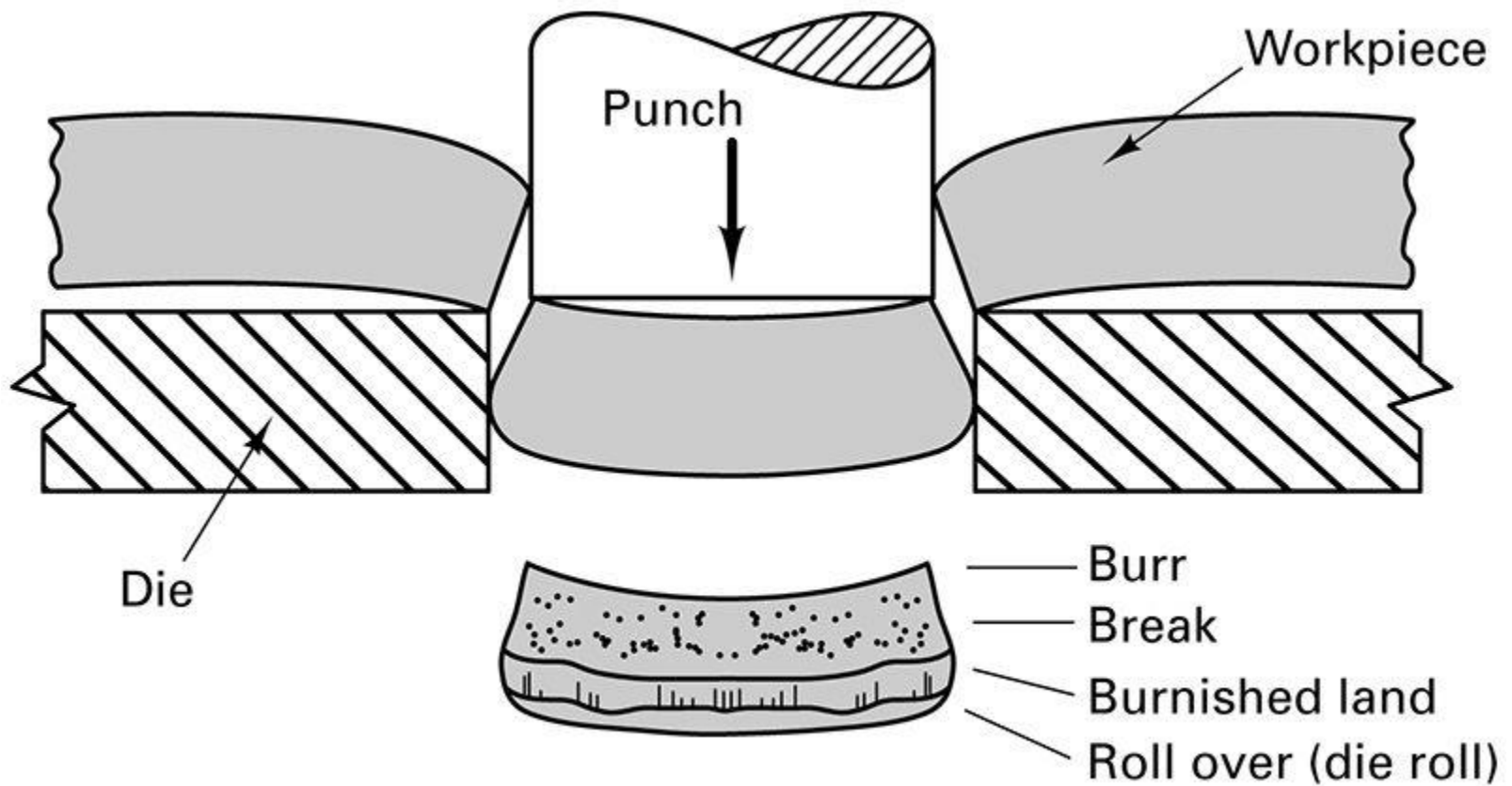


Sheet Forming Processes

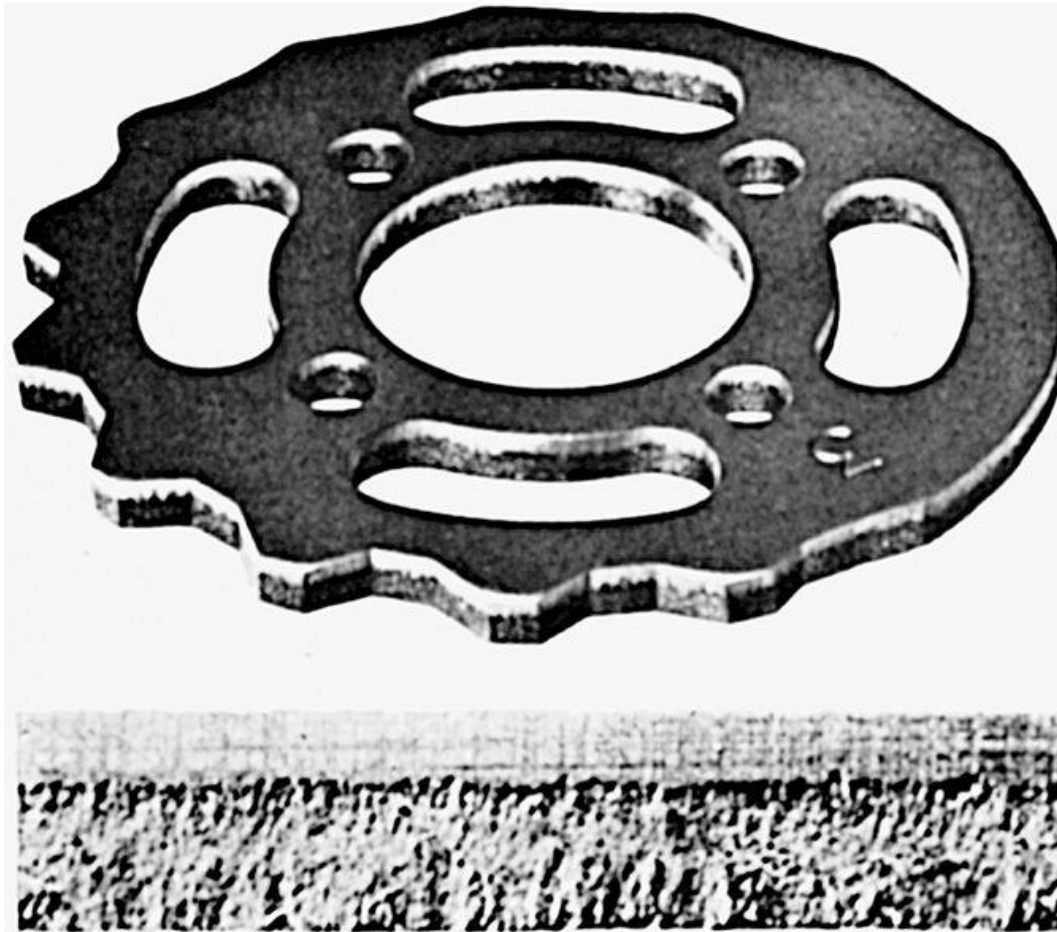
Basic Categories

- Shearing
- Bending
- Drawing

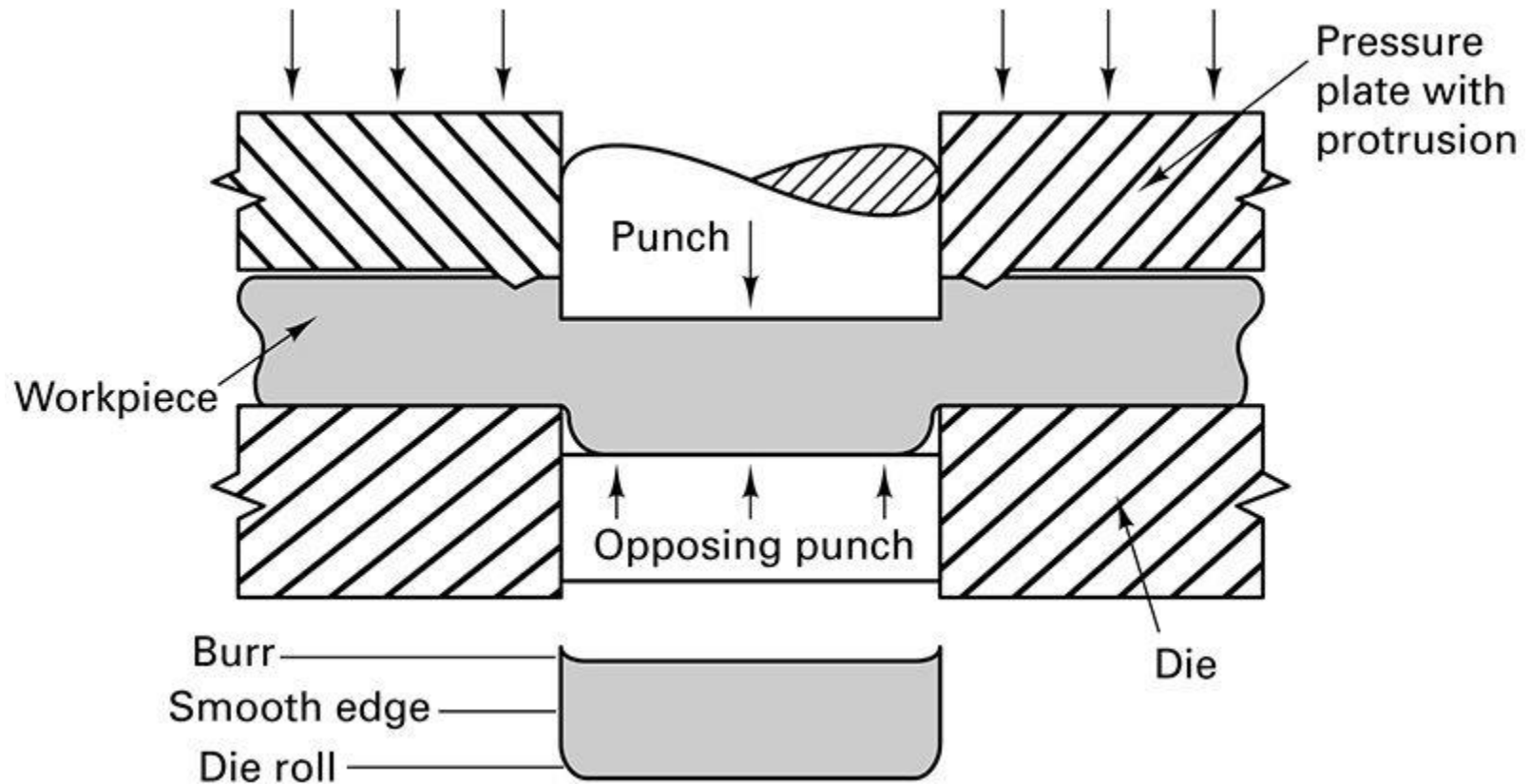
Standard Punching Operation



Conventionally Sheared Surface



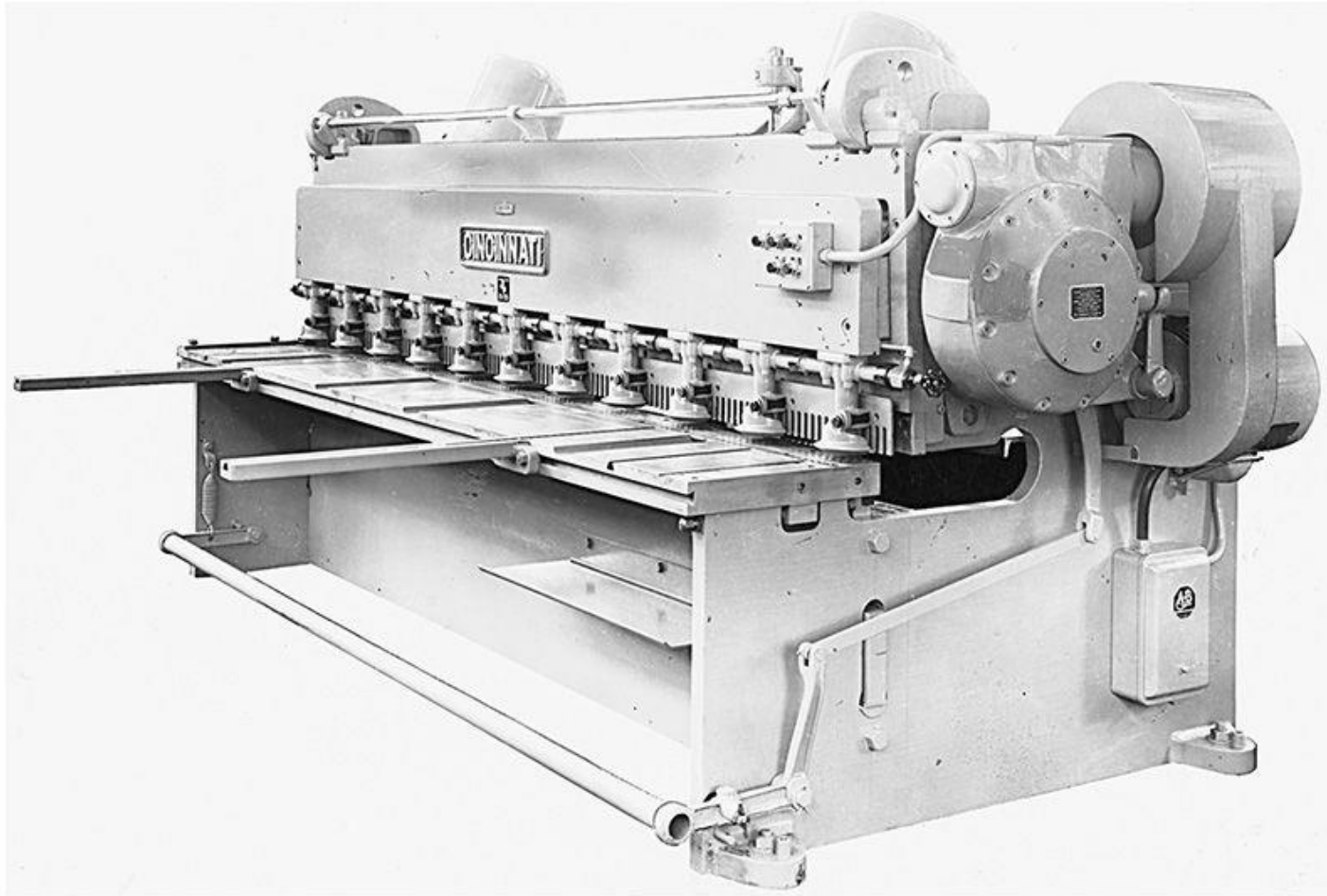
Fineblanking Process



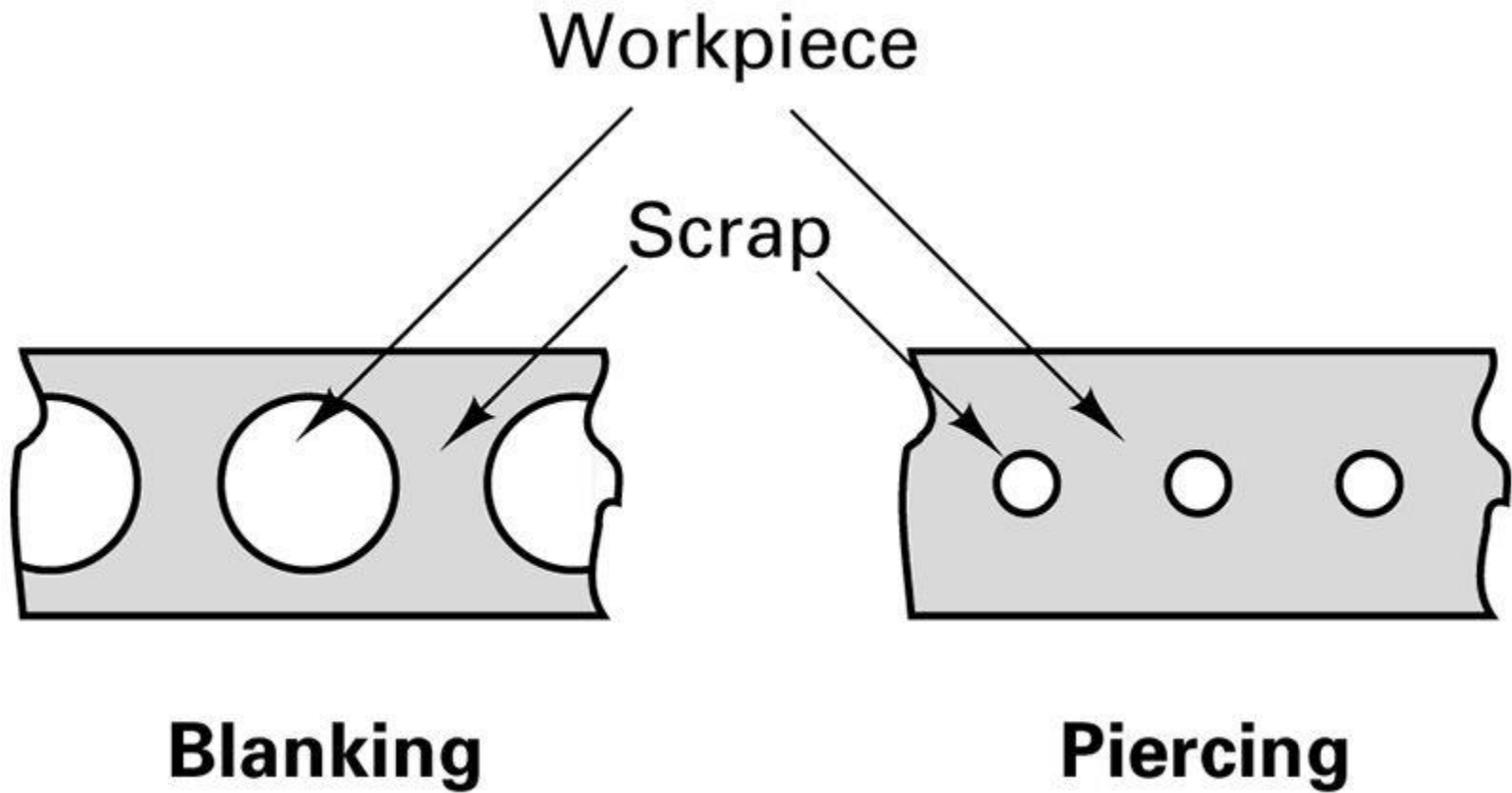
Fineblanked Part



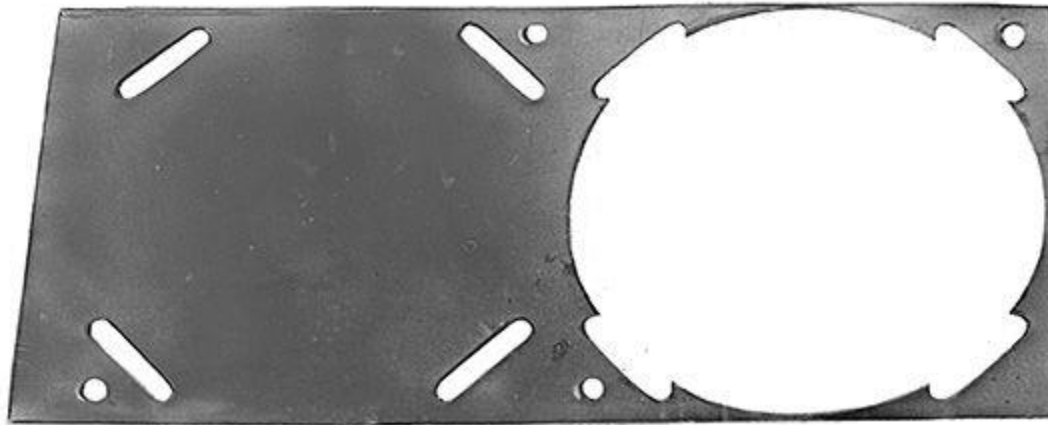
Power Shear



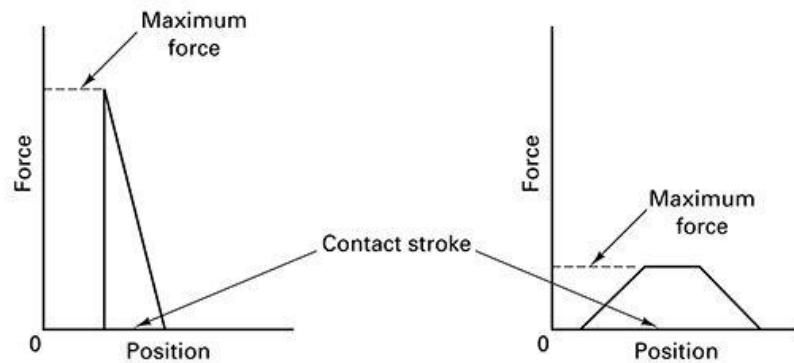
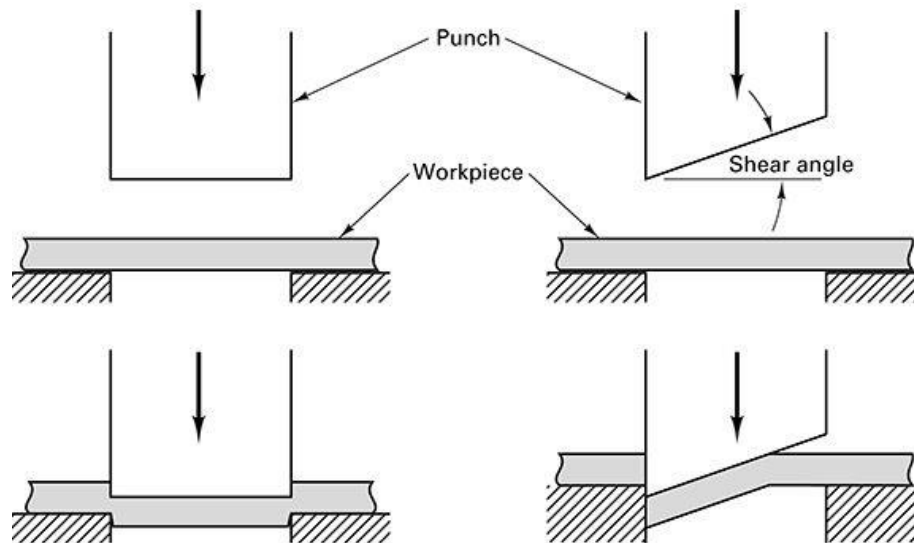
Piercing vs. Blanking



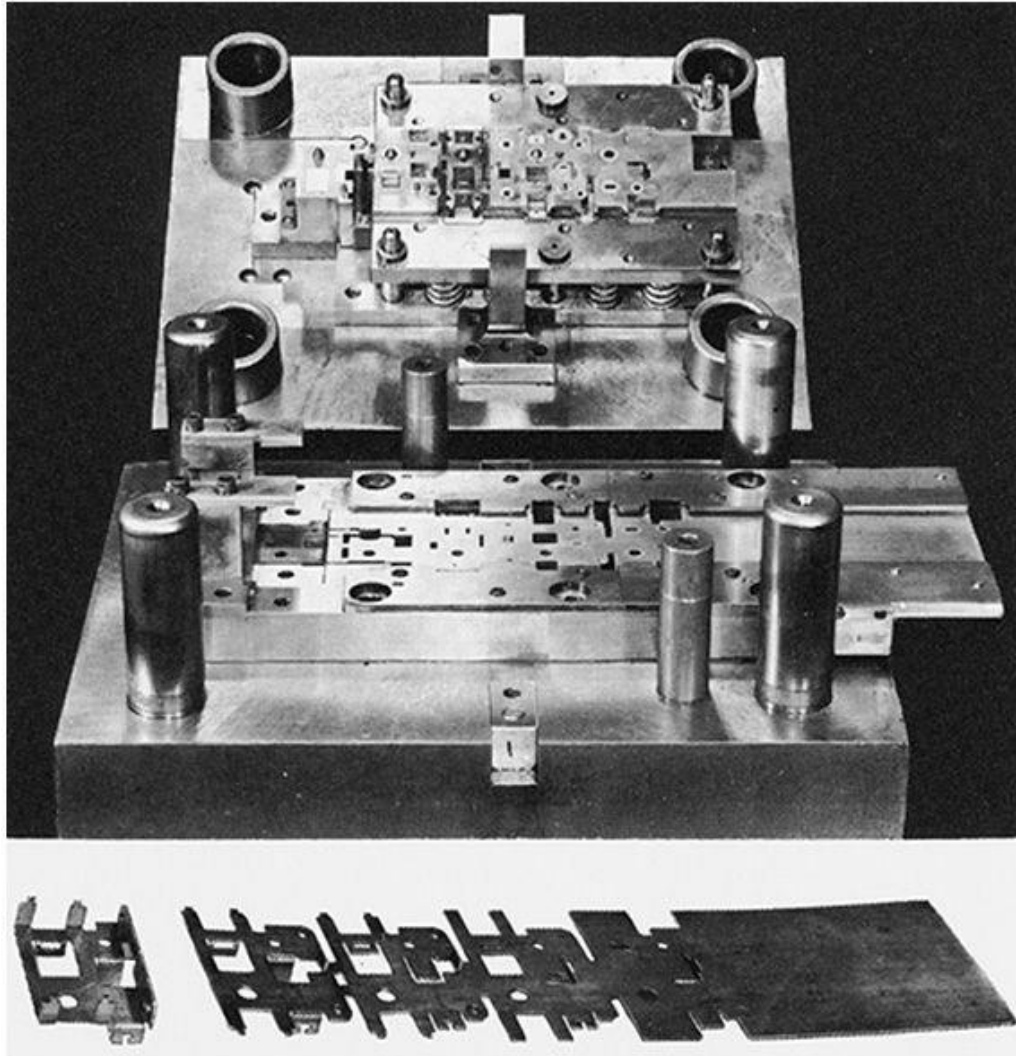
Piercing, Lancing and Blanking



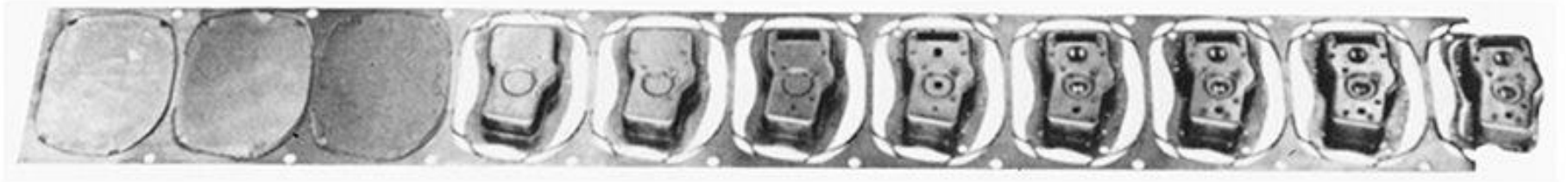
Blanking Punch Design



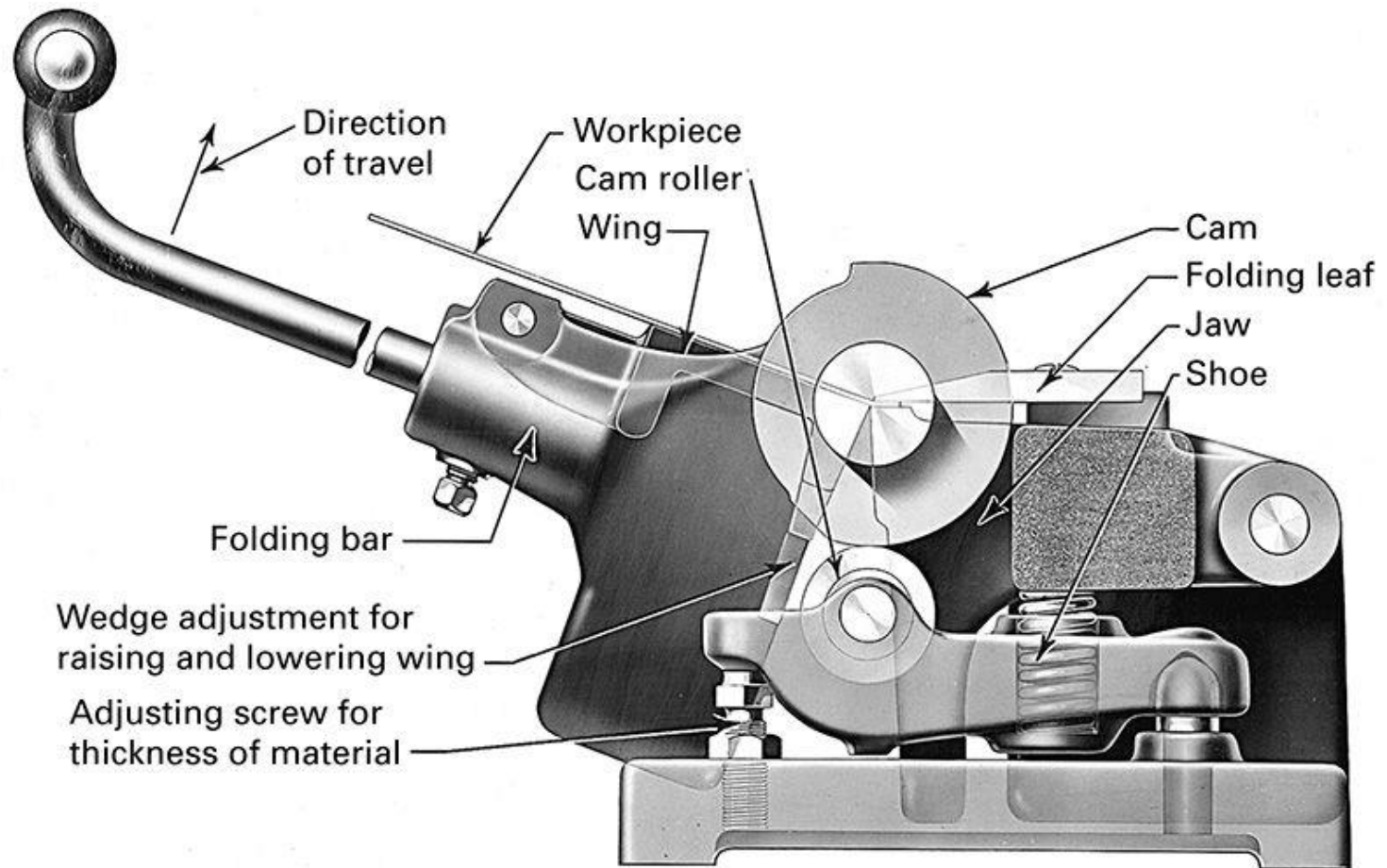
5-Station Progressive Piercing, Forming and Cut-off Punch and Die



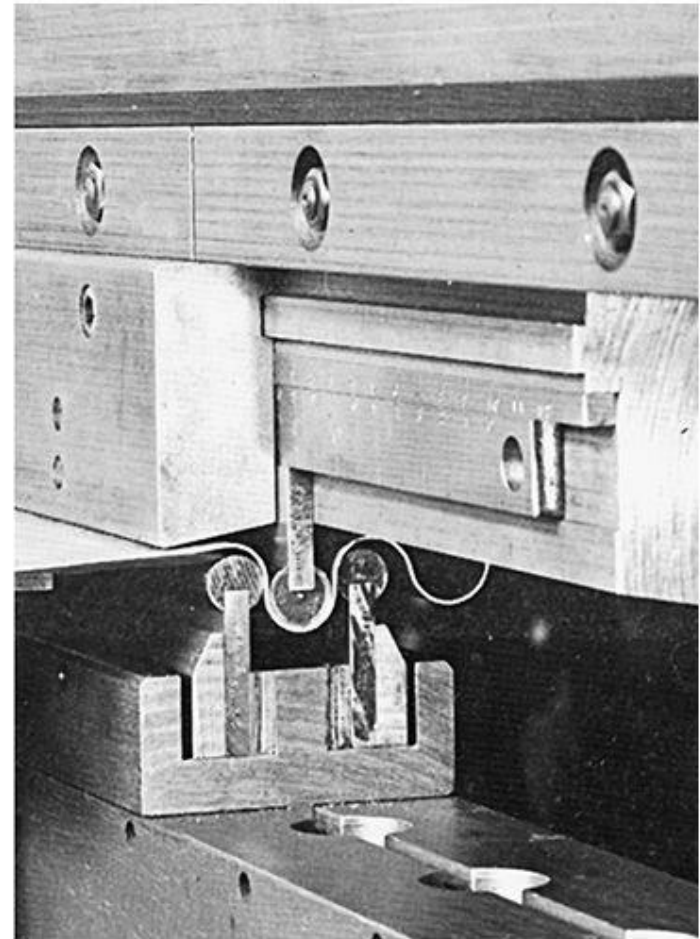
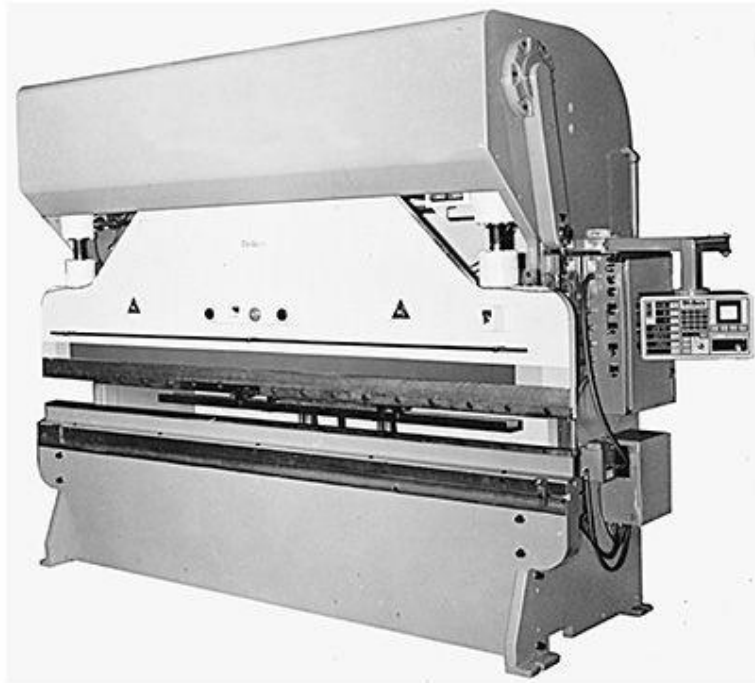
Stages of 11-Station Progressive Punch and Die



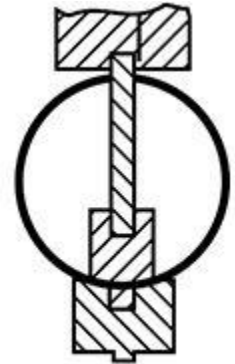
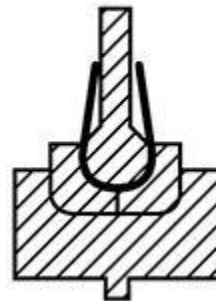
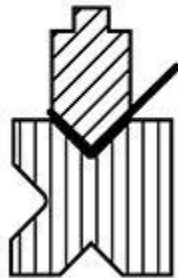
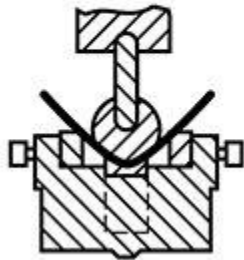
Bar Folder



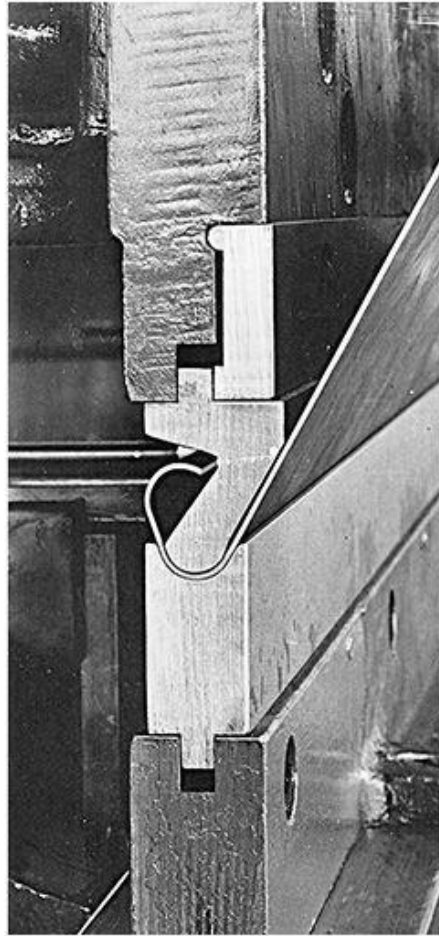
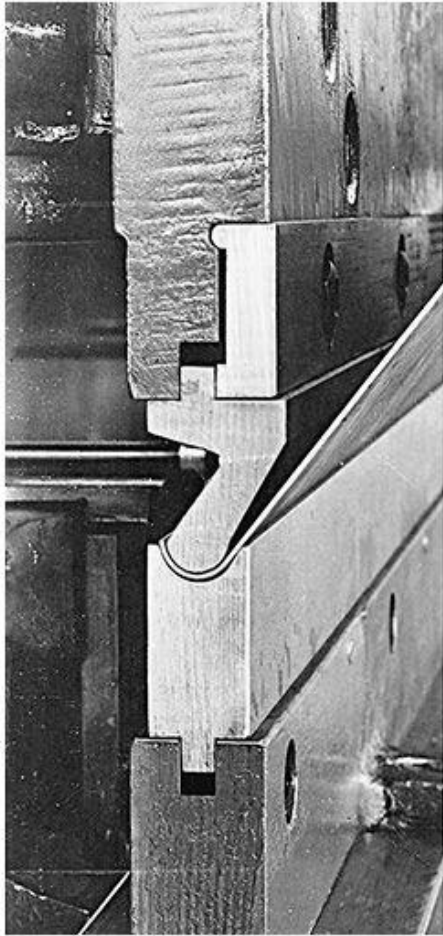
Press Brake



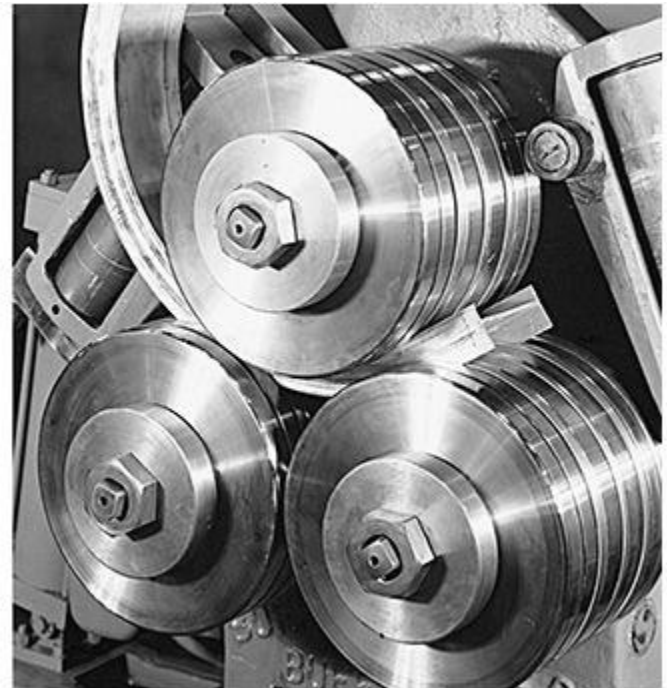
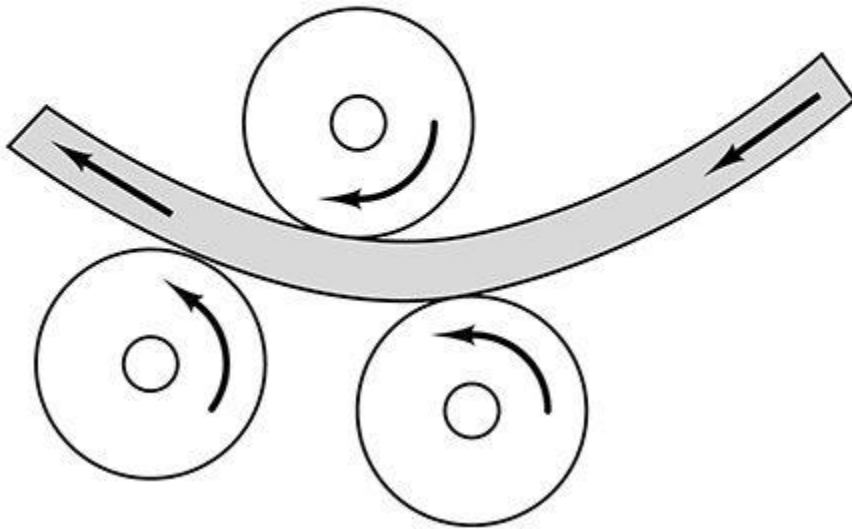
Bent Sheet Profiles



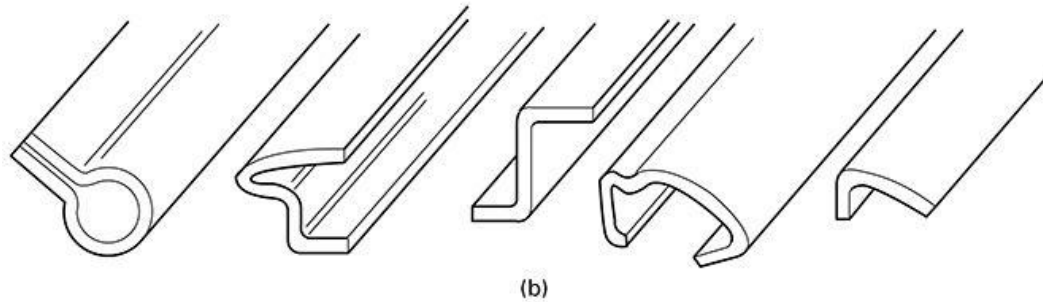
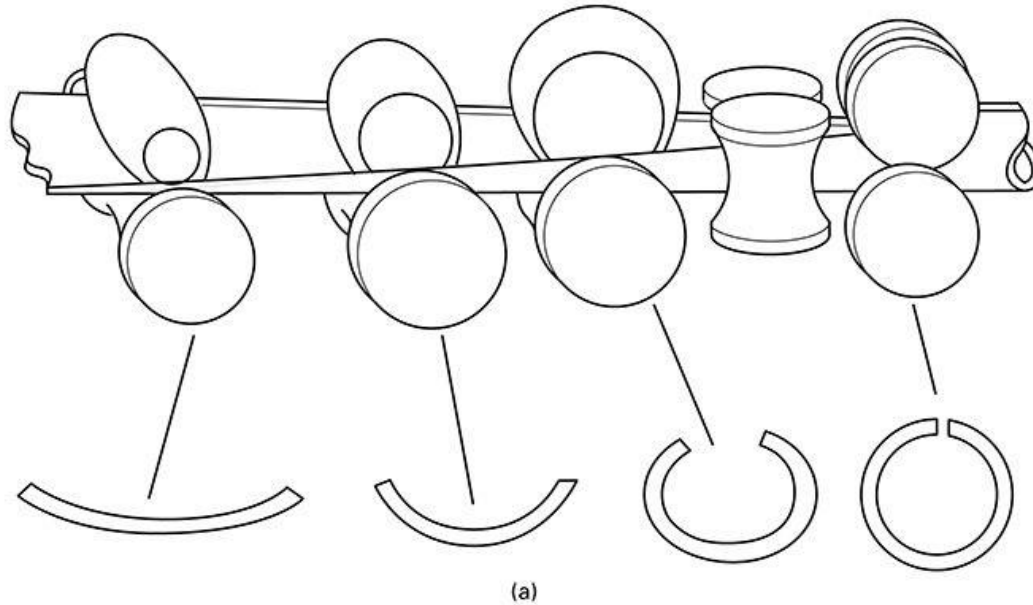
Dies Forming a Rolled Bead



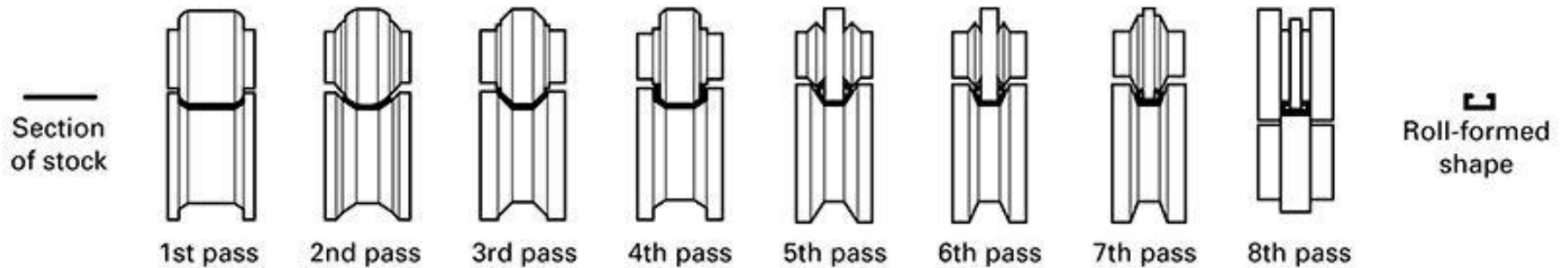
Roll Bending



Bend Sheets into Shapes



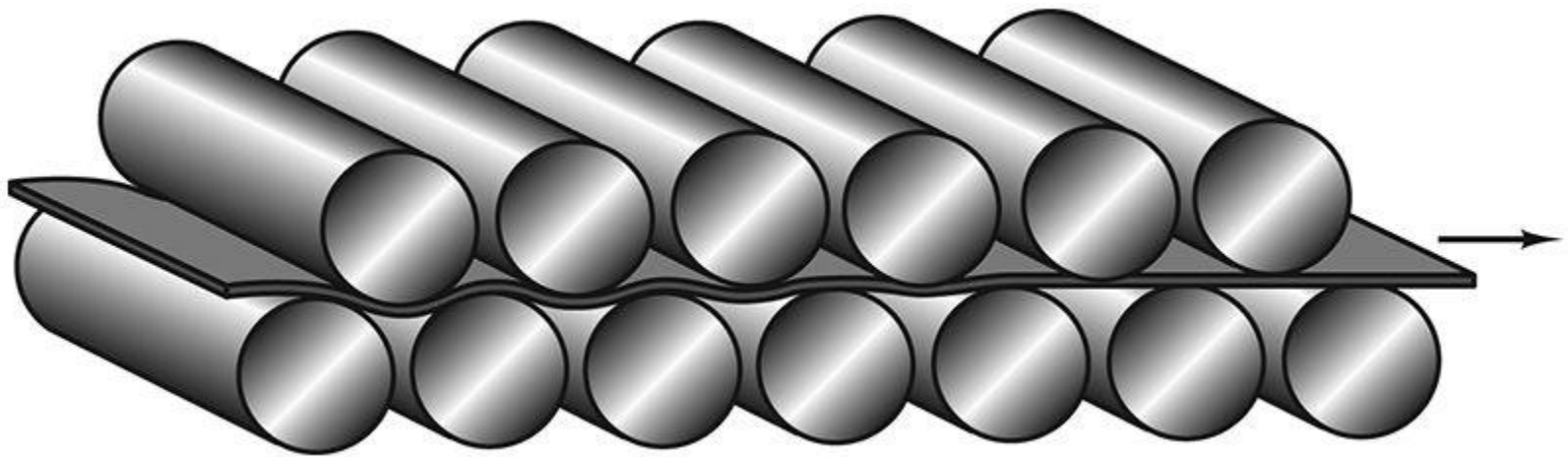
Forming a Box Channel



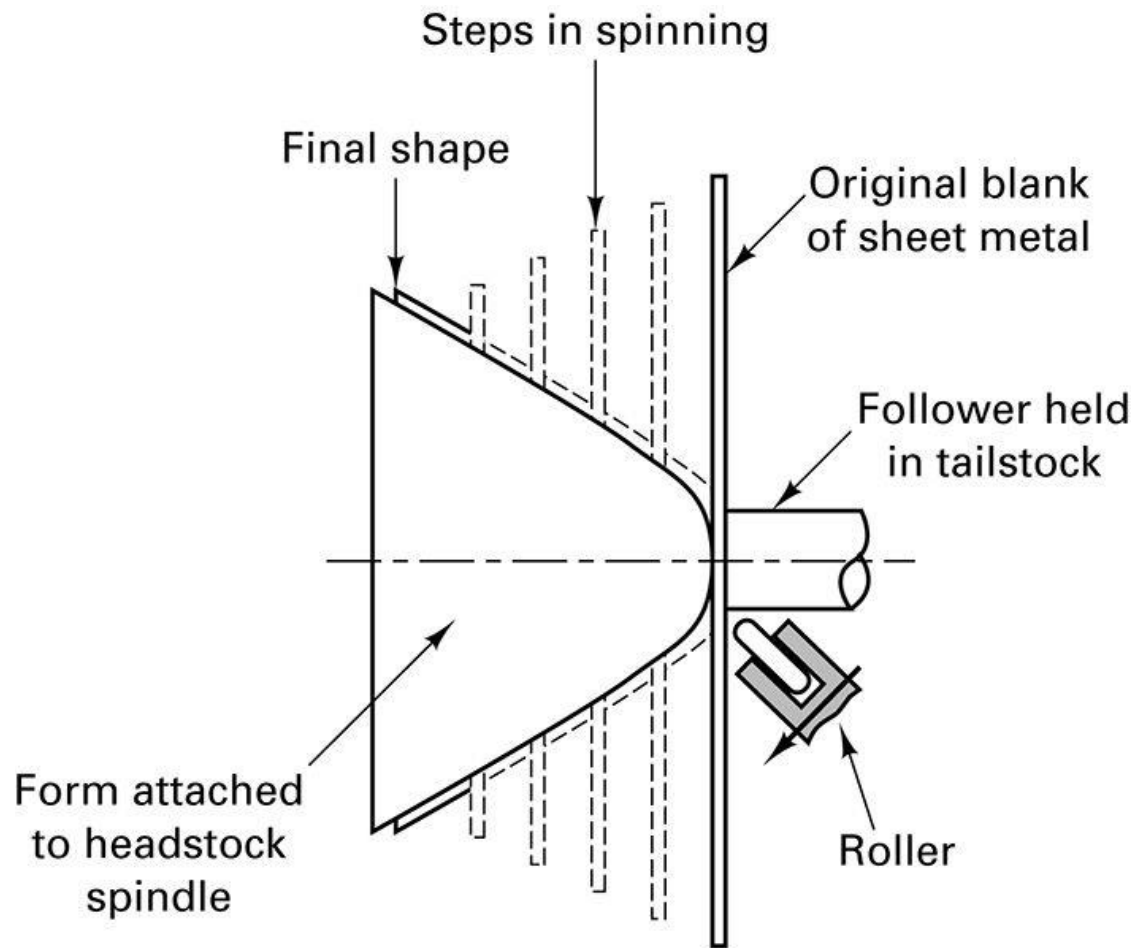
Sheet Metal Seaming



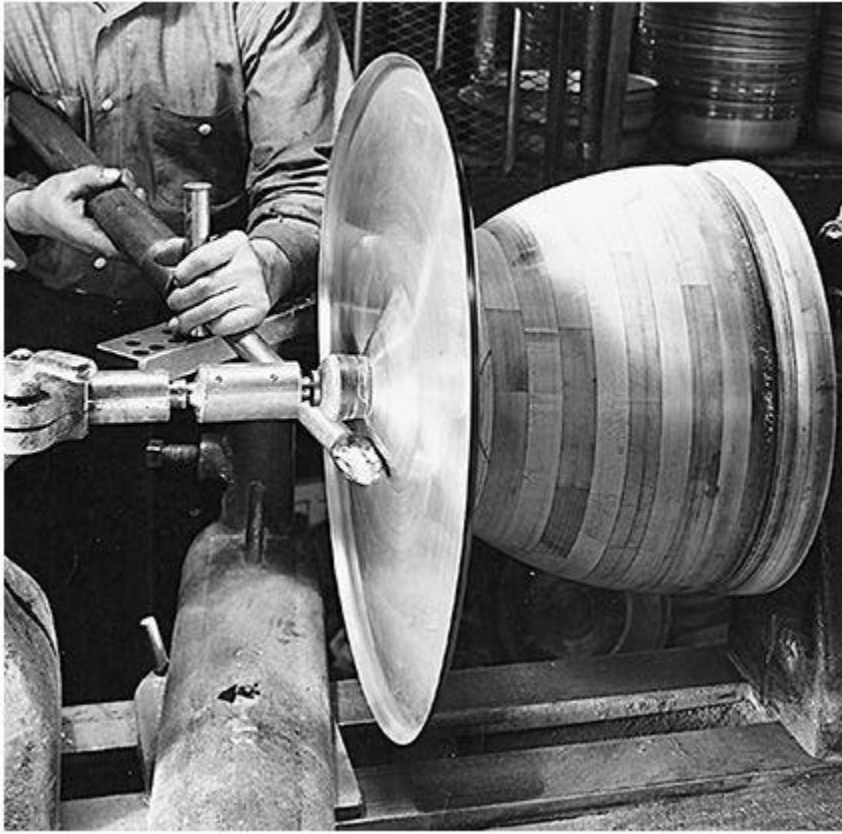
Straightening Sheets and Strips



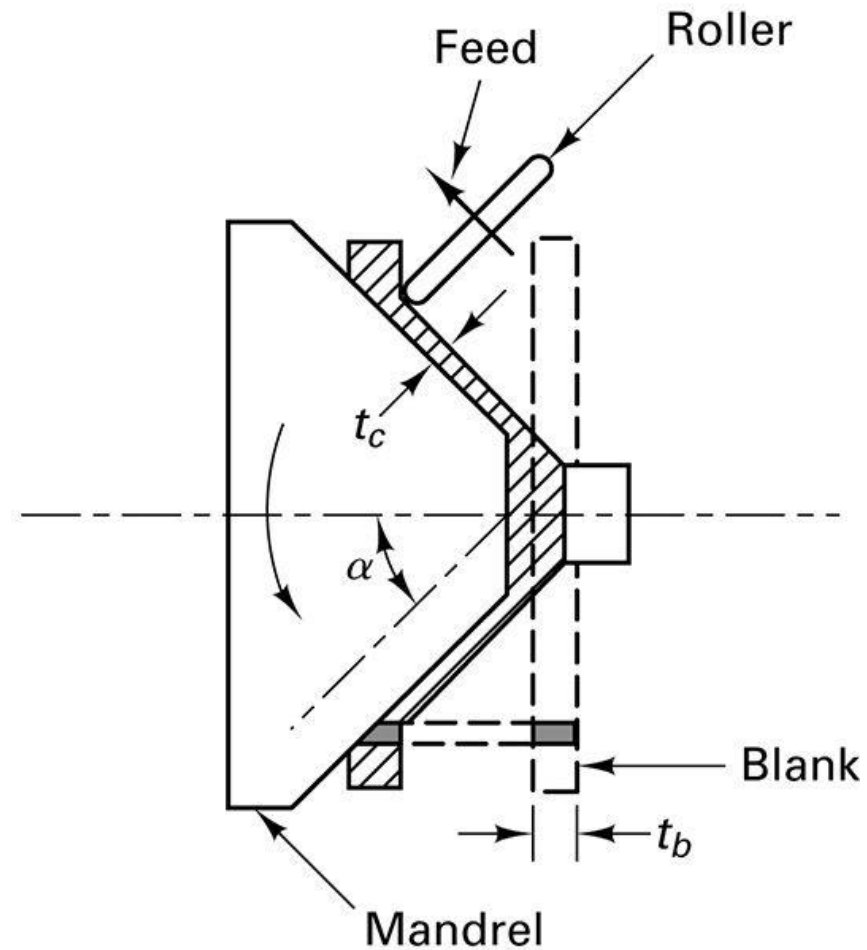
Forming Sheet by Spinning



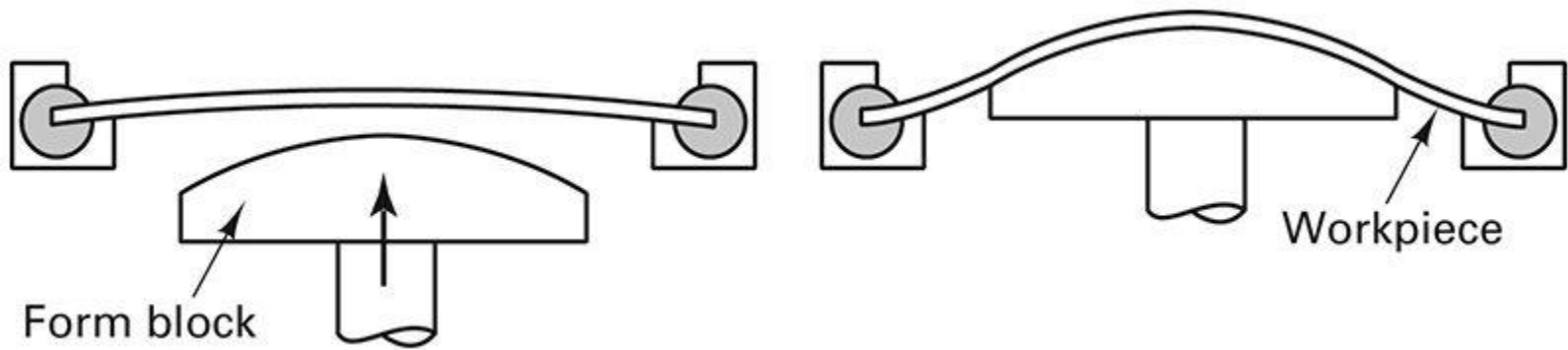
Forming a Reflector by Spinning



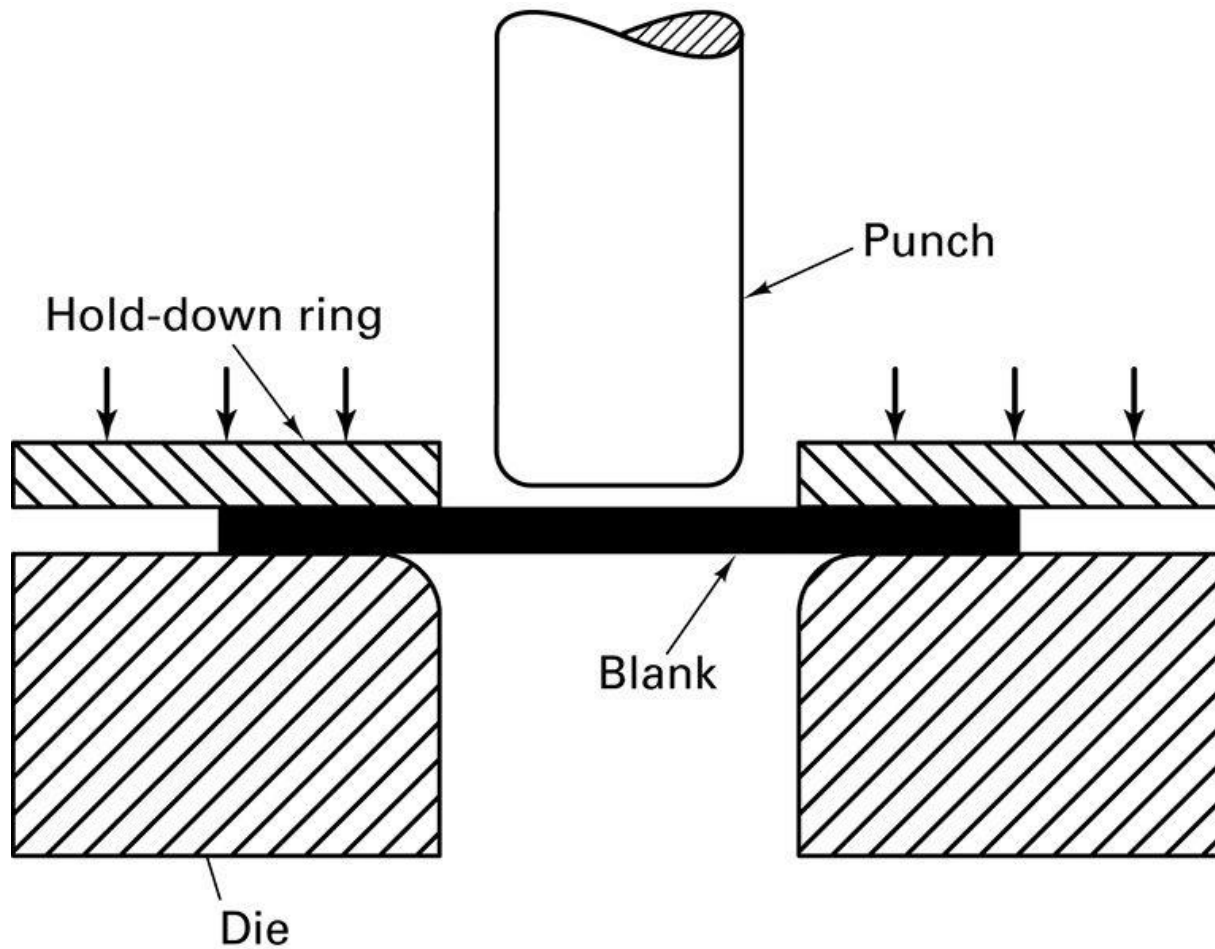
Shear Forming



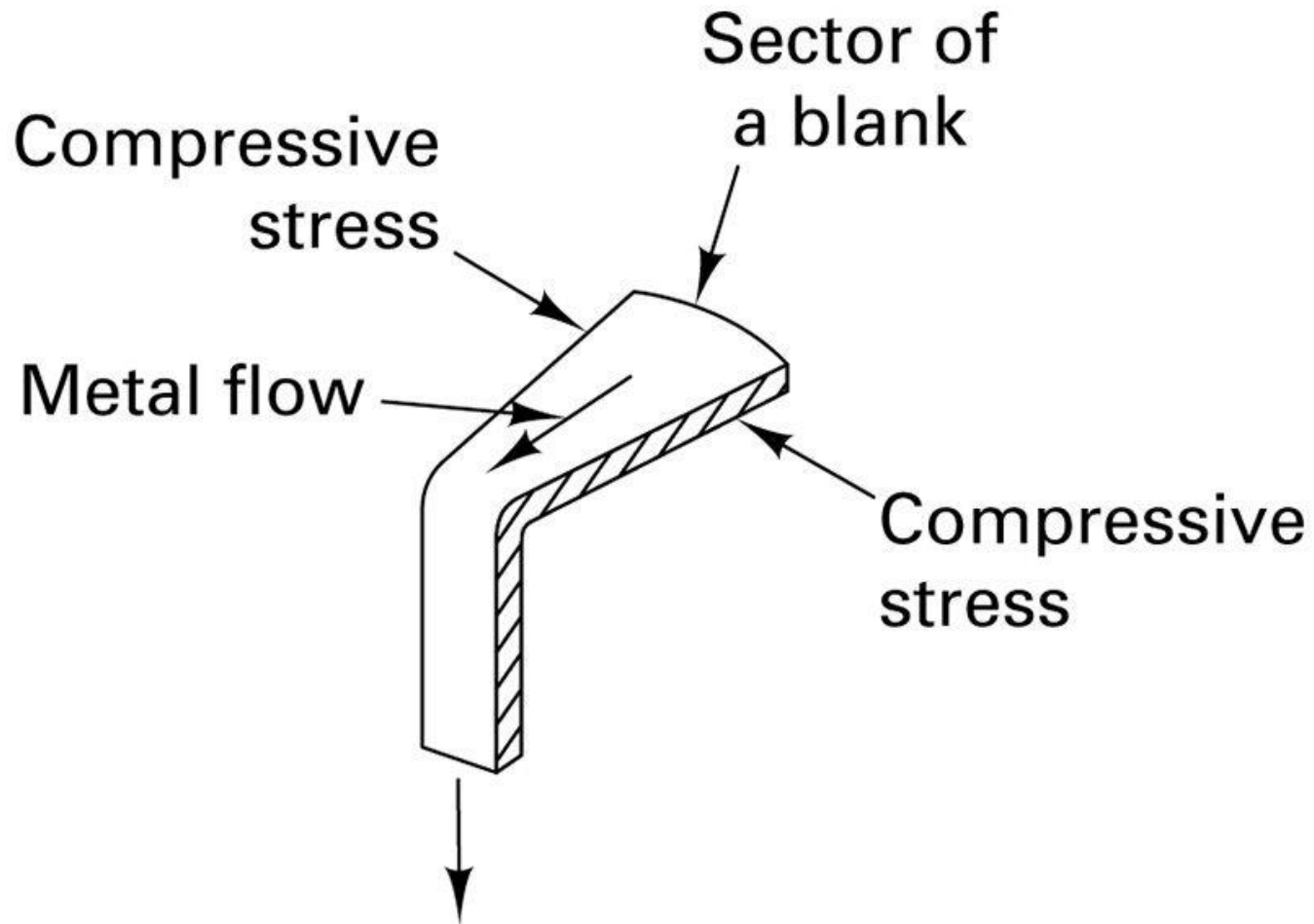
Stretch Forming



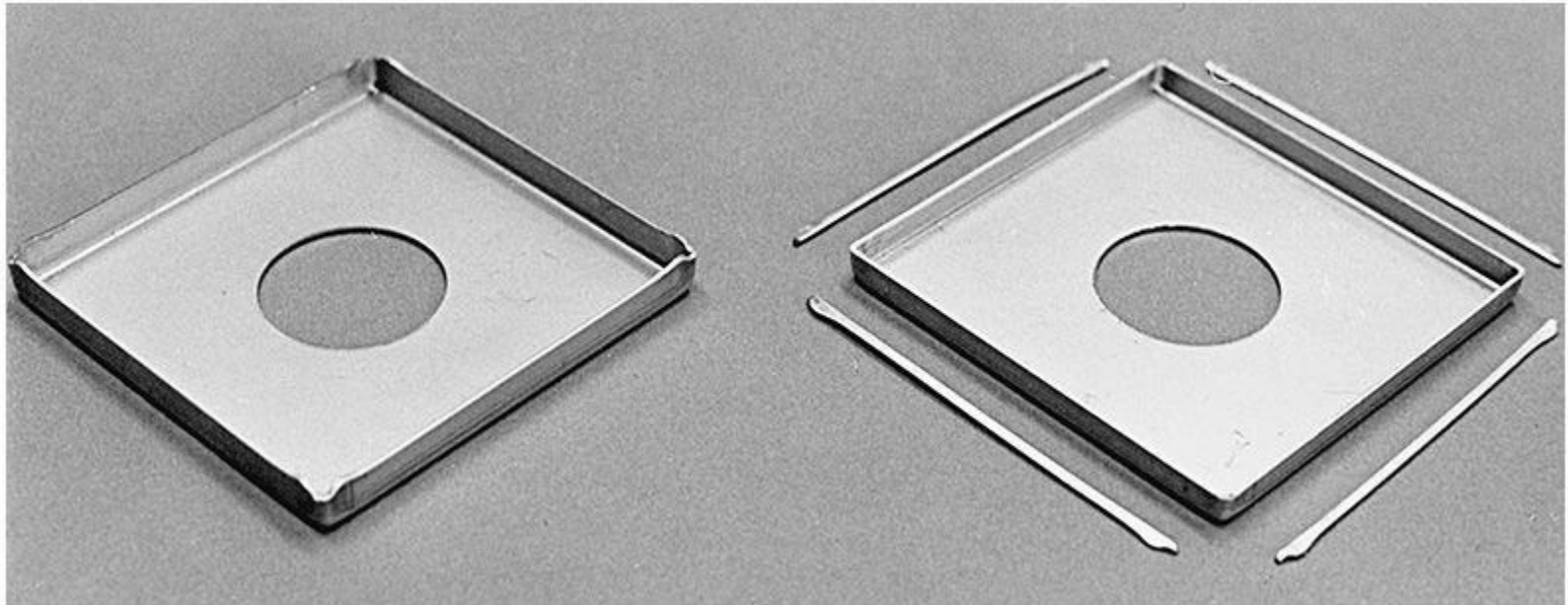
Deep Drawing



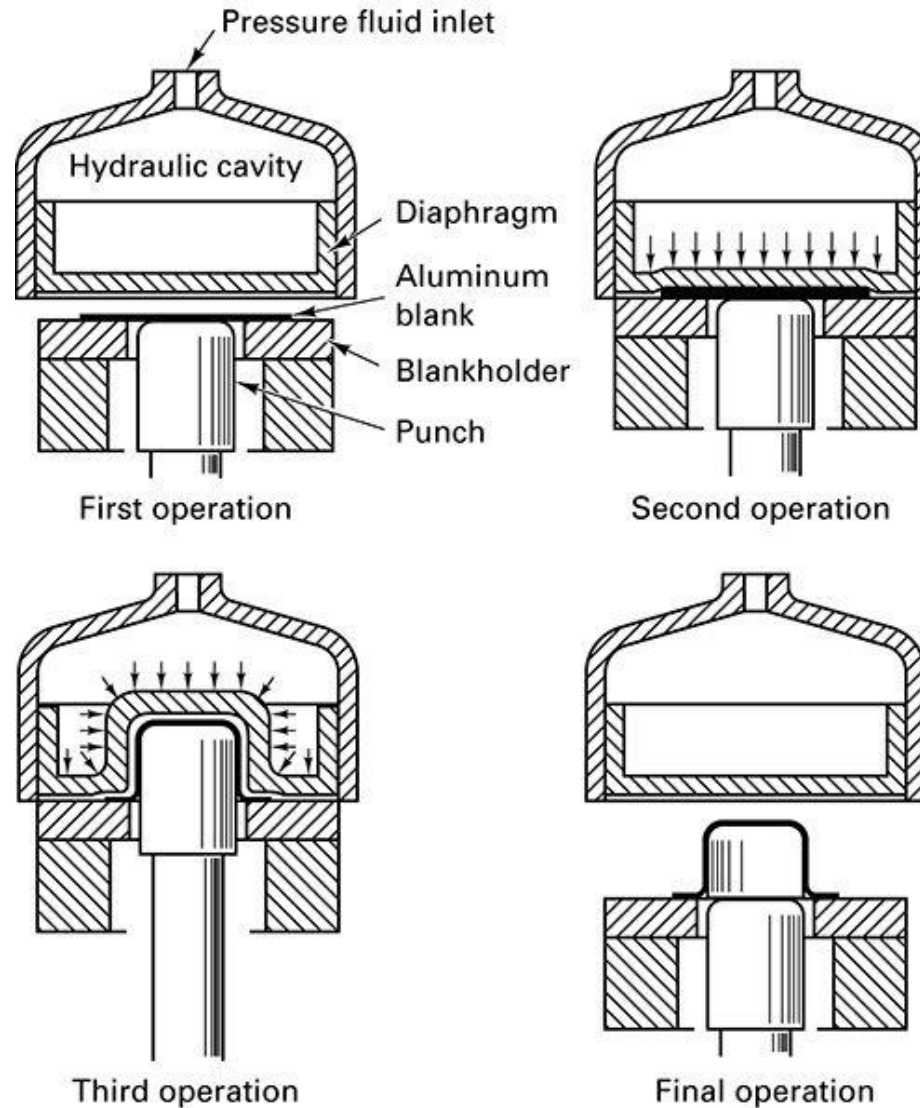
Metal Flow in Drawing



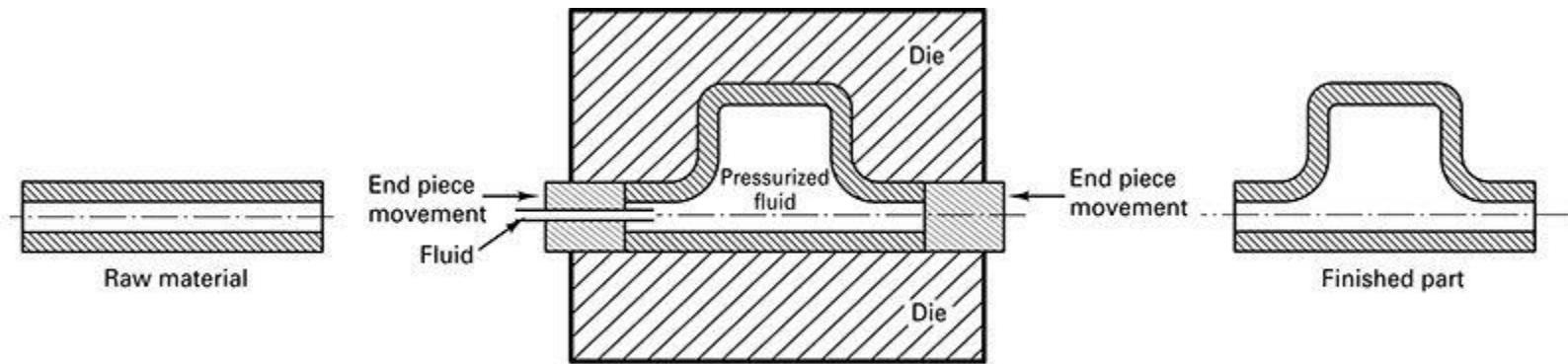
Piercing, Blanking, Drawing and Trimming



Hydroforming Sheets

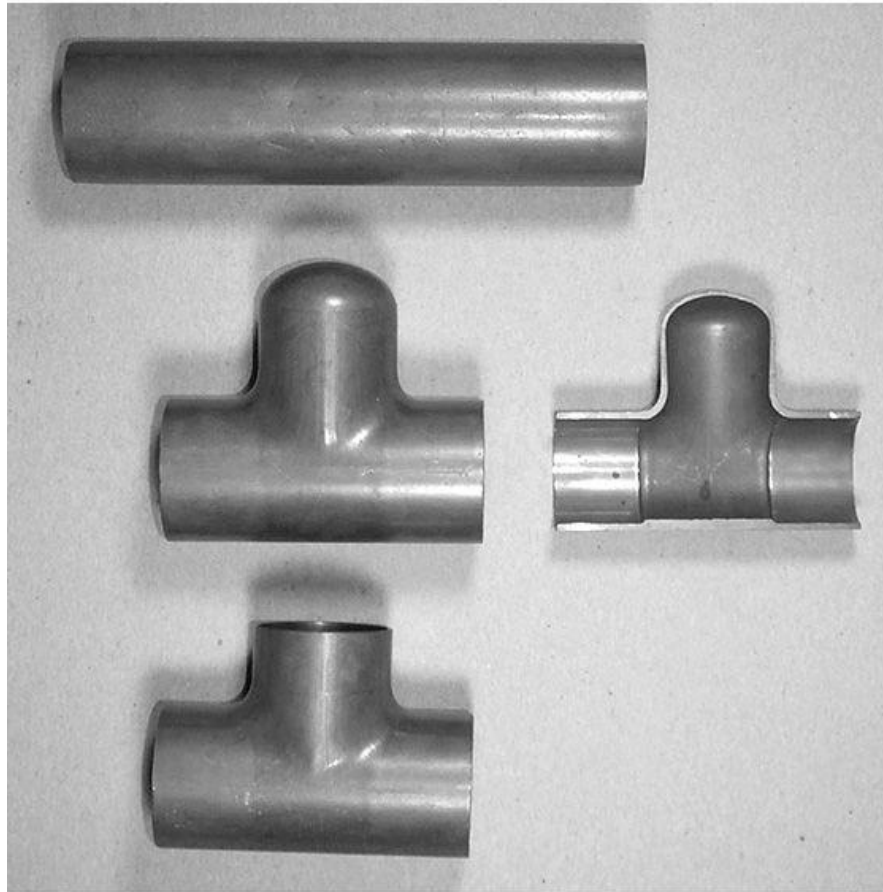


Hydroforming Tubes



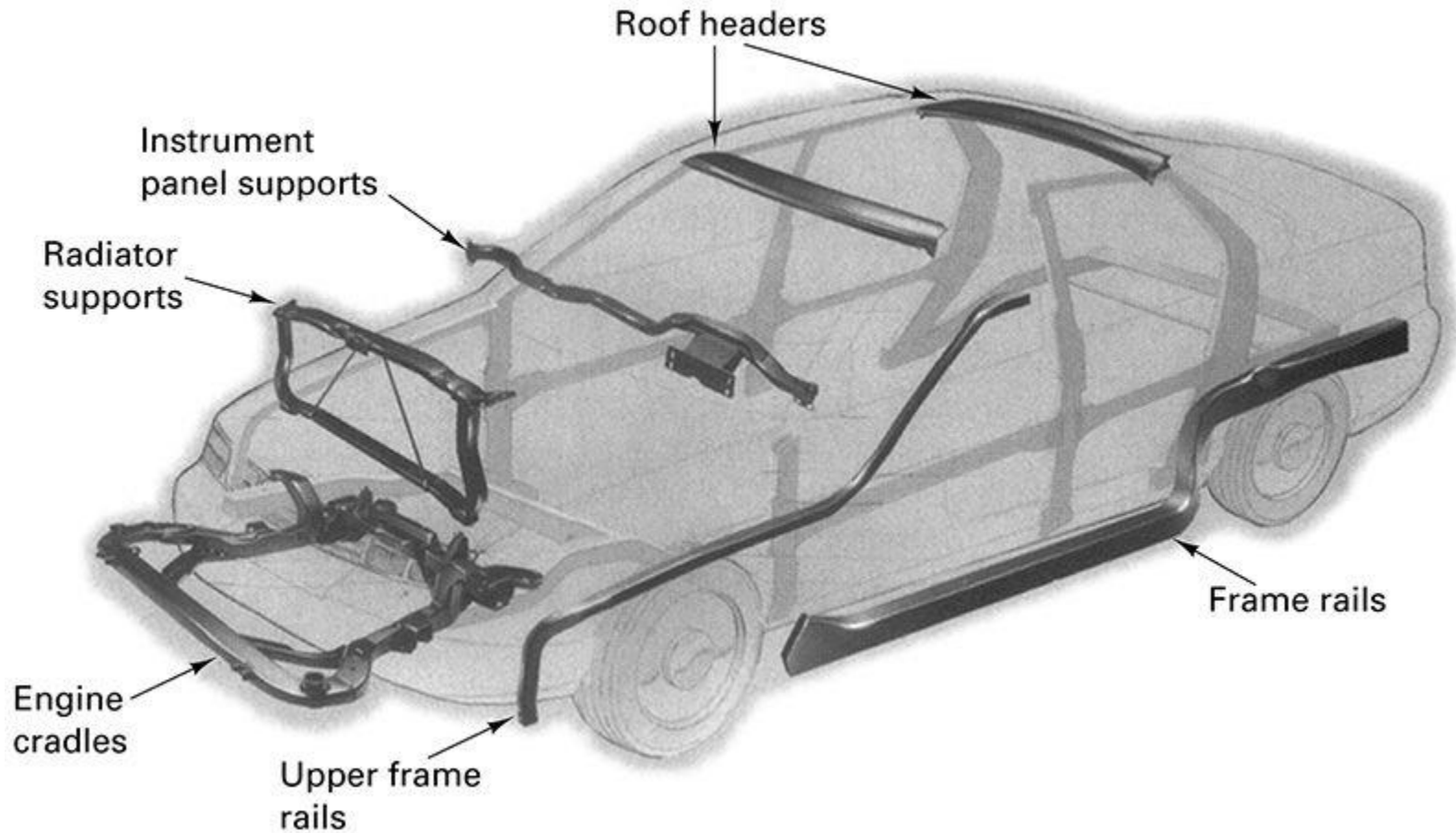
(a)

Cross-section of Formed Tube

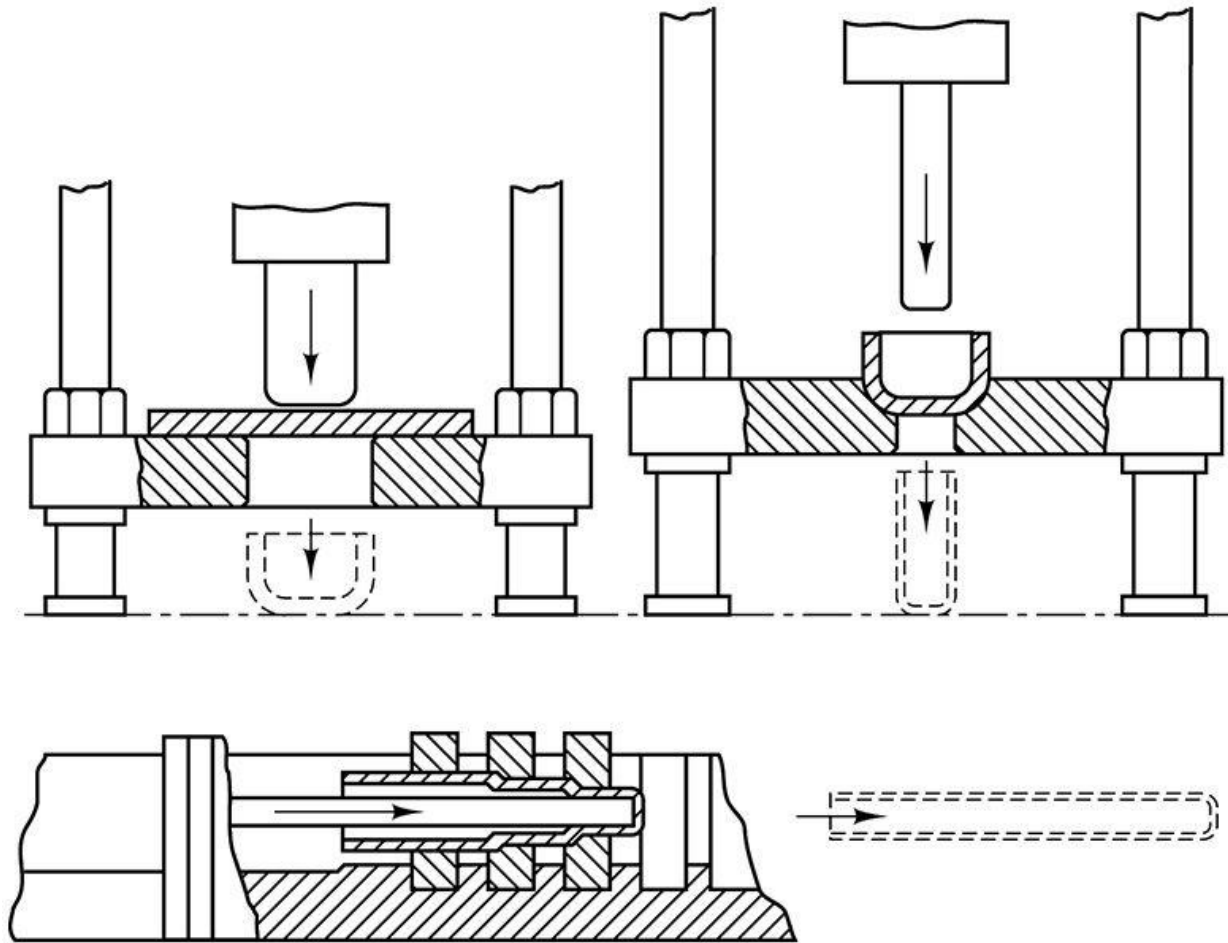


(b)

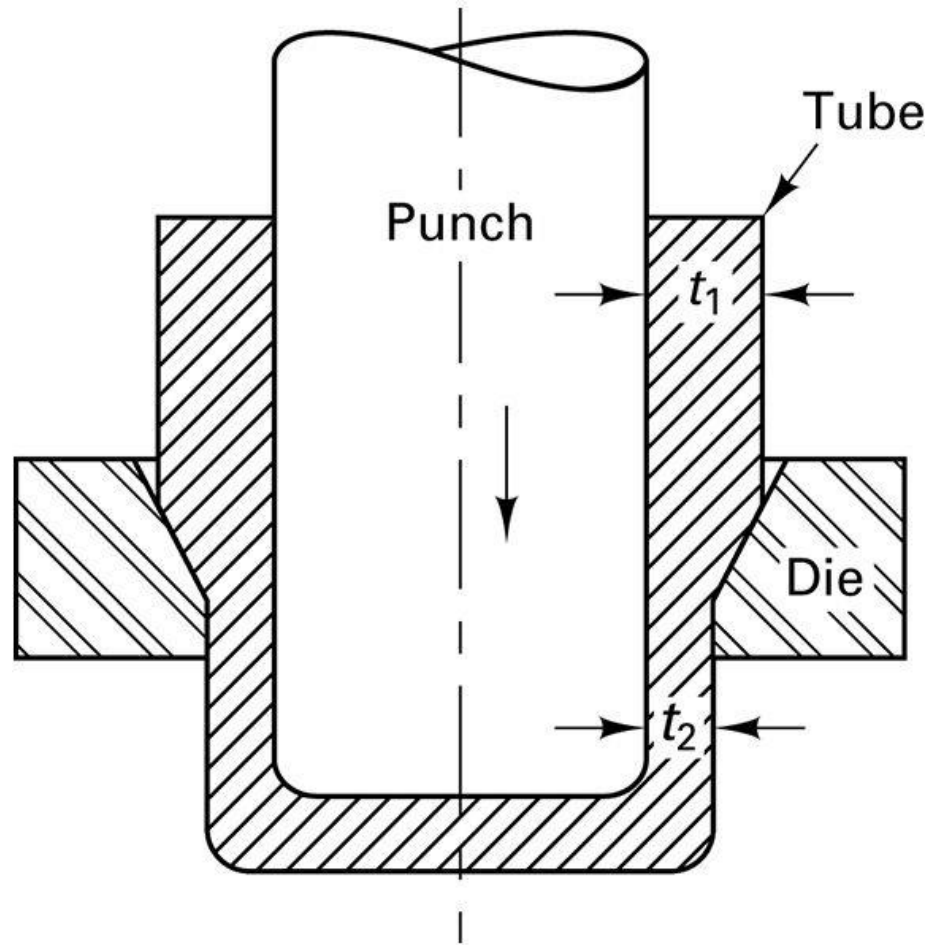
Formed Tubes in Auto Bodies



Hot Drawing



Ironing



Embossing

