

Mitutoyo Dial Calipers

Maintenance

The dial calipers are precision instruments which *should be well maintained*. They should be coated with WD40 prior to their initial use. Following each day trip and throughout each multi-day trip they should be rinsed with fresh water to remove salt and debris, particularly from the gear channel, and then sprayed with WD40. Take care to use only silicone spray around and on the dial face; WD40 will cloud the dial face. When completely closed the dial needle should point to zero. This will insure that accurate measurements are taken. Instructions for recalibrating are included in this document and in the caliper's case; calipers *should be calibrated prior to and throughout each trip*. Calipers should be stored slightly agape. Calipers that are stored in the closed (zero) position may become seized and difficult to fix if there is no room to work out the grit that often becomes lodged in the calipers.

How to take a reading

Read the measurement off the lower jaws of the calipers when taking outside measurements (i.e. lobster carapace length). Read off the upper jaws when taking inside measurements (i.e. an escape vent or trap entrance). Note that carapace length measurements are whole numbers only (i.e. 96 mm), do not use the dial calipers to measure lobsters to the tens or hundreds place (i.e. 96.4 mm or 96.53 mm).

If a measurement aligns directly with a gradation on the calipers there is no need to use the dial face. If the measurement falls in between gradations on the calipers, use the dial face to determine whether to round the measurement up or down.

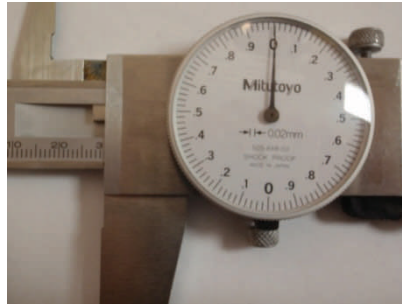


Figure 1 – measurement aligns directly with gradation.

Round up if the dial is at 0.5 or greater and round down if the dial reads below 0.5 (**Figure 2**).

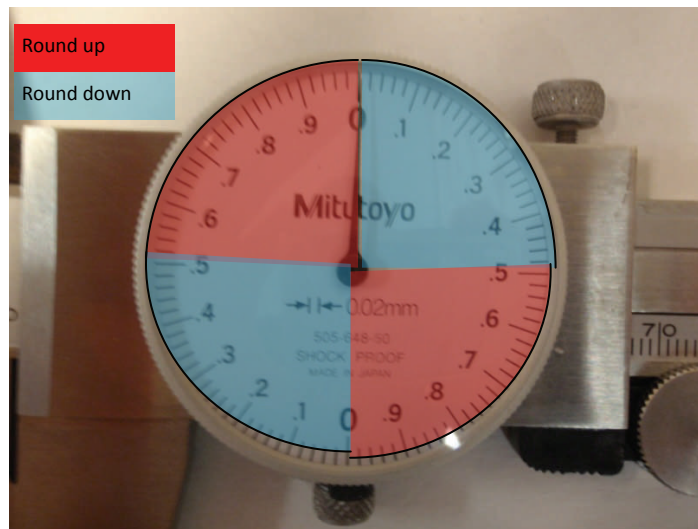


Figure 2 - rounding

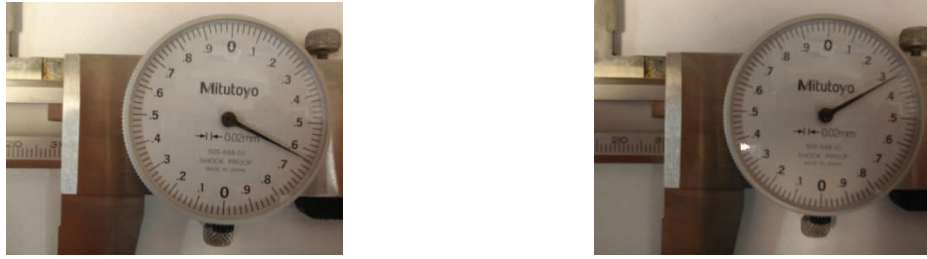


Figure 3 – in the image on the left, the pointer is above 0.5 so the measurement is rounded up to 31 mm. In the image on the right, the pointer is below 0.5 so the measurement is rounded down to 30 mm.

How to calibrate the dial calipers

The dial calipers may need to be calibrated on occasion; a simple way to tell is by looking at the dial face when the jaws are fully closed. If the pointer is not on the 0 when fully closed (Figure 4), the calipers should be recalibrated.

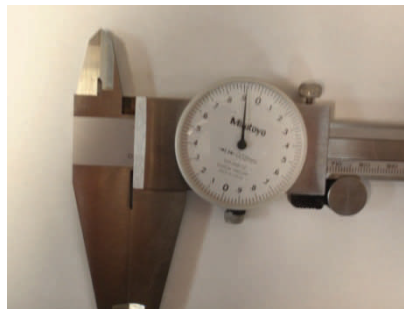


Figure 4 – calipers in need of calibration.

To recalibrate the calipers if the pointer is off by an amount less than or equal to the first ten deviations on the dial face, loosen the lower screw on the dial and rotate the dial face until the 0 aligns with the pointer. Remember to tighten the screw again when finished.

If the pointer is off by greater than ten deviations, begin by opening the caliper jaws 10-20 mm. Loosen the lower screw on the dial face and, if needed, adjust the face so that the 0 is aligned with the top center of the dial. Tighten the lower screw. Use the thumbwheel to adjust the pointer until it is directly aligned with the 0. Insert the adjuster in the groove on the rear side of the dial. Close the jaws of the calipers slowly while pressing in the adjuster until the jaws are fully closed. Remove adjuster and confirm that the pointer is on 0 once again. A bent paper clip will work if the adjuster is missing, **bring one with you as a spare**.

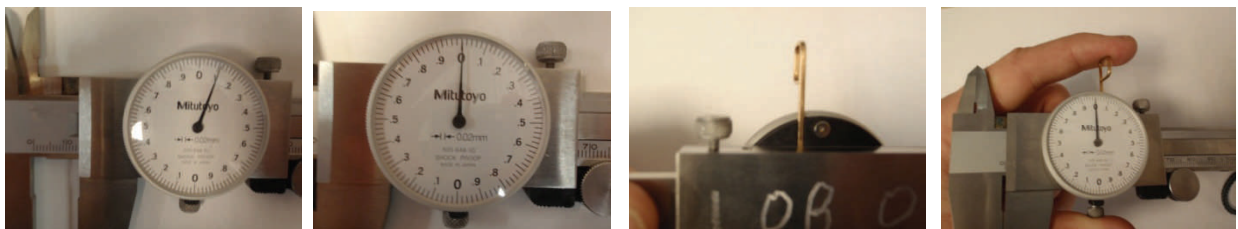


Figure 5 - calibration steps

Calibration steps, from left (Figure 5):

- 1) Open caliper jaws 10-20 mm, loosen lower screw on dial face and align 0 with top of dial;
- 2) Adjust pointer so it aligns with 0;
- 3) Insert adjuster into groove on back of dial;
- 4) Close jaws slowly, maintaining pressure on adjuster. Remove adjuster and confirm calibration.