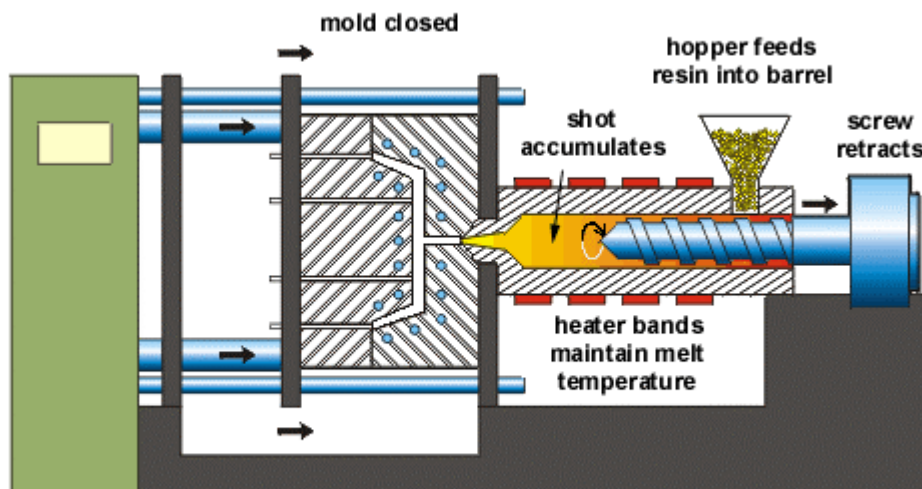


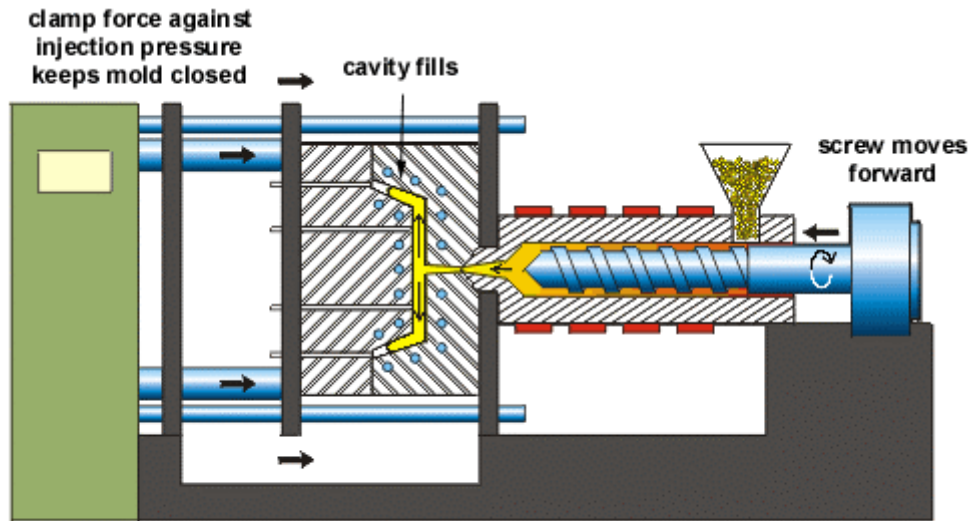


Injection Molding 101



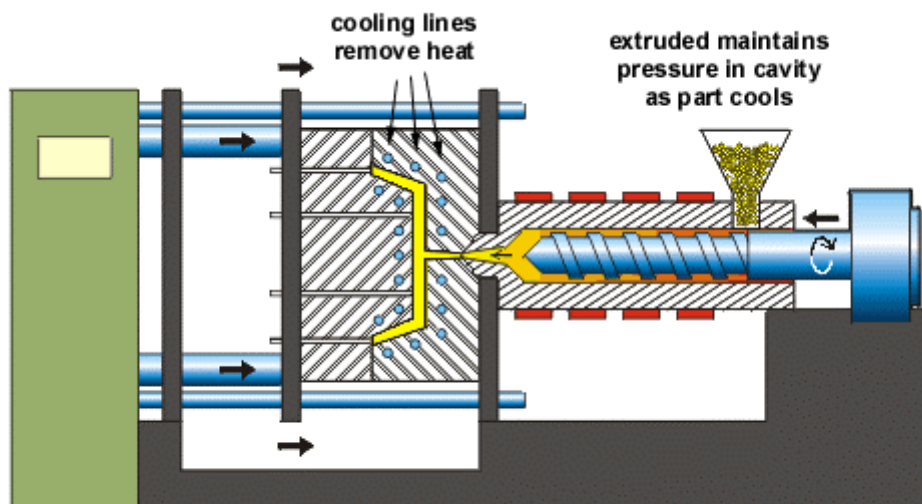
1. plasticizing the resin

The cycle begins with the extruder plasticizing the resin and accumulating it in the forward section of the barrel. The heater bands maintain the melt's temperature as the shot it built up. The mold is closed. The cycle is typically timed so that there is minimal time between the closing of the mold and the next shot.



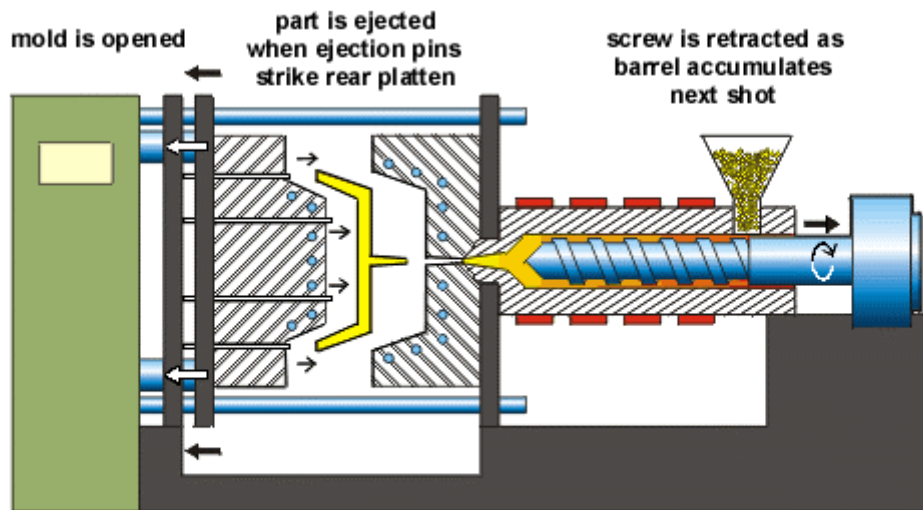
2. injecting the resin

Once the shot is ready, a valve is opened at the nozzle and the melt is quickly injected into the mold. This part of the process only takes a few seconds. As the melt enters the cavity, the displaced air is vented out through the holes for the ejection pins and along the parting line. Proper filling of the cavity is dependant on part design as well as good gate location and design and proper venting.



3. cooling the part

This is the longest portion of the molding cycle. Once the cavity is filled, the part is allowed to cool. If an accumulator is not used, the extruder continues to push material into the mold and maintain the proper amount of pressure until the material cools (or "freezes"). This is all controlled by timers.



4. ejecting the part

Once the part has cooled enough (so that it will hold its shape out of the mold, and the ejection pins won't deform the part), the mold is opened. The moving platen has moves backwards and the ejector pins strike the rear plate (or "ejector plate"), ejecting the part. (There are many different ways to eject the part which are discussed elsewhere in this section.)

At the same time, the extruder begins retracting ("recovering") to build up the next shot.