

## UNIT 2

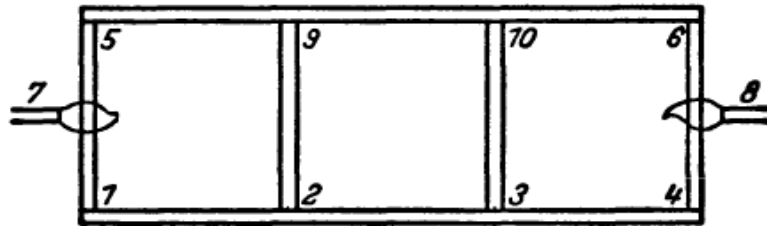
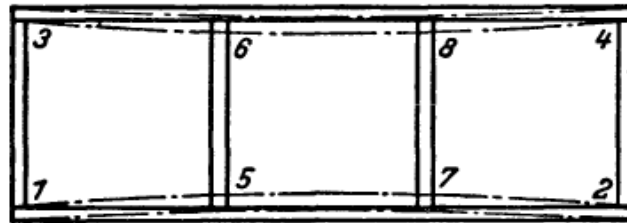
# ***WELDING SEQUENCE***

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## ***WELDING SEQUENCE:***

- ❖ The designer cannot begin to design successfully for welding until he appreciates the harmful effects of contraction stress and minimizes them by appropriate design methods.
- ❖ Unintelligent assembly may result in the setting up of severe contraction stress so that the work distorts.
- ❖ For this reason, the designer must consider the most favorable welding sequence to adopt and inform the workshop accordingly by means of a suitable plan.

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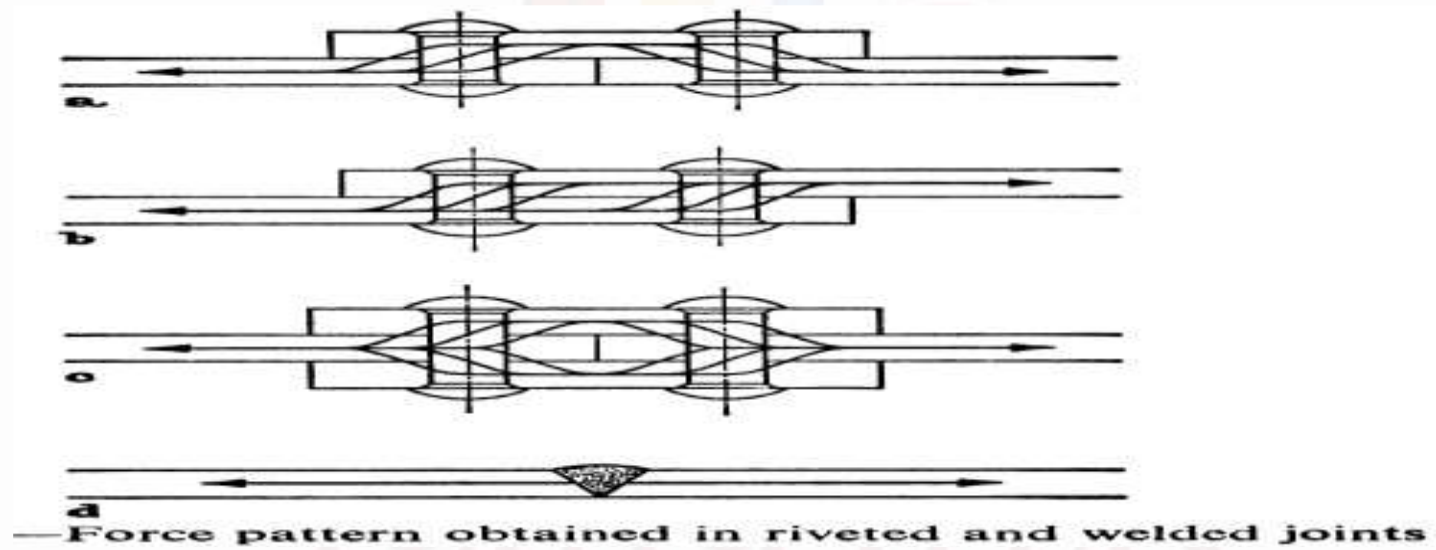
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## FORCE TRANSMISSION WELD:

- ❖ *For* many applications welding has superseded riveting. The reason for this is easy enough to understand when one stops to consider just how ideal are the joining methods offered by welding compared with riveting
- **EXAMPLE:**The joining together of two fiat steel bars subjected to a tensile load can be done in three ways by riveting.

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*Fig.9*

# *Joints used in welding*

- **Corner joints:** The types of corner joint shown in fig. *a* and *b* are used only with gas welding processes, whilst *c* and *d* require fitting and thereby differ from *e* and *f*.
- Types *c*, *e*, *g*, *h*, *i*, and *k* are not strong when subjected to bending.
- Types *i* and *k* are forms of edge weld used for sheet under 3mm thick.

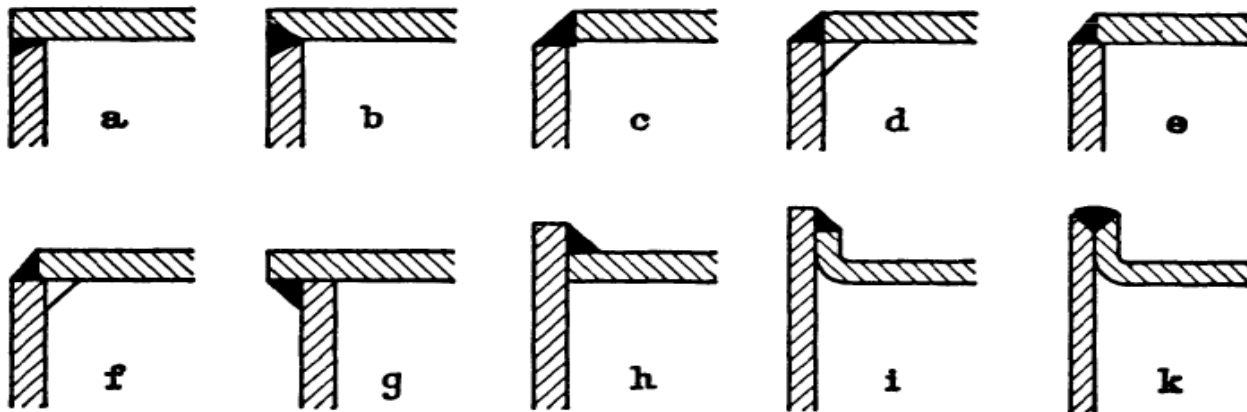
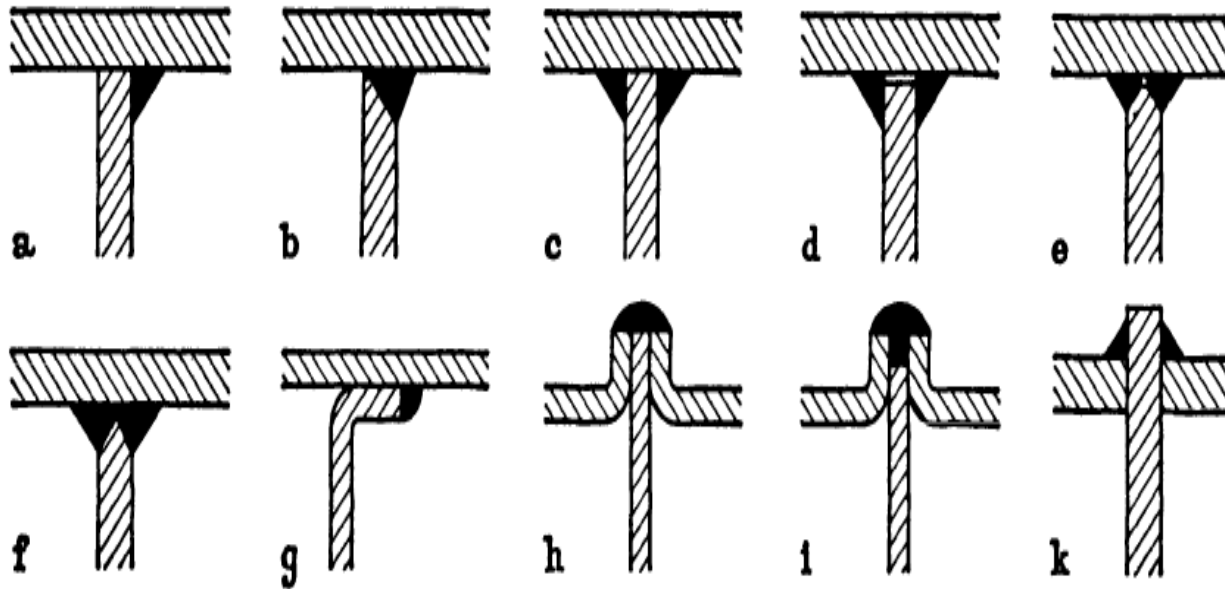


fig.10

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- **Single T and H joints:** The type shown in fig 140a is a corner joint made with a fillet weld.
- A better version is *b* because the weld form acts like a butt weld.
- Types *c* and *d* are good, but *e* and *f* are the best from the strength point of view.
- Type *g* is used only when joining a thin sheet to a thicker one.
- Types *h* and *i* are edge welds with an intermediate thin sheet.

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*Fig.11*

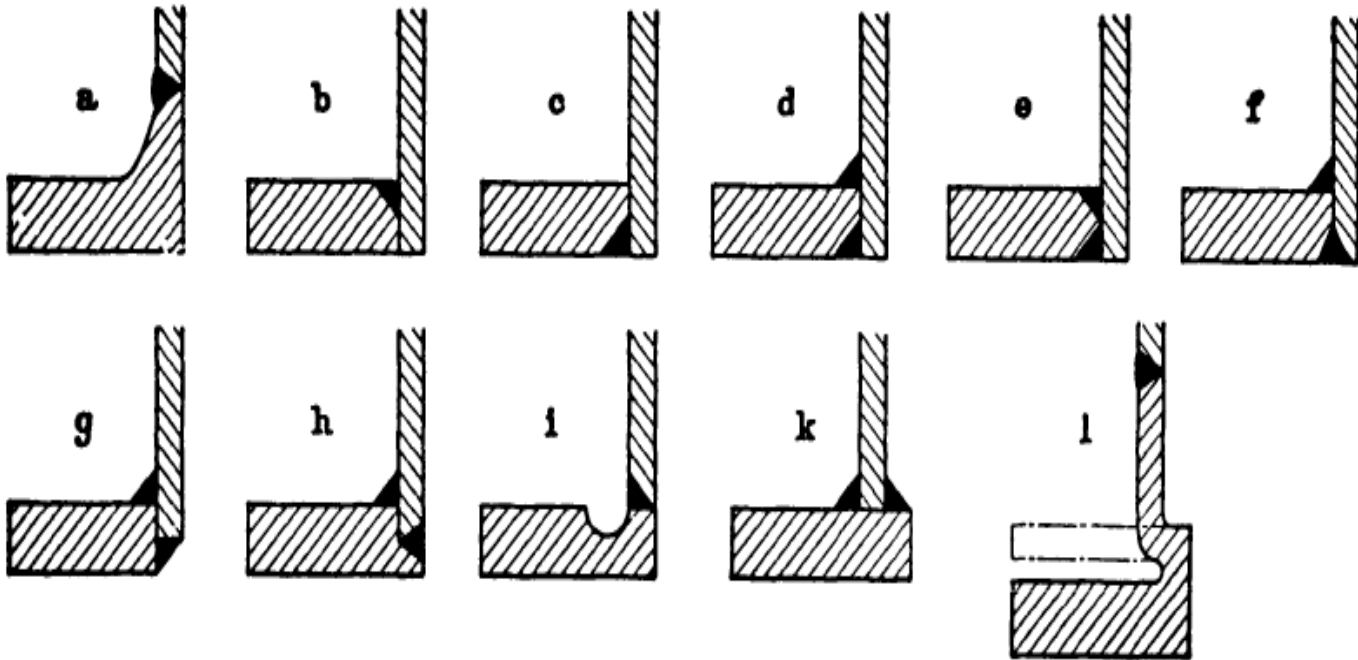


# ***CONTD.***

*The type shown in fig a is certainly the best, but is expensive.*

- types band c are suitable only for light loading.
- Examples *d, e, f, g, and h* offer good strength.
- Type *i* is suitable for gas welding.
- Types *k* and *l* are used for connections to tube plates.

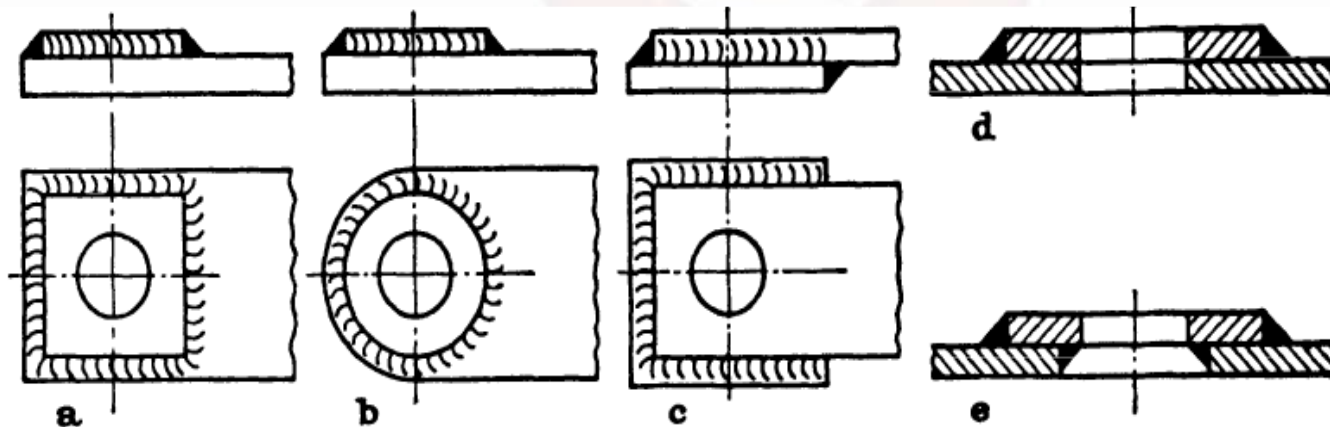
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*Reinforcement* is made by the methods shown in fig *d* and *e*; *a*, *b*, and *c* are methods of fabricating eyes and bosses by welding.



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## **REFERENCE BOOKS**

1. Boothroyd, G., (1994), Product Design for Manufacture and Assembly, Marcel Decker, ISBN- 978-1-420-08927-1.
2. Bralla, J.G., (1999), Design for Manufacturability Handbook, McGraw-Hill. ISBN- 978-0-070-07139-1.