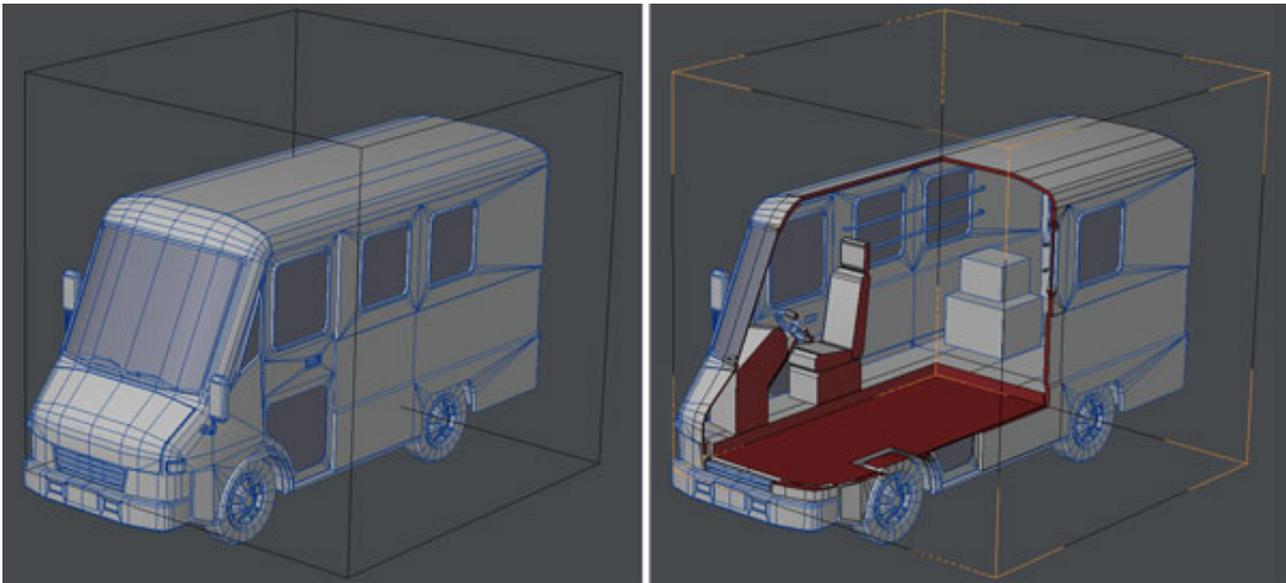
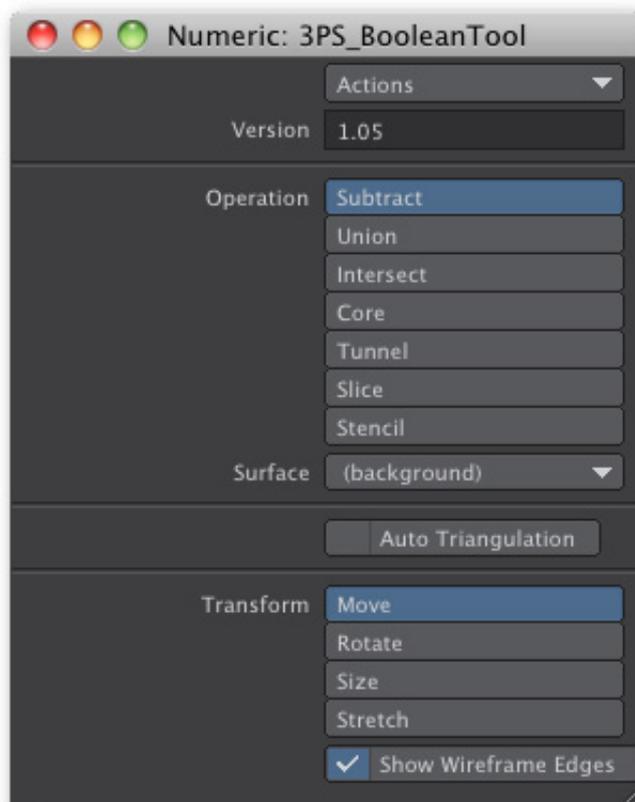


## What is Boolean Tool

Boolean Tool is an interactive version of Boolean which creates a new object from the overlapping portions of the foreground and background objects. This new tool will allow the boolean modeling with ease. You can interactively transform the background object and quickly get the best results you prefer.



## Controls

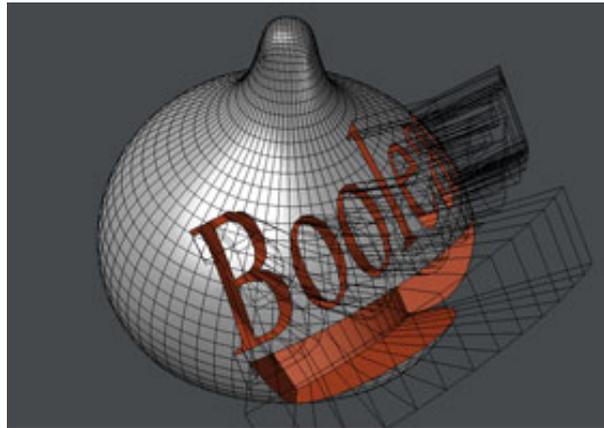


Left-clicking will transform an internal copy of the background object, and you can also rotate it by right-clicking. Since LightWave 11.5, you can also scale it by holding the Shift key down and left-clicking.

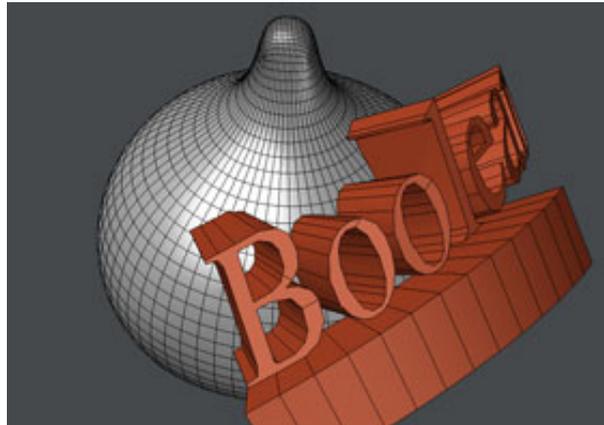
In any of the orthogonal viewports, holding the CTRL key will constrain movement along the initial dragging axis or one of the axes. In Rotate mode, it will constrain the rotation angle to 15-degree increments.

**Operation** - has the following seven options:

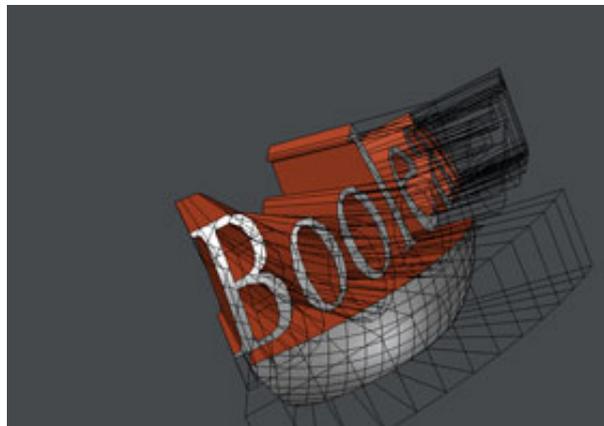
**Subtract** - removes the volume of the background object from the foreground object. The surface names of the newly created cut polygons are determined by an option or an existing surface name selected from the Surface pop-up menu. By default, they will take on the surface names of the background object. This is suitable for cutting away or hollowing out.



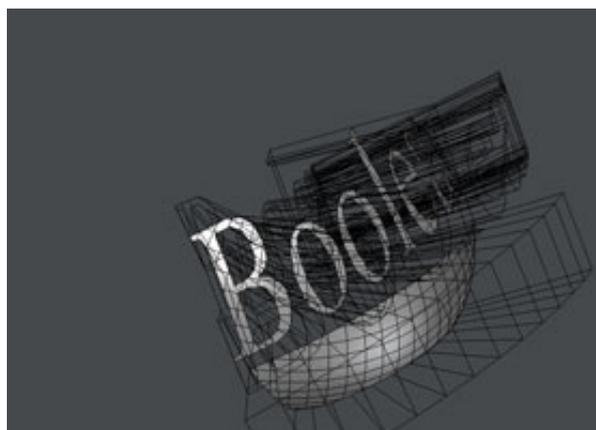
**Union** - joins the background object with the foreground object, and combines them into one object.



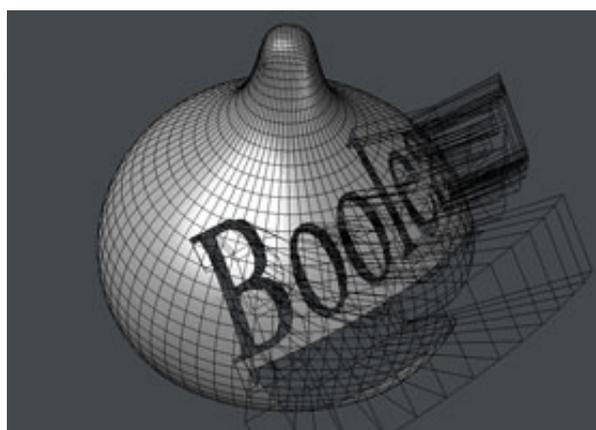
**Intersect** - creates a new object from the intersecting volume of the background object and foreground object. The surface names of the newly created cut polygons are determined by an option or an existing surface name selected from the Surface pop-up menu. By default, they will retain their original names.



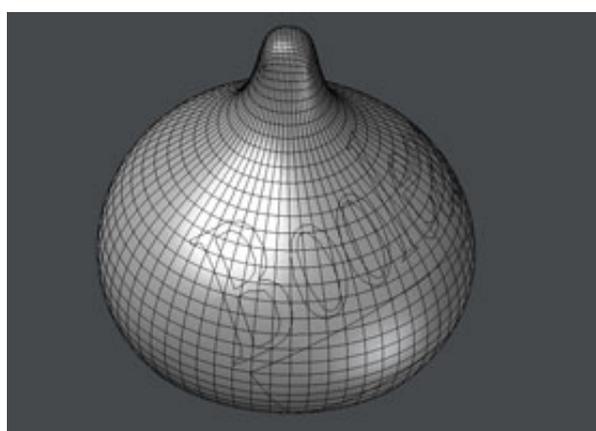
**Core** - cuts out the foreground polygon mesh with the background polygon mesh, and removes polygons out of the volume of the background object.



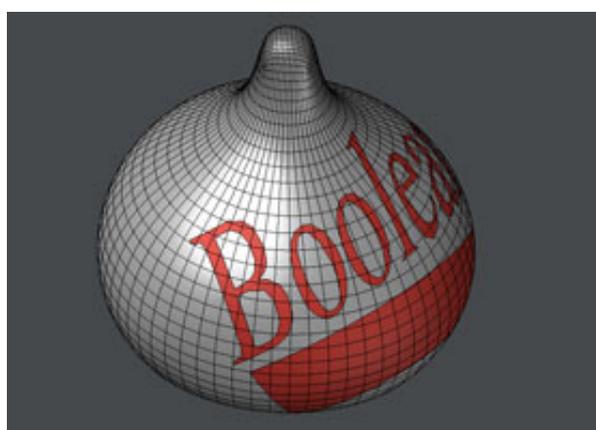
**Tunnel** - cuts out the foreground polygon mesh with the background polygon mesh, and removes polygons in the volume of the background object.



**Slice** - places edges of intersection on the foreground mesh.



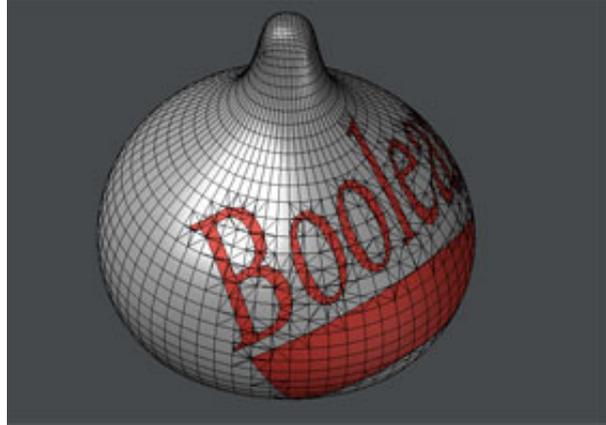
**Stencil** - places edges of intersection on the foreground mesh, and surfaces of polygons in the volume of the background object will be assigned a name selected from the pop-up menu.



**Surface** - determines the surface names of the newly created cut polygons.

When "(background)" is chosen as the surface name of cut polygons, the cut surfaces will take on the surface names of the background object. When "(foreground)" is chosen, the surface names of newly created cut polygons are taken from the original surface names at the cut edges of the foreground object.

**Auto Triangulation** - If checked, the new n-gons will be automatically triangulated.



**Transform** - chooses the type of transformation you want to assign to the left mouse button. There are four types of transformations: Move, Rotate, Size and Stretch.

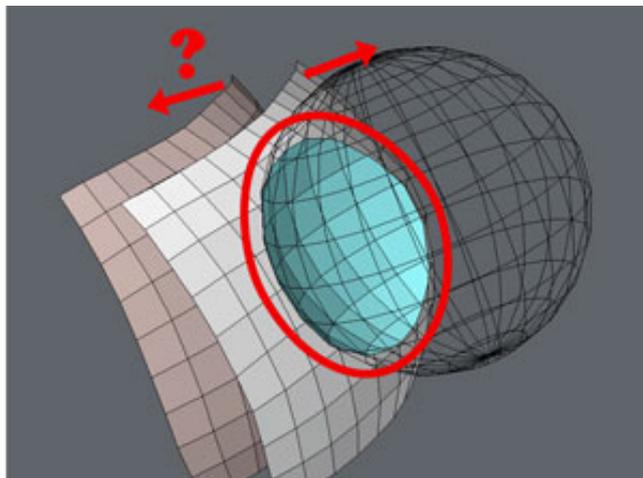
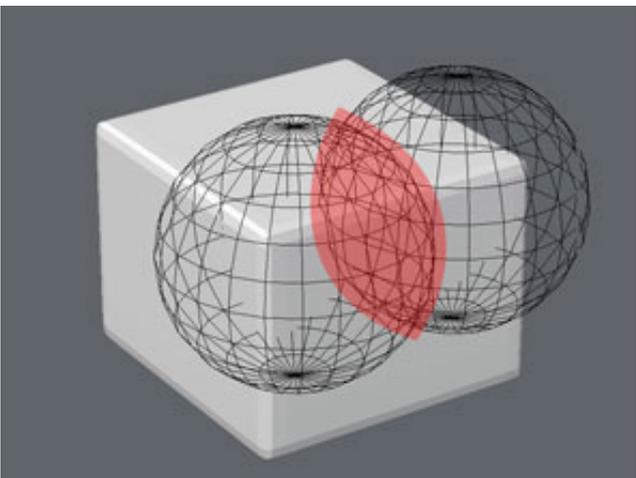
**Show Wireframe Edges** - If checked, the wireframes of the geometry will be displayed. You should uncheck this toggle if it interrupts viewing.

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## NOTE:

It is preferred that all objects in both foreground and background layers are closed 3D solids. If the curves of intersection are closed loop, the boolean operation will be performed regardless of whether they are closed 3D solids or not, but the open meshes can not have any discontinuous inner surface and are considered as individual objects because Boolean Tool does not detect whether open mesh is an inner or outer surface of hollow model.

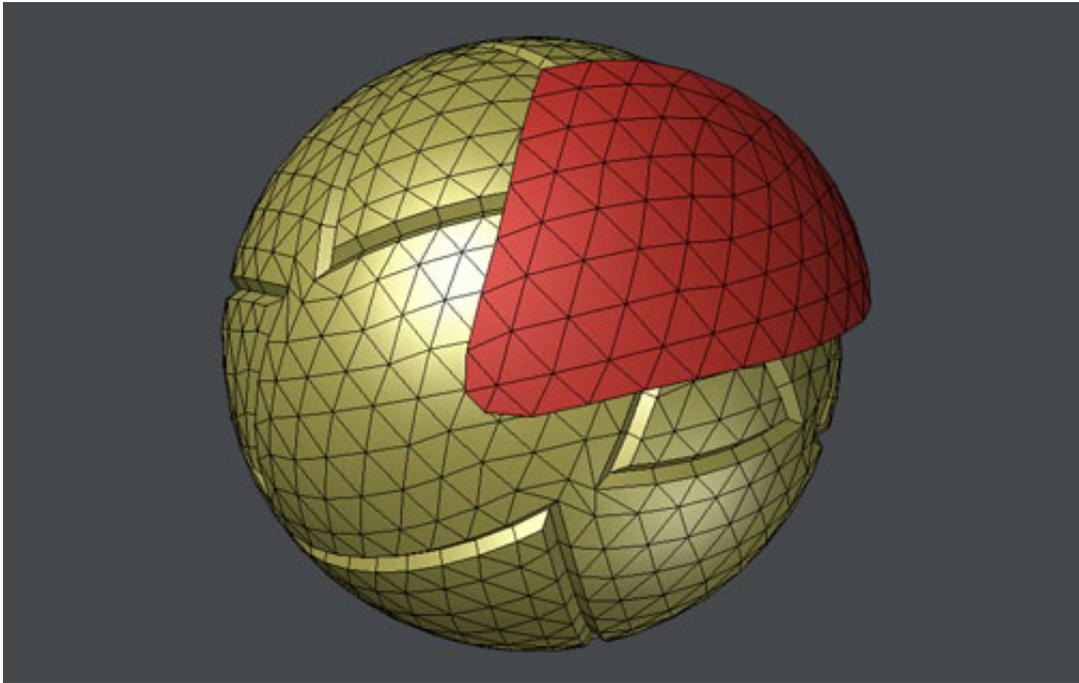
Because an overlapping object in the Foreground can be automatically and internally divided into non-overlapping objects, except in Union operation, it is allowed that there are overlapping objects in the Foreground, but not in the Background. If there are any overlapping parts in the Background, the self-intersecting meshes will be ignored in the boolean operation.



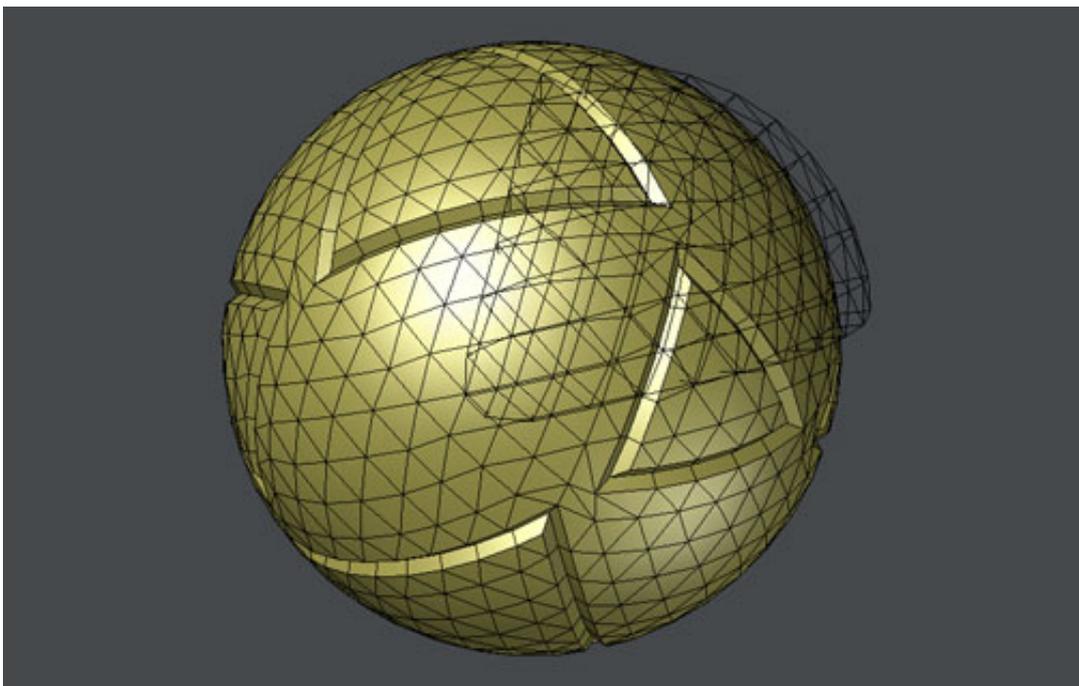
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## Example:

We've loaded the "MysterySphere.lwo" file found in the content. We've got a golden sphere and a piece of something.



With the sphere in the foreground, and with the piece in the background, we'll launch Boolean Tool. Accept the default of "Subtract".



A cryptic message appears... Hmm, we'll leave it. Freely, let's change the operation, and move the piece by left-clicking, and rotate the piece by right-clicking.

