

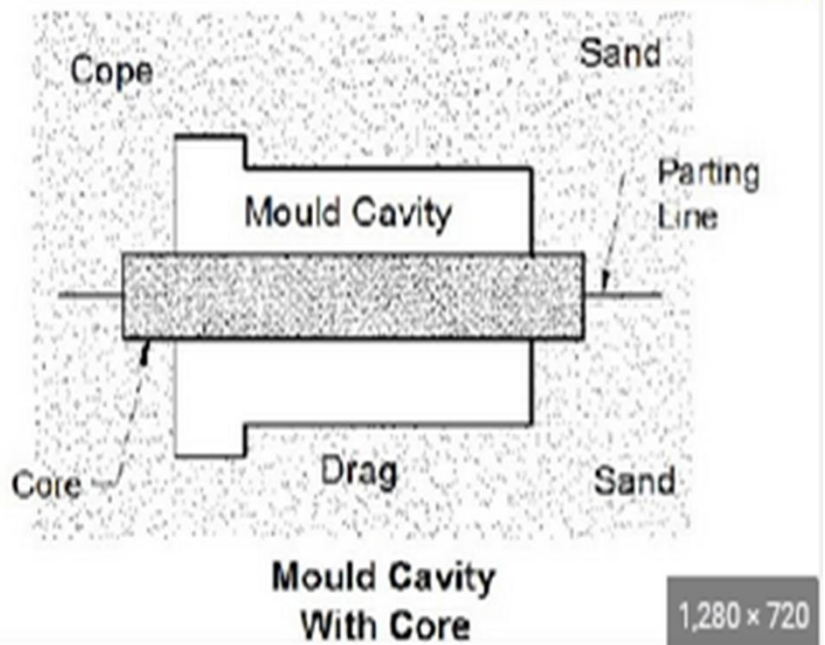
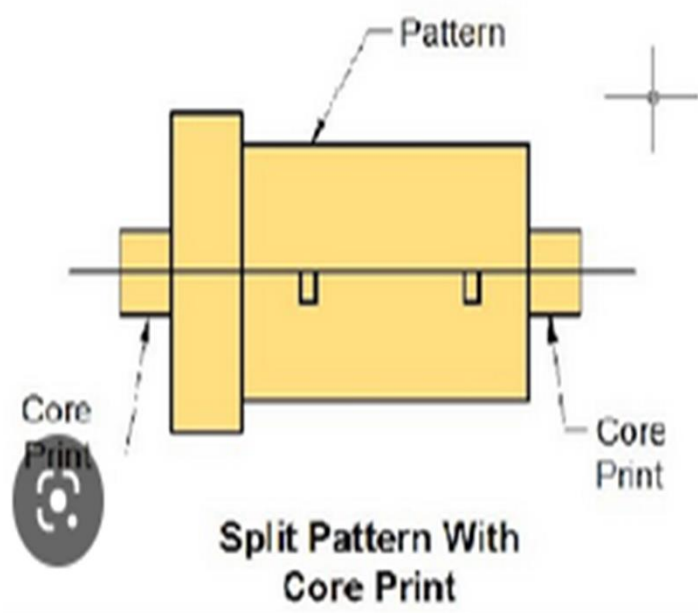
Machining or Finish Allowance

The finish and accuracy achieved in sand casting are generally poor and therefore when the casting is functionally required to be of good surface finish or dimensionally accurate, it is generally achieved by subsequent machining.

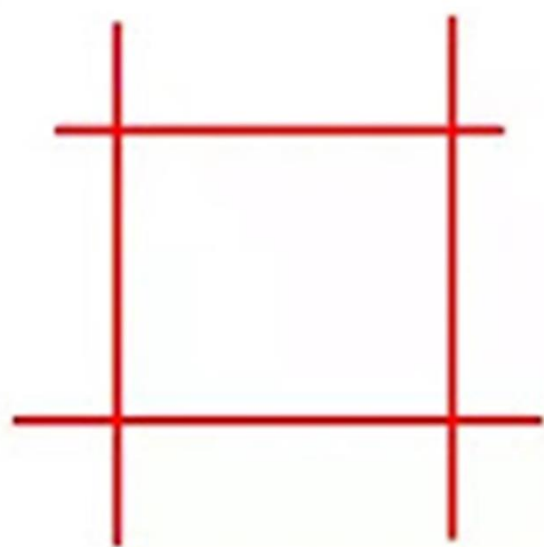
Machining or finish allowances are therefore added in the pattern dimension.

Core and Core Prints

- Castings are often required to have holes, recesses, etc. of various sizes and shapes.
- These impressions can be obtained by using cores.
- So where coring is required, provision should be made to support the core inside the mold cavity.
- Core prints are used to serve this purpose.



1,280 x 720



Before Machining



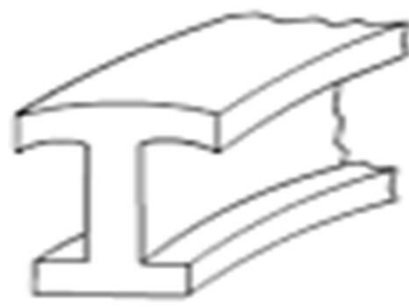
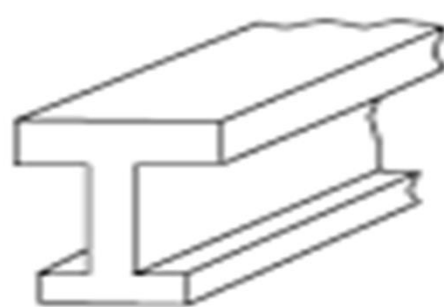
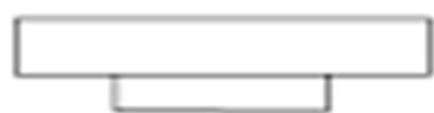
After Machining

The amount of machining allowance is also affected by the size and shape of the casting; the casting orientation; the metal; and the degree of accuracy and finish required.

Distortion Allowance

The distortion in casting may occur due to internal stresses. These internal stresses are caused on account of unequal cooling of different section of the casting and hindered contraction. Measure taken to prevent the distortion in casting include:

- Modification of casting design
- Providing sufficient machining allowance to cover the distortion affect
- Providing suitable allowance on the pattern, called camber or distortion allowance



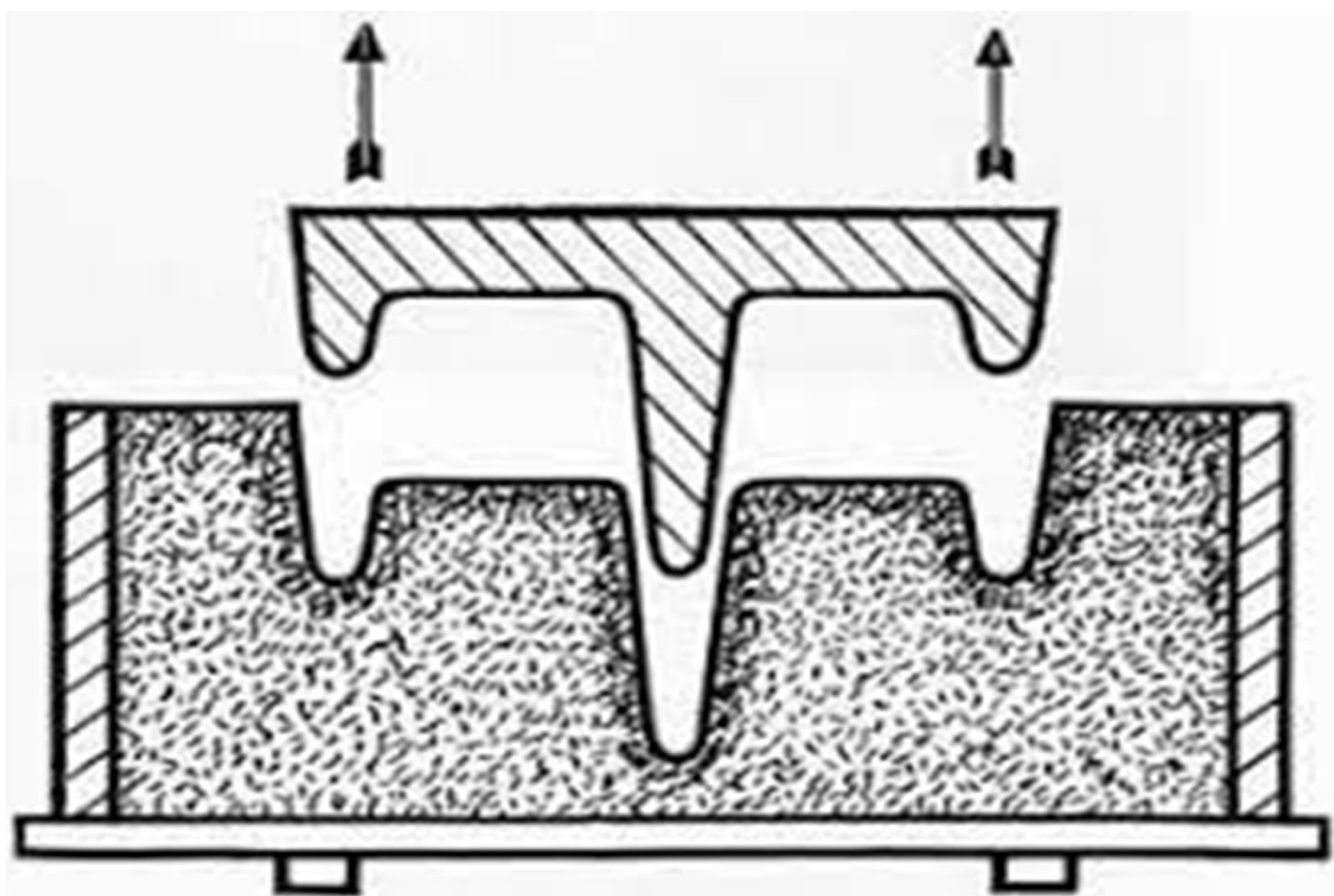
**Required Shape
of Casting**

**Distorted
Casting**

**Cambered
Pattern**

Rapping Allowance

- Before the withdrawal from the sand mold, the pattern is rapped all around the vertical faces to enlarge the mold cavity slightly, which facilitate its removal.
- Since it enlarges the final casting made, it is desirable that the original pattern dimension should be reduced to account for this increase.
- There is no sure way of quantifying this allowance, since it is highly dependent on the foundry personnel practice involved.
- It is a negative allowance and is to be applied only to those dimensions that are parallel to the parting plane.



Properties of Moulding Sand

Moulding sand is used in the foundry industry for mould preparation during metal casting. The properties of the moulding sand improve the casting metal's quality. When adequate sand is used, casting faults that may occur during the mould preparation and casting process is considerably reduced.