FORGING PROCESS

23MOT201- Manufacturing and Measurement Techniques
Unit -2 Metal Forming and Metal Cutting Processes
II Year /III Semester
Mechanical and Mechatronics Engineering

FORGING

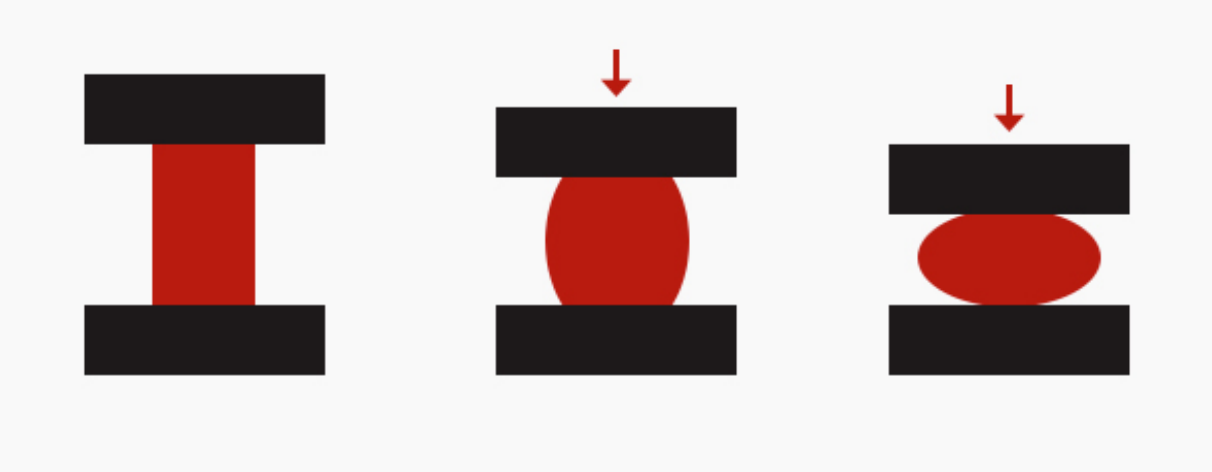
- Forging is a manufacturing process involving the shaping of a metal through hammering, pressing, or rolling.
- These compressive forces are delivered with a hammer or die.
- Forging is often categorized according to the temperature at which it is performed.

TYPES OF FORGING- DROP FORGING

- Drop forging derives its name from the process of dropping a hammer onto the metal to mold it into the shape of the die.
- The die refers to the surfaces that come into contact with the metal.
- There are two types of drop forging—open-die and closed-die forging.
- Dies are typically flat in shape with some having distinctively shaped surfaces for specialized operations.

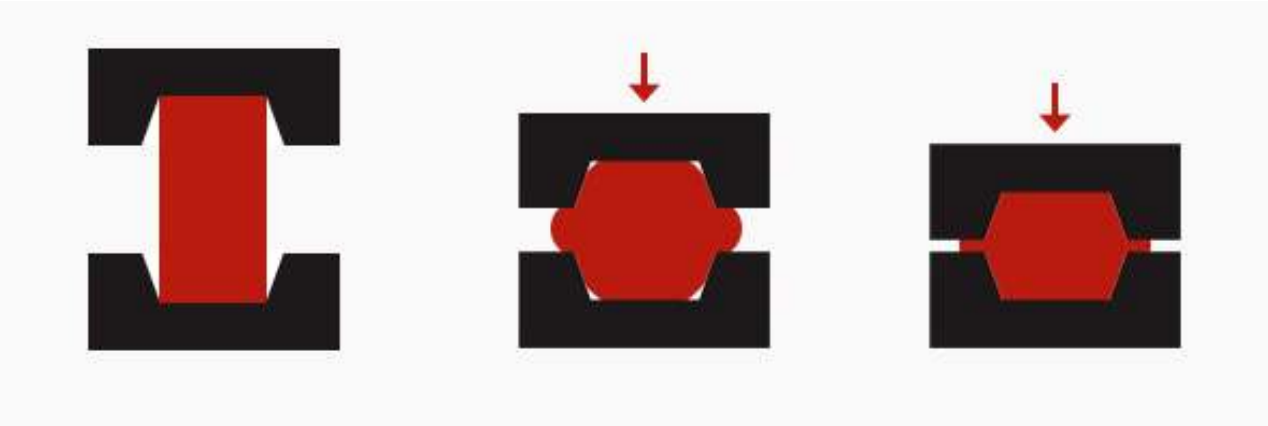
TYPES OF FORGING- OPEN-DIE FORGING

- Open-die forging is also known as smith forging.
- A hammer strikes and deforms a metal on a stationary anvil.
- In this type of forging, the metal is never completely confined in the dies, allowing it to flow except for the areas where it is in contact with the dies.



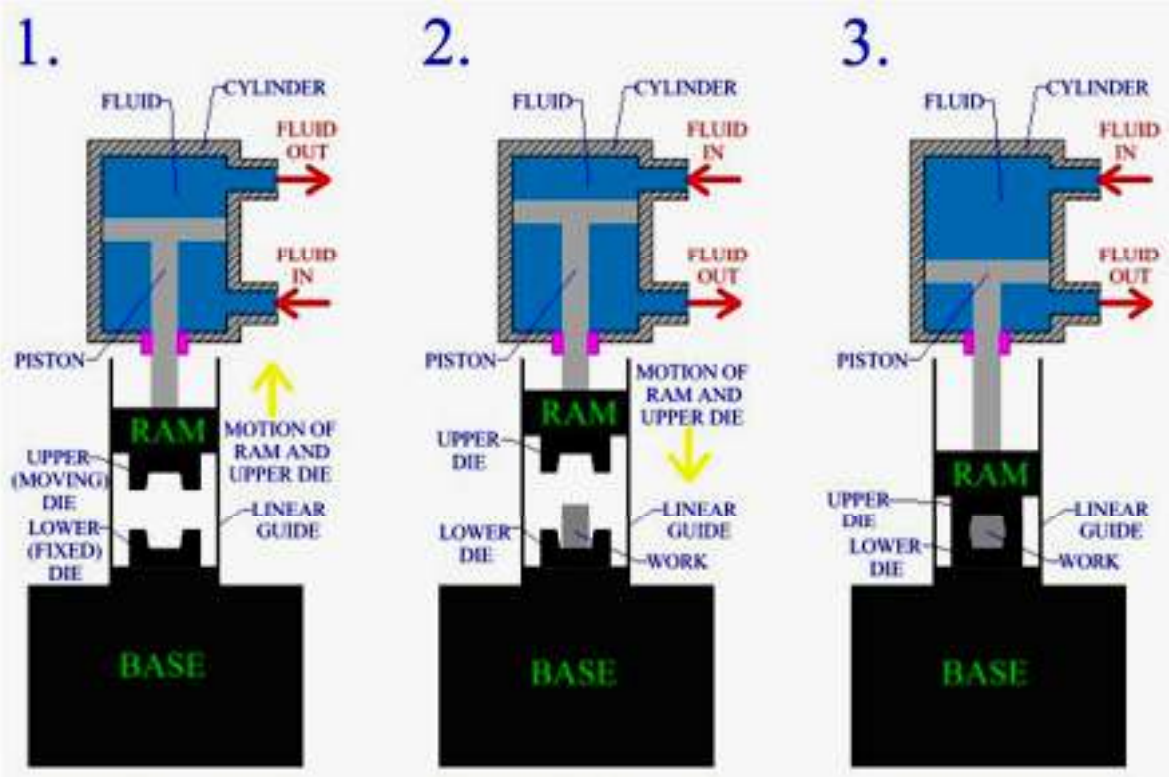
TYPES OF FORGING- CLOSED-DIE FORGING

- Closed-die forging is also known as impression-die forging.
- The metal is placed in a die and attached to an anvil. The hammer is dropped onto the metal, causing it to flow and fill the die cavities.
- Excess metal is pushed out from the die cavities, resulting in flash.
- The flash cools faster than the rest of the material, after forging, the flash is removed.



TYPES OF FORGING- PRESS FORGING

- Press forging uses a slow, continuous pressure or force, instead of the impact used in drop-hammer forging.
- The slower ram travel meaning that the deformation reaches deeper, so that the entire volume of the metal is uniformly affected.
- By controlling the compression rate in press forging, the internal strain can also be controlled.



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https://www.youtube.com/watch?v=XTU0Z-FkhtU

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2. Hajra Choudhury S.K and Hajra Choudhury A.K., "Elements of workshop Technology", volume I and II, Media promoters and Publishers Private Limited, Mumbai, 14th edition, 2010.