08/06/21

Welding.

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2K20/B17/33

The process of joining different metals:→

- **Arc Welding:** Process in which source of heat is electricity i.e. coalesence is brought about heating the workplace with an electric arc struck b/w an electrode and the work piece.

The filler material has similar composition & melting point temp. as the base metal. It is used to fill gap b/w the joint surfaces

- **Resistance Welding:** Process which is coalescence is produced by the heat obtained from resistance of the work to the flow of electric current in a circuit of which work is a part and by application of pressure

Practical Applications of Welding:

- ★ Aircraft Construction
- ★ Automobile
- ★ Pipings & pipelines
- ★ Ships
- ★ Repair of broken & damaged components of machinery
- ★ Bridges
- ★ Buildings
- ★ Storage tanks

Welding terminology

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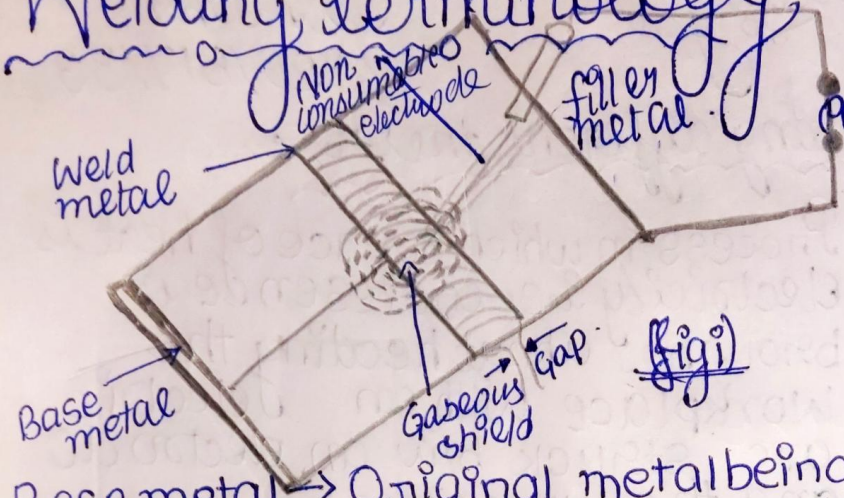

Fig(i)

Base metal → Original metal being joined.
Bead metal → Deposited Metal
Weld metal → Part of Base metal that has melted
Flux → Providing shielding to keep gases out.
Ripple → Shape of the bead.
Pass → Each layer of bead weld deposited
Crater → Depression in the base metal.
Penetration → Dept of fusion with metal
Arc Length → Distance from electrode to metal
Weldface → Exposed surface of weld.
Porosity → Voids of gas pockets in the weld.
Spatter → Metal particles expelled during welding.

Welded joints

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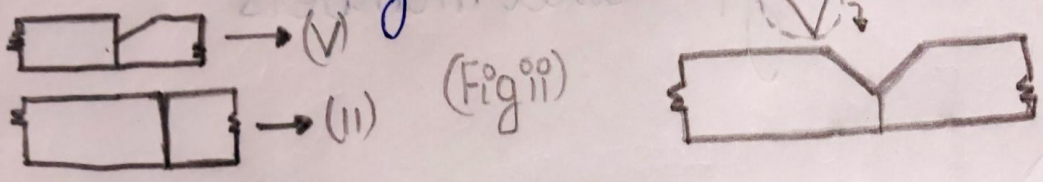
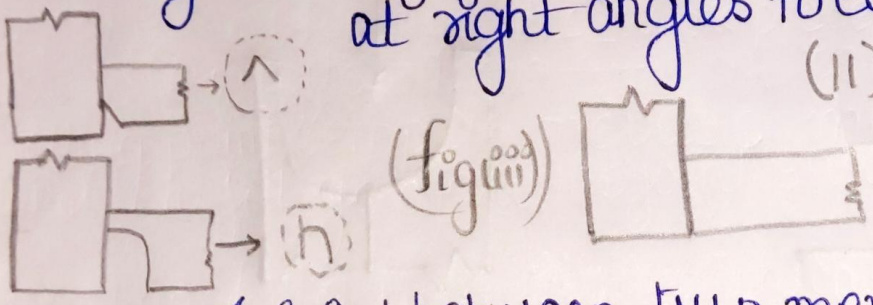
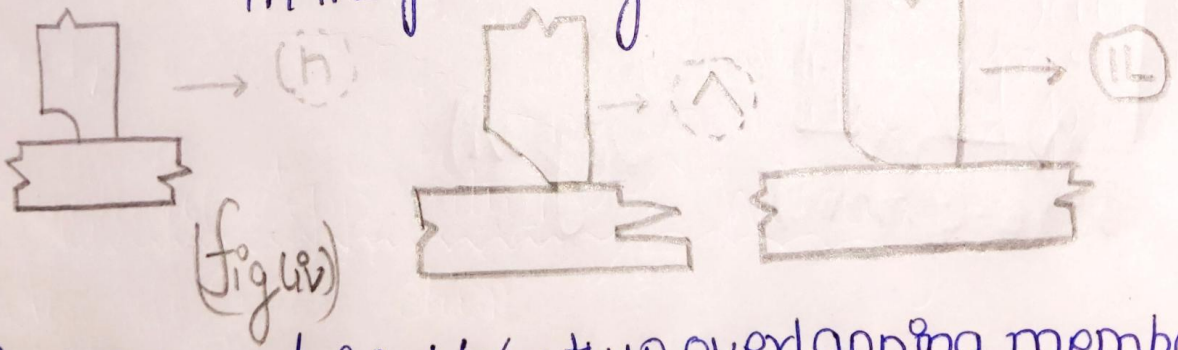
Butt joint = a joint b/w two members aligned appear in same plane



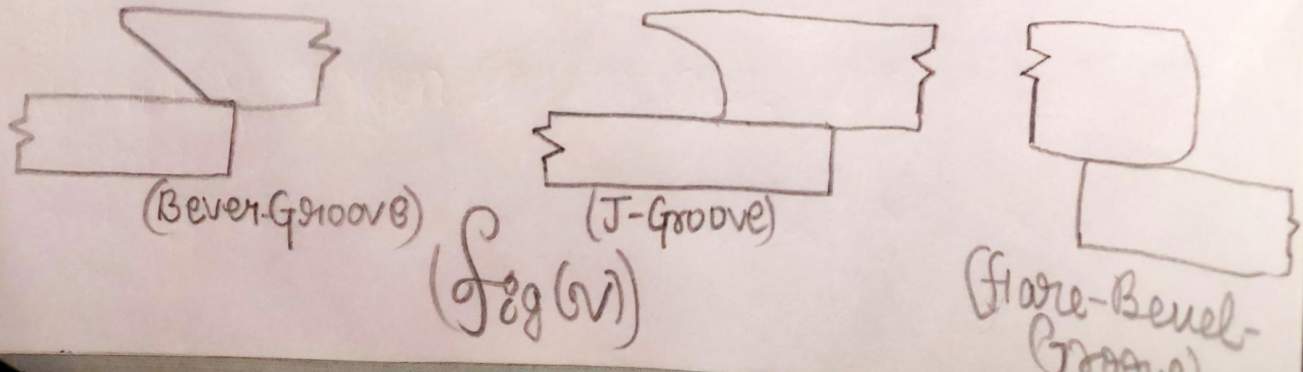
Corner joint = a joint b/w two members located at right angles to each other



T joint = A joint between two members located appear at right angles to each other in the form of T.



Lap joint = A joint b/w two overlapping members



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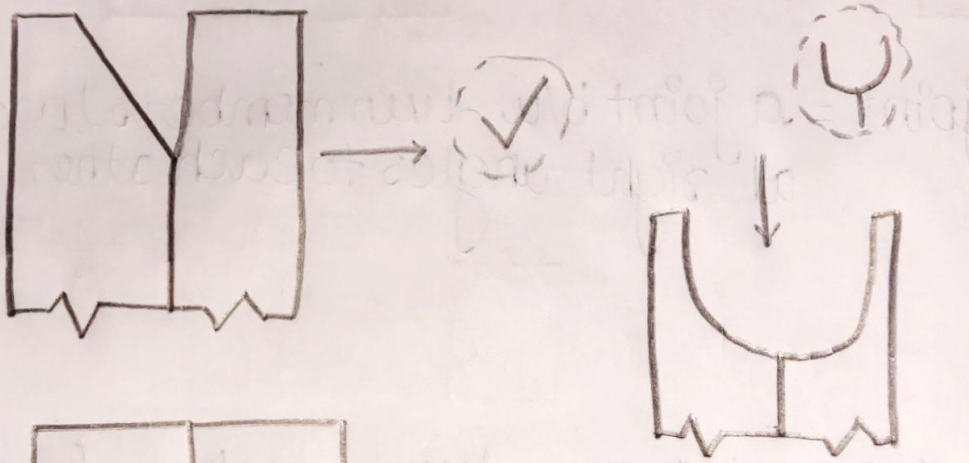
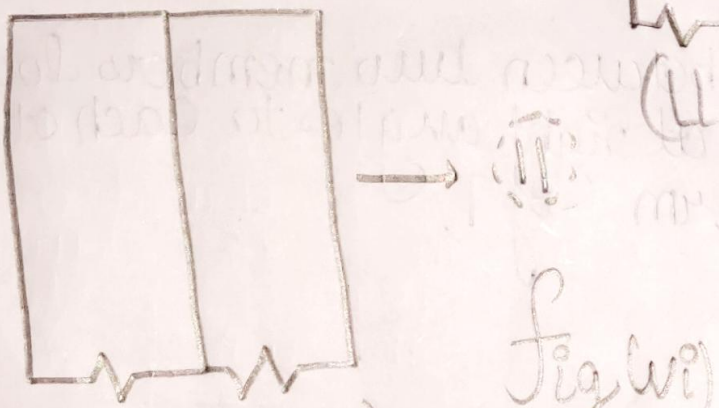
Edge joint = A joint between the edges of two or more parallel or nearly parallel members



(U-Groove)



(Square-Groove)

fig (vi)