

# INJECTION MOULDING

## The process for injection molding

Injection moulding is a method used for manufacturing plastic parts in objects. This process is used to create bottle caps, toys, and wire stools. The injection molding machine can be divided into three parts: the injection unit, the mold, and the clamping unit. It is also made of three components, which are the hopper, the screw, and the heated barrel. The task of the injection unit is to melt the polymer and inject it, the mold unit is for product shape and also to cool it, and the clamping unit is for mold mobility and ejecting the product. The machine works by taking plastic powder and then forming it according to the required shape and dimensions. When we supply the hopper with the material, it uses the frictional action of the screw to produce heat. With the high temperature and pressure the material melts. After it reaches the proper temperature, it is then injected with the right amount into the injection mold once it is filled with the molten plastic the injection will stop and shut off so it can cool and take the shape of the molded design. The time it requires to cool until it is ready depends on the thickness, size, and shape of the material. After it cools the mould will open automatically.

## The disadvantages of the injection molding machine

1. It is a long process that can sometimes take months to finish
2. Size limitation
3. High tooling costs and long set up lead times