



## LESSON 02 - PRODUCTION STAGES

### Steps



Rotational molding is a three step process. The first step is to load a mold cavity with a plastic material, liquid or powder. Next the mold is moved, or indexed, to the heating chamber where it rotates on its horizontal and vertical axes. Finally the mold is then indexed to the cooling chamber where it again rotates biaxially until it is cooled.

### Mold



In the first phase of the process the mold, either cast aluminum or fabricated sheet metal, is charged with a rotationally moldable material. The most commonly used materials are polyethylene, polyvinylchloride, nylon or polycarbonate. Materials are also available with flame-retardant characteristics. The mold is then bolted or clamped back together and moved to the heating chamber.

### Time



Once in the heating chamber the mold begins to turn biaxially. As the mold turns the heat begins to cause the material to stick to the wall surface of the mold. Once the material reaches its melt index a puddle forms. The mold now begins to move around this puddle causing the material to coat the mold with layer upon layer of material. Finally the plastic begins to densify into a uniform wall of material.



Now that the heating, or curing, process is complete the mold continues to rotate and is indexed automatically to the cooling chamber. The entire three step process takes approximately 45 minutes to complete. This longer process time allows rotational molders the ability to offer their customers added value other processes can not. Metal inserts can be molded into the parts eliminating the need for costly secondary operations. In mold graphics can be applied directly to the mold surface.