

# Screw type injection moulding

**Construction :** It has two units to split and take out the finished moulded component. In clamping section it has a mould cavity. 1. Injection unit 2. Clamping Unit

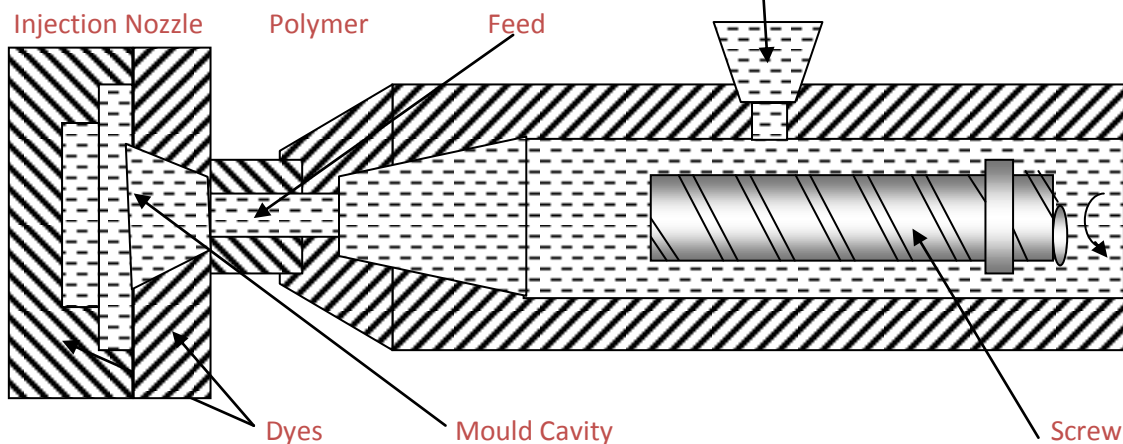
The injection unit has 1. Hopper 2. Screw 3. Heating section 4. Clamping section

## Principle of working

Molten thermoplastics is injected into a mould under high pressure.

High pressure is attained by forwarding the heated Screw along with heated resin to push into the mould cavity.

Plasticizing action of resin had by the rotation of Screw. The filling action got by axial movement of screw.



## Operation

In screw type moulding machine pellets are fed in hopper. - Screw move to and fro motion in forward and backward directions- Screw first move backward - allow enough plastic resin in mould cavity through injection nozzle. Resin are pushed in to injection nozzle by a heated screw by his forward movement – resin are pushed and forced into the mould cavity by screw and made to fill mould.

Rotation of screw provide plasticizing action by shearing and frictional effect. Axial movement of screw provides the filling action.

To overcome and find out the problem occurs jet moulding is used. – In jet moulding preheating of plastic is done to 93°C in the cylinder that surrounding the injection nozzle.

Polymer is created by chemical reaction within resin at low temperature.

To mould low viscosity monomers reaction moulding used in injection moulding process. Useful for polyurethane moulding production.

- Application:**
1. To Produce thin walled parts and intricate shapes. Cups, containers, tool handles, toys, knobs
  2. Electrical and communication components example telephone receiver
  3. used to make the Parts of complex threads

**Limitations :** 1. Reliable temperature controls are needed.

2. CYLINDER AND DIE should be non-corrosive 3. Machine range from 12000mm<sup>3</sup> to 2.2 x 10<sup>6</sup> mm<sup>3</sup>

- Advantages :**
1. Wide range of shape can be moulded
  2. Less material loss
  - 3 suitable for high production
  3. complex thread parts can be easily made
  5. Accuracy of 0.0255 mm can be achieved in finished products.