

## Dimension Plastic 3d Printer

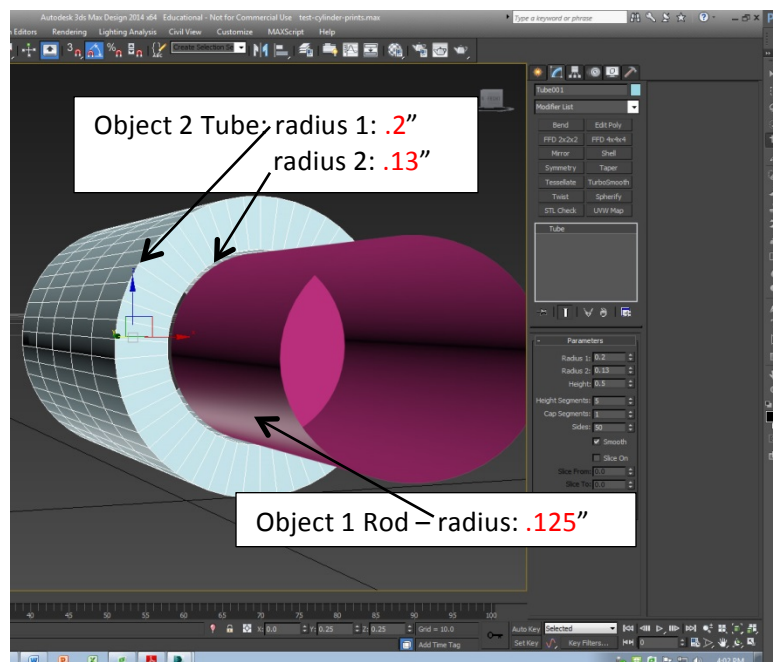
### Tolerances and Thresholds for Joint and Working Parts

The Dimension printer prints a .254 mm (.010 in) or .330 mm (.013 in) of precisely deposited ABSplus model and support material. During the printing process, the model and support material expands a small amount during the building process. An adjustment will need to be made to your modeling dimensions to allow for accurate spacing between tightly fitted joints and working parts. US Standard – Decimal Inches was used in the units setup of 3ds Max.

By following the examples given, you will increase your chances of getting an accurate print. **A guarantee cannot be made** you will get an accurate print the first time. File adjustments and test printing may be required for a successful print.

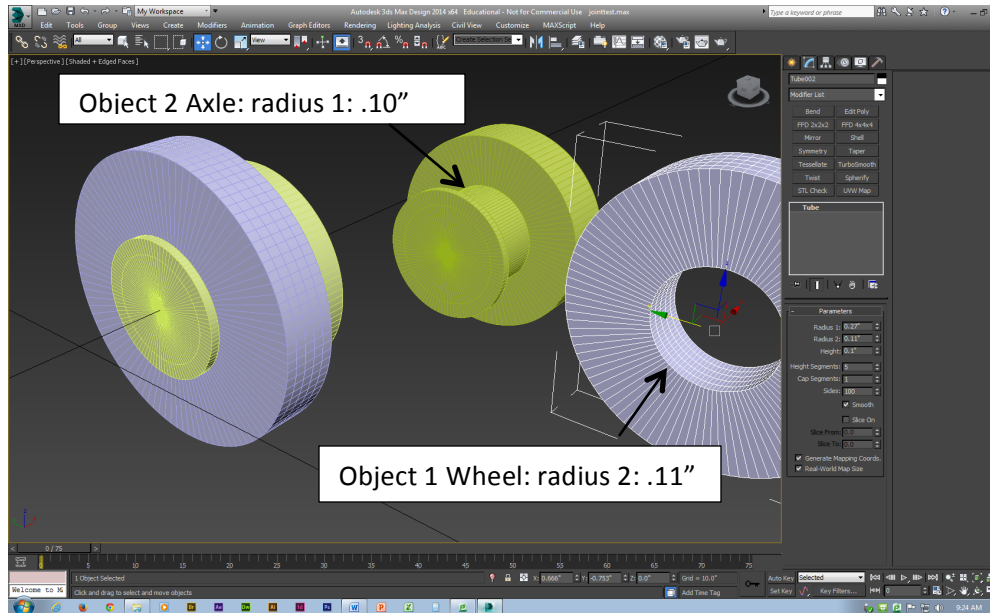
#### 1. Printing two circular objects:

- a. Fitting two circular objects together, the following adjustments will need to be made. The parameter setting for primitive objects uses a radius measurement.
- b. [See Example below](#), Object 1 Rod (Cylinder Primitive): Diameter of the rod - .25" (radius: .125)
- c. Object 2 Tube (Tube Primitive) : A .25" diameter divided by 2 will equal a .125 radius. A .005" increase adjustment will need to be added to radius 2. **(.125" + .005" = .13")**
- d. The gap between the two parts is **.01"**
- e. Test results have shown that a **.005"** gap will work well in some printing scenarios. Sanding one or both of the parts may be required



## 2. Wheel printed on an axle.

- Printing for moving parts joined together.
- Object 1 Wheel: radius 2 (inside opening:  $.10'' + .01'' = .11''$ )
- Object 2 Axle: radius 1:  $.10''$
- This will give enough space between the parts for the wheel to role.
- It is important to have the polygon face count high for a smoother surface, as demonstrated below.



### 3. Sphere printed inside another.

- a. The space between these objects is .03”.
- b. This will allow the sphere to spin freely.

