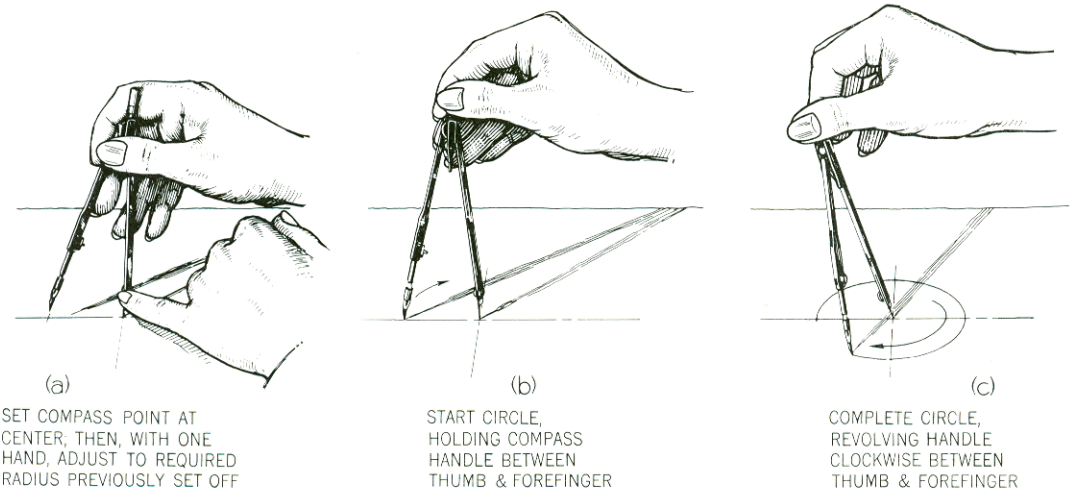

Fig. 3–33. Using the Compass.

As shown in Fig. 3–34, the scale should be used to set off the radius along a center line. Do not place the compass directly on the scale to obtain the radius, as this will eventually damage the subdivisions on the scale. After the circle is drawn, III, check the diameter with the scale, IV, to make sure an error in radius has not resulted in a double error in diameter. The circle should be drawn lightly and not made heavy until the correctness is established. A good method is to draw a trial circle on a piece of scrap paper and check it with the scale before drawing the circle on the drawing.

In drawing circles, you usually know the diameter and must determine the radius by mentally dividing the diameter in half. If a diameter of $3\frac{1}{2}''$ is given, the radius is figured as follows: Half of $3'' = 1\frac{1}{2}''$. Half of $\frac{1}{2}'' = \frac{1}{4}''$. The radius $= 1\frac{1}{2}'' + \frac{1}{4}'' = 1\frac{3}{4}''$. If the drawing is to half scale, it is necessary to divide $1\frac{3}{4}''$ again in the same manner.

3.27 Sharpening the Compass Lead. For construction arcs or circles, use a hard lead, such as 4H, 5H, or 6H. For general work, use a softer lead, which will produce dark lines without smudging too easily, such as an F or H. Since you cannot exert as much pressure on a compass as on a drawing pencil, it may be necessary to use a compass lead about one grade softer than on the straight-line work.

Compass leads come with your drawing set

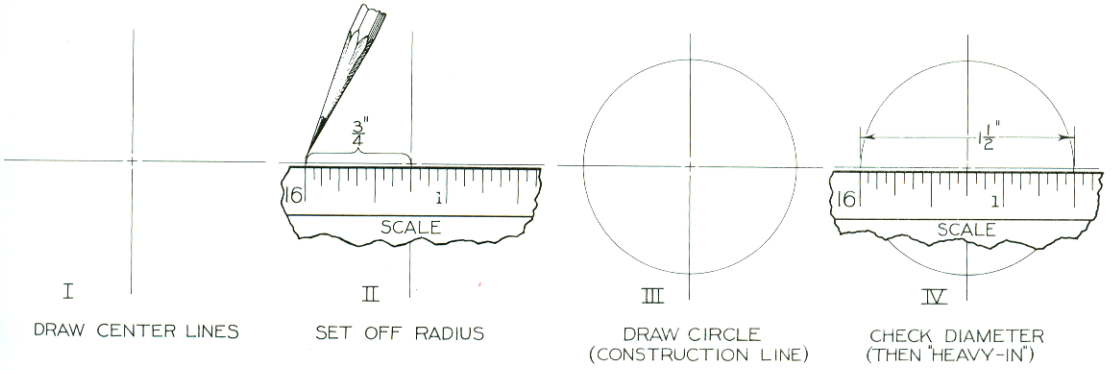

Fig. 3–34. Use of Scale.