Dial Caliper

A picture containing text, device, caliper

Description automatically generated

The caliper can measure distances to a precision of .001 inches or .02 mm, is straightforward to use compared to the micrometer, has multiple measuring mechanisms, and can measure distances all the way up to 6 inches or 15 cm.

To measure using the caliper, place an object between the external jaws, or place the internal jaws within an object, and move the jaws using the thumbroll until it begins to slip. The scale between the jaws gives a distance to within .1 inches or 1 mm, the dial gives an additional contribution in increments of .001 inches or .02 mm. (There are actually two other ways to measure using the caliper besides the external/internal jaws, can you figure out what they are?)

Screw Gauge Micrometer

A close-up of an object

Description automatically generated with low confidence

Knob

The micrometer can measure distances to a precision of .0001 inches=0.000254 cm, better than the caliper, but it’s a bit harder to use, has only one measuring mechanism, and can only determine distances up to 1 inch.

To measure using the micrometer, place an object within the jaws and tighten the screw gauge using the knob at the very end of the device. When the knob begins to skip, you may record a measurement. Begin with the scale on the bottom left: the rightmost visible marking provides the distance to a precision of .025 inches. Now examine the scale on the right: record the value of the first line just below the bottom left scale times .001. Then, examine the upper left scale for the point where the left and right lines come closest to meeting: record this number times .0001. These three values combined give the result. For example, in the picture the measurement is .425+.004+.0002=.4292 inches.

