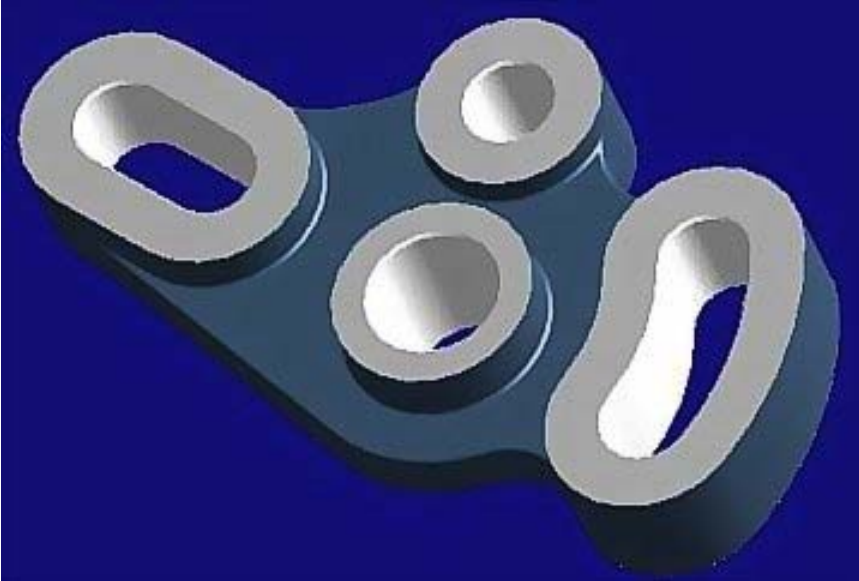# Solids that Don't Boolean

This is an example of a solid that can not be constructed with solid primitives and unioned into one piece. The main problem is the condition of the side surfaces that are coincidental and do not shared a volume with the main solid piece. When Booleans fail, rely on using surface editing techniques as described in the steps below.
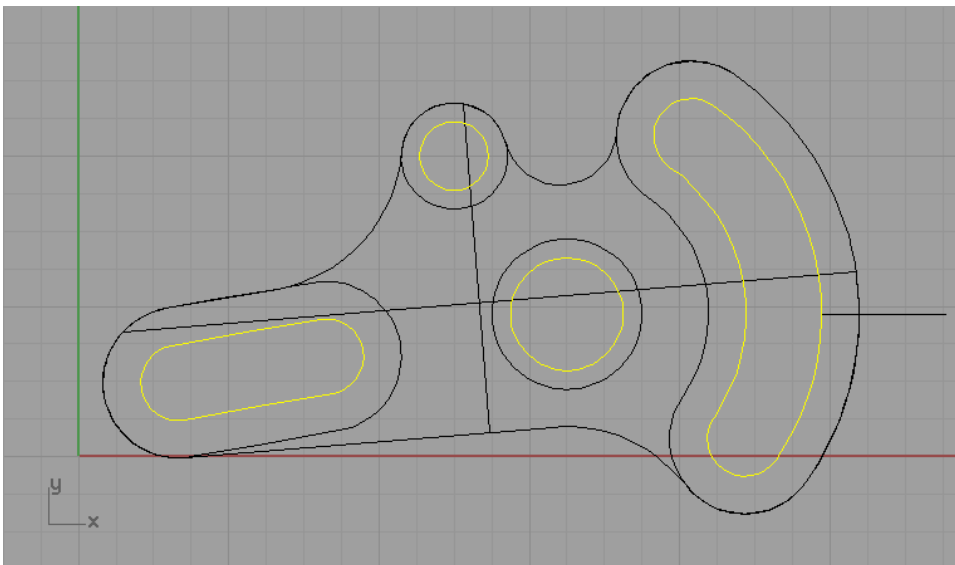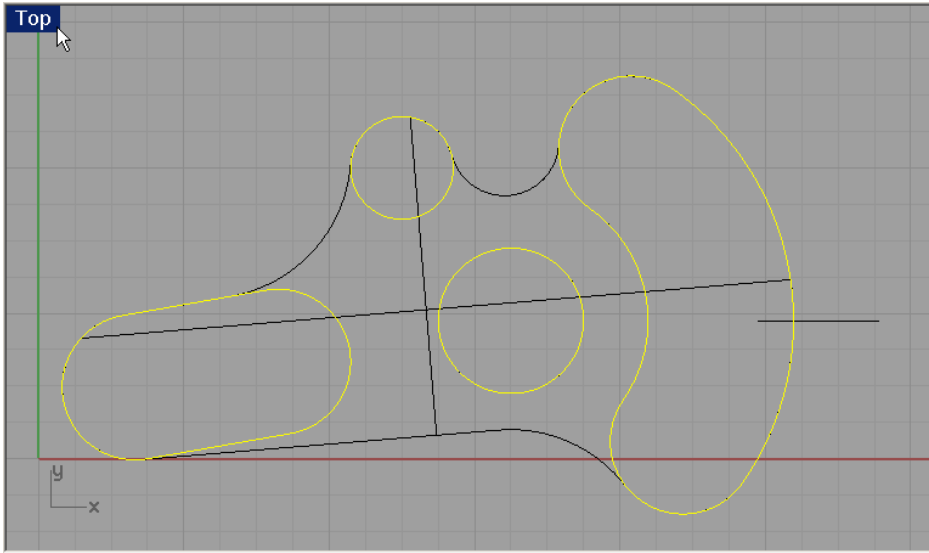

Start with the curves.
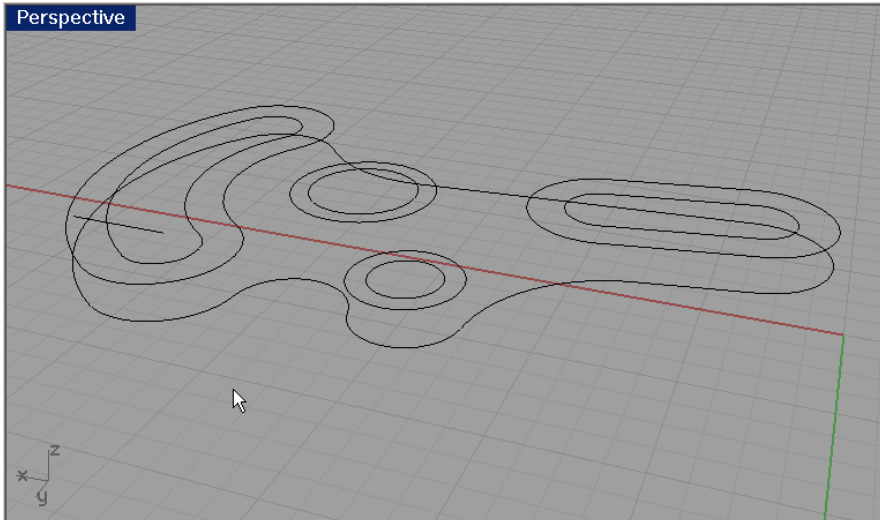
Create a surface from the larger curve with the PlanarSrf command. (Surface -> From Planar Curve)
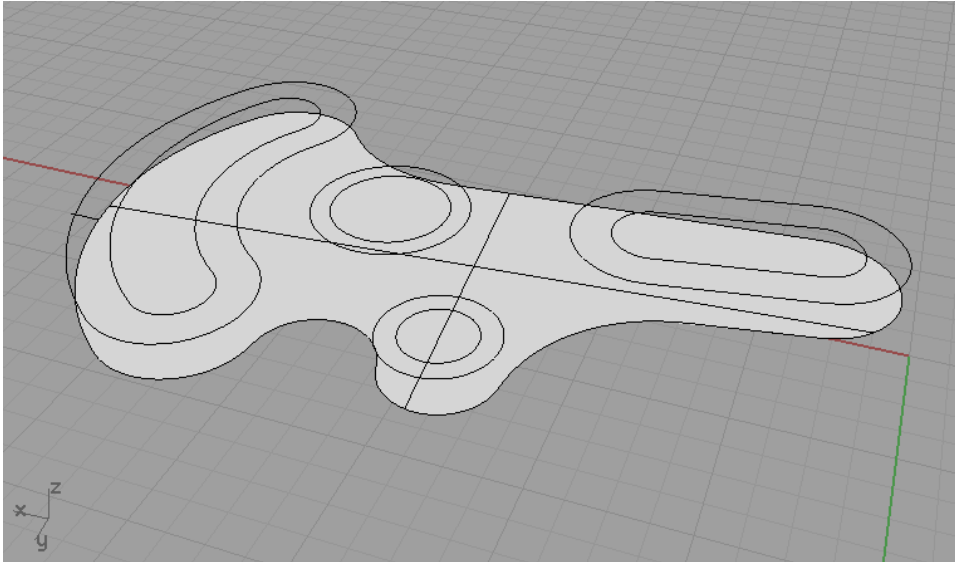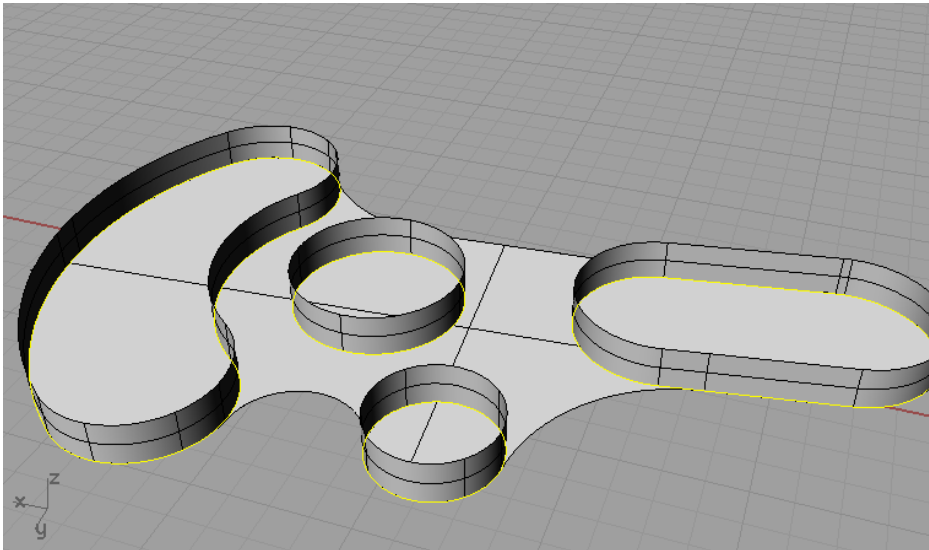

Hide the curves that represent the interior islands or curves. We will work with them later.
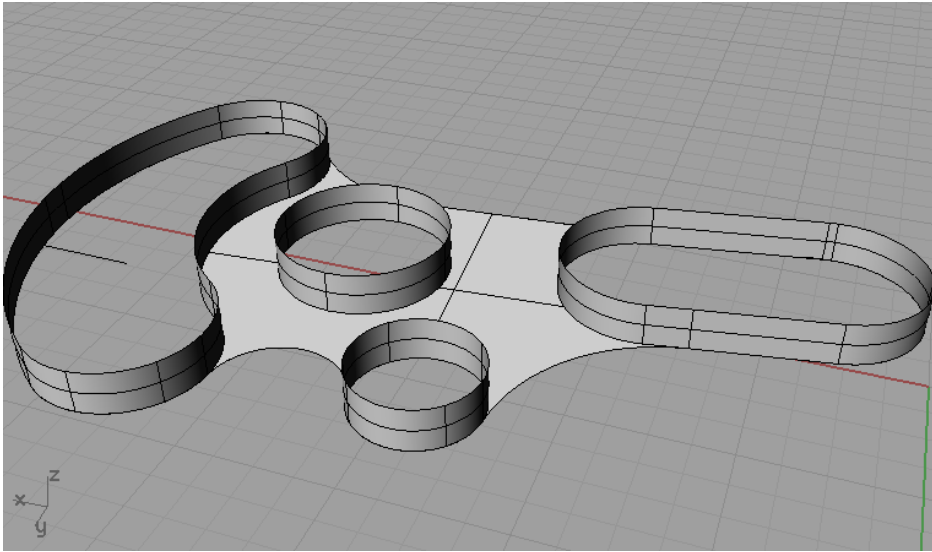
Using the Project command in the Top viewport (Curve -> From Objects -> Project) Split
the surface with the projected curves with the Split command...
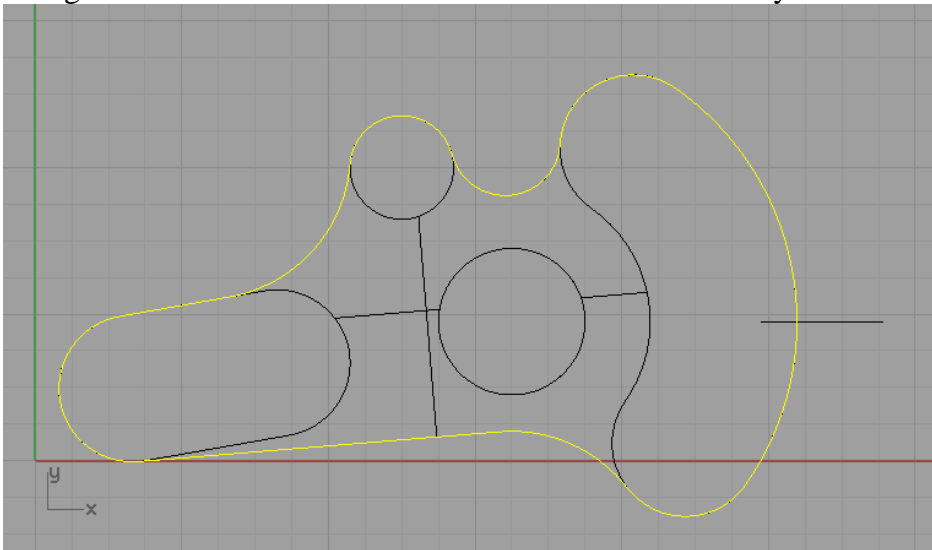

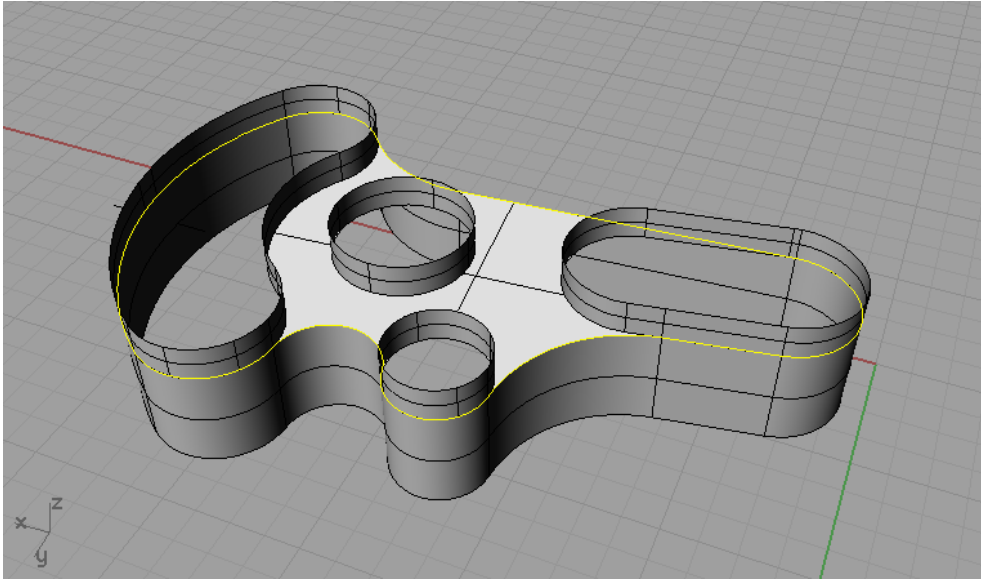Extrude curves at the distance of .25 with the ExtrudeCrv command.
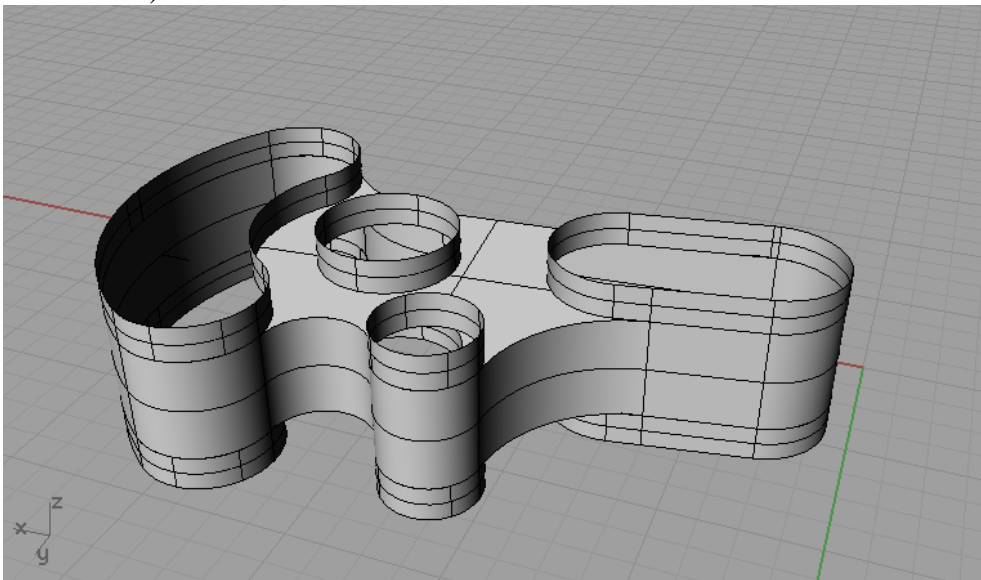
Erase the inside surface.

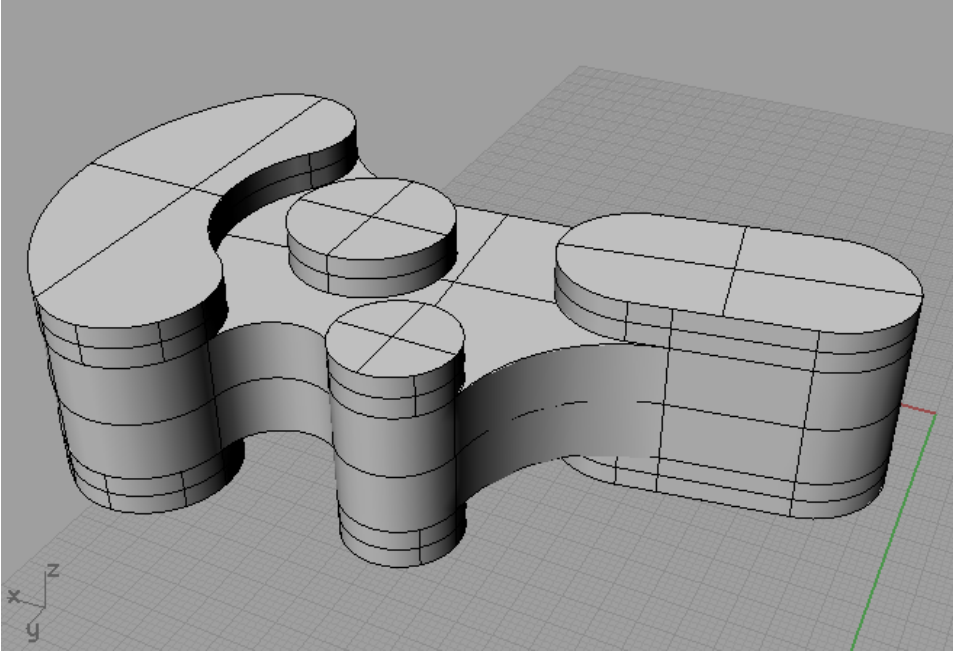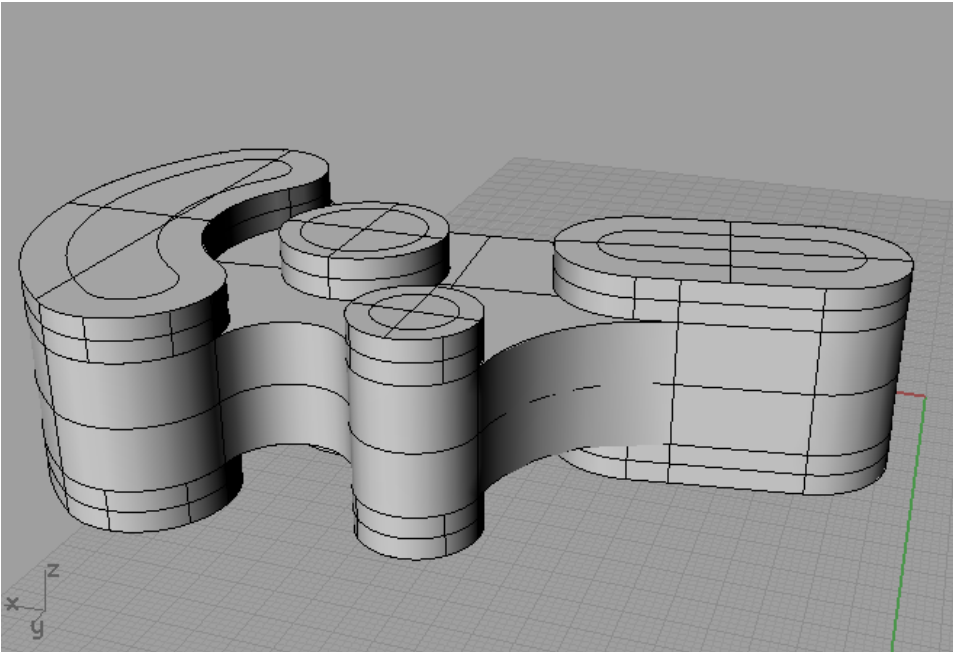Using the ExtrudeCrv command extrude the outside curve by -.75.

Mirror the extruded surfaces to the bottom of the part. (We drew a line to snap to as the mirror line.)
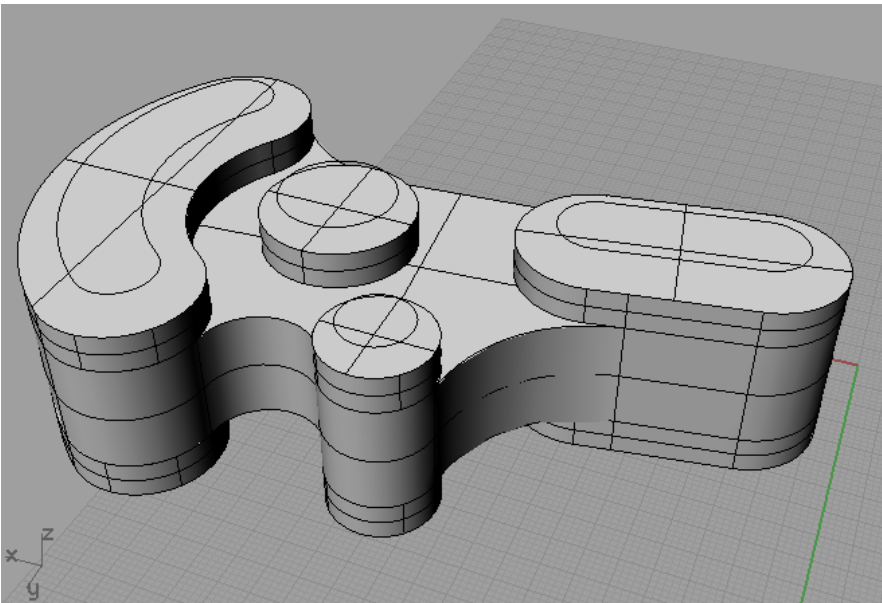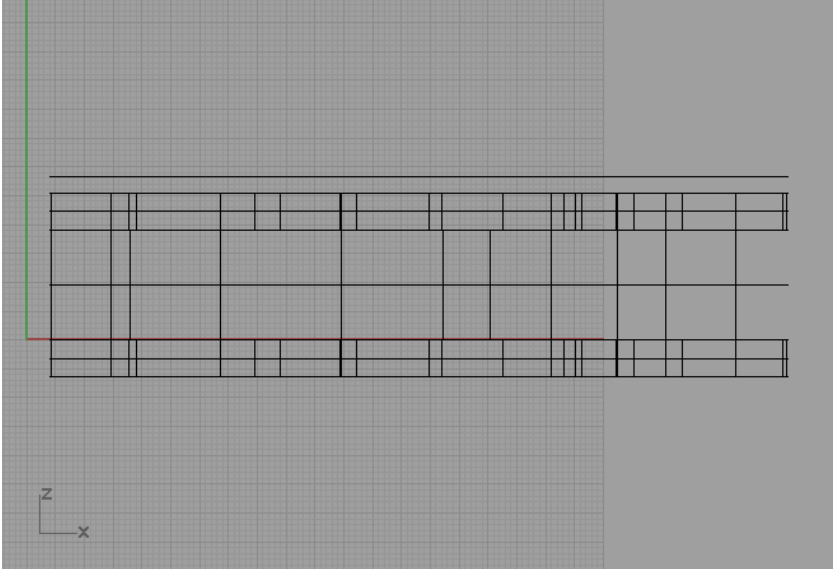
Next join all the surfaces with the Join command. Then close the solids, with the CapPlanarHoles command location on Solids -> CapPlanarHoles.
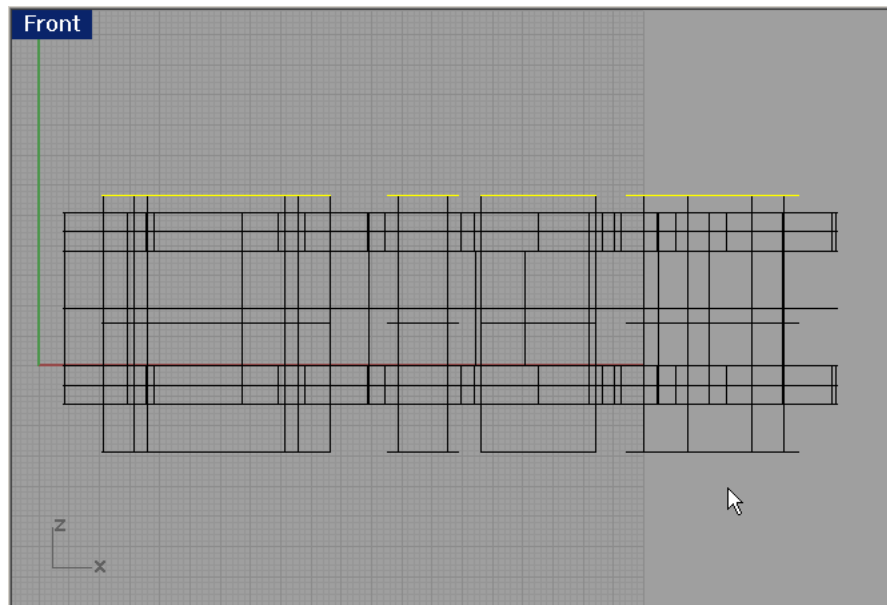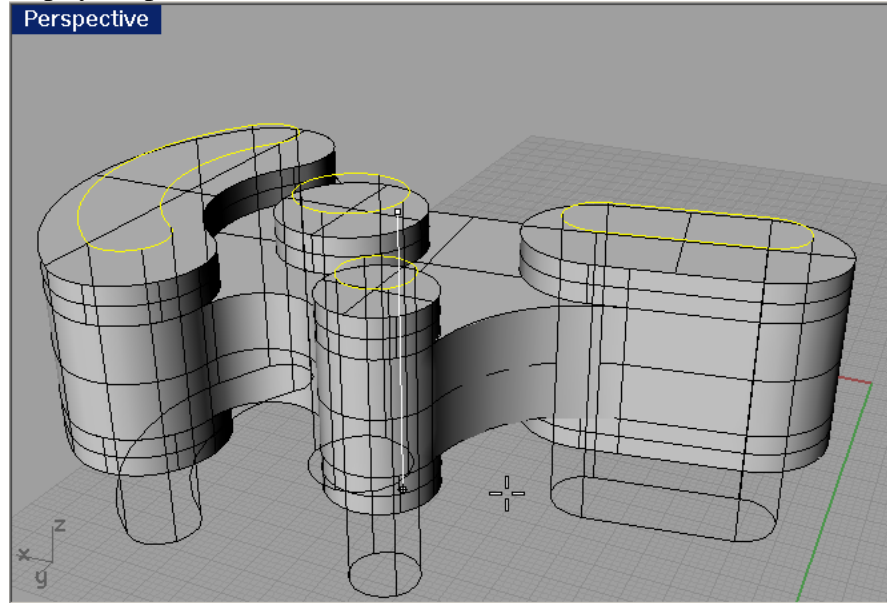
Turn on curves that we hide earlier.
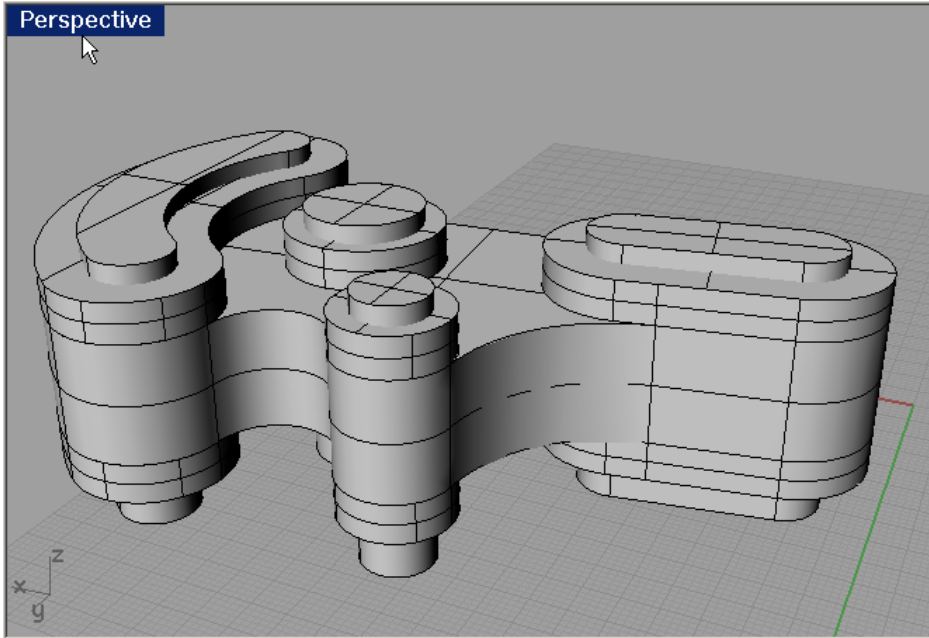
Using the Nudge command, move the curves up above the surface of the model. Nudge is by default Control + Arrow . See the Help for information on how to configure.
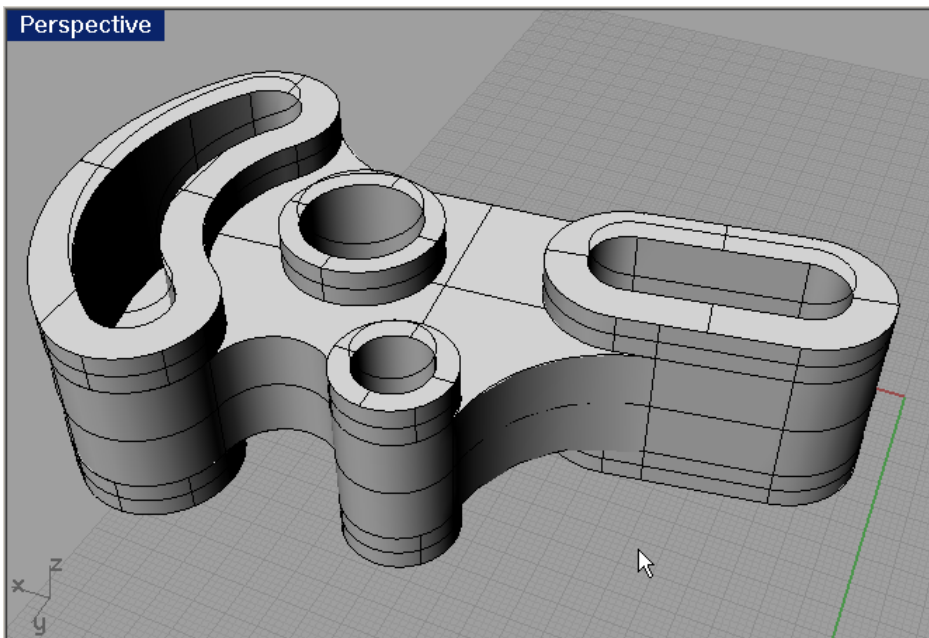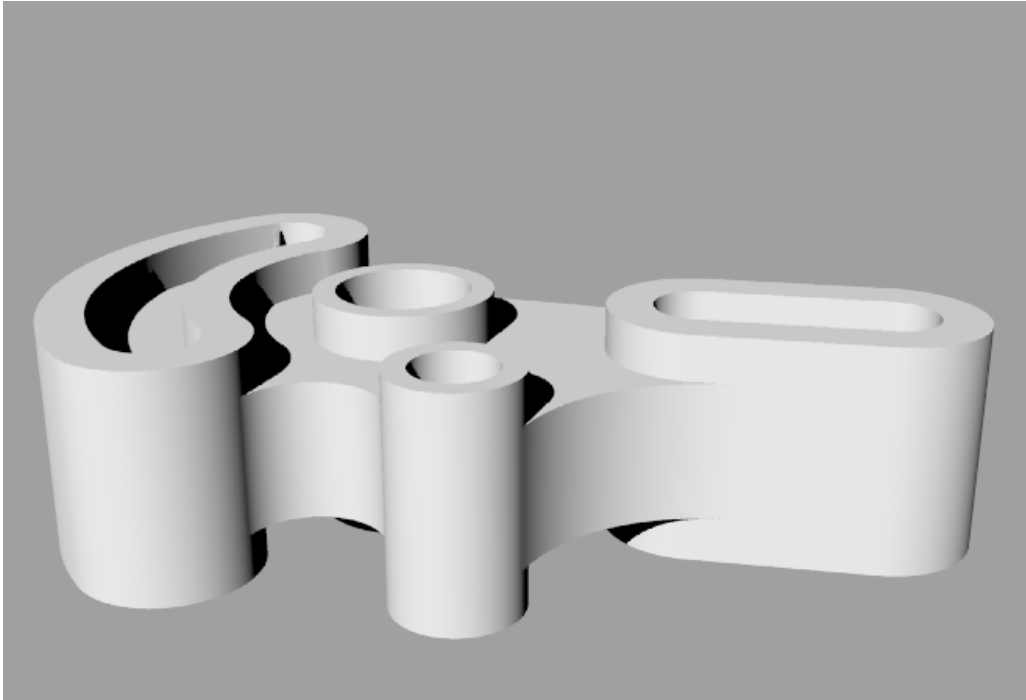
Using the ExtrudeSrf command extruded the curves all the way through the part. Use the Cap=yes option to create closed solids.

Using the Difference command, subtract the solids from the main model. Erase or hide the curves.

Use Properties -> Detail to check the condition of the solid. It is a valid closed polysurface.

polysurface
  ID: 71F2510A-F59C-437D-B38A-69A4C7E28613 (732)
  Layer name: Default
  Render Material:
    source = from layer
    index = -1
  Geometry:
    Valid polysurface.
    Closed solid polysurface with 25 surfaces.
    Edge Tally:
      13 seam edges
      44 manifold edges
     = 57 total edges
    Render mesh: 25 meshes 3144 vertices 3205 polygons
    Analysis mesh: none present