SECTIONING AND SECTIONAL VIEWS

Definition and importance of Sectional Views

Drawing of sectional views

Cutting plane line

Section Lines

Types of Section Views

Some Conventions in Sectioning

SECTIONING AND SECTIONAL VIEWS

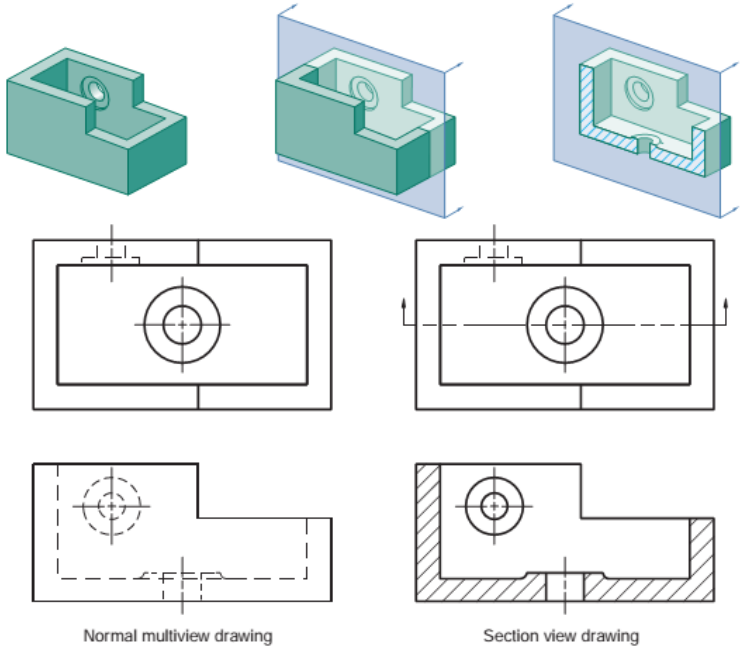
- Orthographic drawings can sometimes be very difficult to visualize and dimension, especially if they are for complicated objects.

- To improve clarity and reveal interior features of objects Section Views of the objects are sometimes drawn.

- Sectional drawings are multiview technical drawings that contain special views of a part or parts, views that reveal interior features that are not easily represented using hidden lines.

- They are created using a technique that is based on passing an imaginary cutting plane through a part such that, upon removing the cut section, the hidden interior features (details) are revealed.

SECTIONING AND SECTIONAL VIEWS



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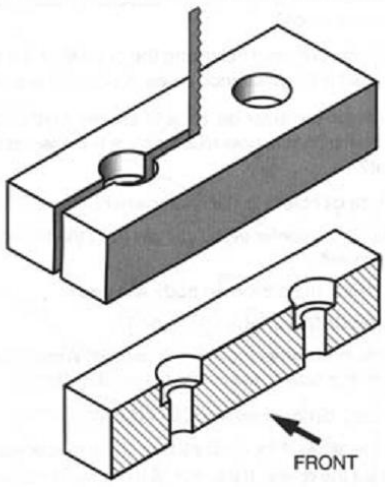

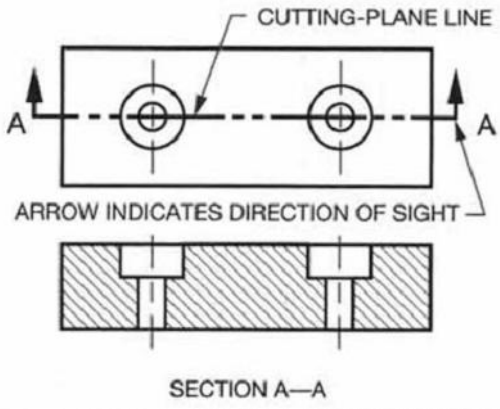

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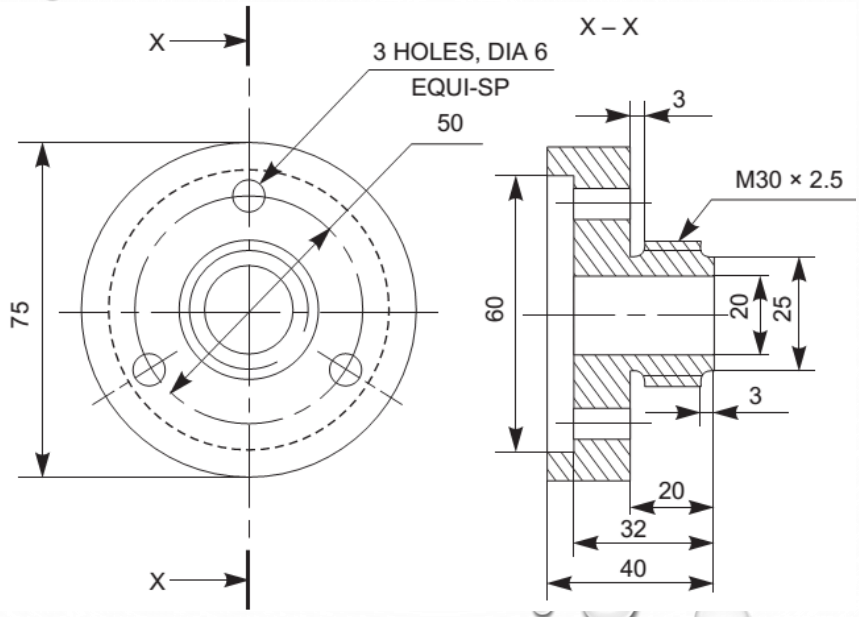


SECTIONING AND SECTIONAL VIEWS

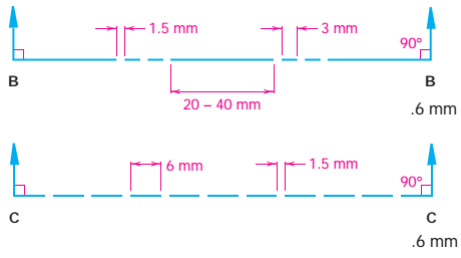
Drawing Sectional View.

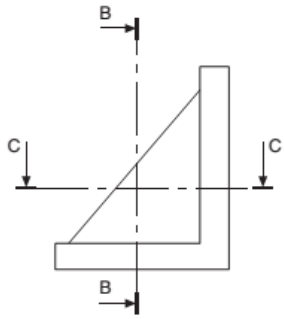
- Draw projections of the complete solid.
- Indicate the cutting plane on the appropriate view using the cutting plane line.
- Visualize and draw the view that will be revealed by the cutting plane.
- Section lines can then be added to the appropriate areas in the obtained view.

SECTIONING AND SECTIONAL VIEWS

Cutting plane line

- The cutting plane line is used to indicate the position of the cutting plane when drawing sectional views.
- The cutting plane lines are thick broken chain lines, or thin broken lines that are thick at the ends.





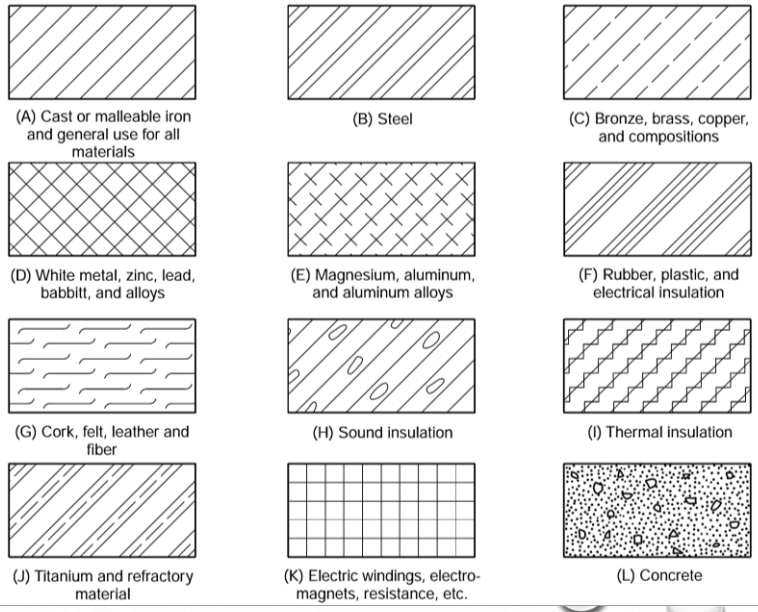
SECTIONING AND SECTIONAL VIEWS

Section/Hatch/Cross-hatch Lines

- These are added to a section view to indicate the surfaces that are cut by the imaginary cutting plane.
- Different section lines exist to denote different materials.
- A standard section line can however be used in practice. This is the general-purpose cast iron section line.
- Cast iron section lines are normally drawn at 45 degrees to the horizontal within area being hatched.
- Individual lines are between 1.5 mm and 3.0 mm spaced (according to ANSI standards)
- Section lines are thin lines.

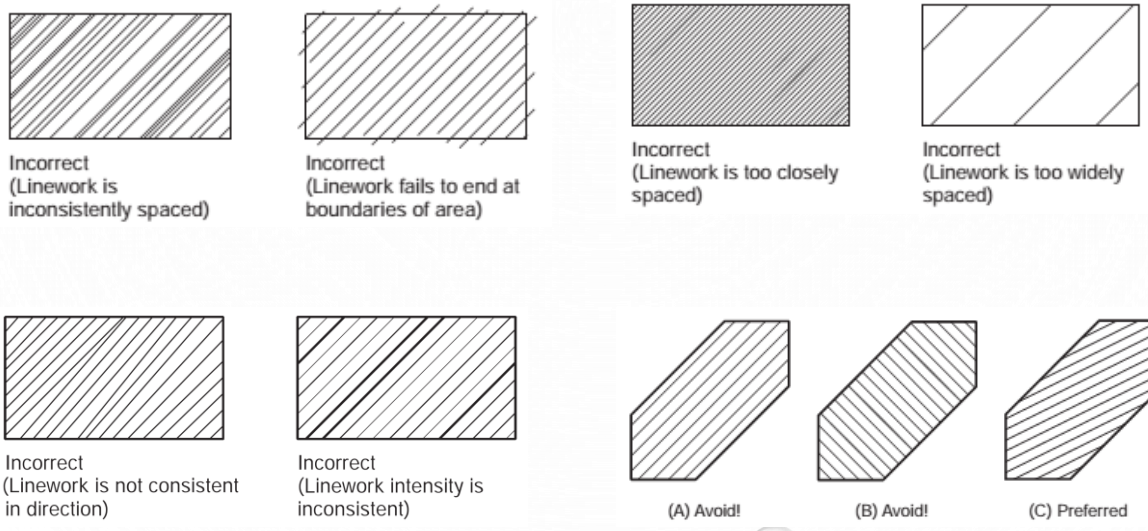
SECTIONING AND SECTIONAL VIEWS

Section/Hatch/Cross-hatch Lines



SECTIONING AND SECTIONAL VIEWS

Section Lining Techniques



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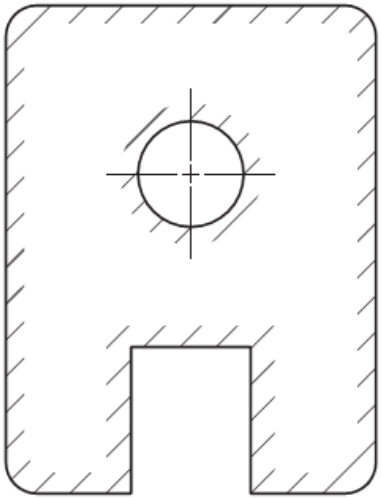
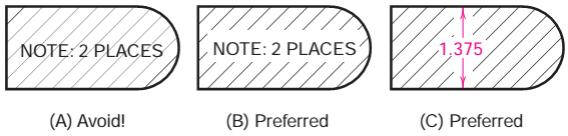
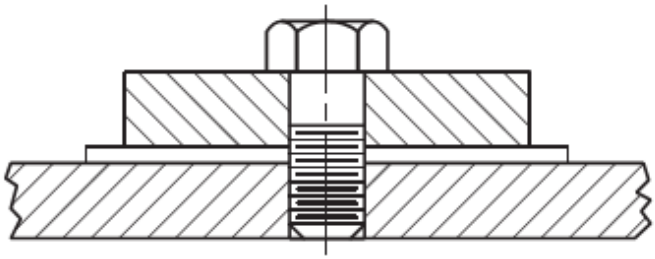
Section Lining Techniques



Outline Sectioning





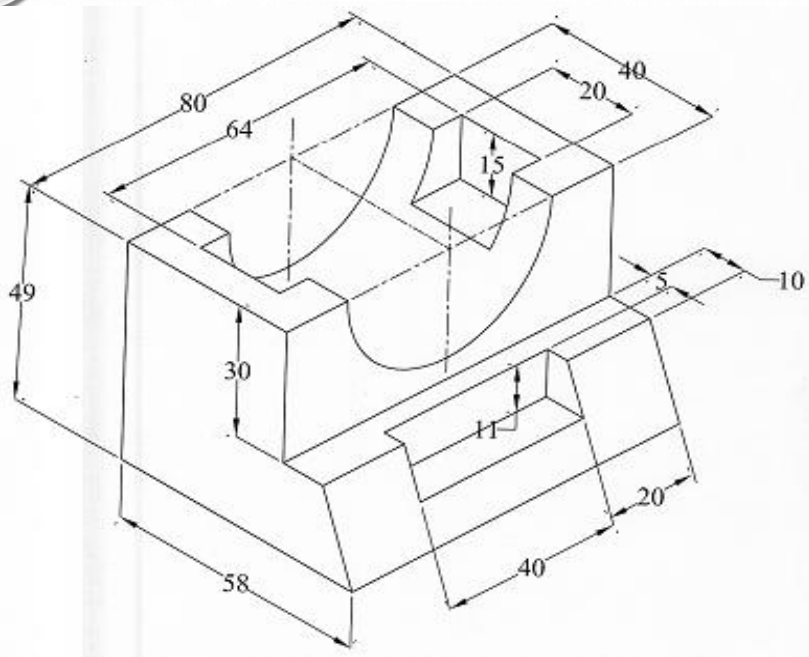
TUTORIAL EXERCISE - to be drawn during tutorial session.

(Mechanical - 05/Feb/2015)

*Produce three fully dimensioned views of the object on the next slide in **both** First Angle and Third Angle Projection. Indicate the system of projection with the appropriate symbol.*

(Materials/Metallurgical- 06/Feb/2015)

*Produce three fully dimensioned views of the object on the next slide in **either** First or Third Angle Projection. Indicate the system of projection with the appropriate symbol.*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