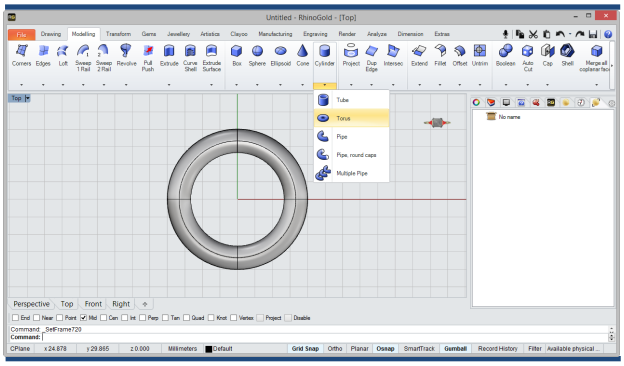
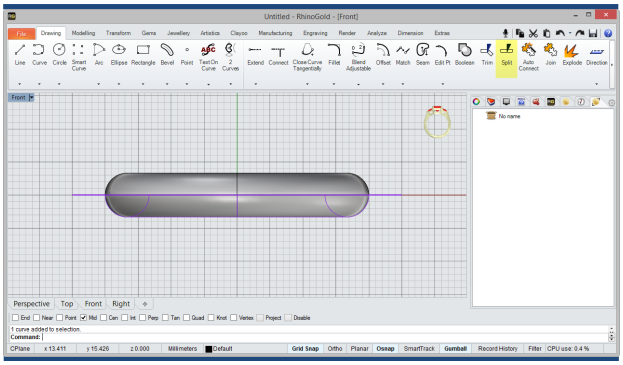
Torus with Gems Pendant

In this tutorial we are going to try some of the more useful commands in RhinoGold. Tools such as the Dynamic Profile, Dynamic Polar Array, Revolve, Dynamic Prongs and Offset.



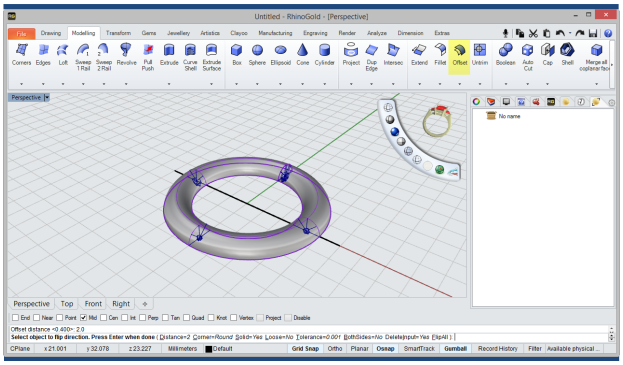
1 Torus

First create a Torus, in the submenu Cylinder, within the Modelling tab. We'll define a diameter of 40 mm.



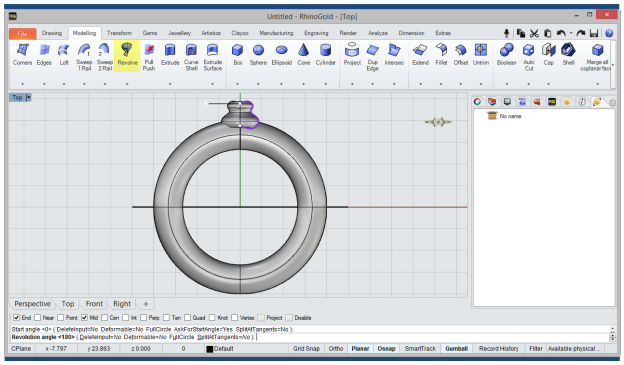
2 Line/Split

Next, define a line in the middle and divide the solid with the Split tool. We will remove the bottom.



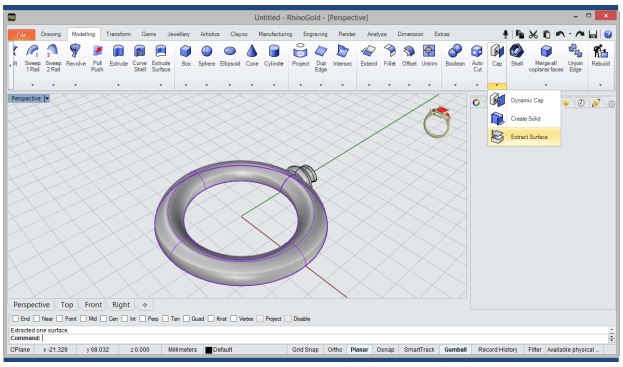
3 Offset

Now, apply a 1mm Offset with the Offset tool. This step is necessary to reverse the direction of the surface, we can do it on the command line.



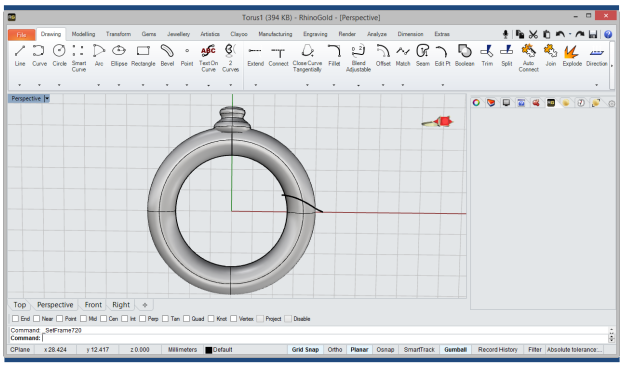
4 Smart Curve/Revolve

In this step, we'll define a similar curve to the image, with the Intelligent Curve tool and will apply one half of a Revolve, in the Modelling tab.



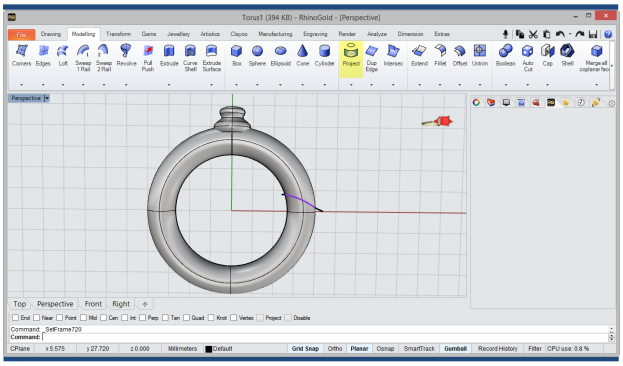
5 Extract Surface

Then, we'll select the Extract Surface tool in the Cap submenú, within the Modelling tab and apply the torus.



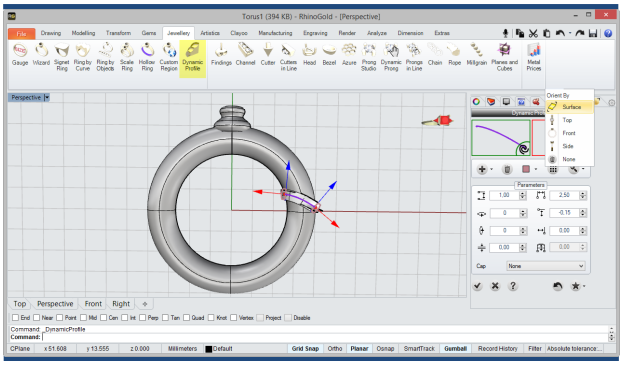
6 Smart Curve

Now, with Smart Curve tool, we'll define a similar curve to the image.



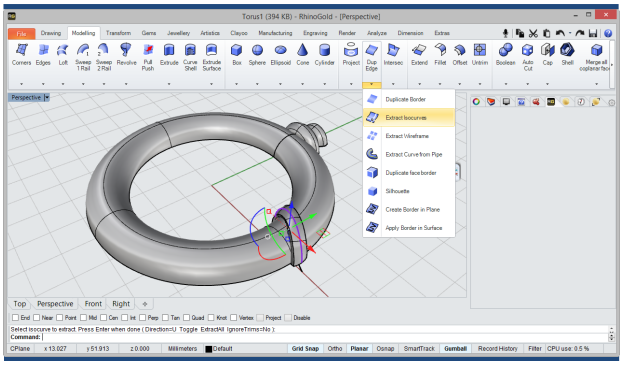
7 Project

In this step, we will apply the Project tool between the line previously created and the extracted surface.



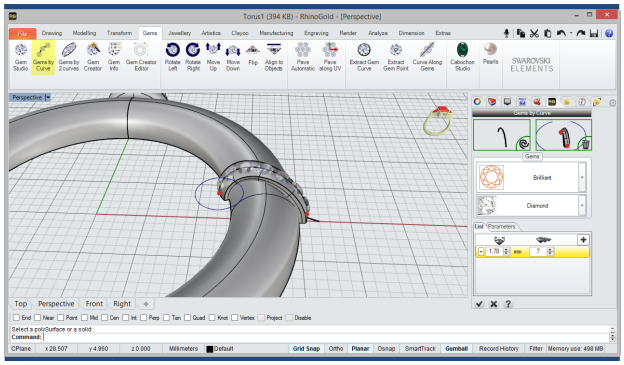
8 Dynamic Profile

Then, we'll select the Dynamic Profile tool and apply it on the projected curve, we will respect the parameters shown in the image, activate the option to orient by surface and activated Caps.



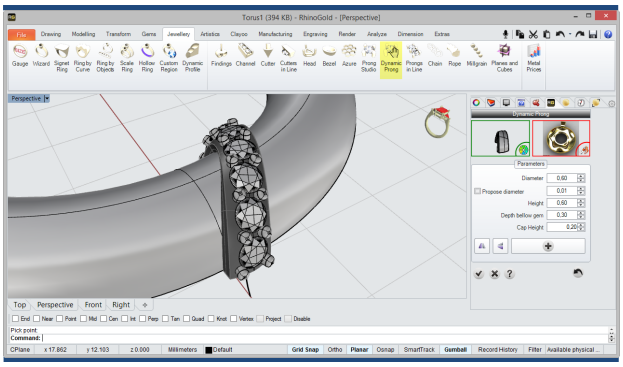
9 Extract Isocurves

Then, we'll select the Extract Isocurves tool and extract the centerline of the Dynamic Profile.



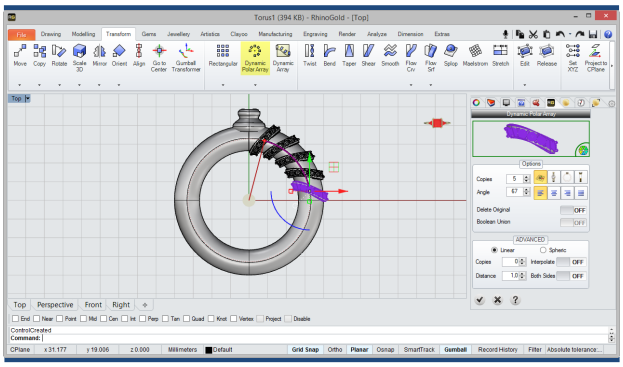
10 Gems by Curve

Now, we define some gems along the curve with the Gems by curve tool. We respect the parameters of the image.



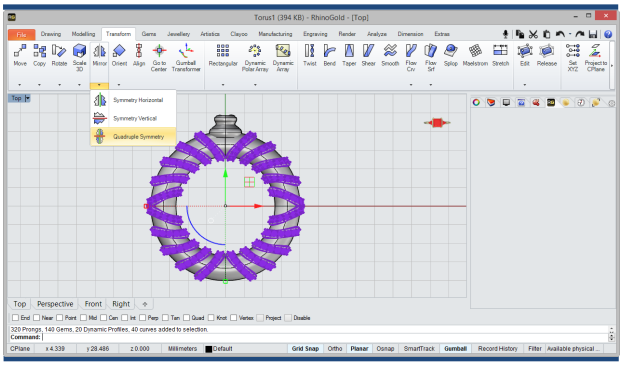
11 Dynamic Prong

In this step we'll define the prongs for gems, with the Dynamics Prongs tool.



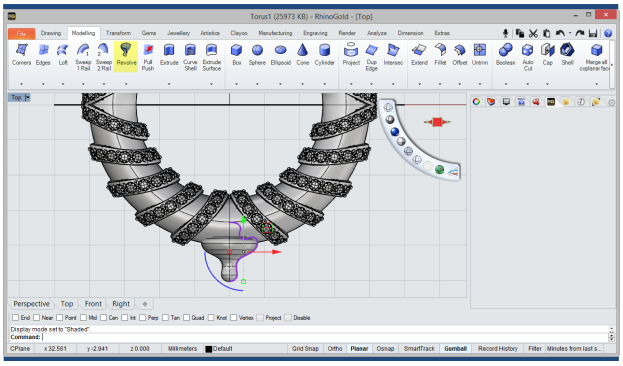
12 Dynamic Polar Array

Then, with the Dynamic Polar Array tool to apply an Array to the profiles with gems and we'll define a section of the torus, as shown in the picture.



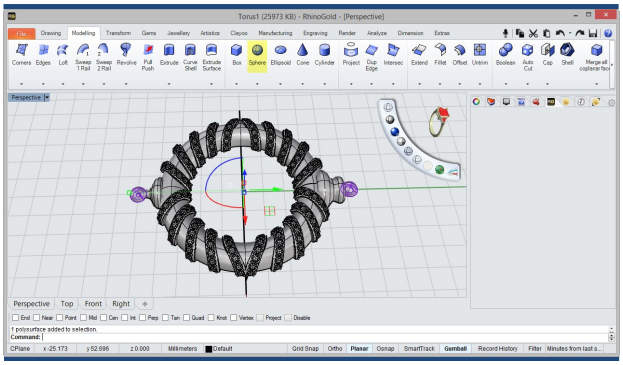
13 Quadruple Symmetry

Then, we'll apply a Quadruple Symmetry to the group created with the Array.



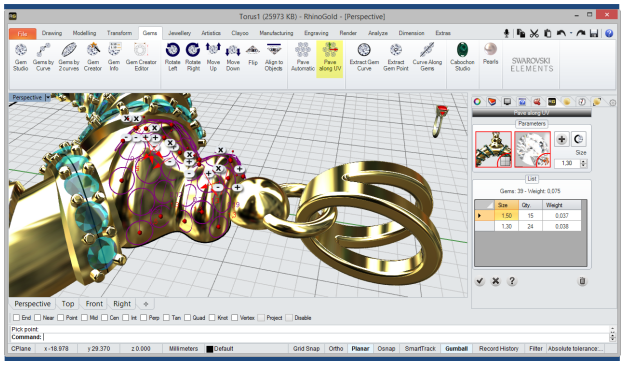
14 Smart Curve/Revolve

Now, we'll create a Smart Curve with a similar form to the image and apply one half of a revolution.



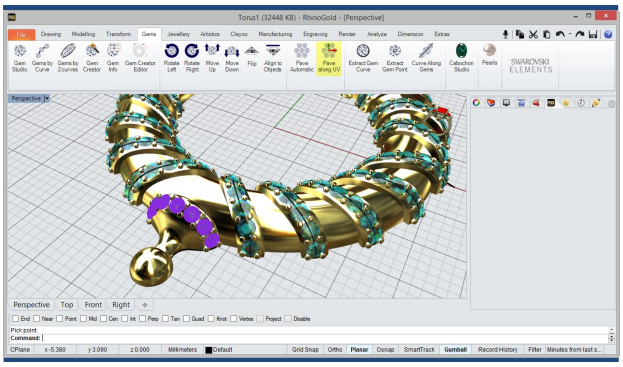
15 Sphere

In this step, we will define a solids with the Sphere tool and will position it to the ends of the torus.



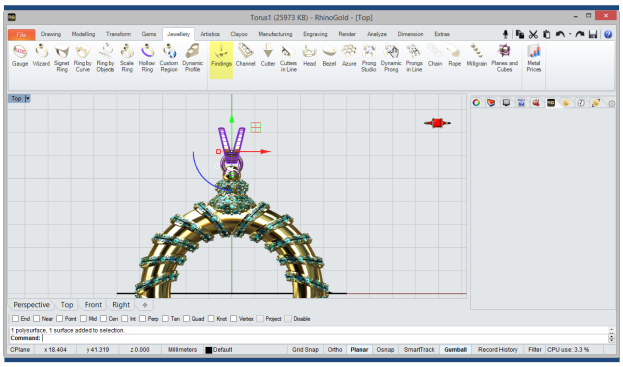
16 Pave along UV/Dynamic Prongs

Then, apply a Pave with Pave along UV tool, we'll respect the image parameters and define the gem prongs, with the Dynamics Prongs tool.



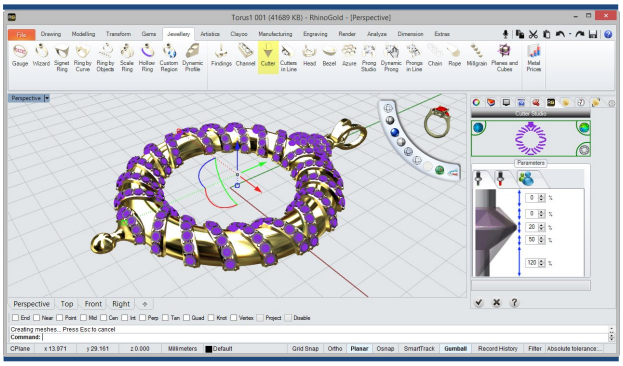
17 Pave along UV/Dynamic Prongs

Next, repeat the above operation with Pave along UV and Dynamics Prongs tools, defining a line at the other end of the torus.



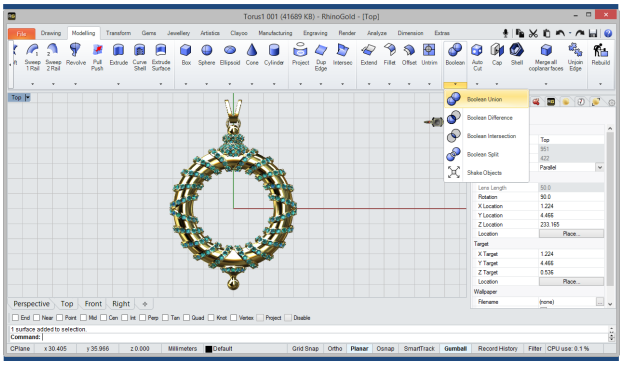
18 Findings

Now, we'll select the findings tool and choose one of the folder, in this case we choose the Bail number 3 and will position it at the top, as shown in the picture.



19 Cutters

Then, we'll apply the gem Cutters with the Cutter tool.



20 Boolean Difference/Booleana Union

Finally, we'll apply a Boolean Difference to subtract the cutters of the solid surfaces and a Boolean Union to unify the ring.