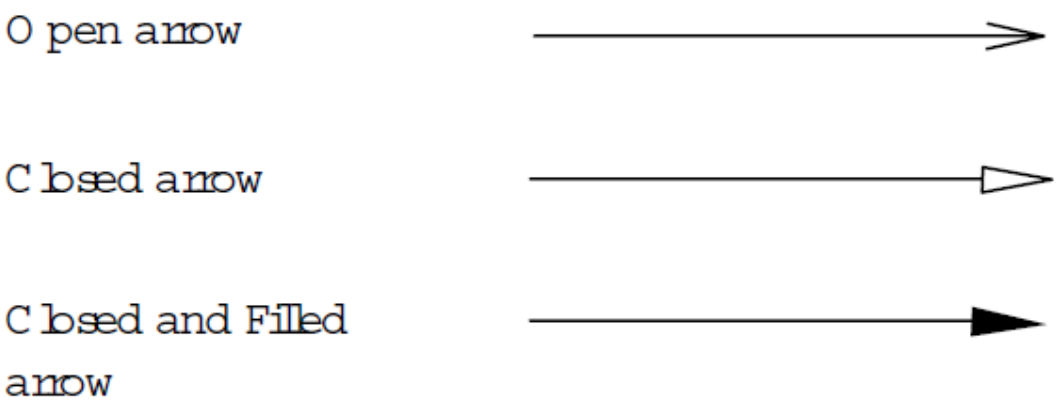
Ministry of Higher Education and Scientific Research / University of Babylon		*Subject: Engineering Drawing*
College of Engineering / Al-Musayab		*Class: 1st year*
Department of Automobile Engineering		*Prepared by :*
(1st Semester) (2019/ 2020)		*Dr Ahmad S. M. Al-Azzawi*

Dimensioning Methods

Dimensioning is used to describe a drawing in terms of details such as the size, shape and position of the object as per the Dimensioning Code 11669 - 1986. Expressing these details in terms of numerical values, lines and symbols is known as dimensioning.

Arrows:

Drawing an arrowhead terminates dimension lines. The arrowhead may be open, closed or closed and filled. The length to width ratio of an arrowhead should be limited to 3:1.



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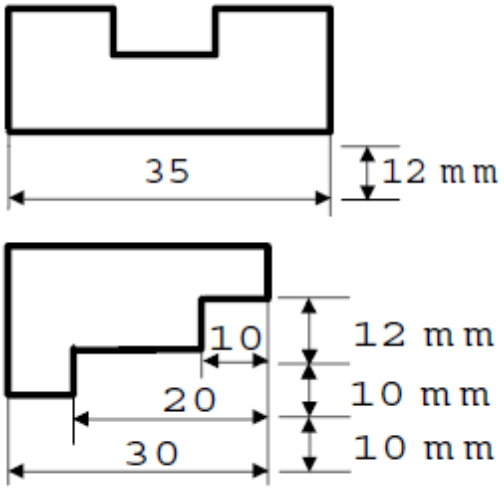
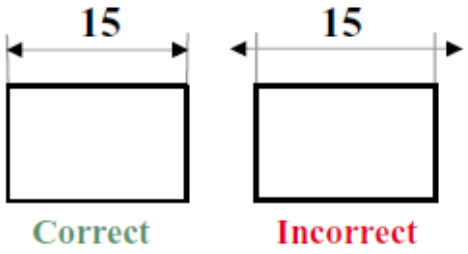
General Rules of Dimensioning:

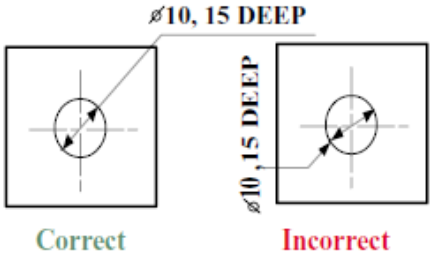
1. Dimension lines are to be drawn maintaining a gap of 12 mm from the object line and a gap of 10 mm between adjacent dimension lines.



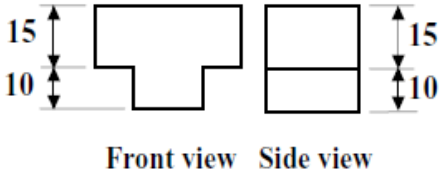
2. Dimension lines should not cross extension lines.



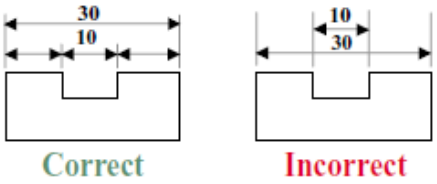
3. All the information should be written horizontally.



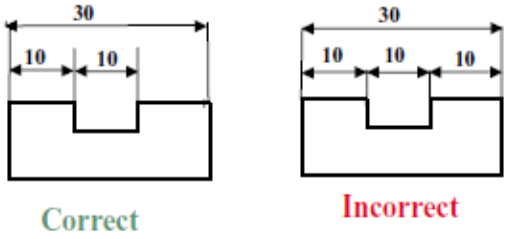
4. A given dimension should be indicated only once. It should not be repeated at another place.



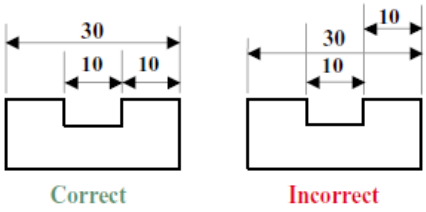
5. a. The overall dimensions should be placed outside the smaller dimensions.



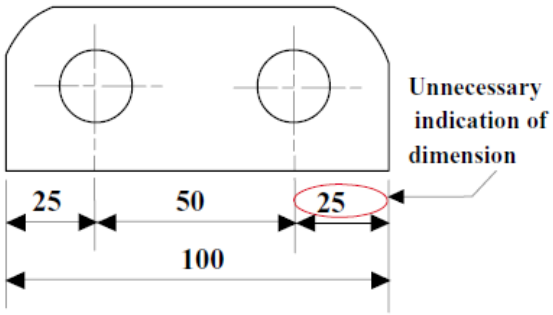
5. b. When an overall dimension is given, one of the smaller dimensions should not be given unless it is needed for reference.



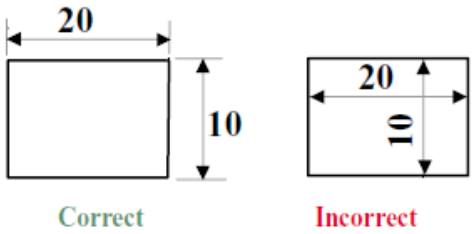
6. The larger dimensions should be placed outside the smaller ones such that the extension lines do not cross the dimension lines.



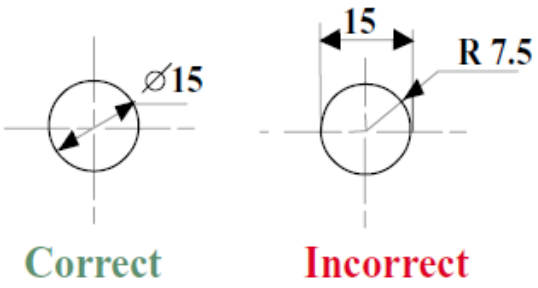
7. No dimensions other than those that are necessary need be given.



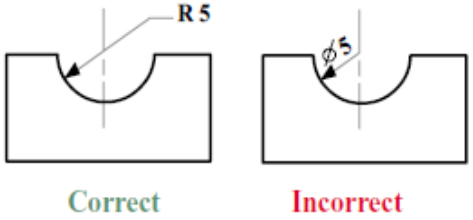
8. Avoid indicating dimensions inside a drawing.



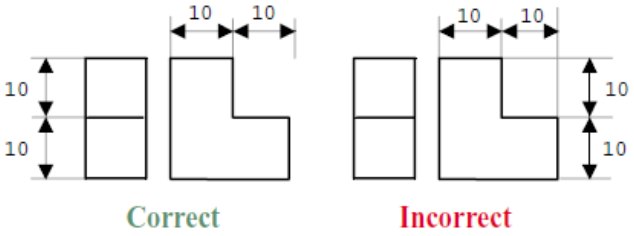
9. Always indicate the diameter of a circle, not its radius. The symbol **(** is used before the dimension, except when it is obvious.



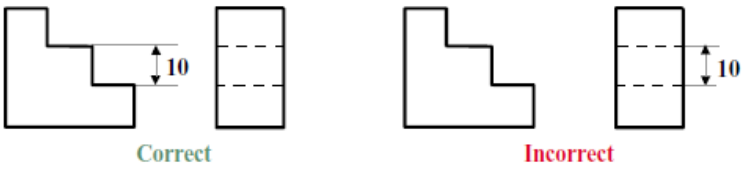
10. The radius of an arc should always be indicated with the abbreviation R placed before the dimension.



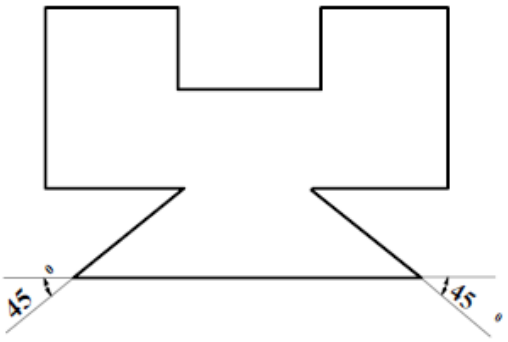
11. Extension lines should not cross each other or dimension lines unless this can be done without making the drawing more complicated.



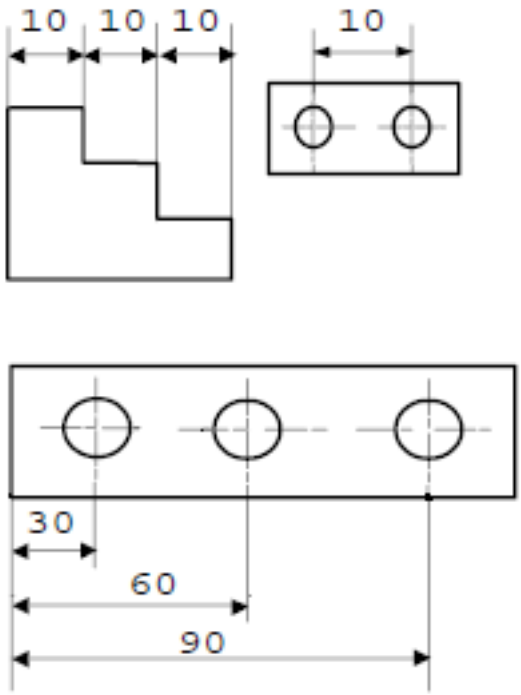
12. Avoid dimensioning of hidden lines if possible.



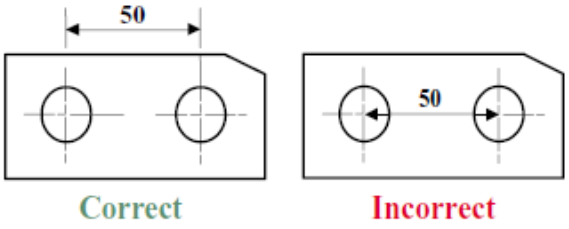
13. Always show the angles outside the space representing an object.



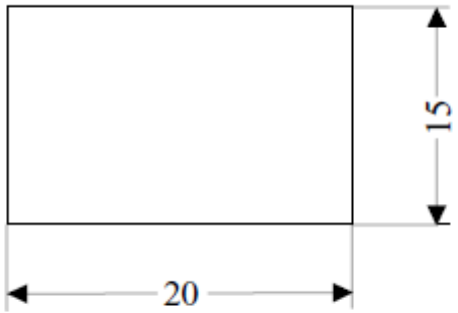
14. Dimensions should be given from the centre lines, finished surfaces, or datum's as applicable to a drawing.



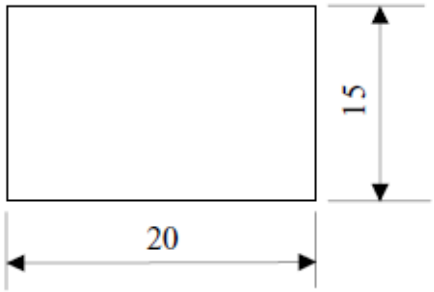
15. The centre line should never be used as a dimension line.



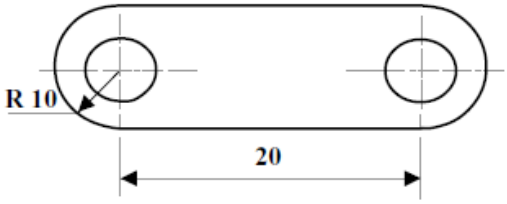
16. In the unidirectional system of dimensioning, all dimensions must be upright and readable when the drawing is viewed in its normal upright position.



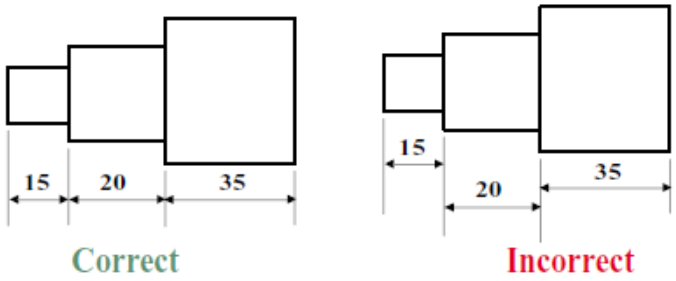
17. In the aligned system, the dimensions must be readable when the drawing is viewed in its normal upright position or from its right hand side.



18. In a drawing of a part with circular ends, the centre-to-centre dimension is given instead of an overall dimension.

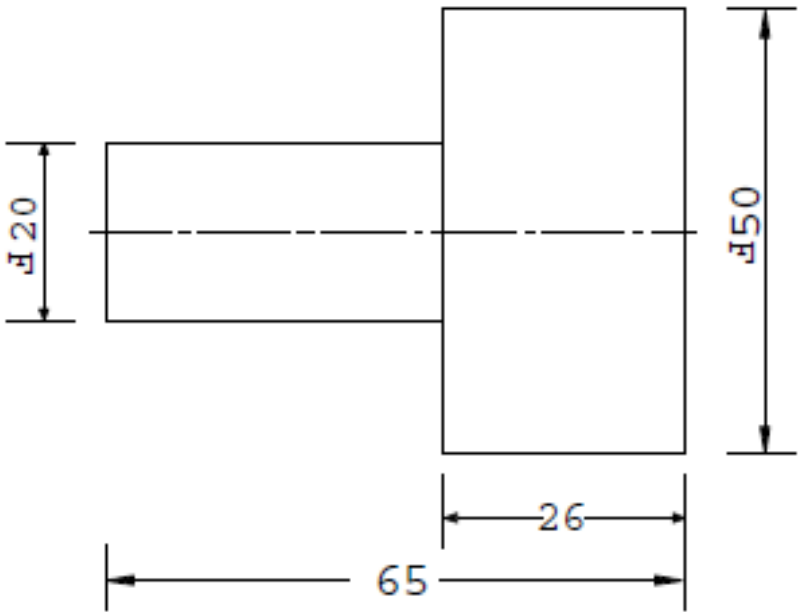


19. When a number of dimensions are indicated on one side of a drawing, they should appear on a continuous line.



Unidirectional Method:

In this system, the dimensions are indicated in the vertical / upright position so that they can be read easily when the drawing is viewed in its upright position. The numerical values are placed at the centres of the dimension lines.



Aligned Dimensioning:

In this system, the dimensions are indicated so as to be perpendicular to the dimension lines. In other words, the horizontal dimensions can be read conveniently when the drawing is viewed normally. Similarly, the vertical dimensions can be read easily from the right side of the sheet.