board in two and measure the two parts made from that board.
Subtract the lengths of the two parts from the length the board was to start with to get the KERF:
11.000 - 4.000 - 6.875 = .125 = KERF

Operations

To begin cutting parts, follow the steps below



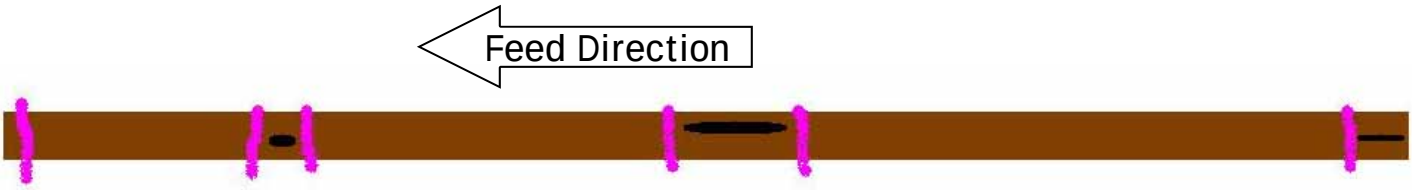
1 Press Open Parts File

2 Select the cutlist you want to open. When the cutlist opens, it will be sorted by material type. Types are determined by the species, thickness, and width of the wood.

3 Choose a type you wish to run. Use the navigation keys to change type. Use the List Types button to see all remaining types.

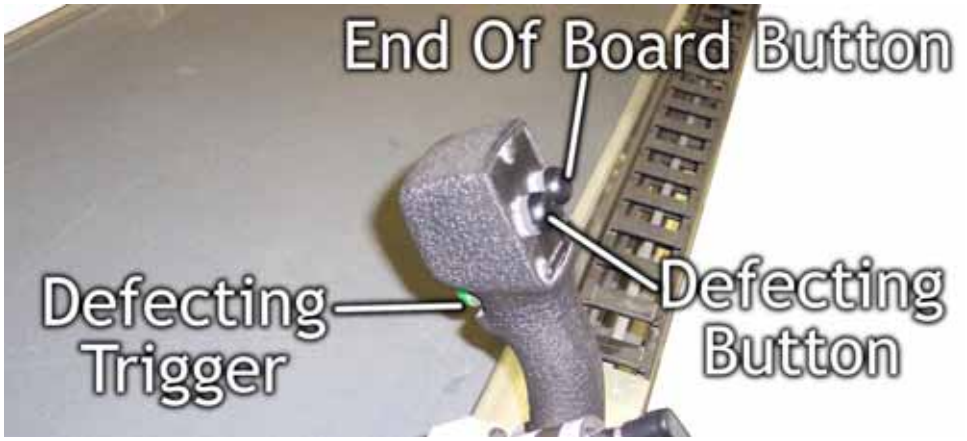
4 Place a piece of stock matching the material type you are running on the table.

Defecting (Crayon Option)



Mark the leading edge trim cut **(Required)**.
Mark the beginning and end of each defect.
Mark the trailing edge trim cut (Optional).
If you prefer to cut out the crayon marks, press **settings**, then **scan**. This screen will allow you to adjust how far away from the crayon mark the RazorOptimal will cut.

Defecting (Joystick Option)



1. Put the board against the hard stop.

2. Put the joystick against the hard stop.

3. For defects that are unacceptable for all applications:
   Pull the defecting trigger at the beginning of the defect.
   Move the joystick to the end of the defect.
   Release the trigger.

4. For defects that are acceptable for some applications:
   Press and hold the defect button at the beginning of the defect.
   Move the joystick to the end of the defect.
   Release the defect button.

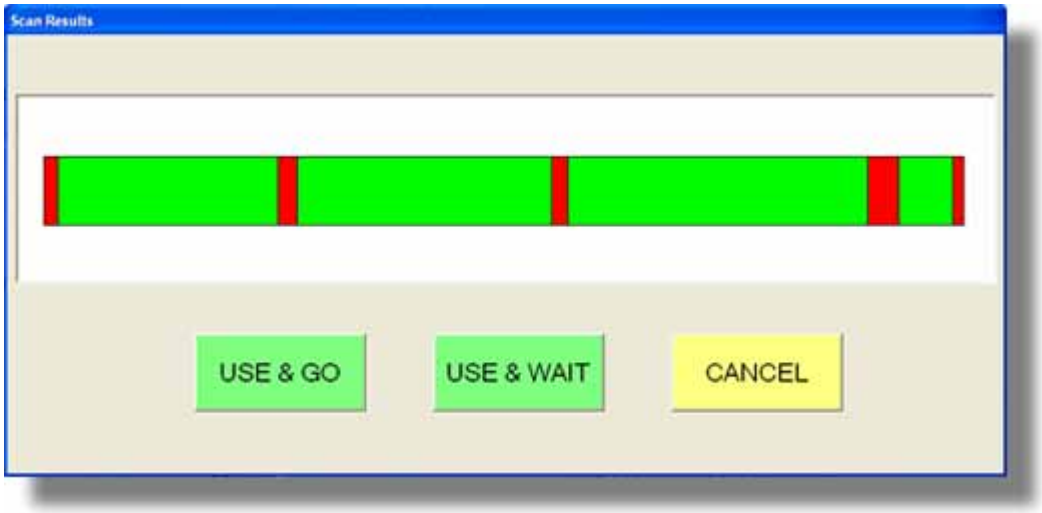
5. When you reach the end of the board, press the end of board button.

Scanning and Cutting

After defecting, press Move To Scan Start. The scanner will move to scanning position. Then press Scan & Wait or Scan & Go.
Scan and Go will scan for defects and start cutting automatically.

Scan & Wait

If you push Scan & Wait, a diagram will appear showing the defects the scanner picked up during the scan. Defects show up in red bands, and clear spans show up in green bands.



This is a good idea to use when you're just getting started so that you can check to make sure you're making the crayon marks dark enough for the scanner to read.

Press Use & Go to accept the scan and start cutting parts.

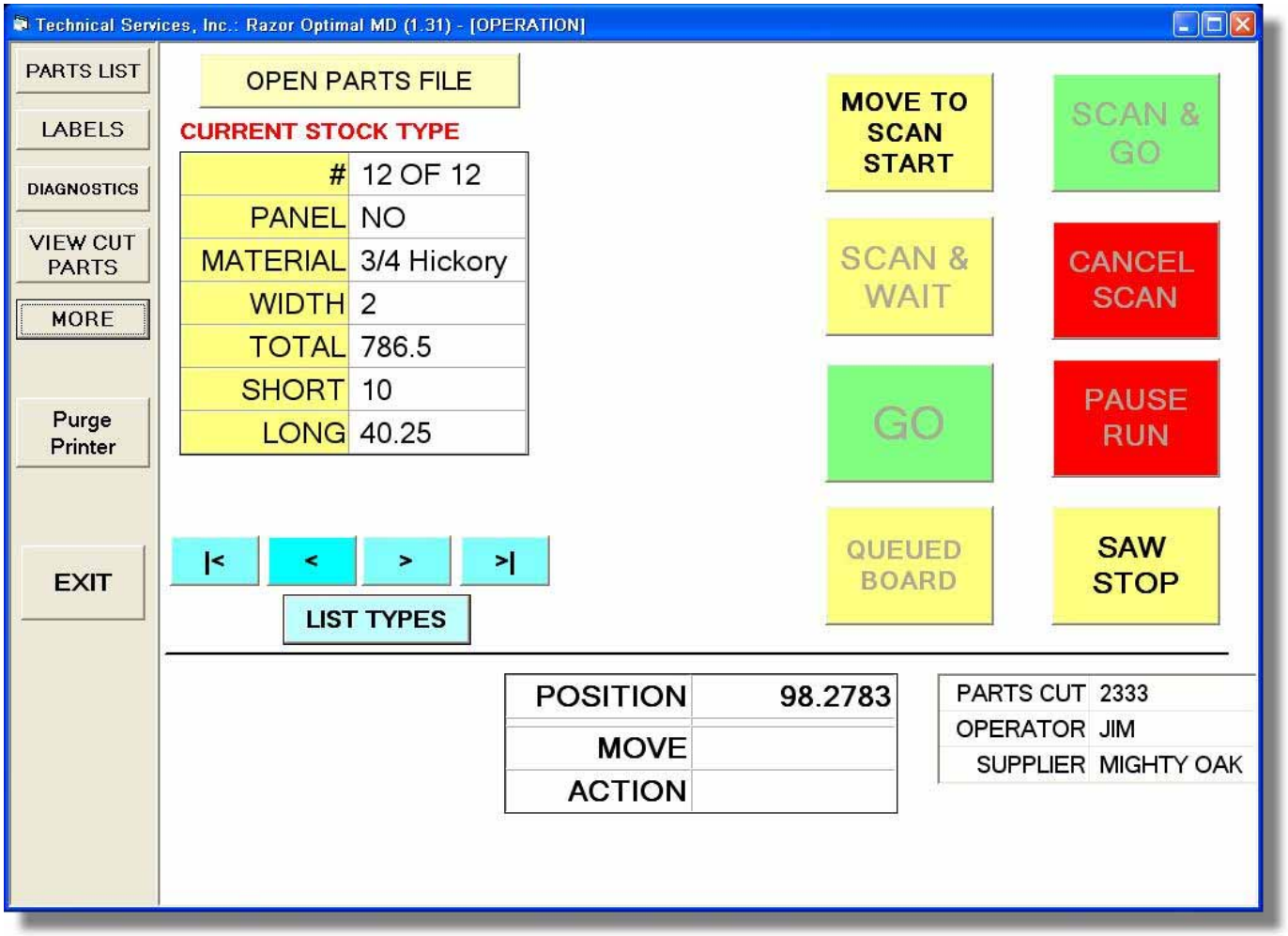
Press Use & Wait to accept the scan and return to the main screen where you'll have to press GO to continue

Press Cancel to clear the scan and start over. If you press Cancel, then you'll have to press Queued Board to delete that scanned board from the queue.

Once you've accepted the scan and initiated process the RazorOptimal will cut the optimal parts from the board to minimize waste. While the machine is processing the board you can be defecting a new board. When the previous board is finished the pusher will return to the scan start position so you won't have to push Move To Scan Start every time. Just place the defected board against the fence, crowd it against the back of the pusher foot, and press either Scan & Wait or Scan & Go.

RazorOptimal Screens

Main Screen



Most buttons on the main screen have been covered in the preceding text. Those that weren't covered are rather self-explanatory.

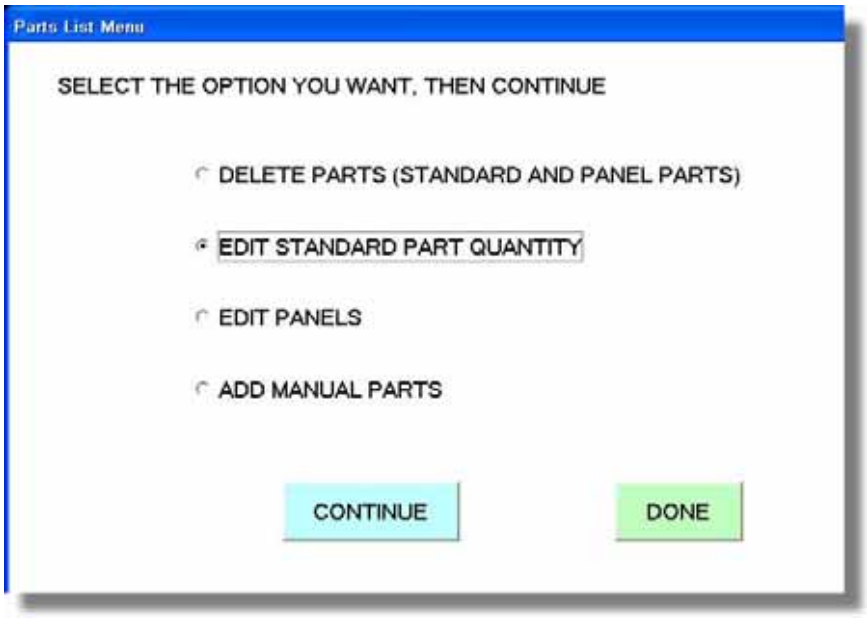
If you wish to pause the run, press Pause Run. If you wish to cancel the scan, press Cancel Scan.

The information at the bottom of the screen is for display purposes only. The buttons on the left side take you to various other screens.

RazorOptimal Screens

Parts List

When you press **Parts List** on the main screen, the following screen appears.



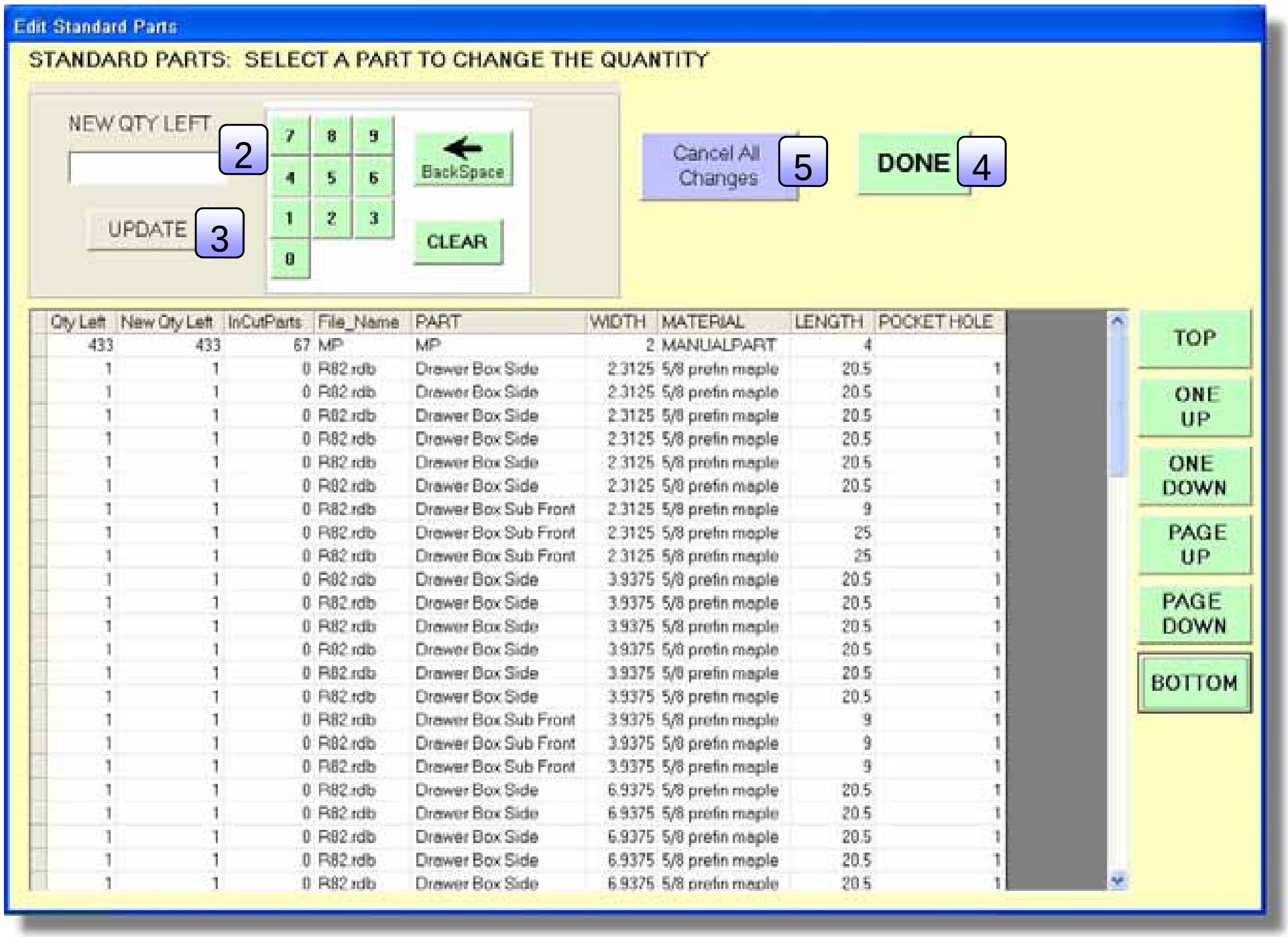
Delete Parts (Standard and Panel Parts)

Most of the buttons are self-explanatory. If you wish to delete a part from the list, highlight the part with your finger and press **Delete Selected Parts(s)**. If you have a keyboard handy, hold down the ctrl key while you are selecting parts to select multiple parts to delete.

RazorOptimal Screens

Parts List

Edit Standard Part Quantity



1 Select the part of which you wish to change the quantity.

2 Enter the desired quantity in the New Qty Left box.

3 Press **Update**

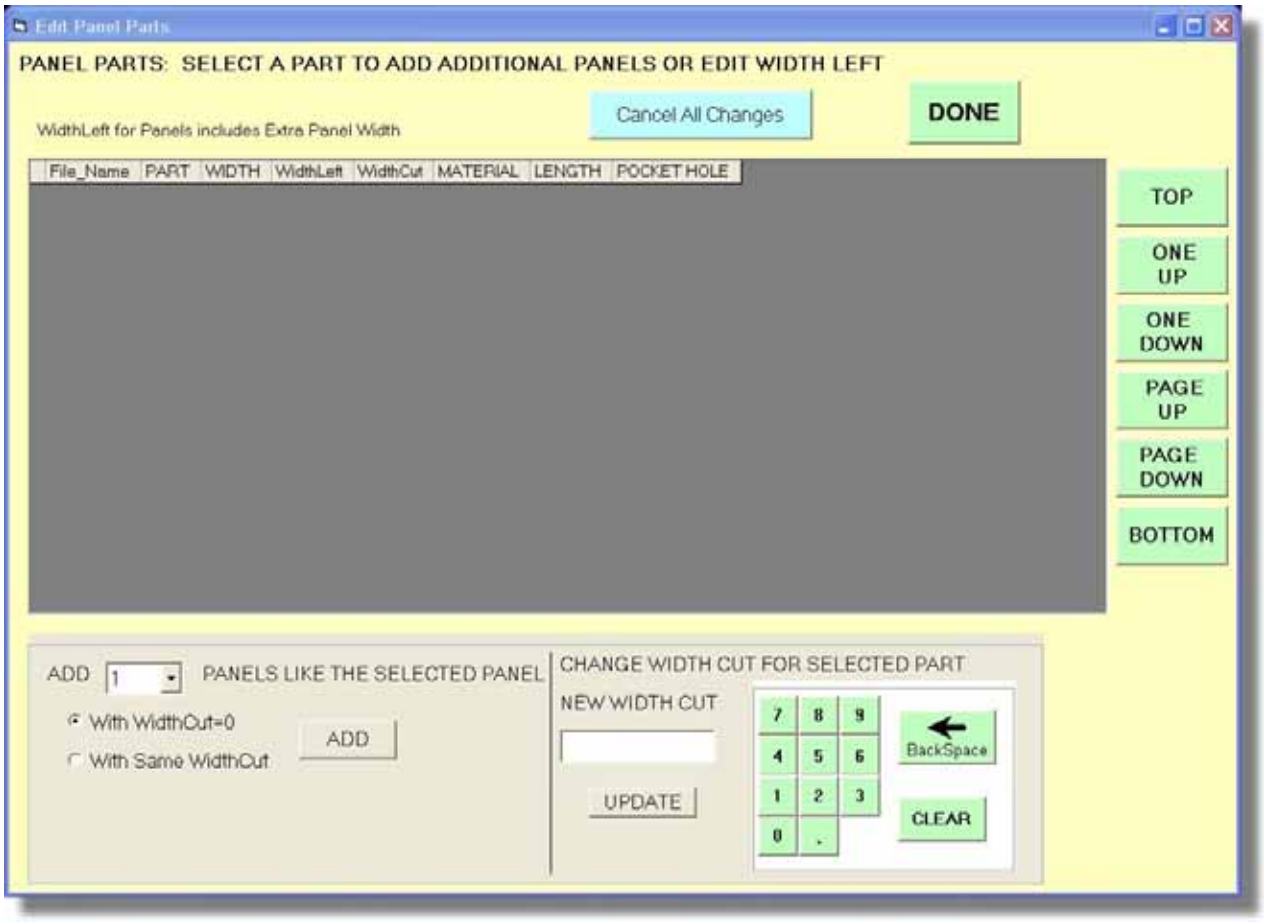
4 Press **Done**. This will save the quantity changes

5 If you do not want to save changes, press **Cancel All Changes**.

RazorOptimal Screens

Parts List

Edit Panels

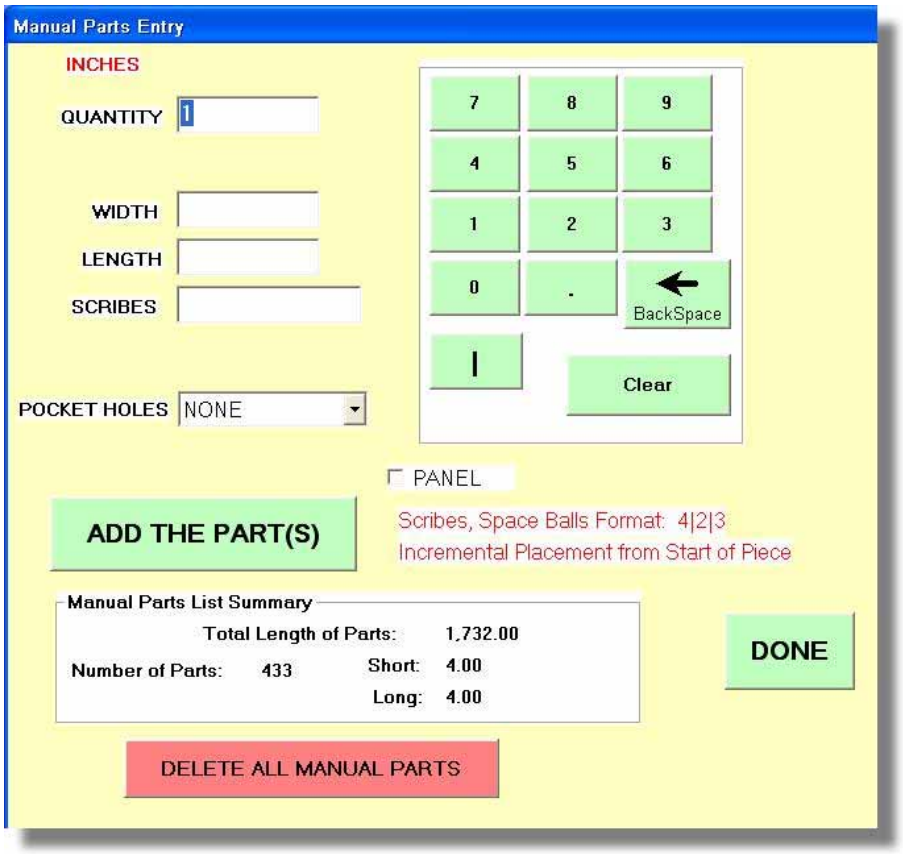


1. Select the part you would like to change.
2. Adjust the number of panels and the new width cut for the selected part.
3. When you are done editing your panels, press Done.
4. If you wish to exit without saving, press Cancel All Changes.

RazorOptimal Screens

Parts List

Add Manual Parts



This screen exists for the purpose of adding parts to the current cut-list manually at the machine. We call these parts Manual Parts. When you add them to the cutlist they will appear with a material type of MANUAL. Manual Parts of differing thickness and width will be grouped accordingly.

The labels printed for Manual Parts will not have any information that is not on this screen. Pieces of information such as Cabinet Number, Job Number that may be present for parts coming from a cabinet design software package will not show up on parts added to the cut list manually.

To add Manual Parts:

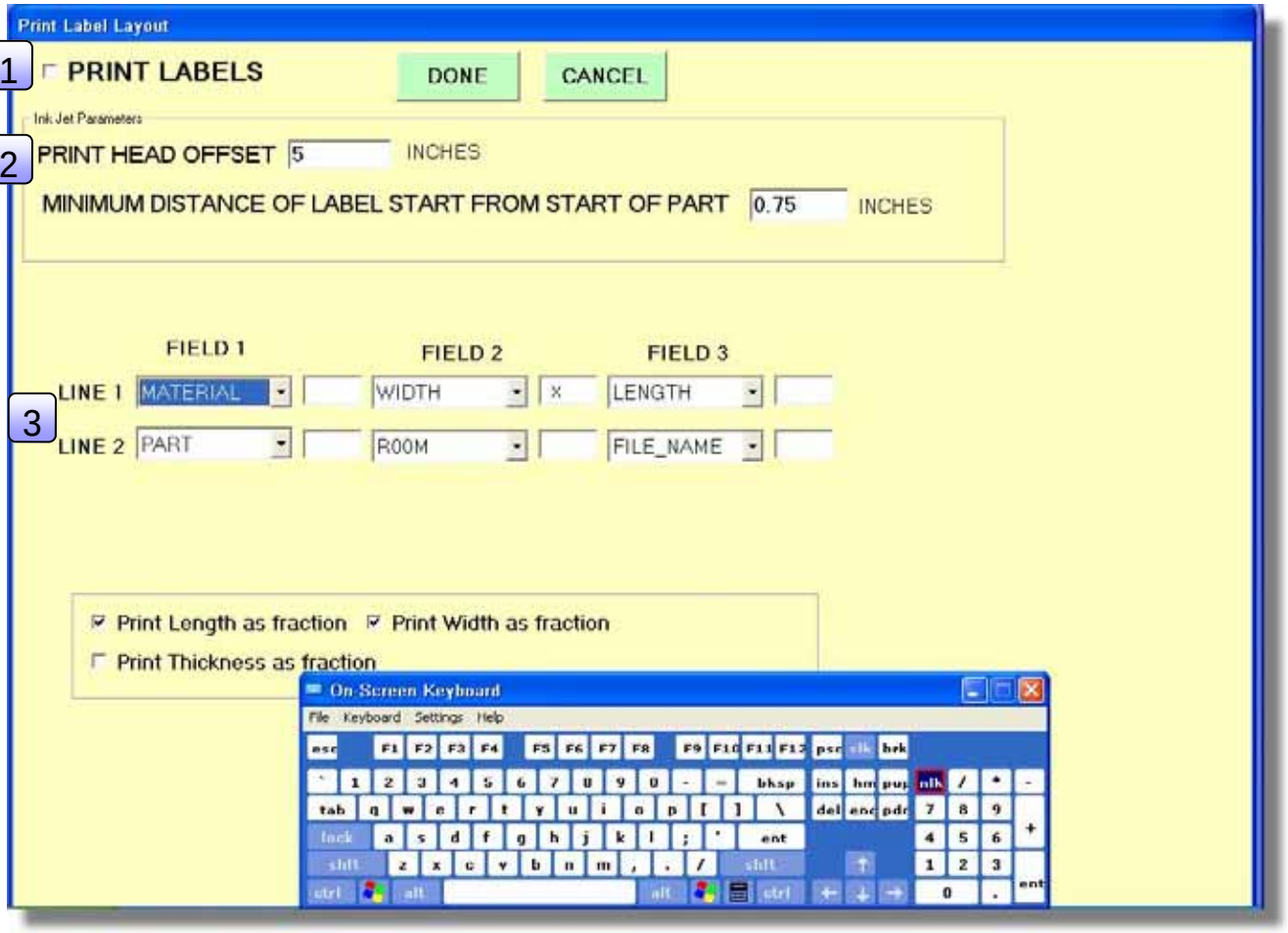
Fill in the Quantity, Thickness, Width, and Length fields, then press Add The Parts(s) to add those parts to the main cutlist.

The Delete All Manual Parts(s) button will delete all manual parts ever entered into the cutlist. If you wish to delete individual manual part groups from the cutlist use the Parts List screen.

When you're done adding parts manually just press Done to return to the Main Screen.

RazorOptimal Screens

Labels



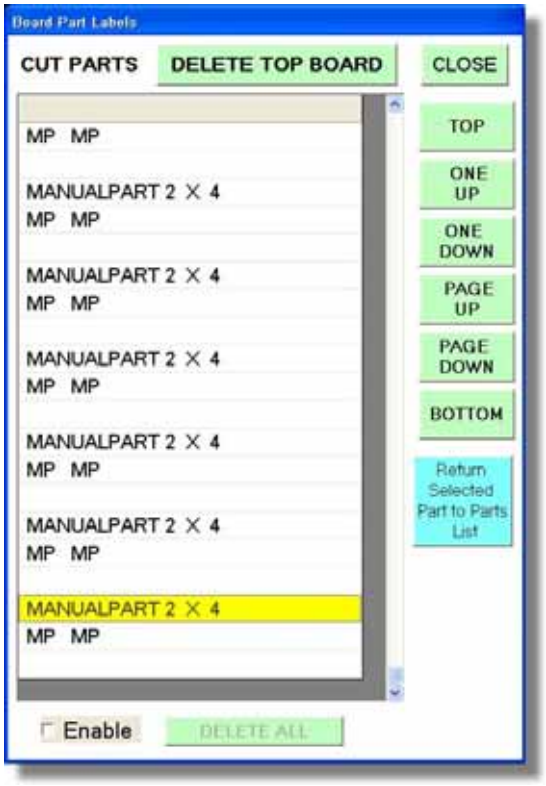
1 Here you can enable or disable label printing by checking or un-checking the box next to PRINT LABELS in the upper left corner of the screen.

2 You can also set the Print Head Offset. This value is the distance from the print head to the saw blade.

3 Select the information you want printed on your parts using the drop-down menus.

RazorOptimal Screens

View Cut Parts



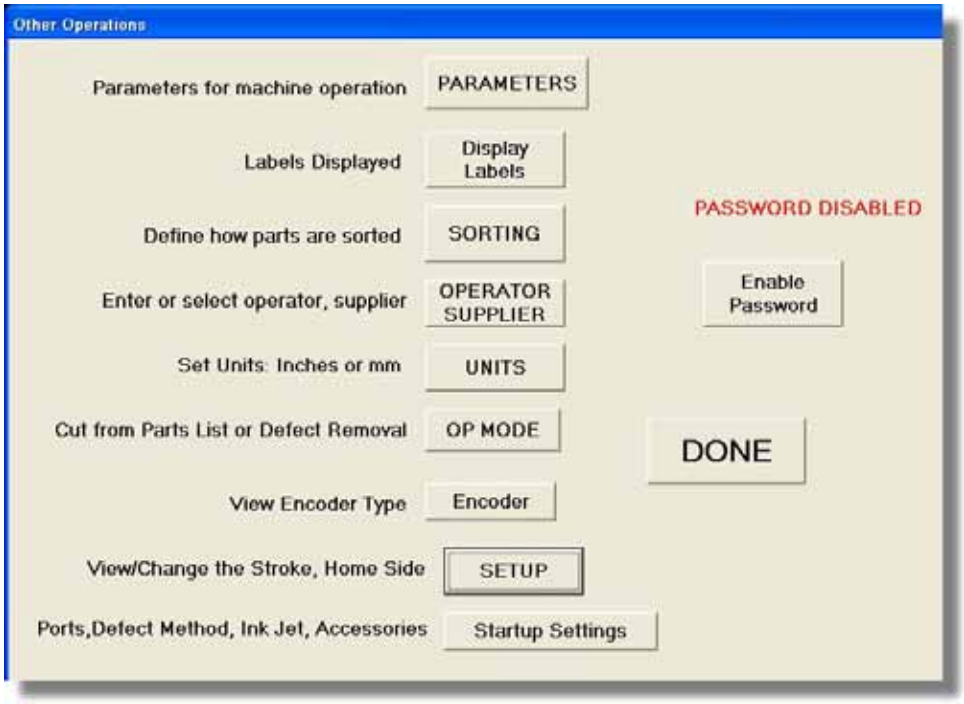
Here are the instructions for this page

Delete Top Board

Return Selected Part to Parts List

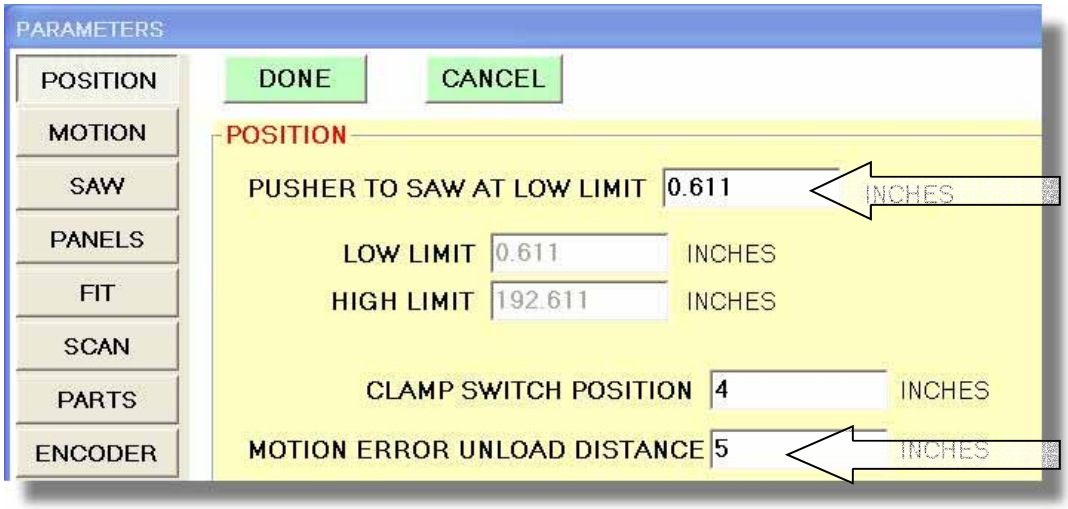
More

The screen below will take you to numerous operations. Each option on this screen will be explained in further detail later.



Parameters

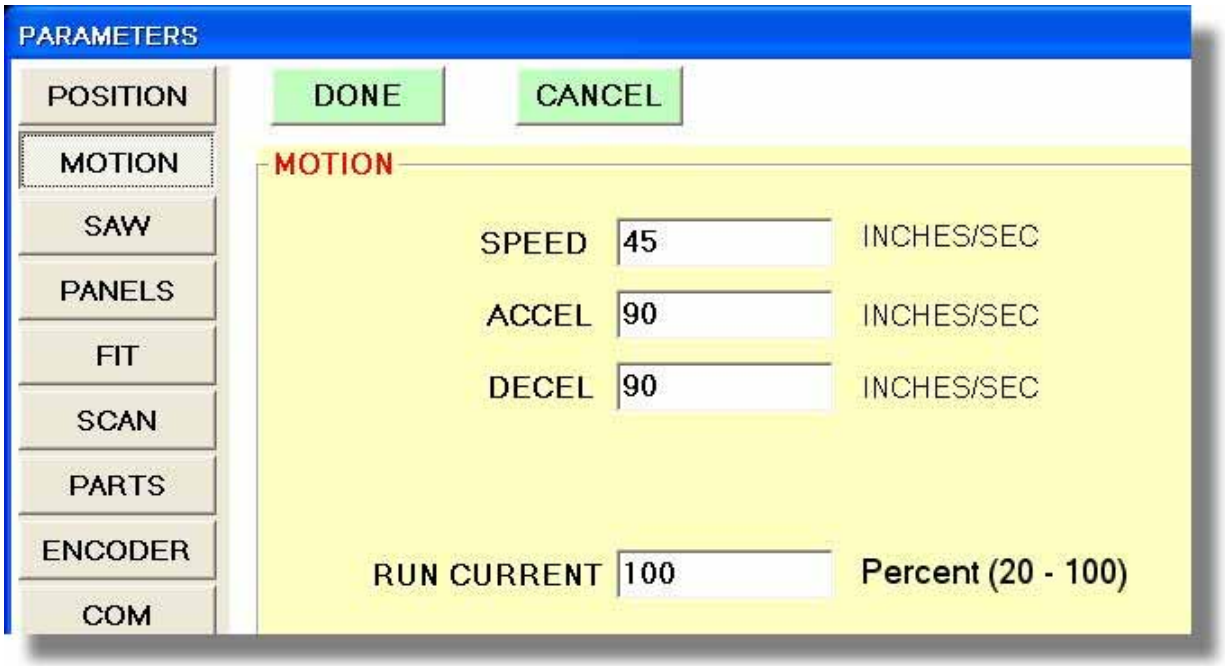
Position



Enter the Lower Limit Offset value here. It tells the pusher how far from the saw it is when at the lower limit.

If the RazorOptimal jams and you need to back it up to clear the jam, this value is the distance it will back up when pressing unload.

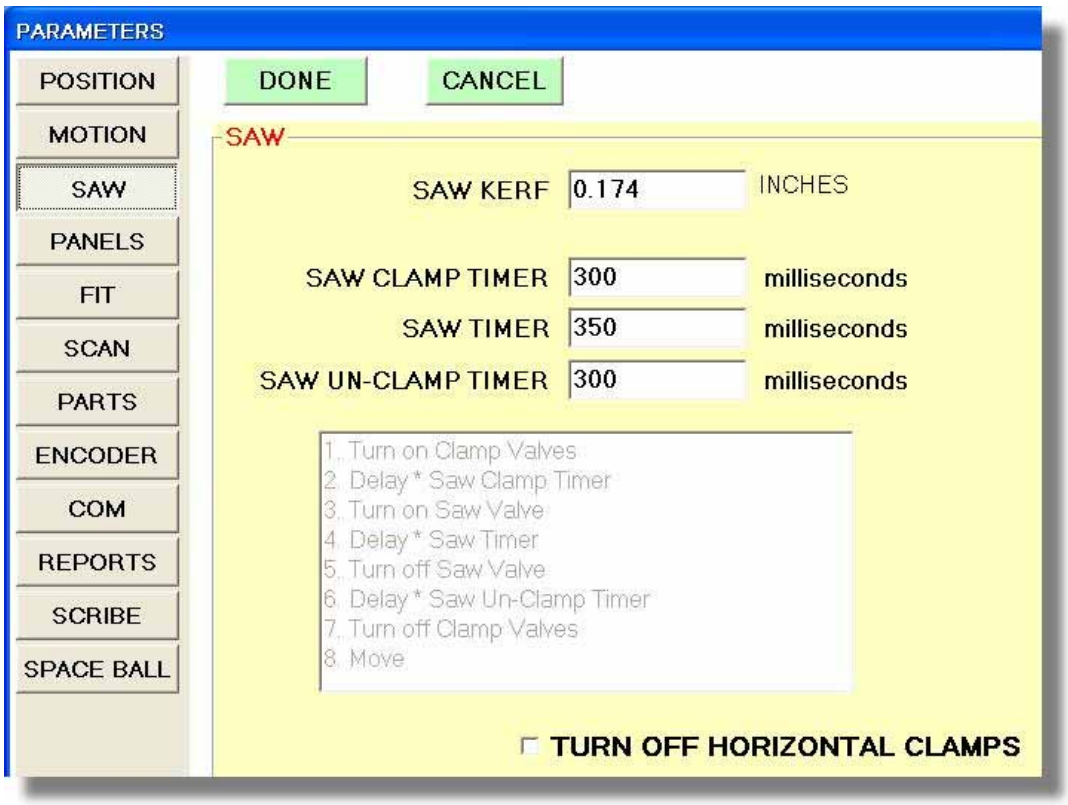
Motion



This screen is where you set the speed of the carriage. Acceleration and deceleration can also be set in this screen.

Parameters

Saw



This screen can help you get the most productivity out of your RazorOptimal. The saw cycle is where you can gain the most speed out of the system so **playing with these timers to fine-tune your process is crucial to getting all the productivity you can out of the machine**.

Basically the cycle can be described this way:

1. The RazorGage pusher advances the board the proper amount to achieve a length
2. When the pusher comes to a stop, the clamps are energized.
3. The SAW CLAMP TIMER is started. The clamp timer is the amount of time from when the clamps are energized and the saw cycle is started. This should basically represent the amount of time it takes for the clamps to clamp the board. This is usually around 100 milliseconds.
4. Once the SAW CLAMP TIMER has timed out the saw cycle is begun at which time the SAW TIMER is started.
5. The SAW TIMER determines how much time elapses from the beginning of the saw cycle to the release of the clamps. When the SAW TIMER times out then the clamps are released and the SAW UN-CLAMP TIMER begins.
6. When the SAW UN-CLAMP TIMER times out the pusher advances the board to the next part.

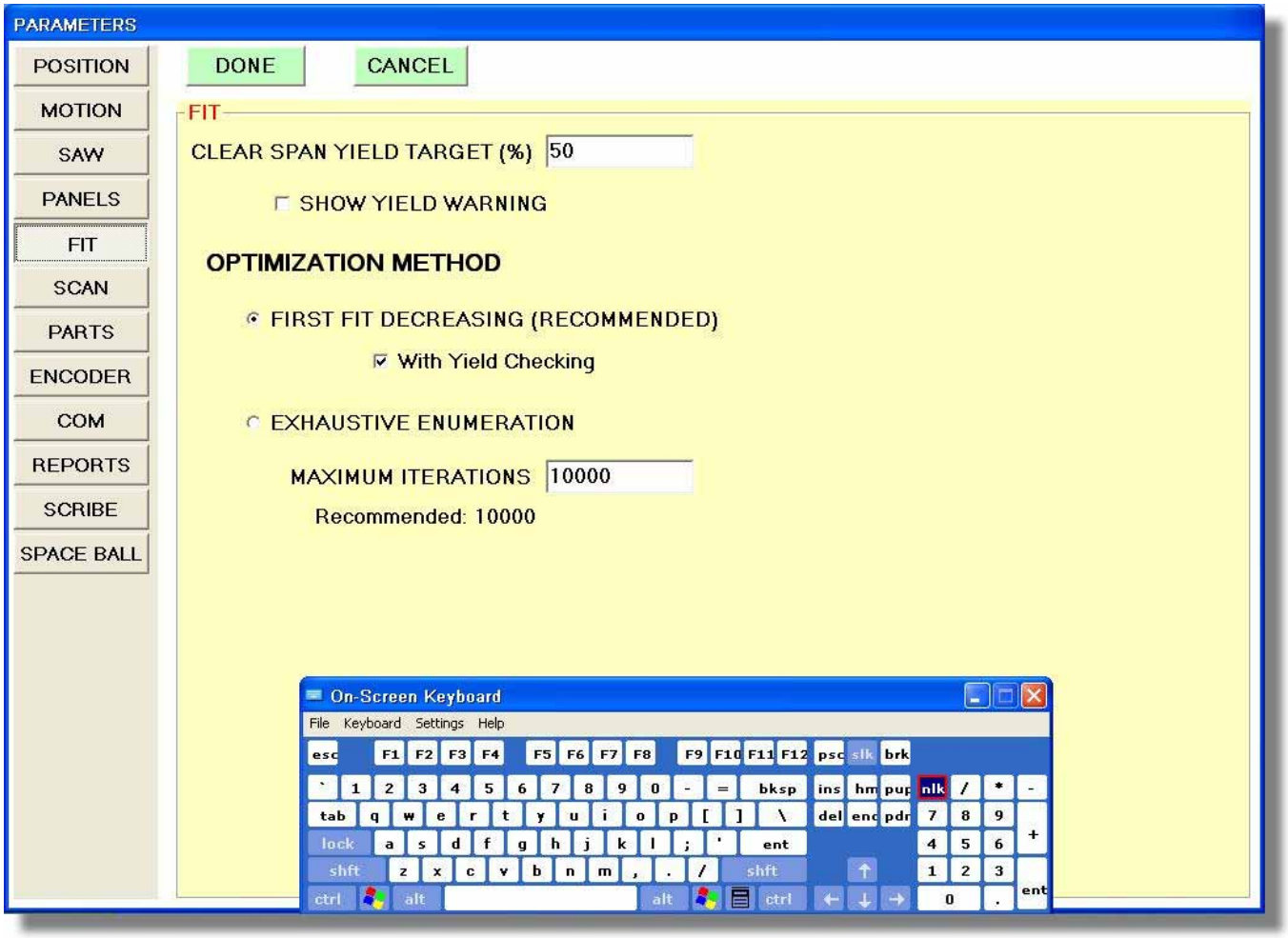
Parameters

Panels

Enter any extra length or width you would like on your panels in the appropriate box.

Fit

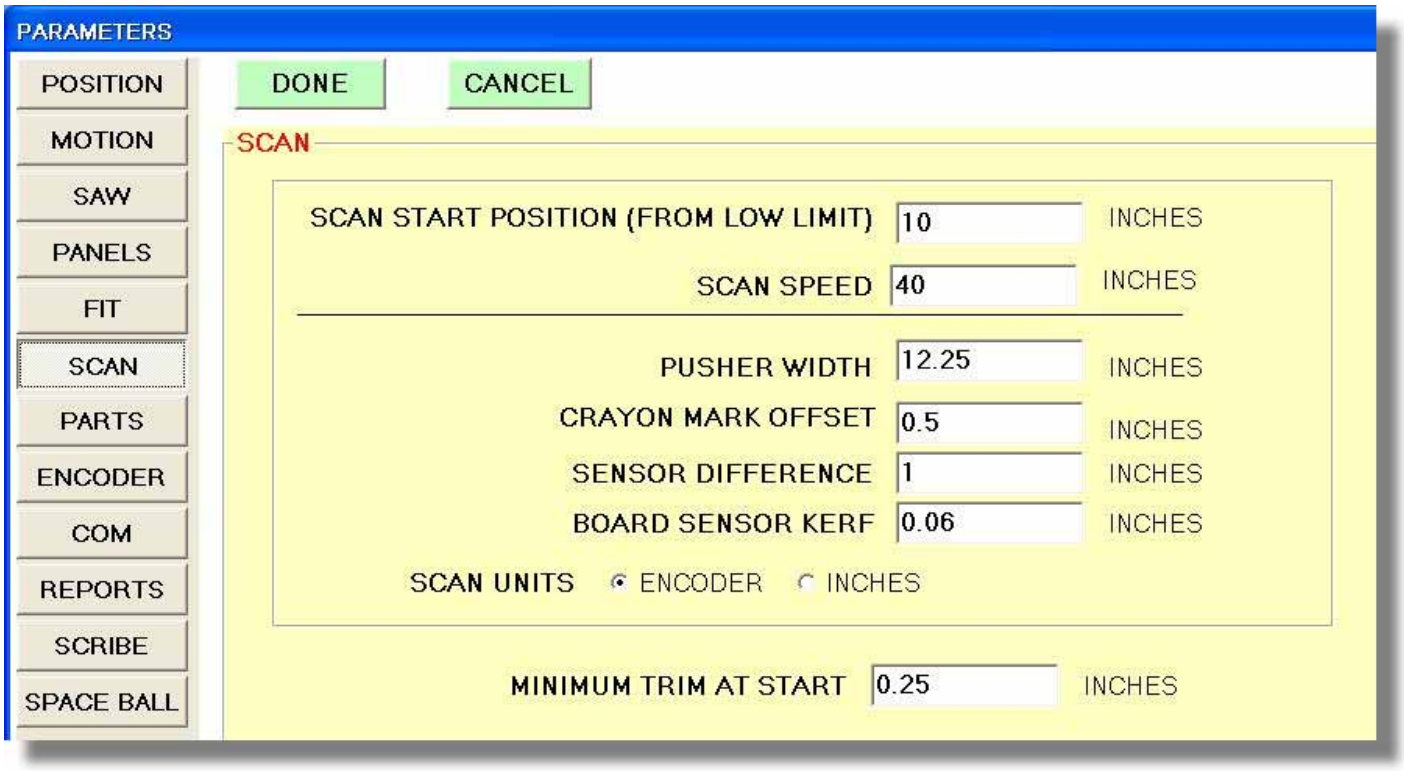
Use this screen to change the fit settings.



Parameters

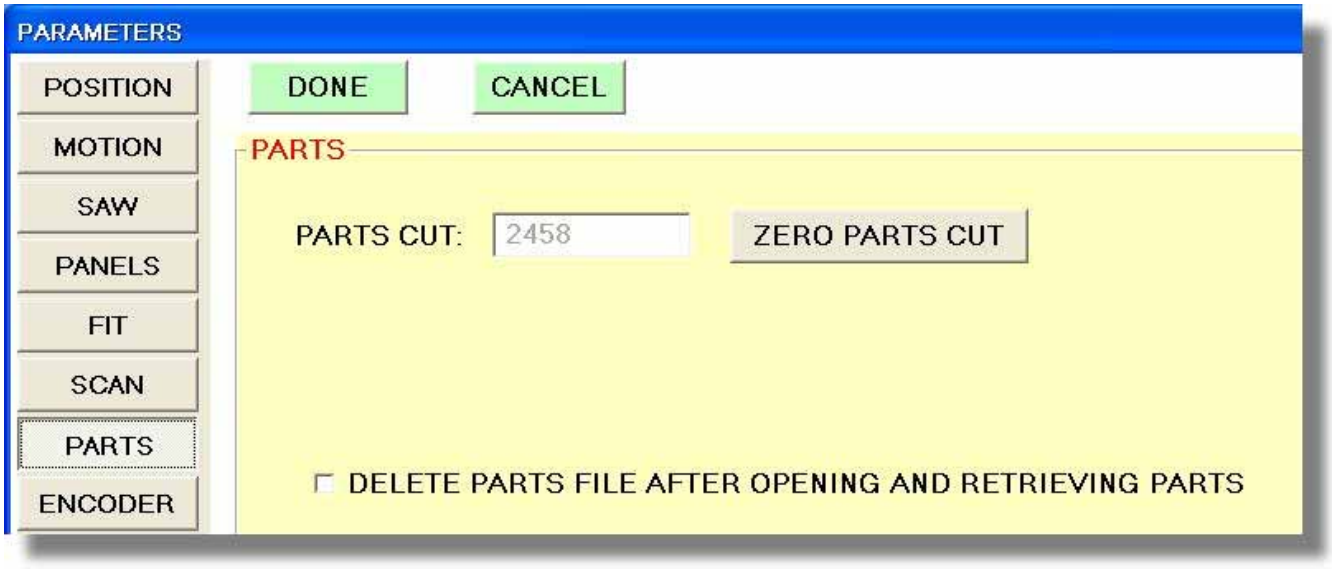
Scan

This screen is where you can adjust your defecting scan settings.



Parts

Use this screen to track how many parts have been cut on your RazorOptimal. To reset the counter, press Zero Parts Cut.



Parameters

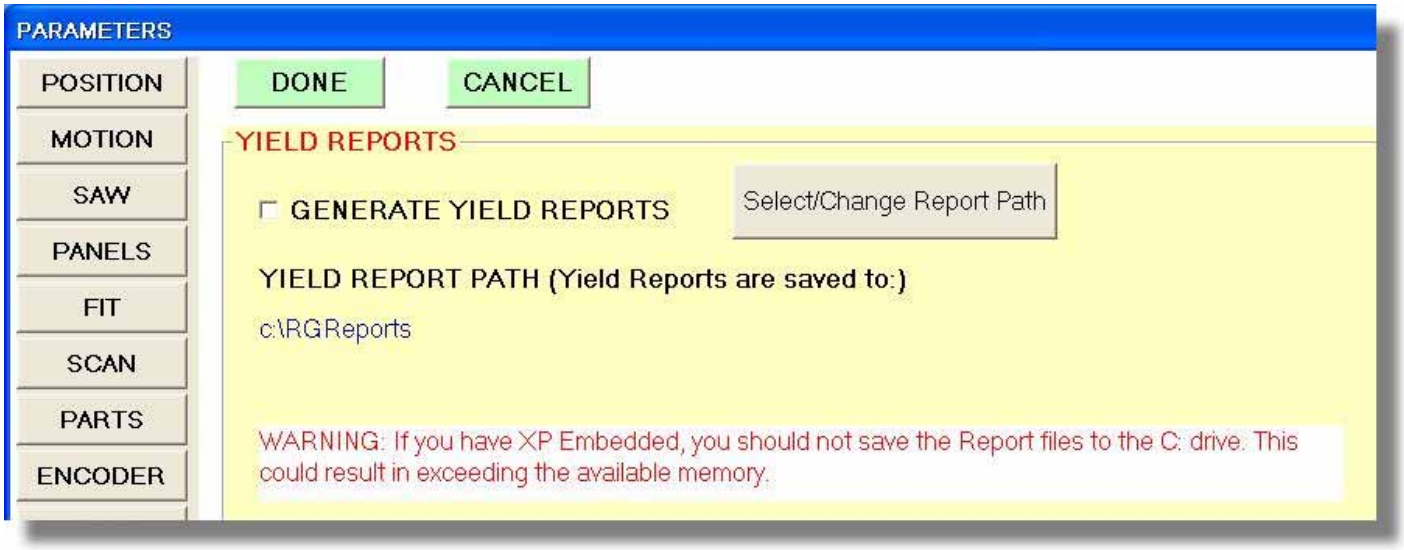
Encoder

The encoder screen is password protected. The parameters change the settings of the encoder and should not be changed.

COM

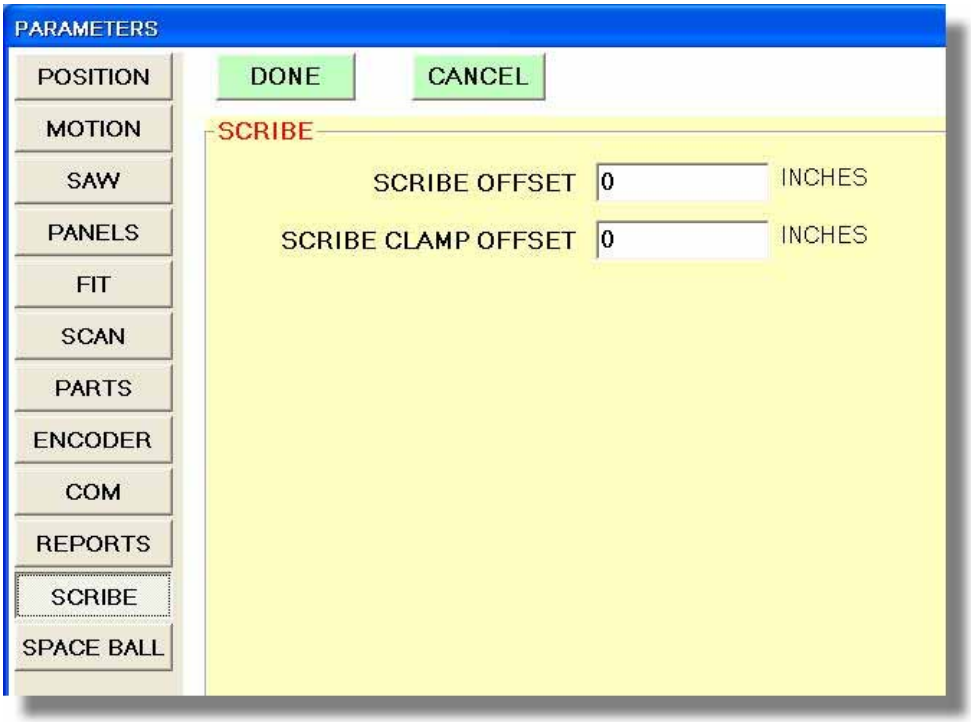
Reports

The reports settings allow you to enable or disable generating yield reports. To change where the reports are saved, press Select/Change Report Path.



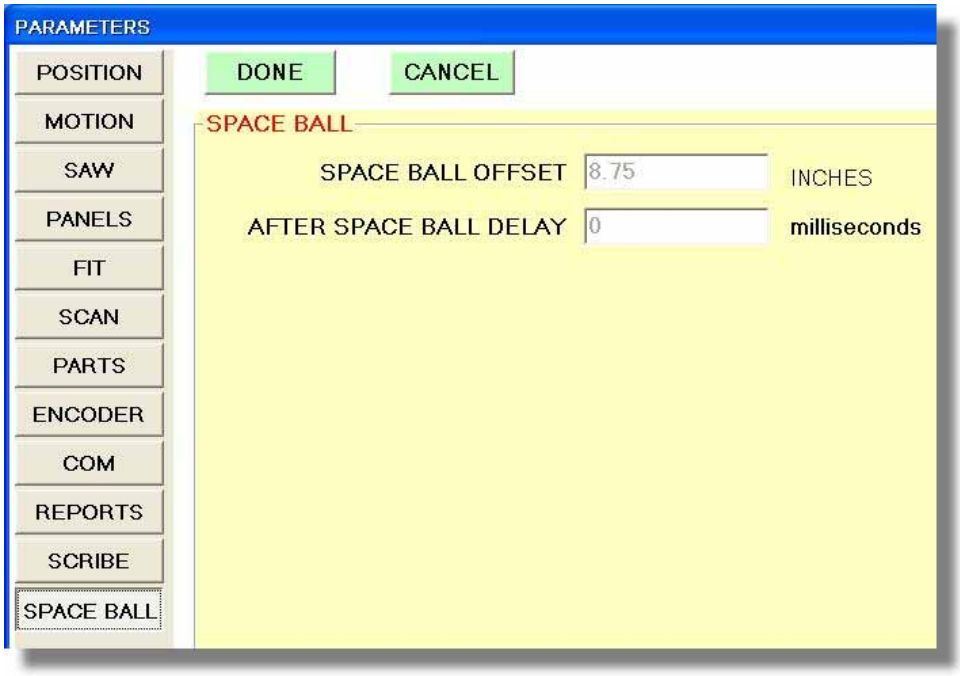
Parameters

Scribe



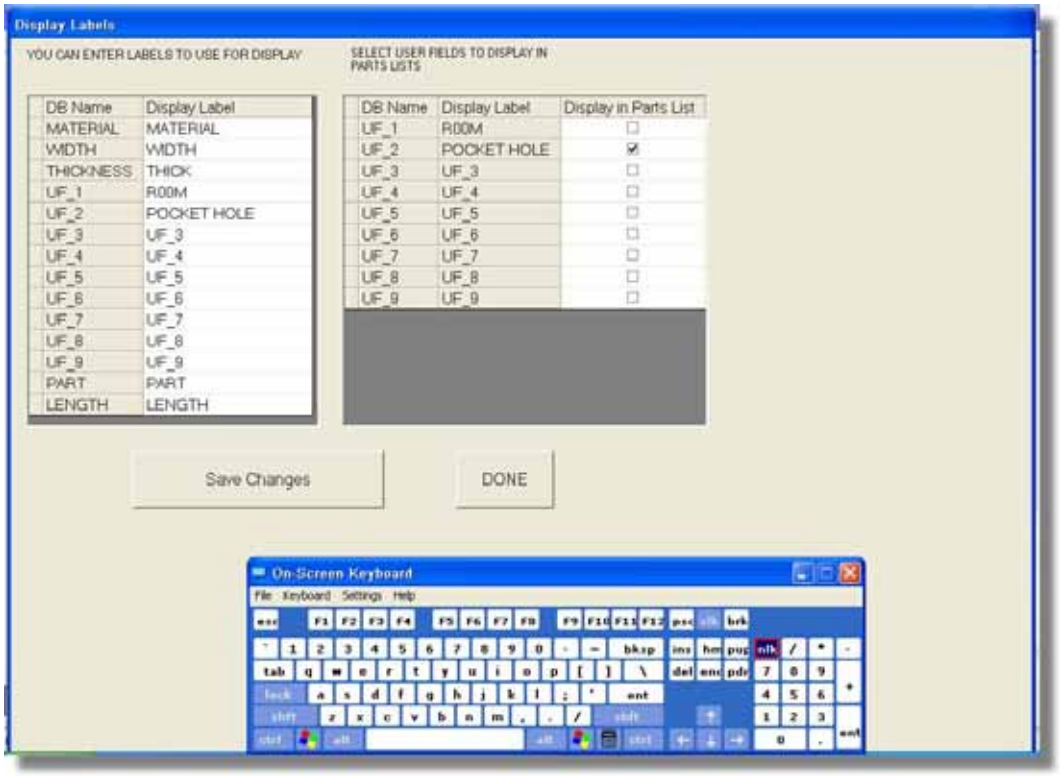
Use this screen to enter the distance between the scribe and the saw blade. You can also enter the scribe clamp offset in this screen.

Space Ball



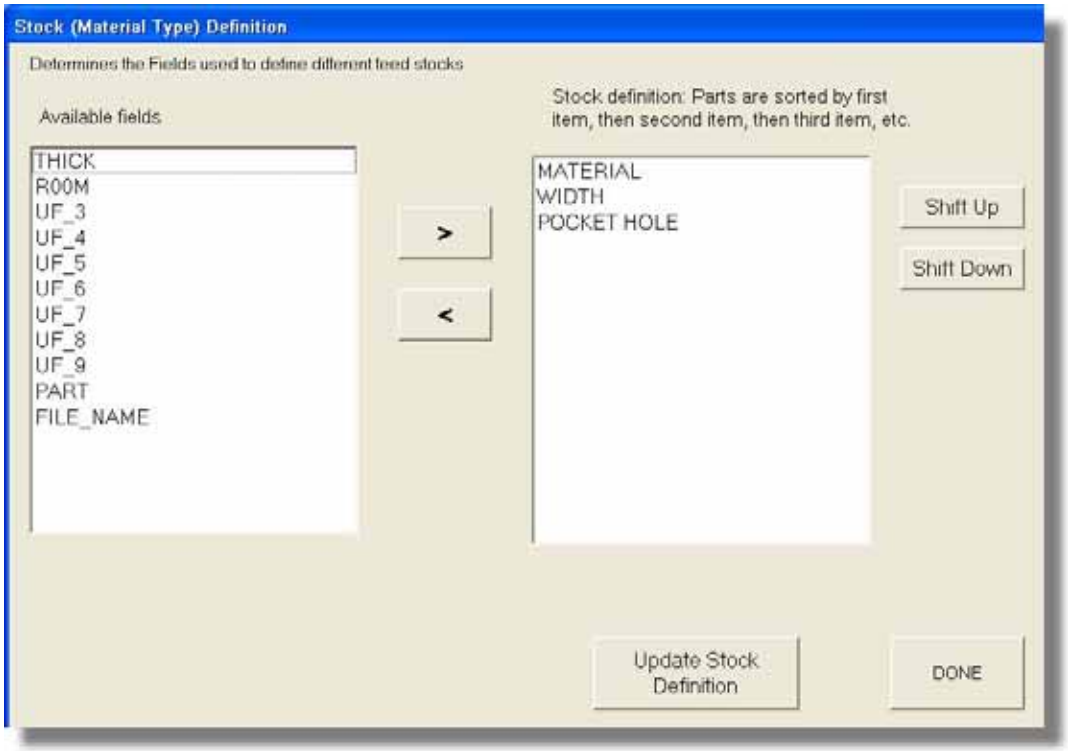
Use this screen to enter the distance between the space ball inserter and the saw blade. You can also enter the delay after the space ball is inserted.

Display Labels



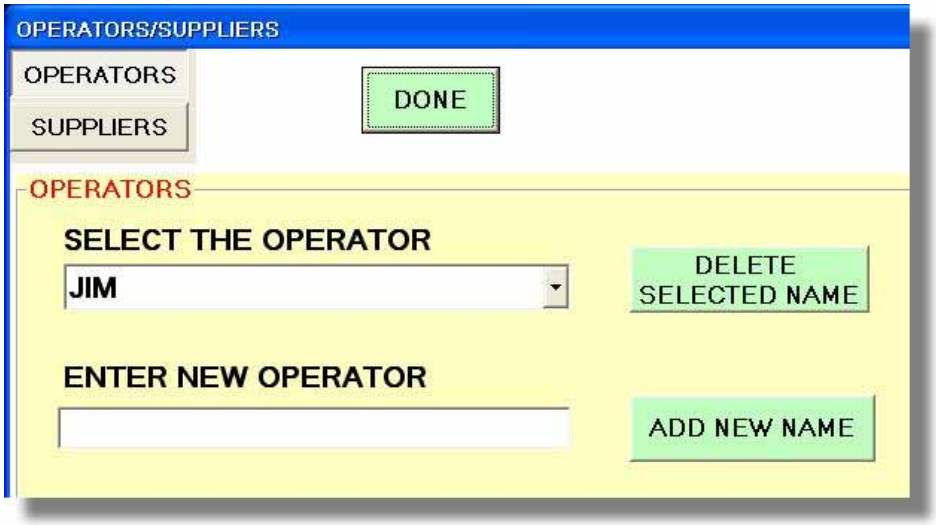
Here you can edit the user defined parts fields. You can also select which labels are displayed in the parts list by checking or un-checking the "Display in Parts List" checkbox.

Sorting



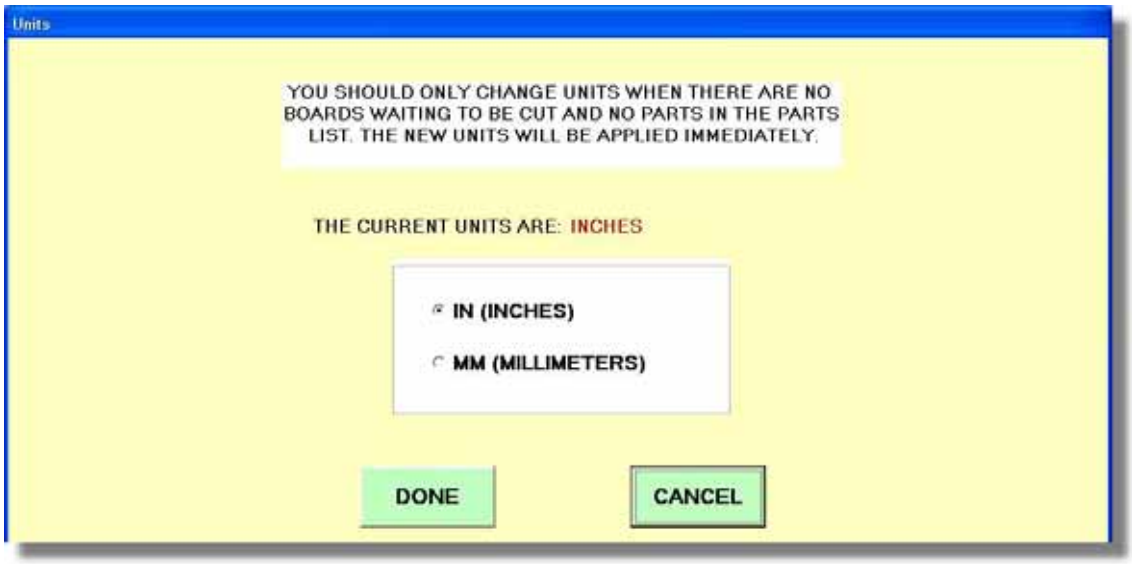
Change the order in which parts are sorted. Highlight the field you wish to sort by, and press the > button to add it to the list. To shift a field up or down, highlight the field and press Shift Up or Shift Down.

Operator/Supplier



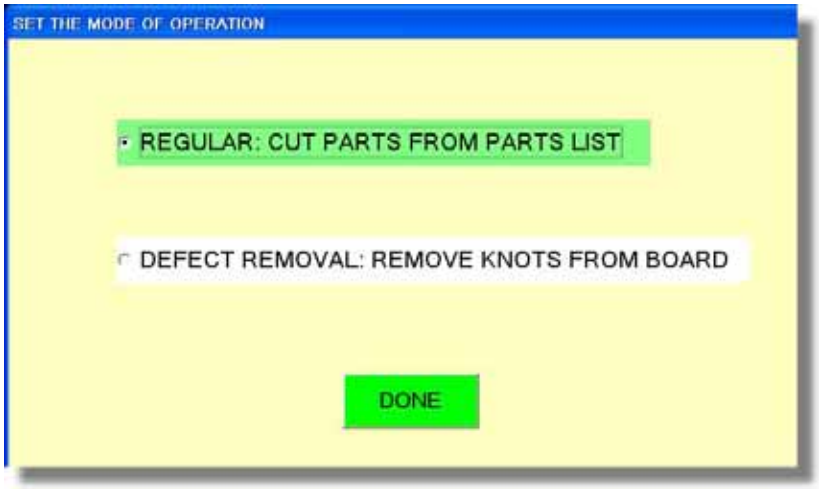
Use this screen to select, add, and remove operators and suppliers. To add an operator or supplier, type in the name and press Add New Name. Select the operator or supplier from the drop-down menu. To delete an operator or supplier, select the appropriate name and press Delete Selected Name.

Units



This screen will change your units settings to inches or millimeters. Theses settings should only be changed when there is no board waiting to be cut and no parts in the parts list.

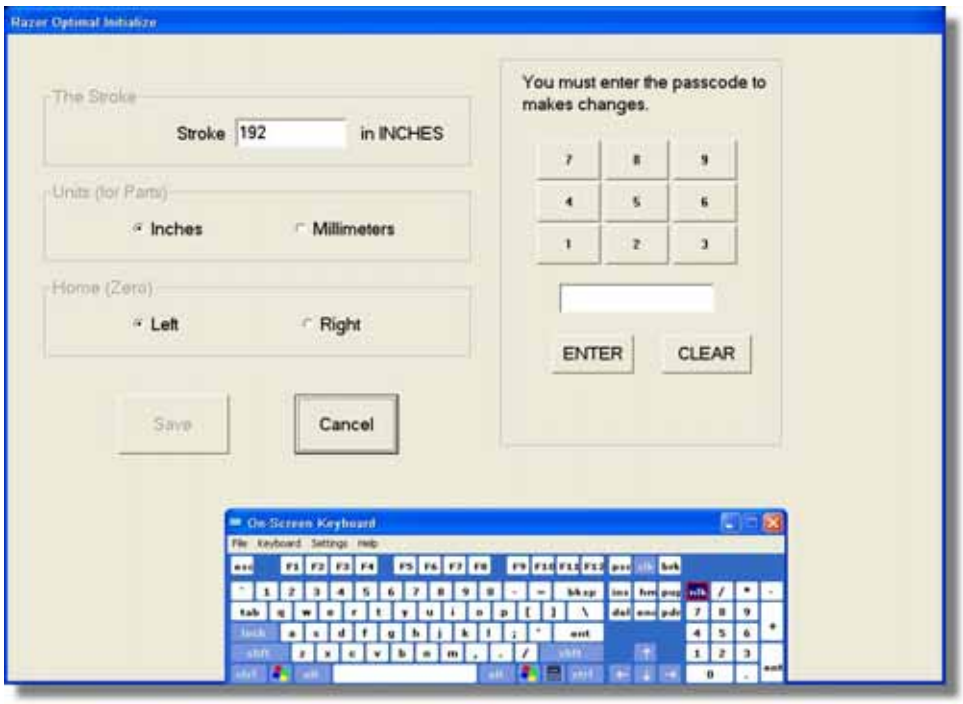
Op Mode



Switch between regular mode and defect removal mode with this screen.

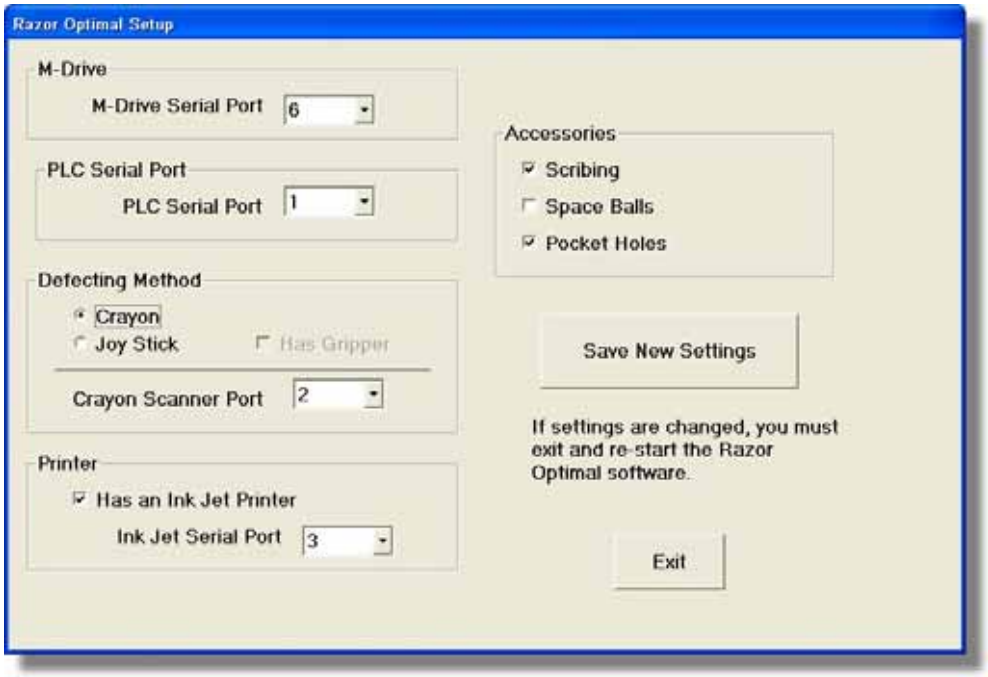
Defect removal mode only removes defects that have been marked. It does not perform operations from a cutlist.

Setup



The setup screen is password protected. These settings should not be changed.

Startup Settings



These are the settings for the options and accessories you have installed with your RazorOptimal.

These are pre-set from the factory, but can be changed if you order additional components.

Routine Maintenance

Greasing

Your RazorGage is greased before shipping. The bearing rail is a one-time grease rail, so no periodic greasing is required.

Replacement Parts

Part	Part No
Mechanical	
Bearing Rail	RG10028
Drive Belt	RG10108
Drive Pulley	RG10037
M-Drive Rotary Encoder	RG10984
M-Drive Linear Encoder	RG10985
Gearbox	RG10978
Linear Encoder Reader Head	RG10091
Linear Encoder Tape	RG10109
Idler Pulley	RG10031
Idler Block	RG10030
Dust Seal	RG10123
Electrical	
Power Switch	RG11016
Solid-State PC	RG10973
Touch Screen Monitor	RG10740
Miscellaneous	
Motor Cable (2 Meter)	RG10672
Extension Cable (USB)	RG10610
Power Cable (M-Drive)	RG10988
I/O Cable (M-Drive)	RG10987
Communications Cable (M-Drive)	RG10986
Crayons (Box of 50)	RG10844
Joystick Laser w/ Power Cord	RG10180
Flex Rated Cable for Joystick	RG10181
Ink (Black Porous) Box of 6 (Cart #4500)	RG10952
Ink (Black Non-Porous) (Cart #4600)	RG10957
Inkjet Printer	RG10951
Drills	RG10816
Drill Holder	RG10889
Drill Drive Belt (Short)	RG10936
Drill Drive Belt (Long)	RG10937

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