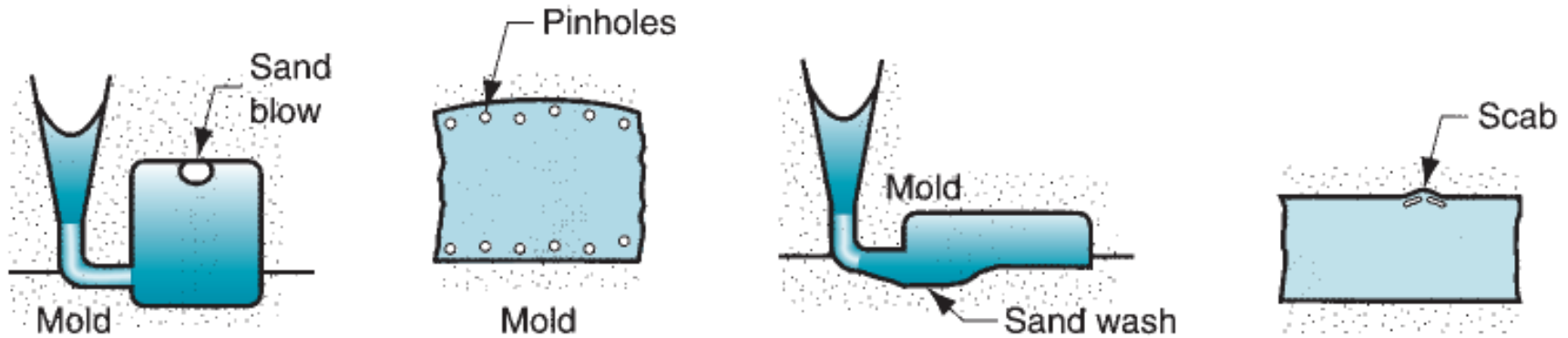


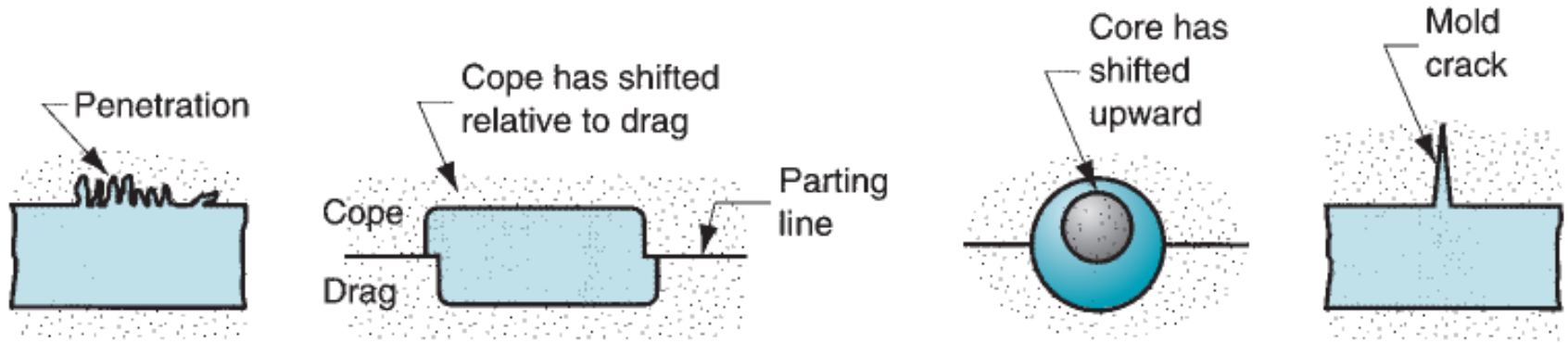
## Defects in sand castings



**Sand blow and Pinholes:** defect consisting of a balloon-shaped gas cavity or gas cavities caused by release of mold gases during pouring. It is present just below the casting top surface. Low permeability, bad gas venting, and high moisture content of the sand mold are the usual causes.

**Sand wash:** surface dip that results from erosion of the sand mold during pouring. This contour is formed in the surface of the final cast part.

**Scab:** It is caused by portions of the mold surface flaking off during solidification and gets embedded in the casting surface.



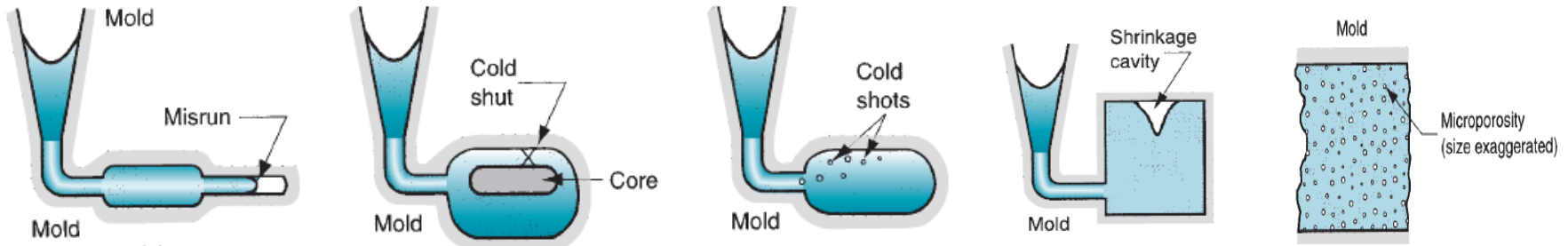
**Penetration:** surface defect that occurs when the liquid penetrates into the sand mold as the fluidity of liquid metal is high, After solidifying, the casting surface consists of a mixture of sand and metal. Harder ramming of sand mold minimize this defect.

**Mold shift:** defect caused by displacement of the mold cope in sideward direction relative to the drag. This results in a step in the cast product at the parting line.

**Core shift:** displacement of core vertically. Core shift and mold shift are caused by buoyancy of the molten metal.

**Mold crack:** 'fin' like defect in cast part that occurs when mold strength is very less, and a crack develops, through which liquid metal can seep.

## Common defects in casting



**Misruns:** castings that solidify before completely filling the mold cavity. This occurs because of (1) low fluidity of the molten metal, (2) low pouring temperature, (3) slow pouring, (4) thinner cross-section of the mold cavity.

**Cold Shuts:** This defect occurs when two portions of the metal flow together but no fusion occurs between them due to premature freezing.

**Cold shots:** forming of solid globules of metal that are entrapped in the casting. Proper pouring procedures and gating system designs can prevent this defect.

**Shrinkage cavity:** cavity in the surface or an internal void in the casting, caused by solidification shrinkage that restricts the amount of molten metal present in the last region to freeze. It is sometimes called as 'pipe'. Proper riser design can solve this problem.

**Microporosity:** network of small voids distributed throughout the casting caused by localized solidification shrinkage of the final molten metal.