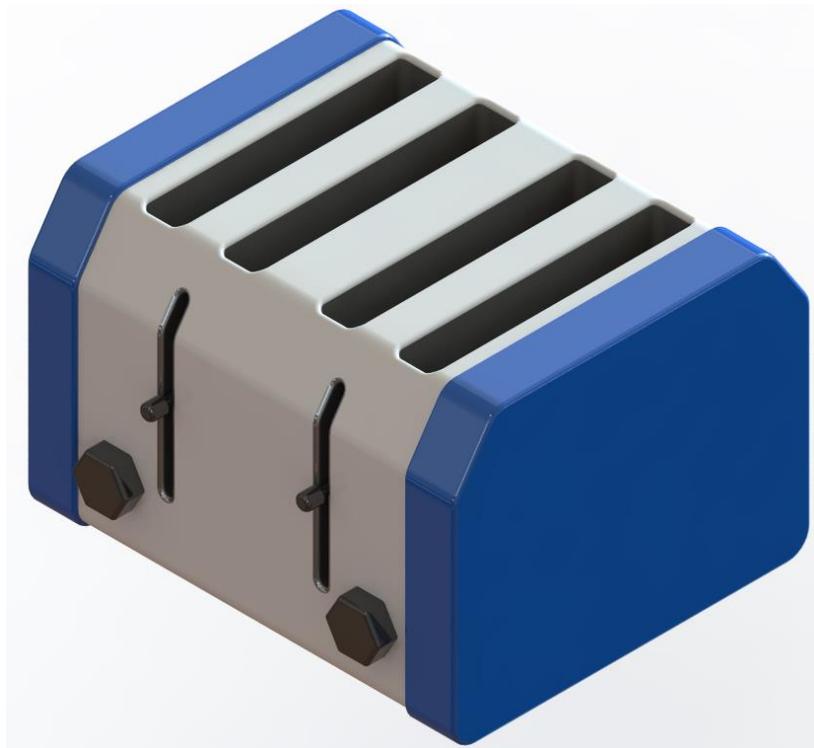


SOLIDWIZE

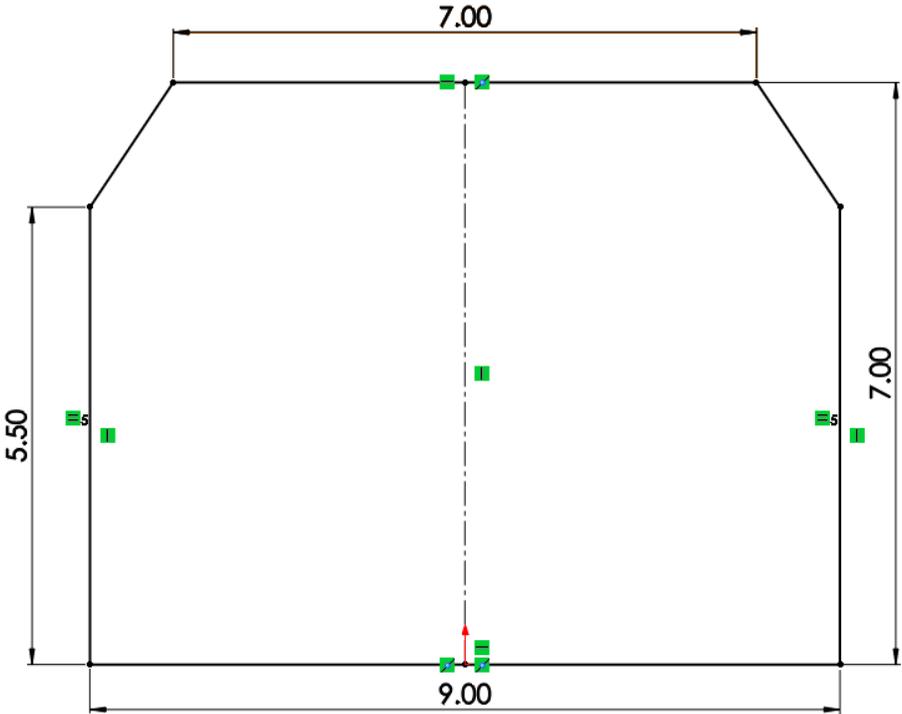
ONLINE SOLIDWORKS TRAINING

Extrusion Exercise - Toaster

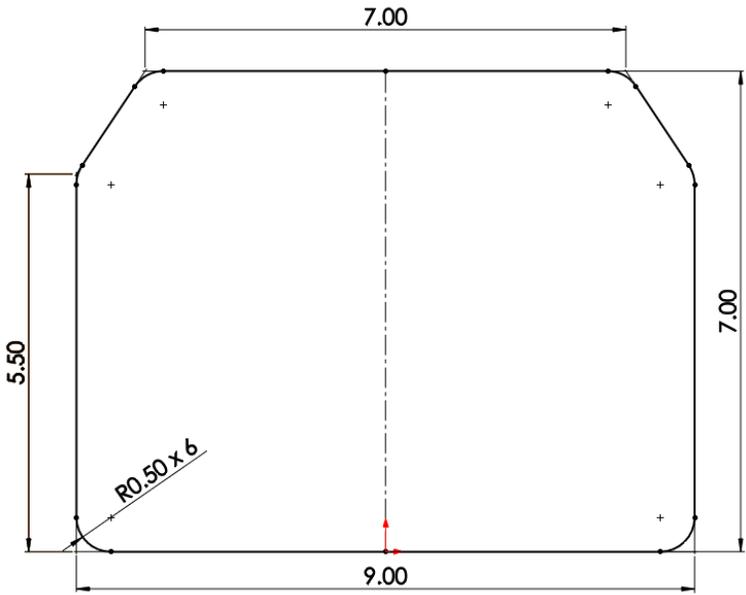


Step 1: Creating the Body

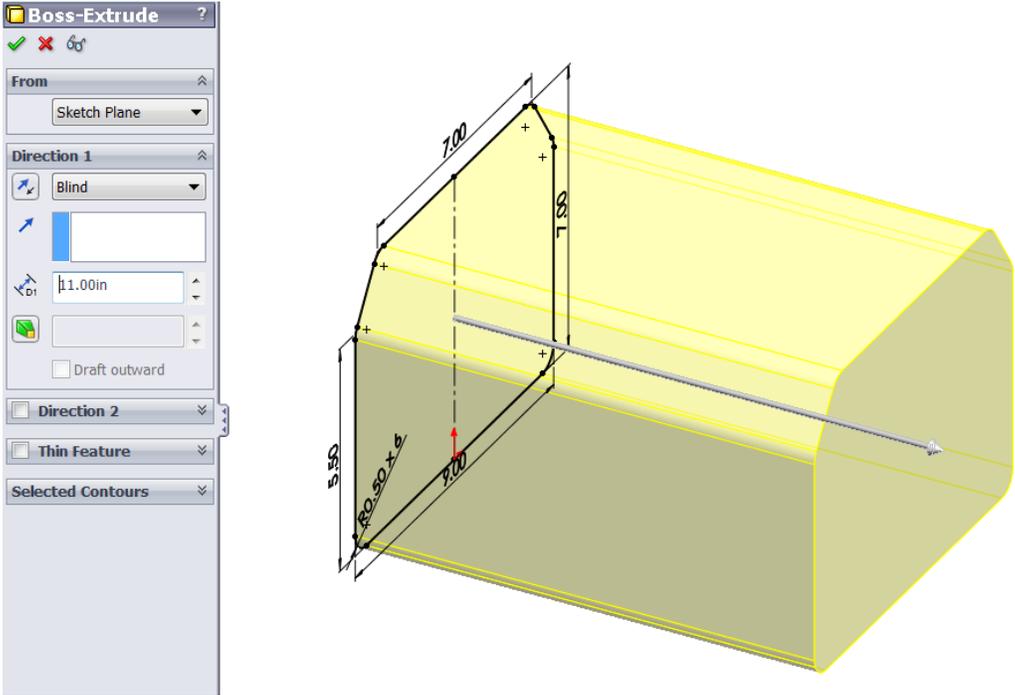
Create a sketch on the **Right Plane** with entities shown below. Notice the bottom sketch line has a midpoint relation with the origin. The vertical construction line also has a midpoint relation with the upper sketch line.



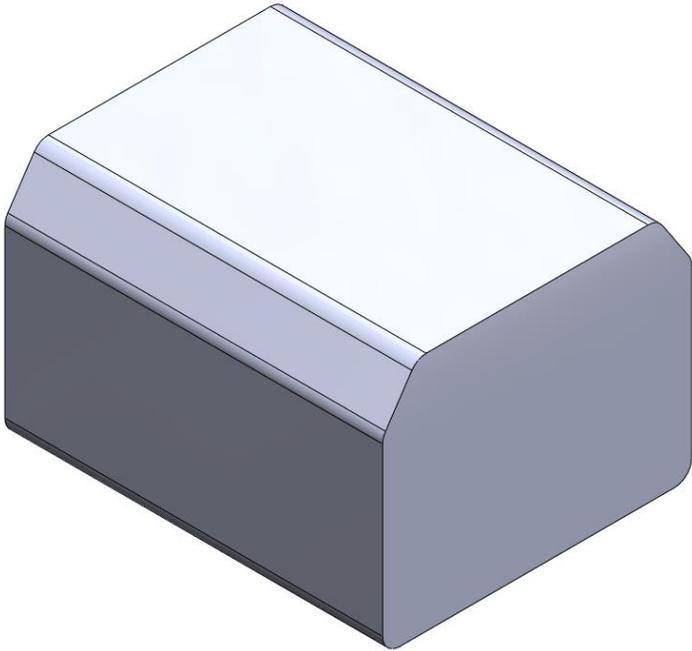
Add **0.50in.** fillets at the following vertices.



Extrude the sketch using the **Extruded Boss/Boss** tool. Set extrude type to **blind** with a depth of **11.00in**.

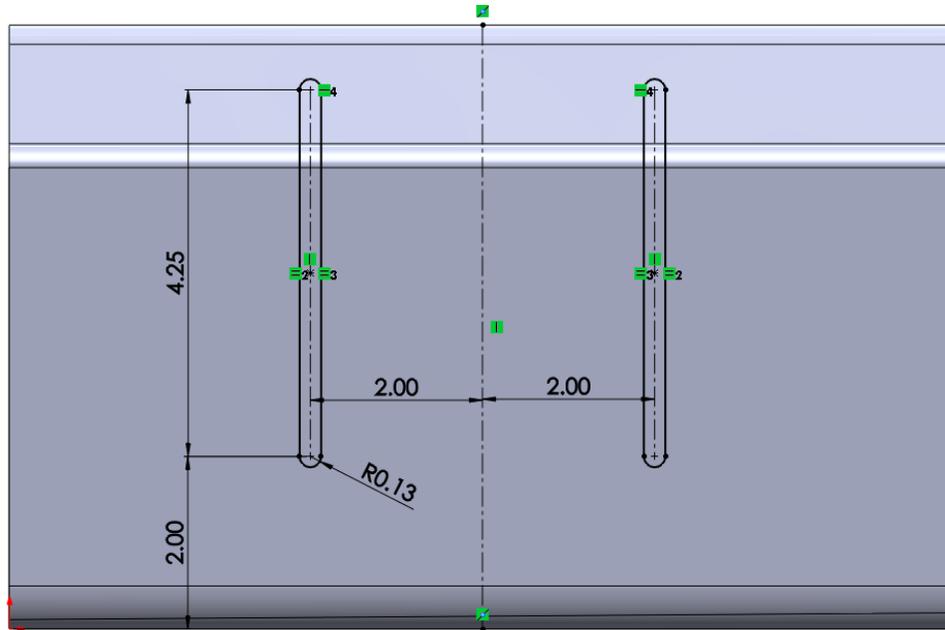


The resulting body should look like this:

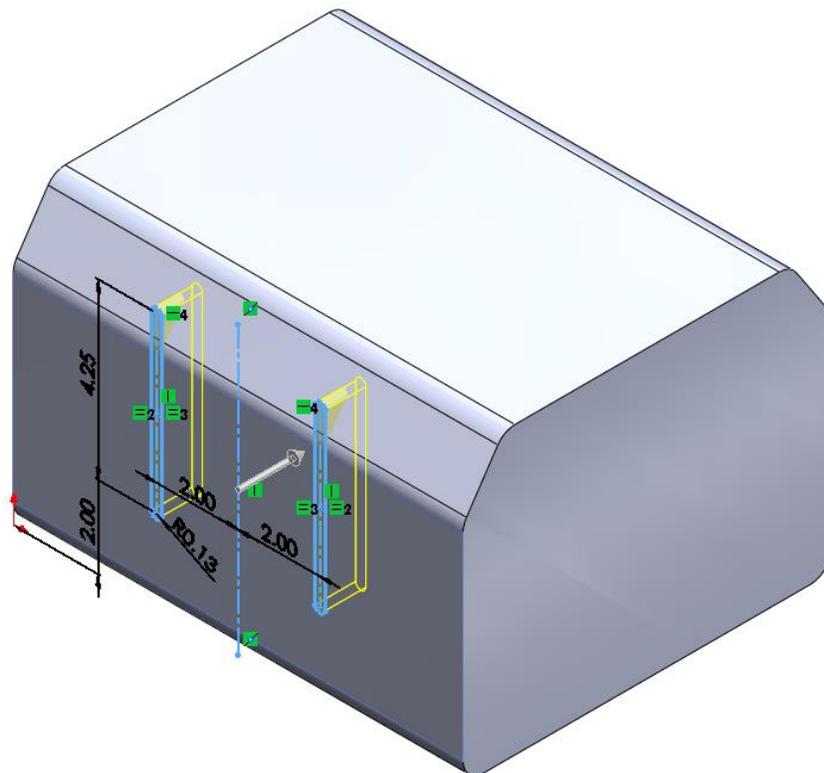


Step 2: Ejection Slots

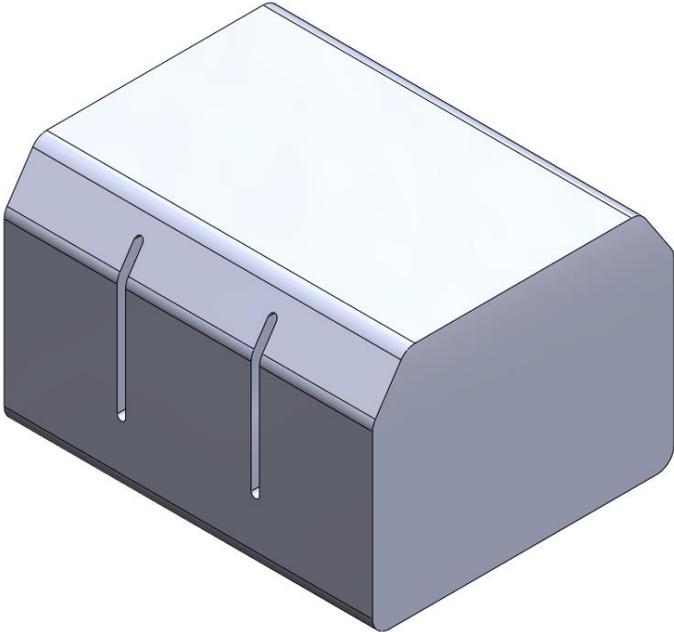
Create a sketch on the **side planar surface** of the body. Using the **Slot tool**, create two identical **Straight Slots** with the dimensions and spacing shown in the sketch below.



Extrude cut the slot into the body using the **blind** end condition with a cut depth of **1.00 in.**

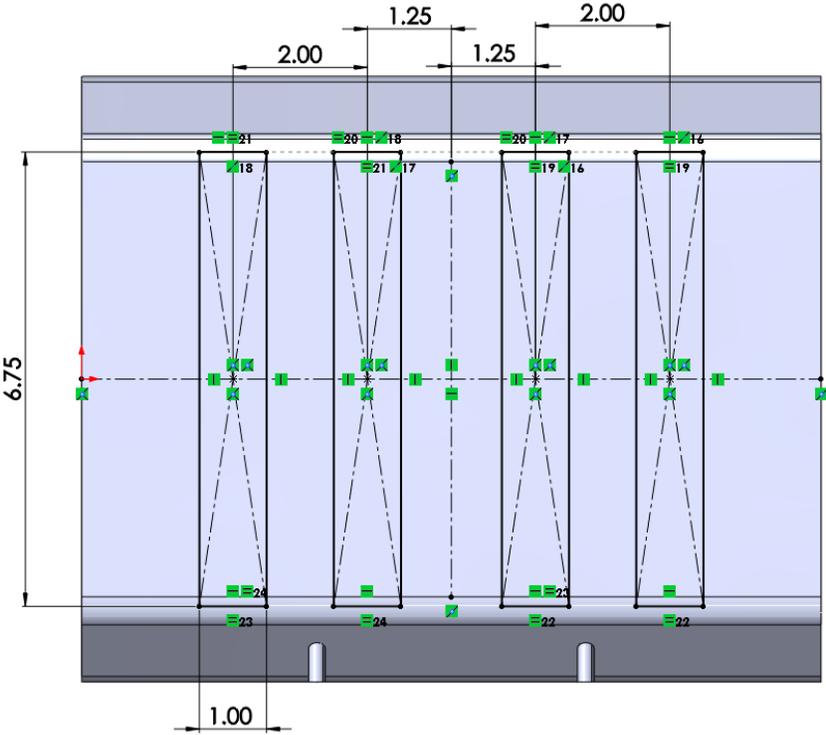


The results should look like this:

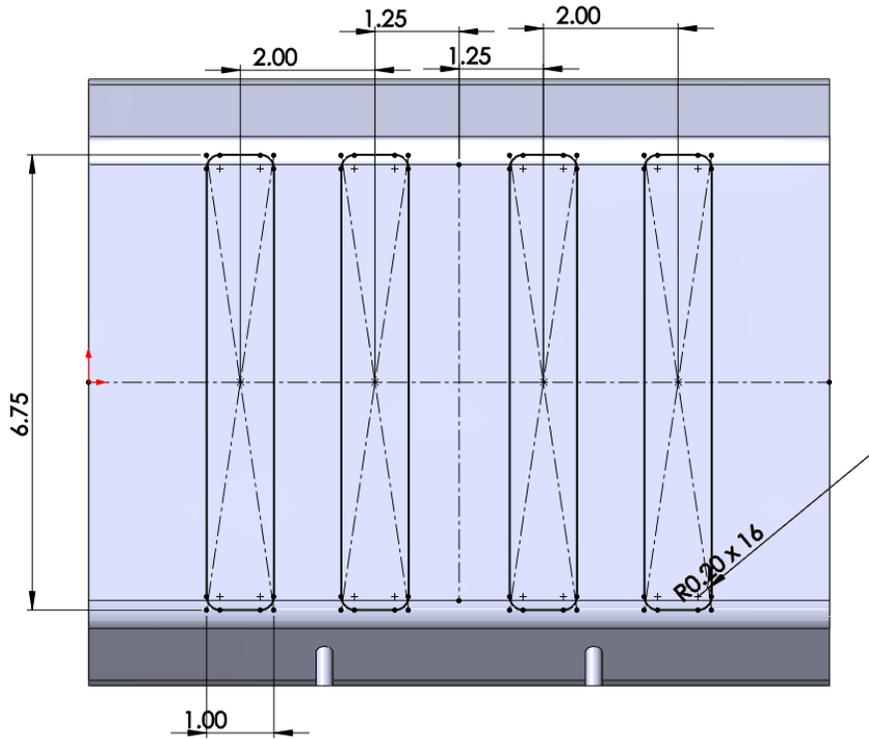


Step 3: Toaster Slots

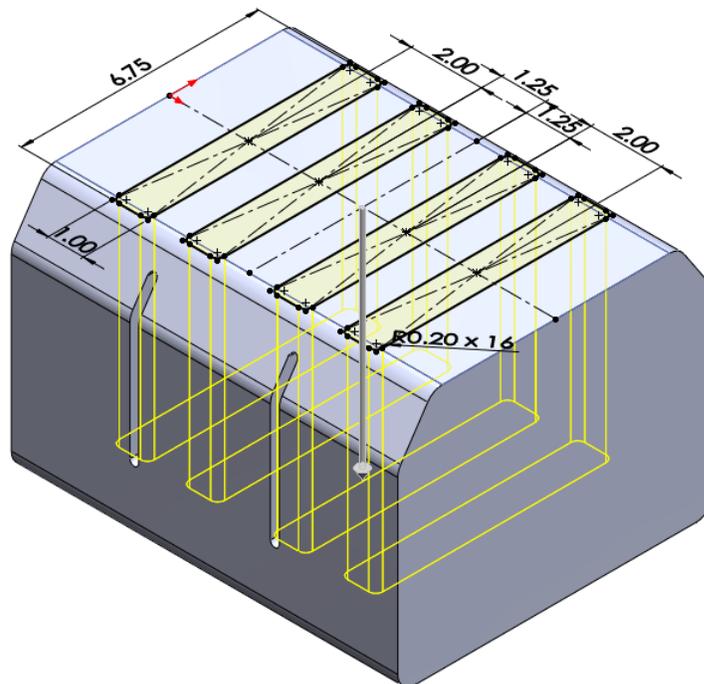
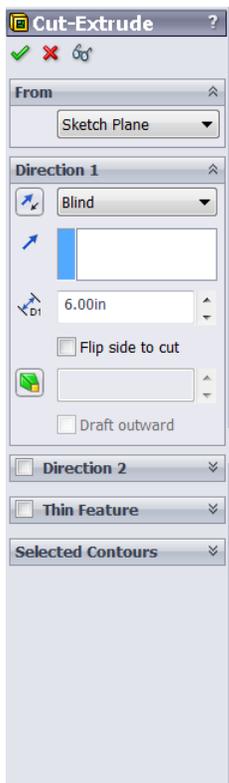
Create a sketch on the **top planar surface** of the body. Using the **center rectangle tool**, create four identical rectangles with the dimensions and spacing shown below.



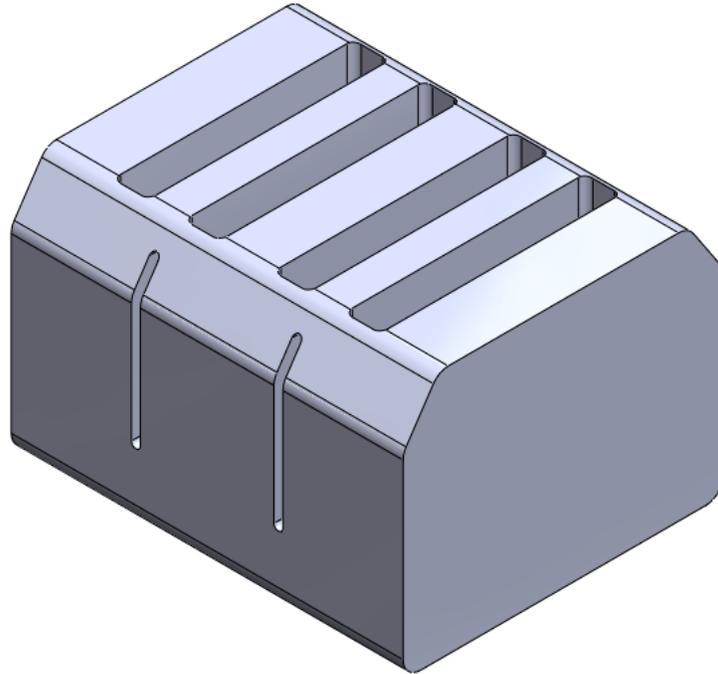
Add **0.2 in fillets** to all corners of the rectangle.



Extrude cut the slot into the body using the **blind** end condition with a cut depth of **6.00 in**.

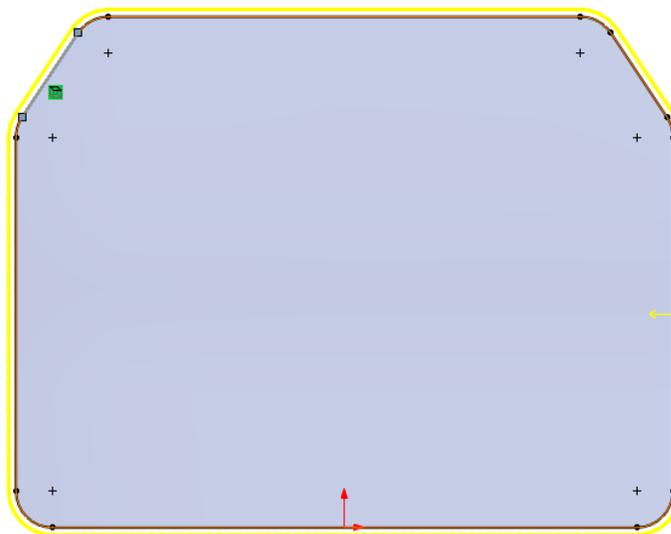
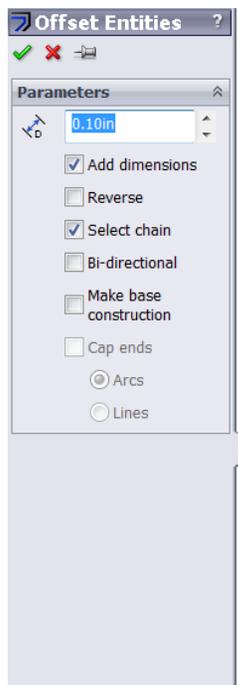


The result should look like this:

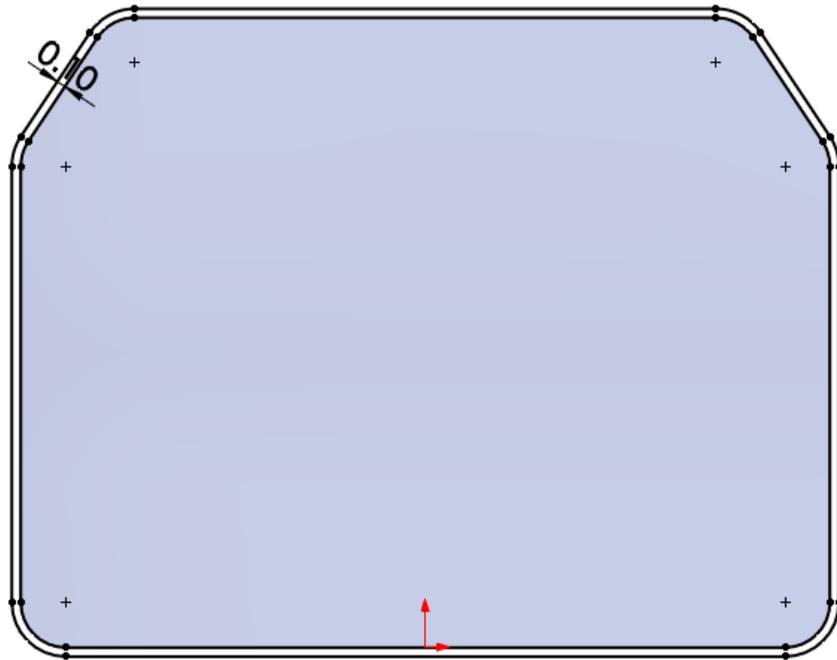


Step 4: Creating the Side Bezels

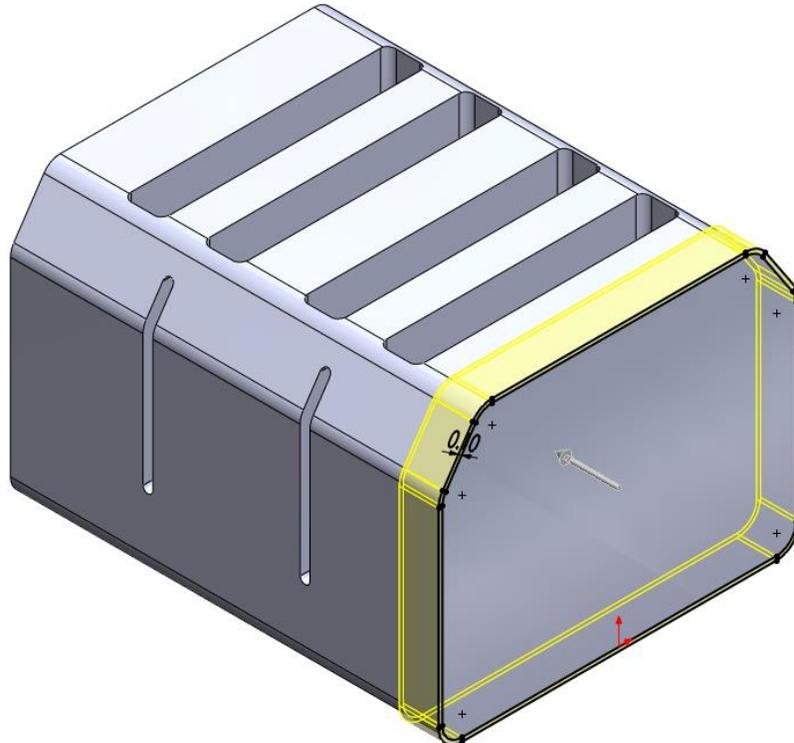
Create a sketch on the **right or left planar surface** of the body. Using the **Convert entities tool**, convert the contour of the surface. Then using the **Offset entities tool**, offset the contour lines with an offset distance of **0.10in**.



The sketch should look like the following:

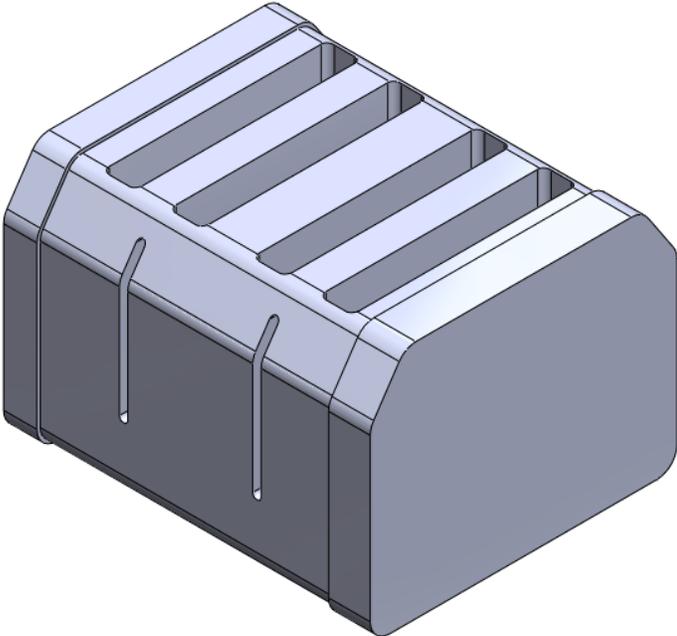


Extrude the sketch into the body with the **blind** extrusion type and distance of **1.25in.**



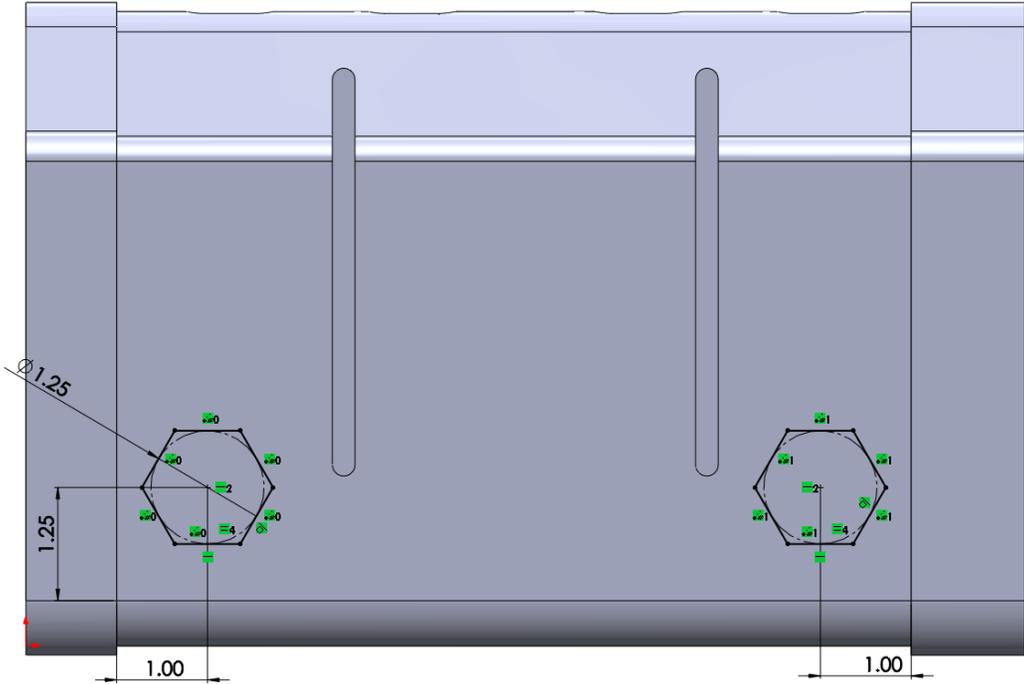
Do the same for the other side of the toaster.

The result should look like this:

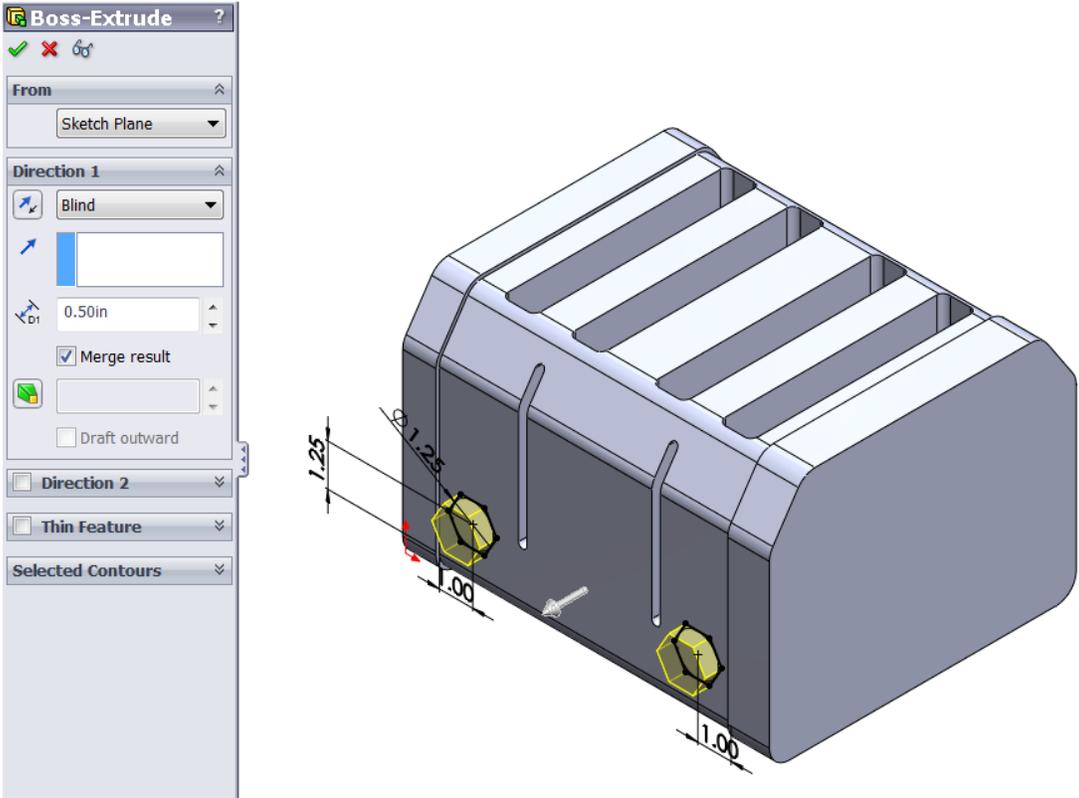


Step 5: Creating the Temperature Knobs

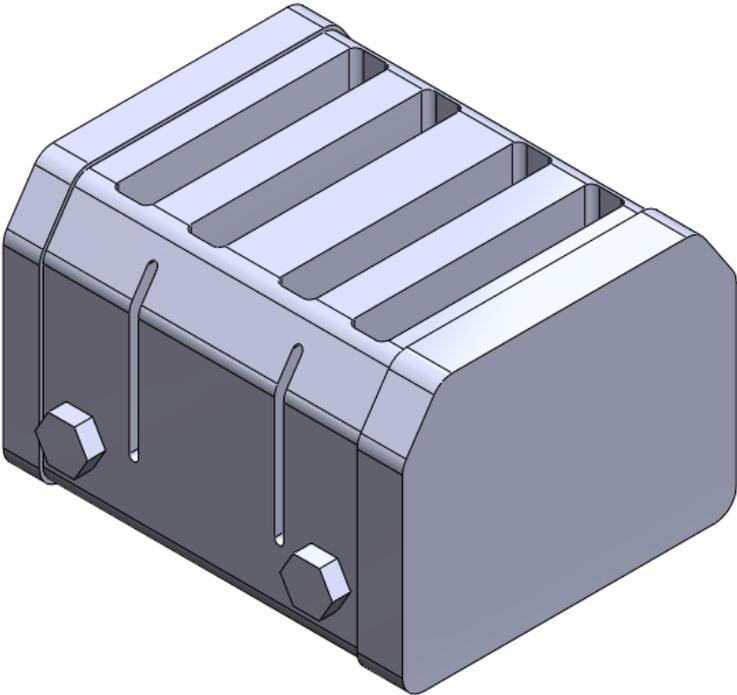
Create a sketch again on the same planar surface used for the slots. Using the **Polygon** sketch tool, create two identical **hexagons** with the following dimensions and spacing. Notice the horizontal relations between the two hexagons, and the horizontal relation of bottom hexagonal edge. The inscribed circles are also equal.



Extrude the sketch using the **blind** end type and a distance of **0.50in**.

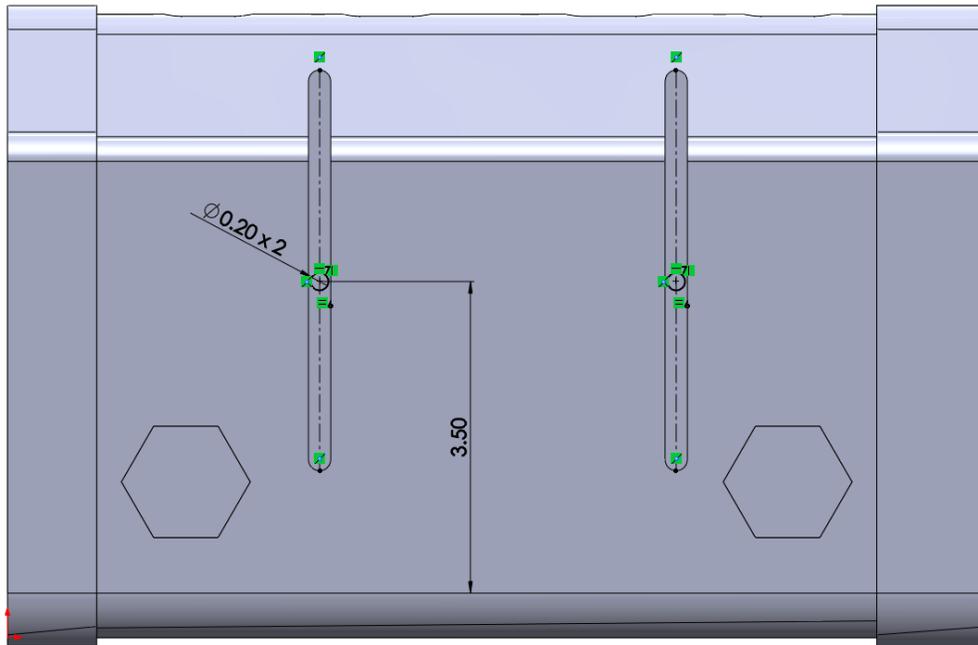


The results should look like this:

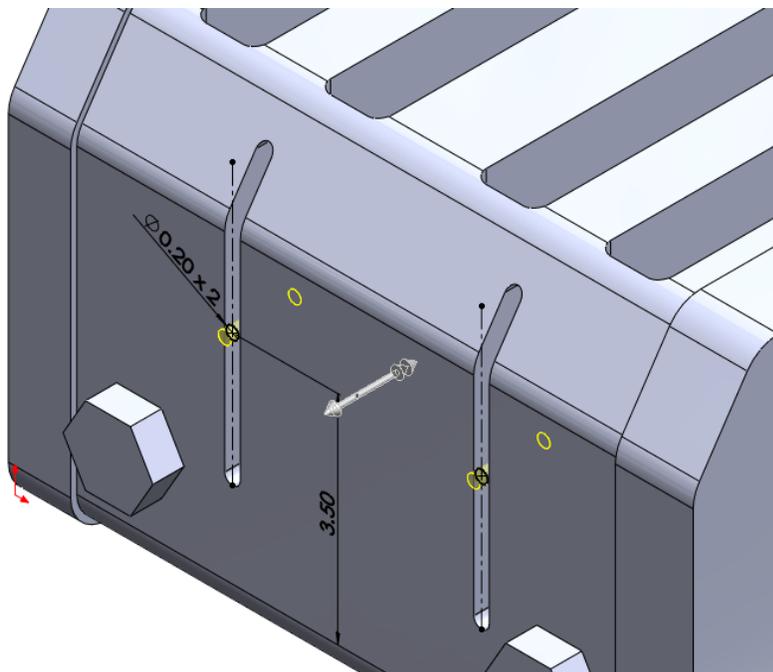
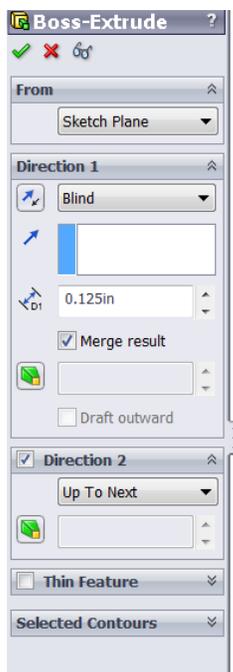


Step 6: Creating the Ejection Knobs, Part 1

Create a sketch on the same planar surface as step 5. Create two identical circles spaced in between each slot (Using a construction line may help make it easier). Dimension the circles as shown below.

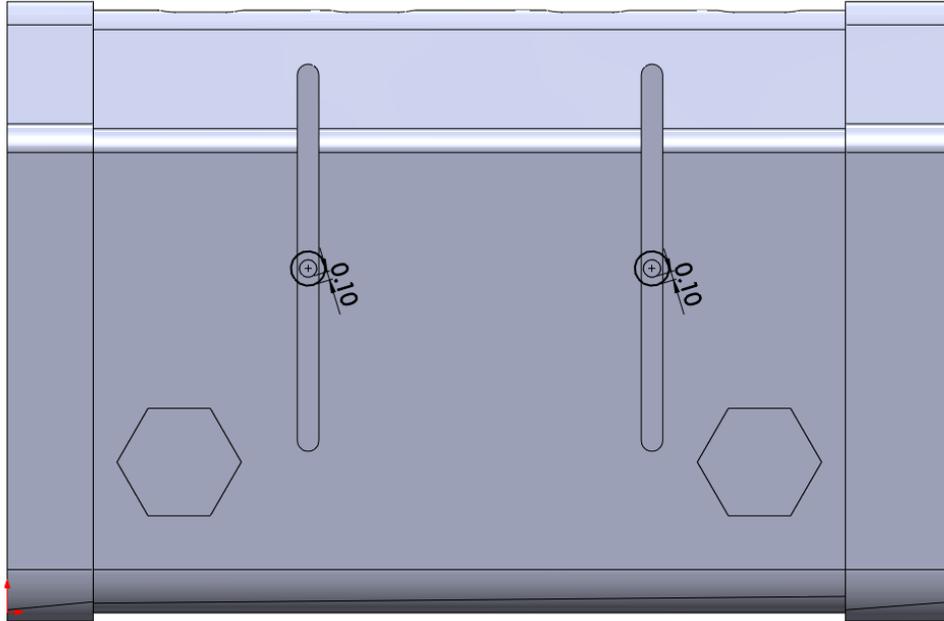


Using the **Extruded Boss/Base** tool, extrude **0.125in blind** in **direction 1** (away from body). Select the check box for **direction 2** and change the end condition to **Up to Next**.

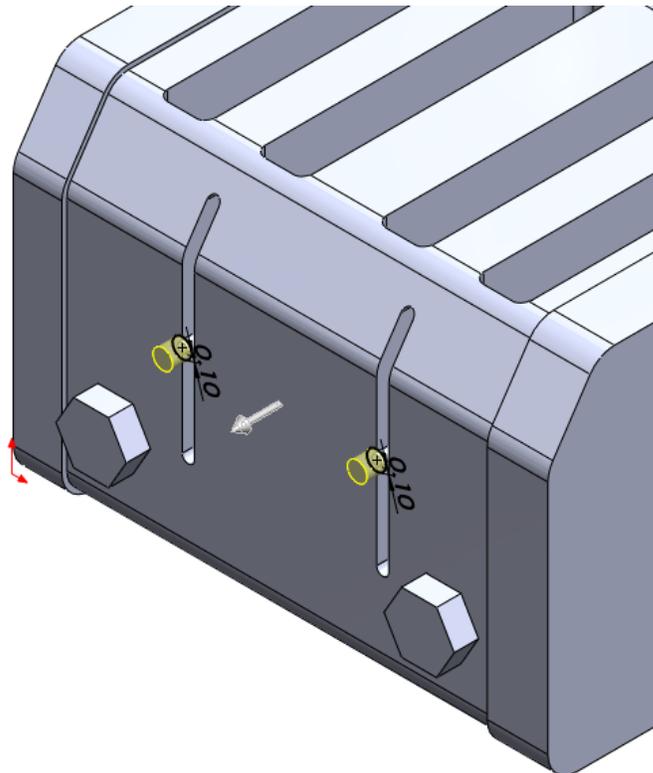
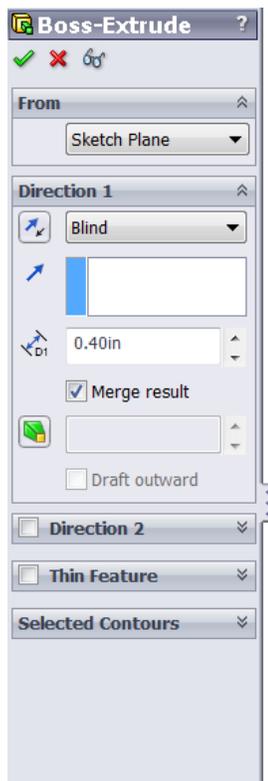


Step 7: Creating the Ejection Knobs, Part 2

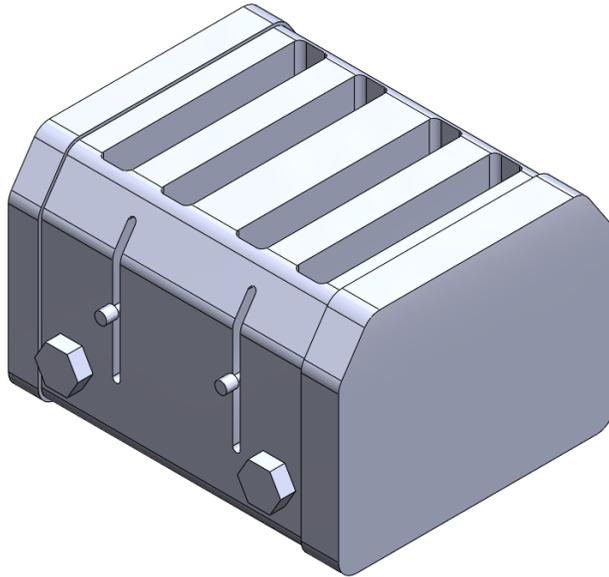
Create a sketch on the end face of one of the recently extruded cylinders. Using the **Offset Tool**, create and offset of both end face circle contour with an offset distance of **0.10in**.



Extrude the sketch with a **blind** distance of **0.40in**.

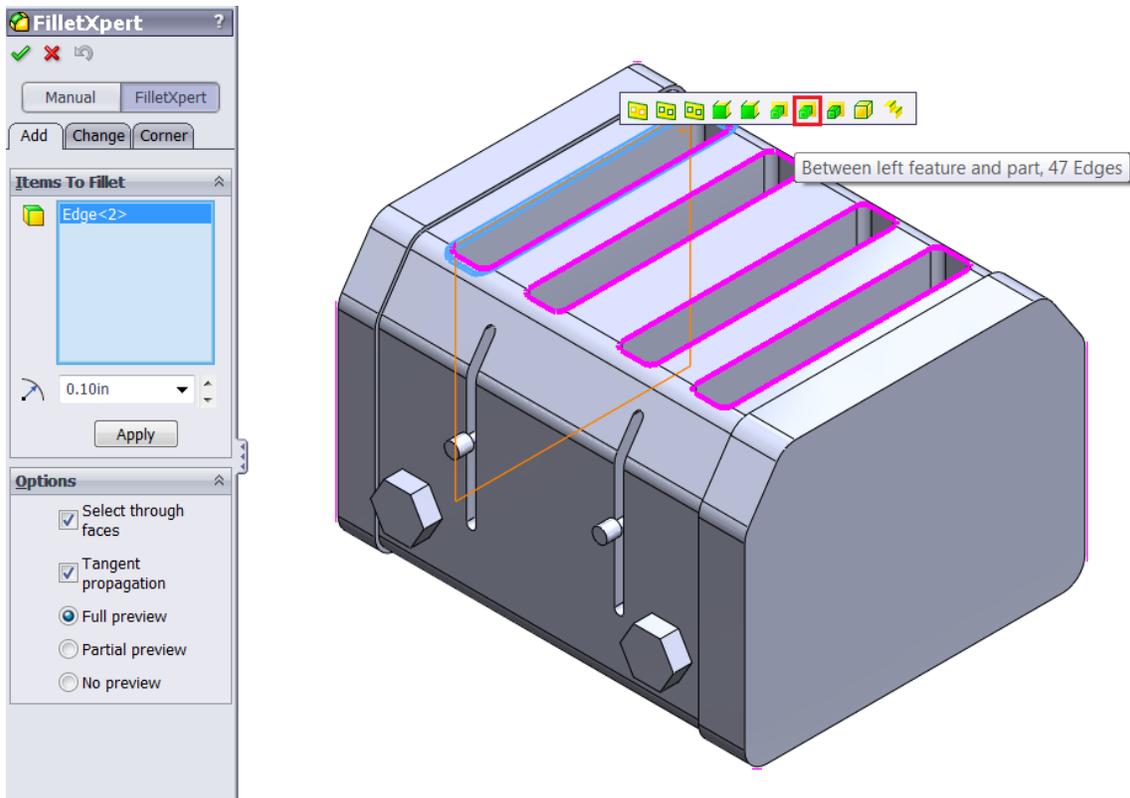


The results should look like this:

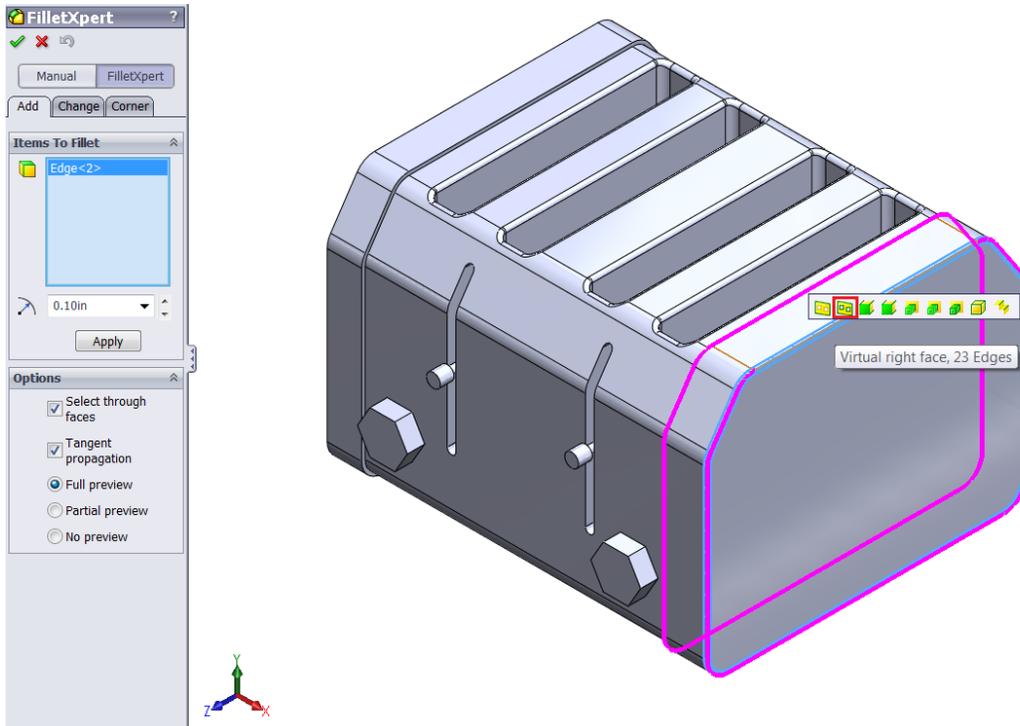


Step 8: FilletXpert the Edges.

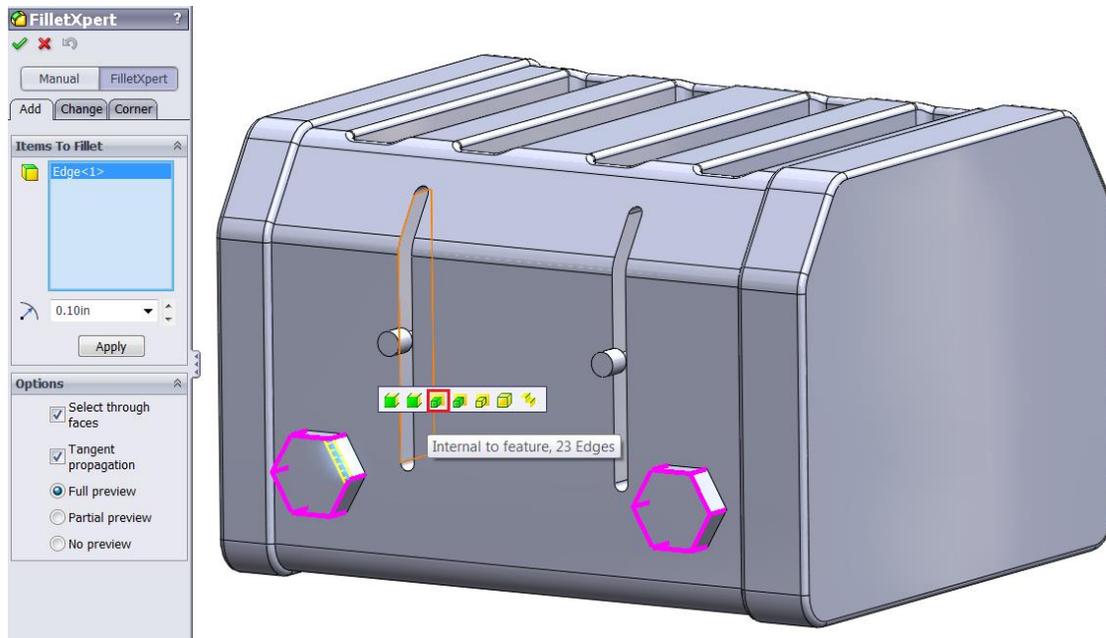
Using the **FilletXpert** tool, select the edges of the rectangular slots. Use a fillet radius of **0.10in**. Once the edge is selected, select **“Between Left Feature and Part,”** this should select all the other rectangular edges.



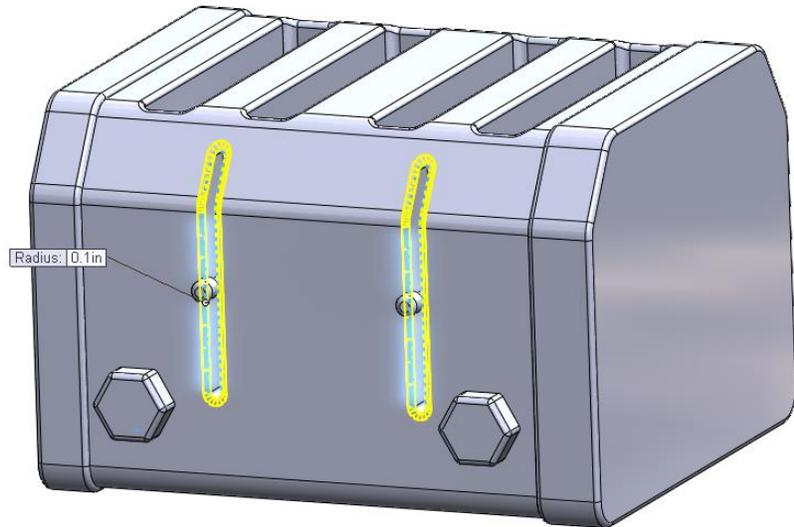
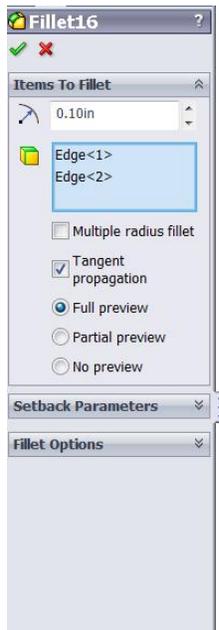
Using the **FilletXpert** tool, select an edge of the extruded bezel created in step 4. Use a fillet radius of **0.10in** also. Use the option “**Virtual Right Face**” in the pop-up shortcut menu to select the edges on the opposite side of the bezel. Repeat for the bezel on the other side of the toaster.



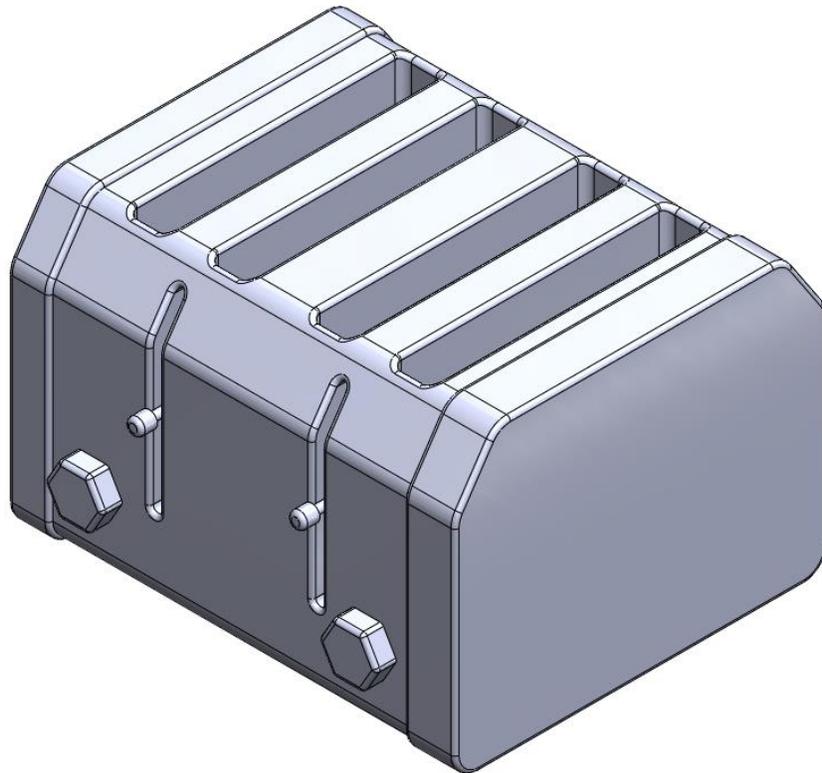
Using the **FilletXpert** tool, select the edges of the four knobs on the side of the toaster. Using a fillet radius of **0.10in**, fillet all the edges shown with the appropriate options from the pop-up shortcut menu.



Lastly, **manually fillet** the ejection slots with a fillet radius of **0.10in**.



The final part should look like this:



Step 8: Save and Close

Finally, save and close the file as **Extrusion_Toaster.sldprt**.