

D. How to adjust indicators when major axis does not fall in correct position:

1. Set lower scale to 0" and upper scale to 3". Revolving the crank should give a line 6" long.
2. Extend this line about 1 1/2" on both ends.
3. Loosen screws that hold indicator brackets to frame. Set indicators to point to line. Retighten screws in frame.

Small errors may be the result of the lead having been sharpened off center or slight variance in spring tension. These errors may be compensated for by small adjustments in the scale settings.

**ELLIPSES
MADE EASY**

WITH AN

**ELLIPTICAL
COMPASS**

MANUFACTURED BY
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ELLIPTICAL COMPASS... MODEL C-2

Patent No. 2670540 Other Patents Pending

This instrument is unequaled for rapidly drawing ellipses which are true in every sense. Adapted either for pen or pencil work. With a range limit from 0" to 14" x 7 1/2" where the major and minor axes do not differ over 6 1/2". The dimensions of the major and minor axes being known, the desired ellipse can be produced in one operation.

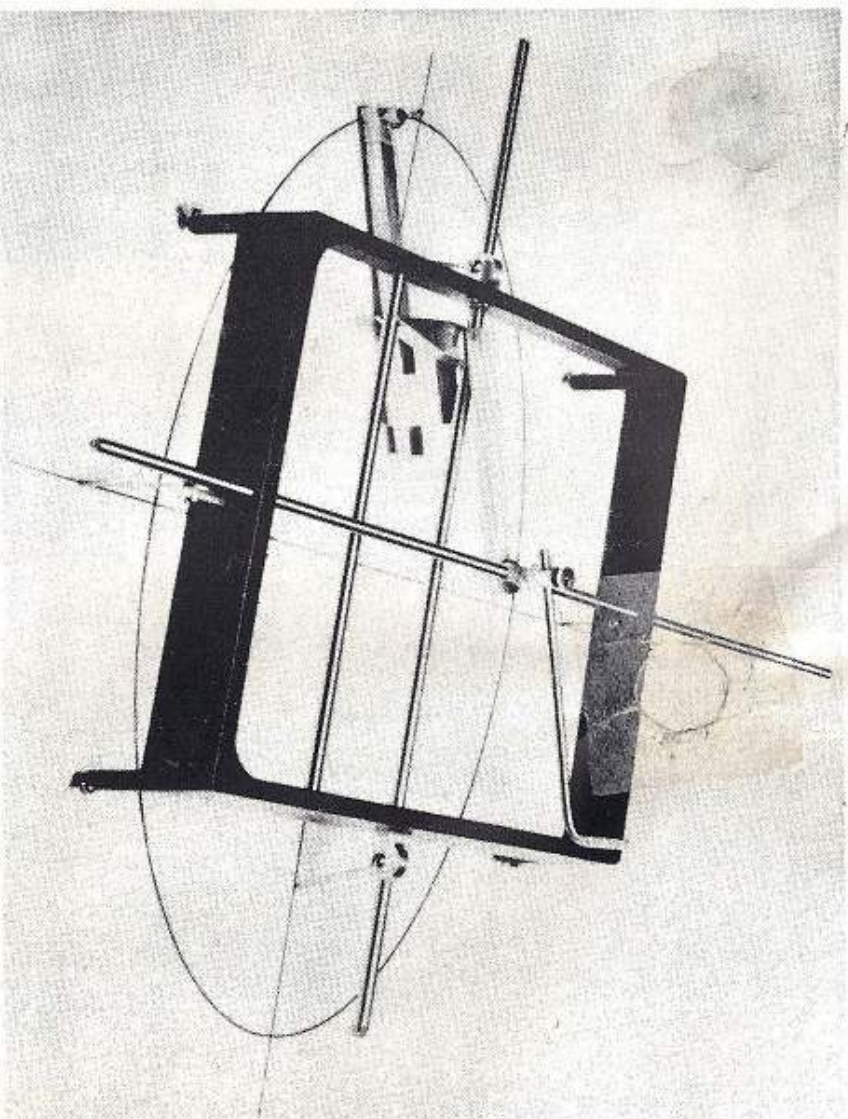
DIRECTIONS:

A. To locate an ellipse in a required position:

1. Draw a straight line on the paper approximately 9" long where the major axis is desired. Draw another line 9" long perpendicular to this one where the center of the ellipse is desired.
2. Swing the four indicators to the down position.
3. Set the instrument on the paper so the four indicators are on the two lines. The major axis being in the direction of the double rods. With the instrument in this position any setting on the scales will produce an ellipse with its major and minor axes on these lines.

B. To draw an ellipse of required size:

1. Set 1/2 minor axis on the lower scale.
2. Subtract 1/2 minor axis from 1/2 major axis and set the remainder on the upper scale.
3. Example: An ellipse 4" x 6" is required. Set 2" on the lower scale. Subtract 2" from 3" and set



the remainder (1") on the upper scale as shown in Fig. 2 and 3.

4. Adjust pencil so that the lead touches the paper with sufficient tension for desired line. When clamping lead in lead holder be sure slot in holder is at right angles to the thumb screw as shown in Fig. 1.

5. The ellipse is drawn by holding the frame with one hand and revolving the crank with the other.

C. To ink an ellipse:

1. Replace lead holder with the tip from Le Roy lettering set.

DETERMINING MINOR DIA. IF MAJOR DIA. AND DEGREE OF ELLIPSE ARE KNOWN.

1. FIND MAJOR DIA. (IN INCHES) ON BOTTOM SCALE
2. FOLLOW CURVE FROM THAT POINT UNTIL IT INTERSECTS THE LINE SHOWING DEGREE OF ELLIPSE WANTED
3. MEASURE DISTANCE BETWEEN THE TWO POINTS. THIS DISTANCE IS THE MINOR DIAMETER.
4. IF MAJOR DIA. IS LESS THAN 8", SET $\frac{1}{2}$ OF MEASUREMENT ON LOWER SCALE OF MACHINE
- IF MAJOR DIA. IS GREATER THAN 8", SET ENTIRE MEASUREMENT ON LOWER SCALE OF MACHINE

DETERMINING DEGREE OF ELLIPSE IF BOTH DIAMETERS ARE KNOWN.

1. FIND MAJOR DIA. (IN INCHES) ON BOTTOM SCALE
2. PLACE A RULER SO THAT ONE END OF MINOR DIA. (IN INCHES) IS ON THE POINT INDICATING MAJOR DIA. SWING THE RULER THRU AN ARC UNTIL THE "0" POINT OF THE RULER IS ON A DEGREE LINE AND THE EDGE OF THE RULER IS PERPENDICULAR TO THAT DEGREE LINE.
3. THE DEGREE INDICATED FOR THAT LINE IS THE DEGREE OF THE ELLIPSE

