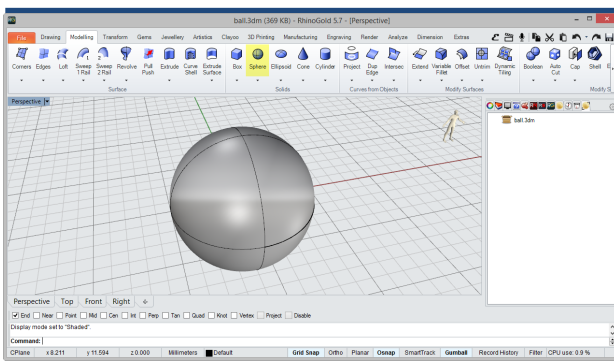




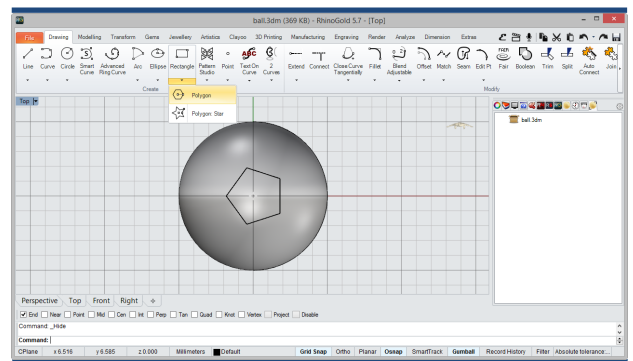
## Polyhedron Dome Ring

In this tutorial we'll try some of the more useful commands in RhinoGold. Powerful tools such as Polygon, Smart Curve, Hollow Ring, Dynamic Polar Array, Offset, Project and Dynamic Cap.



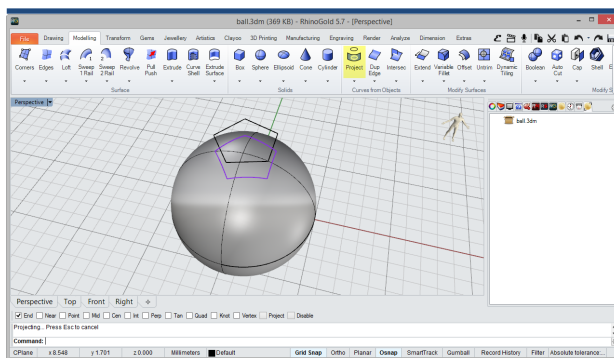
### 1 Sphere

First, we'll define a sphere of 10 mm in diameter using the Sphere tool, in the Modelling tab.



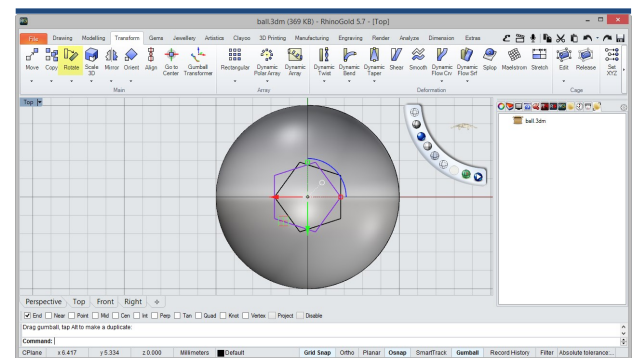
### 2 Polygon

Then, we'll trace a curve of 4mm in the pentagon shape with the Polygon tool from the Drawing tab.



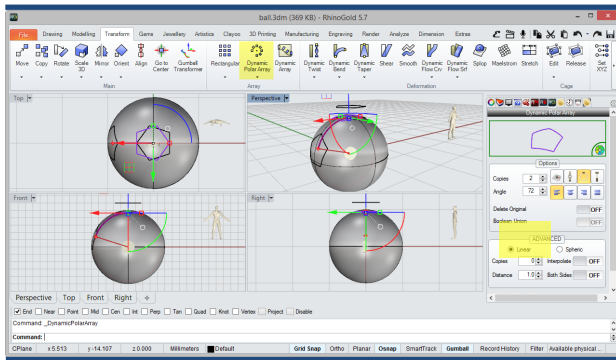
### 3 Project

Now, we'll duplicate the polygonal curve on the surface sphere using Project tool, in the Modelling tab.



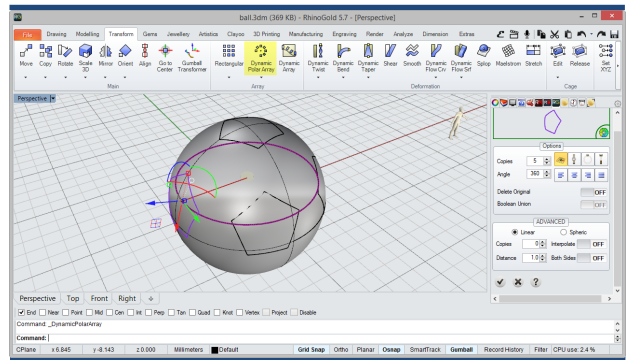
### 4 Rotate

In this step, we'll rotate the projected curve at 180° with the Rotate tool in the Transform tab, activate the Copy option from the command line.



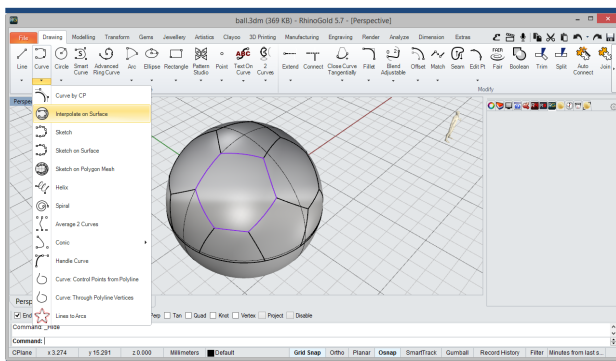
## 5 Dynamic Polar Array

Then, we'll make an array of 2 copies with the polygonal curve rotated in the previous step, using the Dynamic Polar Array tool, in the Transform tab. We'll position copy in the same way as shown in the image.



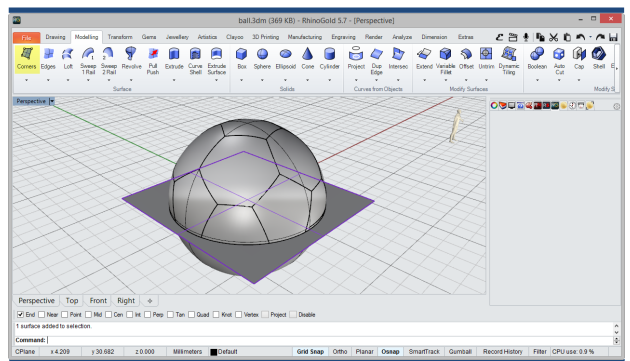
## 6 Dynamic Polar Array

Now, we'll repeat the operation with the Dynamic Polar Array tool, defining an array of 5 copies, in this case applied to the copy made in the previous step.



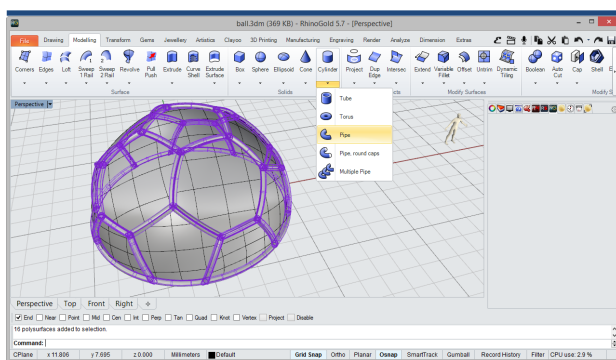
## 7 Interpolate Surface

In this step, we'll trace curves to join the Polygon vertices using the Interpolate Surface tool, located within the Curve submenu, in the Drawing tab.



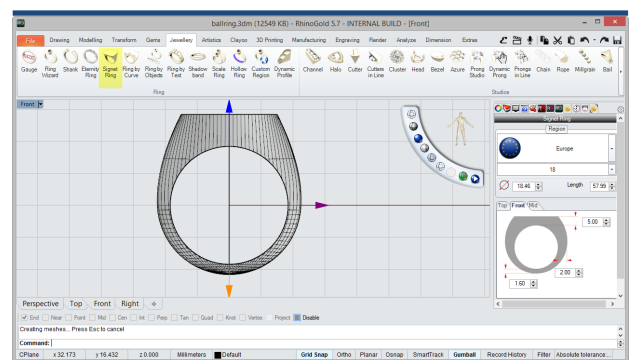
## 8 Corners / Boolean Difference

Then, we'll define a flat surface with the Corners tool, we'll position it at the sphere center and will make a Boolean Difference between these two objects to subtract a half sphere.



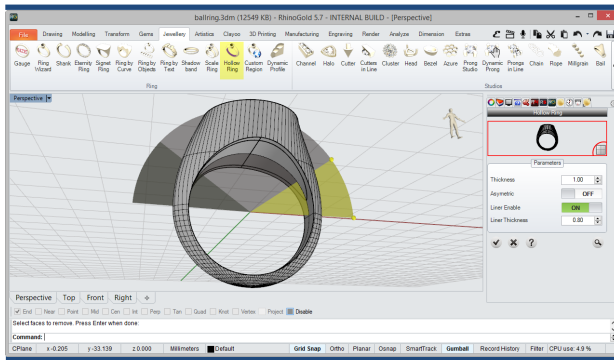
## 9 Pipe

Now, we'll apply the Pipe tool from the Modelling tab to the curves, we'll define pipes of 0.3 mm in radius.



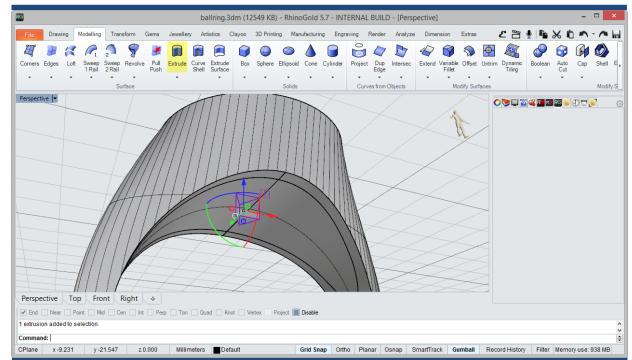
## 10 Signet Ring

Then, we'll select the Signet Ring tool, from Jewellery tab and define a European ring type of 18 in size.



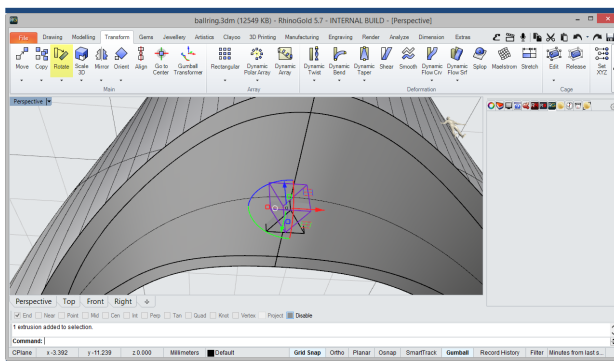
## 11 Hollow Ring

In this step, we'll select the Hollow Ring tool, in the Jewellery tab and apply it to the inner surface of the ring.



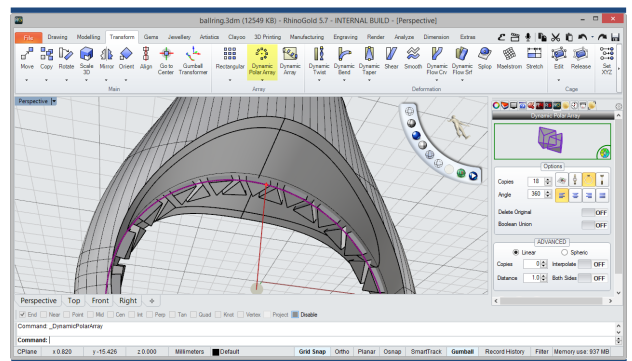
## 12 Polygon / Extrude

Then, we'll trace a curve in the triangular shape using the Polygon tool and apply it the Extrude tool located on the Modelling tab defining an extrusion of 3 mm.



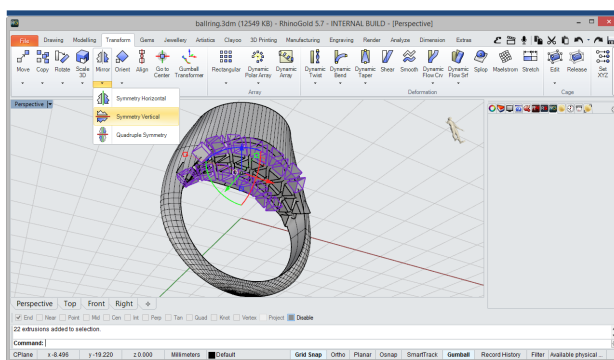
## 13 Rotate

Then, we'll rotate the extrusion at 180° with the Rotate tool and activate the copy option from the command line.



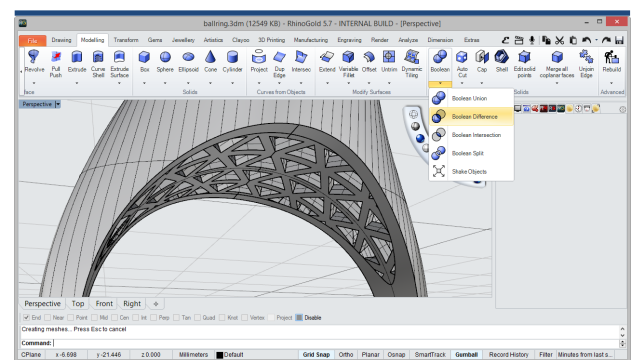
## 14 Dynamic Polar Array

Now, we'll position the copied extrusion beside the original and apply it the Dynamic Polar Array tool generating an array of 360°.



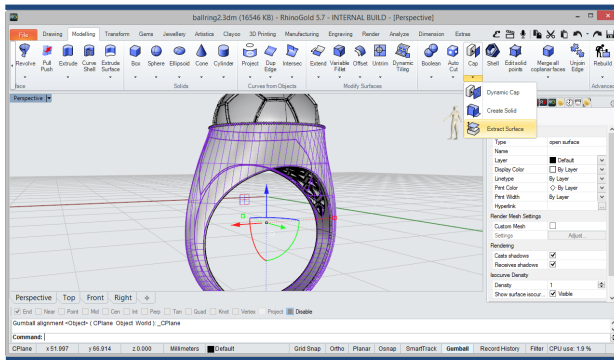
## 15 Symmetry Vertical

In this step, we'll apply various symmetries with the Symmetry tool, filling of copies the ring's under gallery.



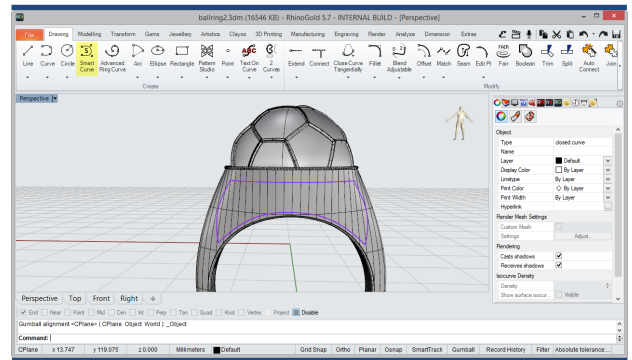
## 16 Boolean Difference

Then, we'll apply a Boolean Difference between the extruded objects and ring's liner, subtracting them from the surface.



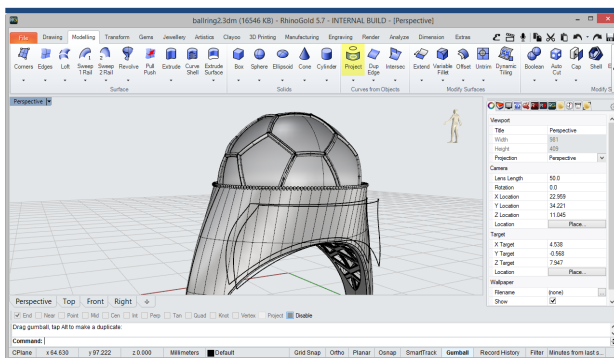
## 17 Extract Surface

In this step, we'll duplicate the ring surface using the Extract Surface tool, within Cap submenu, in the Modelling tab.



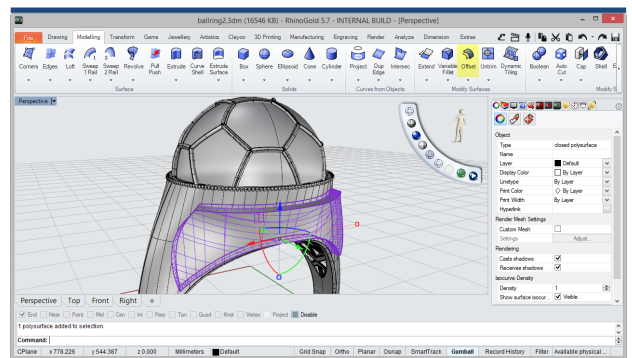
## 18 Smart Curve

Then, we'll trace plane curve similar to that shown in the image, using the Smart Curve tool.



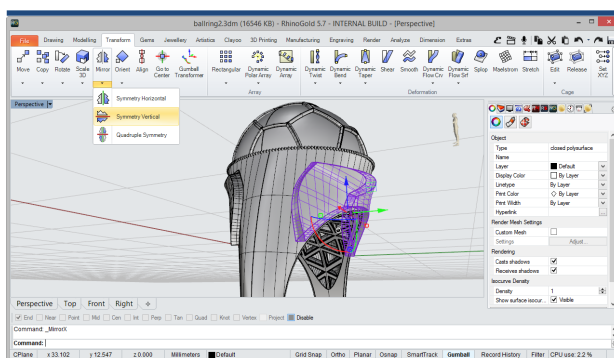
## 19 Project

Then, we'll project the curve on the Surface ring using the Project tool.



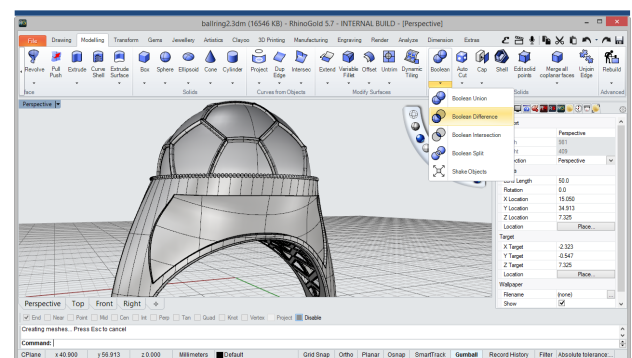
## 20 Trim / Offset

Now, we'll apply the Trim tool between the mirrored surface and the projected curve, getting the inside surface. Then apply an offset of 5 mm to the trimmed surface using the Offset tool.



## 21 Symmetry Vertical

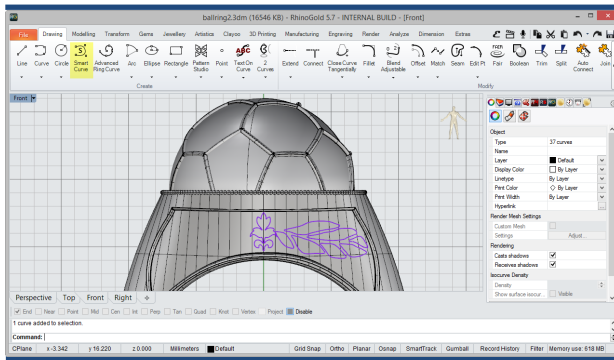
Then, we'll duplicate the offset surface using the Symmetry Vertical tool.



## 22 Boolean Difference

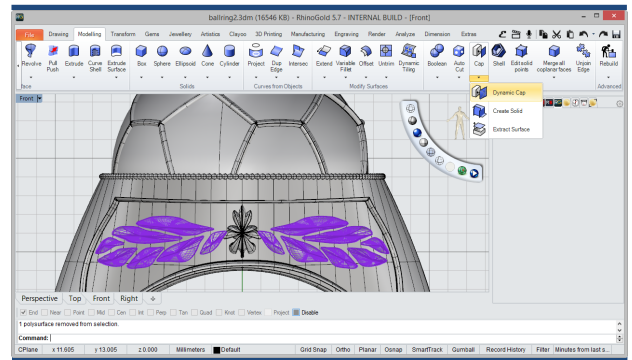
In this step, we'll apply a Boolean Difference between the offset surface and the ring.





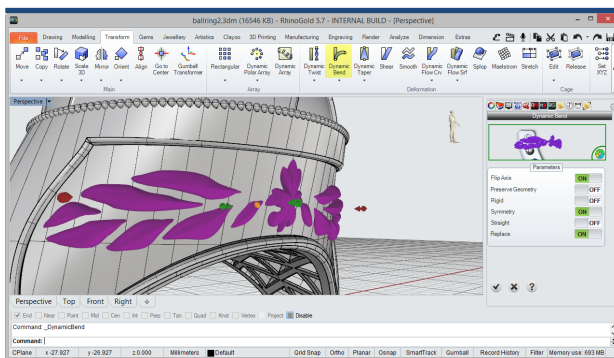
## 23 Smart Curve

In this step, we'll trace a plane curves similar to those shown in the picture, using the Smart Curve tool, from the Drawing tab.



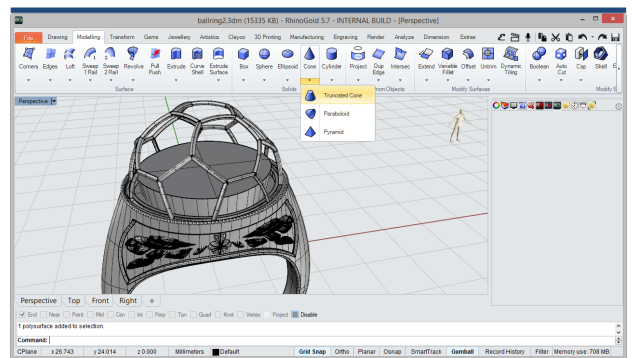
## 24 Symmetry Horizontal / Dynamic Cap

Then, we'll apply a Symmetry Horizontal to the curves and apply them the Dynamic Cap tool. In this case there the option to use "Elements" getting the same result.



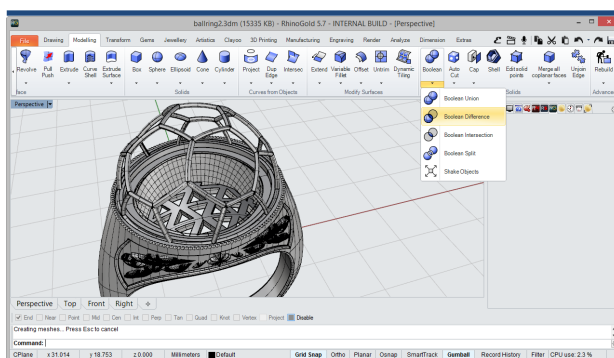
## 25 Dynamic Bend

Then, we'll apply the Dynamic Bend tool located on the Transform tab and adapt the selected objects to the ring surface.



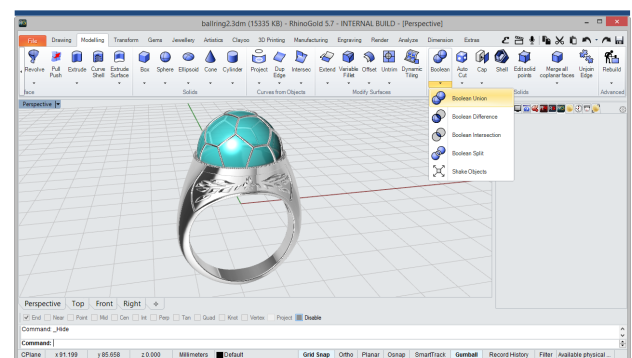
## 26 Truncated Cone

Now, we'll define a cone with the Truncated Cone tool, within the Cone submenú, in the Modelling tab and we'll position it in the center of the ring.



## 27 Boolean Difference

In this step, we'll apply a Boolean Difference between the cone and ring.



## 28 Boolean Union

Finally, we'll apply a Boolean Union between all solids to unify the piece.