

Calibration Procedure for Bimetal Dial Type Thermometers

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To Recalibrate:

Choose 2 points on the dial at least half the scale range apart. Place the thermometer shaft (2" minimum) in an agitated liquid (oil or water) together with a [certified reference thermometer](#) and check the readings of both and record both if both are stable for at least 30 seconds.

If the reading is out then to adjust the reading, hold the hex nut beneath the face with a wrench or the sheath if it has a HEX fitting on the sheath (see <http://www.scigiene.com/PT0100>) then turn the face by hand. Rotate the face until the needle aligns with the correct temperature reading. Check the second temperature. If the second temperature is outside the specified tolerance, readjust the dial so that the thermometer readings are within tolerance at both temperature settings. If this is not possible dispose of the thermometer and replace.



HINT: Try checking at both points first and if within specification only then try readjusting it, otherwise you can end up spending half the day readjusting them. If it is out significantly at either point it might be easier to dispose of the unit as this likely indicates damage.

There are 2 keys to making this work properly:

- 1) Having a NIST traceable reference thermometer that is accurate. At least double the accuracy of the unit being tested.
- 2) Using a calibration bath that is highly stable in temperature (this is not easy without the correct equipment and stirred ice baths can have a variance of up to 2C. We have simplified this process by designing the [Scigiene Calibrator](#). This is a cost-effective device that incorporates the reference [thermometer](#) a stirrer hot plate and a specially designed rack and bath to allow highly repeatable ice bath readings.

If using the [Scigiene Calibrator](#), please follow the directions precisely.

Using only a crushed ice bath can lead to variances of over +/-2C and can lead to DE calibration of the thermometer. See our document [Why Use the Scigiene Calibrator](#) for more details.



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