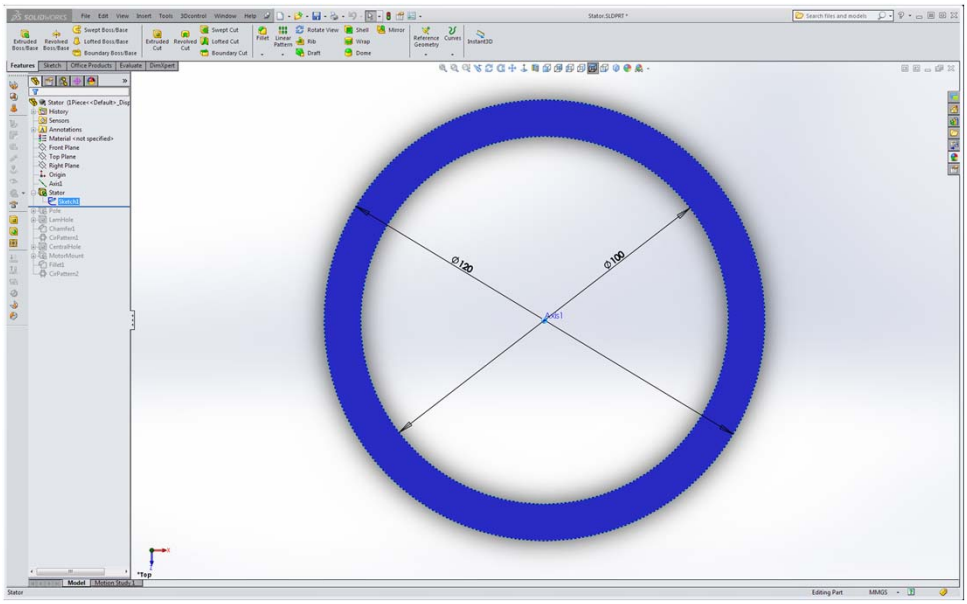
Solid Parts

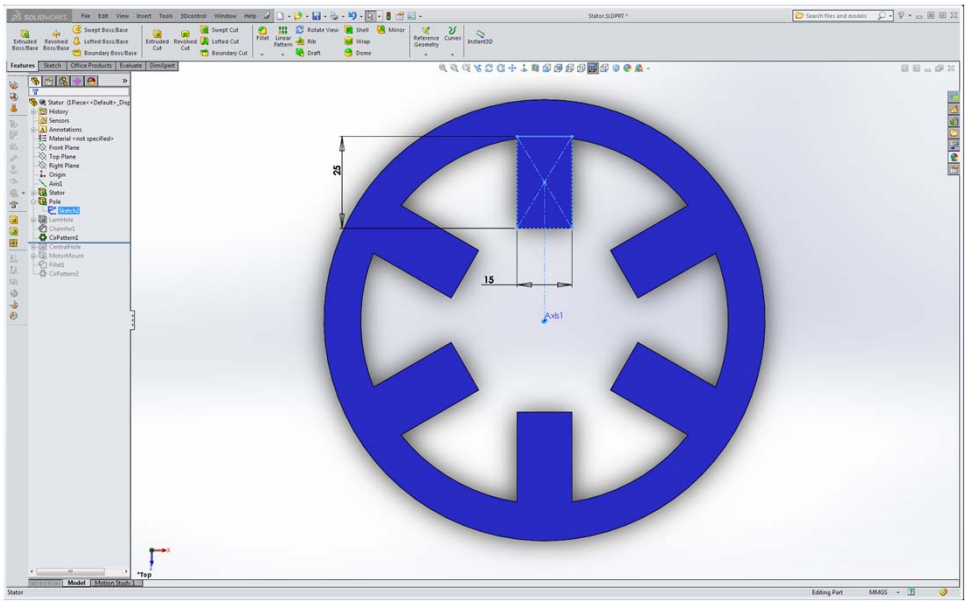
- Stator
  - Sketches
    - Black lines
    - Driven geometry
  - Design Tree
    - Rearrange order
      - Referenced features prevent time-travel
    - Reverse time
    - Reference geometry (axis)
  - Configurations
    - Suppressed Features
    - Dimensions
    - Colours
- Pinion
  - Tooth Geometry
  - Helical
  - Export
    - 3D Printer
      - STL
    - Waterjet
      - DXF

Stator.SLDPRT

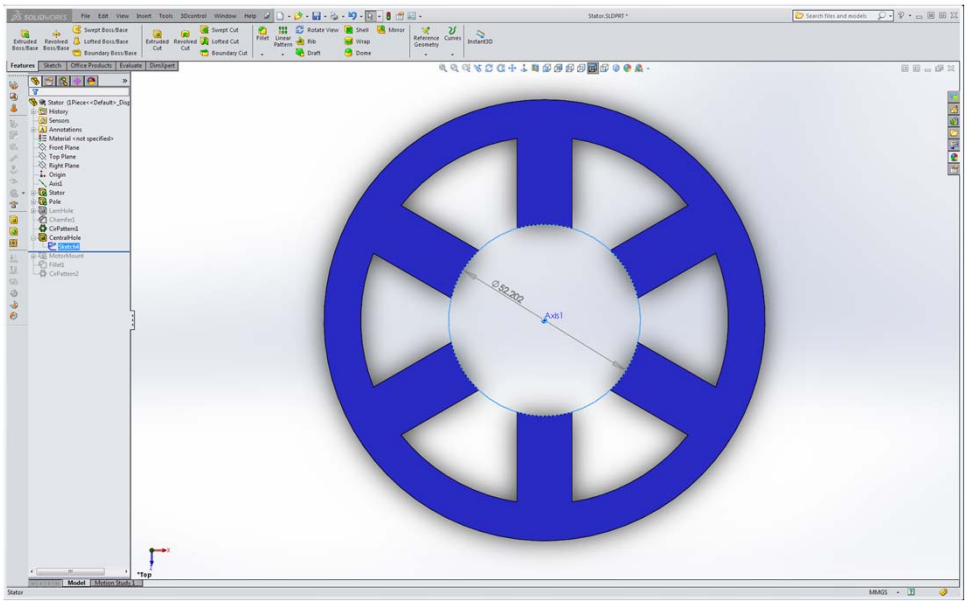
Solid Parts



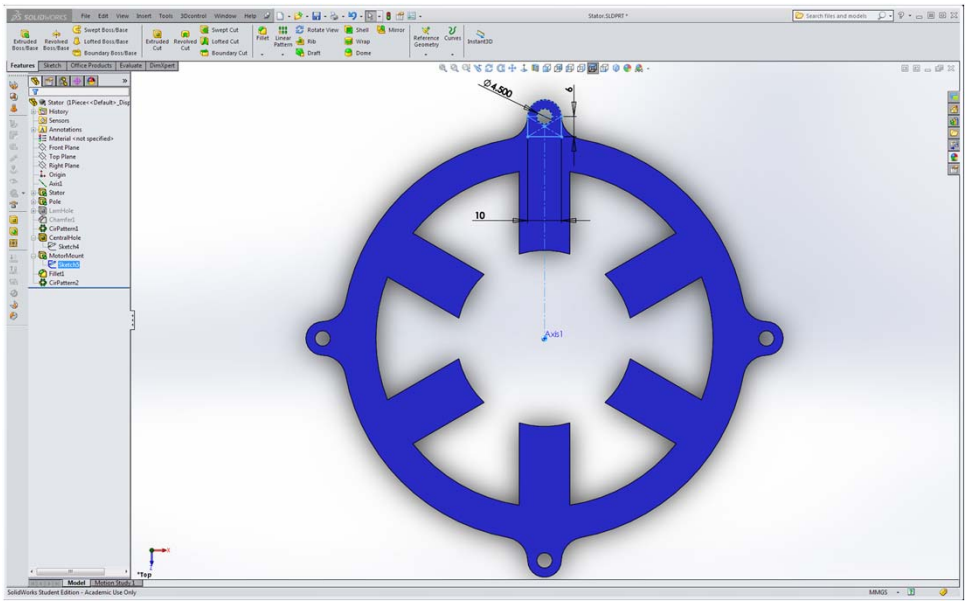
12.5mm Mid-Plane Extrusion



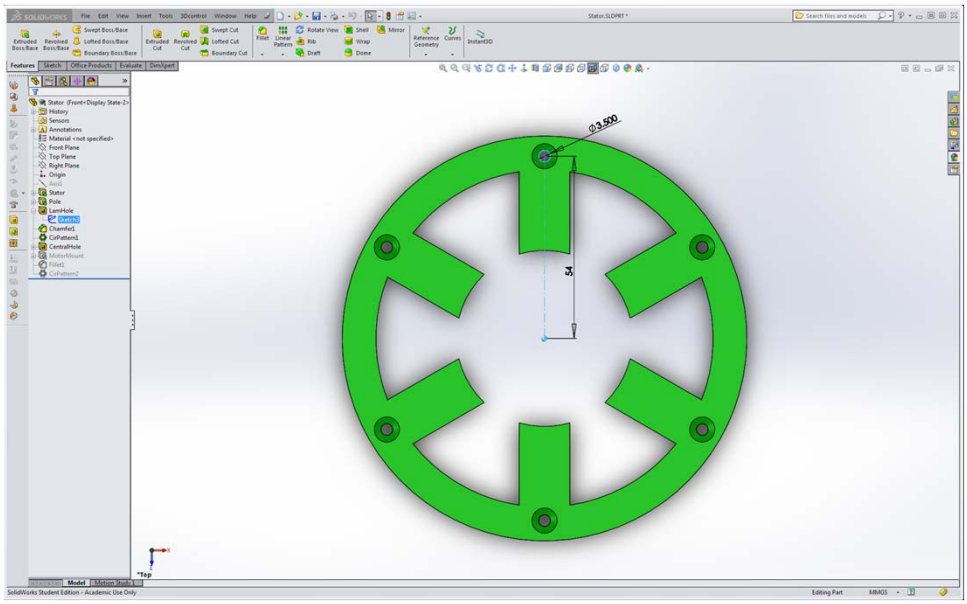
Extrude Through All and Circular Pattern around Axis 1



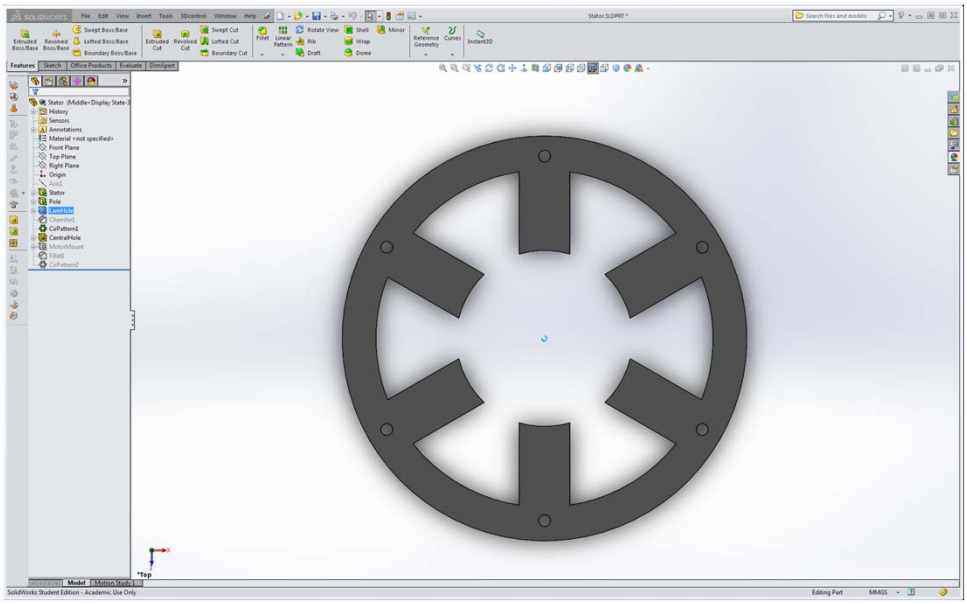
Extruded Cut Through All with Driven Geometry



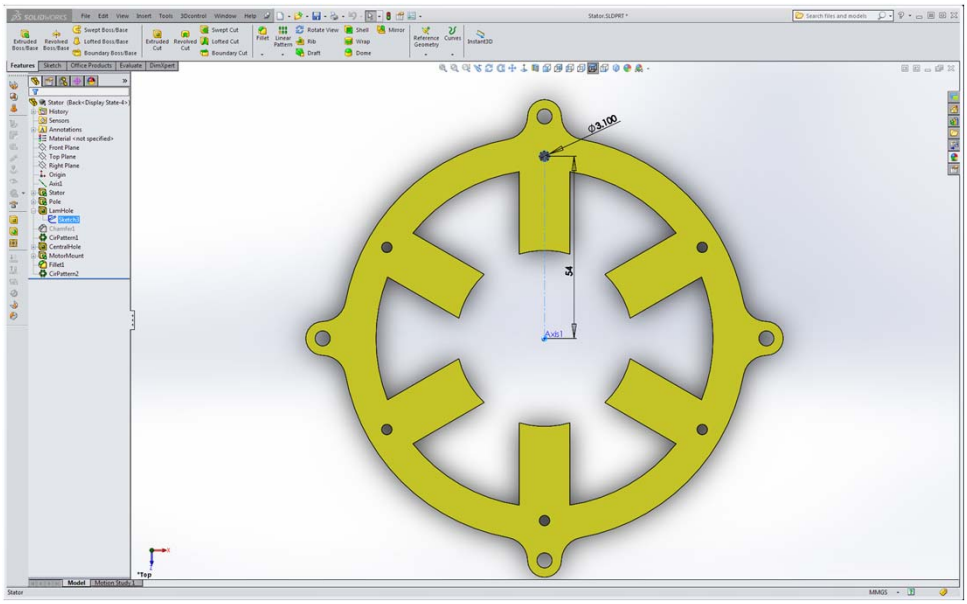
Extruded Tab with 7mm Fillet & New Circular Pattern



New Configuration : 25mm Thick with Countersunk Holes

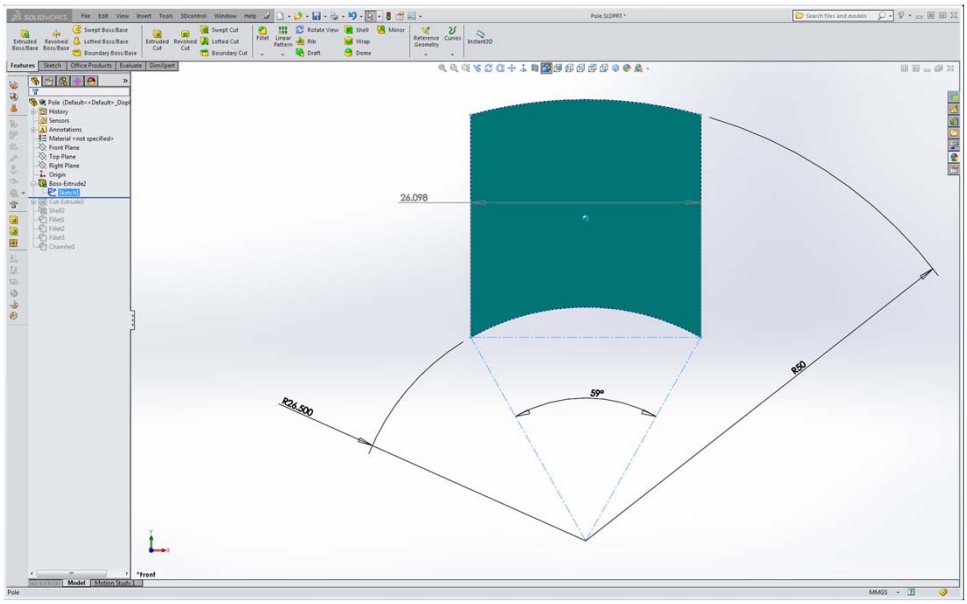


New Configuration : 25mm Thick with Countersink Suppressed

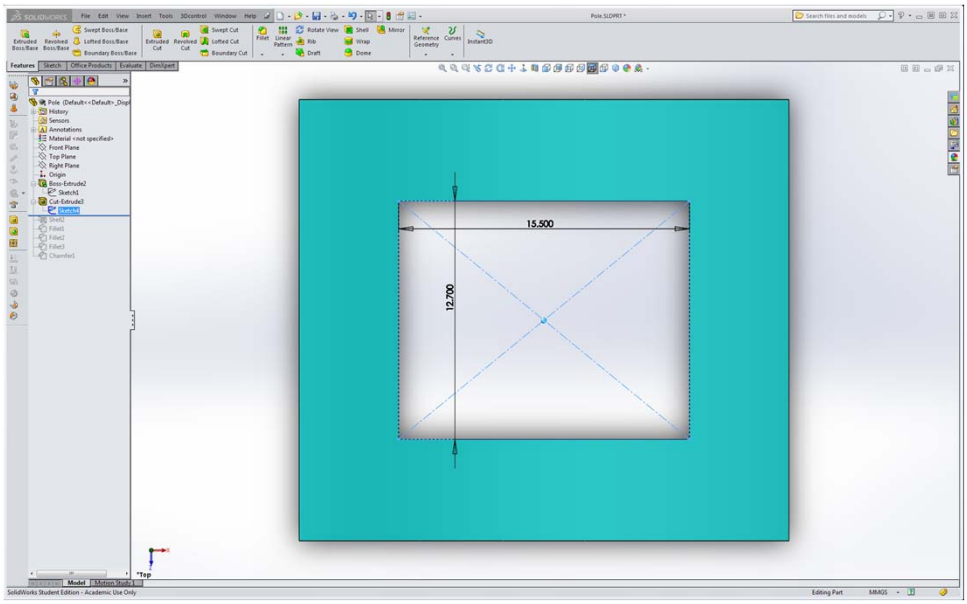


New Configuration : 2.5mm Thick with Tap Holes

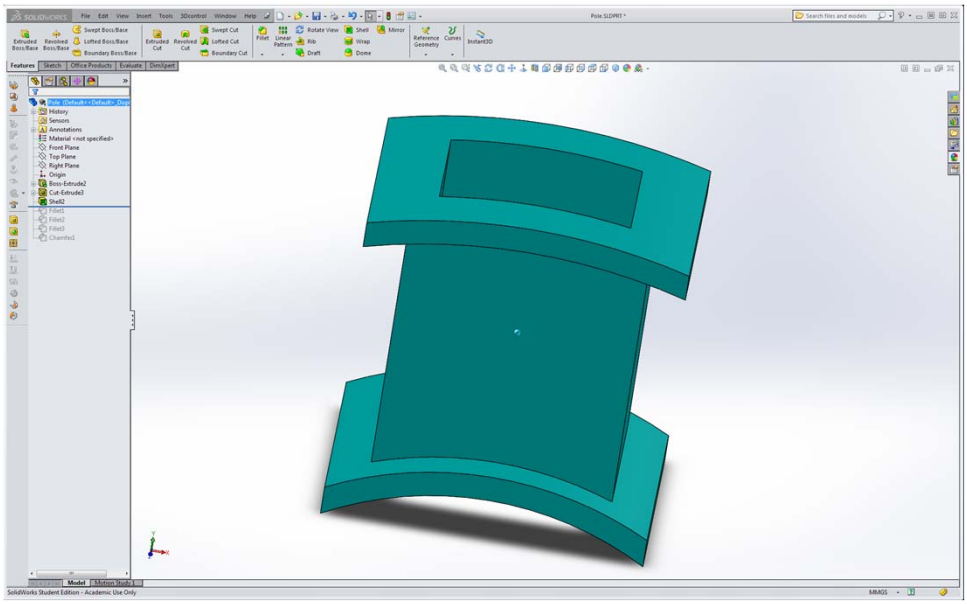
Pole.SLDPRT



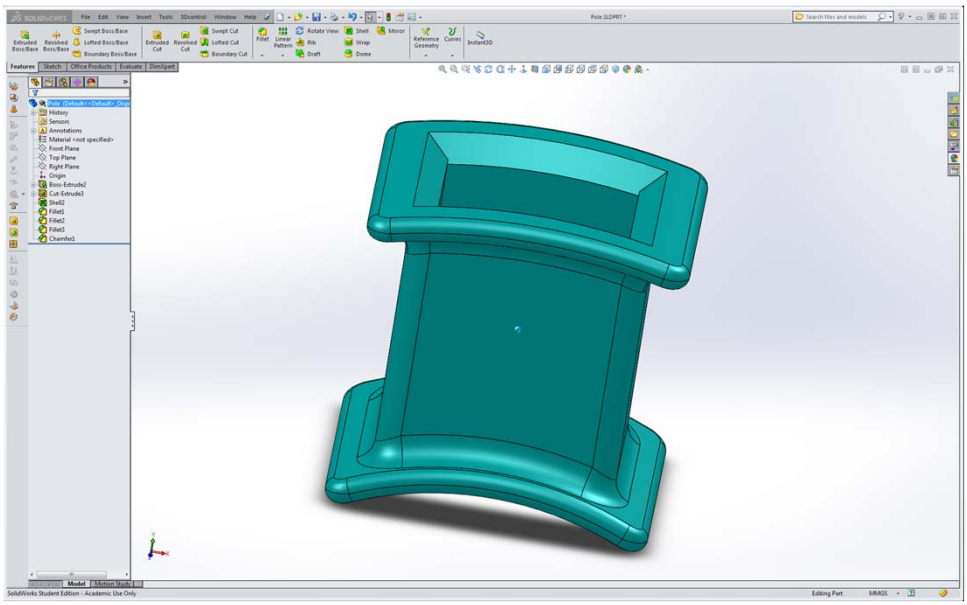
23.5mm Mid-Plane Extrusion



Extruded Cut : Measure actual part to account for manufacturing error + 0.2mm clearance



2mm Shell

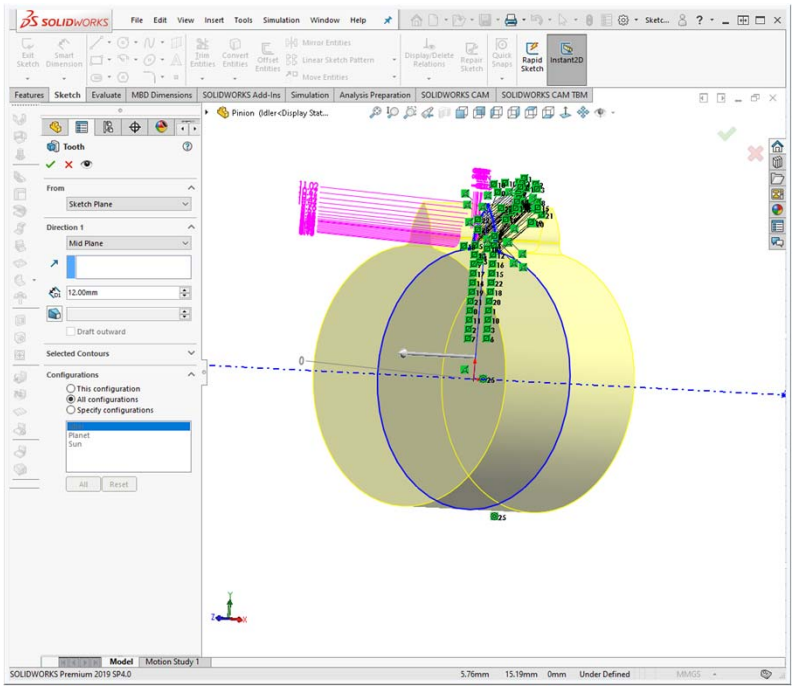


1 & 2mm Fillet + 2mm Chamfer

Pinion.SLDPRT

- Available on SW page in Tools Tab

Extrusion named “Tooth” determines face width.

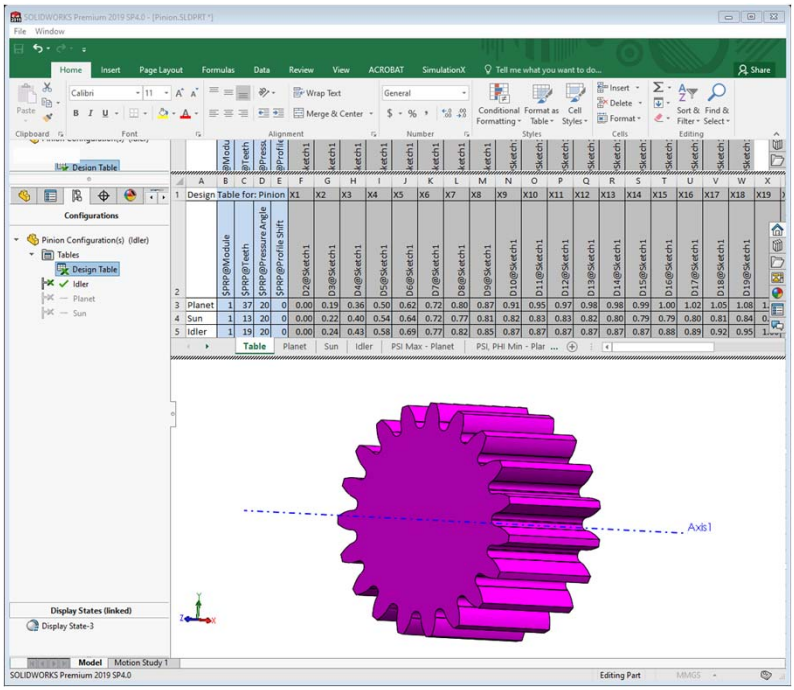


Edit Design Table in Configuration menu to set Module (M) and Number of Teeth (Z).

M ≈ ½ Tooth Height
Gear OD ≈ M x Z

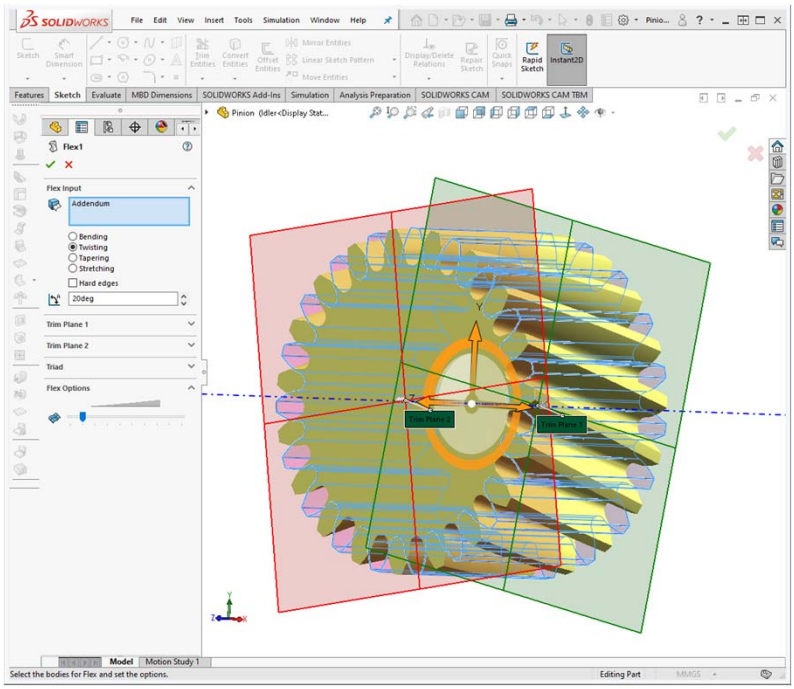
20° is a standard Pressure Angle. Do not change unless you know what you are doing.

0 is a standard Profile Shift. Do not change unless you know what you are doing.



Un-suppress “Helical Flex” feature for helical gear.

Helix angle must be proportional to Z for two engaged helical gears.

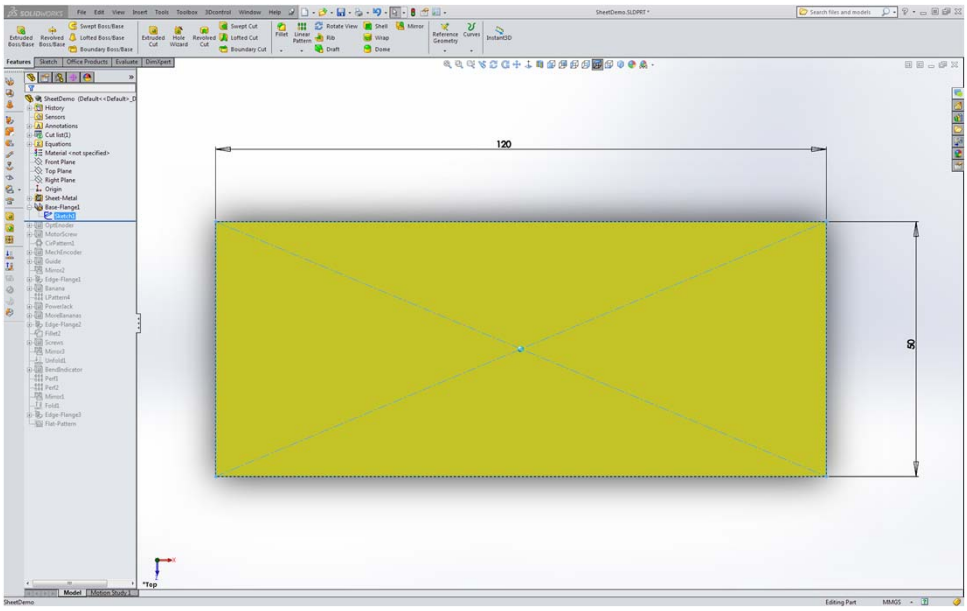


Sheet-Metal Parts

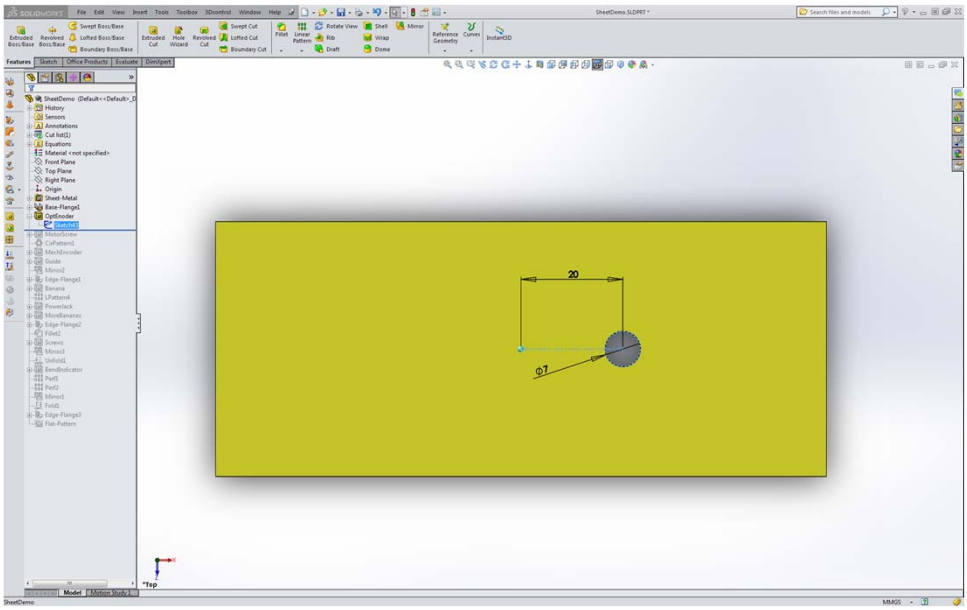
- New Part
  - Base Flange
  - Edge Flange
- Stand
  - Flatten
  - Unfold / Fold
  - Export DXF
    - Sheet metal option
- Sheet-Metal Design
  - Bend indicator
  - Bend perforation

Stand.SLDPRT

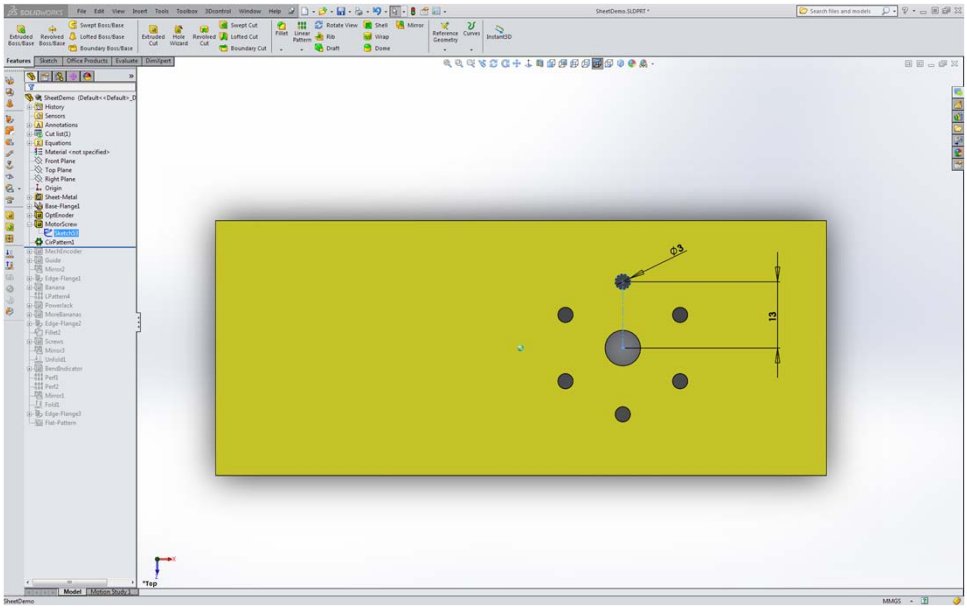
Sheet-Metal Parts



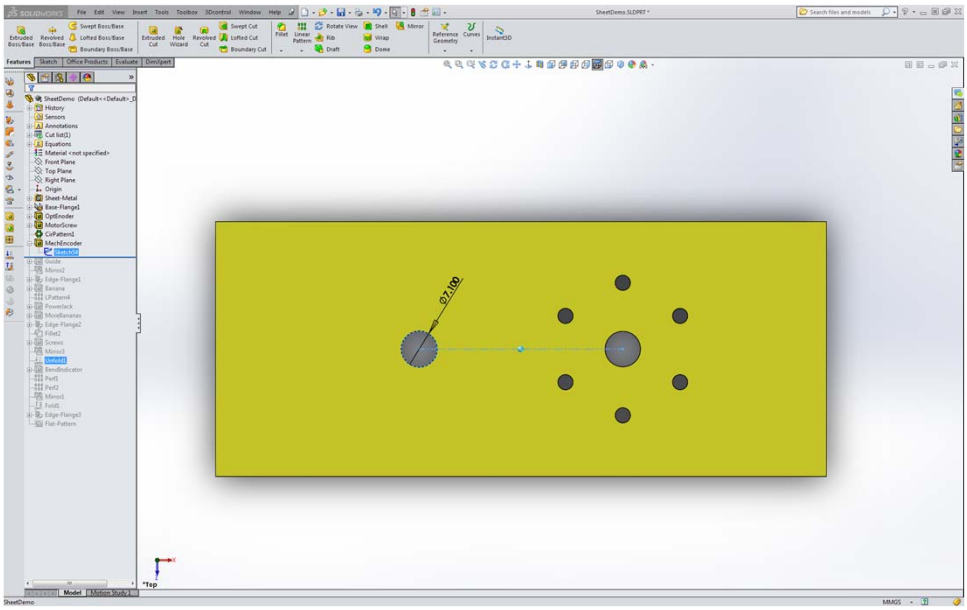
Sheet-Metal Base Flange – 20 Ga (1mm = 0.04”) Al



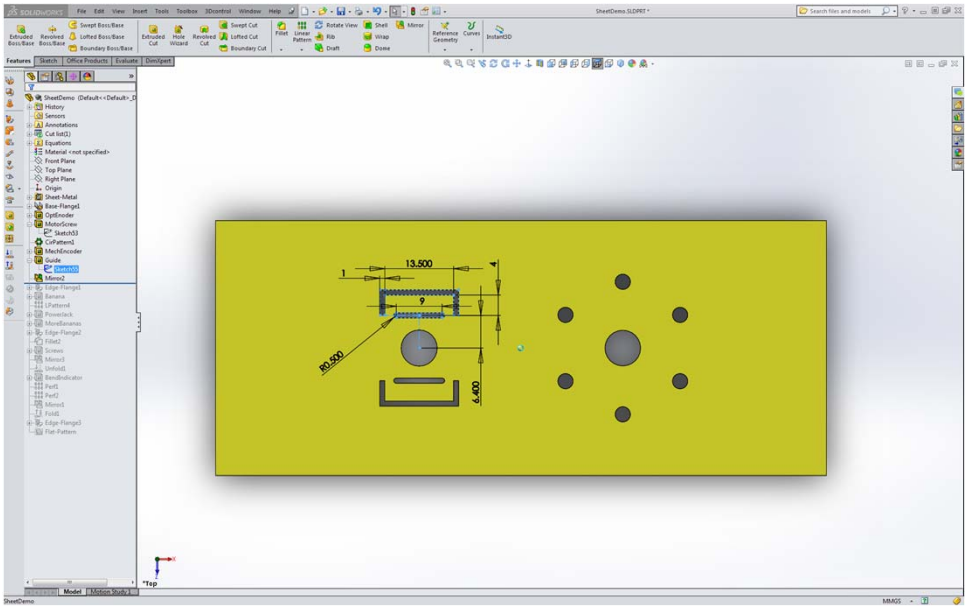
Cut Hole for Motor Shaft / Blind / Link to thickness



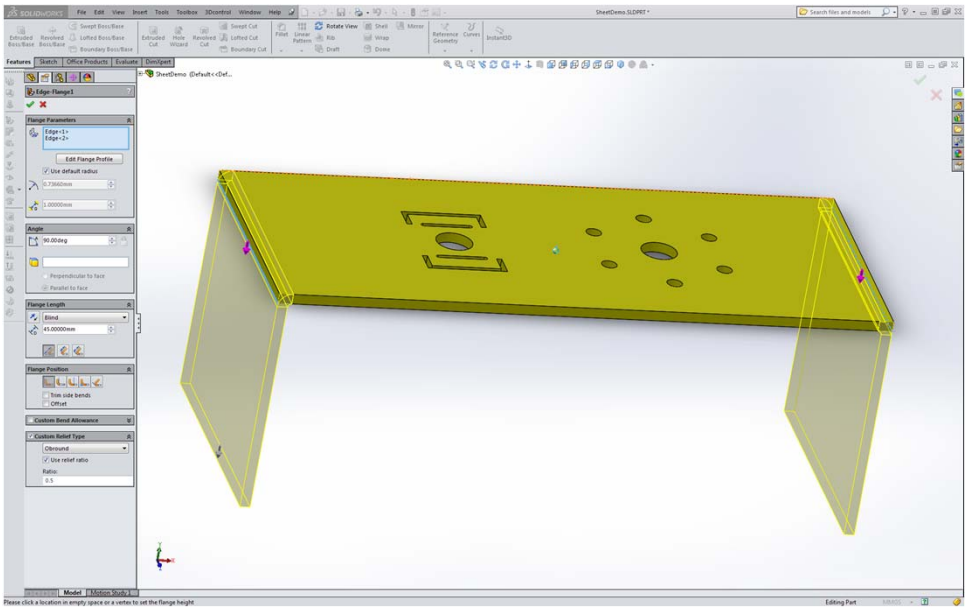
Cut Hole for Motor Mount & Create Circular Pattern



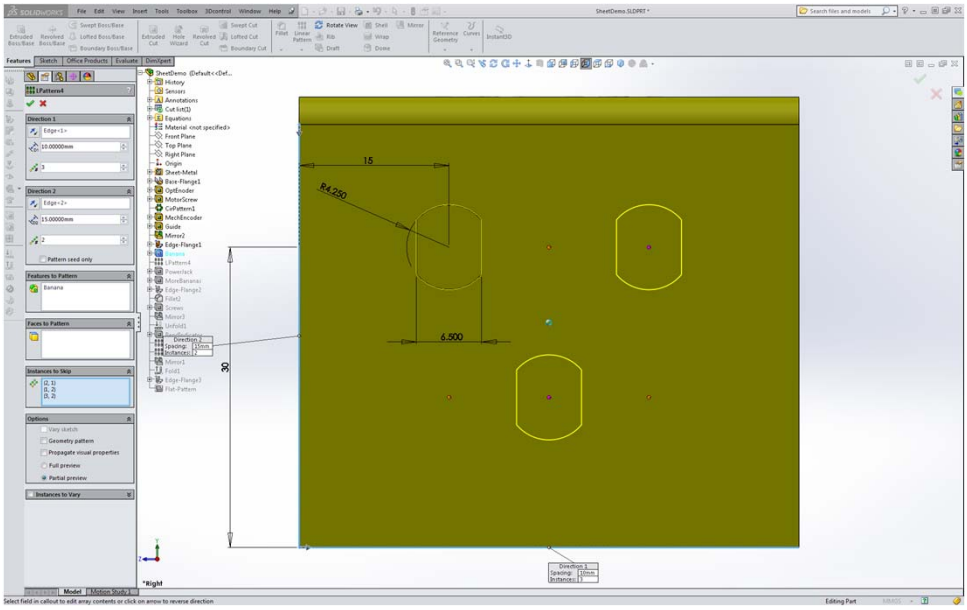
Cut Hole for Mechanical Encoder



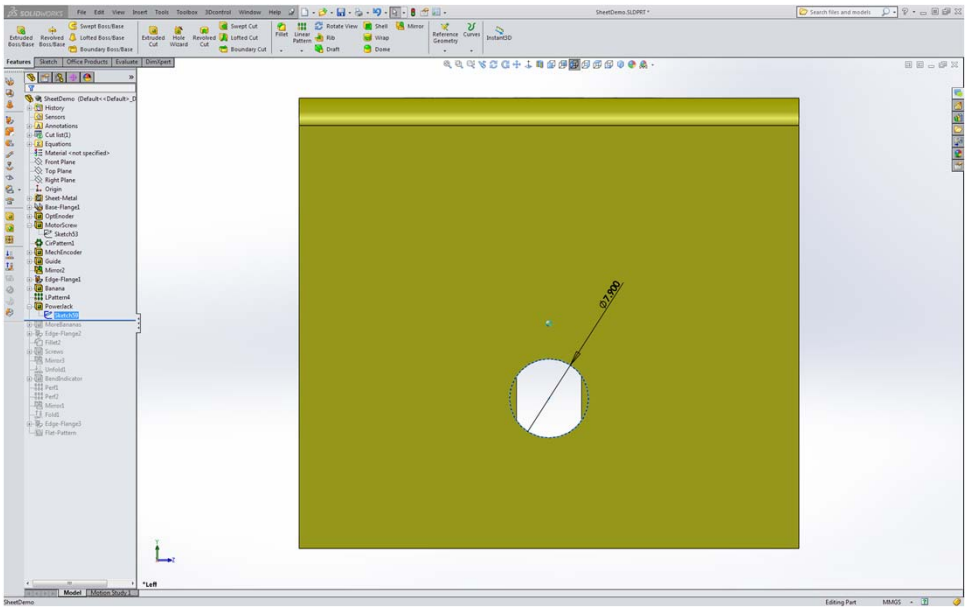
Cut Pattern for Alignment Tabs & Mirror about Front Plane



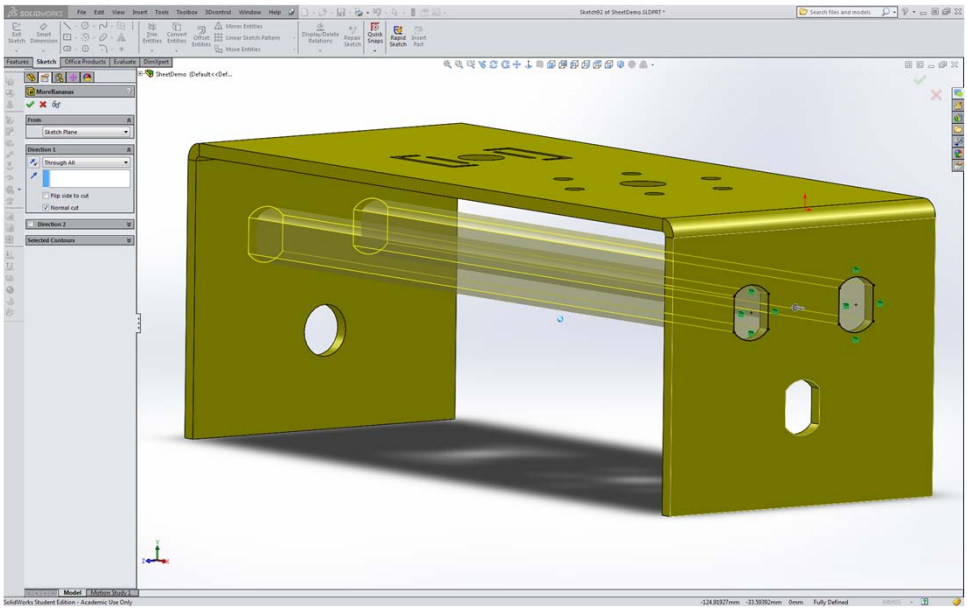
Create Edge Flanges for Legs – 45mm



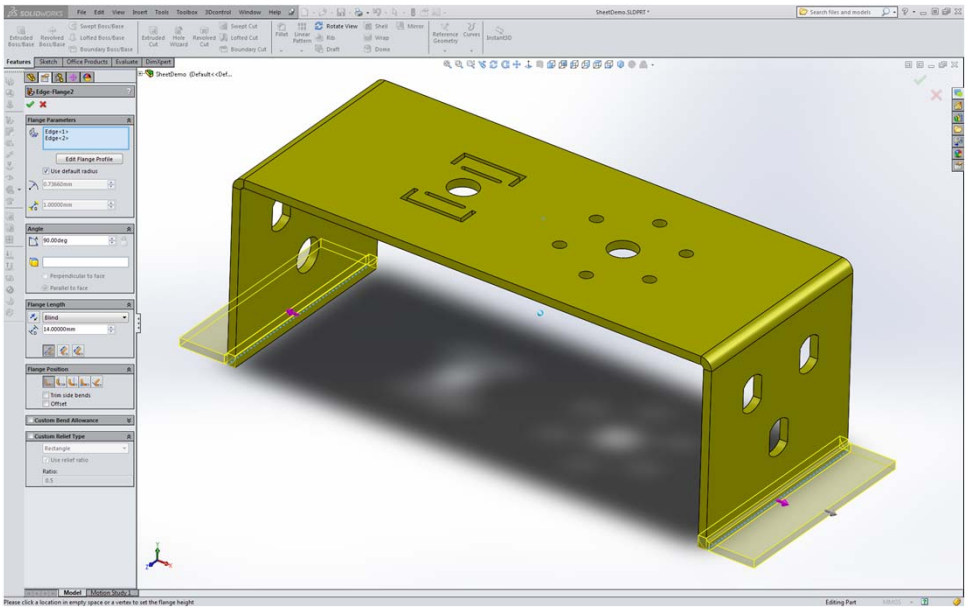
Cut Hole for Banana Plug & Create 3x2 Linear Matrix Pattern with Skipped Instances



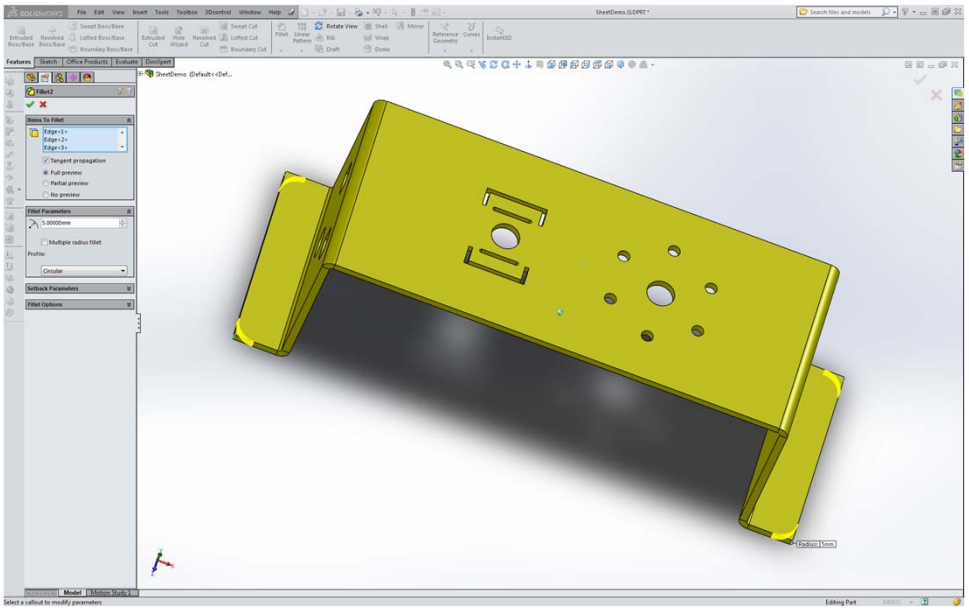
Cut Hole for Power Adapter



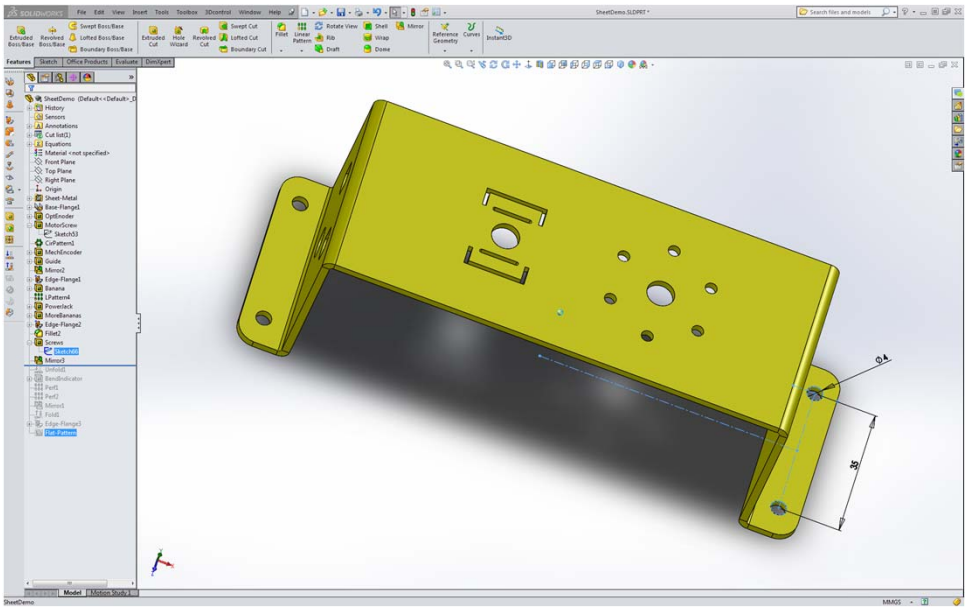
Convert Entities of Top 2 Banana Plug Holes & Cut Through All



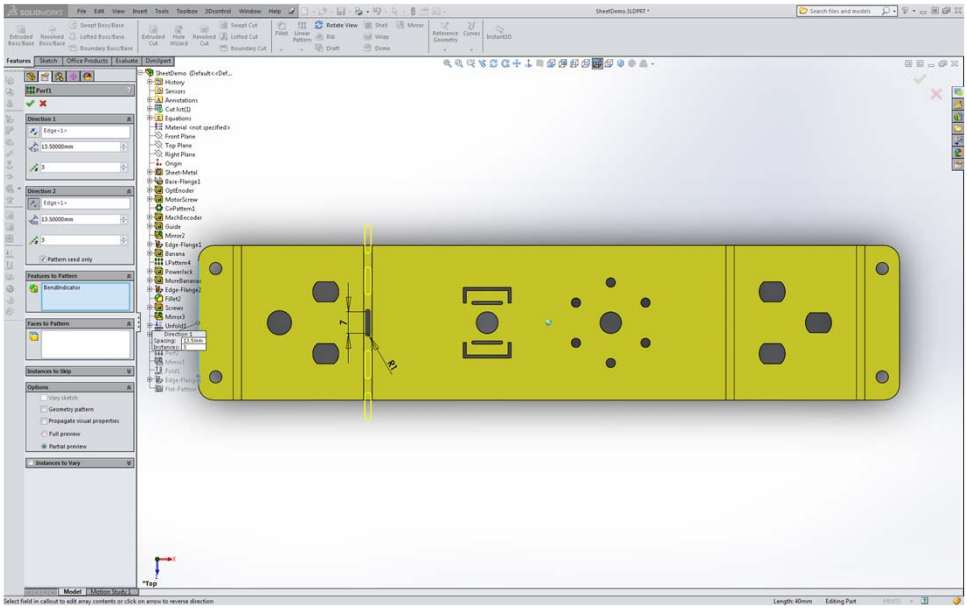
Create Edge Flanges for Feet – 14mm



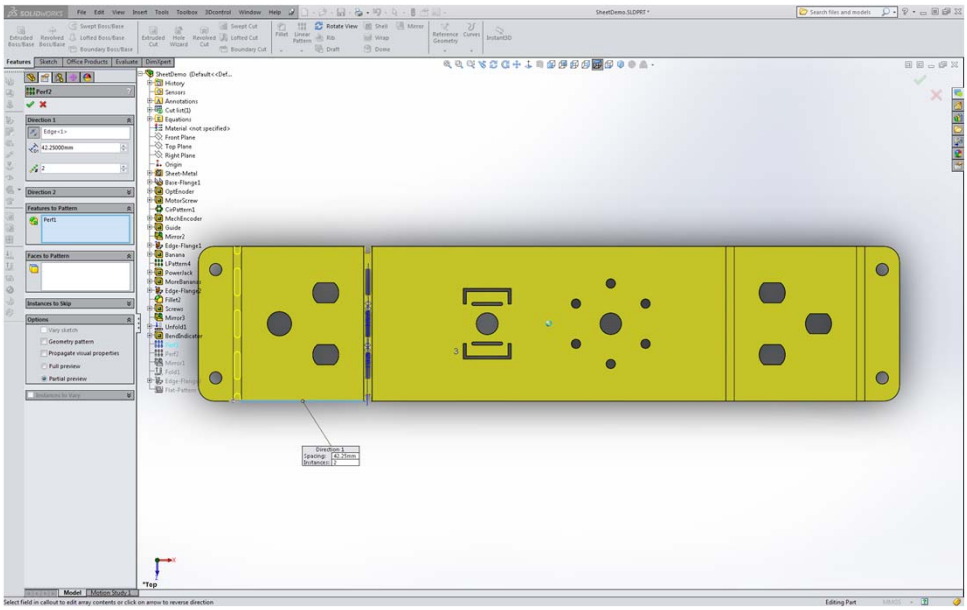
Fillet Feet – 5mm



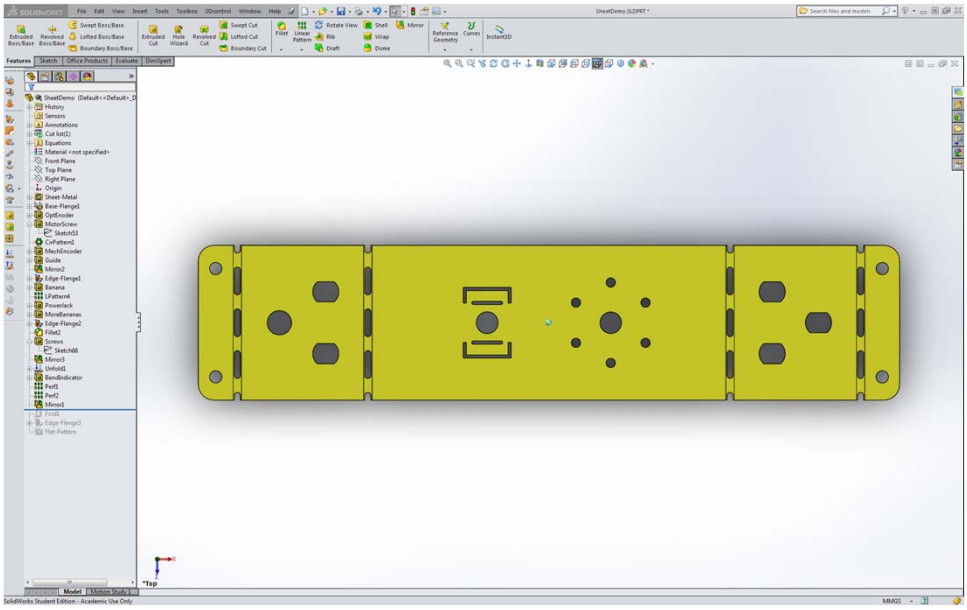
Cut Holes for Mounting Screws & Mirror about Right Plane



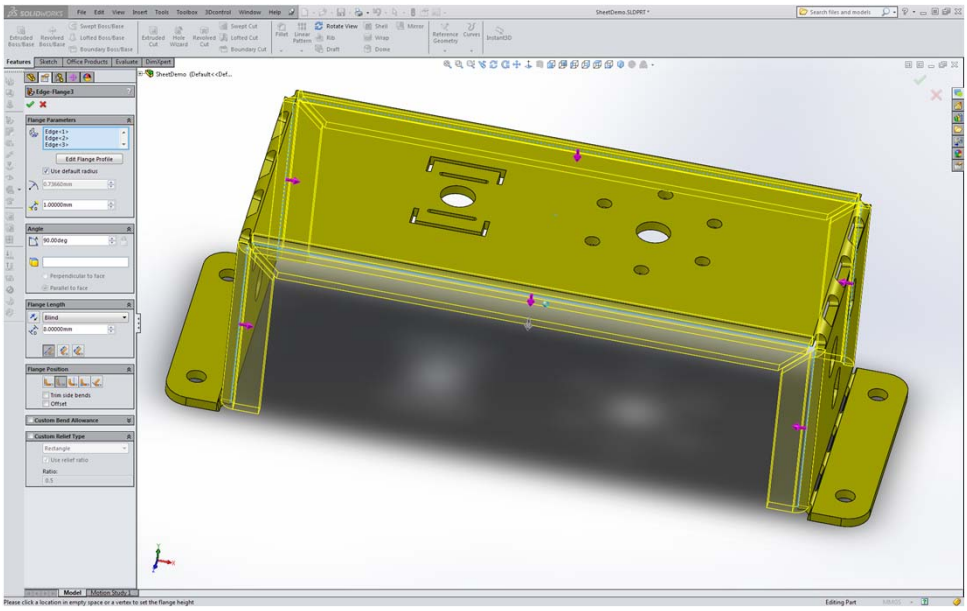
Cut Hole for Perforation & Create 2-Way Linear Pattern using same edge & flipped direction



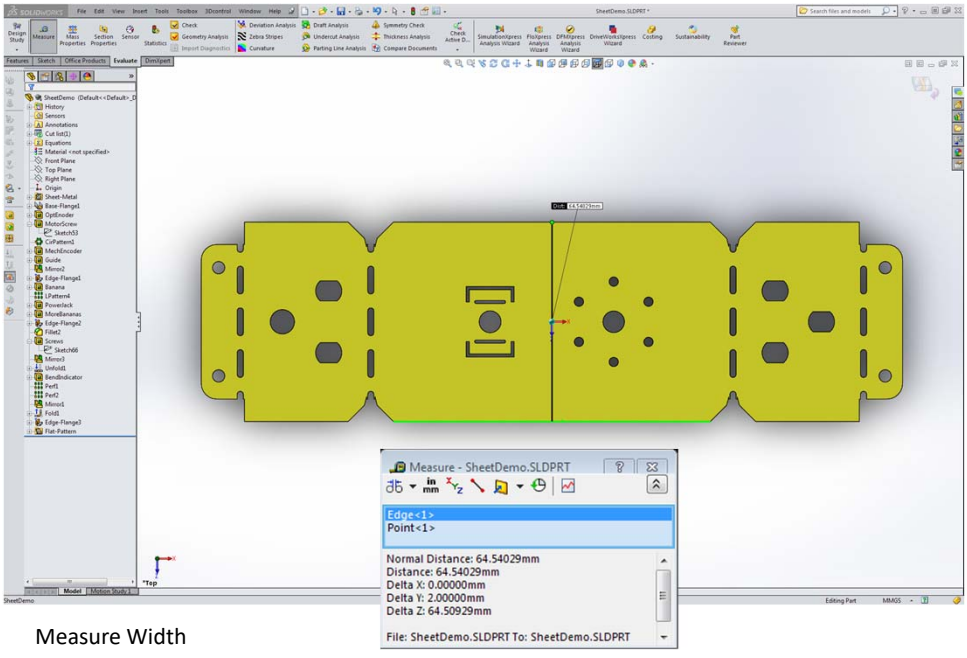
Add Linear Pattern of Linear Pattern



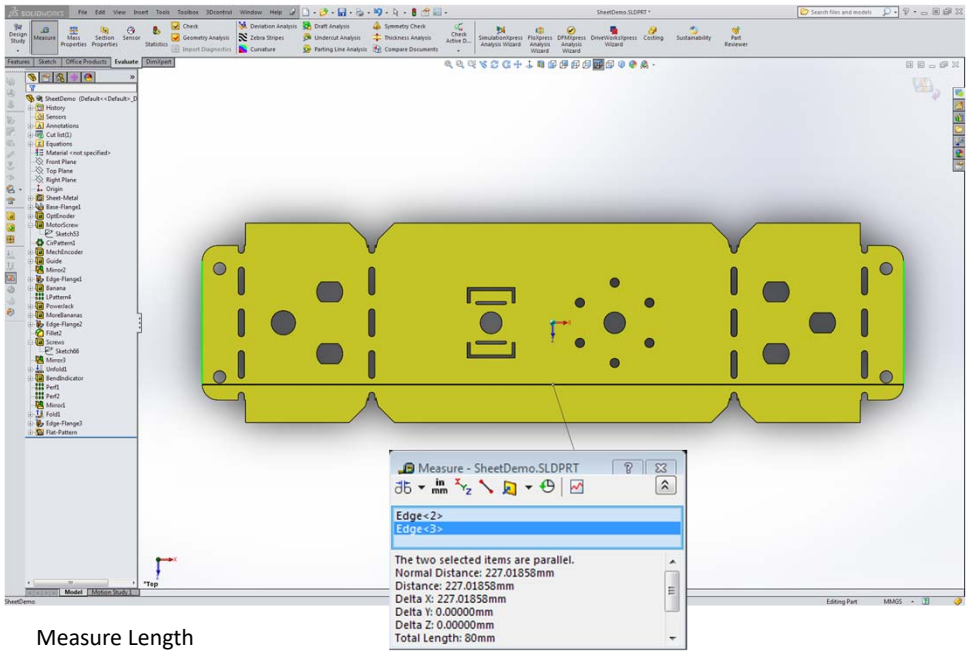
Mirror Linear Pattern about Right Plane



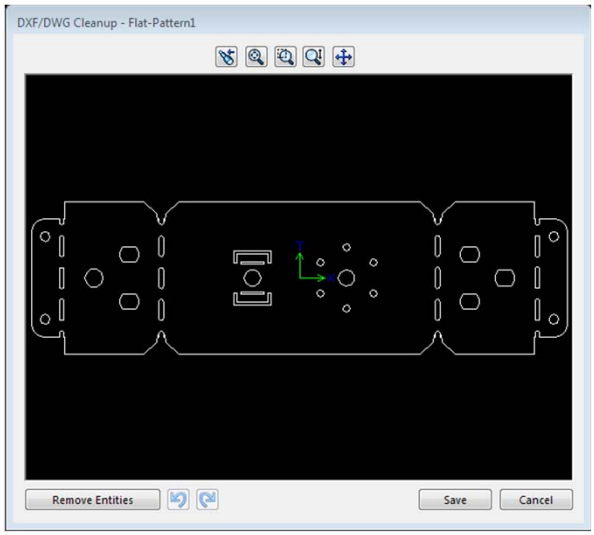
Create Edge Flanges for Stiffening Ribs – Edges automatically bevel for clearance



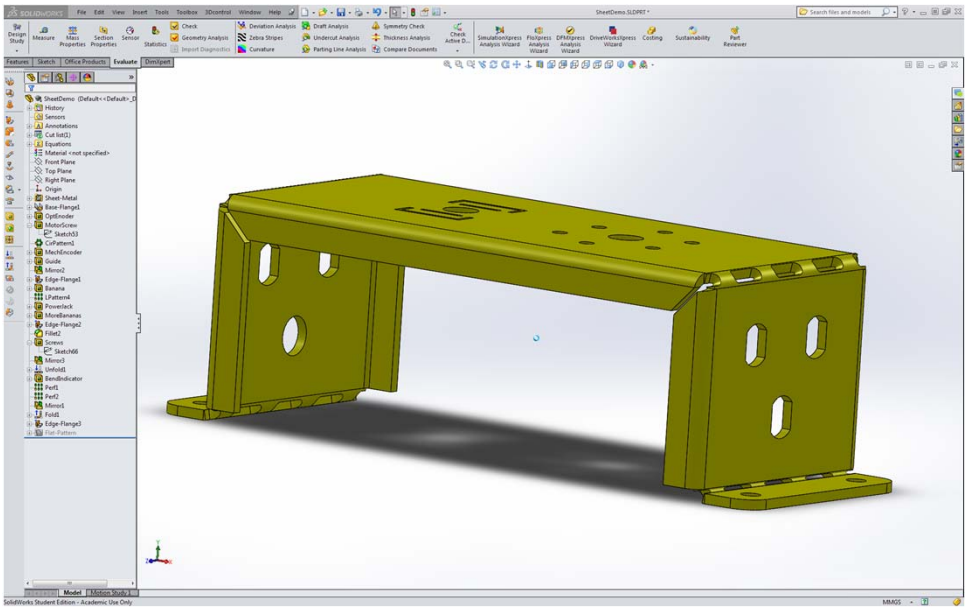
Measure Width



Measure Length



Generate DXF File of Flattened Pattern



Order the part, bend the ribs on the brake and the perforations by hand.