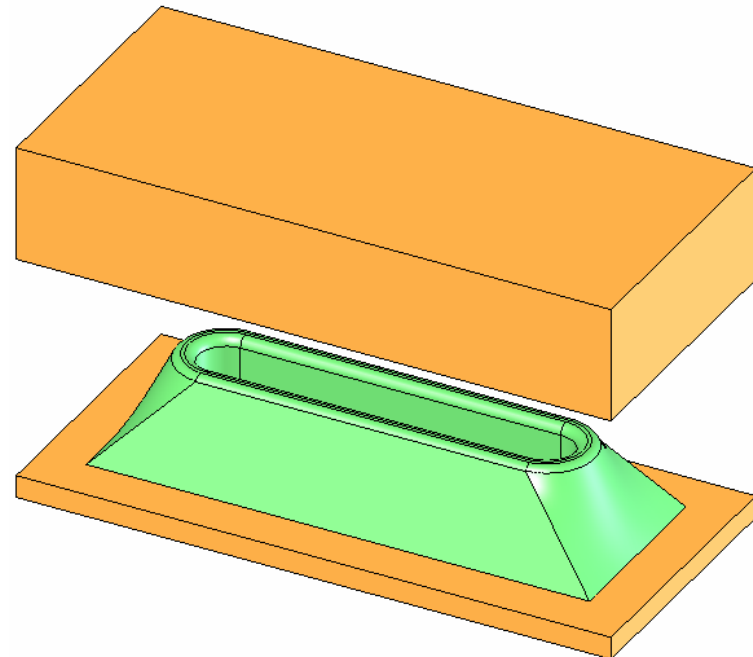
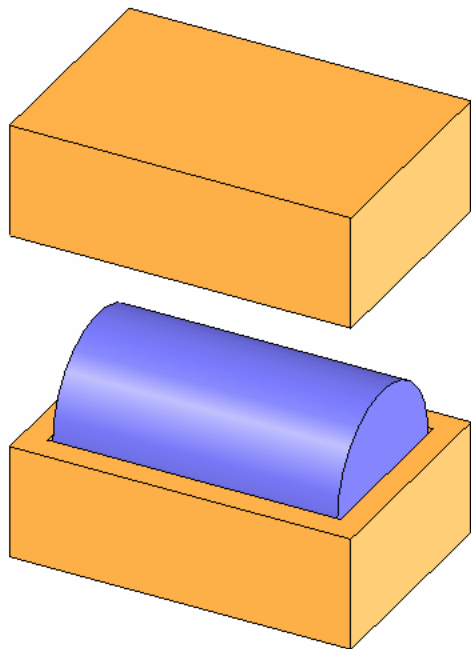

Mold Design

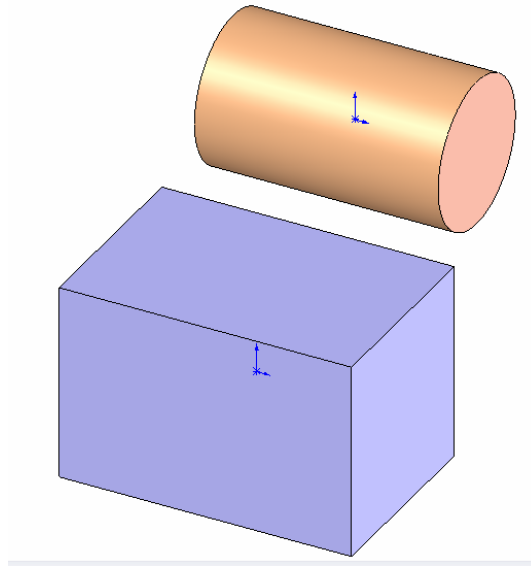


Mold Design

- Mold design is a very specialized field
- Features for adding material to the mold, venting, heating, and cooling are highly dependent of the type of material and process
 - Plastic injection molding
 - Liquid polymer molding
 - Metal die casting, etc
- We will concentrate on the creation of the mold cavity and mold halves, operations that are common to most molding processes

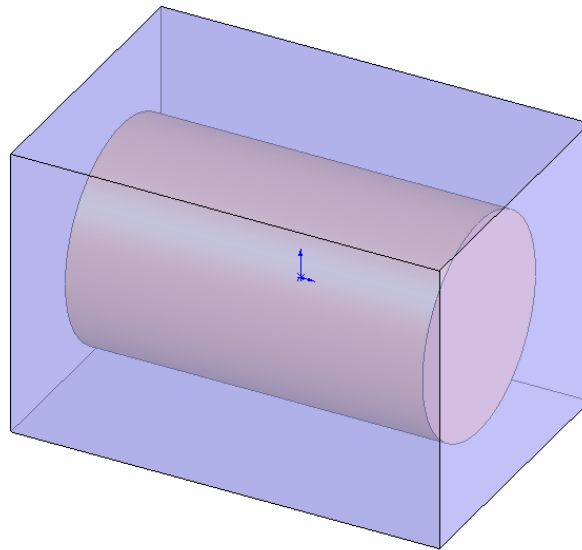
Assembly – Part and Mold Base

- The mold base must be large enough to completely contain the part
- Use of symmetry when creating parts is very helpful for centering part within base



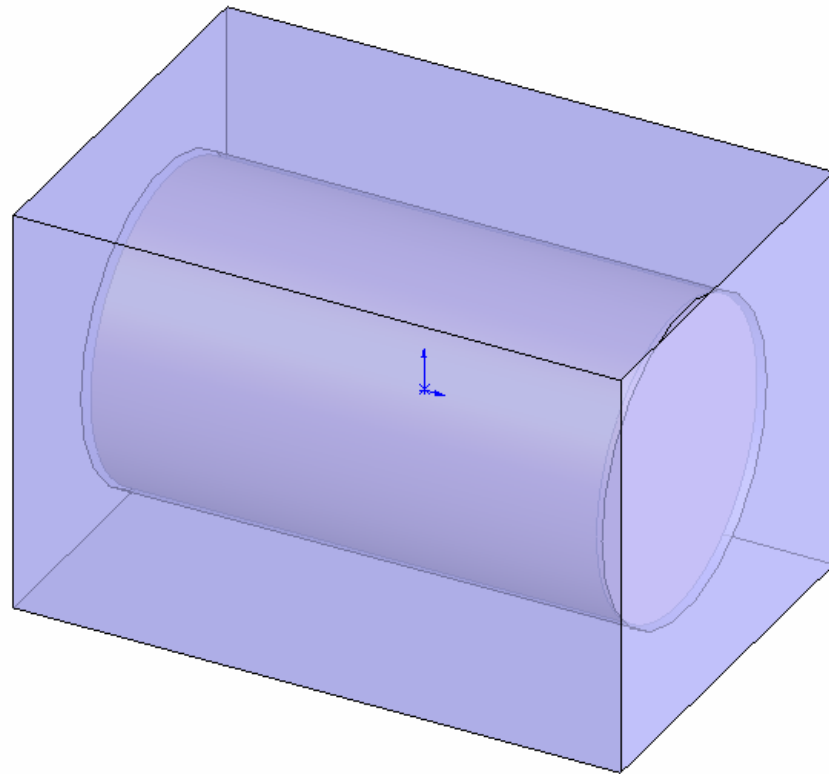
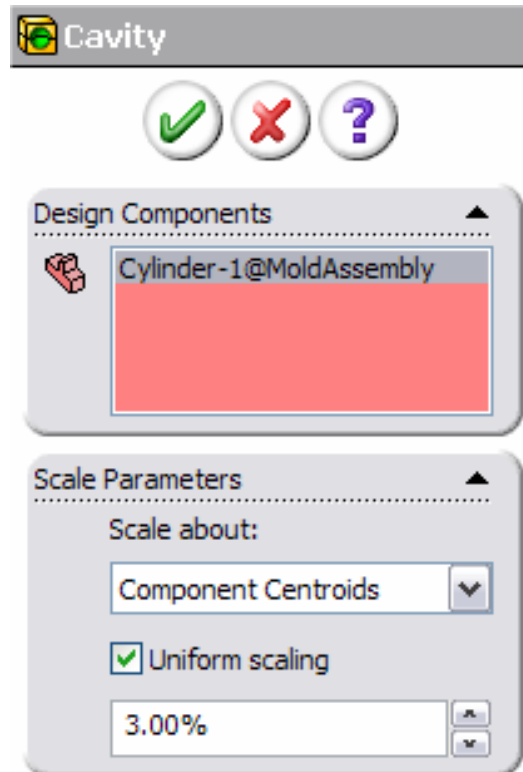
Center Part in Base

- Use mates to locate part within mold
- This assembly is called an “interim assembly” from which the mold halves will be created
- Making base translucent helps visualization



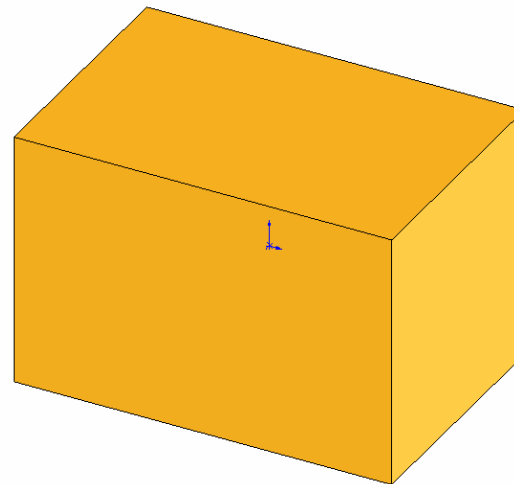
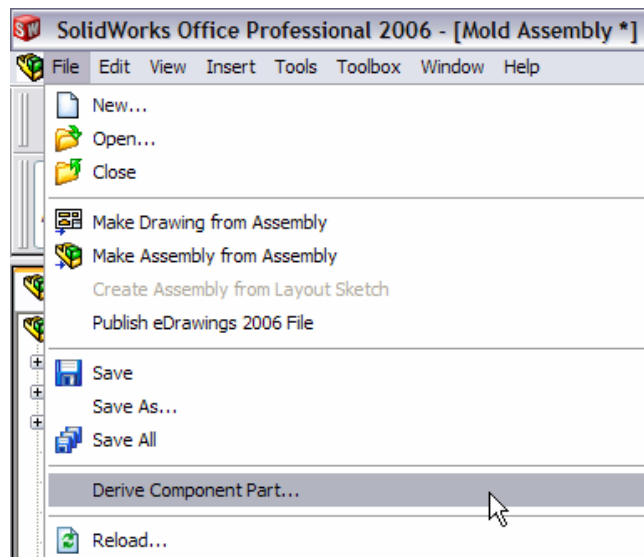
Create the Cavity

- The cavity is usually larger than the finished part to allow for material shrinkage during cool-down

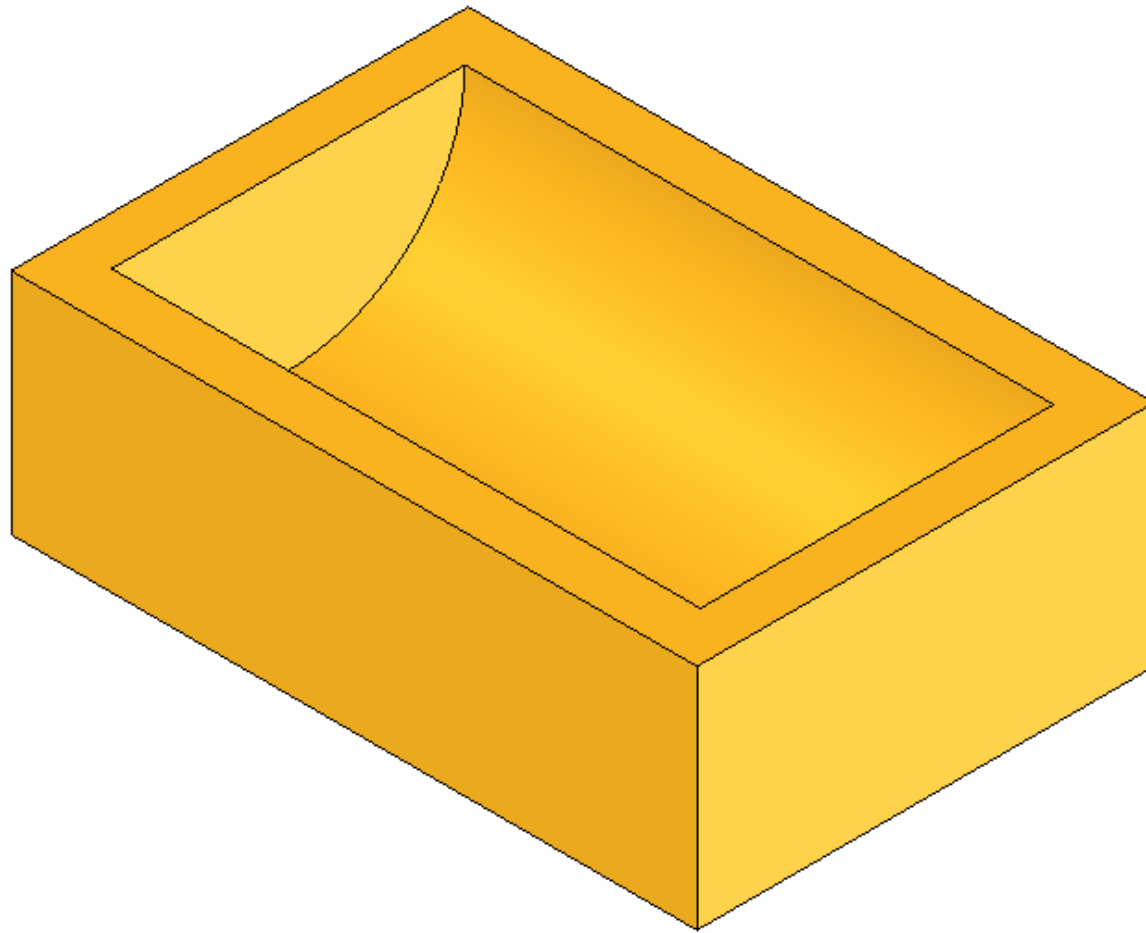


Create a Base Part with Cavity

- A *derived component* is created from an assembly, and includes assembly-level features (in this case, the cavity)
- Associativity is maintained – changes to the assembly will be reflected in the derived part

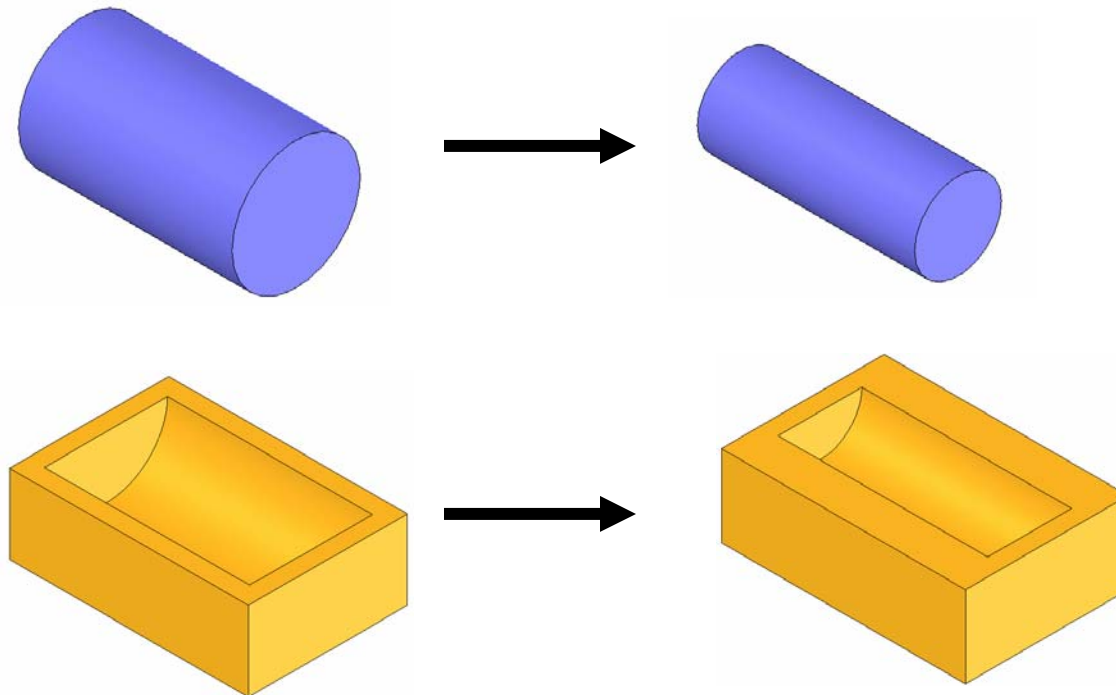


Cut Away Top Half of Mold



Associativity

- Changes to the original part are reflected in the interim assembly and then to the derived part (mold half)

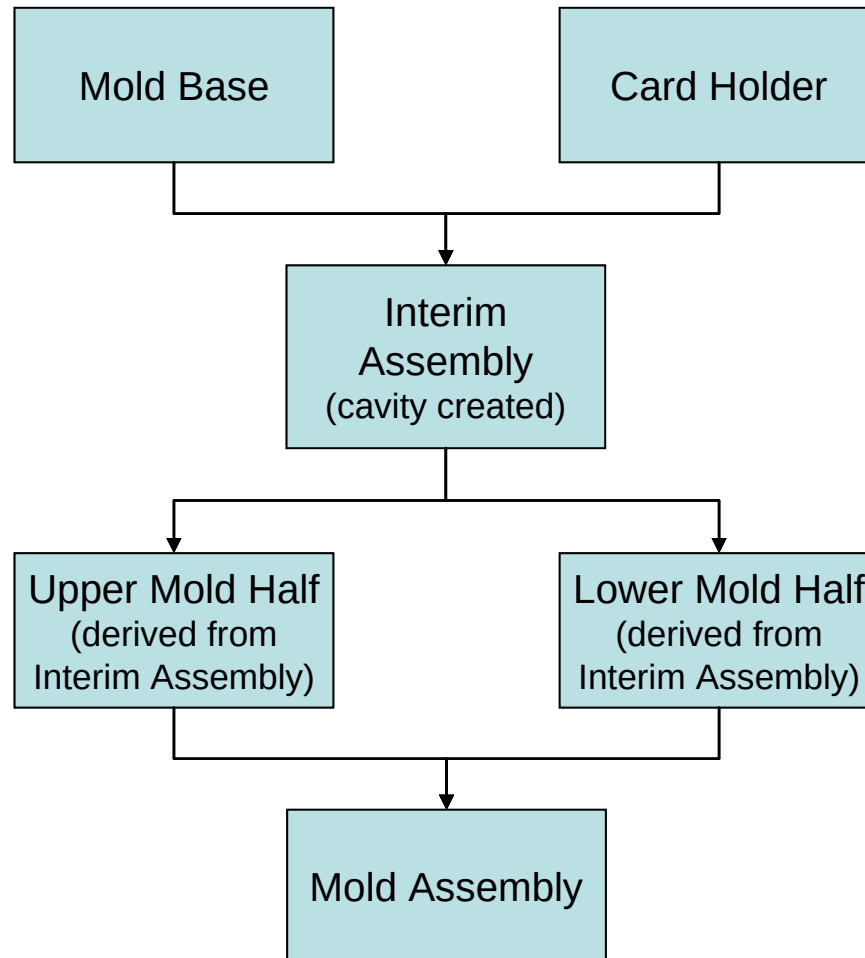


Tutorial 2: Core and Cavity Mold

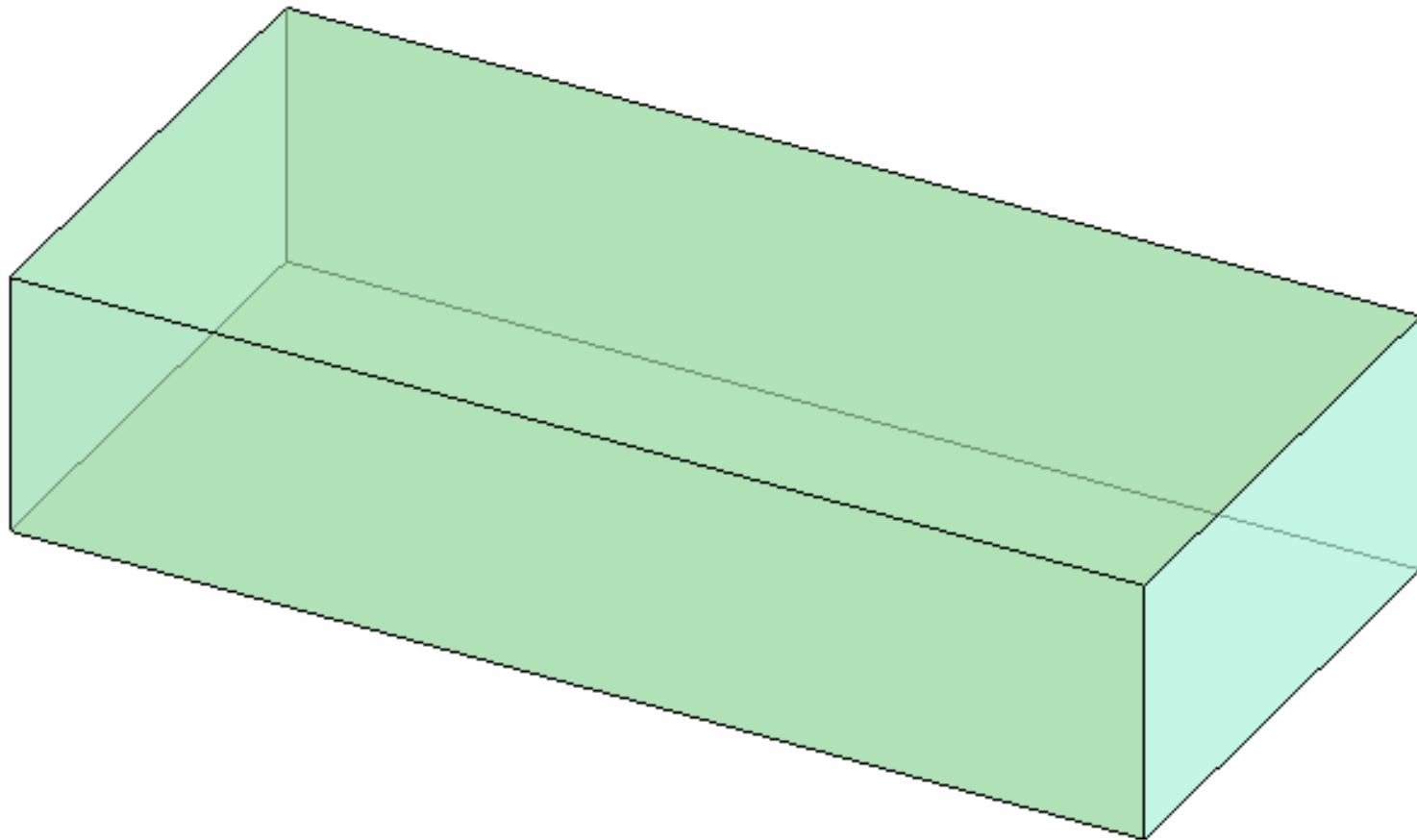
- A mold for the card holder will require two different mold halves – a core, with features protruding away from the parting line, and a cavity, with features cut into the mold half



Overview of Procedure

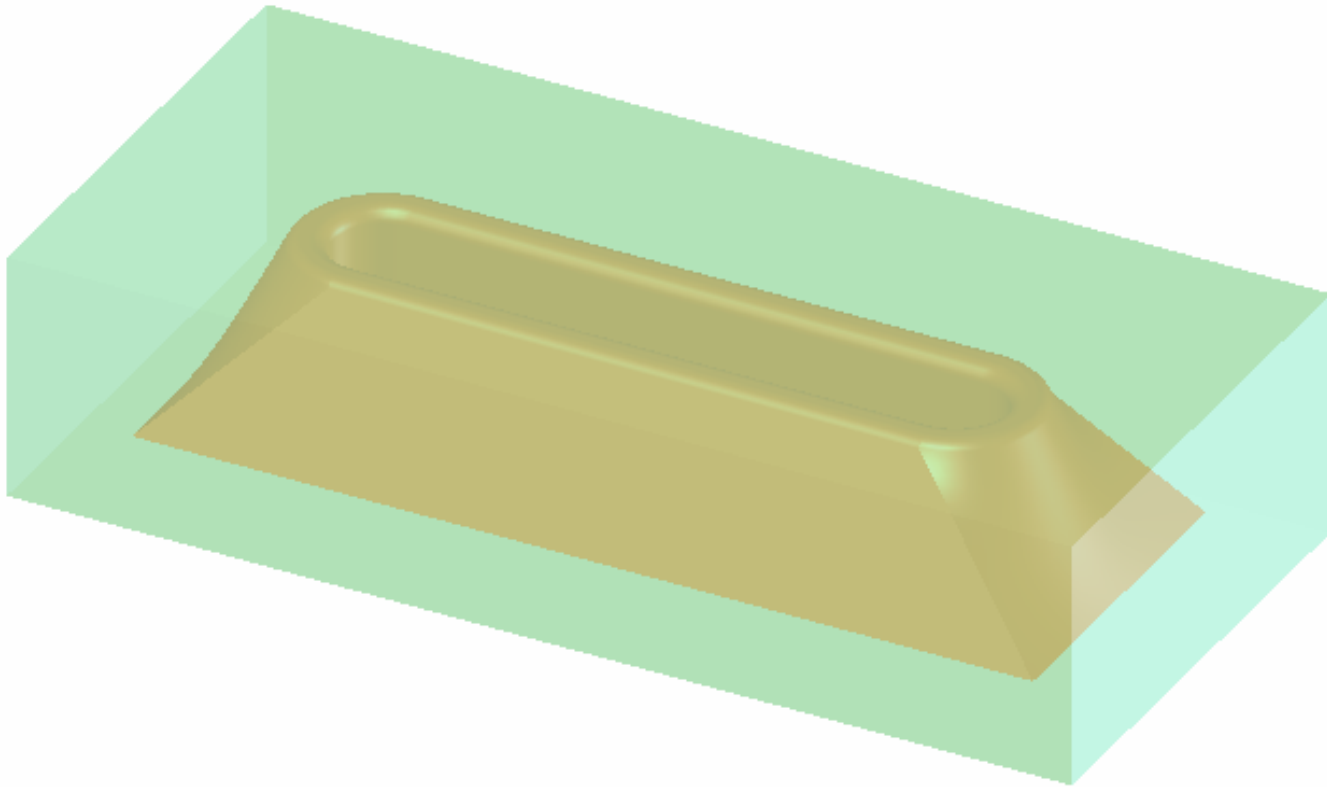


Mold Base



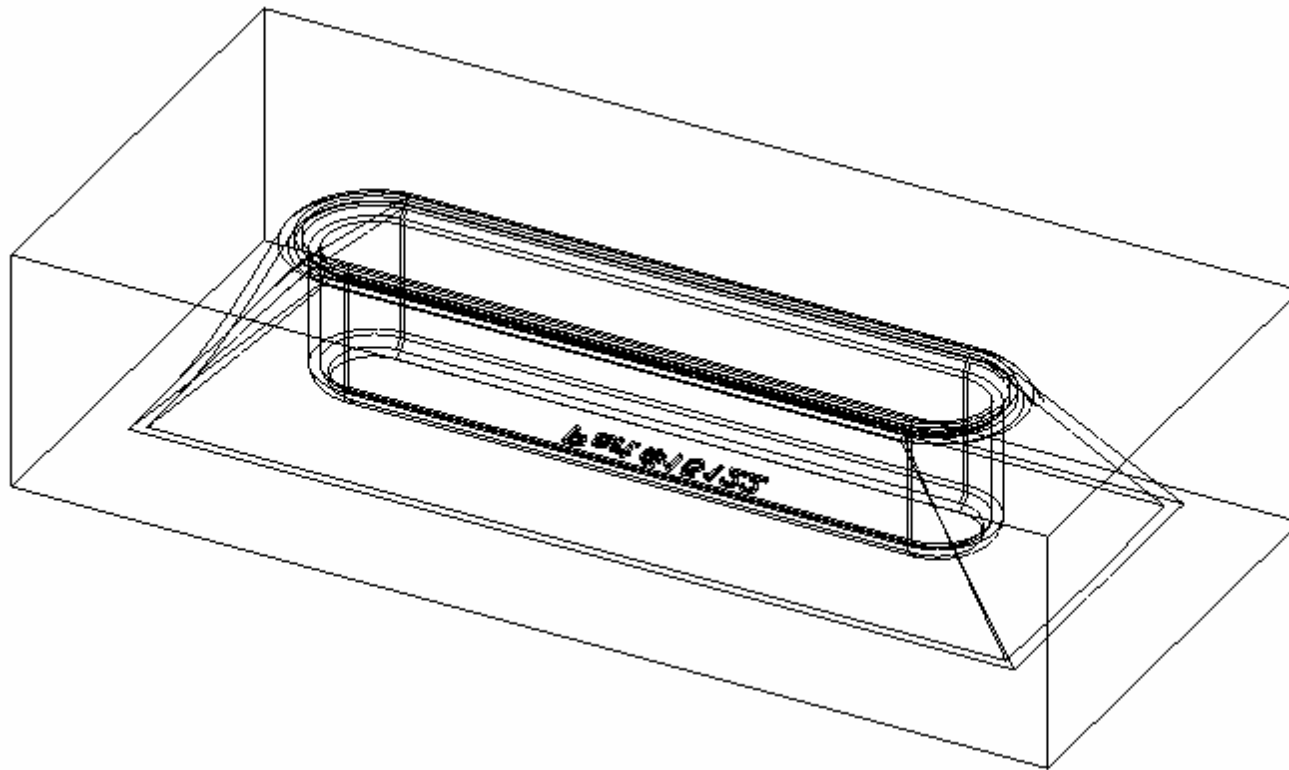
Interim Assembly

- Mates added to center the part within the base



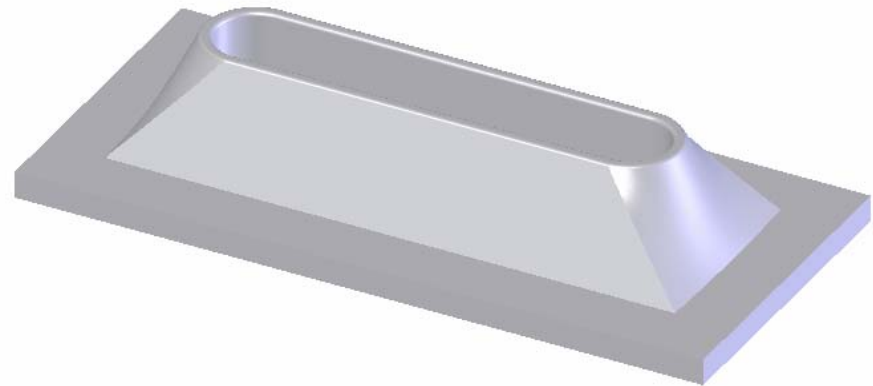
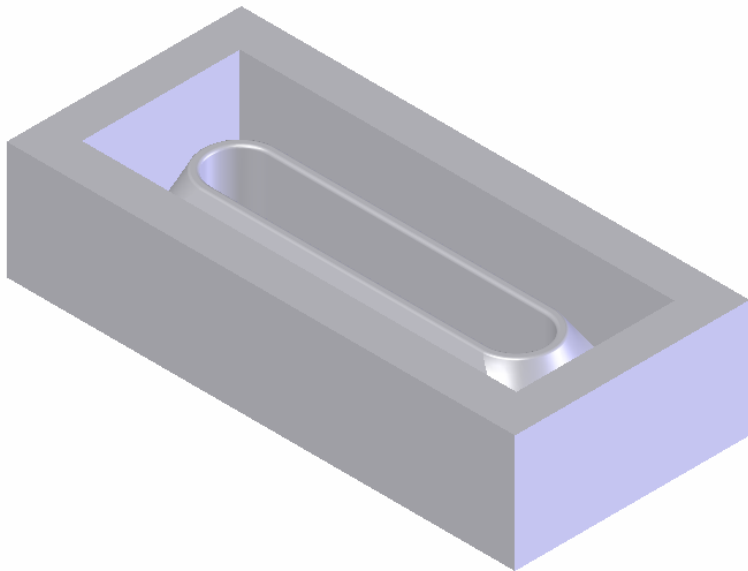
Create Cavity in Base

- Derive two components – upper and lower mold halves



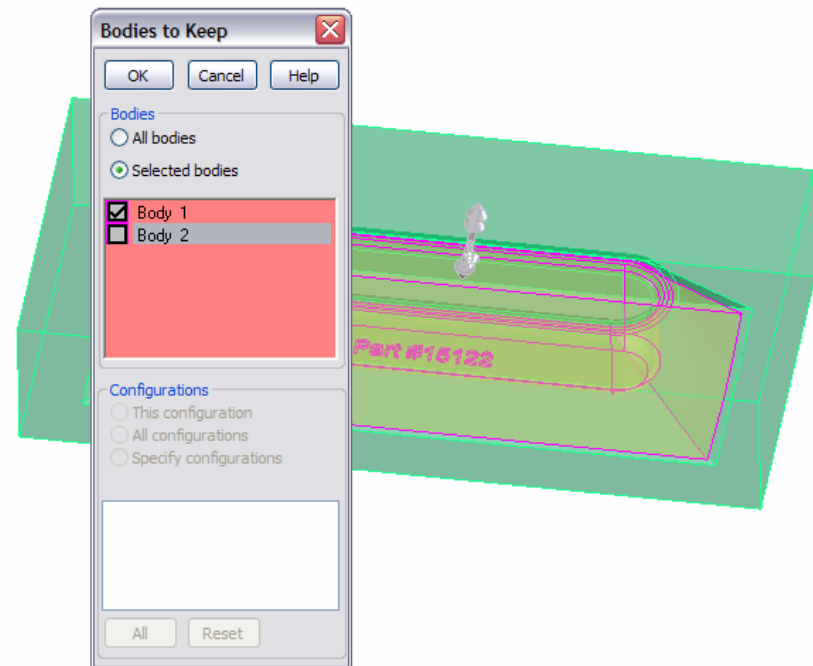
Lower Mold Half

- First Cut: Portion directly above cavity
- Type = Up to Next
- Second Cut
- Type = Up to surface (parting surface)

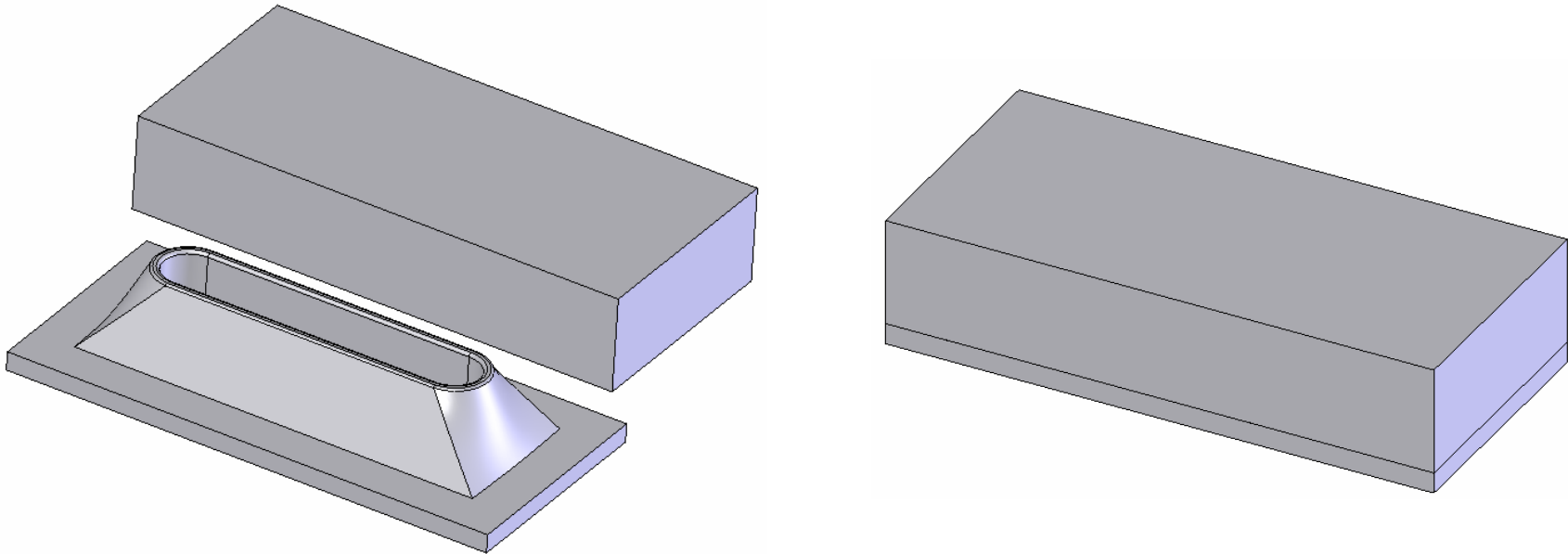


Upper Mold Half

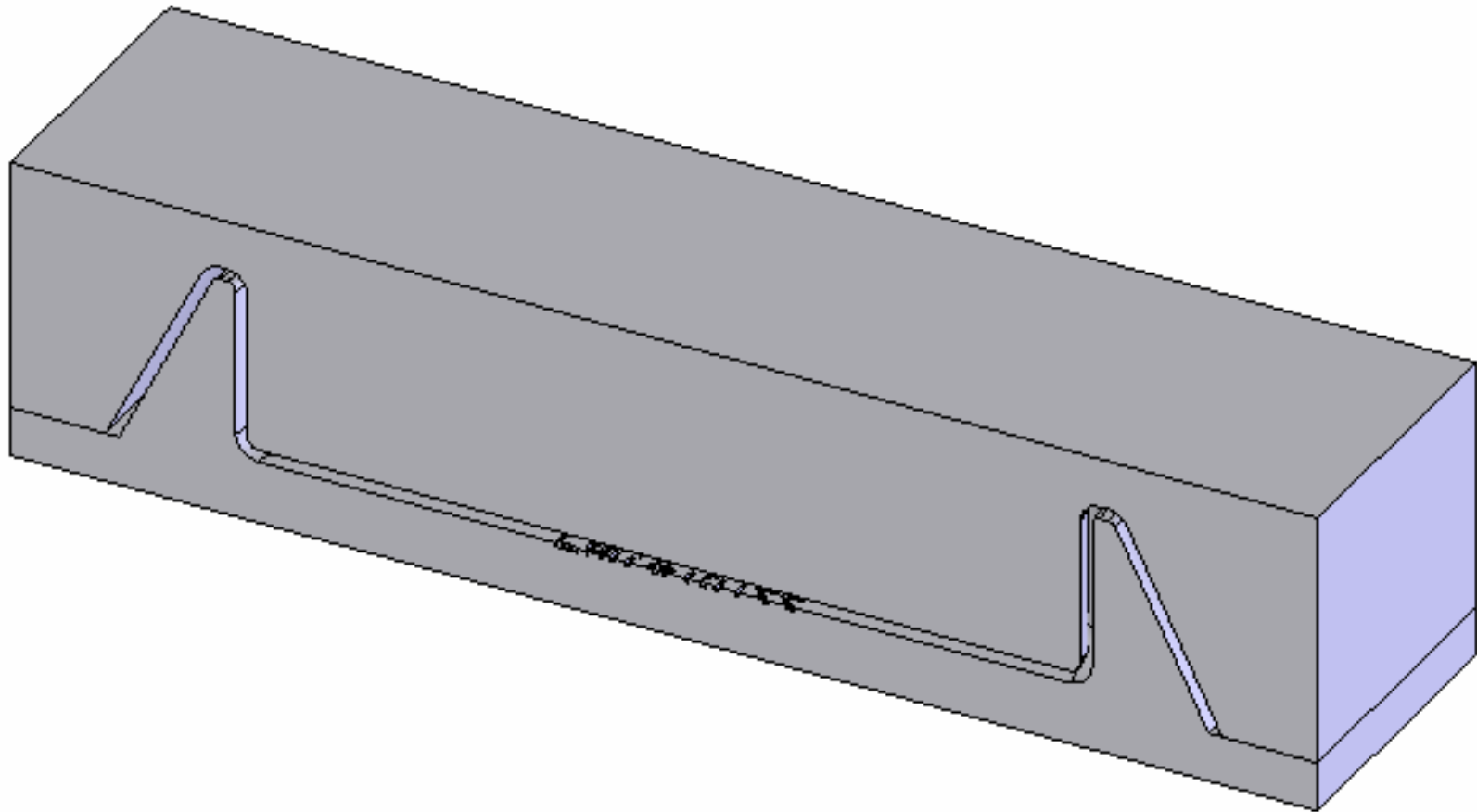
- Single cut (through all) through parting surface
- Cut creates two separate bodies – must specify which to keep



Mold Assembly



Cross Section Shows Cavity



Associativity

- Change in part (increased thickness) reflected in interim assembly, mold halves, and mold assembly

