Manual drafting tools for Engineering drawing

Drawing board

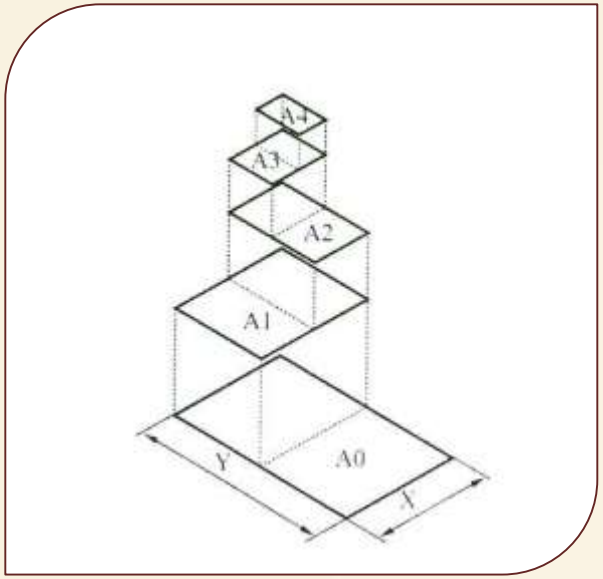
- One edges is used as the working edges.
- Normally made of hard and durable wood.
- Board is placed on the table such that the working edge comes to the left side of the draft man.

Size of drawing board

B_0	1500 x 1000 mm
B_1	1000 x 700 mm
B_2	700 x 500 mm
B_3	500 x 350 mm

Drawing Sheet:

Sizes of drawing sheets are given below.



Sheet designation	Width (mm)	Length (mm)
A_0	841	1189
A_1	594	841
A_2	420	594
A_3	297	420
A_4	**210**	**297**
A_5	148	210

For class work, A_2 size of drawing sheets is preferred.

Set-squares

Normally two in number

30^0- 60^0 set-square

45^0 set-square

Used to draw lines inclined with the horizontal.

With the help of two set-square and a T-square angle of 15^0, 30^0, 45^0, 60^0, 75^0, 90^0, 105^0, etc with the horizontal may be drawn

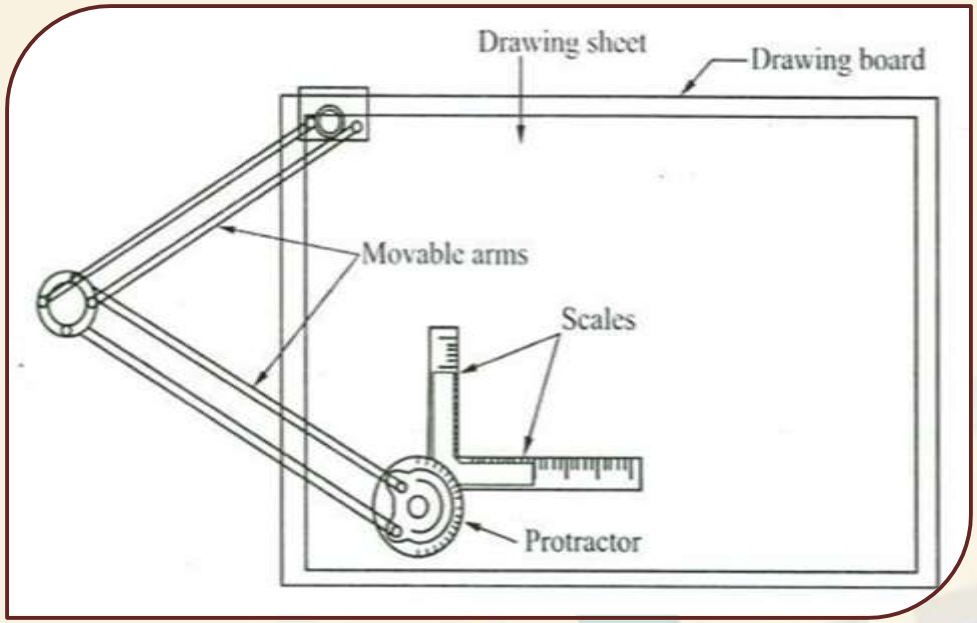
Circle can be divided into different parts.

Protractor

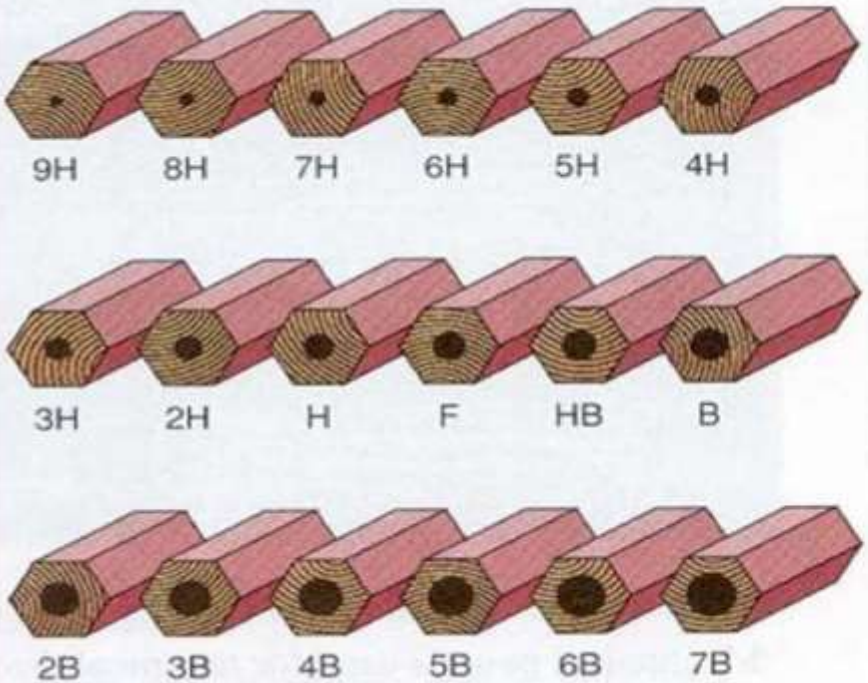
- Used for measuring and laying off angle.
- It is usually semi-circular in shape and made of either metal or transparent plastic.
- Line joining 0^0-180^0 is called the base of the protractor.

Mini drafter

- Mini drafter serves the purpose of T-square, set-square, protractor and scale.
- Two blade are accurately set at right angle to each other.



Pencil grades and eraser



HARD

The hard leads are used for construction lines on technical drawings.

MEDIUM

The medium grades are used for general use on technical drawings. The harder grades are for instrument drawings and the softer for sketching.

SOFT

Soft leads are used for technical sketching and artwork but are too soft for instrument drawings.

Engineering drawing

- Every language has its own rules of grammar.
- Engineering drawing also has certain rules
- Rules of grammar : Lines, lettering, and dimensioning

Scales: Size of objects may be extremely small, medium or large

- Full scale 1:1
- Reduced scale 1:2, 1: 2.5, 1 : 5, 1: 10, 1:20, 1:50, 1:100, 1:200
- Enlarged scale 10:1, 5:1, 2:1

Representative fraction

- The ratio of the dimension of the element in the drawing to the dimension of the same element in the object is called the representative fraction.

$$\frac{10mm}{1\ metre} = \frac{10mm}{1000mm} = \frac{1}{100}$$ It is also represented by 1:100

Suppose a line of 10 mm length in drawing represent 1 mm length of object

$$R.F. = \frac{10mm}{1mm} = \frac{10}{1}$$

The End

Thanks