



Tel-Tru Manufacturing Company

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► **RECOMMENDATIONS FOR CHECKING THE CALIBRATION OF BIMETAL THERMOMETERS:**

Use of a **MASTER THERMOMETER**, at least as accurate as a bimetal thermometer, is recommended for making comparisons. For best results, use a **precision ASTM** type mercury-in-glass thermometer certified directly traceable to NIST.

Immersion of the bimetal thermometer stem into the medium must be at least up to the groove on the stem to **assure that the entire bimetal coil is immersed**.

- In some short stem Tel-Tru industrial thermometers the groove may be hidden by the threaded connection; the entire stem and thread should be immersed in this case.

CALIBRATION TEST EQUIPMENT CONSIDERATIONS:

Check the stability and accuracy specifications of this instrumentation, and cross-check the read-outs with NIST traceable mercury in glass thermometers. Make certain the test instrument is stabilized at the reading point as initial insertion of thermometer stem into bath/dry block can sometimes have a short-term affect on test device stability.

- Take reading of Bimetal Thermometer when the pointer has stabilized and stopped moving. Typical immersion time may vary from approximately 1 to 3 minutes depending on type of thermometer, temperature point and calibration test equipment used.

Use of a laboratory grade **CONSTANT TEMPERATURE BATH**, with agitation to provide uniform temperature throughout, is recommended.

- Controls and read-out (if provided) should be properly calibrated and at least as accurate as the bimetal thermometer being tested.
- Confirm upper and lower limits of bath operating range as accuracy and stability may not be as consistent at those points.

If using a **DRY BLOCK** calibration device consider:

- The hole into which thermometer is inserted should allow for minimal air space around stem.
- The temperature profile of the “hole” may affect the reading of the tested bimetal thermometer— if the heat source is only at the bottom of hole or is not uniform over the length of the bimetal coil. This is compounded with short stem thermometers.

Tel-Tru Check-Temp Calibrators are recommended for verification of thermometer accuracy in food safety and food service **HACCP** (Hazardous Analysis Critical Control Points) programs.

Please call, fax or e-mail Tel-Tru if you have any questions, require review of process or need assistance.
