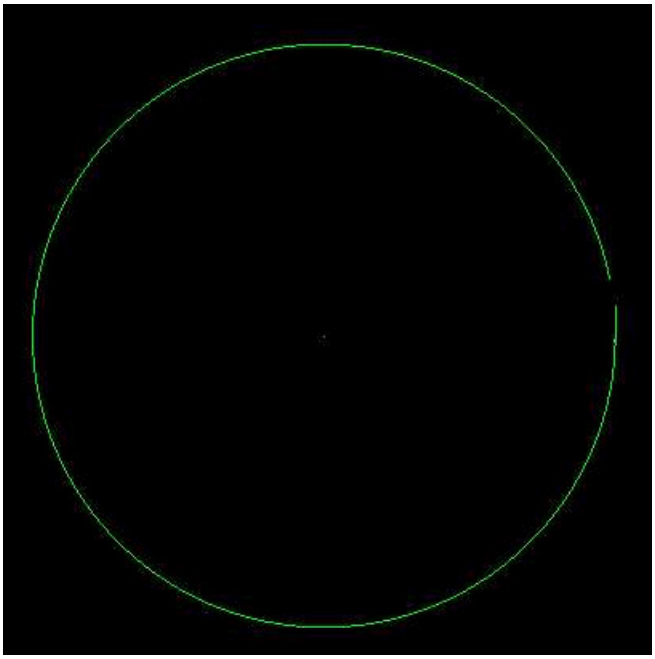
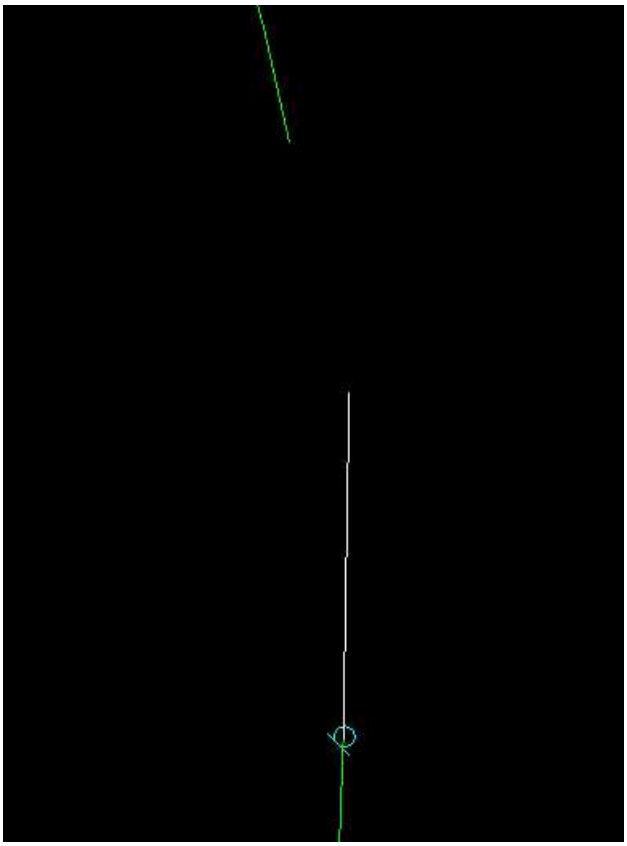
Making cylindrical/rolled parts in I-DEAS Sheet Metal.

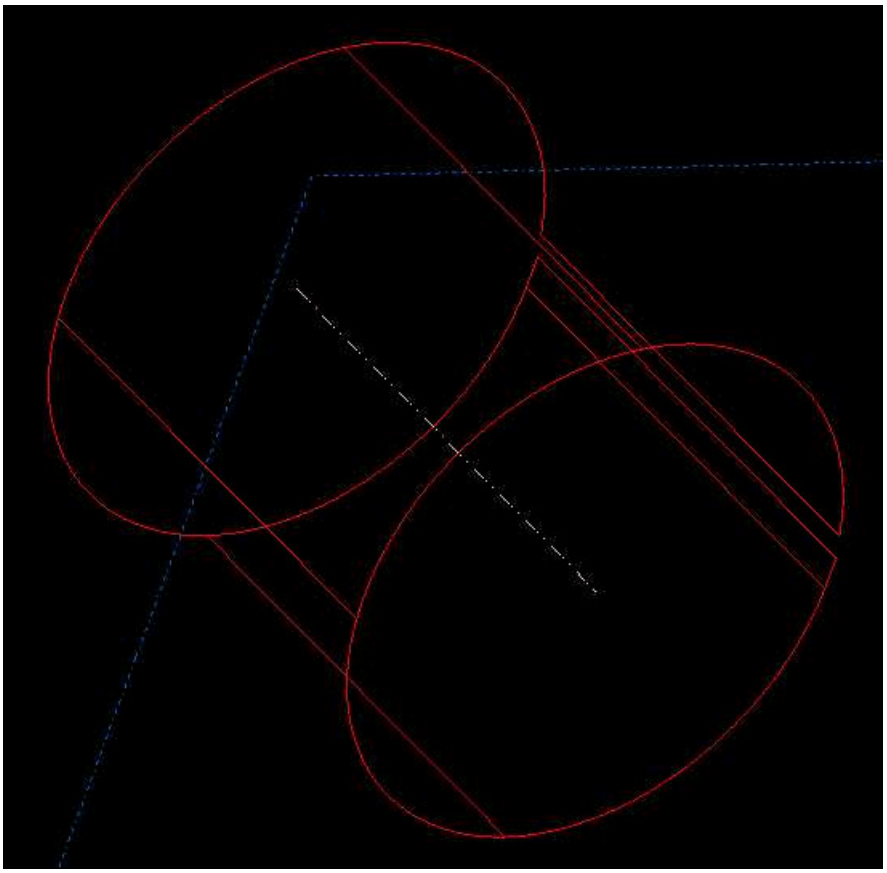
I-DEAS Sheet Metal design is capable of creating rolled parts that can be folded/unfolded (rolled/unrolled) in order to create flat patterns for drawings and manufacturing. In order for any part to be "sheet metaled", it must include a planar surface that can be used to define the ground panel. For cylindrical parts, the easiest way to define this panel is to draw the part in wireframe using an end view:



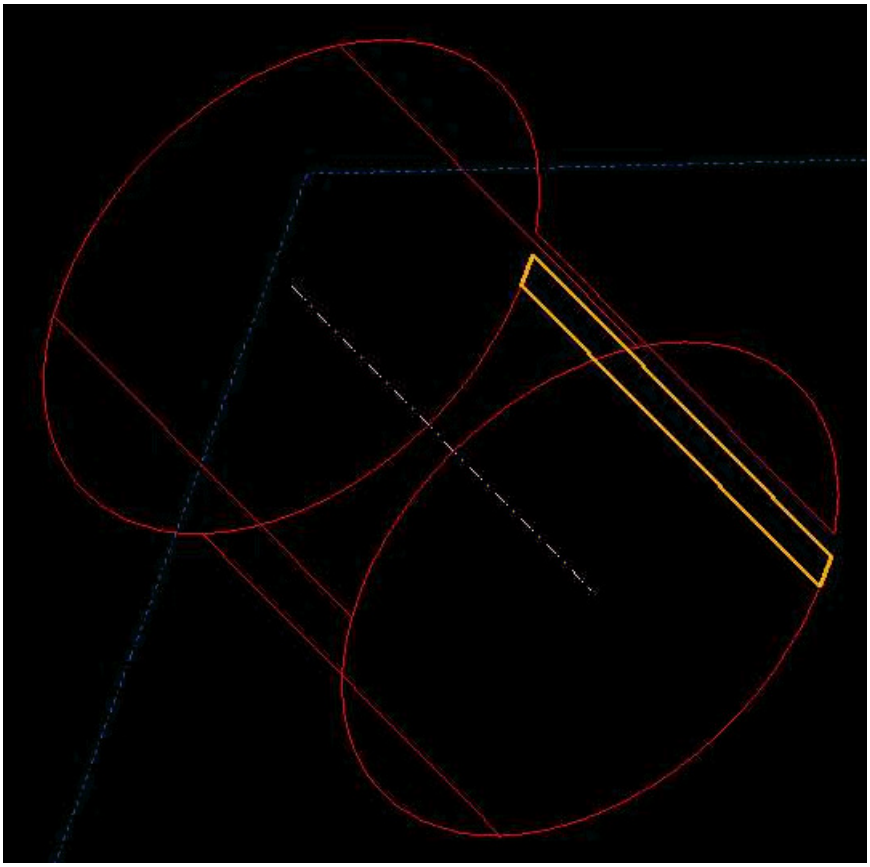
The small linear section added to the arc can be very small. In this example, it has been made large enough to see easily. As long as the wireframe can be extruded to produce a planar surface, sheet metal will be able to use this plane as the ground panel plane. The only requirement is that the line must be tangent to the arc at the point where they meet. This closer image shows how the line was added at the end of the arc to nearly close the gap left in the rolled profile:



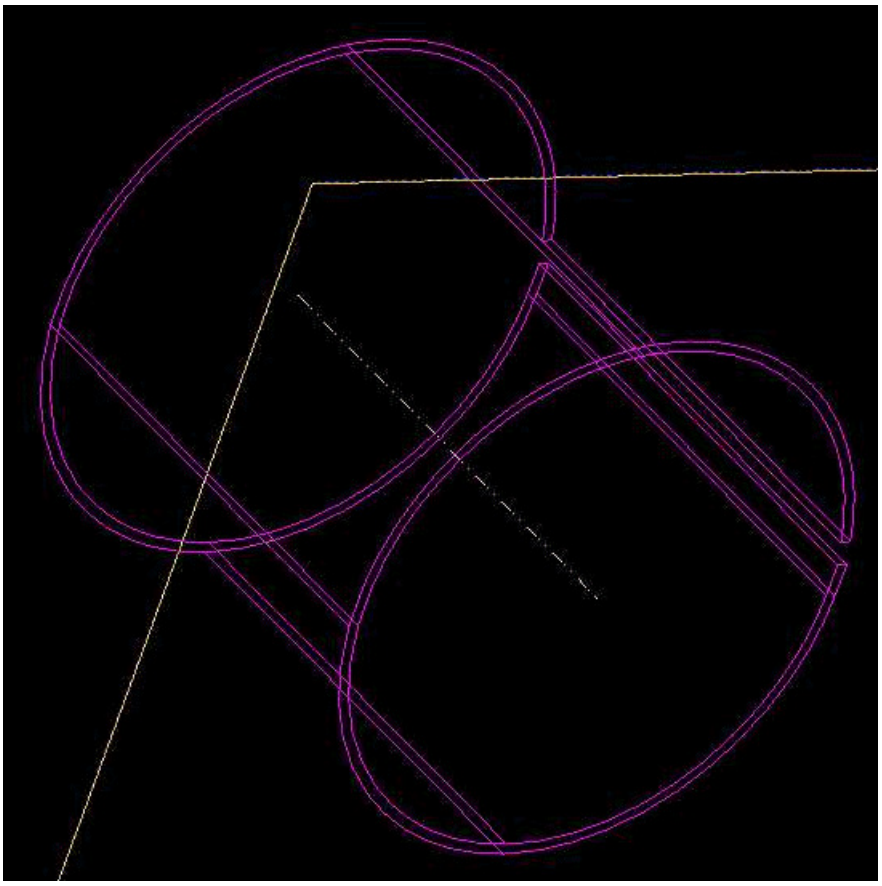
Once the end view profile is drawn, it can be extruded into an open surface part. Note the planar surface that results:



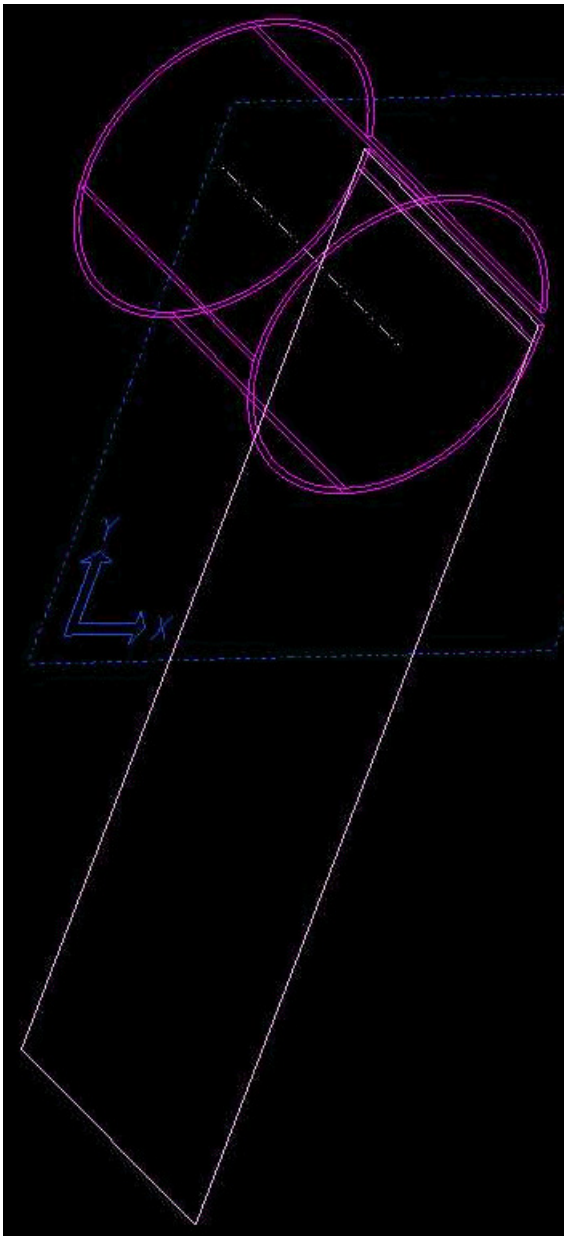
Use this part in the sheet metal function to create the sheet metal part. When prompted to select the ground panel, pick the planar surface at the end of the cylindrical surface:



Note that you should NOT use "Auto Bend Create" inside of sheet metal, as the remaining cylindrical surface of the part will be defined as a bend surface when selected by the user. Here is the part after the sheet metal and shell steps have been completed:



This is a regular sheet metal part that can now be unfolded for detailing or manufacturing use. By making the linear portion of the wireframe profile very small, the impact of the flat surface on the finished part can be minimized, yet still allow the part to be "sheet metaled".


Y
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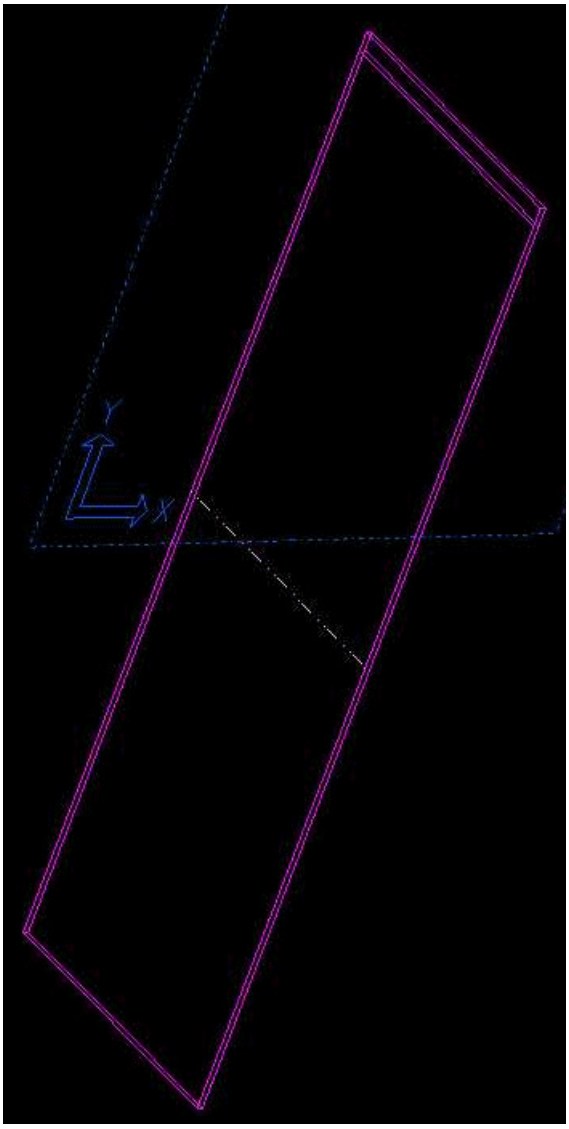
Y
X