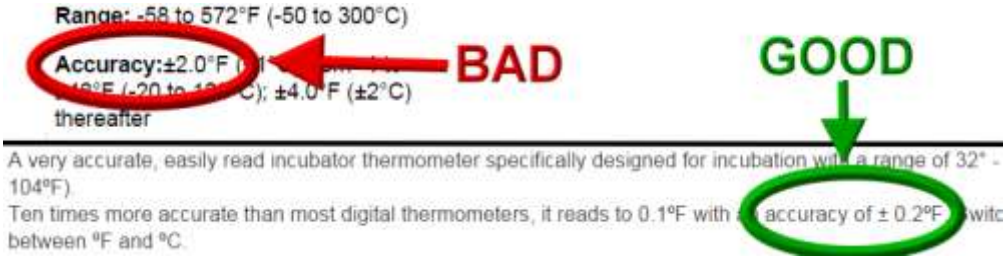
# Incubation Thermometers

**OBJECTIVE**: Chickens should hatch on day 21. If they hatch early, then your temperature is too high. If they hatch later, then your temperature is too low. While early and late chicks may survive, they are not among the healthiest or vigorous. ***It is important that you get your incubation temperature correct***.

**INCUBATOR GAUGES**: ***Do Not Trust*** the gauges that came with your incubator. Verify that both the temperature and humidity readings are correct with a calibrated thermometer and hygrometer. It is recommended that this verification be repeated periodically. If there is a reading difference between the incubator panel and the calibrated thermometer, trust the calibrated thermometer.

**DIGITAL SENSITIVITY**: ***Most digital thermometers are inadequate for incubation***. While they may read to 0.1° F, they are only sensitive to 2.0° F – while the readout may display 99.5° F the temperature will range anywhere from 98.5° F to 100.5° F. Before purchasing a digital thermometer, read the packaging. If it does not specifically list an accuracy of ±0.2° F, do not buy it…




***CAUTION***: All digital thermometers appear to be accurate but ***most*** are grossly inadequate for incubation. A digital thermometer ***must be calibrated*** and ***must have a sensitivity*** of no less than ***±0.2° F***.

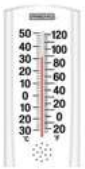
**RESPONSE TIME**: When the heating element comes on, the temperature will rise and continue to do so for a short time after the element switches off. Some digital thermo meters will incorrectly register this rise as a temperature spike and cause concern… "Why does my temperature seem to bounce all over the place?" Digital thermometers encase in plastic frequently continue to register this increase long after the air temperature has returned to normal. For best result, buy only digital thermometers with a probe type sensor where the probe can be slipped into one of the vent holes.

## THERMOMETER TYPES

### STEM

**PRO**: Slips thru vent
May be calibrated
**CON**: May be difficult to read
Not readable to 0.1°

### RED, SPIRIT GLASS



**PRO**: Easily calibrated
Inexpensive
**CON**: Difficult to read
Not readable to 0.1°

### DIGITAL PROBE

**PRO**: Slips thru vent
Easily to read
**CON**: Can be Expensive
Most not accurate ±0.2°

### DIGITAL

**PRO**: Easy to read
Inexpensive
**CON**: Cannot be calibrated
Most not accurate ±0.2

**MERCURY THERMOMETERS**: Silver mercury glass thermometers are the most accurate thermometers but are not readily available because of toxicity associated with mercury.

## CALIBRATING A THERMOMETER

### FREEZING POINT

1. Fill a glass with crushed ice cubes and cold water.
2. Stir the water and let sit for 3 minutes.
3. Stir again, then insert your thermometer into the glass, making sure not to touch the sides.
4. The temperature should read 32°F (0°C).
5. If it doesn't, loosen the glue holding the glass to the scale, move the glass up or down as needed.
6. Recheck accuracy and secure tube with a drop of glue.

### BOILING POINT

1. Boil a pot of distilled water.
2. Once the water has reached a rolling boil, insert your thermometer, making sure not to touch the sides or bottom of the pot.
3. The temperature should read 212°F (100°C).
7. If it doesn't, loosen the glue holding the glass to the scale, move the glass up or down as needed.
4. Recheck accuracy and secure tube with a drop of glue.