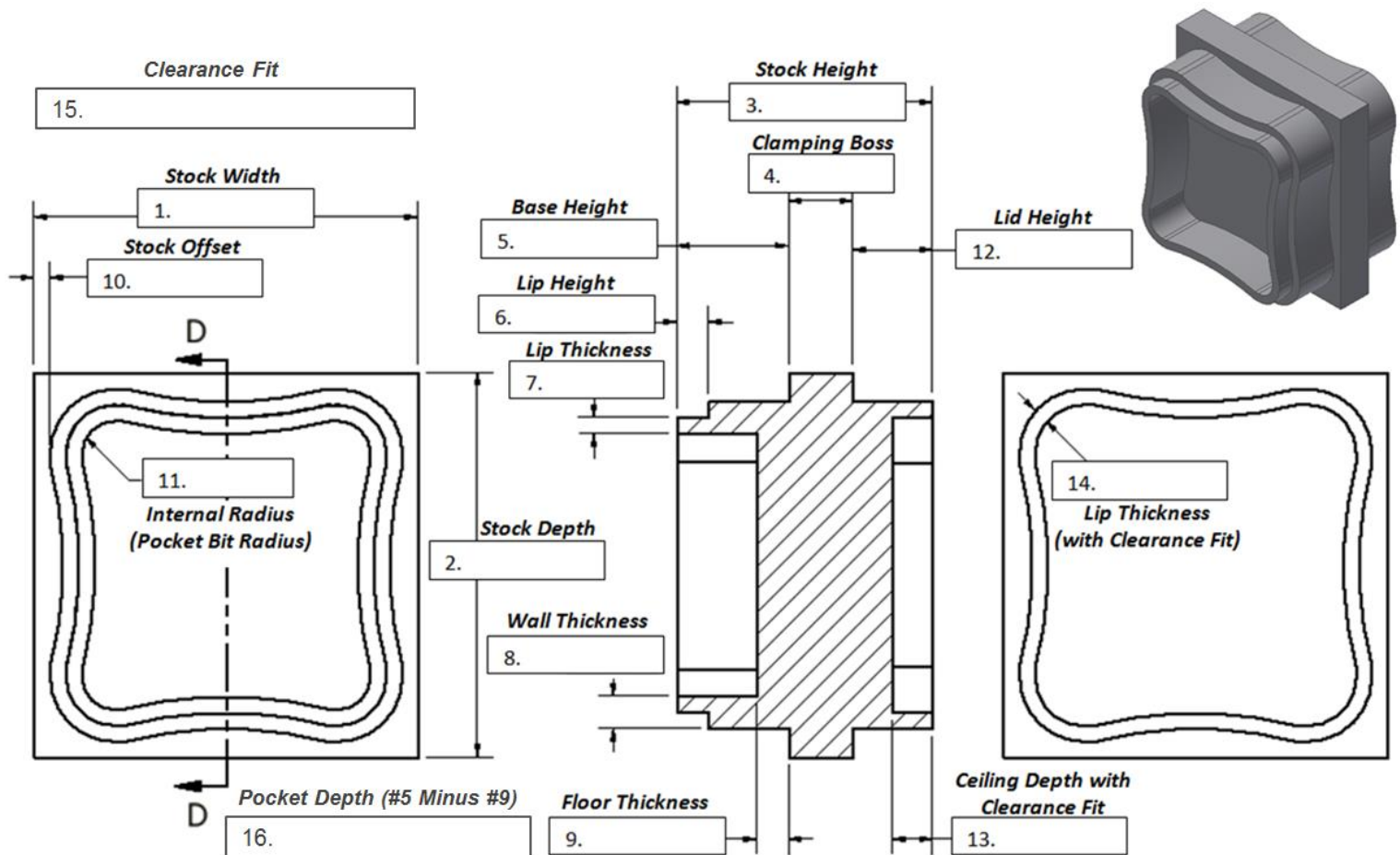
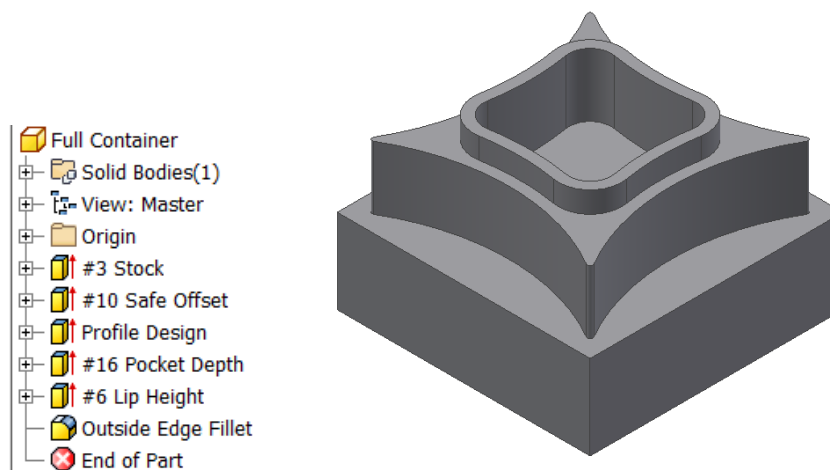





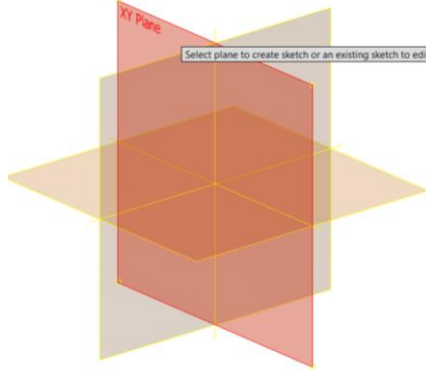
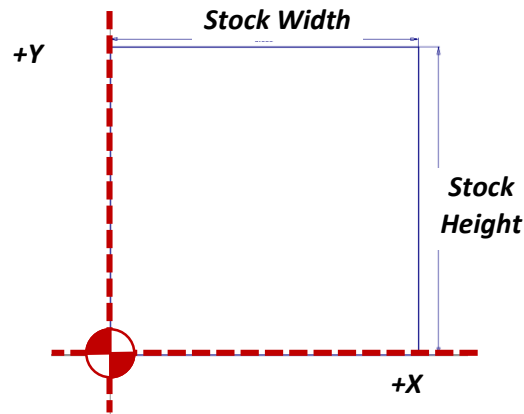




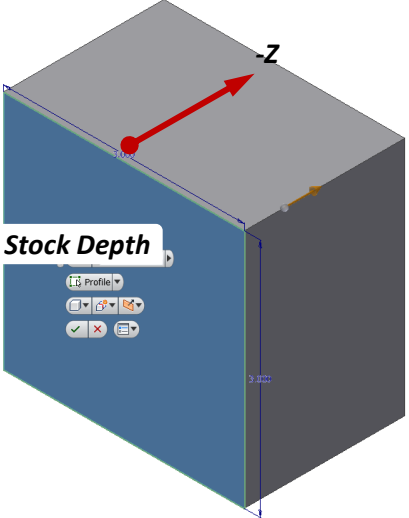
CNC Container Cheat Sheet

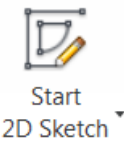
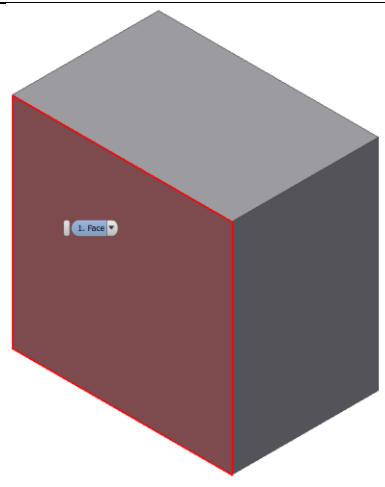

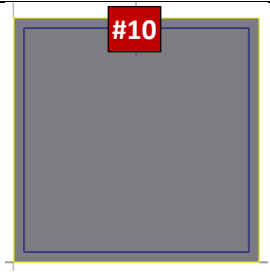




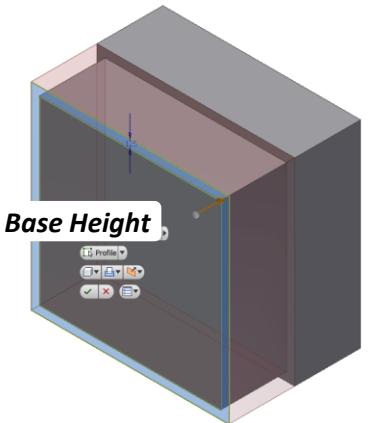
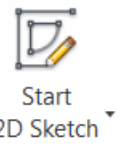
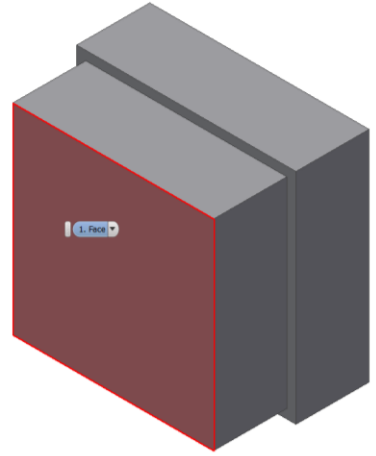

Base Layout and Design

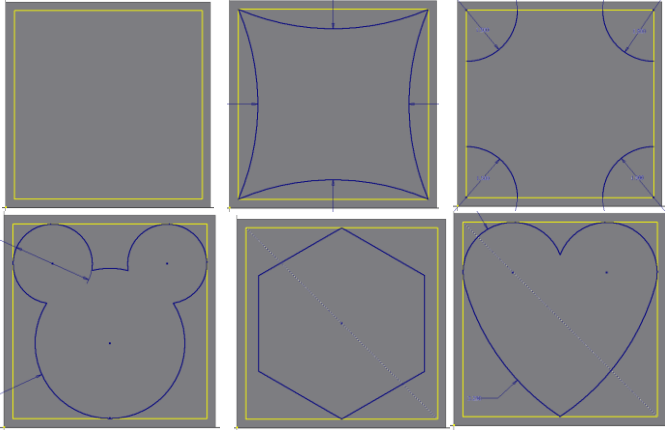
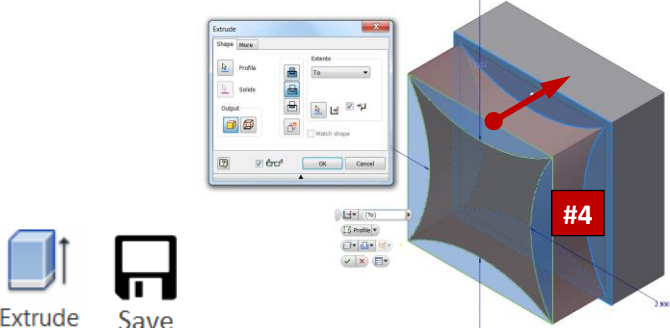
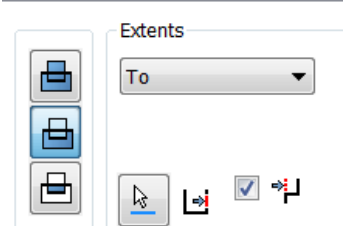
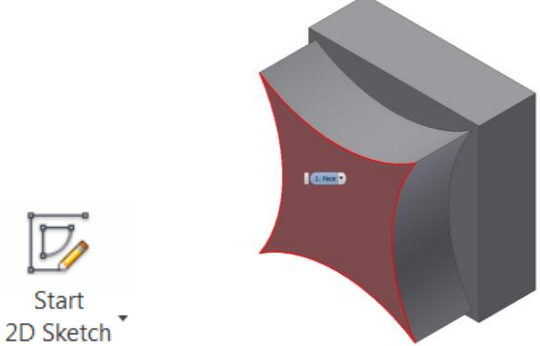

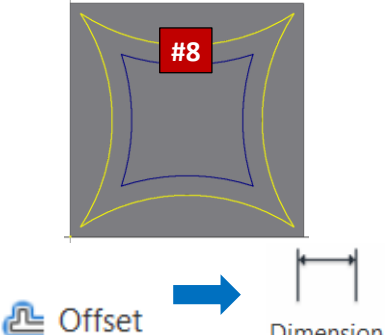


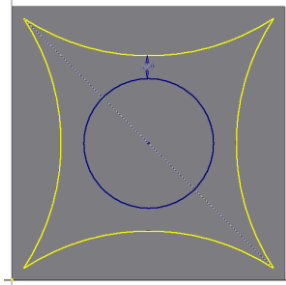
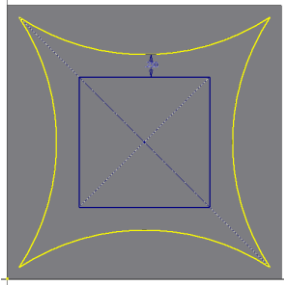
DESIGN STRATEGY 2 CONTAINER BASE & LID CONSTRAINTS



<div><div><div>Standard (in).ipt</div></div><div><div>Save</div></div></div>	<p>Start a new Standard Part File (.ipt)</p> <p>Save the file as “LastName_Full_Container”</p>
<div><div><div>Start 2D Sketch</div></div><div></div></div>	<p>Start a new 2D SKETCH on the XY Plane</p>
<div><div></div><div><div><div>Rectangle</div></div><div><div>Dimension</div></div><div><div>Finish Sketch</div></div></div></div>	<p>Create a TWO-POINT RECTANGLE in the +X and +Y Coordinates to create the rough stock boundaries</p> <ul style="list-style-type: none">• Ensure the rectangle is locked onto the origin• Place a Stock Width dimension of<ul style="list-style-type: none">○ #1 _____• Place a Stock Height dimension of<ul style="list-style-type: none">○ #2 _____ <p>FINISH SKETCH</p>
<div><div><div>Extrude</div></div><div></div></div>	<p>EXTRUDE the rough stock into the –Z direction</p> <ul style="list-style-type: none">• Set an extrusion Stock Depth of<ul style="list-style-type: none">○ #3 _____

 	<p>Place a new 2D SKETCH on the top surface of the part</p> <p>This will create a safe stock boundary around the edge of the part for inaccuracies in the</p> <ul style="list-style-type: none"> • creation of the actual stock material • setup of the vise (parallel and perpendicular to the tool X and Y axis) • setup/homing of the PRZ (Part Reference Zero) on the X and Y axis  <p>Project Geometry</p> <p>If auto project edges is not on by default (you get yellow edges every time a new sketch is created), please project the geometry of the top surface</p>
  <p>Offset</p>  <p>Dimension</p>  <p>Finish Sketch</p>	<p>OFFSET the outside profile</p> <ul style="list-style-type: none"> • Set a safe Stock Offset distance of <ul style="list-style-type: none"> ○ #10 _____ <p>FINISH SKETCH</p>
 <p>Extrude</p>  <p>Base Height</p>	<p>EXTRUDE CUT the rough stock into the –Z direction</p> <ul style="list-style-type: none"> • Set an extrusion Base Height of <ul style="list-style-type: none"> ○ #5 _____
 	<p>Place a new 2D SKETCH on the top surface of the part</p> <p>This sketch will be used to define to outside profile/design of the container</p>  <p>Project Geometry</p> <p>If auto project edges is not on by default (you get yellow edges every time a new sketch is created), please project the geometry of the top surface</p>

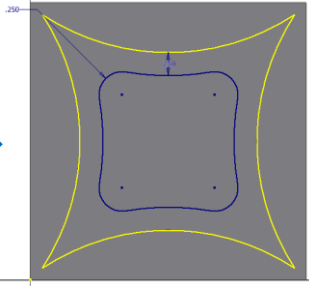
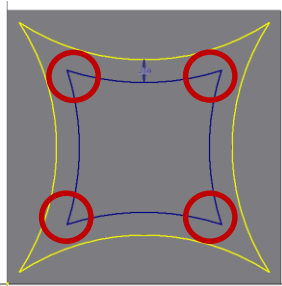
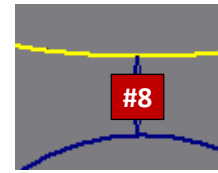
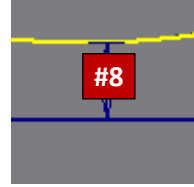
 <p>Finish Sketch</p>	<p>Create the outside stock profile of the container</p> <p>Have fun, Be creative, But ensure the design can be created</p> <p>Consider:</p> <ul style="list-style-type: none"> capabilities of the tooling available (Radius of the tool for internal intersections vs external corners) amount of tool changes that would be needed time for machining amount of contours vs straight edges (Intelitek CNC machines will internally slow the feed rate while performing arcs) <p>Ensure:</p> <ul style="list-style-type: none"> The sketch is FULLY constrained (No missing dimensions) Try to maximize your space in the design (touch SAFE BOUNDARIES, but do not go over) <p>FINISH SKETCH</p>
 <p>Extrude Save</p>	<p>EXTRUDE cut the outside profile(s) TO the top face of the #4 CLAMPING BOSS</p>  <p>Save</p>
 <p>Start 2D Sketch</p>	<p>Place a new 2D SKETCH on the top surface of the part</p> <p>This sketch will be used to define the inside pocket of the container</p>  <p>Project Geometry</p> <p>If auto project edges is not on by default (you get yellow edges every time a new sketch is created), please project the geometry of the top surface</p>
 <p>Offset Dimension</p>	<p>OFFSET the outside profile of the container in the part</p> <ul style="list-style-type: none"> Set an safe Wall Thickness distance of <ul style="list-style-type: none"> #8 _____



IF

the profile is too complex to offset or will not offset in due to arc from the outside profile, simplify the inside pocket design

Regardless of the inside pocket design, ensure a minimum **Wall Thickness** distance



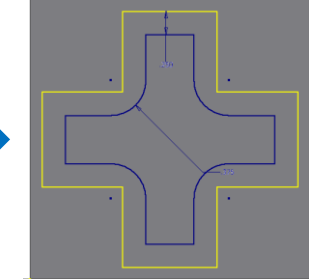
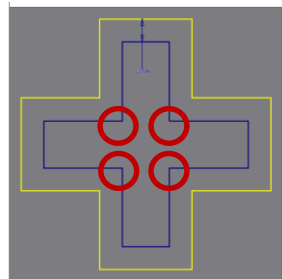
Finish
Sketch

Fillet ALL inside intersections with a minimum radius of the END MILL bit to be used to create the part

- Set a minimum fillet radius **Internal Radius** of

○ #11 _____

FINISH SKETCH



IF

Any external corners/intersections exist, add #11 and #7

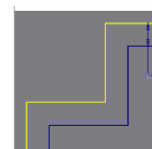
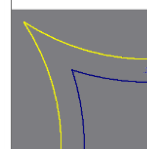
- Set a minimum fillet radius **External Radius** of

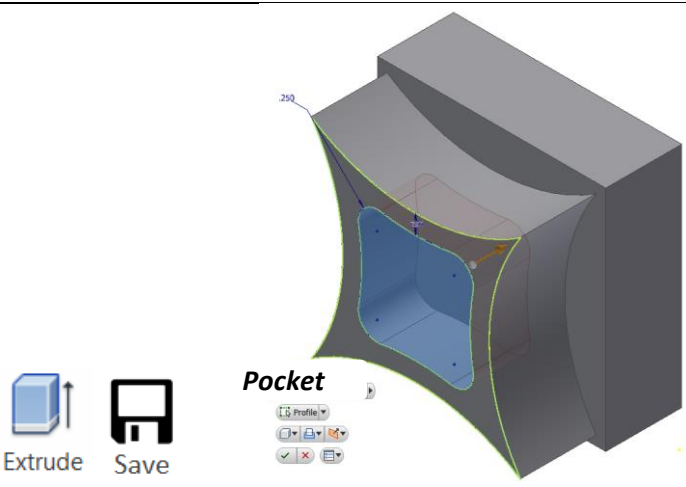
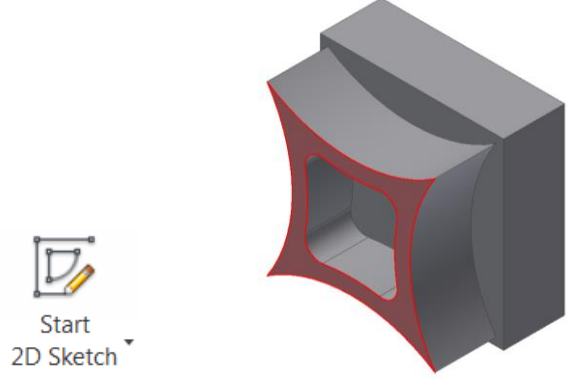

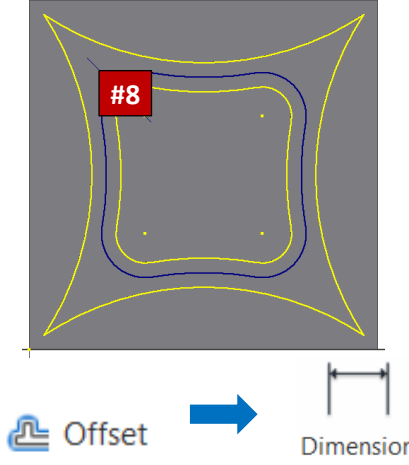
○ #11 + #7 _____

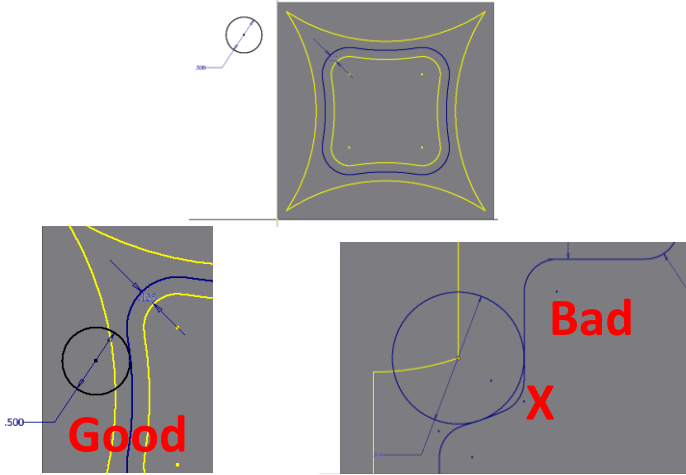
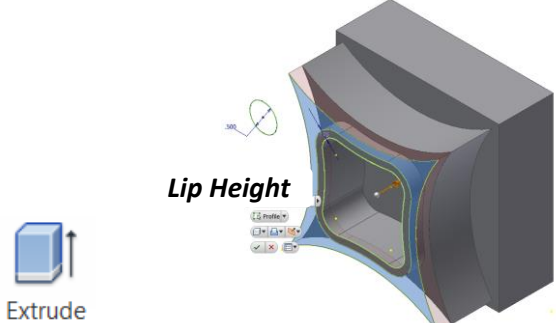
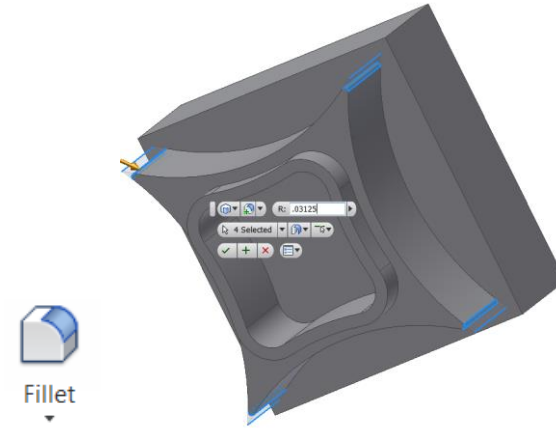


Example:

- Bit Diameter = 0.5"
- #11 = 0.25" Radius
- #7 = 0.125" Offset
- #11 + #7
- $0.25" + 0.125" = 0.375"$

Internal Corner VS External Corner



 <p>Pocket</p> <p>Extrude Save</p>	<p>EXTRUDE CUT the pocket profile into the -Z direction</p> <ul style="list-style-type: none"> Set an extrusion depth for the Pocket of <ul style="list-style-type: none"> #16 = #5 - #9 _____ <p><i>Example</i></p> <ul style="list-style-type: none"> #5 = Total Base of 1.00" #9 = Floor Thickness of 0.25" Pocket Extrusion = 1.00" - 0.25" = 0.75" <p>Save</p>
 <p>Start 2D Sketch</p>	<p>Place a new 2D SKETCH on the top surface of the part</p> <p>This sketch will be used to define the outside profile of the base lip</p> <p> Project Geometry</p> <p>If auto project edges is not on by default (you get yellow edges every time a new sketch is created), please project the geometry of the top surface</p>
 <p>#8</p> <p>Offset Dimension</p>	<p>OFFSET the outside profile of the pocket to create the lip</p> <ul style="list-style-type: none"> Set an offset distance for the Lip Thickness of <ul style="list-style-type: none"> #7 _____

 <p>Good</p> <p>Bad</p> <p>✓ Finish Sketch</p>	<p>Off to the side of the part, create a CENTER POINT CIRCLE with a diameter of the bit to be used to profile the outside of the lip. (this will represent the tool to be used)</p> <p>To ensure the tool can create the desired feature:</p> <ul style="list-style-type: none"> • Manually grab and hold the center point of the circle • Drag the circle around the edge of the lip created • Ensure there are no areas the tool cannot create <p>If any areas exist that the tool cannot create, they must be fixed now</p> <p>FINISH SKETCH</p>
 <p>Extrude</p> <p>Lip Height</p>	<p>EXTRUDE CUT the Lip profile into the -Z direction</p> <ul style="list-style-type: none"> • Set an extrusion Lip Height of <ul style="list-style-type: none"> ○ #6 _____
 <p>Fillet</p>	<p>Fillet all inside corners with the bit radius to be used for the machining of the part</p> <p>Fillet any outside edges they may be sharp or hazardous while handling the final product.</p> <p>WARNING: RenShape material can be fragile on hard sharp edges if dropped. Suggested to fillet the outside edges</p> <p>Minimum Outside Edge Fillet: 0.03"</p>
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  Save </div> <div style="text-align: center; flex-grow: 1;"> <h2>THIS COMPLETES THE CONAINER BASE</h2> </div> <div style="text-align: center;">  Save </div> </div>	

