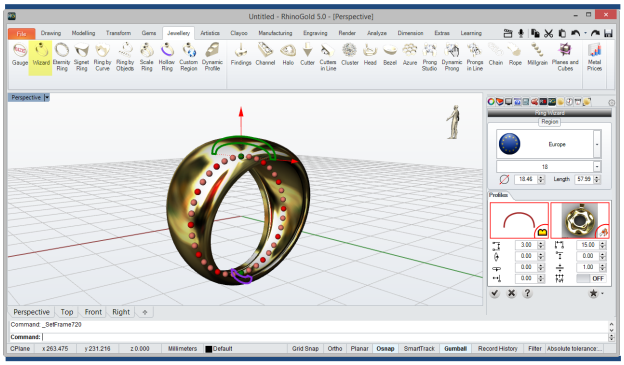
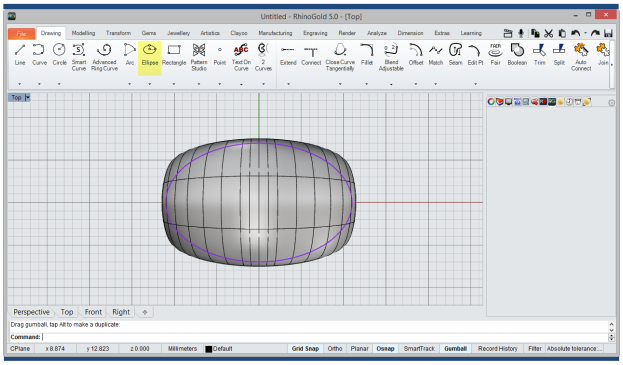
Enamel Flowers Ring

In this tutorial we are going to try some of the most useful commands in RhinoGold. Tools such as Smart Curve, Ring Wizard, Offset, Extract Surface, Gem Studio and Create Border in Plane.



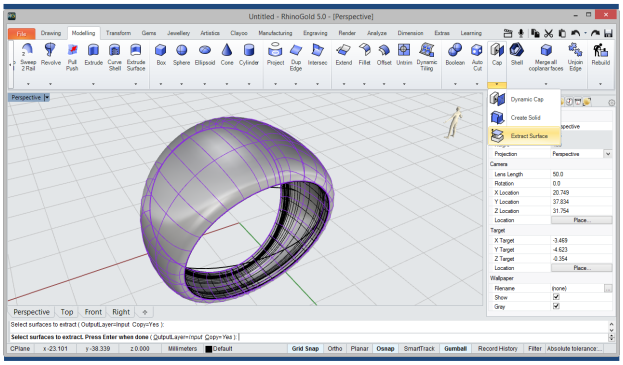
1 Ring Wizard

First, we'll define a shank with Ring wizard tool with 3 mm thick and 15 mm wide at the top.



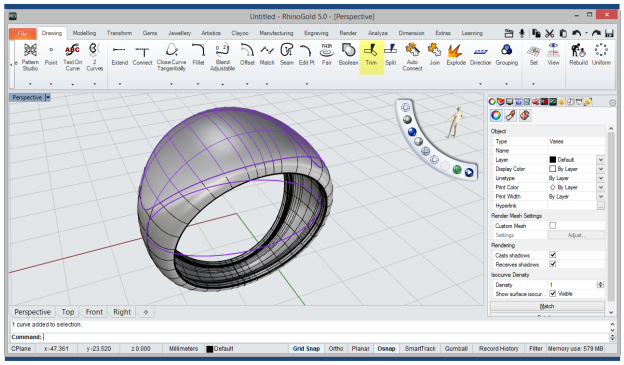
2 Ellipse

Then, we'll trace a curve to the center of the ring, similar to the image, with the Ellipse tool.



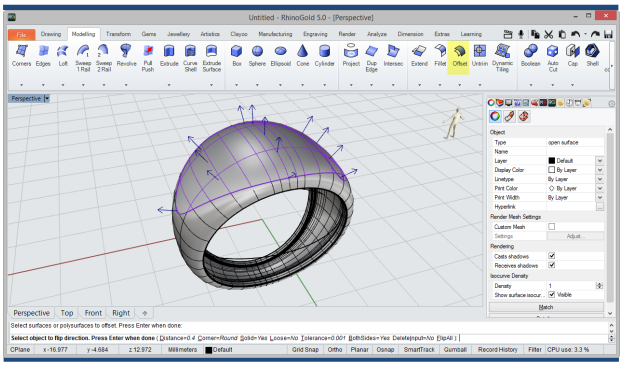
3 Extract Surface

Now, in the shank, we'll apply the Extract Surface tool, located in the Cap submenu.



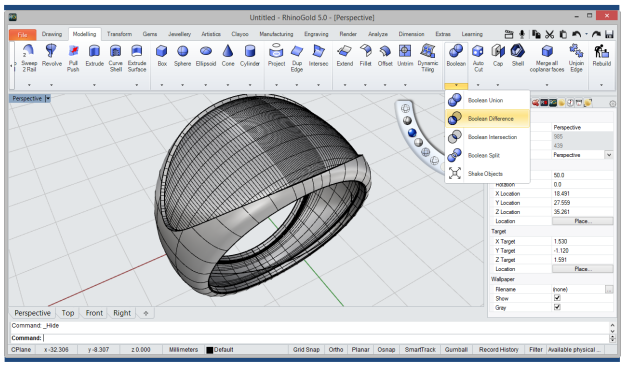
4 Trim

In this step, we'll select the shank and the Ellipse curve and apply the Trim tool.



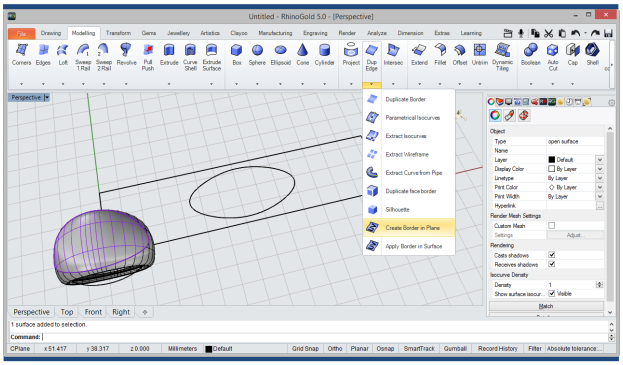
5 Offset

Then, we'll apply the Offset tool in the new surface obtained with the previous step, applying a distance of 0.4 mm. We'll make a copy of the offset surface and keep hidden for future operations.



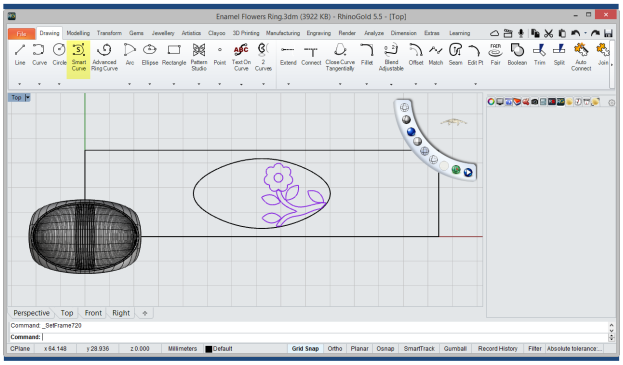
6 Boolean Difference

Now, we'll apply a Boolean Difference between the hidden surface and the shank.



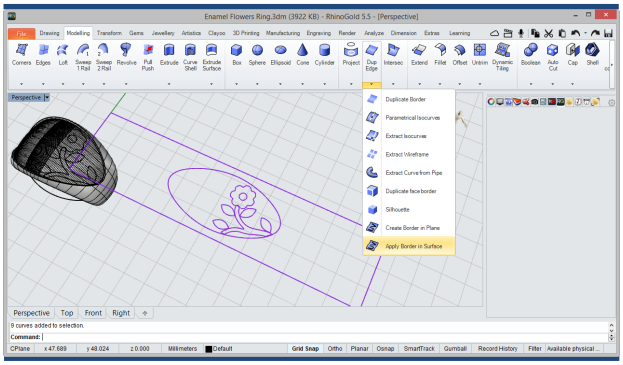
7 Create Border in Plane

In this step, we'll apply Create Border in Plane tool, in the Duplicate Edge submenu, using the hidden surface.



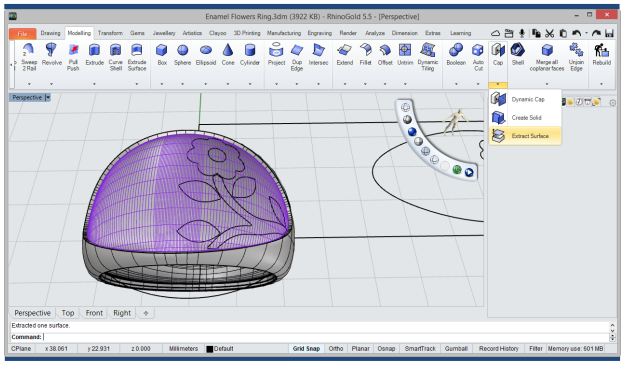
8 Smart Curve

Then, we'll select the Smart Curve tool and will trace similar curves to those shown on the image.



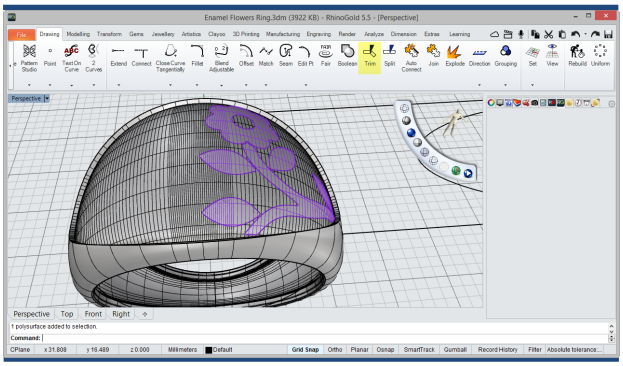
9 Apply Border in Surface

Then, we'll select the Apply Border in Surface tool, in the Duplicate Edge submenu, and apply it between the curves of the plane and the ring surface, as shown in the picture.



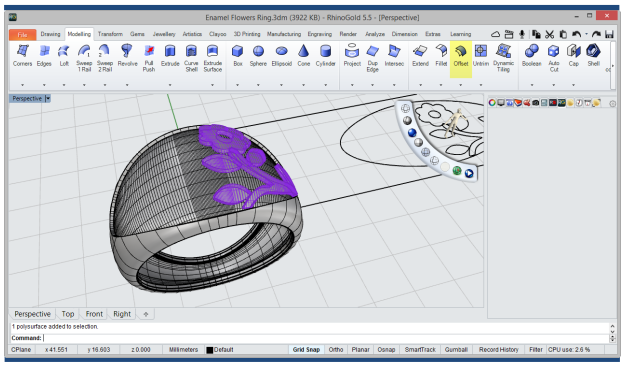
10 Extract Surface

Now, we'll select the Extract Surface tool and apply it in the shank surface.



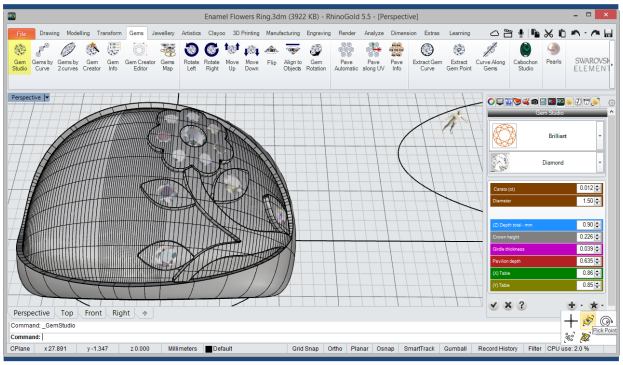
11 Trim

In this step, we'll select the Trim tool and apply it between the projected curves and the extracted surface.



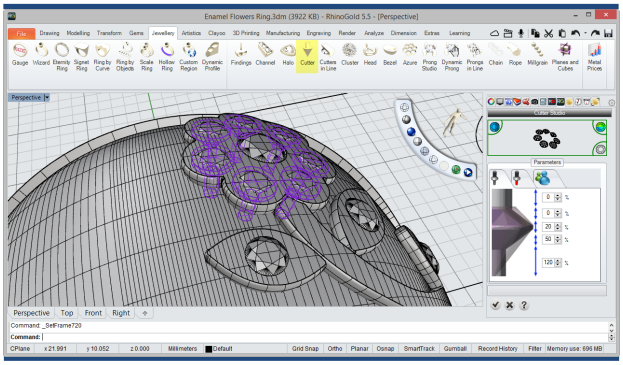
12 Offset

Then, we'll apply the Offset tool to the new surface obtained in the previous step, with 0.5 mm distance.



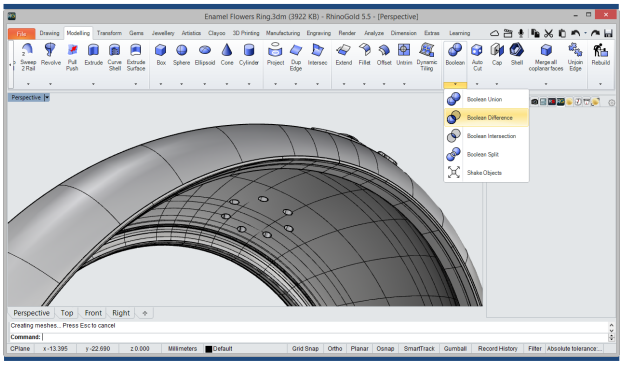
13 Gem Studio

Then, we'll apply the Gem Studio tool and will position a few gems of 1.50 mm, similar to the image, with the orient by surface option.



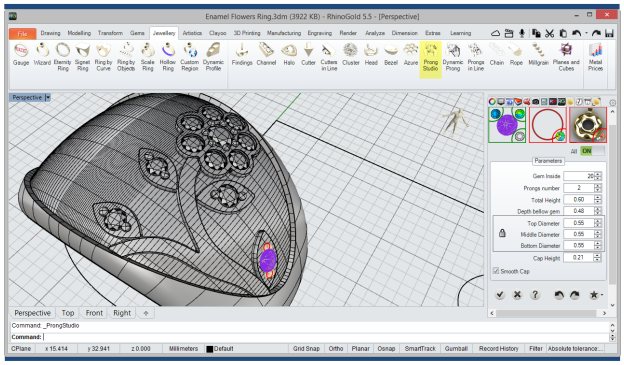
14 Cutter

Now, we'll define the gem cutters with Cutter tool.



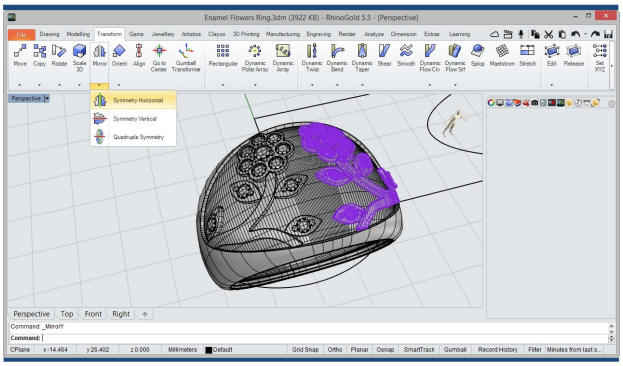
15 Boolean Difference

In this step, we'll apply a Boolean Difference to subtract the cutters from the shank surface and the flower.



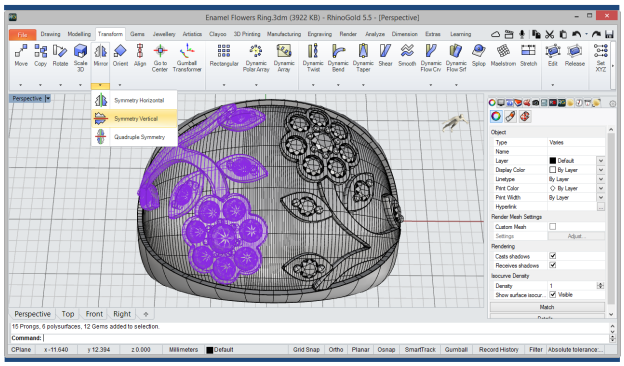
16 Prong Studio

Then, we'll define the gem prongs with the Prong Studio tool.



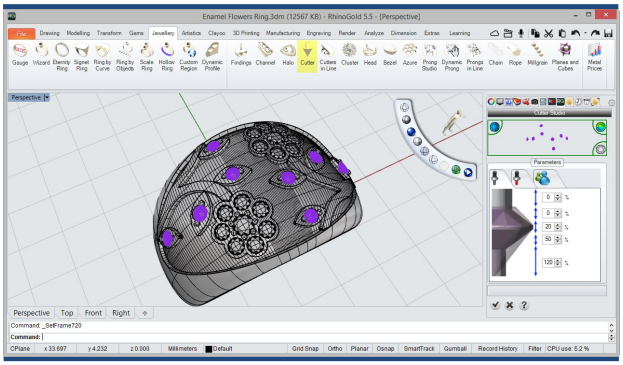
17 Symmetry Horizontal

In this step, we'll apply a Symmetry Horizontal to whole group of the flower.



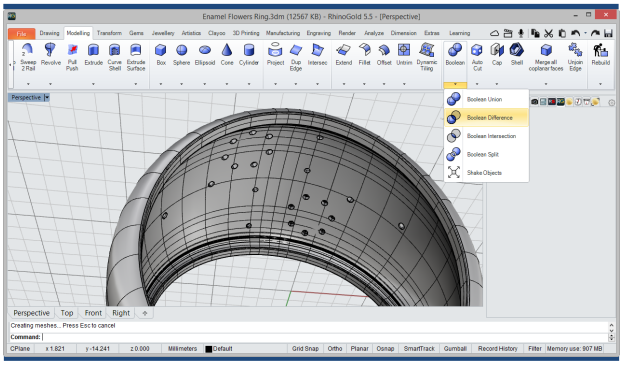
18 Symmetry Vertical

Then, we'll apply a Symmetry Vertical to invert the orientation of the flower surface.



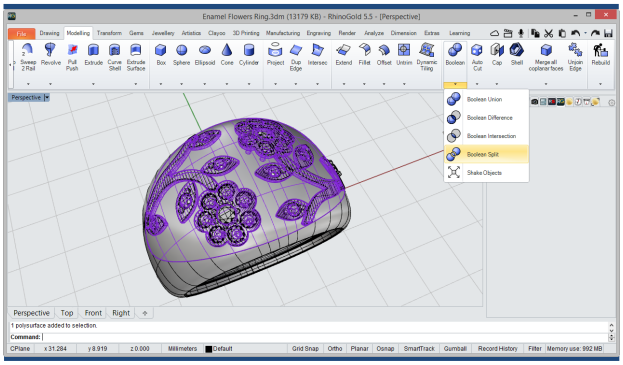
19 Cutter

Then, we'll define the cutters to the remaining gems with the Cutter tool.



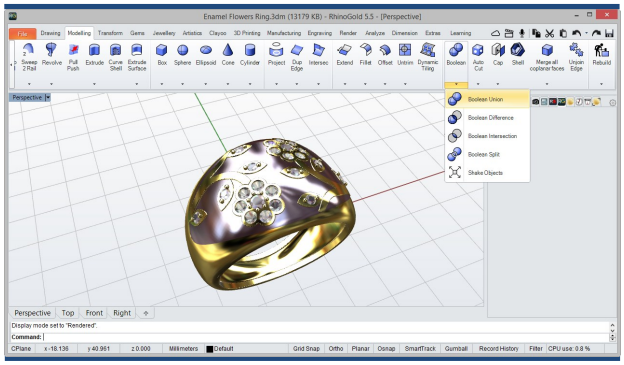
20 Boolean Difference

Now, we'll apply a Boolean Difference to subtract the cutters from the ring surface.



21 Boolean Split

In this step, we'll apply a Boolean Split between the oval surface and the flower surfaces and remove the overlaid material to avoid intersections.



22 Boolean Union

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