Bangladesh University of Engineering and Technology

ME 174(CSE):

MECHANICAL ENGINEERING DRAWING

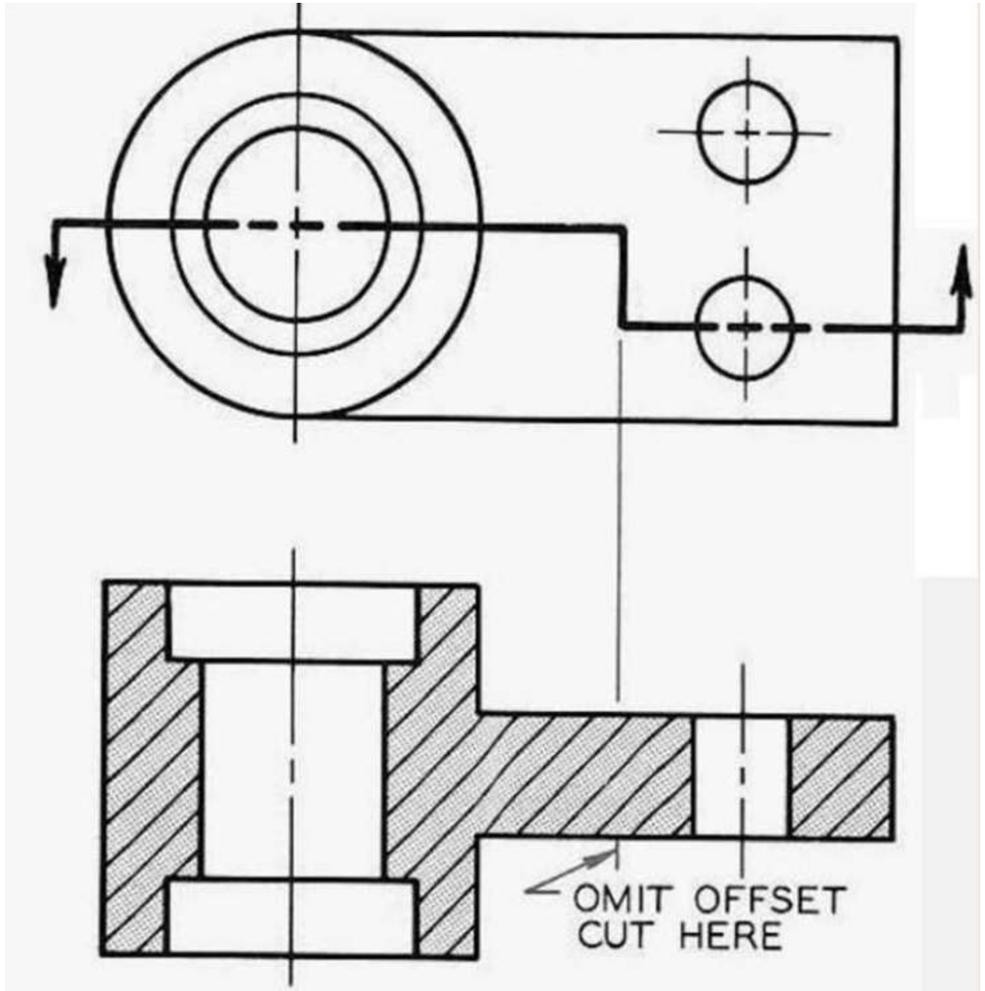
Course Teachers:

Shahriar Alam, Assistant Professor

Taslima Hossain Sanjana, Adj. Lecturer

Department of Mechanical Engineering, BUET

Sectional View



Definition

- A sectional view is what is seen beyond the imaginary cutting plane through an object at right angles to the direction of sight.
- The exposed or cut surface is identified with the help of section lining or cross-hatching.

Purpose

The external features of an object can be shown fully in Orthographic Views.

- However, the internal details can not be clearly shown through hidden lines.
- The Internal details of complex machine parts can be shown by cut-away sections or views

Sectional Plane

•The Object is assumed to be cut by one or more Planes, usually parallel to the Principal Planes.

Types of Sections

- Full Sectional Views
- Half Sectional Views
- Offset Sectional Views

Full Sectional Views

The cutting plane cuts the part into two halves.

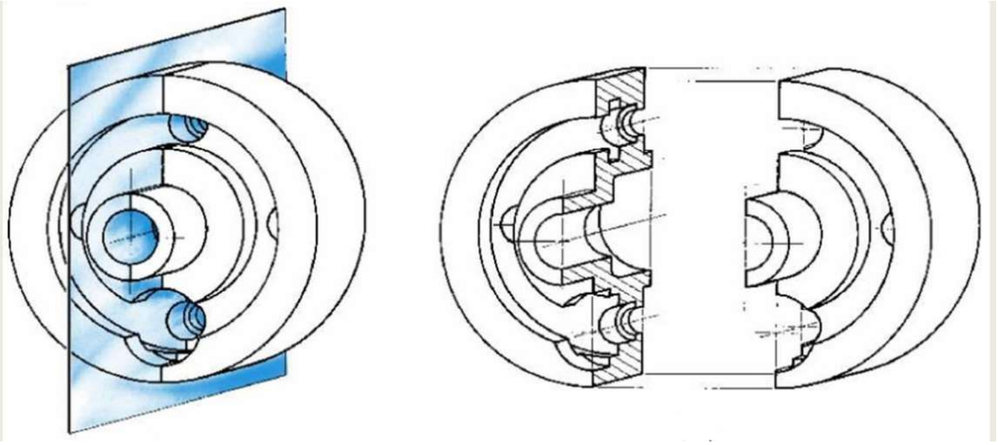
Half Sectional Views

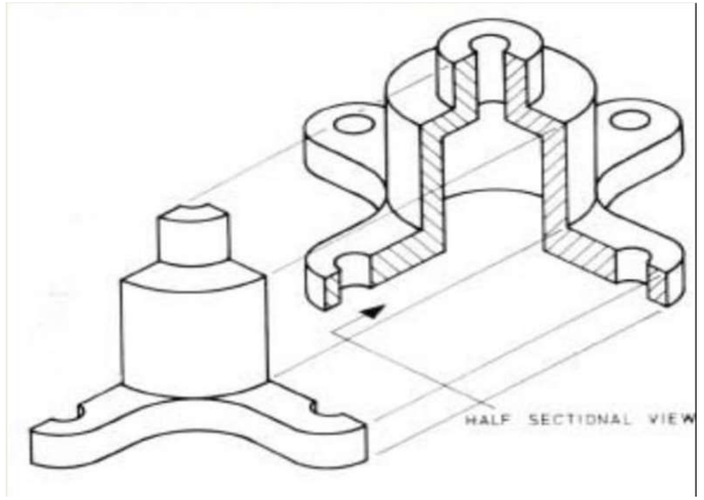
A Quarter of the object is removed
(or Half of the view is sectioned)

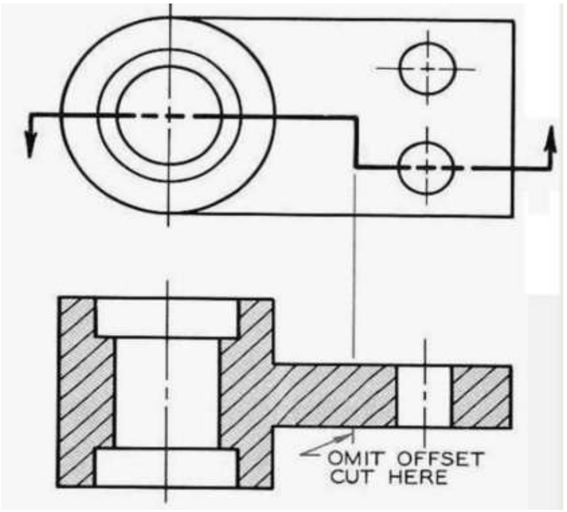
Offset Sectional Views

Several features of an object that do not lie in a straight line.

- Such features can be shown by “offsetting” or bending the cutting plane.
- The section is then called an **OFFSET SECTION**

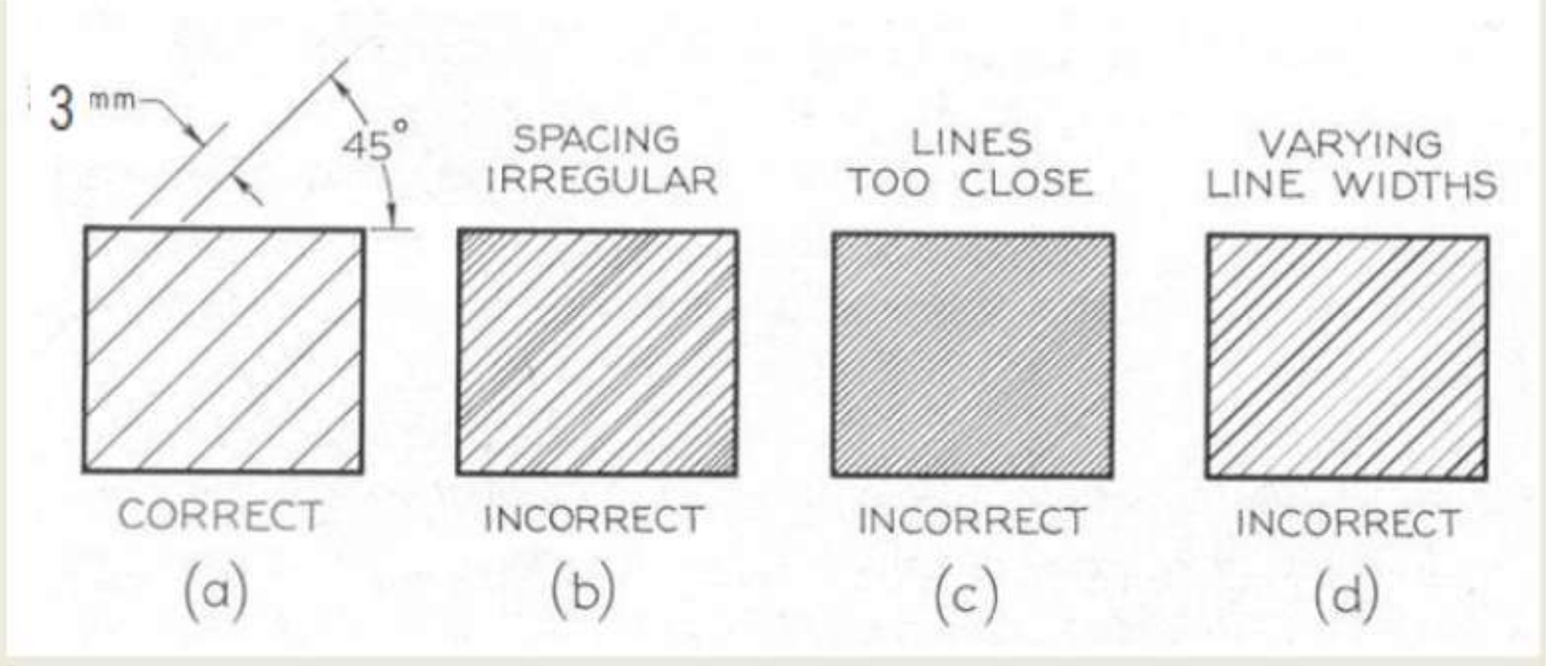


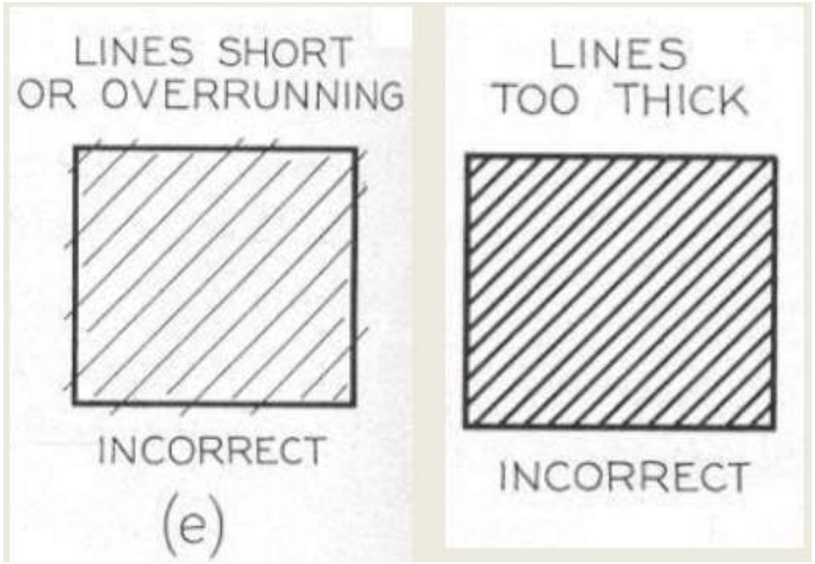




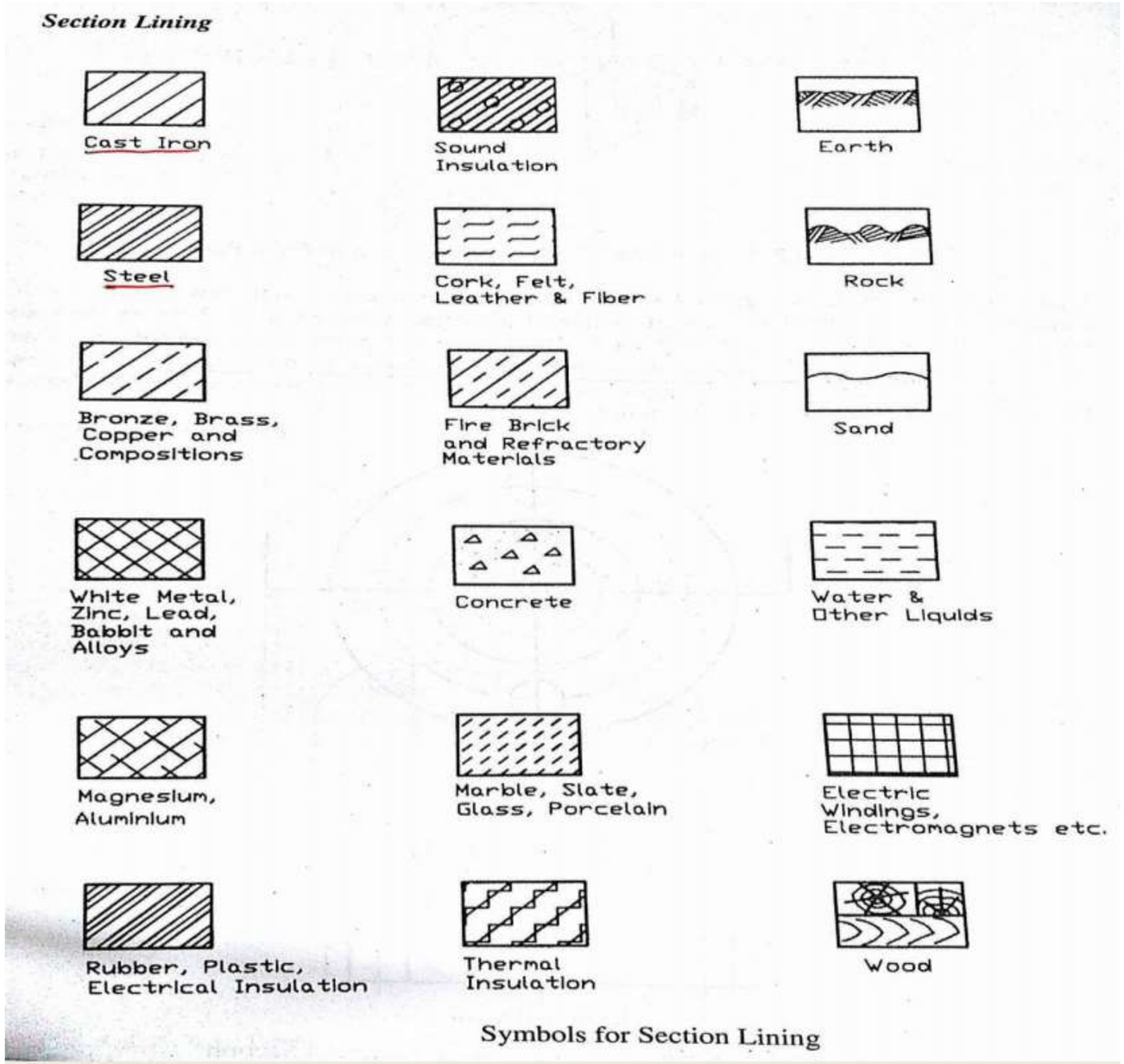
Hatch Line

- Material that has been cut by the cutting plane is hatched.
- Dimensions are NOT inserted in hatched areas.





Hatch Line



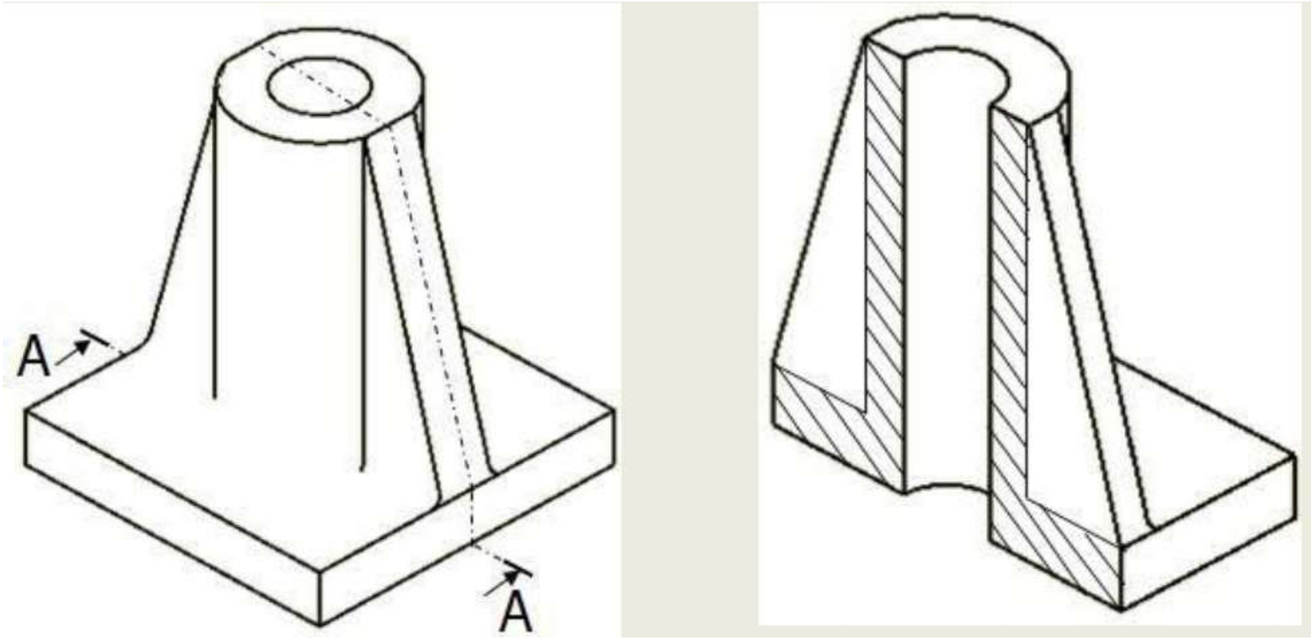
Symbols for Section Lining

Dimensioning

- Object Line: 100% thick
- Hidden Line: 50% thick
- Dimension, Extension Line: 25% thick
- Center Line: 50% thick
- Cutting Plane Line: 125% thick
- Hatchet line:25% thick

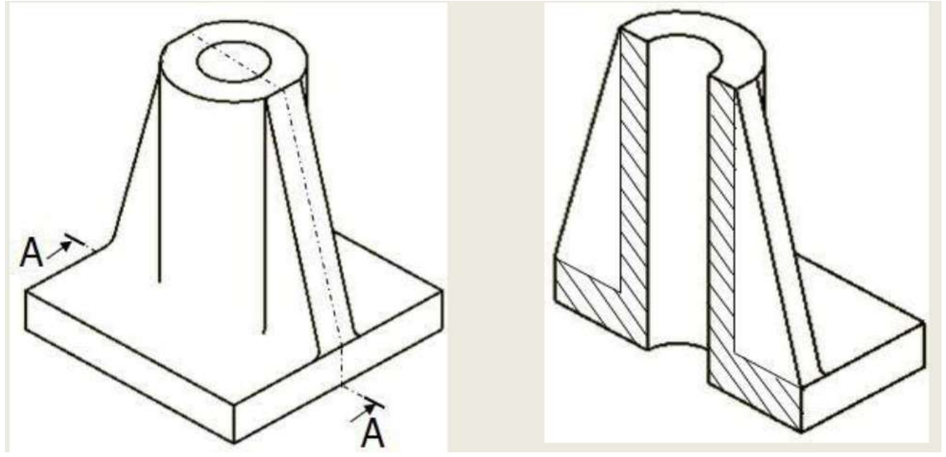
Parts should not be sectioned!

When the cutting plane passes through Thin features such as rib or a web, shafts, keys & splines, nuts, bolts & rivets - such parts are not sectioned.



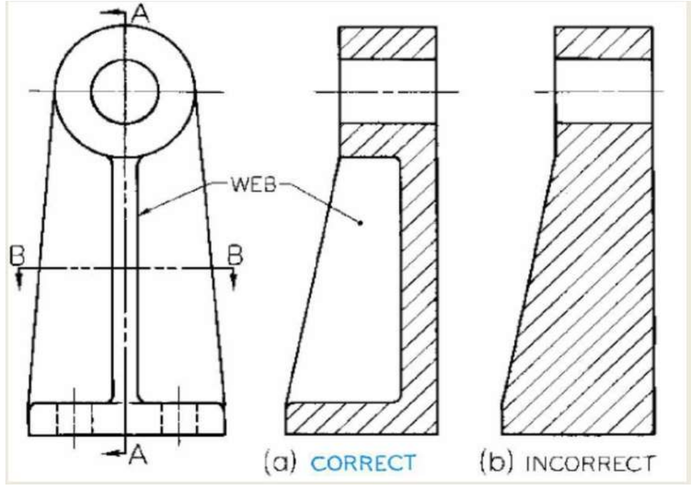
What is RIB?

Ribs and webs are often used in Molds and castings. In plastic parts, they are commonly used to create rigidity and to prevent warping (buckling).



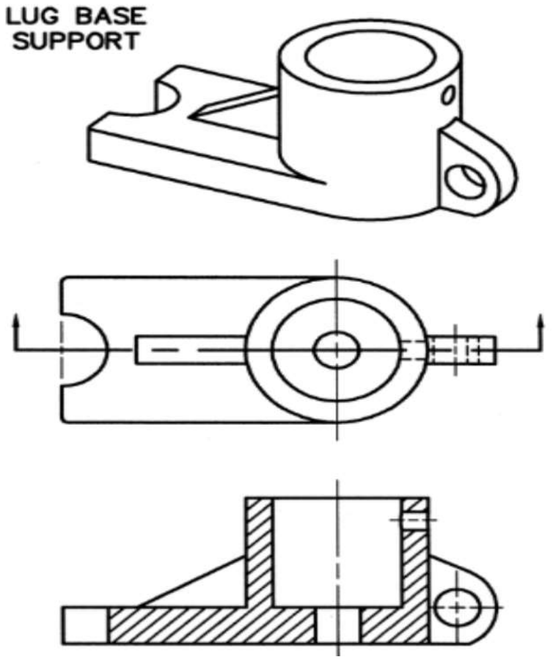
What is WEB?

Ribs and webs are often used in Molds and castings. In plastic parts, they are commonly used to create rigidity and to prevent warping (buckling).



What is LUG?

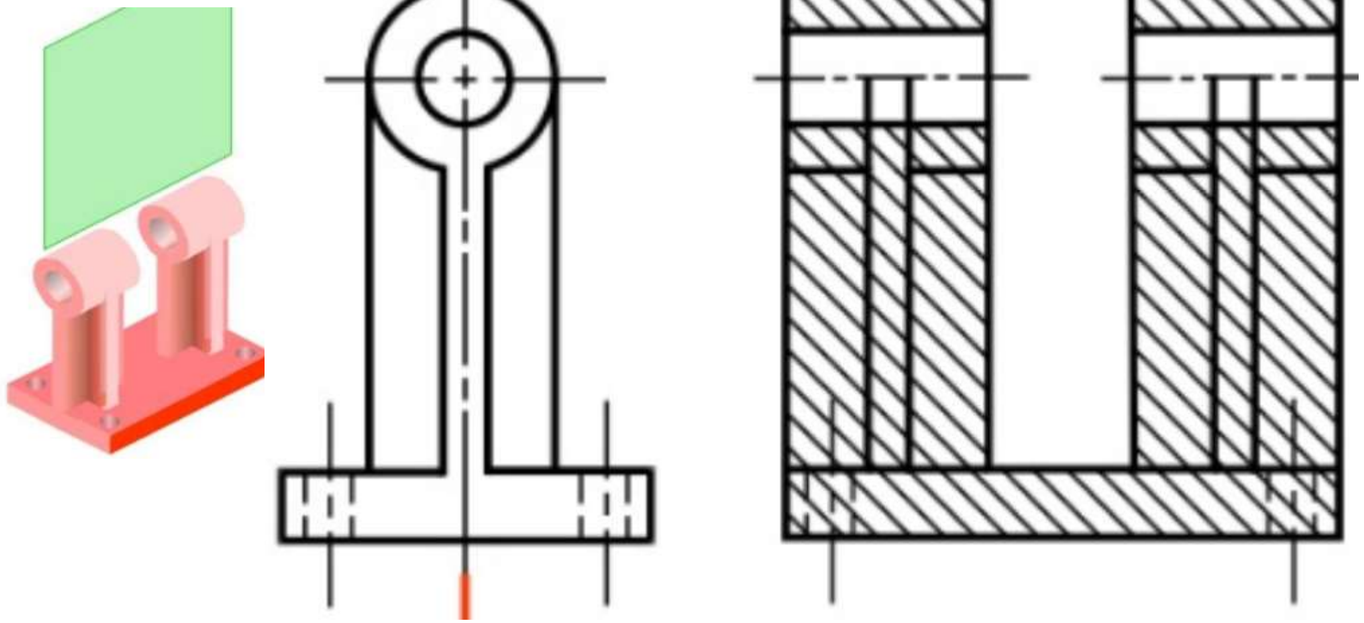
Lug is an ear that is built as part of an object for attachment.



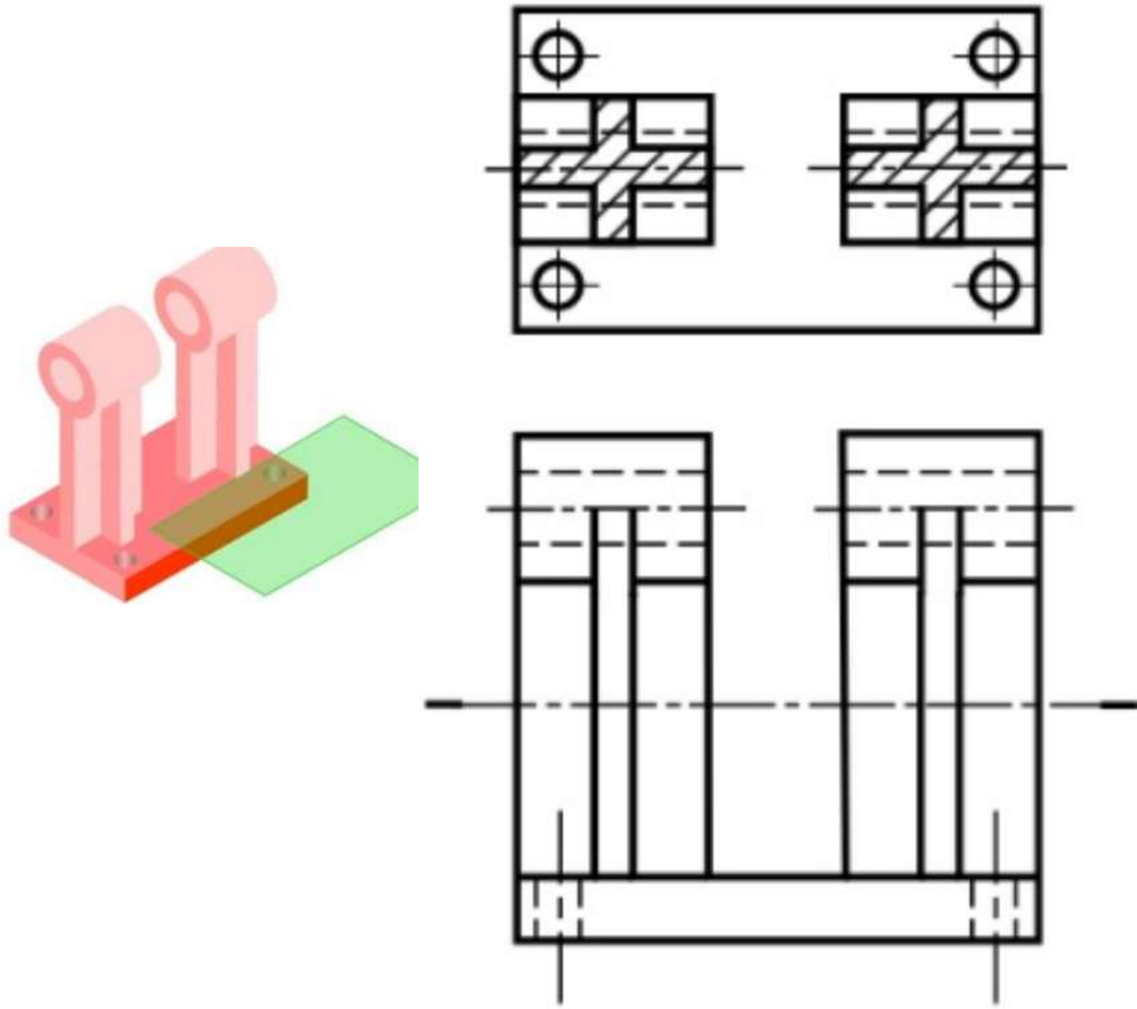
Conventional Practice

Omit the section lines on the sectional view if the cutting plane is passed flat wise through (for Rib, Web, Lug)

Web: Flat Wise Cut



Web: Cross Wise Cut



THANK YOU