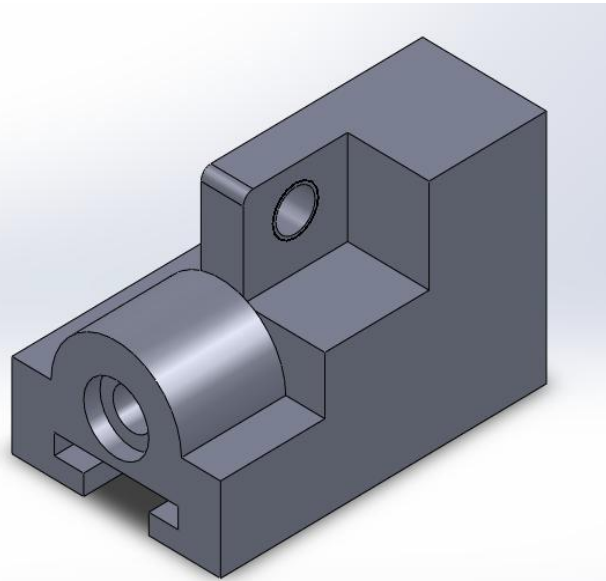


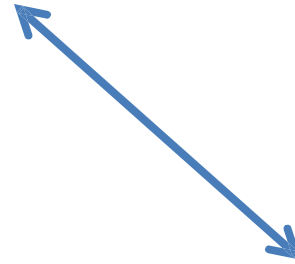
# Revision on Engineering Drawings

MMAN2130 CAD  
LAB Review

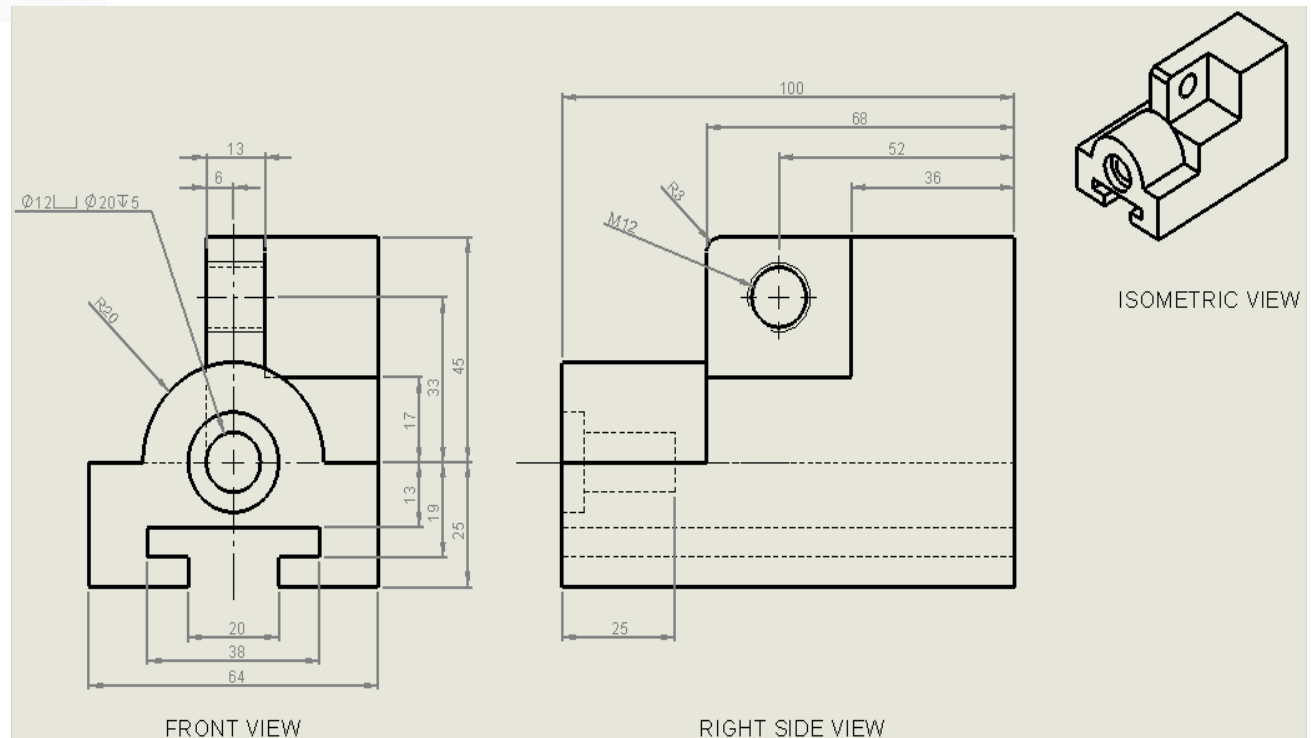
By MMAN2130 Tutors



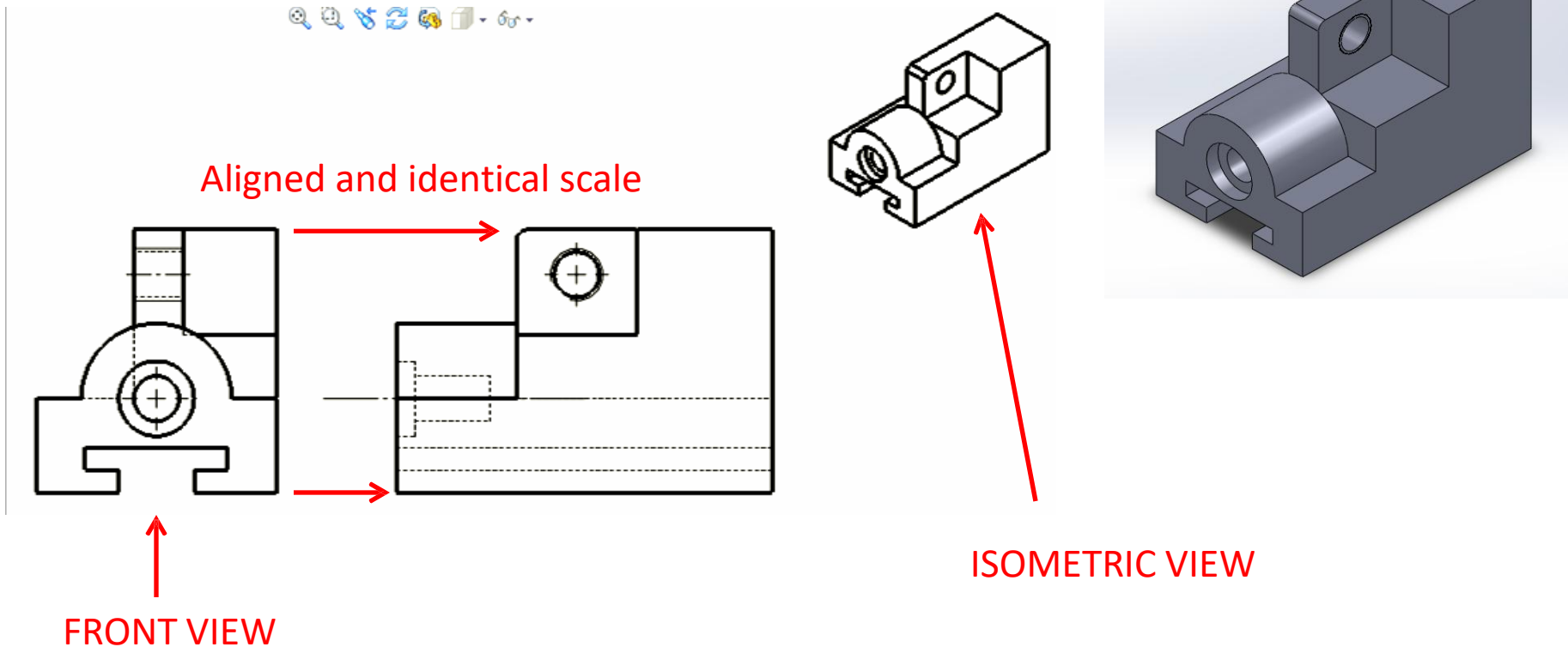
3D Part



Technical Drawing

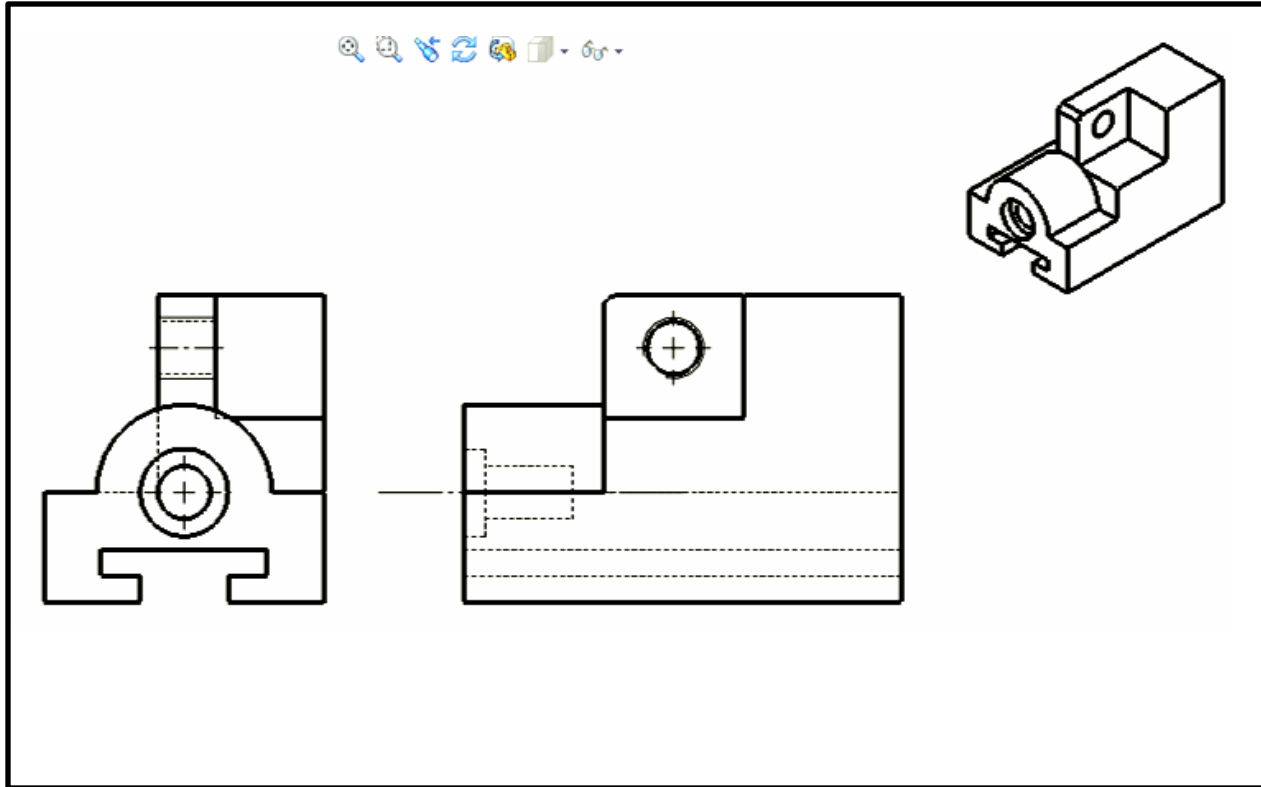


# Model Views



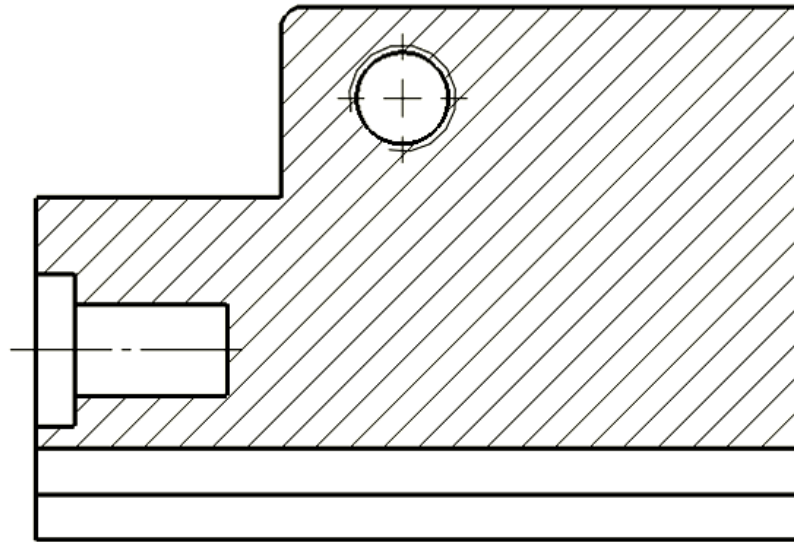
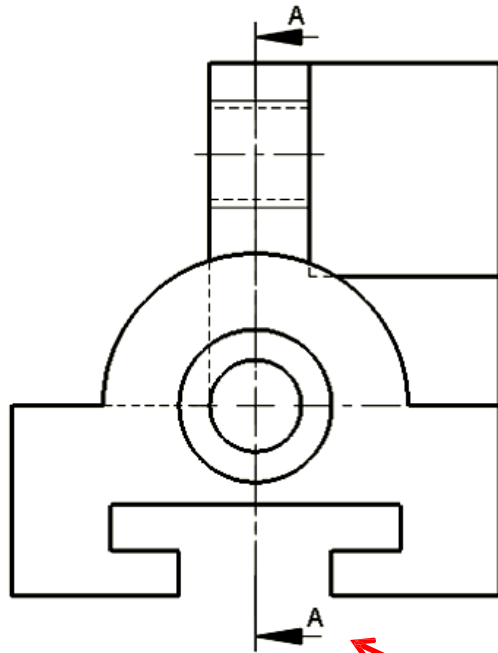
- Typically, **2-3 orthogonal views** are sufficient
- **FRONT VIEW** must be presented
- All orthographic views are **identical scale and aligned**
- Try selecting the views that **minimise the number of hidden line**

# Model Views (cont.)



- Use a proper **Scale**
  - Layout fits to the drawing sheet
  - Can be Portrait or Landscape
  - All dimensions must be clear and readable
  - According to the AS1100

# Section View



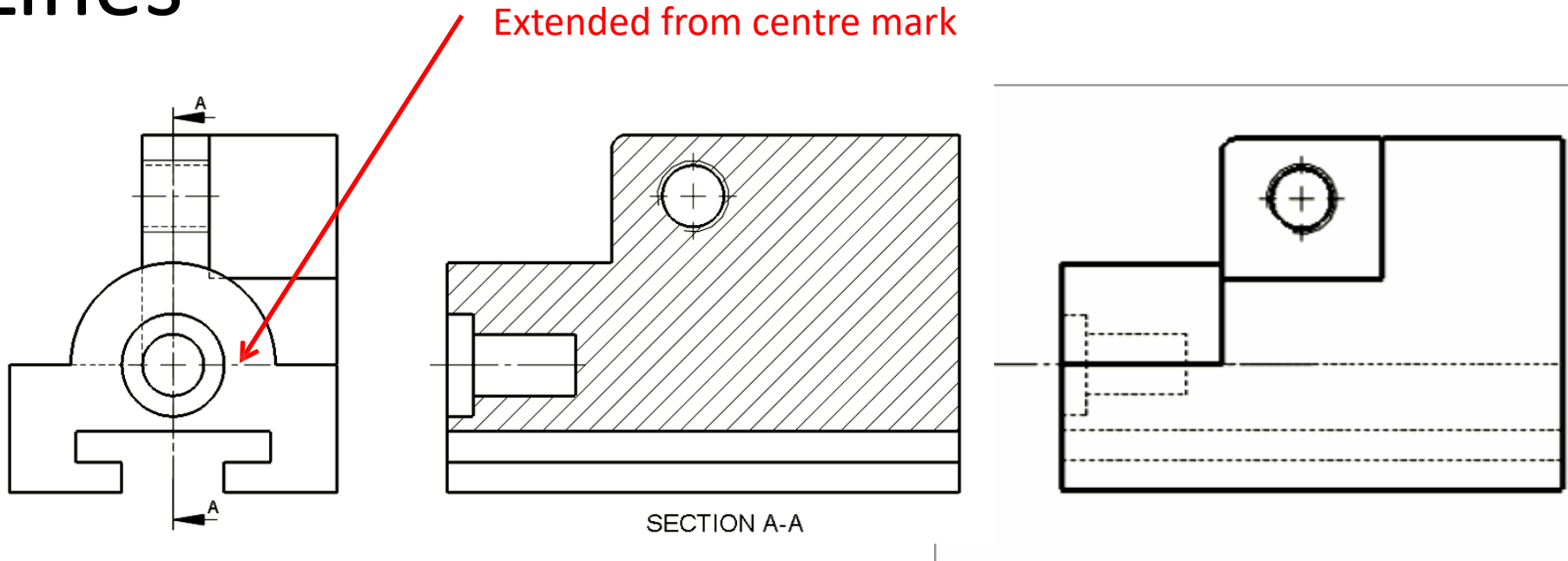
SECTION A-A

Projecting direction

View name

- Correct projecting direction
- Hidden lines can be hidden
- Centre lines & marks must be shown
- View name is noted properly (font size 3.5mm)

# Lines



- **Hidden Lines**

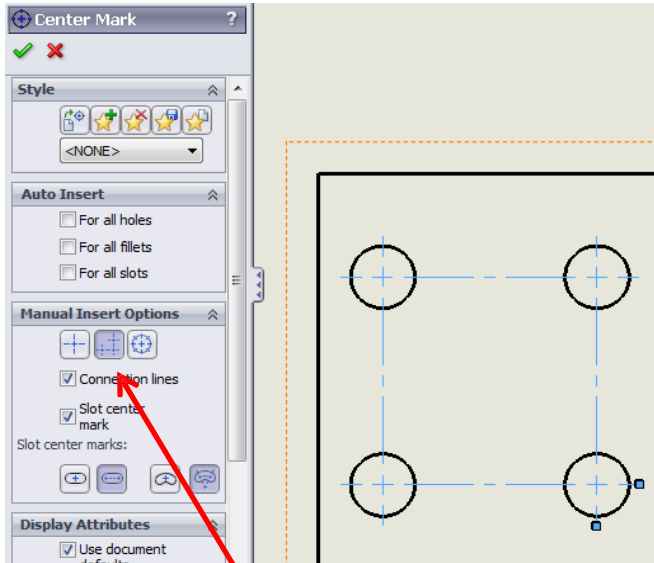
- Must be shown in the orthographic views
- Unnecessary in **Section view**

- **Centre Lines & Centre marks**

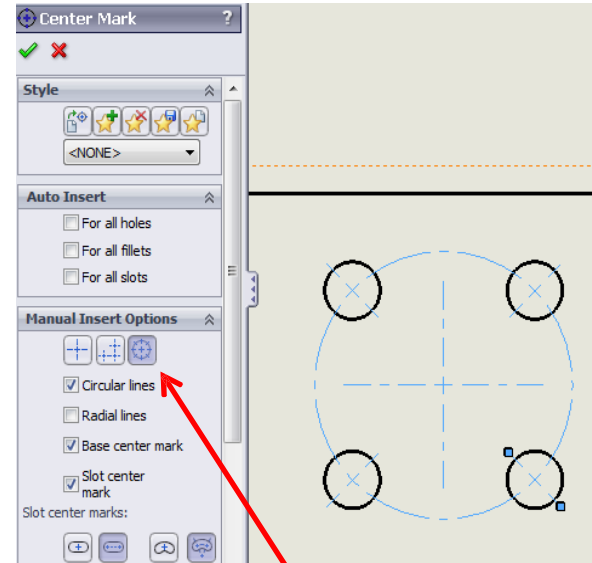
- Must be shown for every circular feature
- Can be extended and connected
- Can be drawn manually if the circular feature cannot be selected

# Centre mark

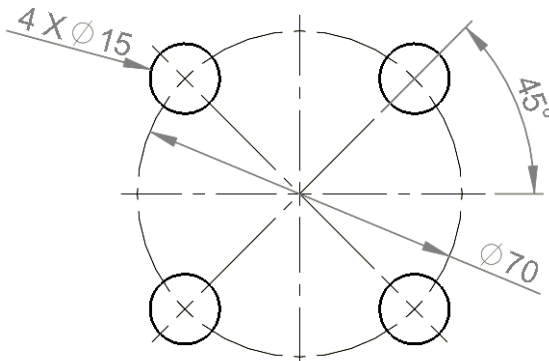
## Connected lines for centre marks



Linear



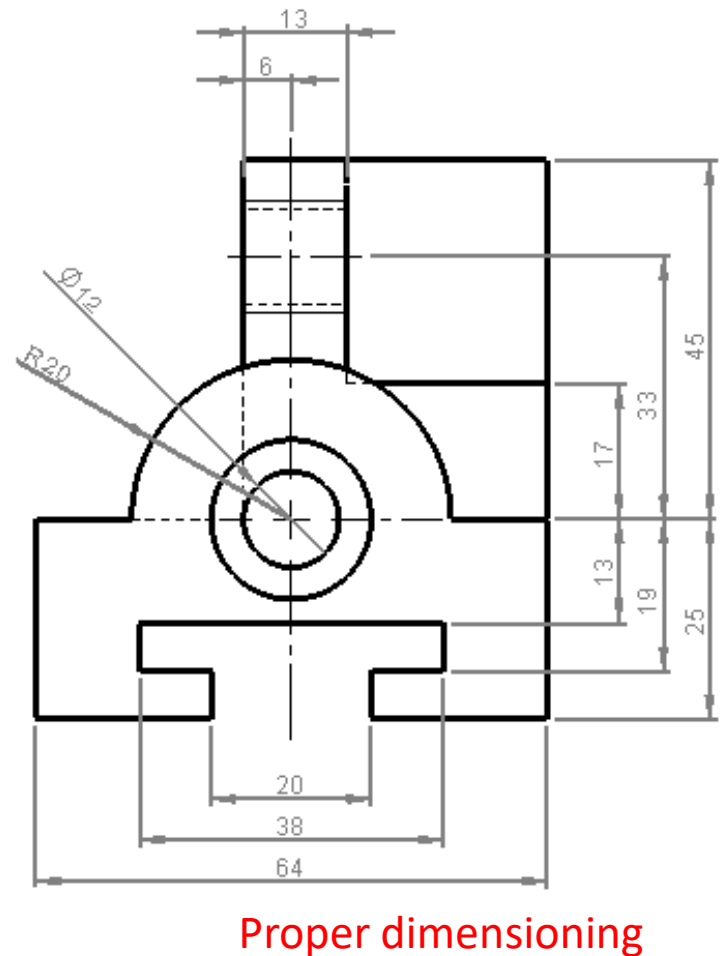
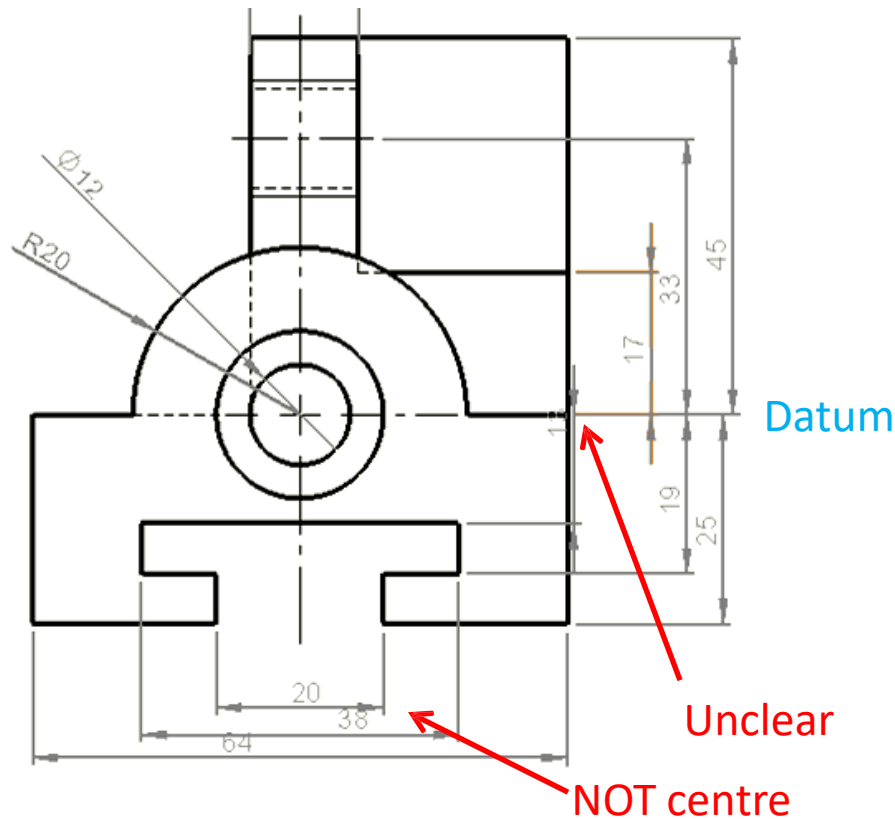
Circular



## Equispaced positioning

- Pitch Circle Diameter (PCD)
- The number of the features
- Angle

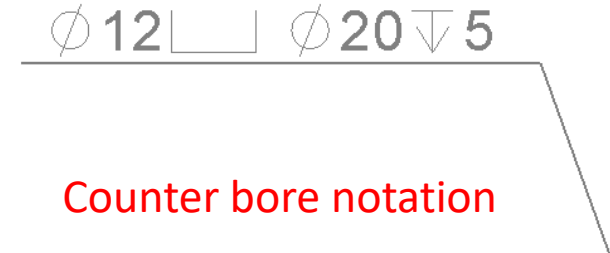
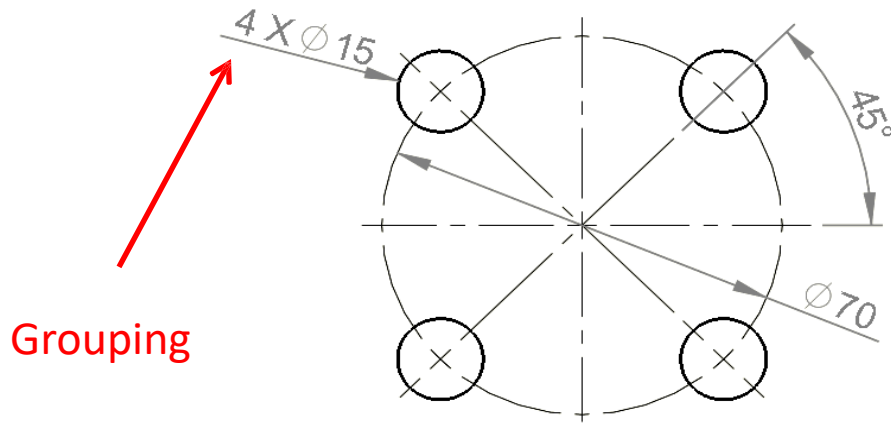
# Dimensioning



- Select a proper **Reference** (datum)
- Minimal crossing or overlapping with each other
- Text and lines must be clear
- Number should be at the centre of the dimension line



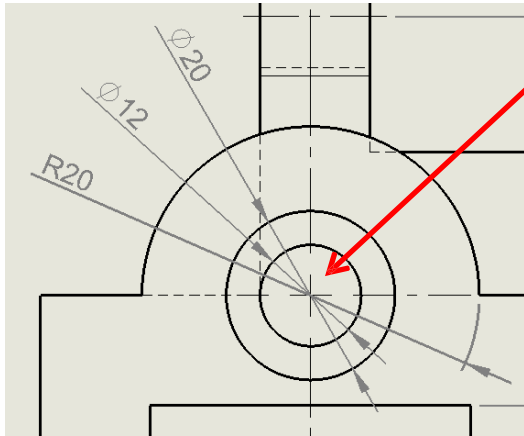
# Simplified Dimension



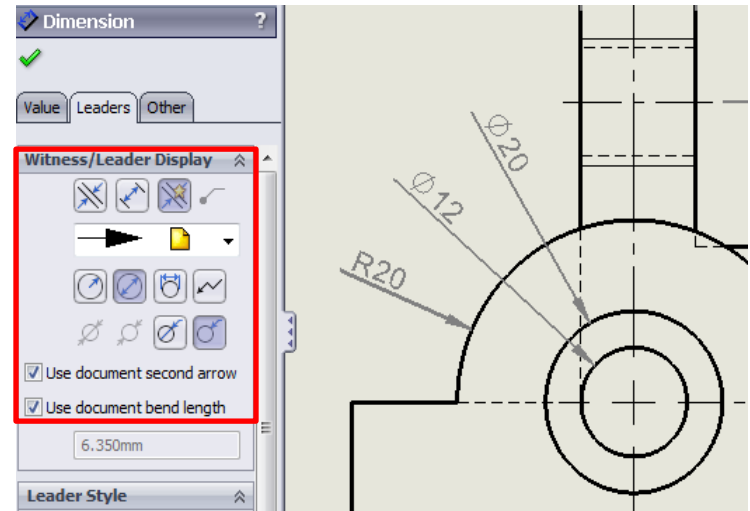
- Grouping the **multiple instances feature**, e.g. 4 holes =  $4 \times \phi ?$ , TYP
- Notations of Counter bore, Counter sunk, and Thread
  - *See Boundy's Textbook [P27-28, 34]*
- **Radius (R?)** only for an arc (incomplete circle)
- **Diameter ( $\phi ?$ )** only for a complete circle
- **Thread (M?)** for thread

# Rearrange Leader Lines

- Clutter arrows

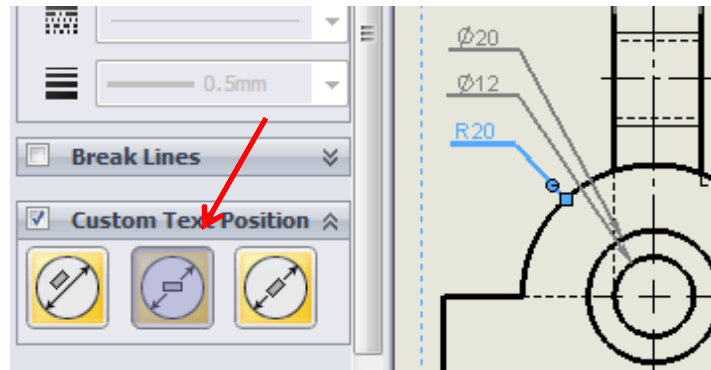
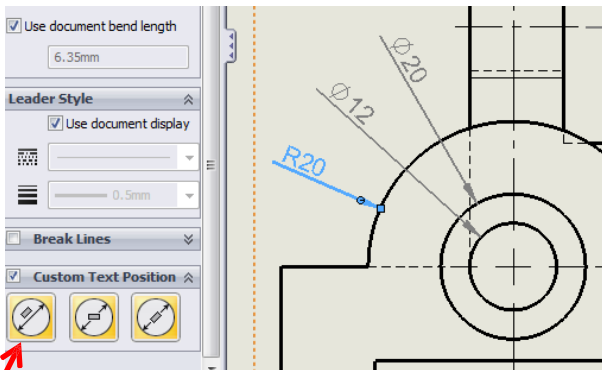


Clutter



Try configuring these options

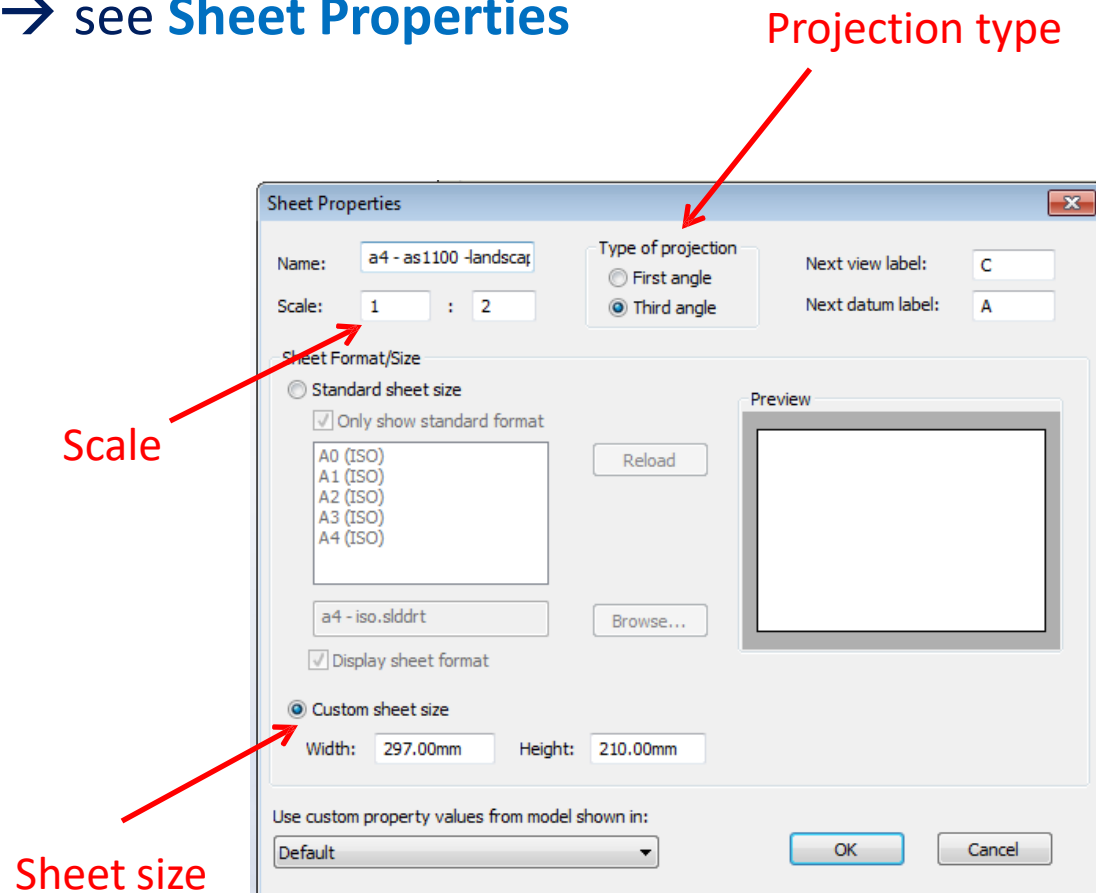
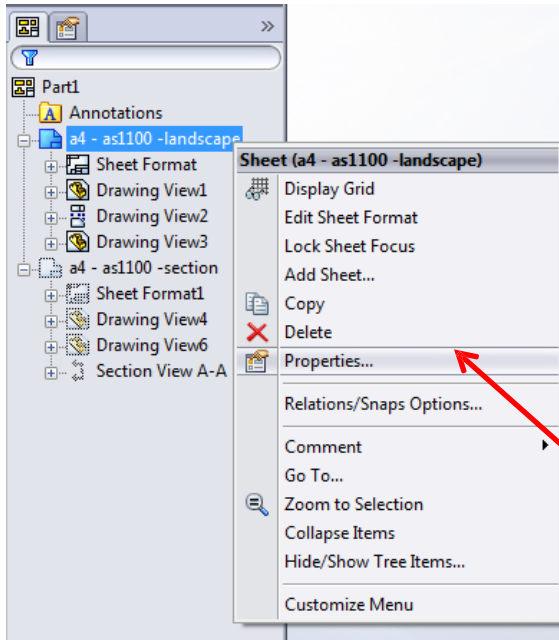
- Rearrange text position



*See more option Boundy's Textbook [P25]*

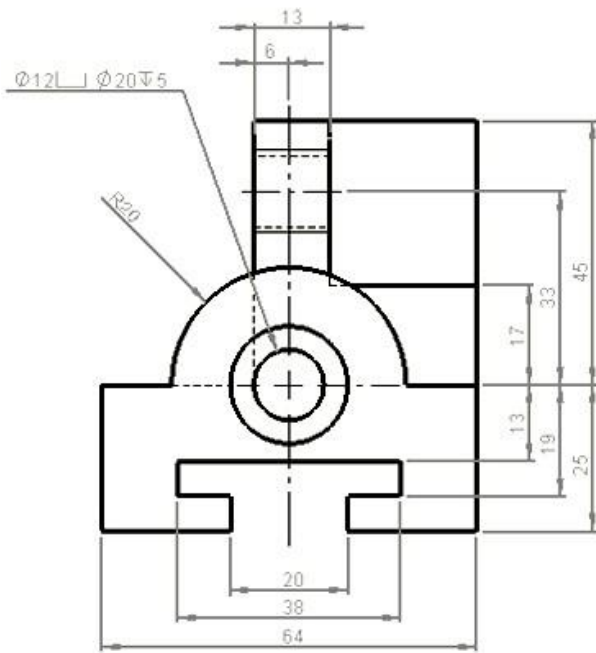
# Title block

- General font size minimum 2.5mm
- **Title** should be emphasised (5mm)
- AS1100
- Is correct **scale** indicated? → see **Sheet Properties**
- Is **projection type** correct?
- Is **sheet size** correct?

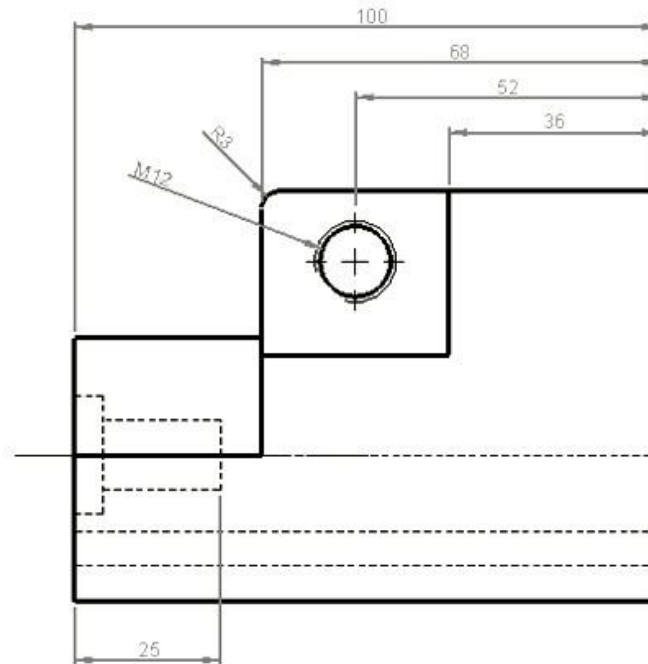


# View Name

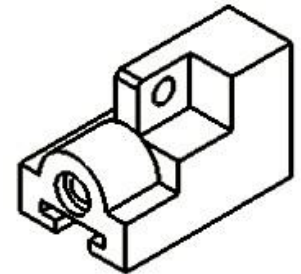
- 3.5mm height Capital letter
- Centre of each view
- **Specific scale** must be noted



FRONT VIEW



RIGHT SIDE VIEW



ISOMETRIC VIEW

# Review Questions – Checklist

- ☐ Is dimension sufficient to reproduce the required part? \*\*\*
- ☐ Sufficient views? Redundant views?
- ☐ Projection type (3<sup>rd</sup> angle)?

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- ☐ Hidden lines, centre lines, and centre marks are placed properly?
- ☐ Missing dimension? Double dimension?
- ☐ Simplified dimension for specific features?

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- ☐ Overlapping or unclear text and lines?
- ☐ Title block?
- ☐ View names?
- ☐ Font size?

Thank you