Unrolling Cones and Cylinders

To “unroll” a conical or cylindrical shape, the Recognize Bends method must be used. A cut of minimal thickness must be made in the direction of the cone’s center axis and through a wall. The “fixed face” must be an edge for the unrolling operation to work.

1. **Open the part Unroll.**
   The Unroll part contains an arc that was extruded as a thin feature. The arc has a 1° gap, creating a gap in the wall of the cylinder.

2. **Recognize bends.**
   Click Insert Bends and select the model edge indicated. This is the Fixed Face or Edge. The Bend Radius and the Auto Relief options have no bearing on this example.
   Click OK.

3. **Flattened.**
   Click Flatten to show the part in its flattened state. Notice that the part is rolled back to before the Process-Bends1 feature.

4. **Copy a sketch.**
   Open the part Pattern Sketch. It contains a sketch that will be used for a sketch driven pattern.

   Select the sketch and copy it to the clipboard. You can use Edit, Copy, or press Ctrl+C.

5. **Paste the sketch.**
   Switch back to the unrolled cylinder part window.