

Drawing Practice  
 Axonometric Projections  
 Dimetric Projection

**DIN**  
**5**  
 Part 2

Zeichnungen; Axonometrische Projektionen, Dimetrische Projektion

Dimensions in mm

The isometric projection is used for drawings in which the essential features must be shown clearly in one view.

**1. Drafting aids**

Drafting aids for drawing in dimetric projection are:  
 drafting machine, dimetric grid

When a drawing machine is used without a grid, it is advisable to work with the following detent settings:

- A vertical
- B at angle  $\alpha$  ( $-7^\circ$  to the horizontal)
- C at angle  $\beta$  ( $+42^\circ$  to the horizontal)

The view (a x b) can also be arranged at  $+7^\circ$  rising to the right, i.e. the representation being the mirror image of the examples in Figures 1 to 4.

The lines in the dimetric grid are arranged as indicated under A, B and C.

**2. Representation without a grid**

The representation of a cube and of circles in 3 views is shown in Figure 1.

Ratio of edges (a,b) : diameter d = 1 : 0.94

Ellipse  $E_1$  .. major axis horizontal

Ratio of axes = 1 : 3

Ellipse  $E_2$  .. major axis at right angles to  $7^\circ$

Ratio of axes = 1 : 3

Ellipse  $E_3$  .. (ratio of axes 9 : 10), because of the simplification in the drawing, has a 1 : 1 ratio of axes and is thus a circle.

Figures 2 and 3 show examples of dimensioning.

**3. Representation using a grid**

Figure 4 shows the representation of a component on a dimetric grid.

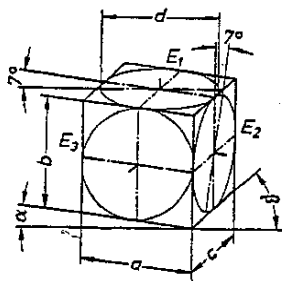


Figure 1

Ratio of sides  
 $a:b:c = 1:1:1/2$   
 $\alpha = 7^\circ$   
 $\beta = 42^\circ$

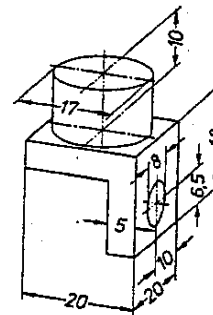


Figure 3

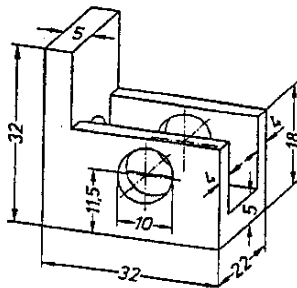


Figure 2

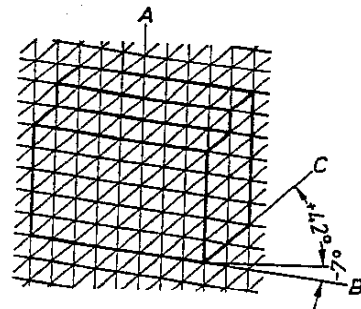


Figure 4