

Conditional Rules

Objectives

Learn about Conditional Rules and how to create them.

Overview

What is a Conditional Rule?

How to create a Conditional Rule

Conditional Rules

As we've seen, some Rules are what is known as a Condition Rule. Conditional Rules are in the form of If...Then...Else... For example, I'm eating dinner:

```
If I'm still hungry Then
    Keep eating
Else
    Stop eating
```

What's between the If and the Then is called a condition. If the condition is true, the Then clause is executed. Otherwise, the Else clause is executed. We license Microsoft's Visual Basic Script (VB Script) to execute these Rules. VB Script's If...Then..Else format is as follows:

```
If Condition1 Then
    Result1
Elseif Condition2 Then
    Result2
...
Else
    ResultN
EndIf
```

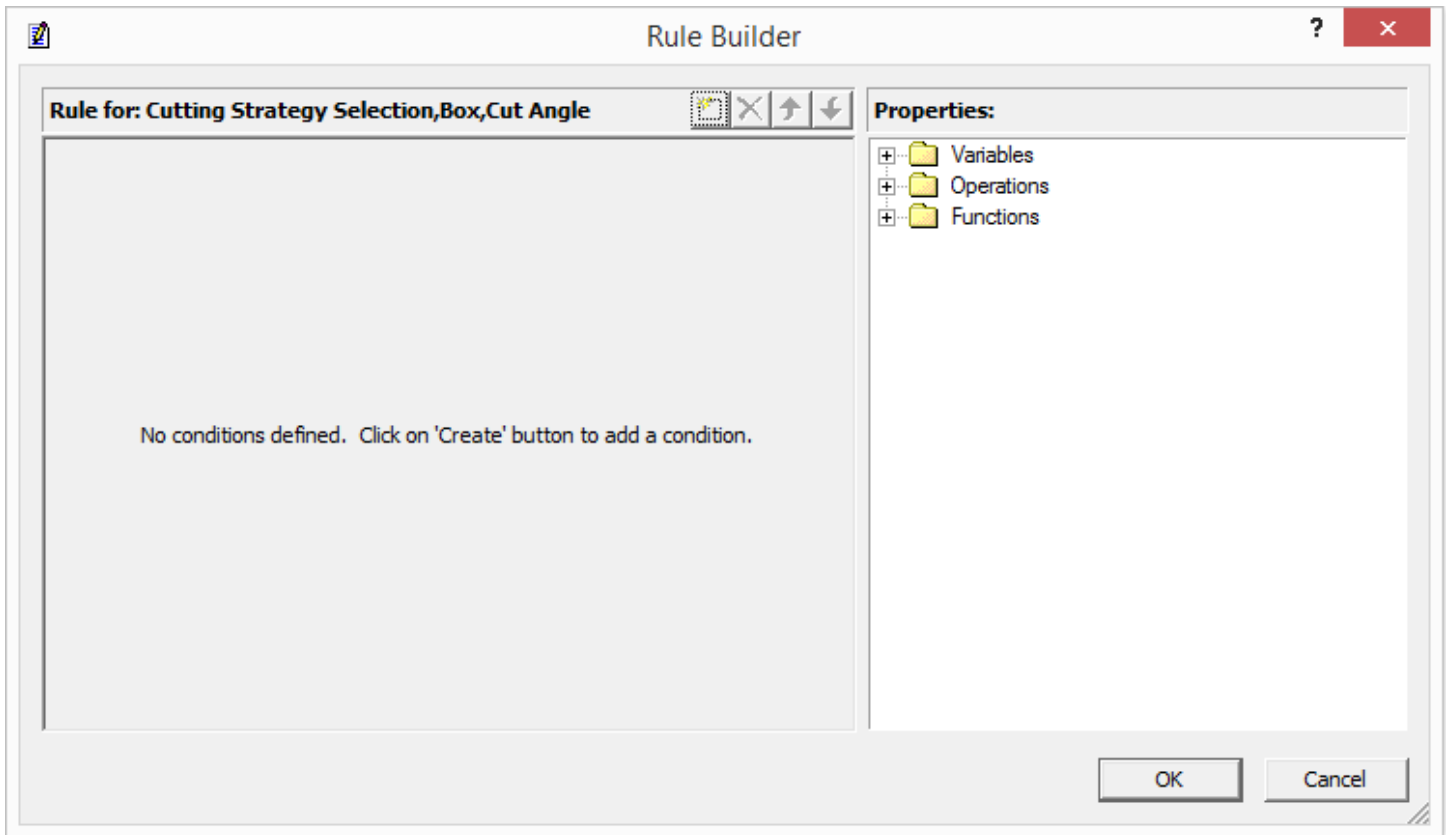
There can be as many Elseif statements as needed, but are not required. For PowerSource, the result clauses always set the Property. The Else clause is always required because the Rule must set the Property to some value.

Example 1 - Finish Box Cut Angle - If the Window is wider than it is tall use 0 degrees, otherwise 90

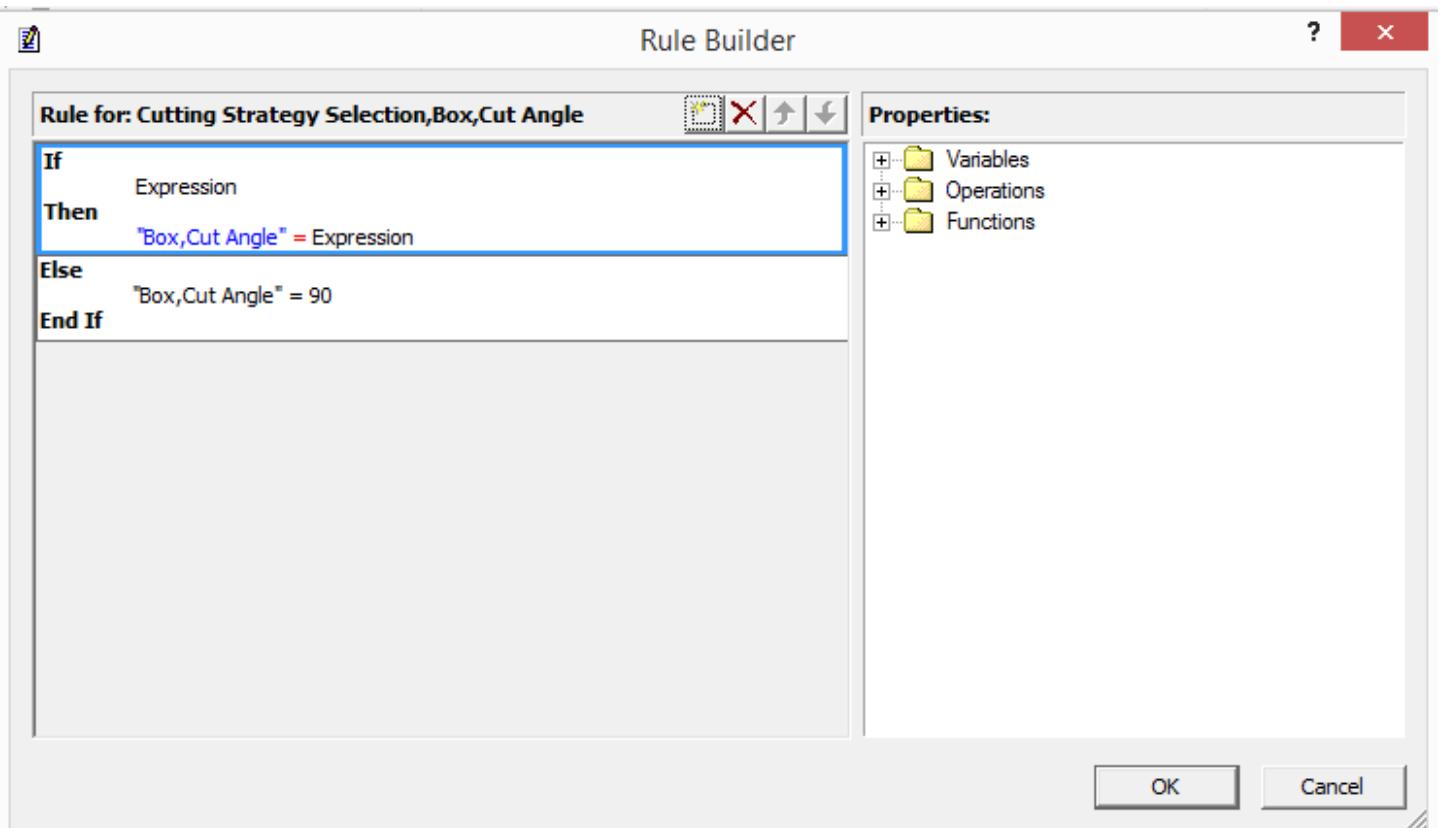
In Insight, go to Inch/P20/Plastic Injection Mold/Finish/Box/Cut Angle. We could type in the Rule, but we're going to use the Rule Builder to help us out. On the right side of each Property Value, there's a button that will bring up the Rule Builder dialog:



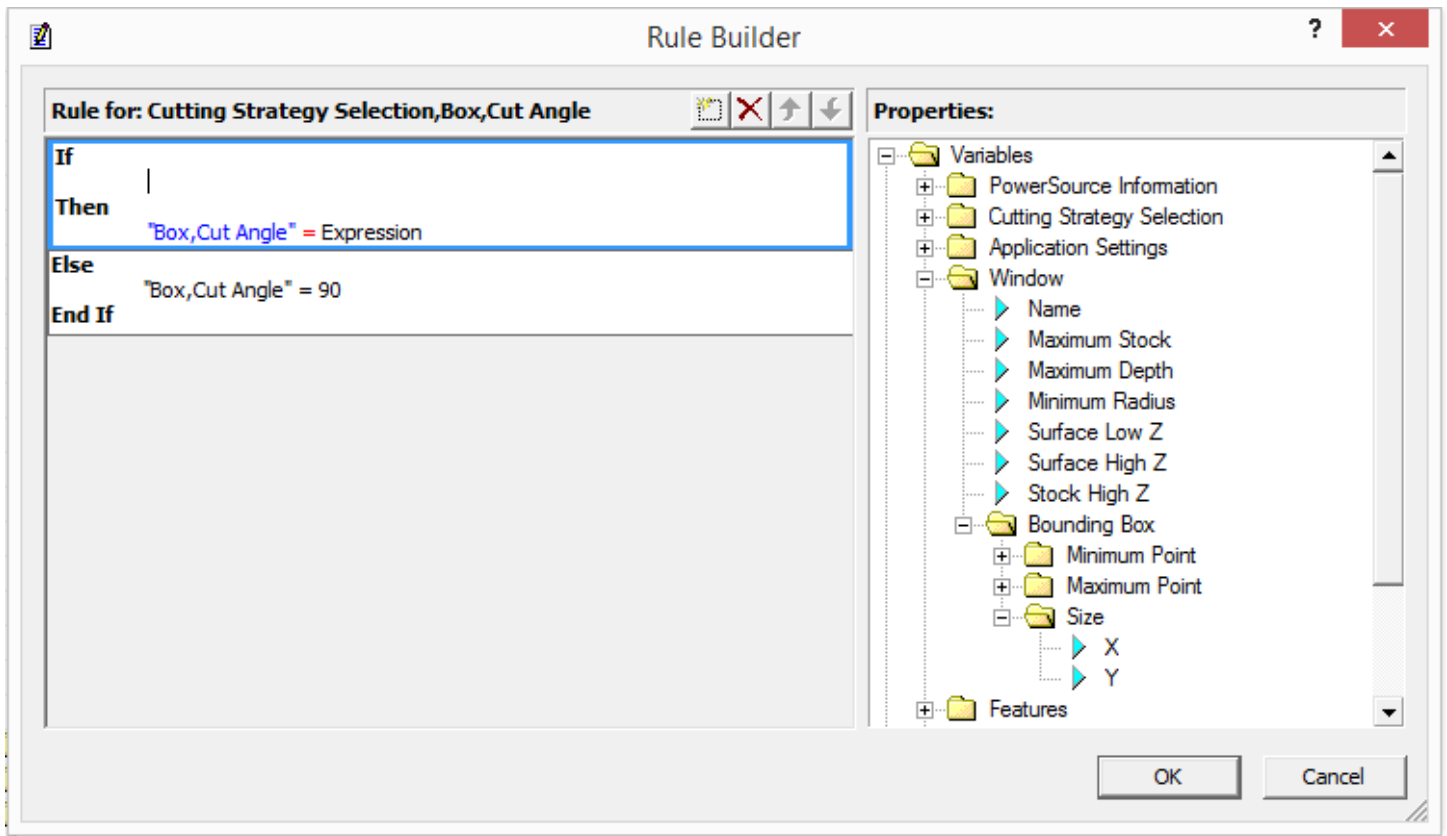
Click on the button in the Cut Angle cell to start the Rule Builder:



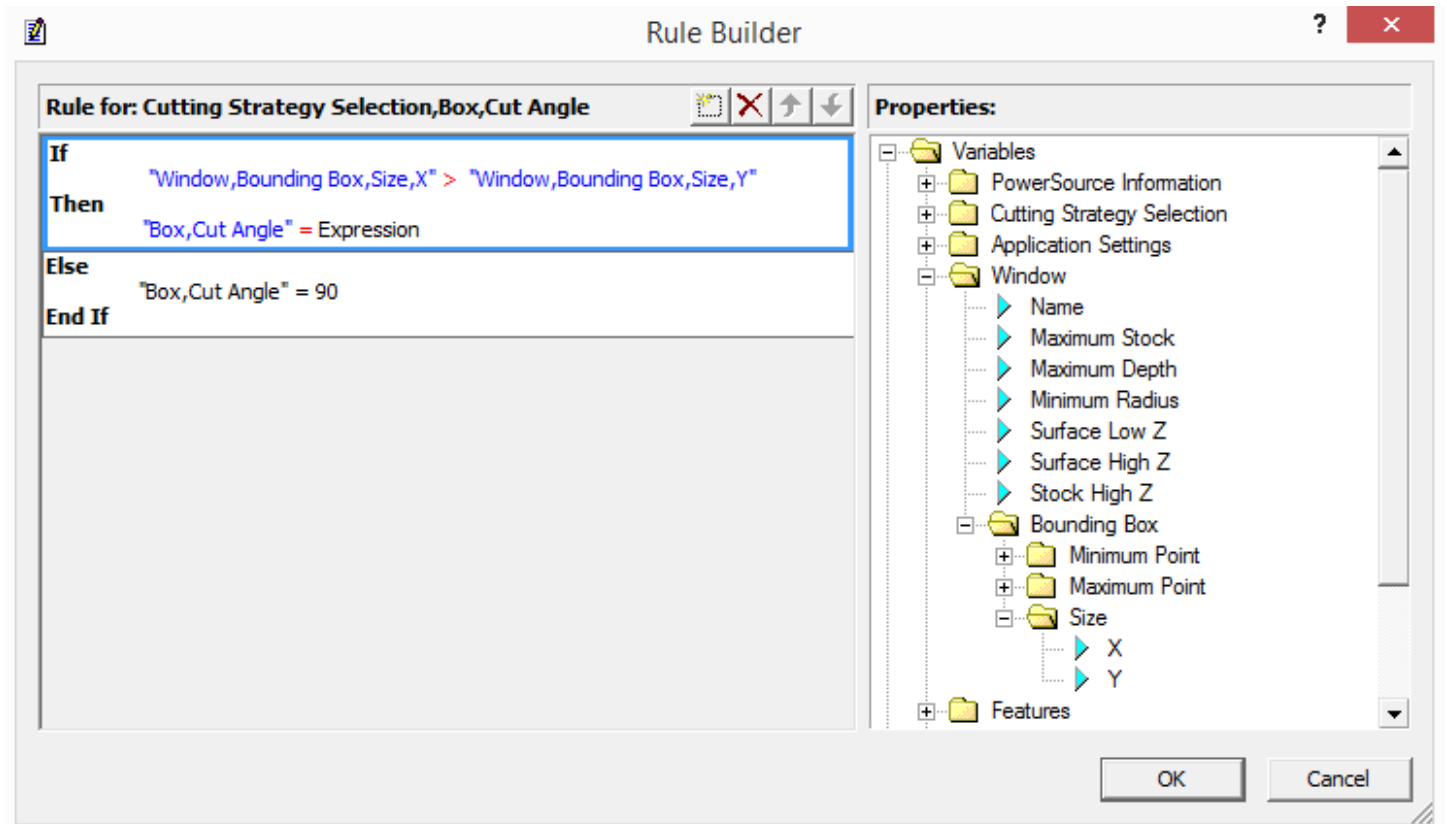
On the left are the list of conditions and results. On the right are the Common Expressions, just like in the bottom pane. At the top are icons to add, remove, and move conditions. Click on the Create new condition button, the first one:



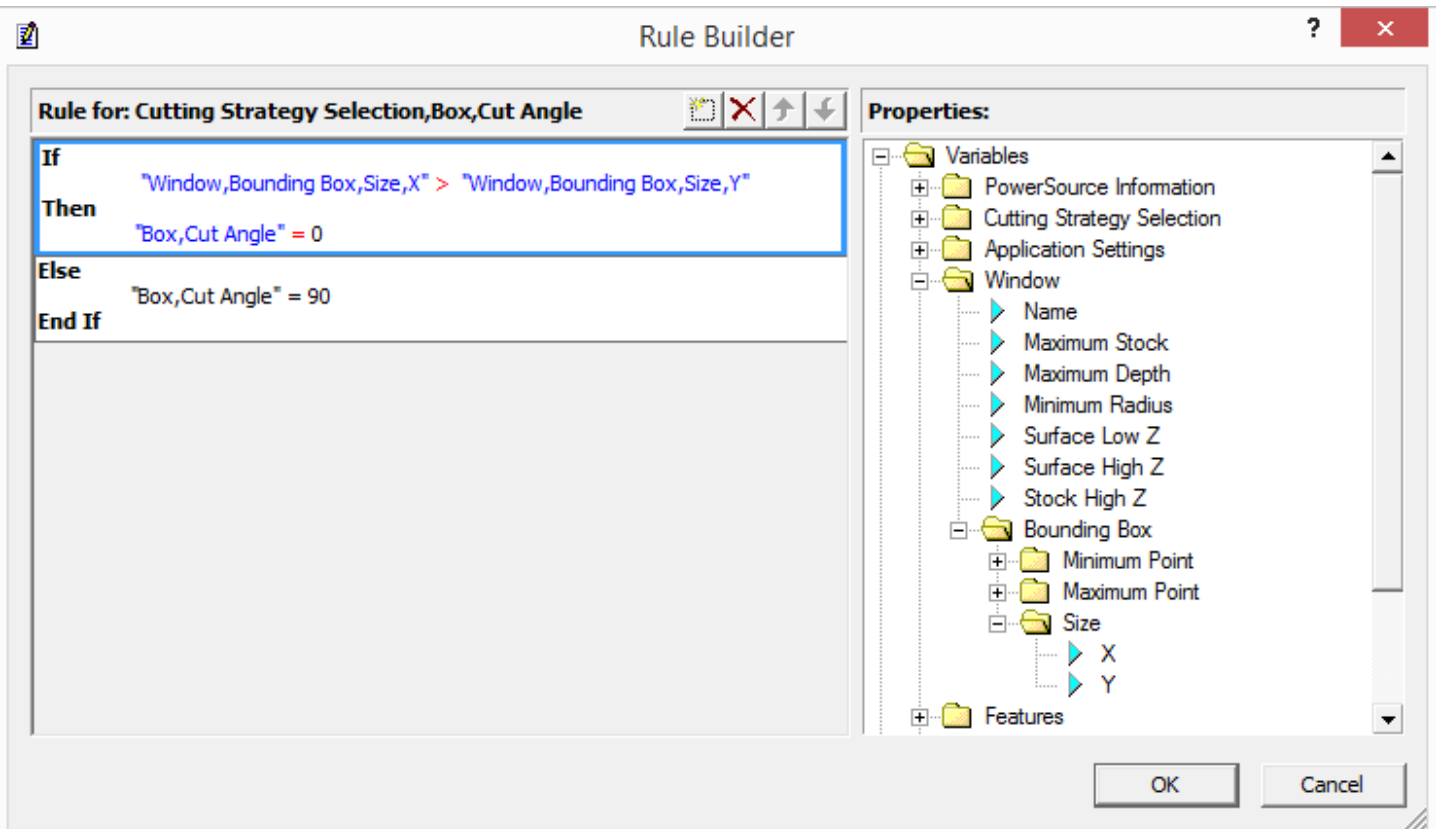
Since we already had a simple Rule in place, it used it as the Else clause. We need to fill in the 2 Expressions. The first one is the condition, click to the right of the word and backspace enough times to erase it. Now on the right, go to Variables/Window/Bounding Box/Size:



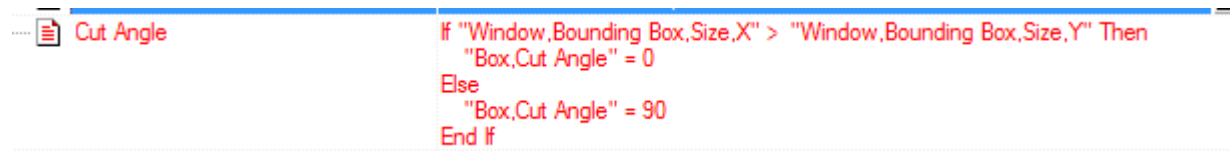
Double-click on X, which adds it to the condition clause. Now type space, a greater than symbol (>), and another space. Double-click on Y to complete the condition:



Our condition is done, we need to move onto the result. Let's get rid of the Then Expression, click to the right of the word and backspace. Type in 0:



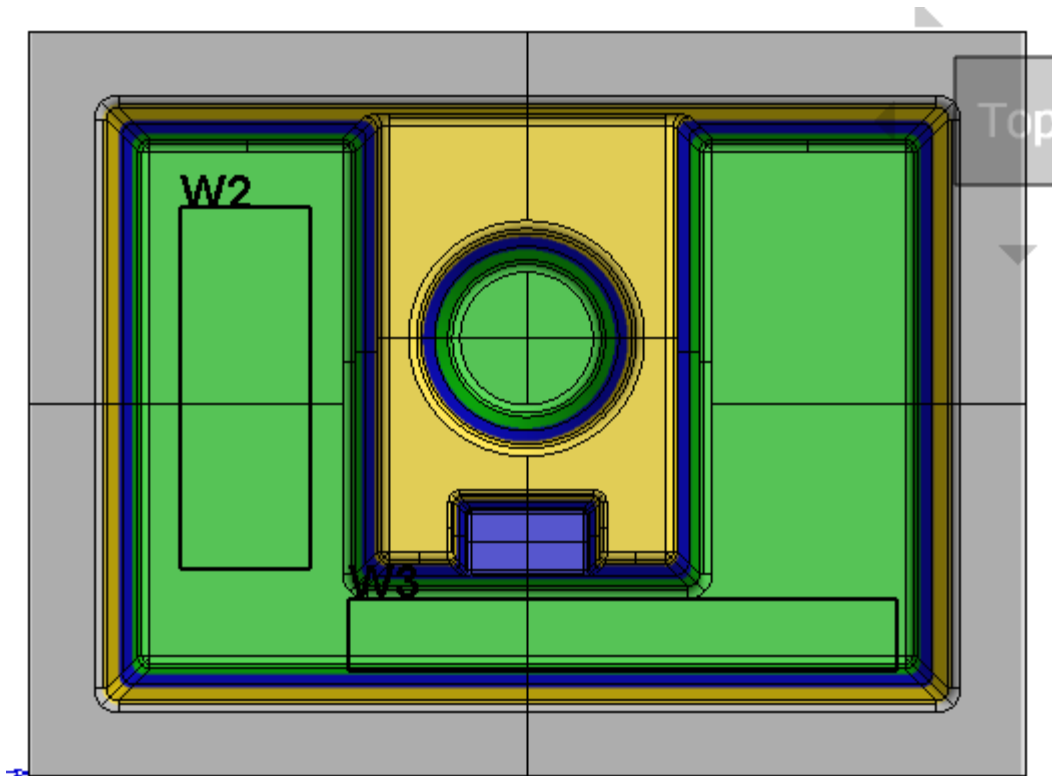
We're done - click the Okay button to save the Rule:



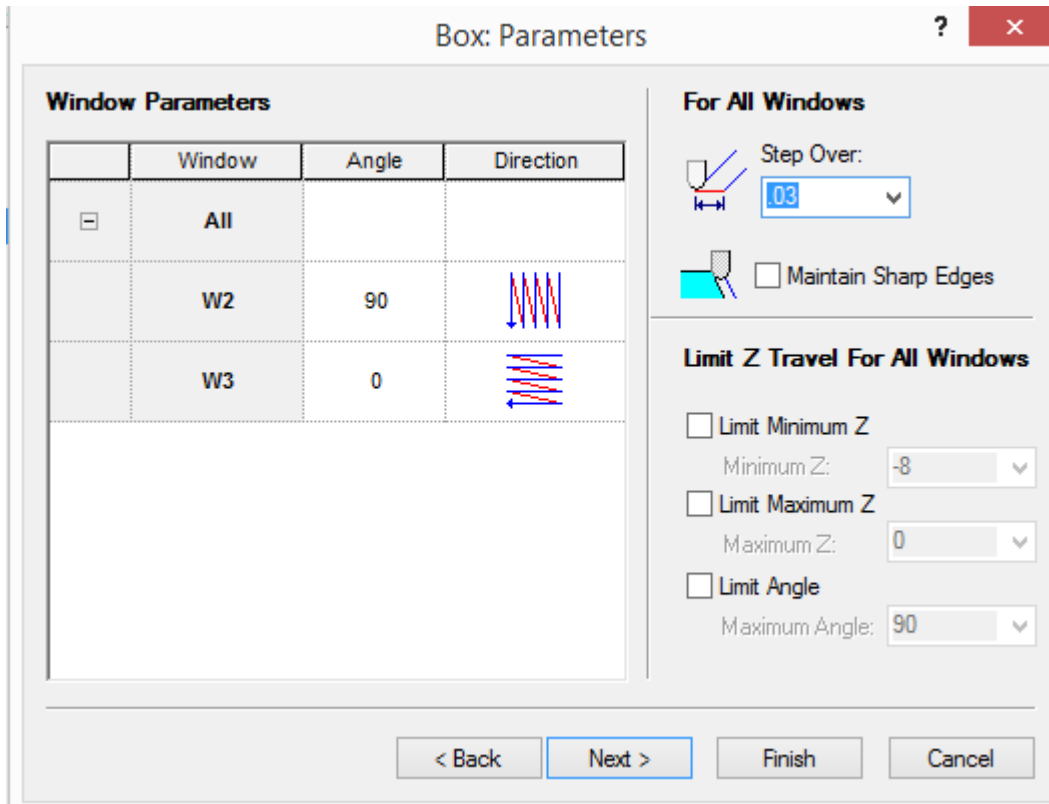
Let's test our Rule. Save the database and go to Prospector.

Prospector

In Finish, new 3D Program. Let's make two windows, one longer in X, one longer in Y. Something like this:



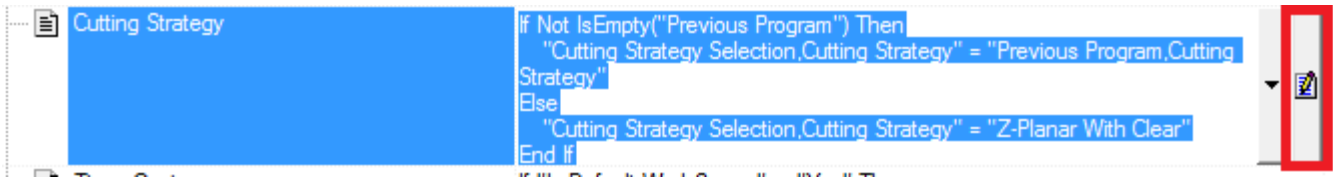
Select both Windows. Click on the first Window in the list and shift-click on the second Window. Click Next. Select Box and Next to the Parameters page. Notice the angles for each of the Windows:



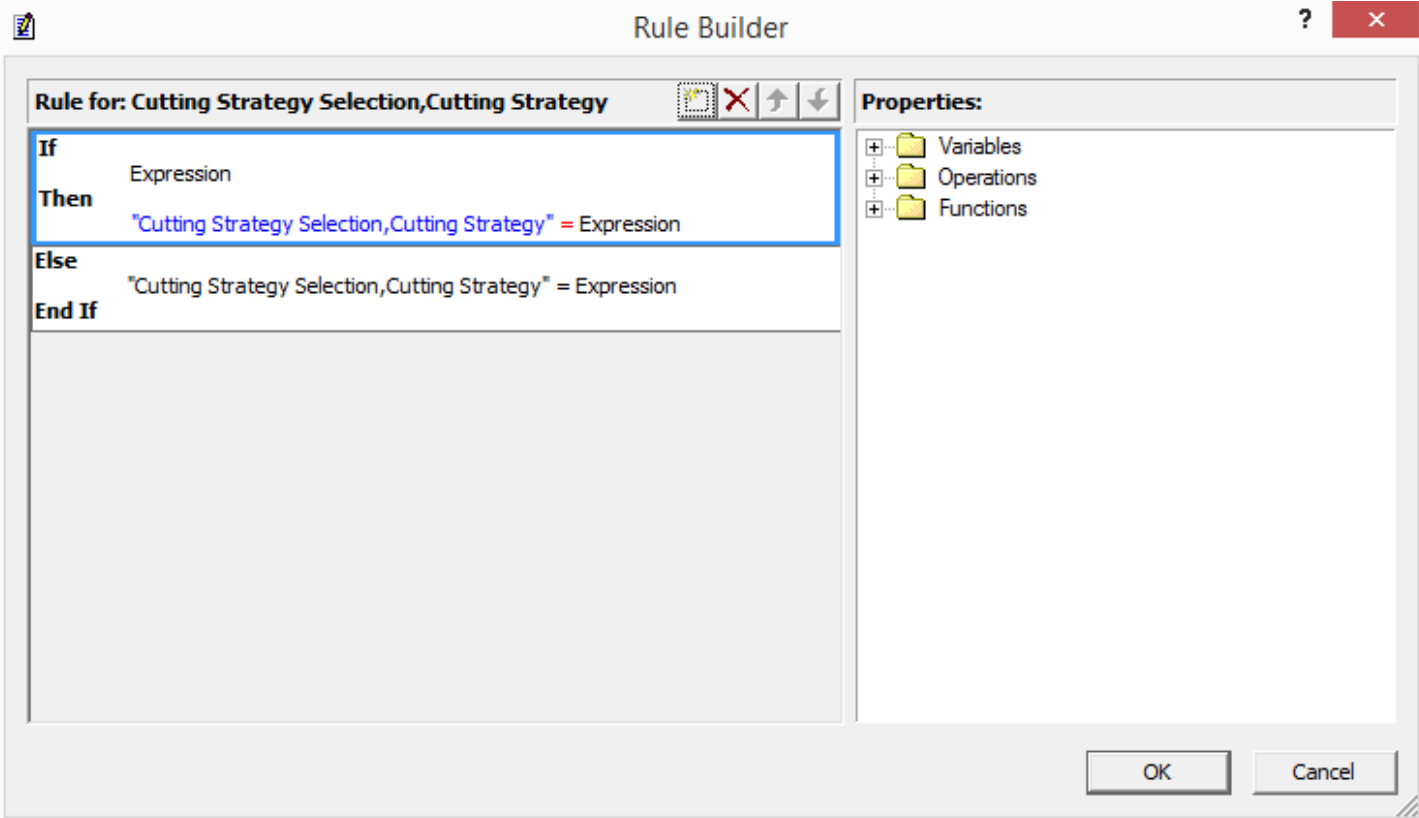
Click Cancel. We're going to take a look at another example.

Example 2 - Semi-Rough Cutting Strategy - If the window has more than 2 inches of stock, use Z-Planar With Clear, otherwise No Clear

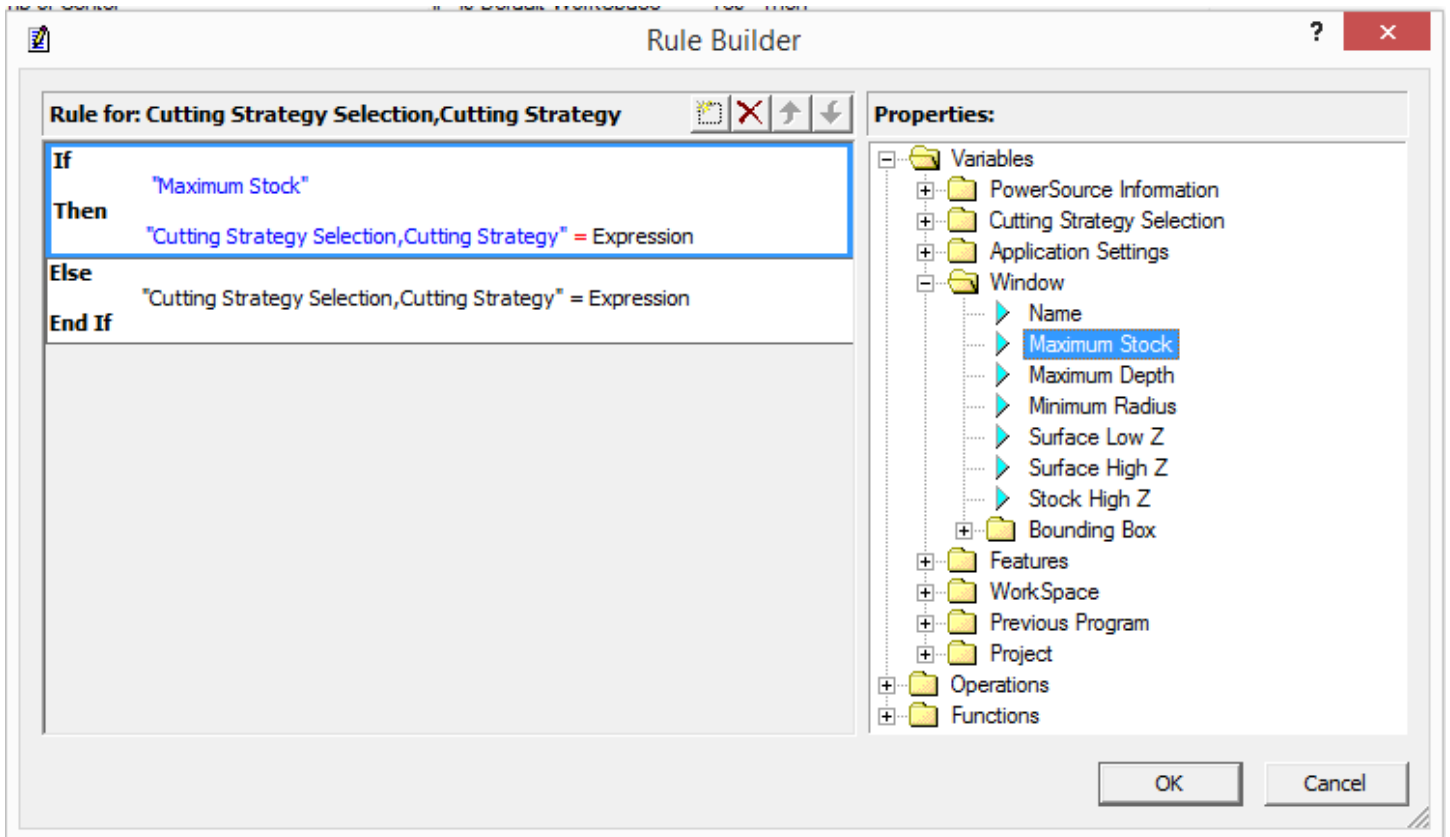
Go back to Insight. Go to Inch/P20/Plastic Injection Mold/Semi Rough/Cutting Strategy. Click on the button to bring up the Rule Builder:



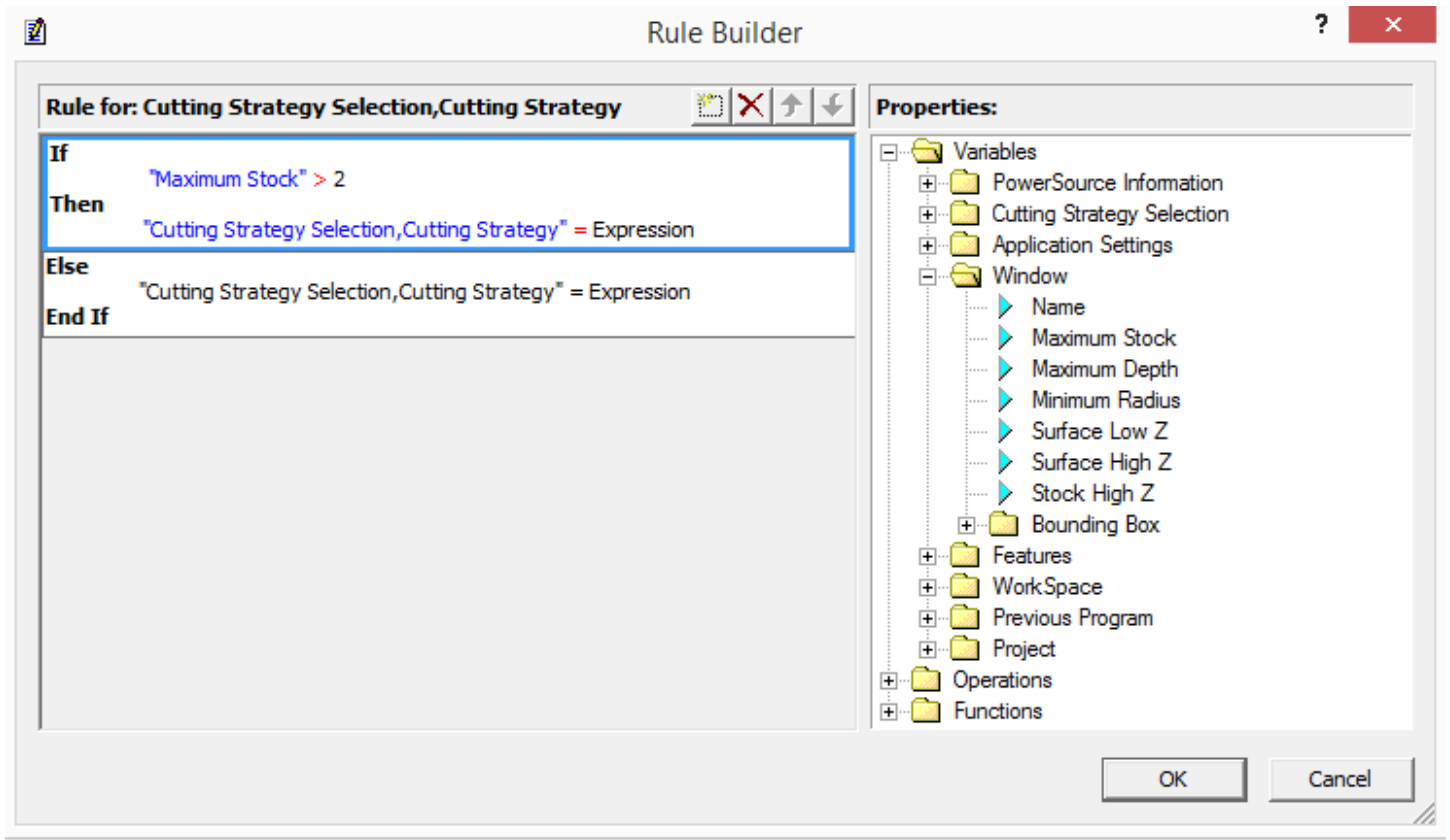
Select the top conditional and hit the X button to delete the current Rule. We could overwrite what is there, but it's easier to delete and start over. Now click on the first button to add a new blank conditional:



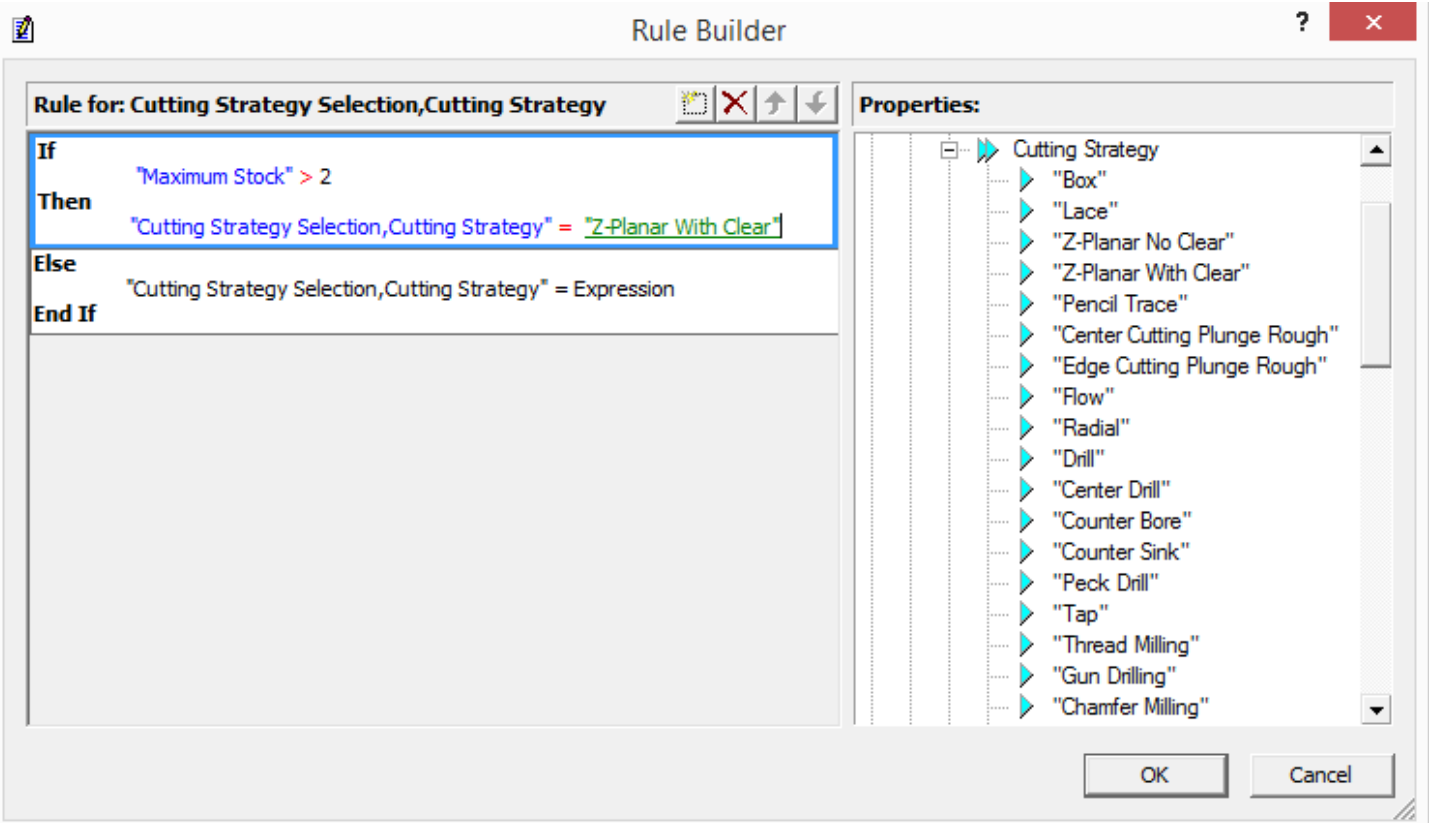
Now we have to fill in three expressions, first the condition. Backspace out the word Expression. On the right, go to Variables/Window. Double-click Maximum Stock:



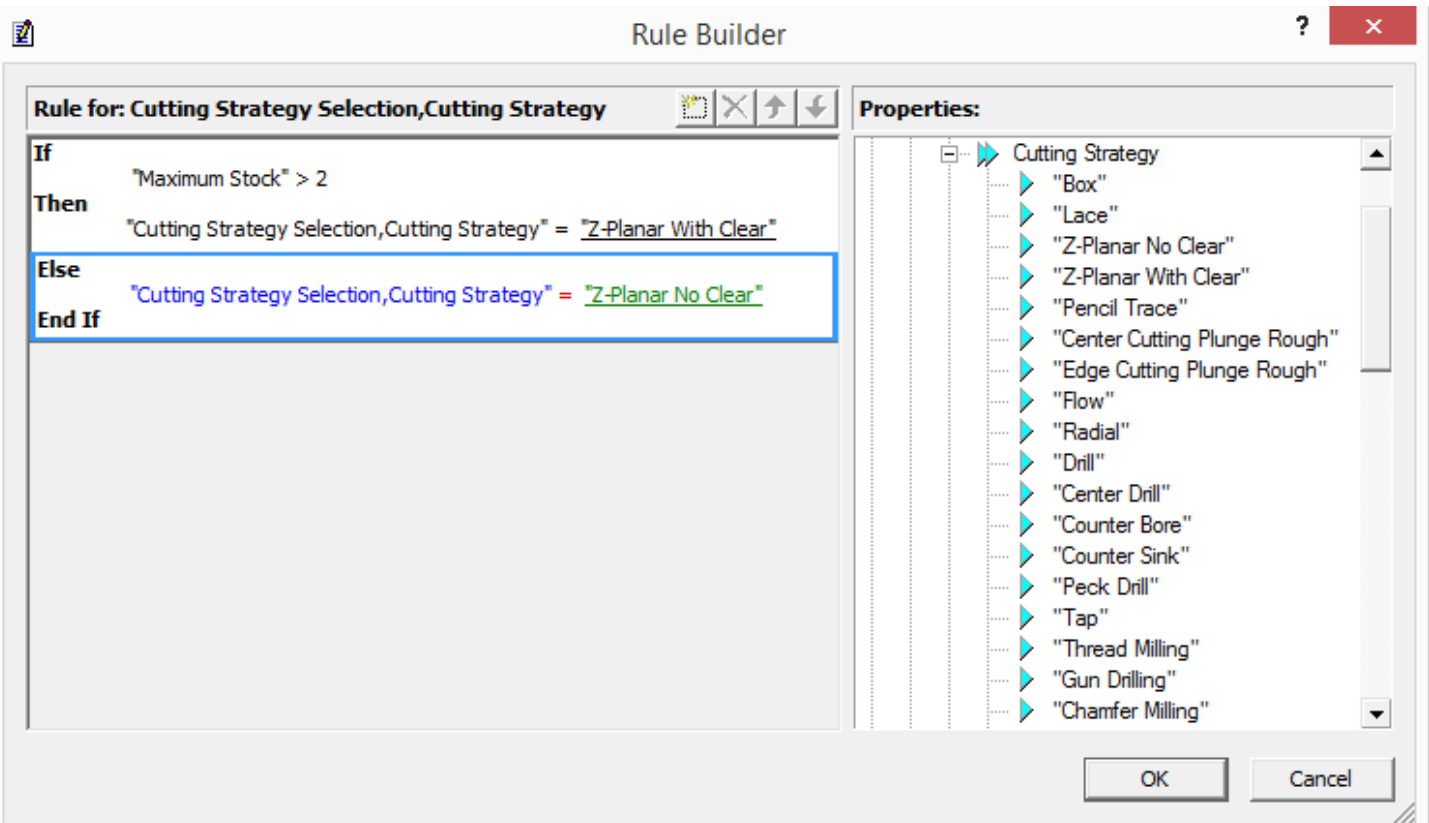
Type a space, greater than symbol (>), space and 2. That should do it for the condition:



Onto the first result. Backspace out the word Expression. Go to Variables/Cutting Strategy Selection/Cutting Strategy. Double-click "Z-Planar With Clear":



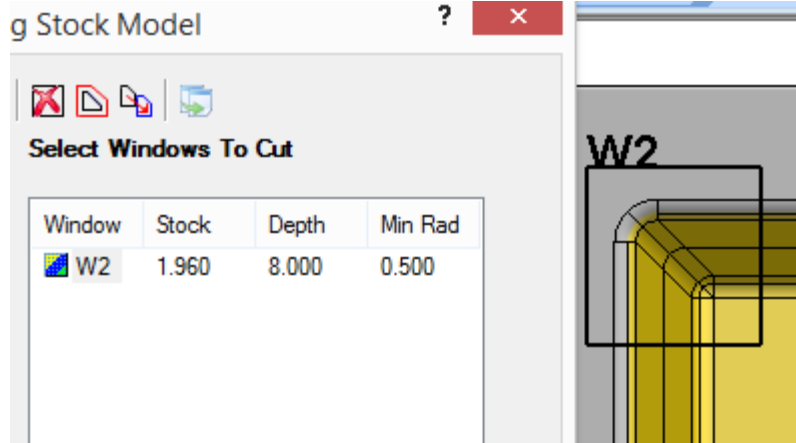
Onto the second result, backspace out the word Expression. Double-click "Z-Planar No Clear":



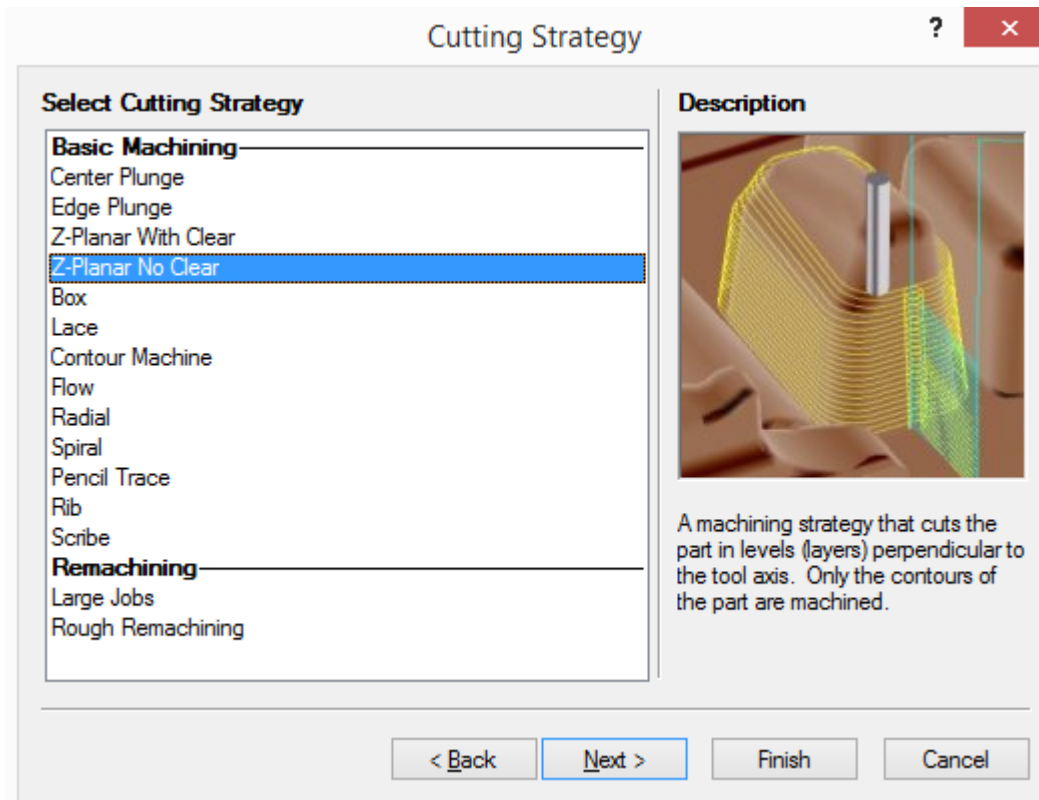
Click the OK button. Let's test the Rule. Save the Database and go to Prospector.

Prospector

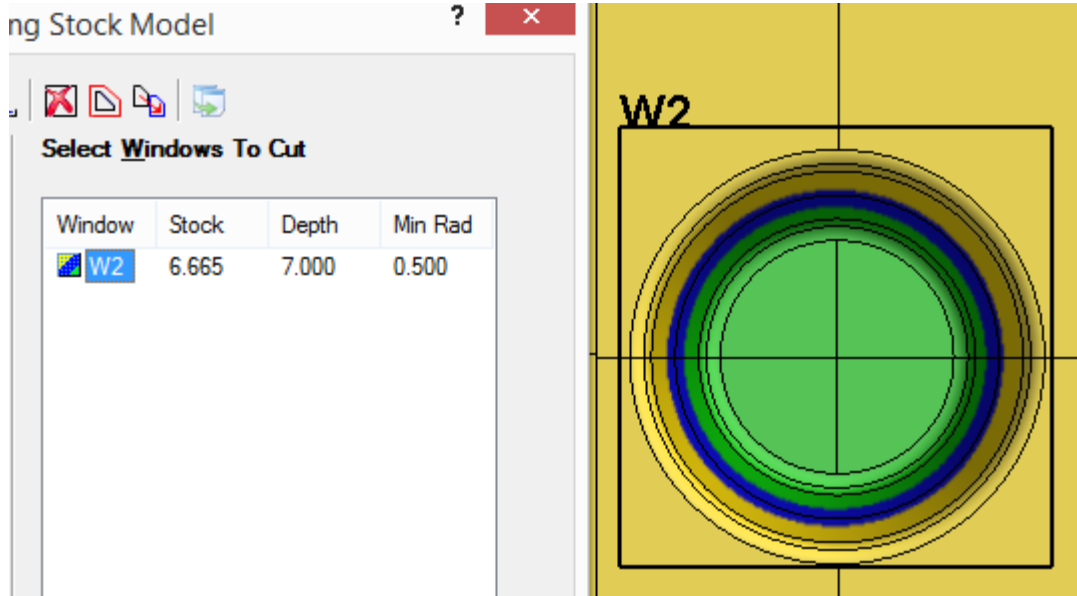
In Semi Rough, new 3D Program. Let's create a rectangular window around the upper left corner. Notice the max stock value:



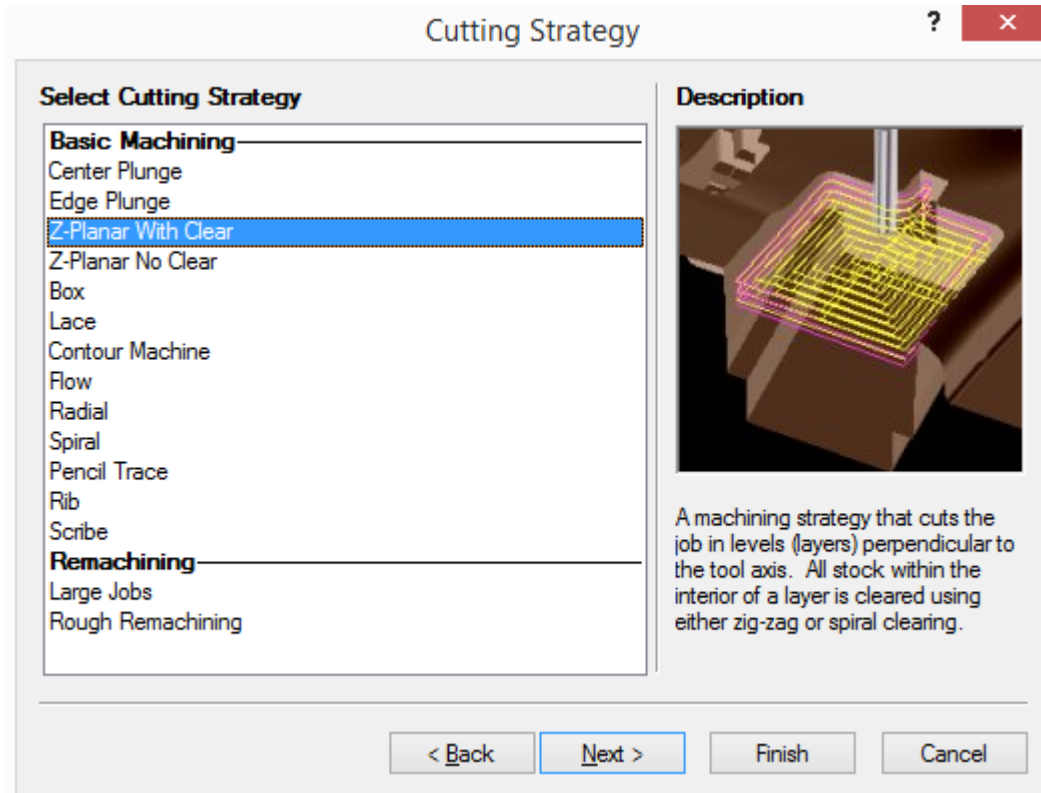
Click next to get to the Strategy page. Notice that it picked "Z-Planar No Clear":



Back to the first page, delete the window, and make a rectangular window around the middle feature:



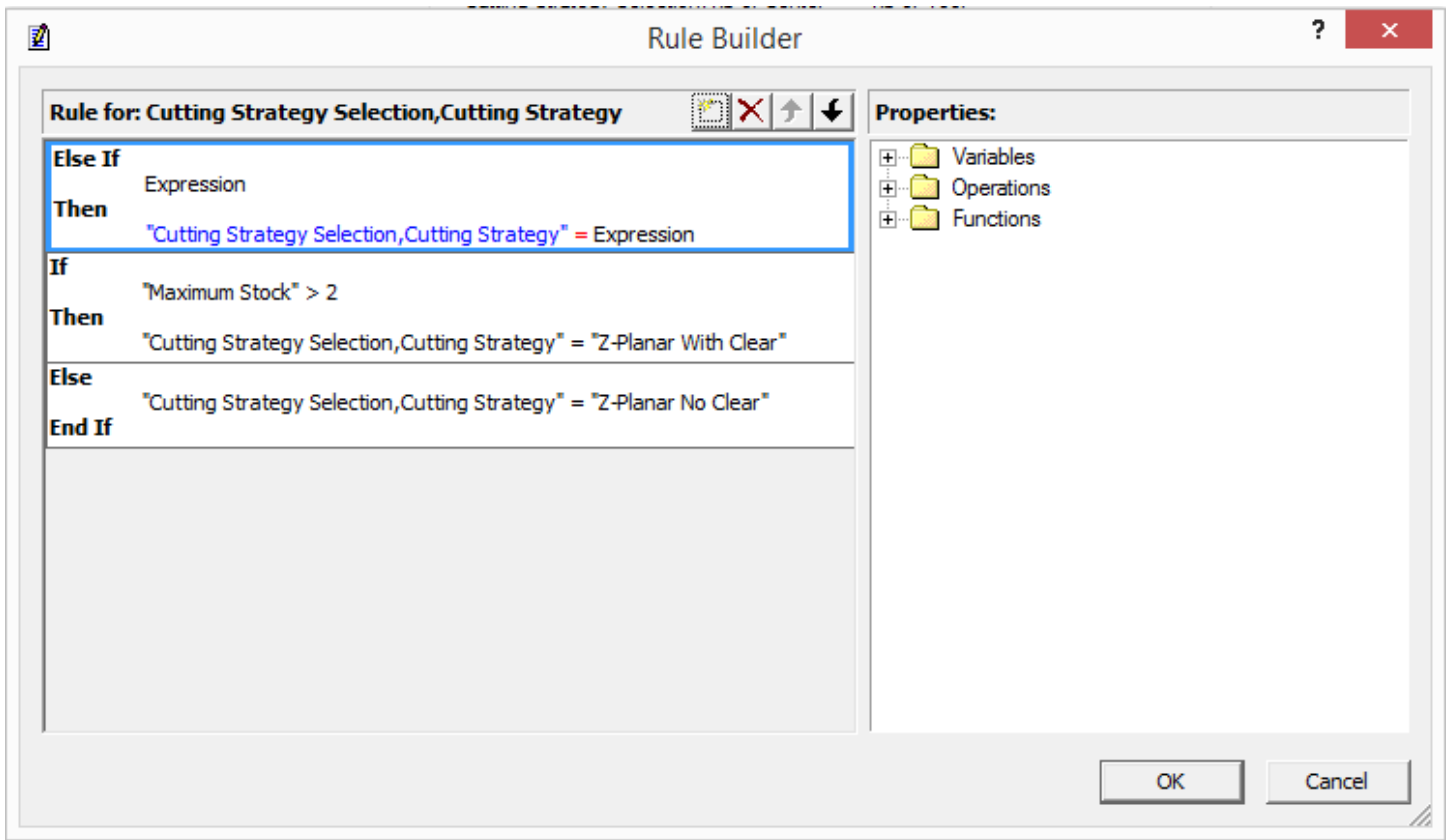
Click next to get to the Strategy page. Notice that it picked "Z-Planar With Clear":



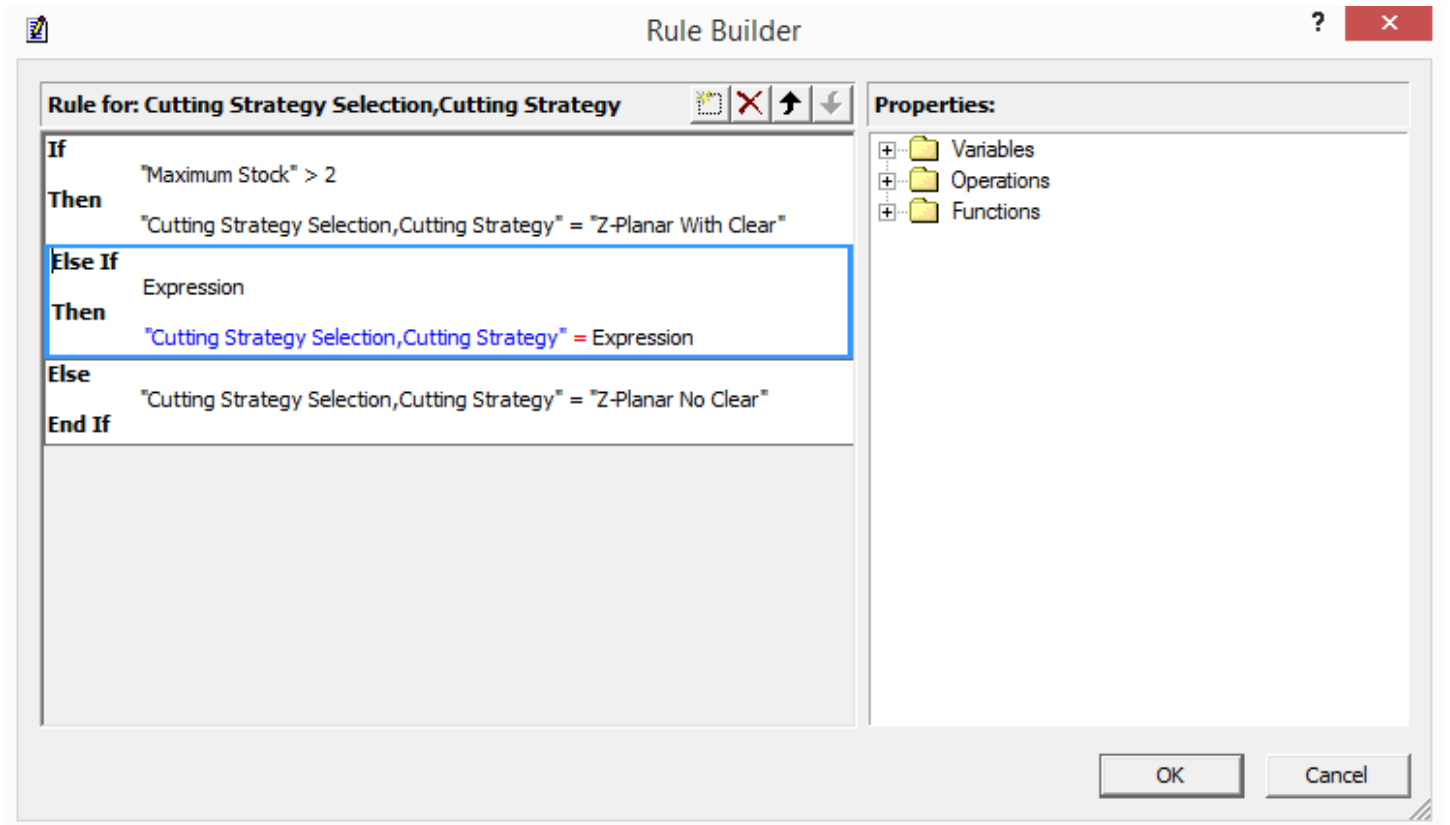
Click Cancel. One more example, this time with and Elseif.

Example 3 - Semi-Finish Cutting Strategy with 2 conditions, want the same Rule as previous example, but when there's less than 1/4 inch of stock, pick Lace

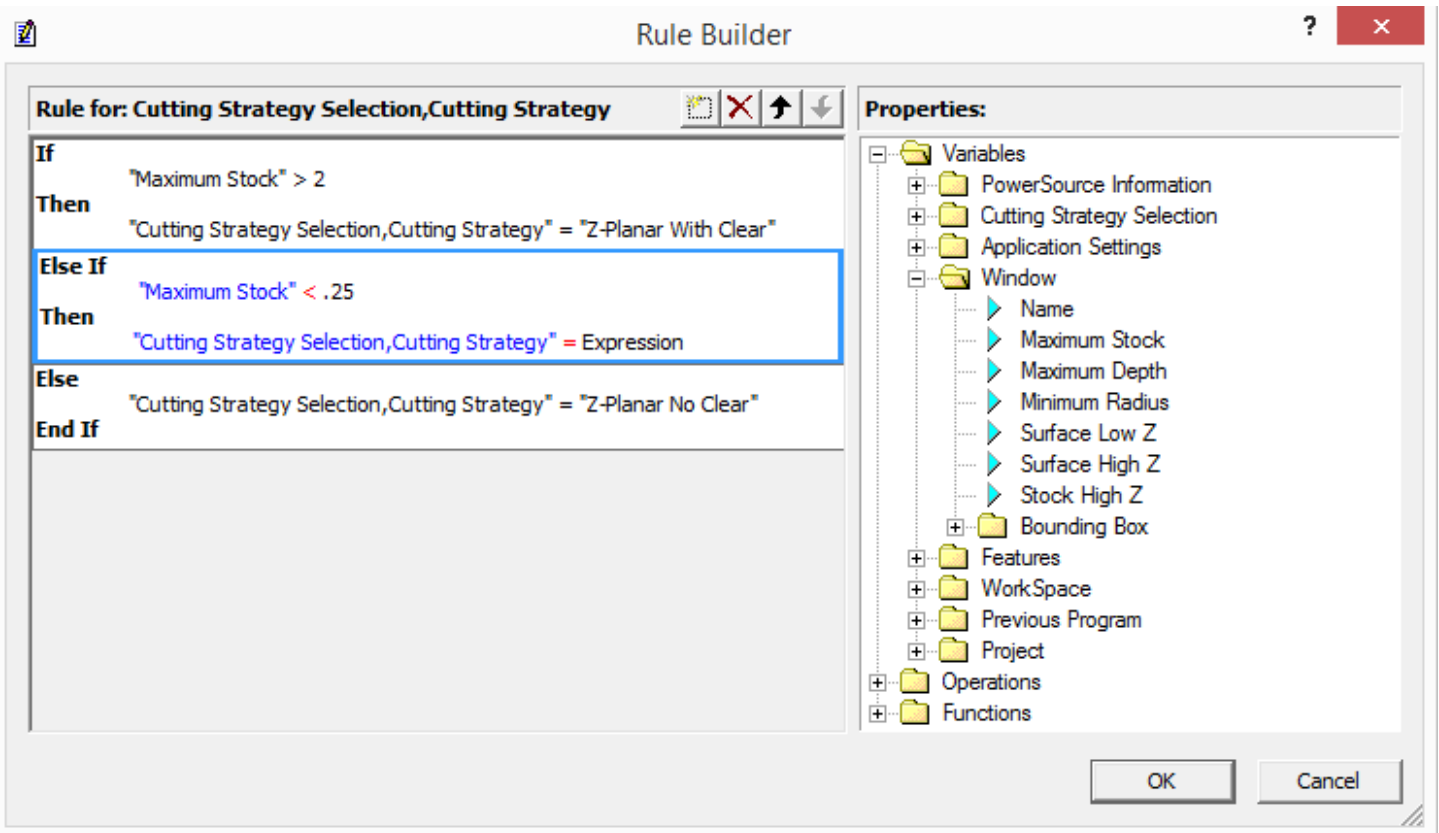
Go back to Insight. We're going to copy the Rule we just made from Semi Rough to Semi Finish. Right-click on Cutting Strategy and click "Copy Rules." Now select Semi Finish in the Configurations tree, right-click on Cutting Strategy, and click "Paste Rules." Click the button to bring up the Rule Builder. Add a new conditional, notice that it put it at the top:



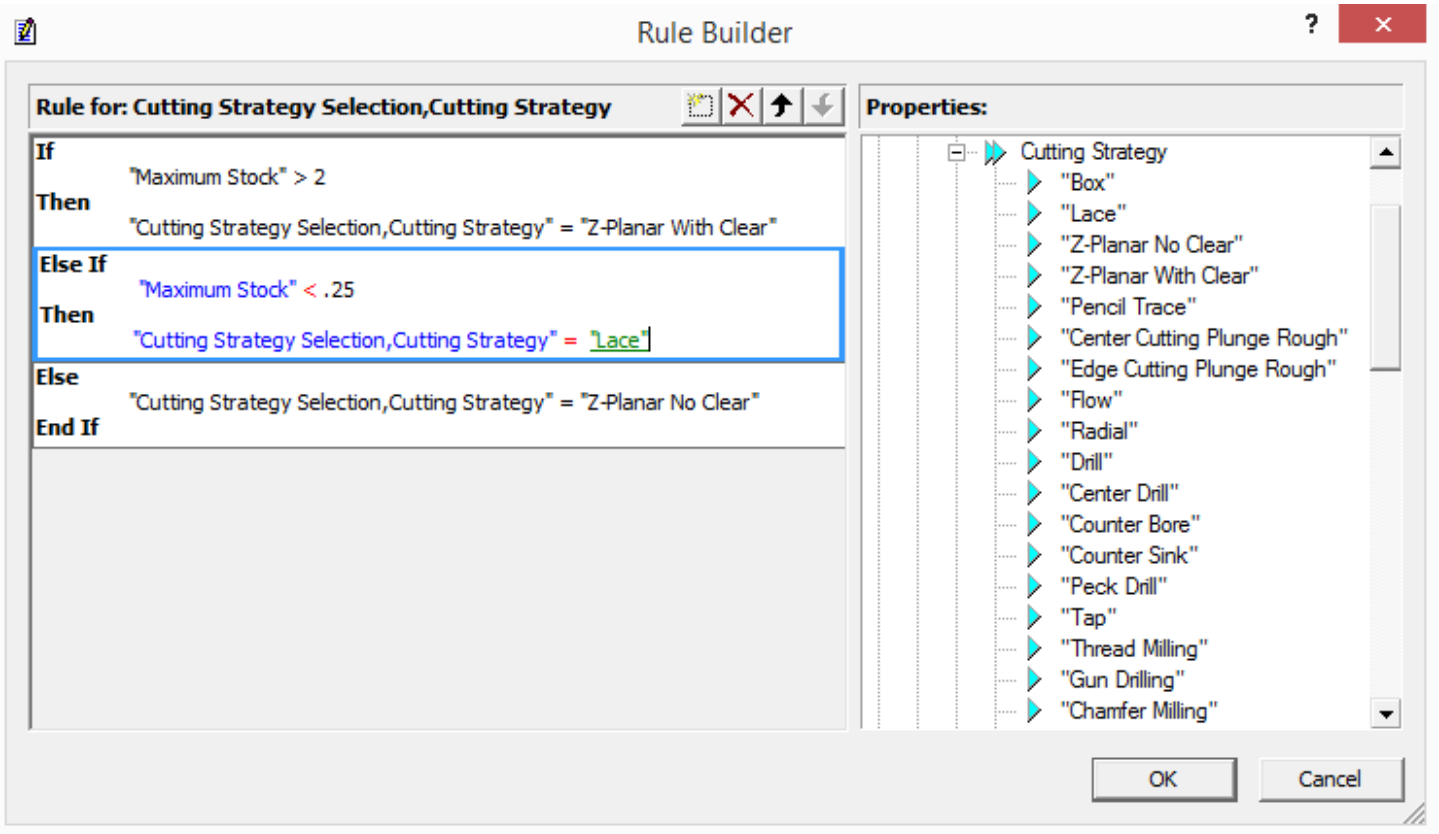
Use the down arrow button to move it down one:



Backspace out the first Expression. On the right, go to Variables/Window. Double-click on Maximum Stock, type a space, less than symbol (<), another space, and .25:



Onto the result, backspace out Expression. Go to Variables/Cutting Strategy Selection/Cutting Strategy. Double-click on Lace:

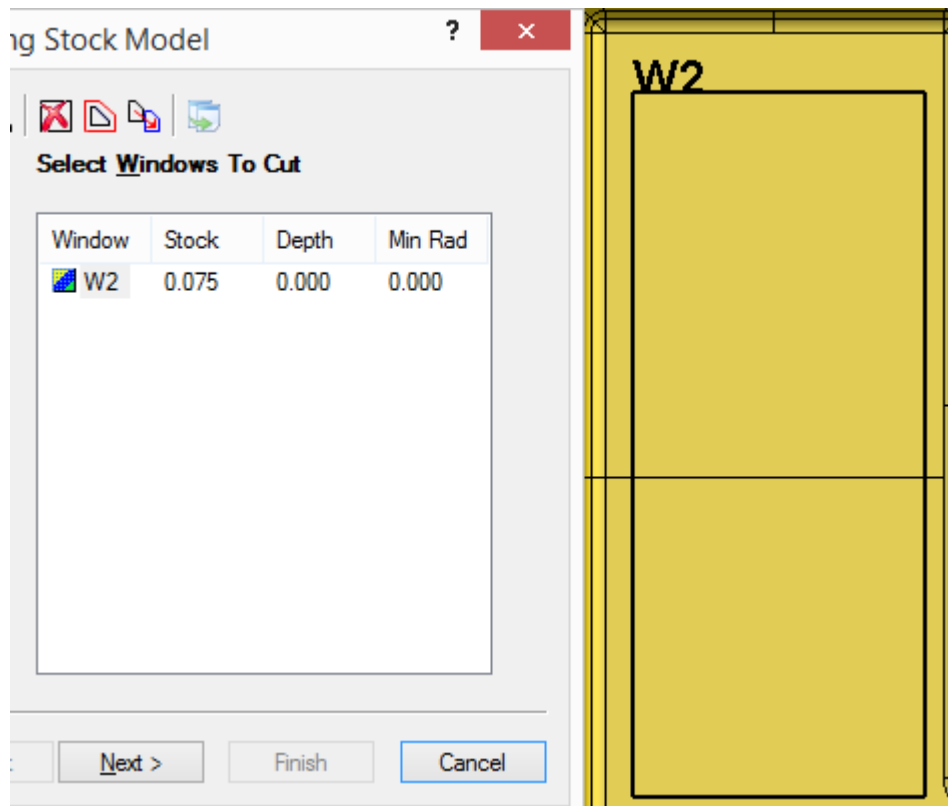


Click the OK button to save the Rule. Let's test our Rule. Save the Database and go to Prospector.

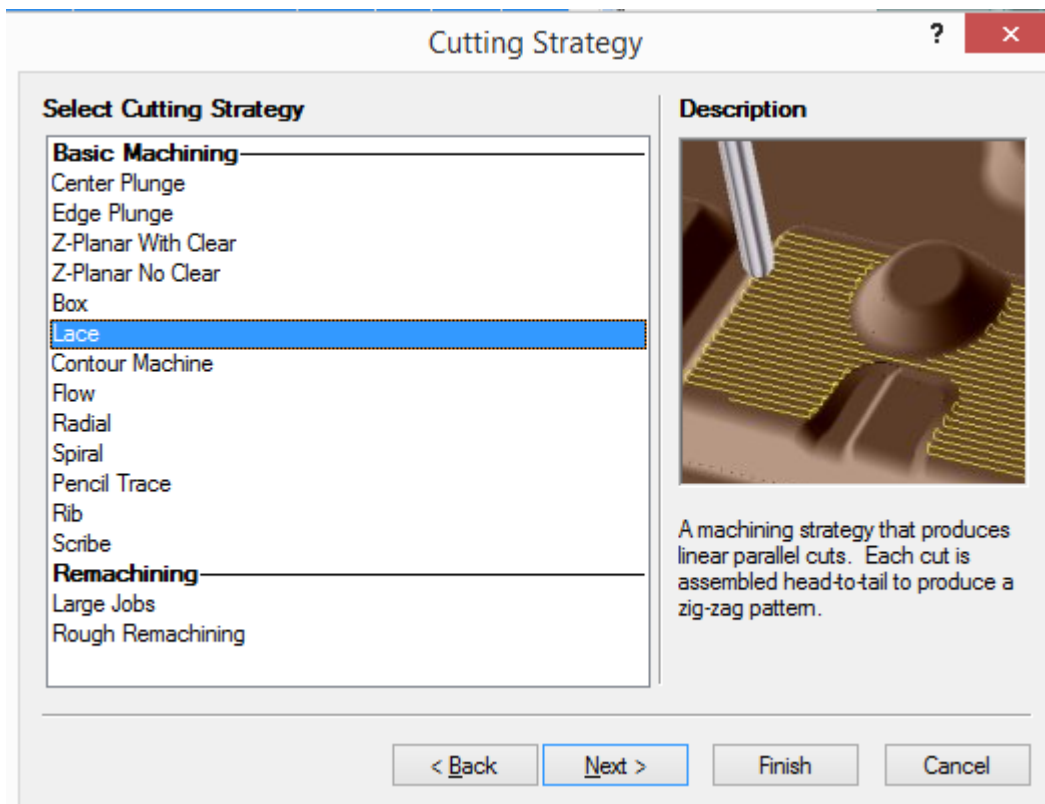
Prospector

In Semi Finish, new 3D Program. Test the Windows as we did in the previous example. You should get the same thing – Z-Planar No Clear for the upper left corner and Z-Planar With Clear for the center hole feature. Let's create a rectangular Window on the

floor surface:



Notice the stock in the Window. Click next to get to the Strategy page.



This time it picked "Lace." Cancel out of the Wizard.