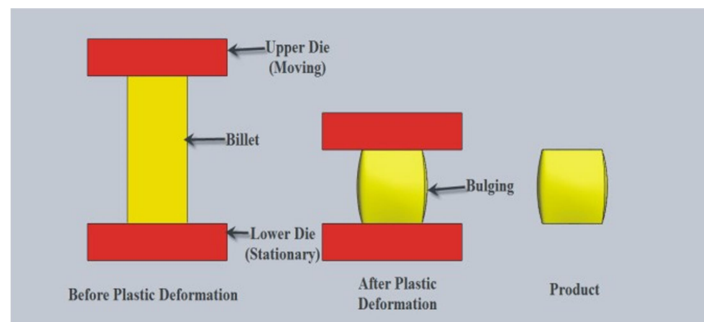


Classification of forging on the basis of category

(i) Open Die Forging Process

When flat dies that have no pre-cut profiles engage in forging, the forge process is called open die forging (or smith forging). The open design allows the metal to flow everywhere except where it touches the die. To achieve maximum results, correct movement of the workpiece, which should be over 200,000 lbs. in weight and 80 feet long, is essential. It is useful for short-run art smithing or for shaping ingots prior to secondary shaping measures. Open die forging creates pieces with better fatigue resistance and strength and reduces the chance of error or holes. It can also be used for a finer grain size than other processes.



(ii) Closed Die Forging Process

Closed die forging, sometimes called impression die forging, employs the use of molds. These molds are attached to an anvil while a hammer forces molten metal to flow into the cavities of the die. Multiple strikes and/or die cavities are often used when forging complex geometries. High initial tooling costs make closed die forging expensive for short-run operations, but the forging process becomes cost-effective as parts produced increases. Closed die forging also provides exceptional strength over alternative methods. Common applications of closed die forging include the production of automobile components and hardware tools.

