



# For Safety's Sake...

## Measuring the Heat

*Foodservice Thermometers: Types & How to Use Them*

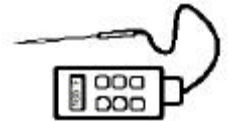
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Temperature control is an important aspect of food safety and using a thermometer is an important part of temperature control. Knowing how to use and calibrate a thermometer is something every food handler should know. This fact sheet will help guide you through the basics of selecting, using and calibrating several types of foodservice thermometers.

#### TYPES of THERMOMETERS

- \* **Thermocouples:** Thermocouples measure temperature through a sensor in the tip of the stem. When the user presses a button, the thermocouple gives a readout of the temperature. This type of thermometer measures temperatures quickly and does not require re-calibration very often.



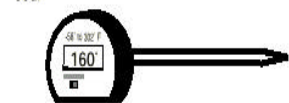
- \* **Bi-metallic stemmed thermometers:**



The bi-metallic stemmed thermometer is the most common type of foodservice thermometer. It measures temperature through a metal stem with a sensor in the lower end. The sensing area is from the tip to a half-inch past the dimple. The

temperature is read on the dial face. When selecting this type, look for an adjustable calibration nut, easy-to-read temperature markings, and a dimple marking the end of the sensing area. These should not be left in food that is cooking in an oven or a microwave, or on a stovetop.

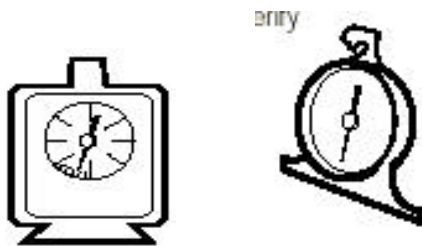
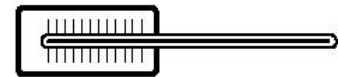
- \* **Digital thermometers:** Digital thermometers measure temperatures through a metal tip or sensing area. They are especially easy-to-read because they have a digital readout.



\* **Other types of foodservice thermometers:**

\* A **time-temperature** indicator (TTI) is a kind of thermometer strip that is usually found on packages and looks like a label. Liquid crystals in the strip change color if foods reach an unsafe temperature.

\* **Candy, meat and deep-fry** thermometers are used for only one type of food. Never use mercury-filled or glass thermometers because they may break.



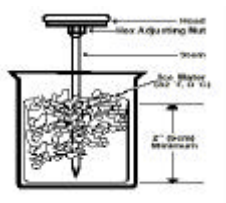
\* **Equipment** thermometers are usually built-in or of the hand-type and are found in refrigerator or freezer units. Others are built into hot-holding equipment and dishwashing machines.

**CALIBRATING YOUR THERMOMETER**

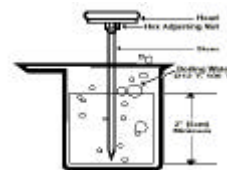
Periodically, all thermometers should be calibrated or adjusted so that they measure temperatures accurately. Here's how:

**Bimetallic Stemmed Thermometers:**

Bimetallic stemmed thermometers are calibrated using the ice-point method. Calibrate on a regular basis and after using the thermometer with very hot or very cold foods, or after dropping or jarring it. In a clean styrofoam cup, make an ice water slush by filling the cup halfway with ice cubes and the rest with water. Stick the sensing tip of the thermometer into the cup being sure not to touch the sides or bottom of the cup. Wait four or five minutes or until the needle is steady. If the needle does not read 32 degrees F (0 degrees C) then turn the nut under the dial until it does. Clean and sanitize the thermometer and its case before next use.



**Ice Point Calibration Method**



**Boiling Water Calibration Method**

### **Thermocouples and Digital Thermometers:**

Check the accuracy of thermocouples and digital thermometers regularly by using the ice point method described above. If the reading is off, try a new battery. If that does not correct the problem, then have the thermometer checked.

## **USING THERMOMETERS**

### **Cleaning and Sanitizing:**

Before and after each use wash, rinse, sanitize and air-dry thermometer stems. Use a sanitizing solution that is safe for food-contact items.

### **Taking Temperatures:**

Depending upon the food being checked, there are several methods for measuring food temperatures:

- \* Stick the sensing tip into the center and/or thickest part of the food. Check the temperature in at least two places.
- \* For flexible packages or soft bulk dispensers, fold the package around the sensing tip of the thermometer. Do not poke a hole in the package.
- \* For individual packages, such as small milk cartons, open one package and insert the thermometer. Throw away the open package or use it immediately for cooking.
- \* For frozen foods, stick the sensing area between packages or tightly packed boxes.

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