SECTIONING AND SECTIONAL VIEWS

Types of Section Views

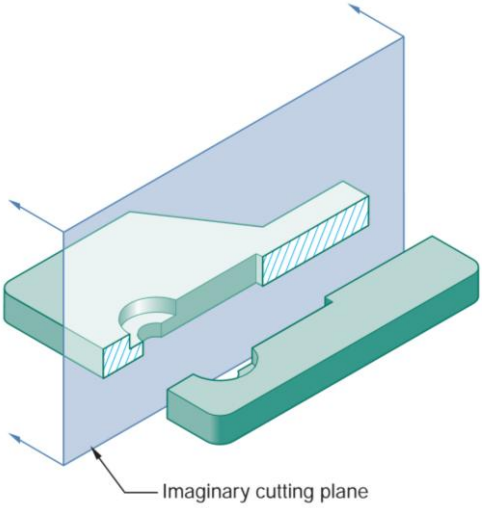
- The nature of the cutting plane gives us the different types of sections there are.
- This imaginary cutting plane is controlled by the designer and depending on how it goes through the object, can give rise to;
  - a full section
  - a half section
  - an offset section
  - a broken-out section
- Other types of sections include the, revolved, removed, assembly and auxiliary sections

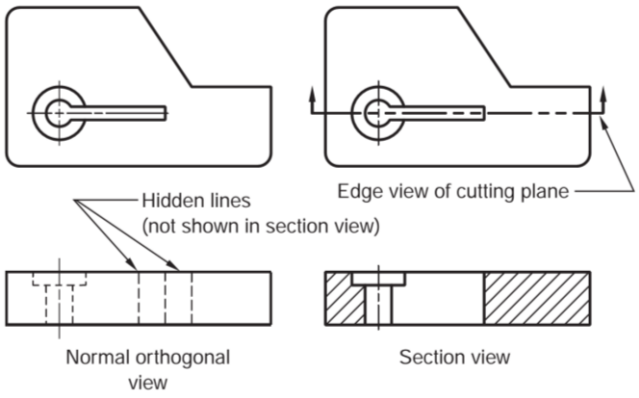
Note: Some books may use a different way of classifying types of section views

SECTIONING AND SECTIONAL VIEWS

Full section

Cutting plane goes completely through the object

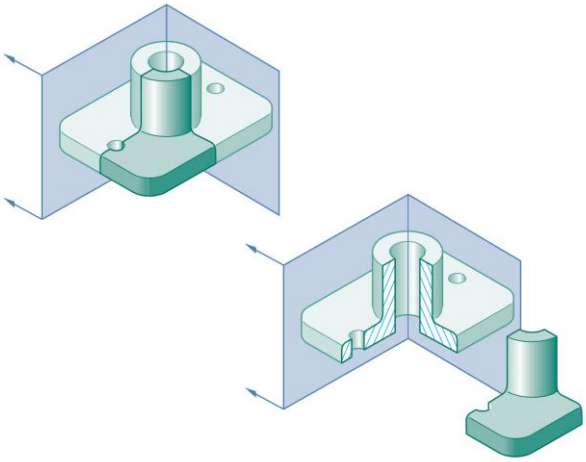




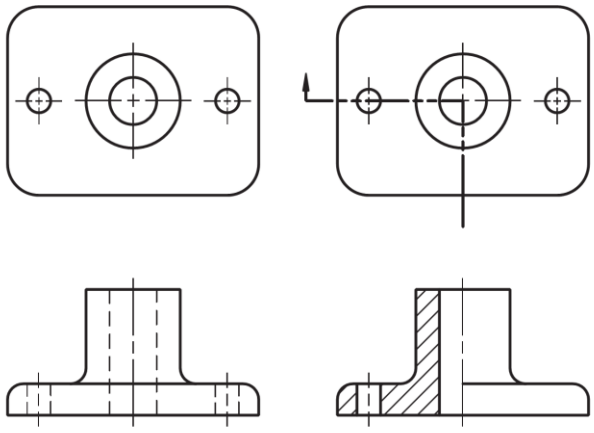
SECTIONING AND SECTIONAL VIEWS

Half Sections

Cutting plane cuts only halfway through the object



(A) Half section

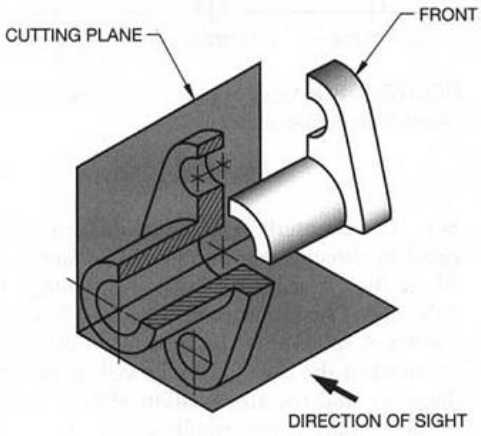


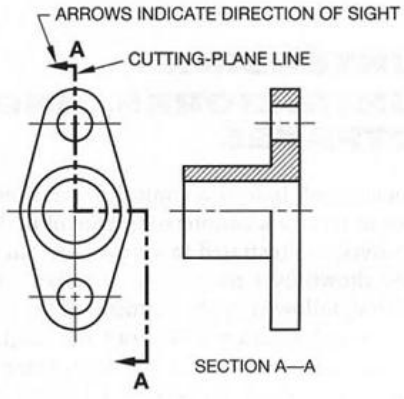
(B) Multiview

(C) Half section view

SECTIONING AND SECTIONAL VIEWS

Half Sections



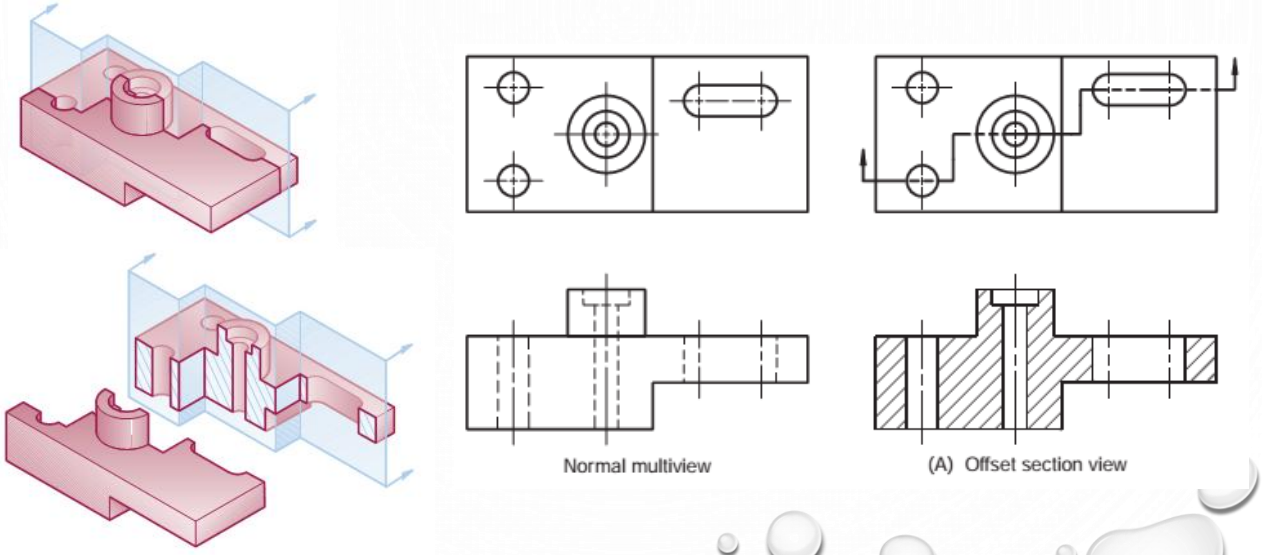


(C) SIDE VIEW IN HALF SECTION

SECTIONING AND SECTIONAL VIEWS

Offset section

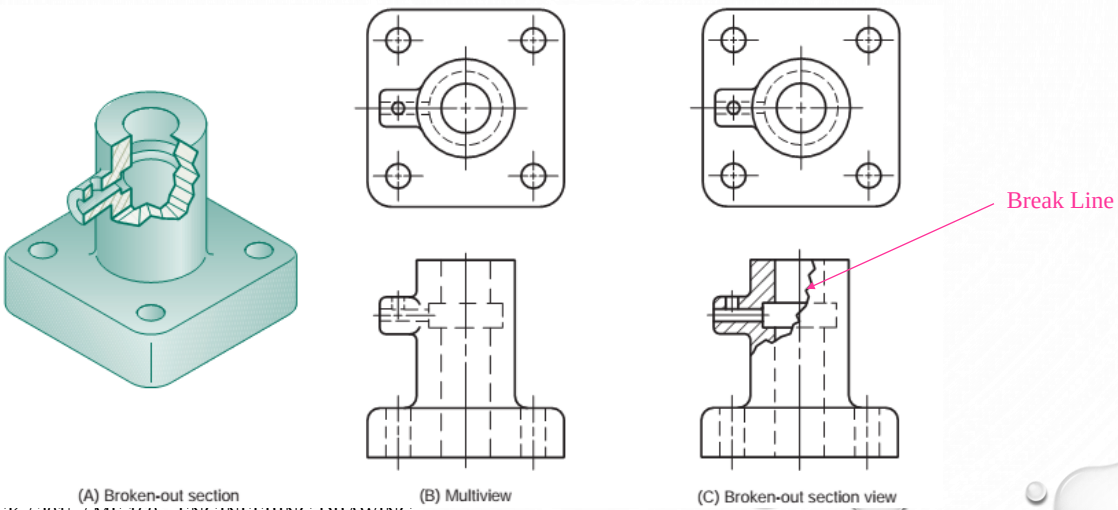
Cutting plane is bent at 90^o angles to pass through important features



SECTIONING AND SECTIONAL VIEWS

Broken-out section

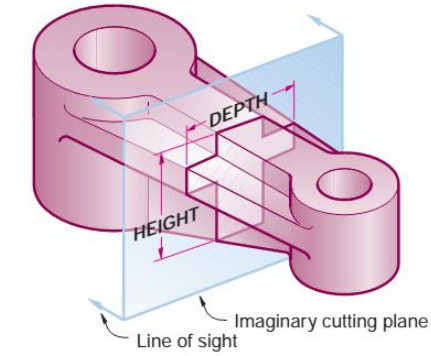
- Used instead of a half or full section view to save time. Cutting plane line is not shown. Break lines are used instead to show sectioned parts from un-sectioned parts.

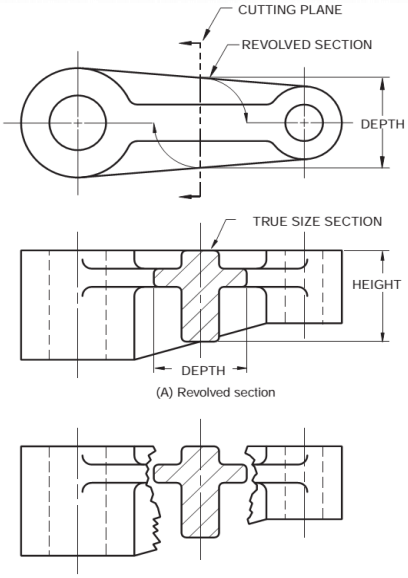


SECTIONING AND SECTIONAL VIEWS

Revolved section

- Involves revolving the cross-section view 90 degrees about an axis of revolution and superimposing the section view on the orthographic view.

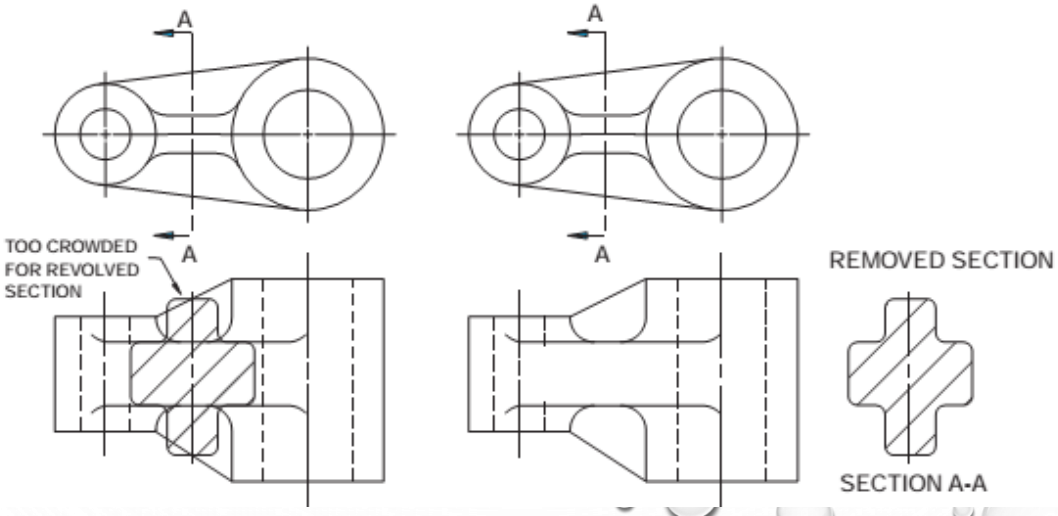




SECTIONING AND SECTIONAL VIEWS

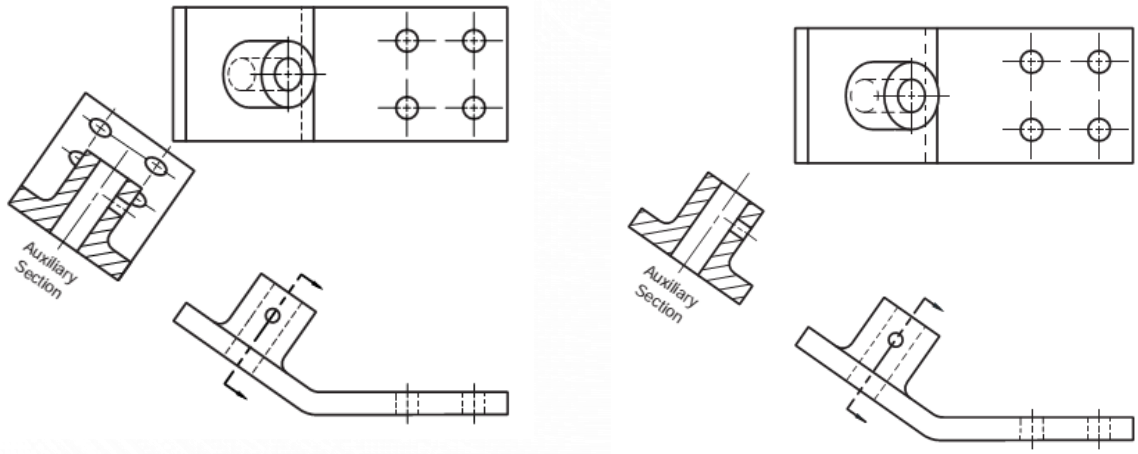
Removed section

- Used when there is not enough room on the orthographic view for a revolved section.



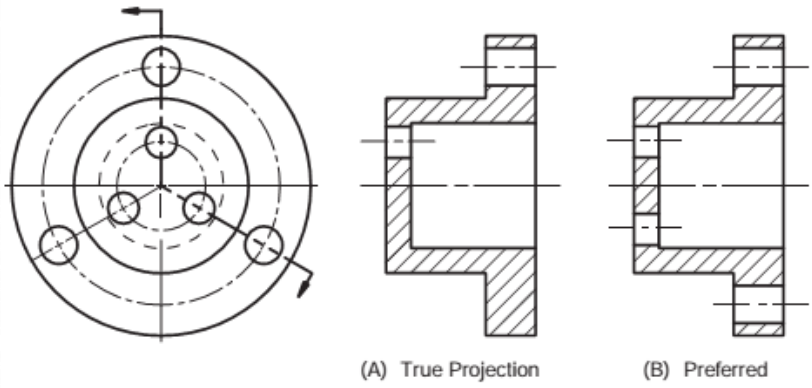
SECTIONING AND SECTIONAL VIEWS

Auxiliary Section



SECTIONING AND SECTIONAL VIEWS

Some Special Conventions in Dimensioning

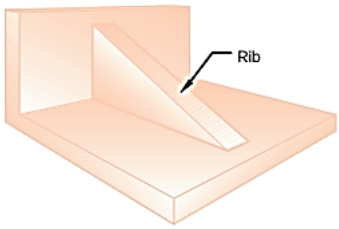


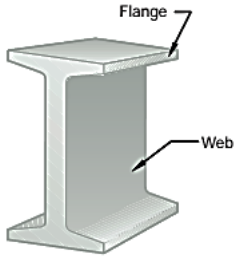
Aligned sections - used when it is important to include details of a part by "bending" the cutting plane.

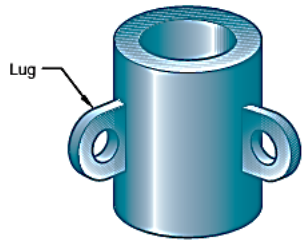
SECTIONING AND SECTIONAL VIEWS

Some Special Conventions in Dimensioning

- Ribs, webs, spokes, lugs, gear teeth, and other thin features are not section lined when the cutting plane passes parallel to the feature.
- Some other parts not sectioned include;
  - Standard parts such as bolts, nuts, and bearings.

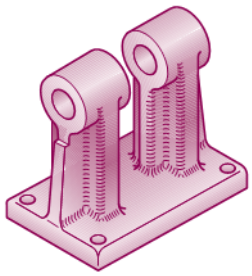


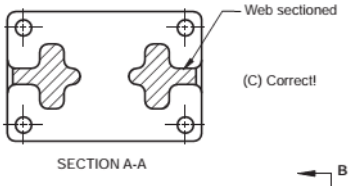


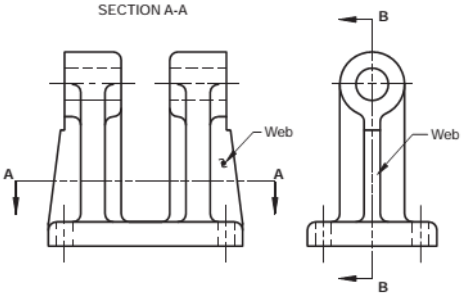


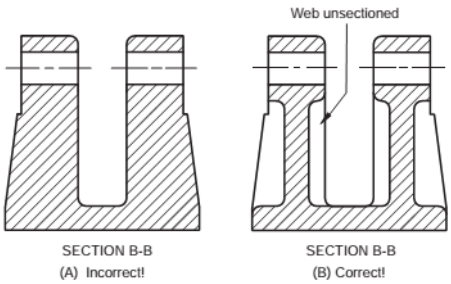
SECTIONING AND SECTIONAL VIEWS

Some Special Conventions in Dimensioning







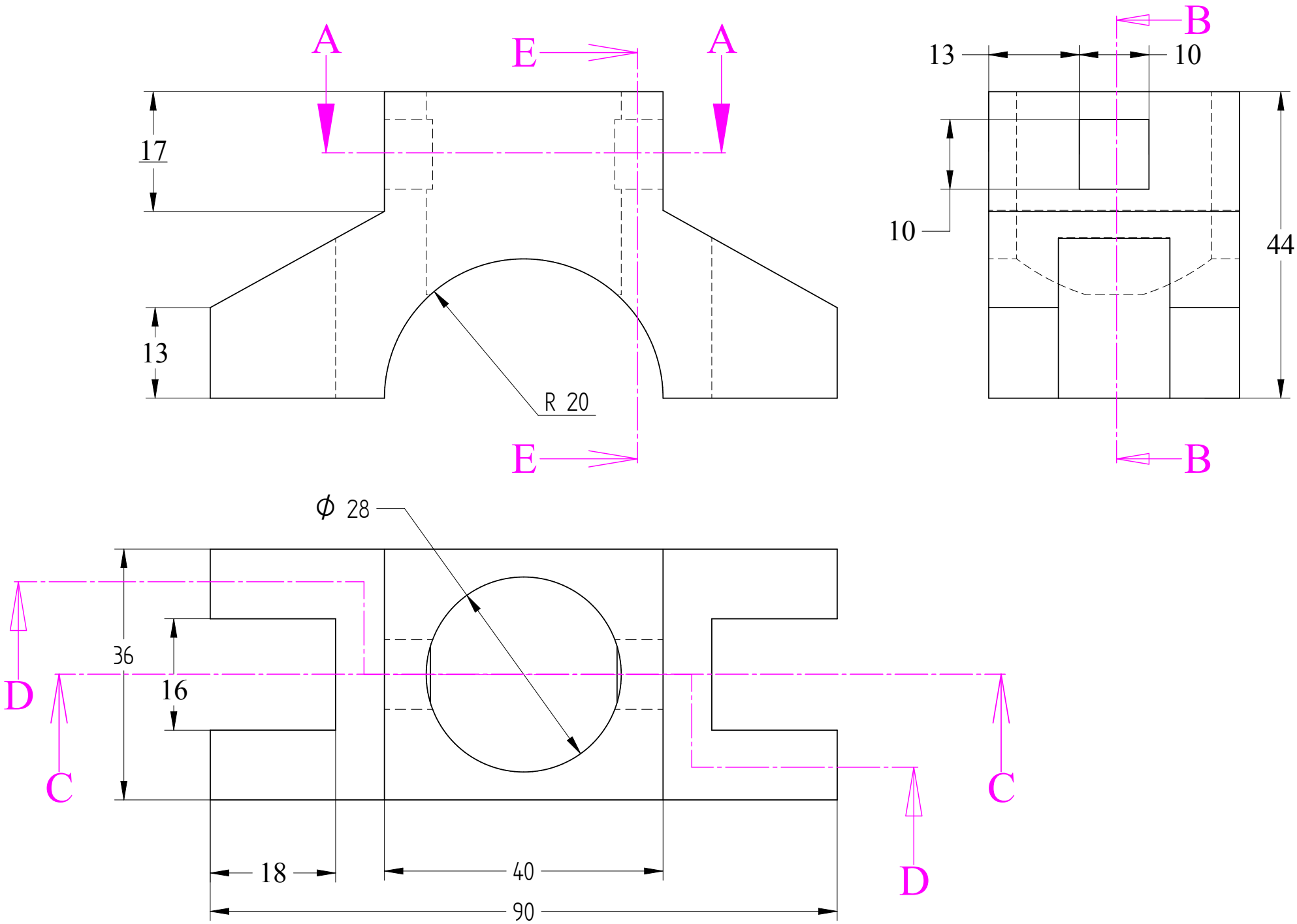


TUTORIAL EXERCISE - to be drawn during tutorial session.
(Mechanical - 12/02/2015)

Produce sections A-A and D-D (see drawing on next page)using a scale of 1:1

(Materials/Metallurgical- 13/02/2015)

Produce section D-D (see drawing on next page) using a scale of 1:1


A
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A
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C
D
18
40
90