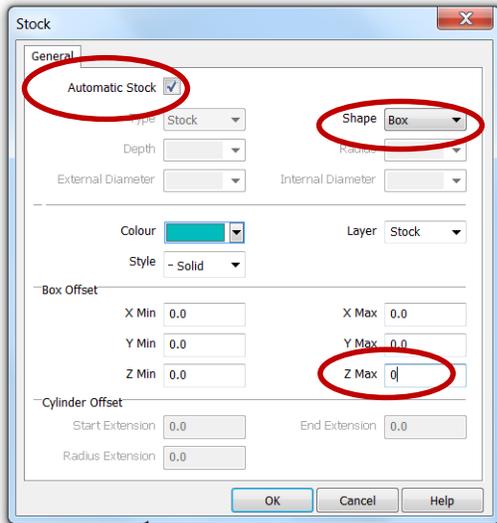
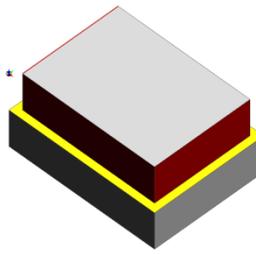
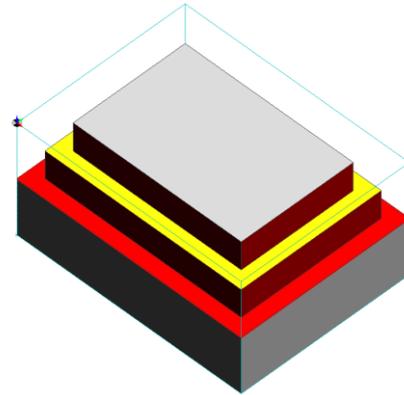


Multiple Island Profiling / Contouring



Create the stock for the part

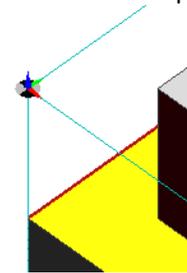
- Select AUTOMATIC STOCK
- Select a SHAPE of [BOX]
- For this activity we will leave all the stock box offsets at ZERO

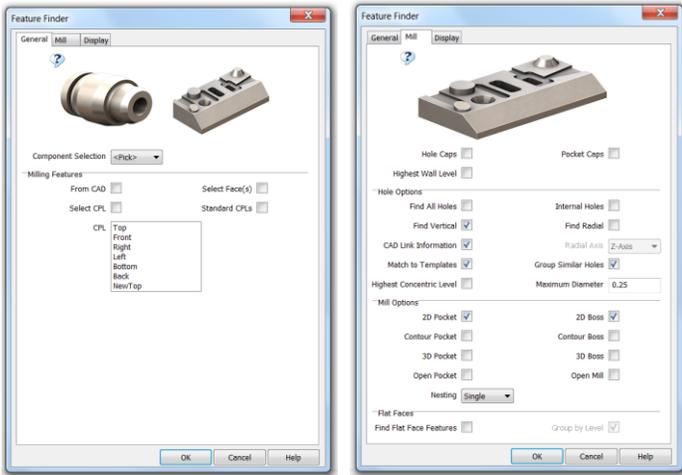


Evaluate and redefine the part reference zero PRZ or CPL

- For this example, the PRZ should not need to be reset. It has been created in Autodesk Inventor with the correct PRZ as we would like to assign it.

Nothing needs to be done at this step.





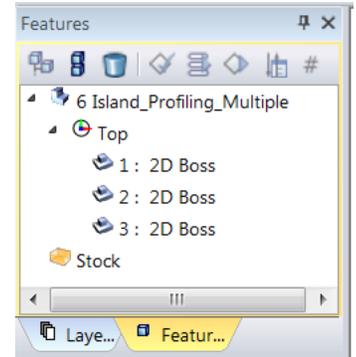
Use the feature finder to allow EdgeCAM to evaluate the 3D CAD model in order to break the model into manufacturable features

Hole Options

Find Vertical
 CAD Link Information
 Match to Template
 Group Similar Holes
 Maximum Diameter = The largest tool you have to be able to drill with (Example = 0.25)

Mill Options

2D Pocket
 2D Boss
 All features found will now be displayed on the features tab



Leave DESIGN mode and enter MANUFACTURE mode

DISCIPLINE – [Mill]

MACHINE TOOL – Choose the correct POST for your machine [intelitek.mcp]

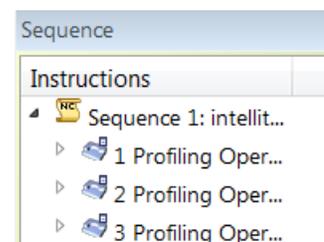
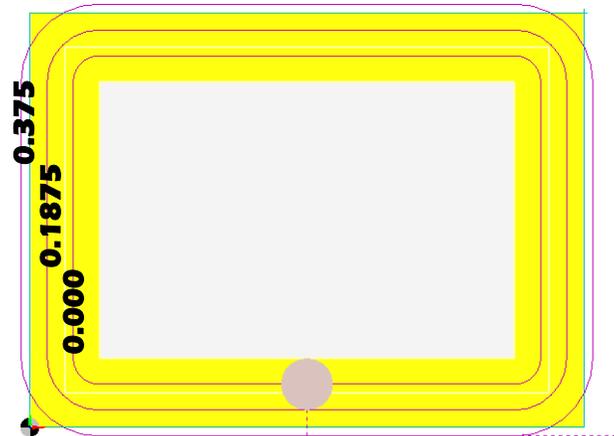
INITIAL CPL – Ensure the CPL is [Top]

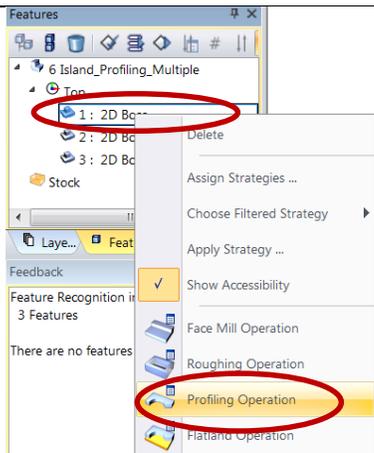
The 1st layer of this part can be produced in one of two ways. Because the top layer is too far in from the edge to be completed in one profile it can be roughed as the island was in tutorial #4 Island Roughing but for this activity we are going to use offset profiles.

In the following steps we will go through the process of developing offset profiles that will produce the same results as roughing it as an island. We will produce three concentric offset profiles, starting from the outside and stepping into the part. Depending on the diameter tool you are using, you may need more or less steps (think 50% step overs)

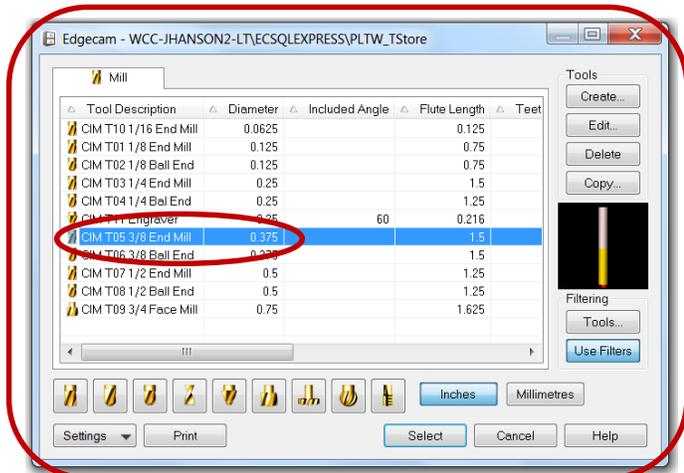
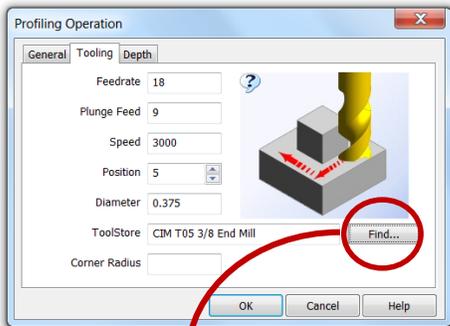
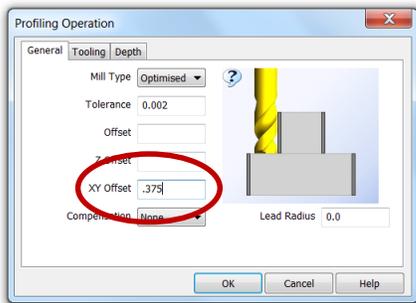
The following PROFILING OPERATION will be completed 3 times for the 0.375 diameter end mill.

- First profile = OFFSET of 0.375
- Second profile = OFFSET of 0.1875
- Third profile = OFFSET of 0





Select boundary entities (Finish for none)



Switch from the SEQUENCE tab back to the FEATURES tab

-Select the 1st 2D BOSS from the features list.

Right click on the first 2D BOSS and select PROFILING Operation from the list

At this time we do not need to define any boundaries for this operation. Select either select the check mark in the top right corner, select enter on the keyboard, or right click to select DONE



GENERAL

-MILL TYPE – Either select [CLIMB]

-% STEPOVER – [50%]

-OFFSET – [Blank] (Used to leave material on all axis (X, Y and Z). A finishing operation can then be used to remove the offset material

-Z OFFSET – [Blank] (Used to leave material on only the Z Plane of the surface defined.)

**NOTE:

-XY OFFSET – 1st time = [.375]

2nd time = [.1875]

3rd time = [0]

-TOLERANCE – [0.001 to 0.005]

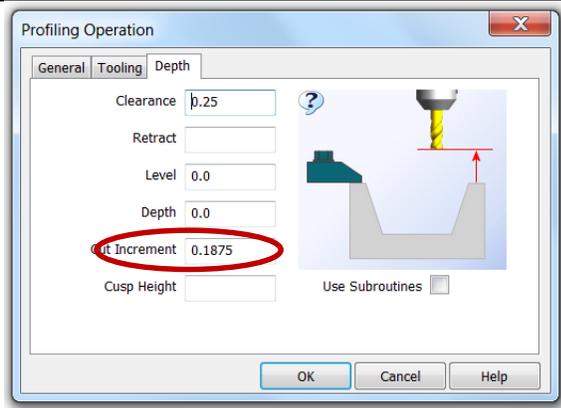
-COMPENSATION – [None]

TOOLING

-1ST Choose the FIND box (choose the largest end mill tool you have available in your library or have available at you machine)

-2nd Ensure the FEEDRATE, PLUNGE RATE, and SPEED are correct for the material and the tool you are using.

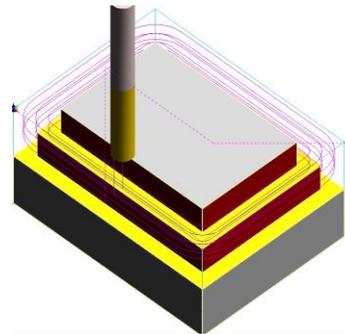
***NOTE: 2nd and 3rd time, select use current tool**



DEPTH

- CLEARANCE – [0.25] - Retract point above the PRZ
- LEVEL – [0] – Measured from the top of the feature selected
- DEPTH – [0] - Measured from the bottom of the feature selected
- CUT INCREMENT – [0.1875] - determine a safe number for the tool you are using to go from the level to the depth. If the Cut Increment is smaller than depth, the facing operation will produce multiple passes to go from the level to the depth.

For prototyping material, use approximately 1/2 to 1/3 the bit diameter as the cut increment



Simulate the machining process

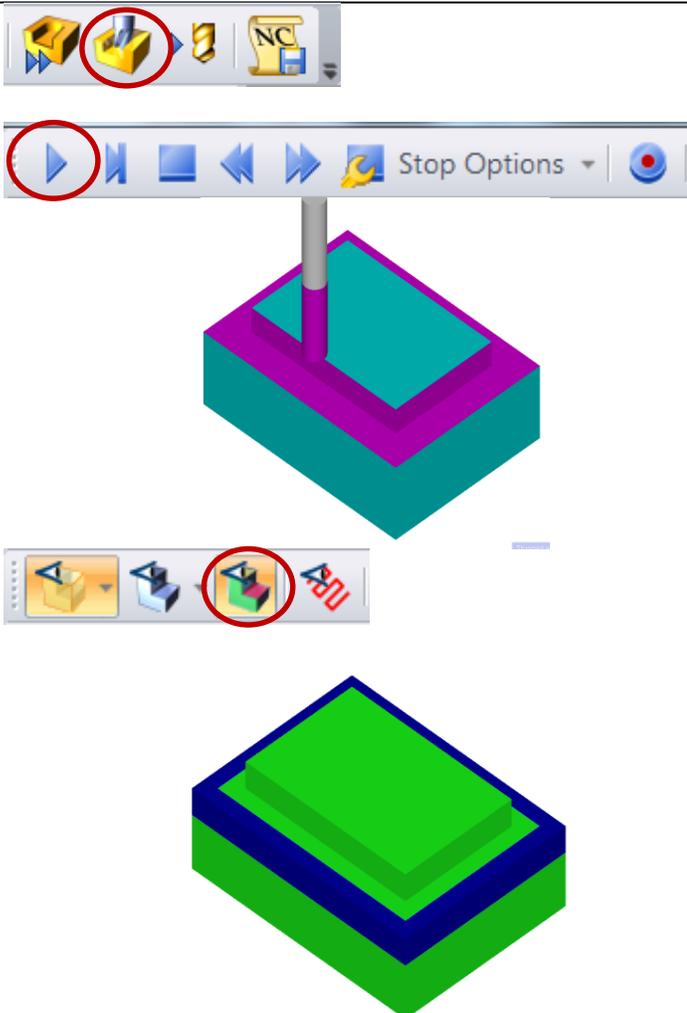
Once the simulator opens, Select PLAY

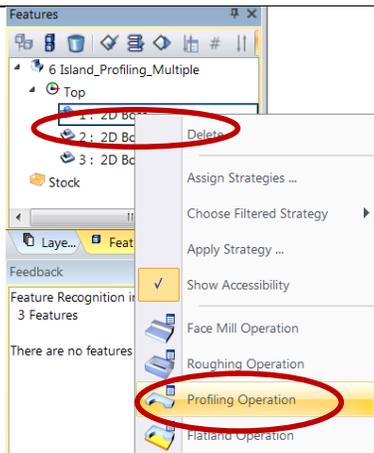
Ensure the simulator produce the results desired

Select the COMPARE tool – this option will compare the original 3D model and the results of the simulated operations. At this time since we raised the stock above the 3D model, set the facing operation to only cut the amount raised from the 3D model, the compare should show as all green

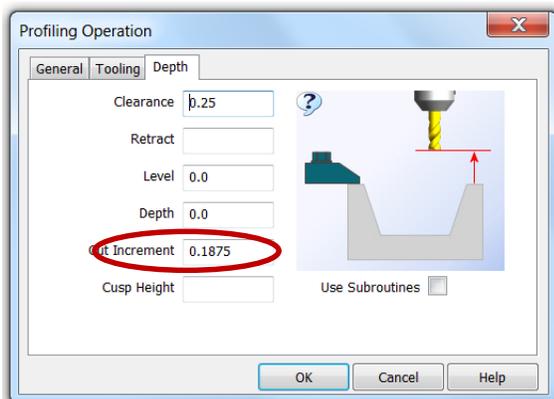
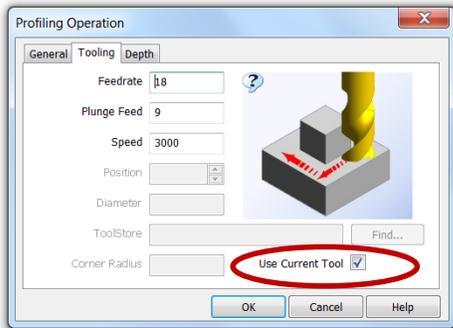
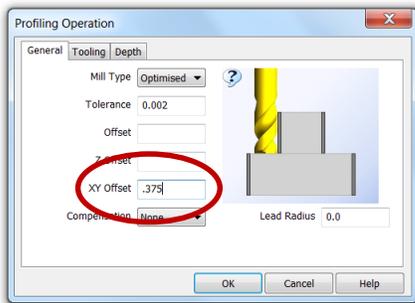
- GREEN** – Simulation and CAD model areas that Match
- BLUE** – Areas not removed or remaining from the stock to produce the 3D model
- RED** – Areas removed from the stock that have cut into the 3D model

Close the simulator to return to EdgeCAM





Select boundary entities (Finish for none)



Switch from the SEQUENCE tab back to the FEATURES tab

-Select the 2nd 2D BOSS from the features list.

Right click on the second 2D BOSS and select PROFILING Operation from the list

At this time we do not need to define any boundaries for this operation. Select either select the check mark in the top right corner, select enter on the keyboard, or right click to select DONE



GENERAL

- MILL TYPE – Either select [CLIMB]
- % STEPOVER – [50%]
- OFFSET – [Blank] (Used to leave material on all axis (X, Y and Z). A finishing operation can then be used to remove the offset material)
- Z OFFSET – [Blank] (Used to leave material on only the Z Plane of the surface defined.)
- XY OFFSET – [0]
- TOLERANCE – [0.001 to 0.005]
- COMPENSATION – [None]

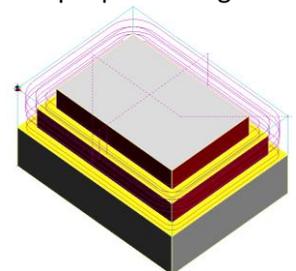
TOOLING

Select USE CURRENT TOOL to keep the same tool and speeds and feeds as used in the previous operation

DEPTH

- CLEARANCE – [0.25] - Retract point above the PRZ
- LEVEL – [0] – Measured from the top of the feature selected
- DEPTH – [0] - Measured from the bottom of the feature selected
- CUT INCREMENT – [0.1875] - determine a safe number for the tool you are using to go from the level to the depth. If the Cut Increment is smaller than depth, the facing operation will produce multiple passes to go from the level to the depth.

For prototyping material, use approximately 1/2 to 1/3 the bit diameter as the cut increment



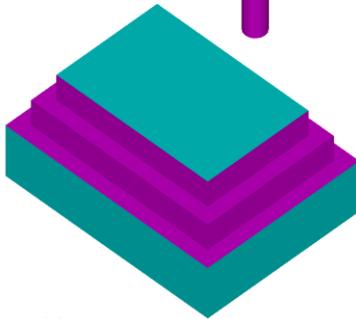


Simulate the machining process

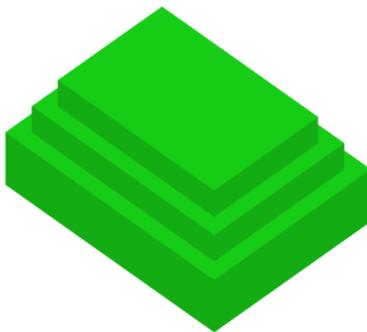
Once the simulator opens, Select PLAY



Ensure the simulator produce the results desired



Select the COMPARE tool – this option will compare the original 3D model and the results of the simulated operations. At this time since we raised the stock above the 3D model, set the facing operation to only cut the amount raised from the 3D model, the compare should show as all green



GREEN – Simulation and CAD model areas that Match
BLUE – Areas not removed or remaining from the stock to produce the 3D model

RED – Areas removed from the stock that have cut into the 3D model

Close the simulator to return to EdgeCAM



**Note: If EdgeCAM is running in HOME WORK mode, producing the NC code is not available*

Select NC tool from the tool bar to produce the NC code using the POST Processor selected earlier