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

Sheet-Metal Parts

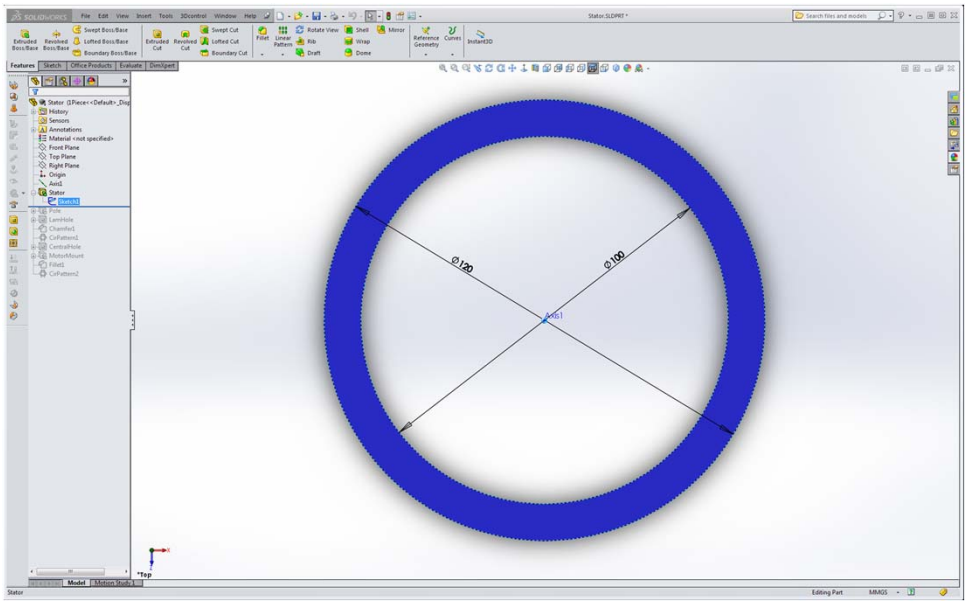
- New Part
  - Base Flange
  - Edge Flange
- Stand
  - Flatten
  - Unfold / Fold
  - Export DXF
    - Sheet metal option
- Sheet-Metal Design
  - Bend indicator
  - Bend perforation

Assemblies

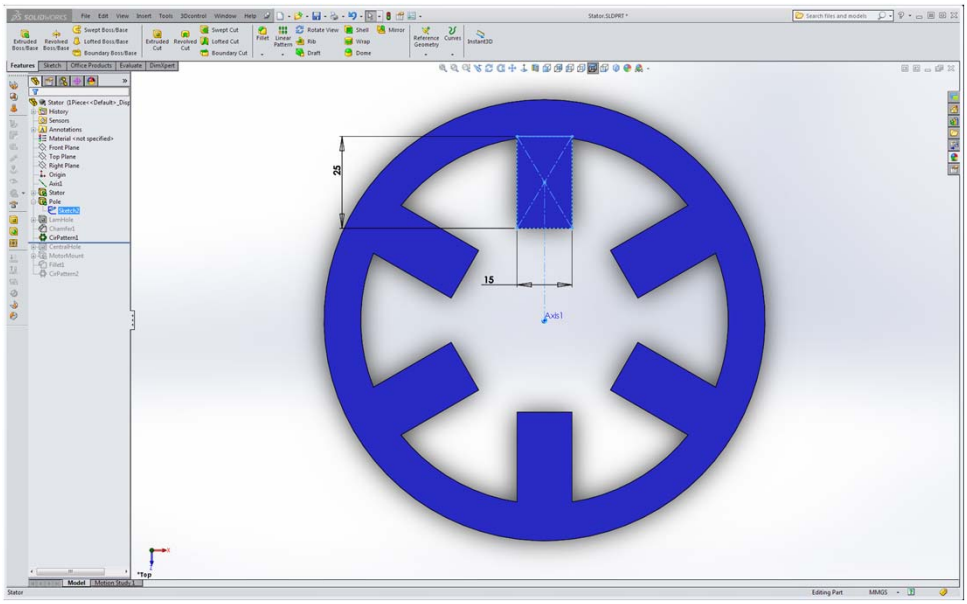
- Stator
  - Fixed / Floating parts
  - Pattern Components
    - Linear
    - Circular
    - Different Part Configurations
  - Configurations
  - Evaluate Design
    - Interference Check
      - Section View
    - Exploded Views
      - Animate
- PlanGear
  - Standard Mates
  - Mechanical Mates
    - Gear
  - Suppressing Mates
    - Alignment
- DriveShaft
  - Sub-Assemblies
    - Rigid / Flexible
- Machine
  - Mechanical Mates
    - Slot
    - Cam

Stator.SLDPRT

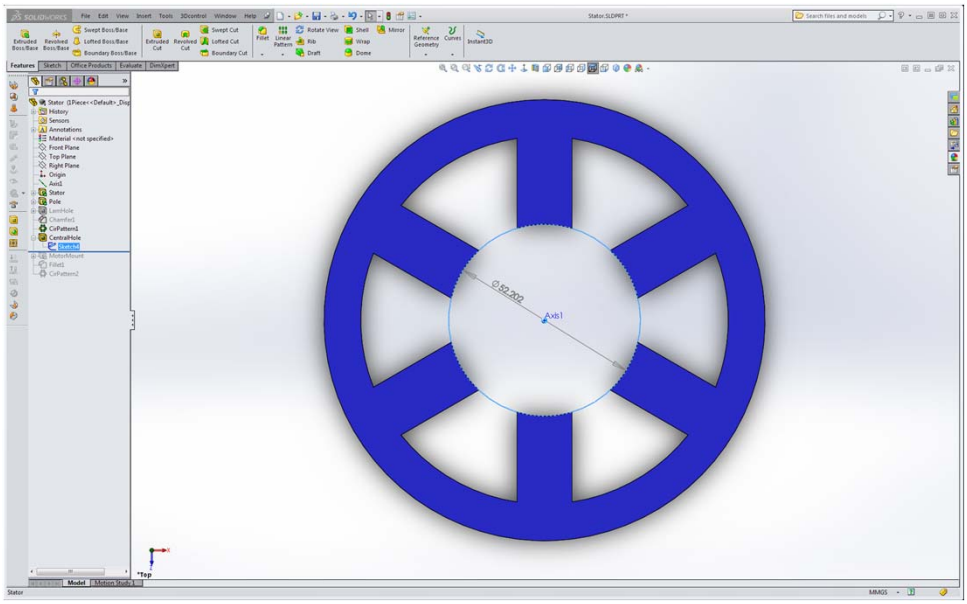
Solid Parts



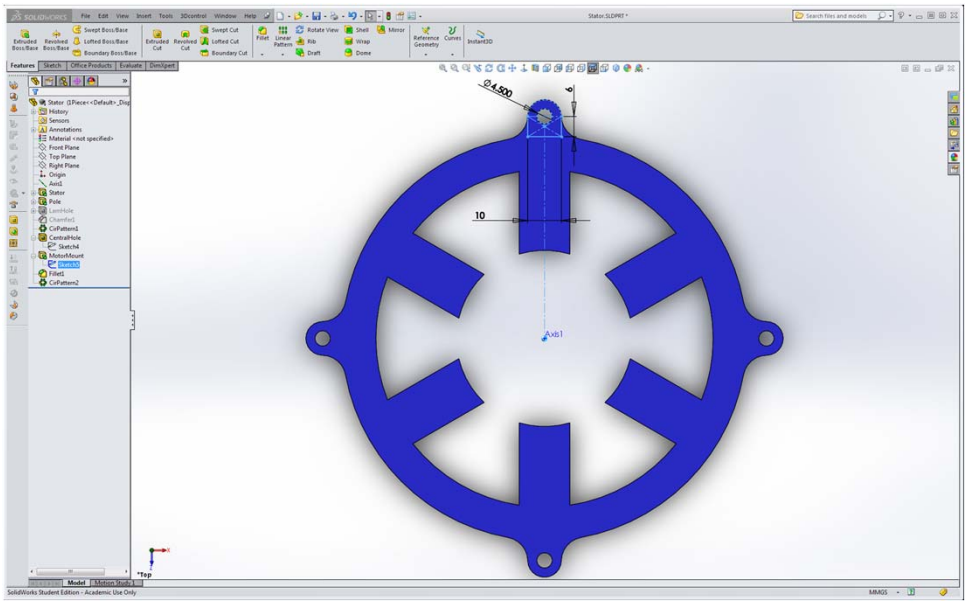
12.5mm Mid-Plane Extrusion



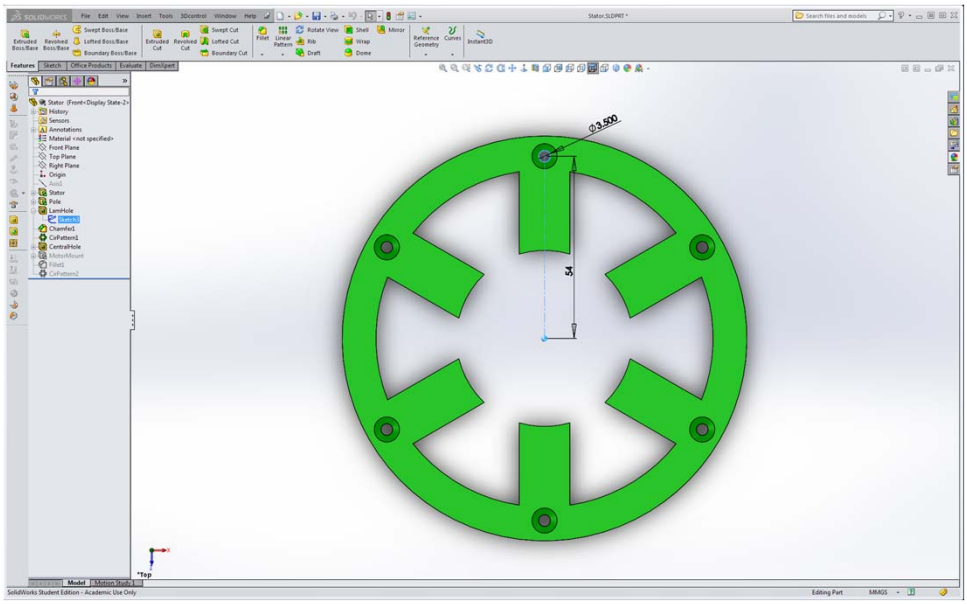
Extrude Through All and Circular Pattern around Axis 1



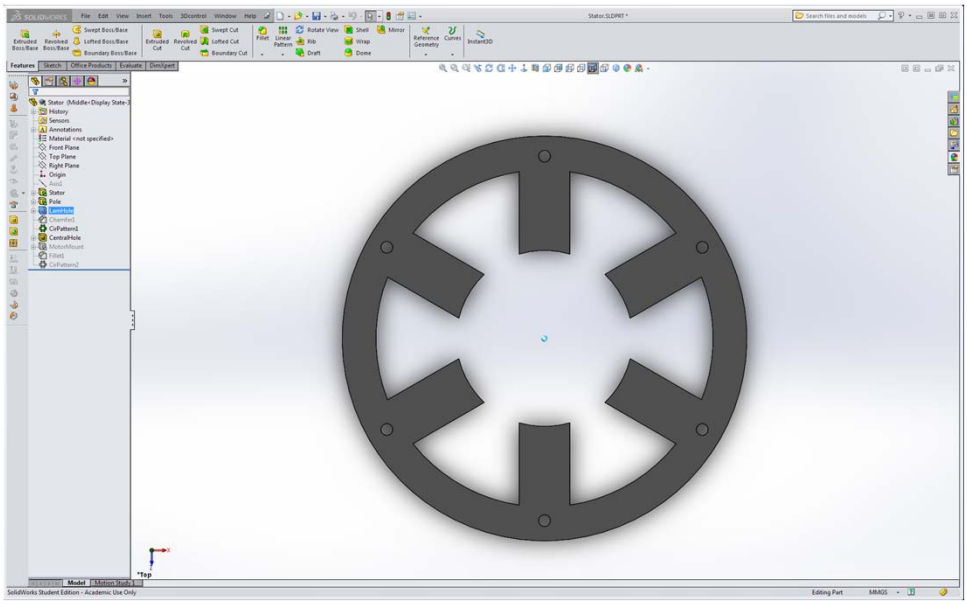
Extruded Cut Through All with Driven Geometry



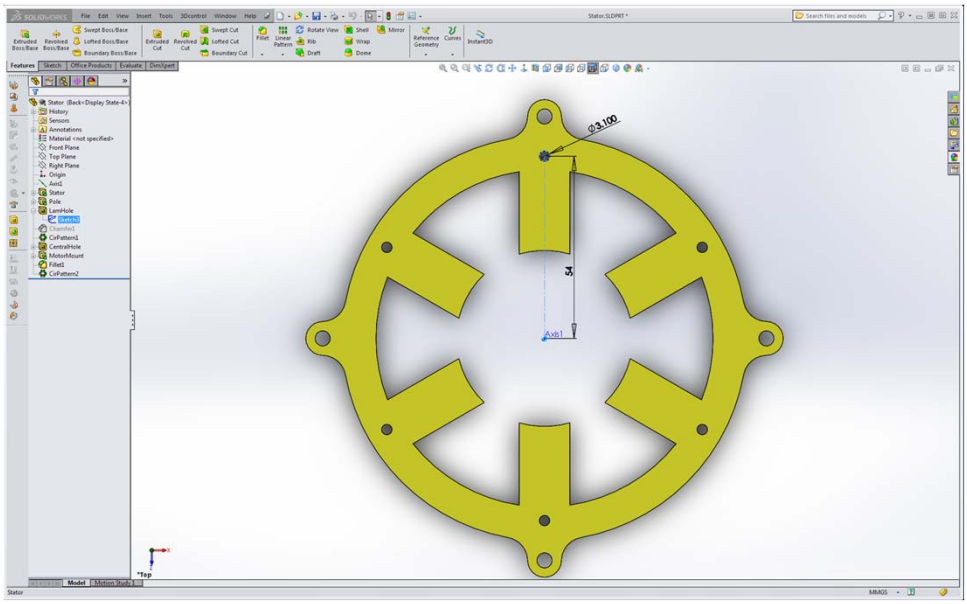
Extruded Tab with 7mm Fillet & New Circular Pattern



New Configuration : 25mm Thick with Countersunk Holes

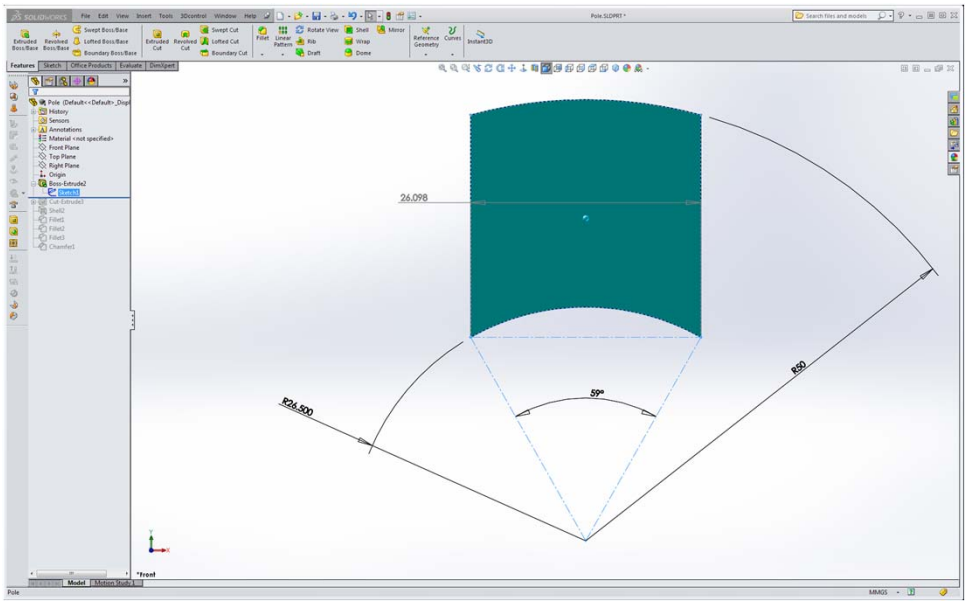


New Configuration : 25mm Thick with Countersink Suppressed

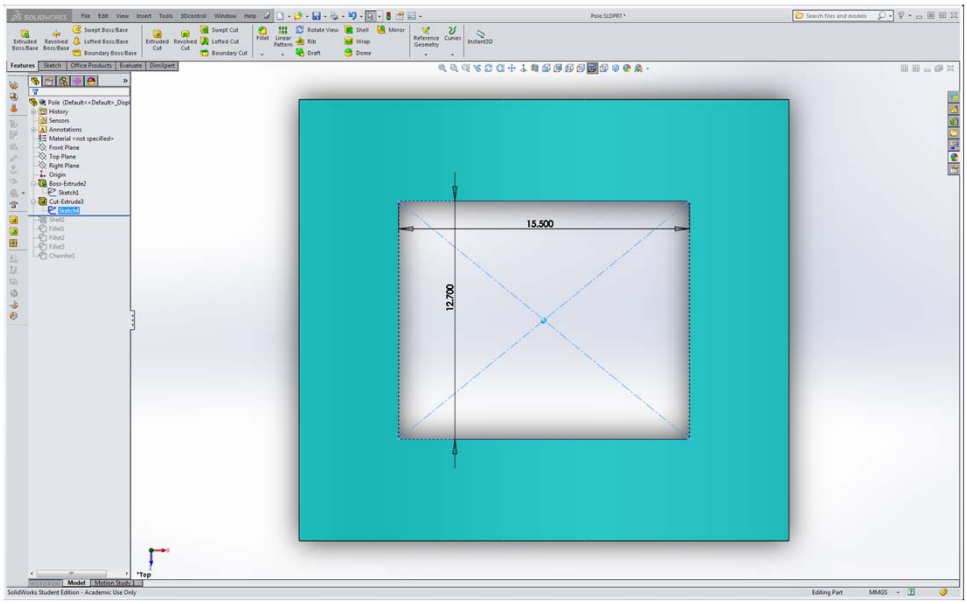


New Configuration : 2.5mm Thick with Tap Holes

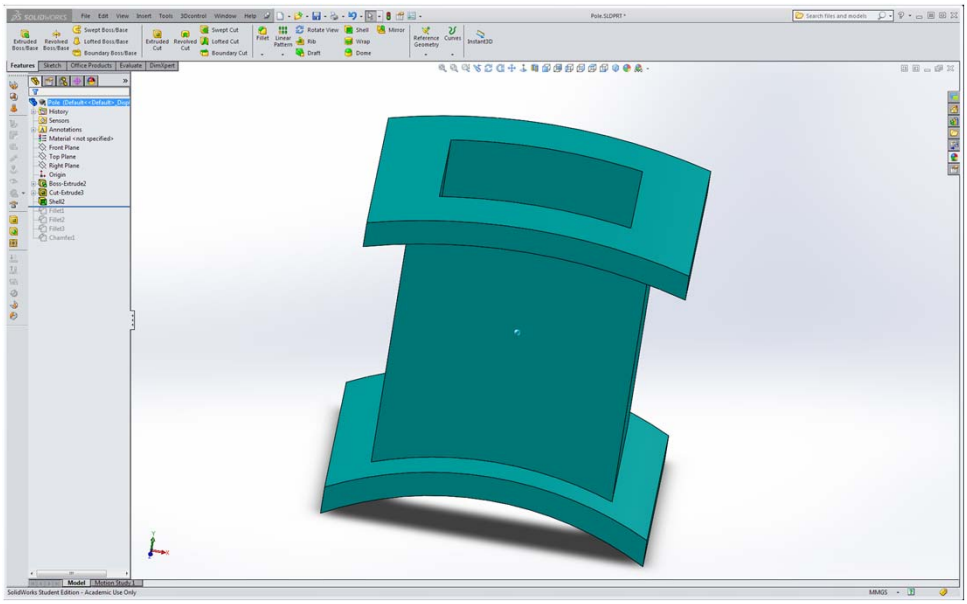
Pole.SLDPRT



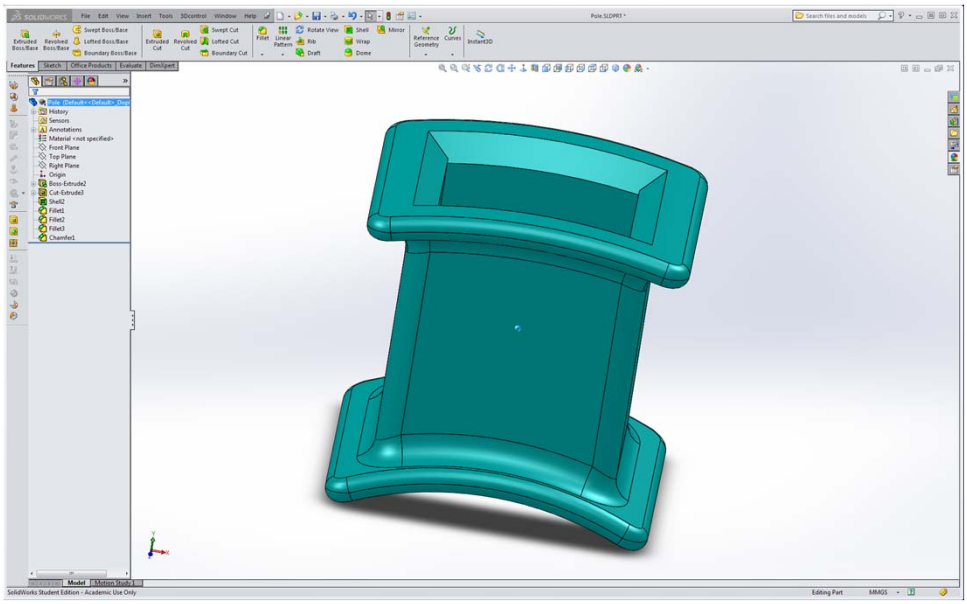
23.5mm Mid-Plane Extrusion



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



2mm Shell

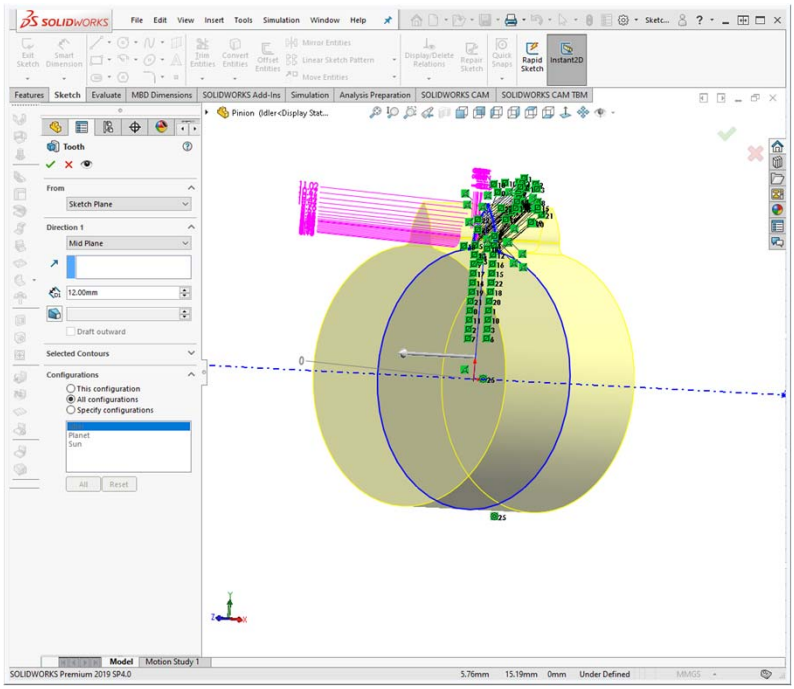


1 & 2mm Fillet + 2mm Chamfer

Pinion.SLDPRT

- Available on SW page in Tools Tab

Extrusion named “Tooth” determines face width.

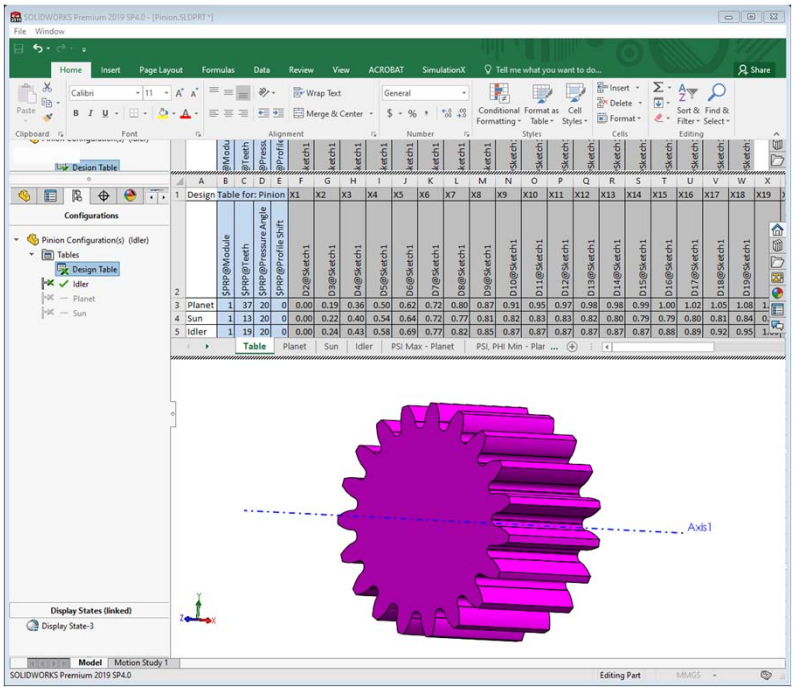


Edit Design Table in Configuration menu to set Module (M) and Number of Teeth (Z).

M ≈ ½ Tooth Height
Gear OD ≈ M x Z

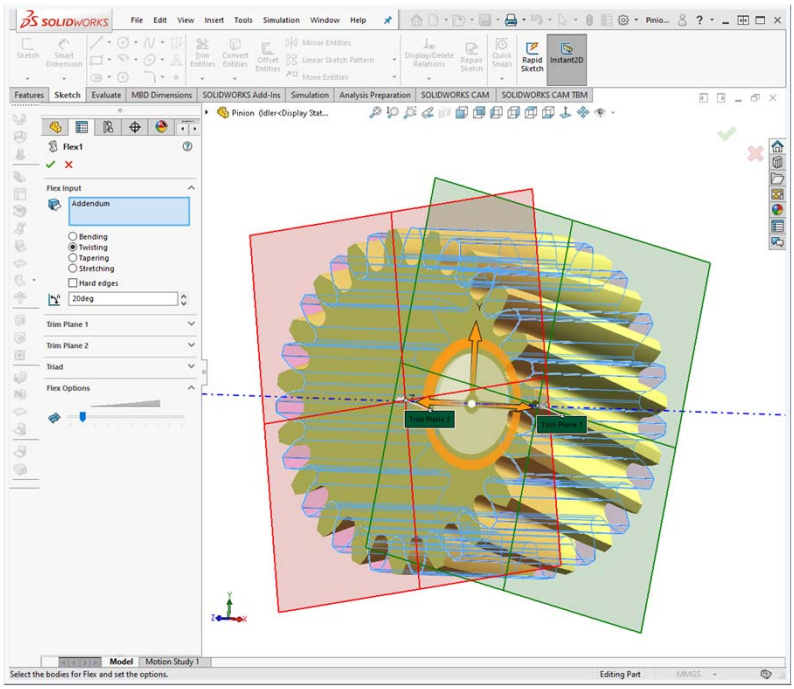
20° is a standard Pressure Angle. Do not change unless you know what you are doing.

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



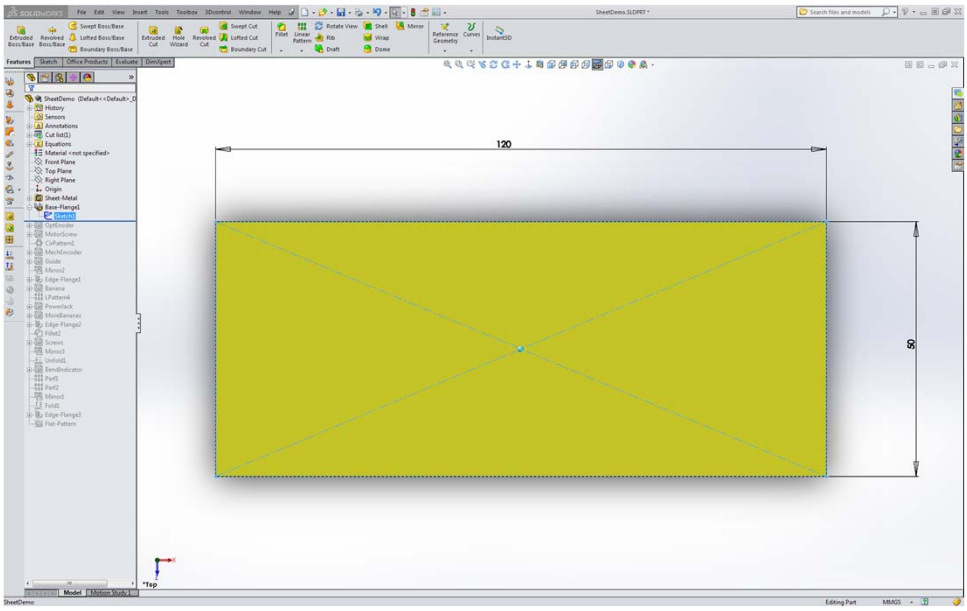
Un-suppress “Helical Flex” feature for helical gear.

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

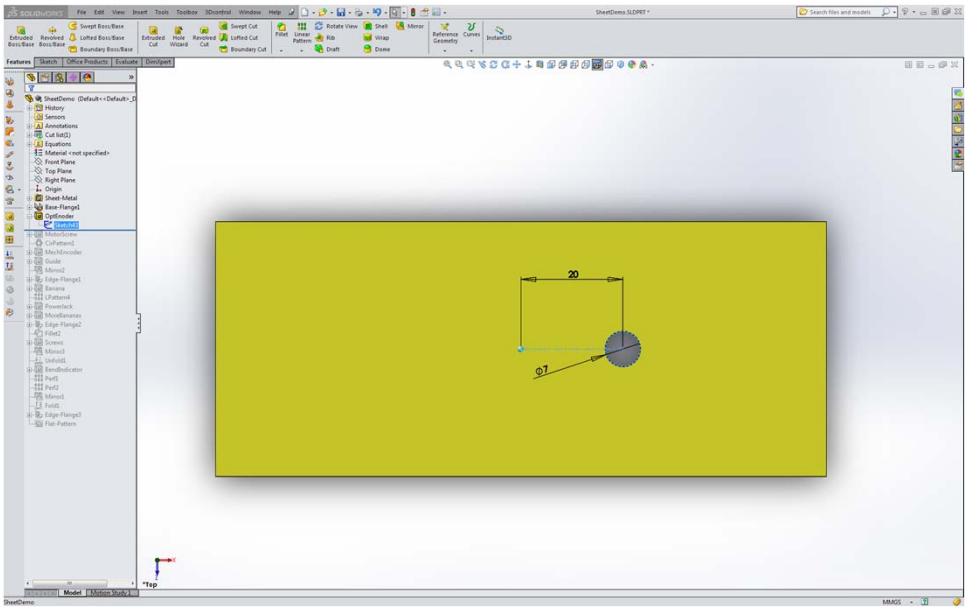


Stand.SLDPRT

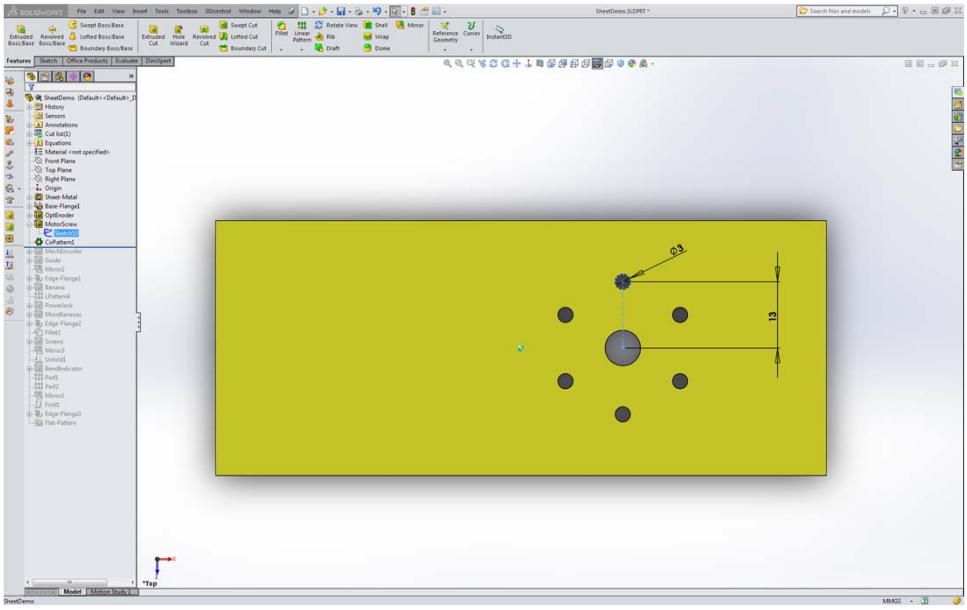
Sheet-Metal Parts



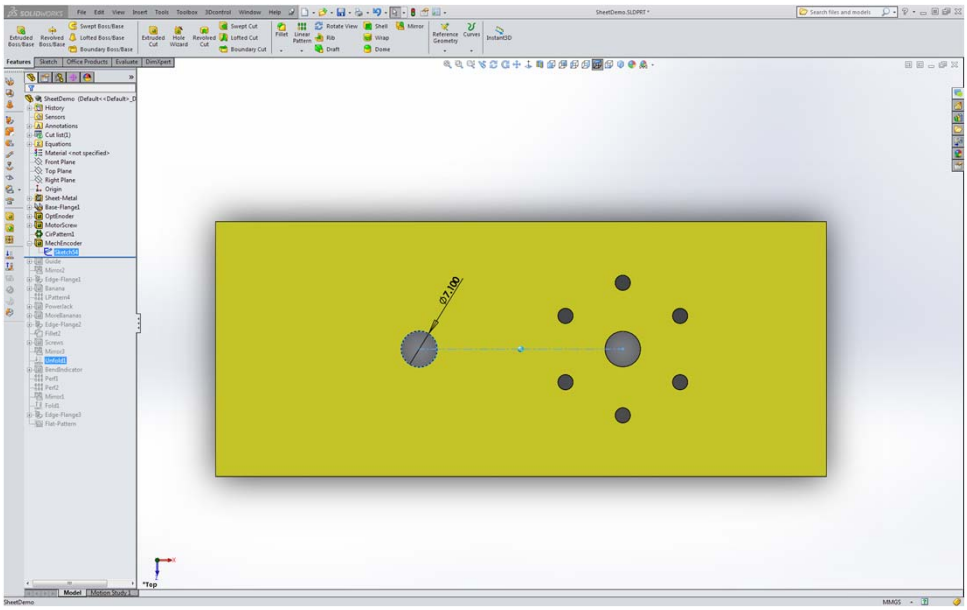
Sheet-Metal Base Flange – 20 Ga (1mm = 0.04”) Al



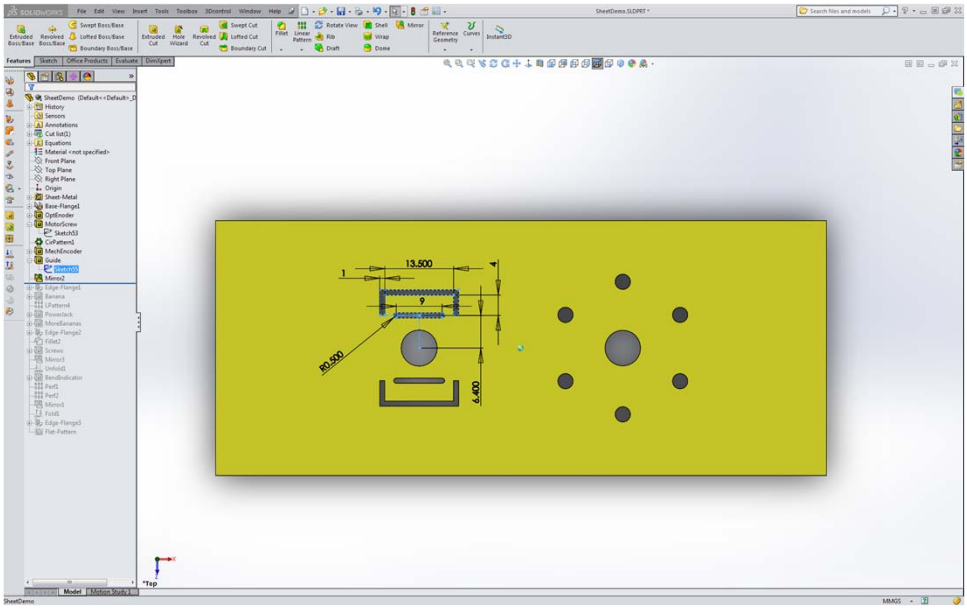
Cut Hole for Motor Shaft / Blind / Link to thickness



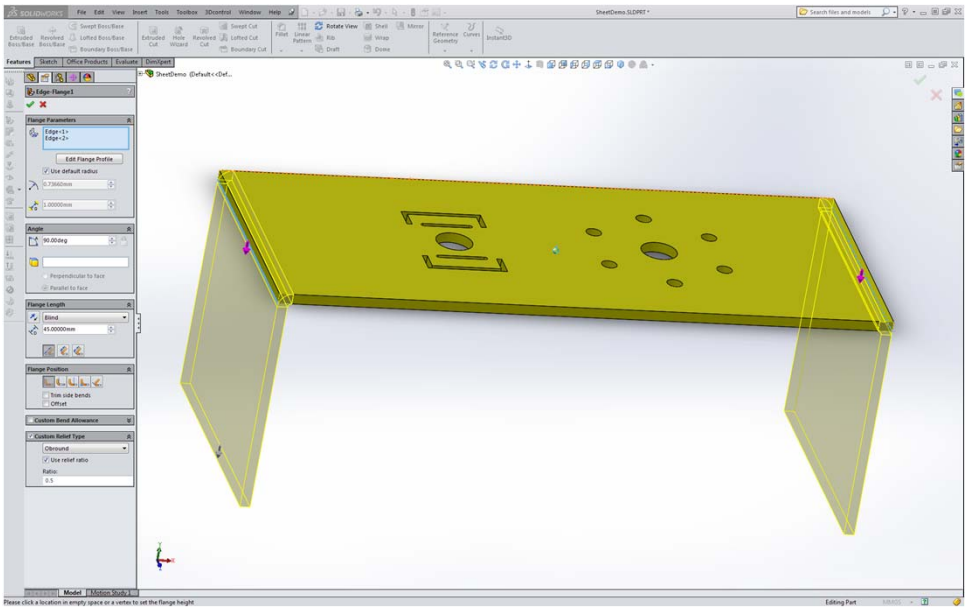
Cut Hole for Motor Mount & Create Circular Pattern



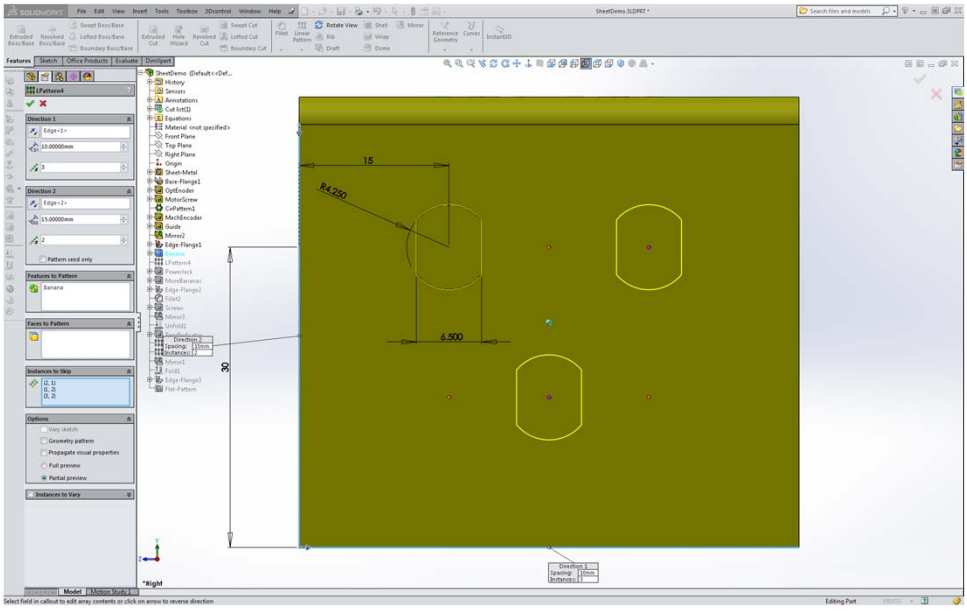
Cut Hole for Mechanical Encoder



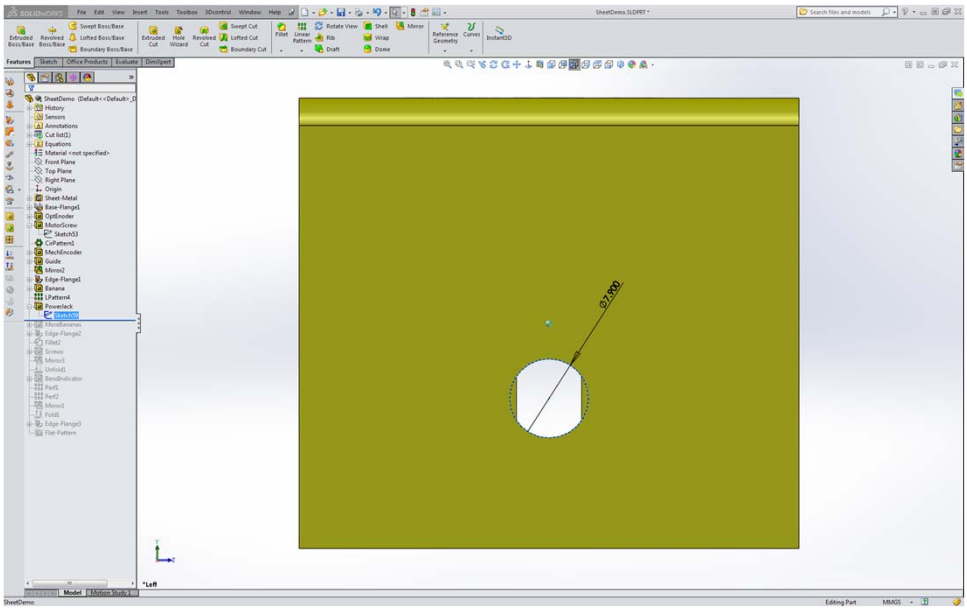
Cut Pattern for Alignment Tabs & Mirror about Front Plane



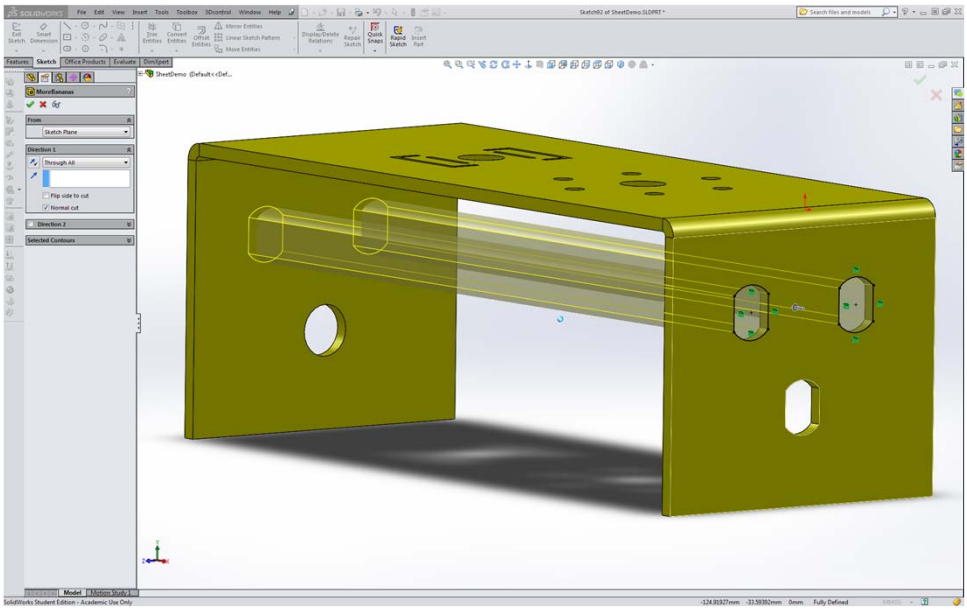
Create Edge Flanges for Legs – 45mm



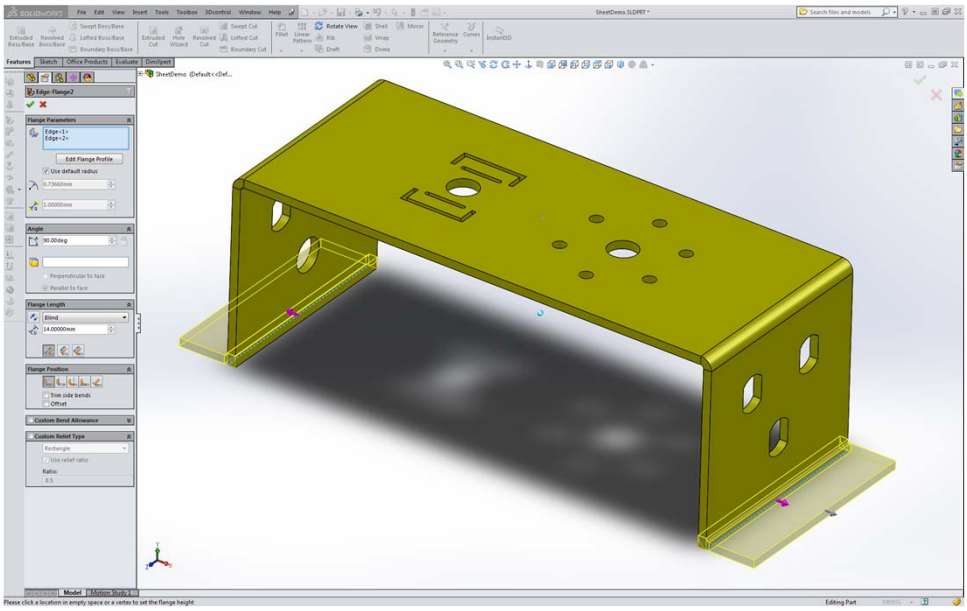
Cut Hole for Banana Plug & Create 3x2 Linear Matrix Pattern with Skipped Instances



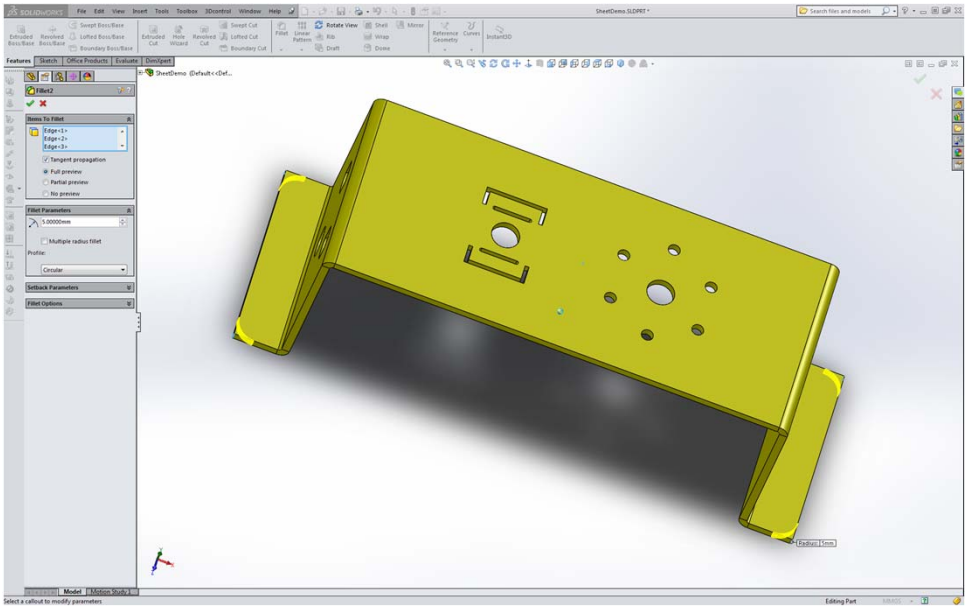
Cut Hole for Power Adapter



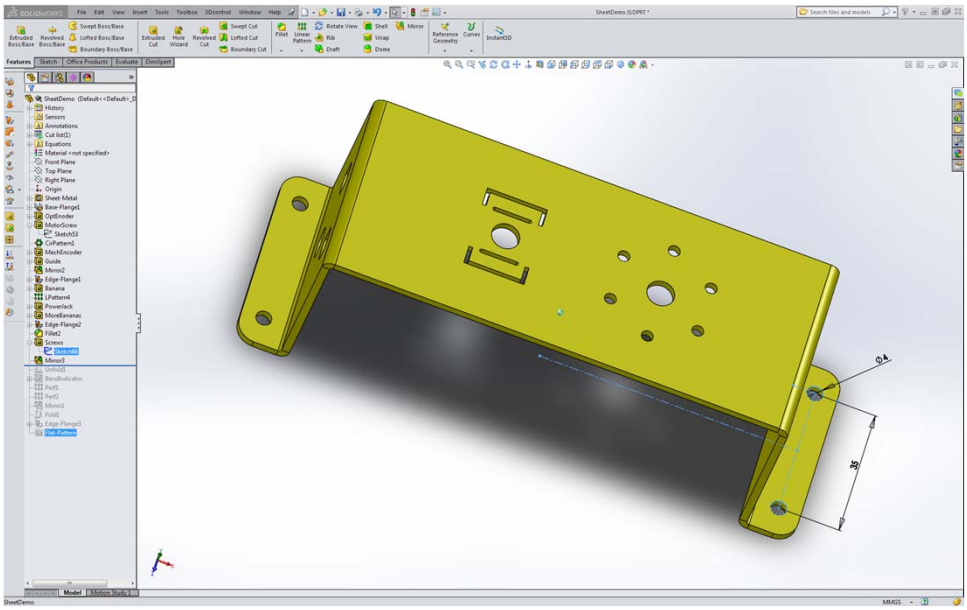
Convert Entities of Top 2 Banana Plug Holes & Cut Through All



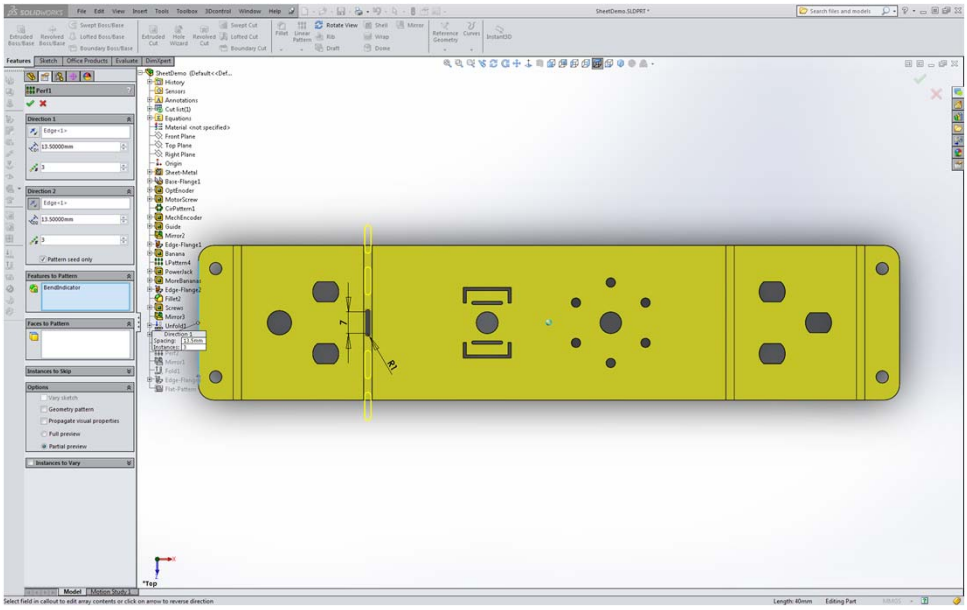
Create Edge Flanges for Feet – 14mm



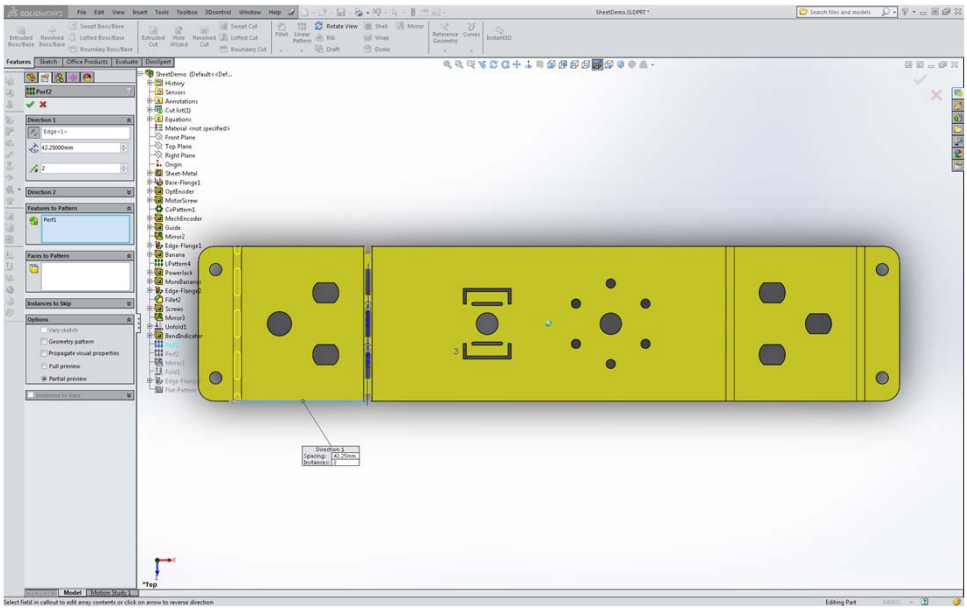
Fillet Feet – 5mm



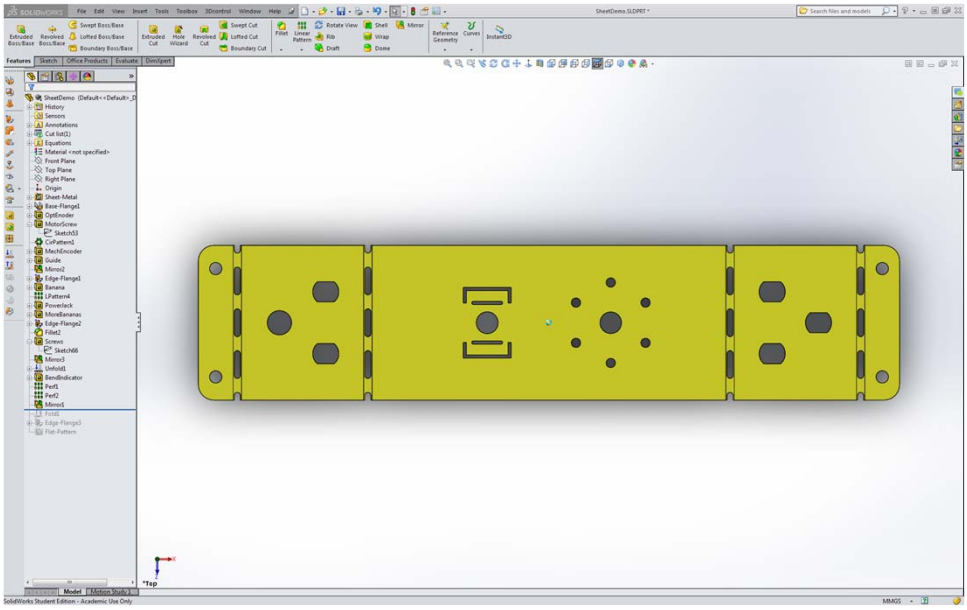
Cut Holes for Mounting Screws & Mirror about Right Plane



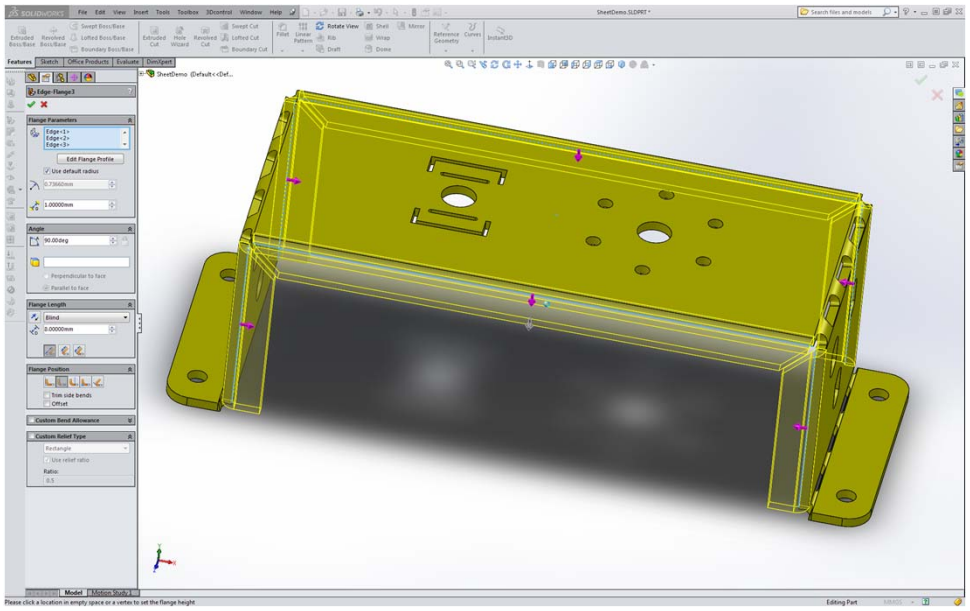
Cut Hole for Perforation & Create 2-Way Linear Pattern using same edge & flipped direction



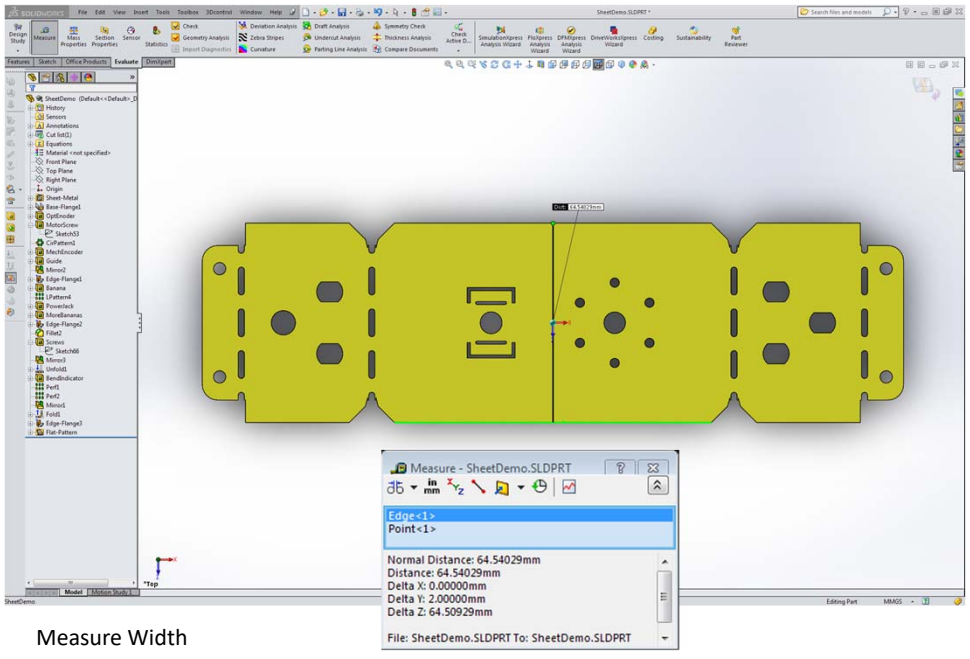
Add Linear Pattern of Linear Pattern



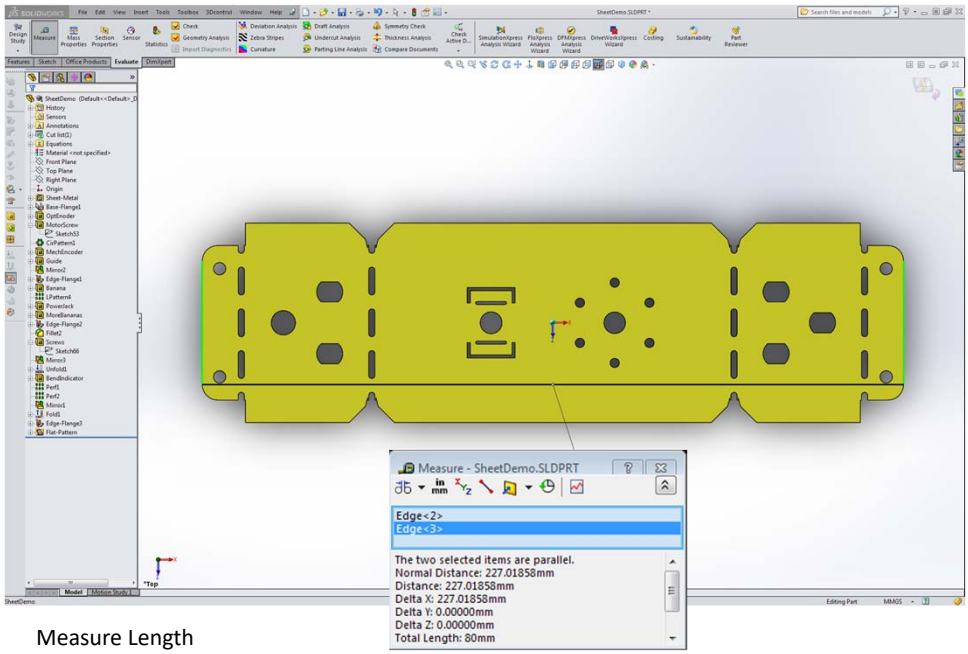
Mirror Linear Pattern about Right Plane



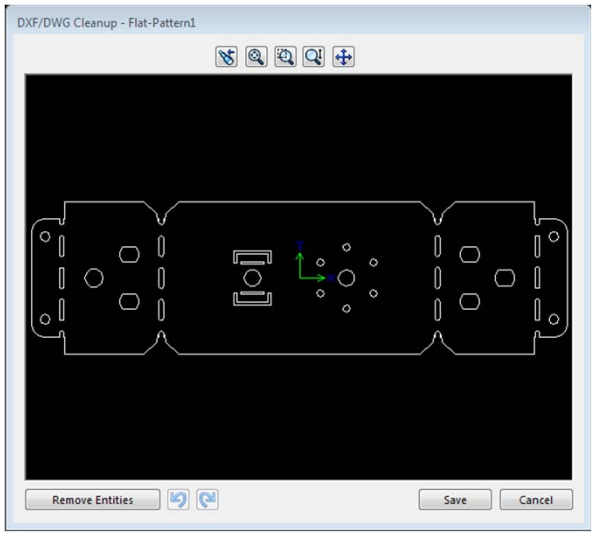
Create Edge Flanges for Stiffening Ribs – Edges automatically bevel for clearance



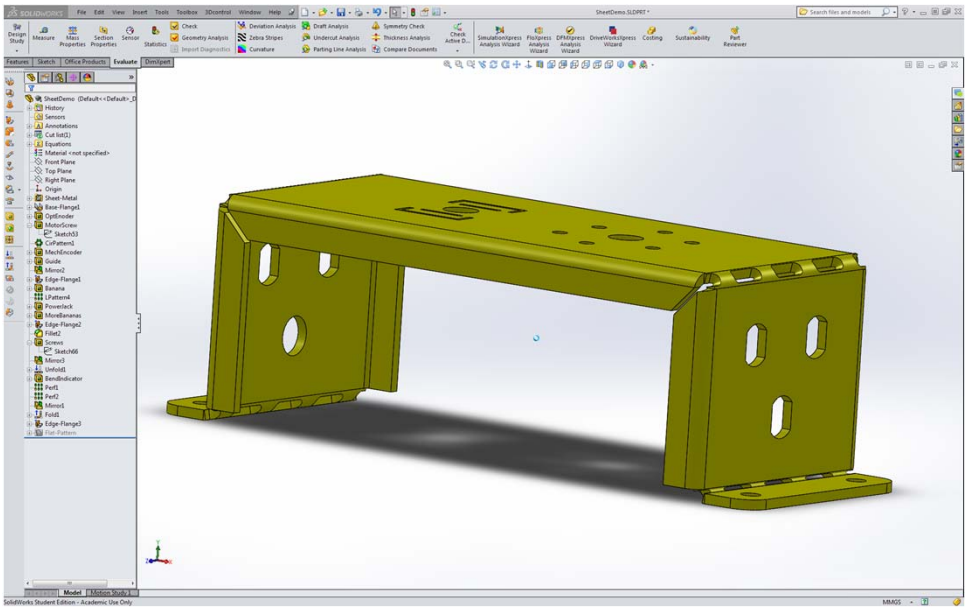
Measure Width



Measure Length



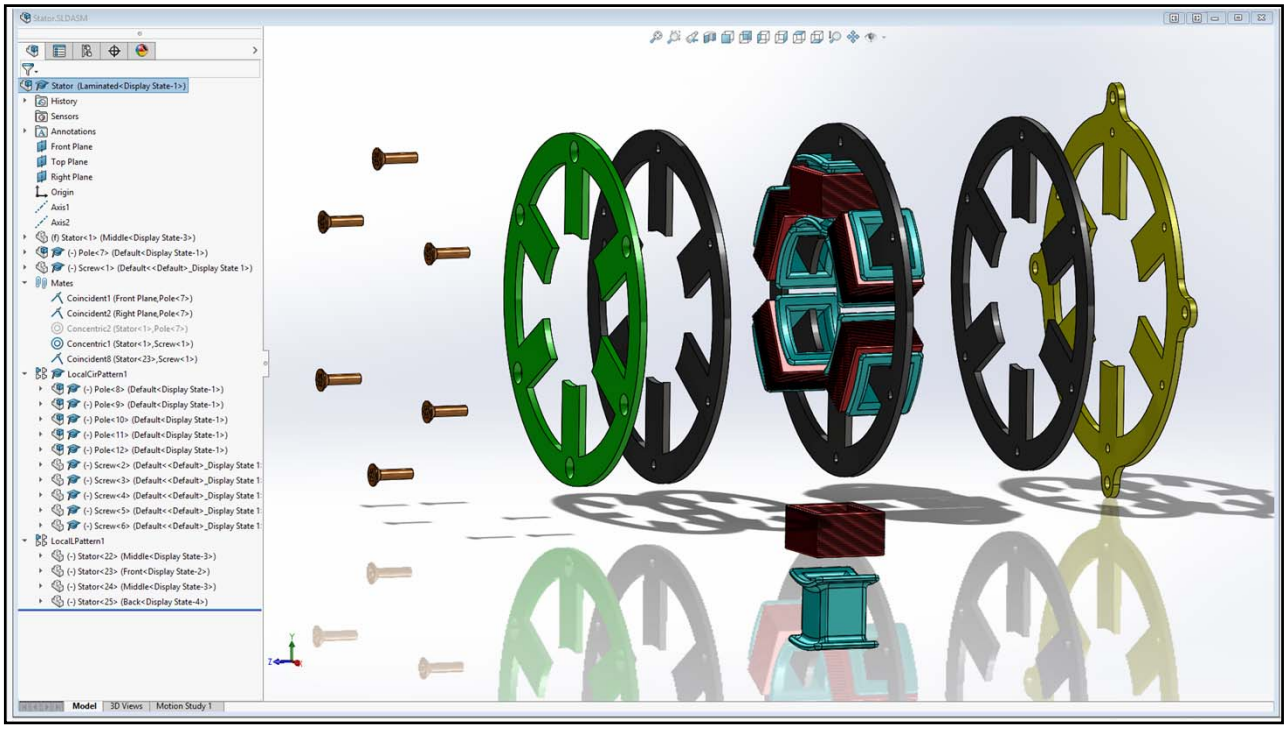
Generate DXF File of Flattened Pattern



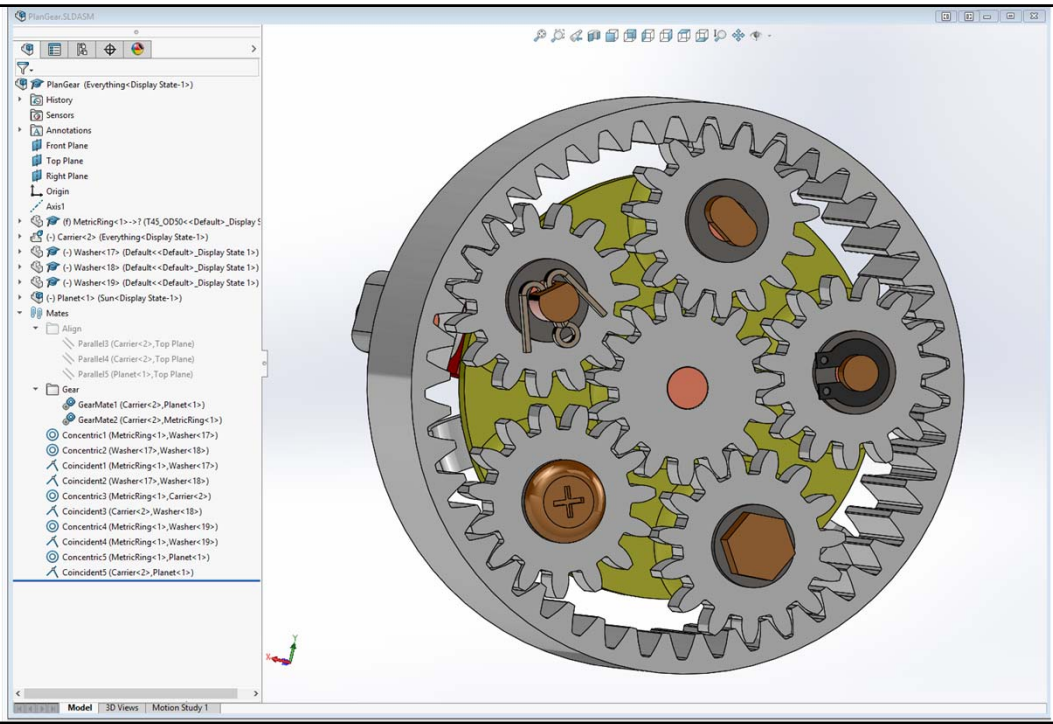
Order the part, bend the ribs on the brake and the perforations by hand.

Stator.SLDASM

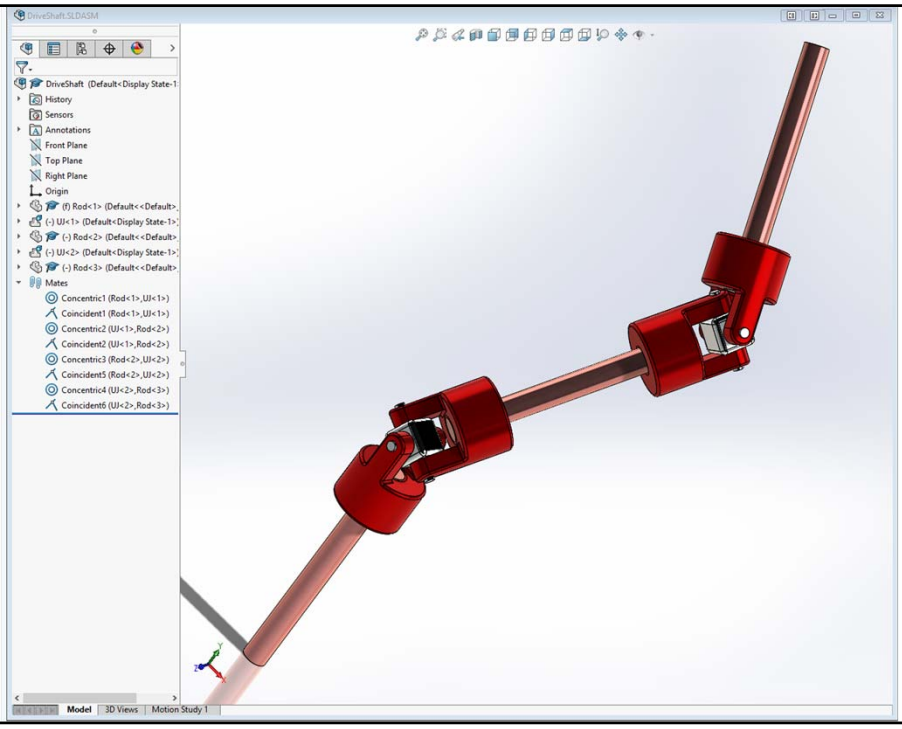
Assemblies



PlanGear.SLDASM



DriveShaft.SLDASM



Machine.SLDASM