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How to Calibrate a Metal Stem Probe Thermometer

A calibrated thermometer has been checked to ensure the temperature is reading correctly. Recalibrating means adjusting the thermometer to ensure an accurate temperature is recorded. These instructions detail how to calibrate a metal stem probe thermometer. No special knowledge or skills are necessary.

When should I calibrate a thermometer? If:

a) it has been dropped; or
b) there has been an extreme temperature change (i.e. freezer to room temperature).

What does a metal stem probe thermometer look like?

A metal probe thermometer has:

- a long metal stem probe with pointed end that is inserted into a food or food container;
- a dimple along the metal probe to mark the sensing area;
- a dial display with numbered temperature markings in Celsius or Fahrenheit (or both);
- a calibration nut located under the dial; and
- a plastic cylinder with calibration brackets.

Figure 1: Typical Metal Stem Probe Dial Thermometer
Adapted from amazon.com

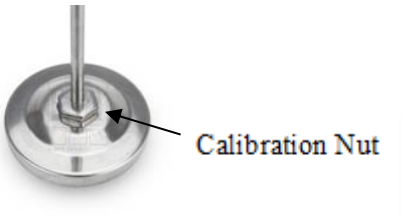

Figure 2: Calibration Nut
Adapted from thermometer.co.uk

How to Calibrate Your Thermometer

Materials you will need:

- 1 cup of crushed ice
- 1 cup of cold water
- 8 oz. glass
- Plastic cylinder, small wrench, or needle nose pliers

Step 1: Fill the glass with half crushed ice and half cold water, as shown in Figure 3 (right). Add enough water so the ice floats. The temperature of this mixture will always be 0°C (32°F). This will be your reference point for ensuring your thermometer is giving an accurate reading.

Figure 3: Slush Water Mix
Adapted from wechu.org

Step 2: Set the probe into the slushy mixture so the dimple is under the slush. Do not touch the sides or bottom of the glass with the pointed tip of the probe. Hold the thermometer by the dial.

Step 3: Wait until the needle stops moving to determine the temperature.

Step 4: The thermometer needs to be adjusted if the needle is not pointing to 0°C (32°F). Insert the probe through the round opening at the end of the plastic cylinder until the calibration nut clicks into the brackets, as shown in Figure 4 (right). If you are using a small wrench or needle nose pliers, grasp the calibration nut with the tool you are using. Put the probe back in the slush. Wait until the needle stops moving to read the temperature.

Figure 4: Thermometer in calibration brackets
Adapted from dish-bliss.com

Step 5: Turn the plastic cylinder to move the needle until it reads 0°C (32°F). If you do not have a plastic cylinder, use a small wrench or pliers to turn the calibration nut. Turn the calibration nut clockwise to turn the needle to a higher number and counter clockwise to turn the needle to a lower number. Make small turns and wait until the needle settles to read the temperature.

Tip: Thermometers without a calibration nut cannot be calibrated and must be discarded. Digital thermometers may have a reset button that has to be pushed to recalibrate the setting. If the digital thermometer doesn't read 0°C (32°F), try a new battery or discard.