TEL-TRU® Manufacturing Co.

CHECK-SET® THERMOMETER CALIBRATORS

An accurate, safe, convenient, and cost-effective thermometer calibration system

Distributed by:

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Temperature + Pressure Since 1916
Verify Thermometer Accuracy at Your Critical Control Point!

The Tel-Tru Check-Set Series of Thermometer Calibrators provides accurate, unambiguous, and cost-effective calibration and accuracy verification for a wide range of thermometers and temperature measurement instruments.

The Check-Set series is the perfect temperature reference device for:

- Plant quality assurance
- Process control
- Food safety
- Instrument calibration and service
- HACCP compliance (Hazard Analysis Critical Control Points)

Typical users of the Tel-Tru Check-Set Calibrators are food safety professionals responsible for operating, inspecting or certifying:

- Food preparation and food service facilities
- Industrial canning, meat, dairy and beverage processing plants

Users include:

- HACCP compliance officers
- QA managers
- In-plant maintenance technicians
- Field calibration contractors
- Local, state, and federal agency compliance officers

FEATURES

- The series includes:
  - Check-Set I with one calibration set point
  - Check-Set II with two calibration set points
  - Check-Set IV with four calibration set points
- High accuracy
  - Certificate of Calibration traceable to NIST
  - Built-in warning circuitry to alert user when unit exceeds set-point by 1°F
- Fast calibration verifications
  - Simple to use
  - Easy operator training
- Serial number assigned to each unit
- Portable - optional padded shoulder strap available (except CS1-HOT models)
- Rugged enclosure and electronics for reliable service
- Quick Start Guide

CALIBRATION SERVICE

- An annual factory recertification service is available.
- Completion of recertification service extends the warranty for one year.

Compatible with thermometers and temperature probes of all sizes!
GENERAL SPECIFICATIONS

• Accuracy ±0.2°F (0.1°C)
• Input Power 115 volts, 50/60 Hz, 1.5 amps
• Recommended Ambient Operating temperature range: -65-85°F (18-29°C)
• Type 304 stainless steel enclosure
• Weight: - All models: 9 lbs. (4 kg)
• Dimensions: - Check-Set I HOT: 11 x 6¾ x 3¾" (279 x 168 x 79mm) - All other models: 8¼ x 8¾ x 4¼" (222 x 225 x 108mm)
• US patent #6,170,983

IMPORTANT CALIBRATION TEMPERATURES

The Check-Set series of thermometer calibrators verifies the calibration of your temperature sensing devices at multiple temperatures. Their accuracy also allows you to validate your temperature measuring devices at temperatures specific to your application. For example, in the food and dairy industry, important temperatures or “set-points” include:

• 40°F (5°C): Recommended cold food holding temperature
• 140°F: Recommended hot food holding temperature
• 150°F: Clean-in-Place return lines
• 160°F: E.Coli safety temperature
• 161°F: HTST flash pasteurization - milk
• 175°F: HTST flash pasteurization - ice cream, eggnog, frozen desserts
• 212°F: Boiling point of water

Eliminate Error-Prone and Cumbersome Calibration Methods

“The READY TO USE” TIMES

Users often keep the Check-Set units on all day so they are ready for use “on demand.” Typical “ready to use” times from ambient:

<table>
<thead>
<tr>
<th>Model</th>
<th>Calibration Temperature</th>
<th>Ready to Use Time</th>
<th>Stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check-Set I</td>
<td>HOT 140°F</td>
<td>10 min.</td>
<td>±0.06°F</td>
</tr>
<tr>
<td></td>
<td>160°F</td>
<td>14 min.</td>
<td>±0.06°F</td>
</tr>
<tr>
<td></td>
<td>212°F</td>
<td>20 min.</td>
<td>±0.06°F</td>
</tr>
<tr>
<td>Check-Set I</td>
<td>COLD 40°F</td>
<td>5 min.</td>
<td>±0.03°F</td>
</tr>
<tr>
<td>Check-Set II</td>
<td>40°F</td>
<td>5 min.</td>
<td>±0.03°F</td>
</tr>
<tr>
<td></td>
<td>160°F</td>
<td>7 min.</td>
<td>±0.03°F</td>
</tr>
<tr>
<td></td>
<td>5°C</td>
<td>5 min.</td>
<td>±0.02°C</td>
</tr>
<tr>
<td></td>
<td>90°C</td>
<td>12 min.</td>
<td>±0.02°C</td>
</tr>
<tr>
<td>Check-Set IV</td>
<td>40°F</td>
<td>6 min.</td>
<td>±0.03°F</td>
</tr>
<tr>
<td></td>
<td>150°F</td>
<td>6 min.</td>
<td>±0.03°F</td>
</tr>
<tr>
<td></td>
<td>161°F</td>
<td>7 min.</td>
<td>±0.03°F</td>
</tr>
<tr>
<td></td>
<td>175°F</td>
<td>9 min.</td>
<td>±0.03°F</td>
</tr>
</tbody>
</table>

The Ice Water Method

• Difficult
• A “pain”
• Time consuming
• Error-prone

The Boiling Water Method

• Dangerous
• Time consuming
• Difficult
• Error-prone -- boiling point of water varies with altitude
Commercials Food Service
• Chain Restaurants
• Grocery Chains
• Corporations
• Airlines
• Hotels
• Restaurants
• Theme Parks
• Sports Arenas

Institutional Food Service
• Military Bases
• Public School Districts
• Colleges and Universities
• Hospitals
• Government Medical Centers
• Dept. of Corrections

Food Processing, Storage, and Distribution
• Red Meats
• Poultry
• Seafood
• Sausage and Hot Dogs
• Baked Goods
• Dairy Products
• Grains
• Tomatoes
• Pickles
• Corn Syrup
• Produce
• Wholesale Food Distribution

Training and Education
• Chef Training/Culinary Arts School
• HACCP and Food Safety Training

Environmental Safety and Health Professionals
• City Health Dept.
• County Dept. of Environmental Health
• State Dept. of Health
• Federal Agencies
• Military Food Safety Inspectors

Industrial/OEMs
• Research and Development Lab
• Industrial Laboratory
• Service and Calibration of:
  – Refrigeration Equipment
  – Industrial Ovens
  – Smokers for Meat/Poultry
• Manufacturer of Food and Beverage Testing Equipment

Markets and Applications Served

Food Safety/ HACCP

Background
HACCP (Hazard Analysis Critical Control Point) is a systematic preventative approach to food safety that involves the definition of specific measurements to reduce risk. HACCP techniques focus on the prevention of hazards and not upon final inspection. HACCP principles are widely applied to FDA and USDA regulated industries and a growing list of international industries, government agencies, and organizations.

Requirements
Satisfactory monitoring of CCPs requires accurate and precise measurements of parameter values (e.g. temperature, pressure, pH, etc.) to ensure that defined Critical Limits are met. Equipment used to make those measurements must be properly calibrated.

The HACCP plan must describe instrument calibration procedures and frequency, responsible individuals and required documentation records for instruments used measuring those parameter values.

Check-Set Series Delivers
Check-Set Calibrators are designed for Food Safety Professionals as an easy-to-use tool to verify the calibration of temperature measurement instruments in compliance with HACCP requirements.

Check-Set users can check thermometers and other temperature sensing instruments at temperatures equal to or close to the critical control points of their processes.
FOOD PROCESSING/ RETORTS

Background
Thermal processing of food in various types of pressure retorts is regulated by the Food and Drug Administration through the establishment of rules for equipment, and temperature indicating, recording and controlling devices.

Requirements
FDA Rule 21 CFR 113.40 specifies that each retort must be equipped with at least one temperature-indicating device, a temperature recording device, and a temperature controller. These instruments must be checked with a reference device that is directly traceable to National Institute of Standards and Testing (NIST) “to ensure accuracy during processing.”

FDA Rule 21 CFR 113.100 defines the required record keeping for reference devices including: identification of the device, a Certificate of Calibration, date and results of the test, and date of the next test.

Check-Set Series Delivers
The Tel-Tru Check-Set Calibrator is optimized for compliance with the temperature instrument calibration and verification requirements of the dairy industry including milk, ice cream, and cheese processing plants.

Typical users include in-plant staff responsible for QA, food safety, HACCP compliance and instrument maintenance. Other users include field calibration contractors and regulatory agency personnel who inspect and certify these plants.

Enjoy less plant down time due to faster and easier certification of temperature instruments:
- No ice water, no ice buckets
- No temperature controller circulators
- Easy to carry throughout the plant
- Probe inserts for most probe sizes

www.teltru.com
Do you need to verify hot temperatures only?

What temperature(s) do you want to verify?

<table>
<thead>
<tr>
<th>HOT</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>140°F</td>
<td>CS1-F01</td>
</tr>
<tr>
<td>160°F</td>
<td>CS1-F05</td>
</tr>
<tr>
<td>212°F</td>
<td>CS1-F16</td>
</tr>
</tbody>
</table>

What are the stem diameters of the instruments you are checking?

<table>
<thead>
<tr>
<th>Code</th>
<th>Single Hole Configuration</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>-100</td>
<td>For probes up to .150” diameter. Calibrate dial thermometers with a 3/8”, 7/16” or 5/8” hex calibration nut</td>
<td>-400</td>
</tr>
<tr>
<td>-400</td>
<td>For probes up to .125”, .187”, .250”, and .375” diameter. Calibrate dial thermometers with 3/8”, 7/16” or 5/8” hex calibration nut</td>
<td></td>
</tr>
</tbody>
</table>

Select your item number here

STEM-LENGTH COMPATIBILITY
For best results, the sensing area of the probe must be inserted completely into the Temperature Control Zone. The minimum immersion depth is dependent on the thermometer type. Check the manufacturer’s user manual of your thermometer for the correct immersion length.

CS1 w/ single hole configuration—Code 100
Frequently used in food preparation or food processing plant environments to verify accuracy of digital or dial thermometers at a single hot test point. Built-in wrench is for easy calibration adjustment of spot check or meat cooking dial thermometers.

CS1 w/ multi-hole configuration—Code 400
Used in food preparation, food processing and industrial environments to verify accuracy of several types of temperature measurement instruments at a single hot test point. Built-in wrench is for easy calibration adjustment of spot check or meat cooking dial thermometers.

OPTIONS AND ACCESSORIES AVAILABLE FOR ALL UNITS

<table>
<thead>
<tr>
<th>Description</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dial Adjustment Tool for 1” and 2” thermometers (set of 3)</td>
<td>96100055</td>
</tr>
<tr>
<td>Cleaning Brushes for models that fit probe diameter up to .150” (set of 3)</td>
<td>96100054</td>
</tr>
<tr>
<td>Cleaning Brushes for multi-hole models (set of 2)</td>
<td>96100145</td>
</tr>
<tr>
<td>Carrying Strap (for all except CS1-HOT)</td>
<td>96100224</td>
</tr>
</tbody>
</table>

FACTORY RECALIBRATION/RECERTIFICATION SERVICE
Tel-Tru Manufacturing Co. offers annual maintenance, inspection, cleaning, and accuracy recertification of each Check-Set thermometer calibrator. Recertification automatically extends the product warranty for one year. Contact Tel-Tru Customer Service for details.

Visit our website at www.teltru.com/calibrator.asp for more information on the Check-Set series of thermometer calibrators and accessories.
Do you need to verify cold and/or hot temperatures?

What temperature(s) do you want to verify?

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLD</td>
<td>CS1-F42</td>
</tr>
<tr>
<td>40°F</td>
<td></td>
</tr>
<tr>
<td>COLD / HOT</td>
<td>CS1-F42</td>
</tr>
<tr>
<td>40°F + 160°F</td>
<td>CS2-F50</td>
</tr>
<tr>
<td>5°C + 90°C</td>
<td>CS2-C53</td>
</tr>
<tr>
<td>40°F + 150°F + 161°F + 175°F</td>
<td>CS4-F80</td>
</tr>
</tbody>
</table>

What are the stem diameters of the instruments you are checking?

<table>
<thead>
<tr>
<th>Stem Diameter</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Hole Removable Wells</td>
<td></td>
</tr>
<tr>
<td>.375”</td>
<td>-120</td>
</tr>
<tr>
<td>.500”</td>
<td>-130</td>
</tr>
<tr>
<td>.750”</td>
<td>-140</td>
</tr>
<tr>
<td>Three Hole Removable Well</td>
<td></td>
</tr>
<tr>
<td>.187”, .250” and .375”</td>
<td>-310</td>
</tr>
<tr>
<td>Three Hole Removable Well</td>
<td></td>
</tr>
<tr>
<td>.125”, .150” and .187” w/recal*</td>
<td>-320</td>
</tr>
</tbody>
</table>

* Calibrate dial thermometers with a 7/16” or 5/8” hex calibration nut, features wrench flats for pocket and laboratory thermometers.

Select your item number here.

3.0” Insulated Zone

3.0” Temp. Control Zone

STEM-LENGTH COMPATIBILITY

For best results, the sensing area of the probe must be inserted completely into the Temperature Control Zone. The minimum immersion depth is dependent on the thermometer type. Check the manufacturer’s user manual of your thermometer for the correct immersion length.

CS1-F42-310 shown with removable well P/N 96100250
- Designed for use with refrigeration.

CS2-F50-320 shown with removable well P/N 96100249 - multi-hole configuration and built in wrench
- Hot-Cold dual set point unit for general HAACP verification of many types of temperature instruments in food service, food processing, and meat packing environments.
- Built-in wrench is for easy calibration adjustment of spot check or meat cooking dial thermometers.

CS4-F80-310 shown with removable well P/N 96100250
- Designed with 4 critical set points for use in dairy products plants.

ADDITIONAL WELL INSERTS FOR CHECK-SET I COLD, II AND IV

<table>
<thead>
<tr>
<th>Well Insert Description</th>
<th>PART #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check-Set Well, 3-Hole (.125”, .150”, .187” Probes w/recal)</td>
<td>96100249</td>
</tr>
<tr>
<td>Check-Set Well, 3-Hole (.187”, .250”, .375” Probes)</td>
<td>96100250</td>
</tr>
<tr>
<td>Check-Set Well, 1-Hole (.375” Probe)</td>
<td>96100252</td>
</tr>
<tr>
<td>Check-Set Well, 1-Hole (.500” Probe)</td>
<td>96100253</td>
</tr>
<tr>
<td>Check-Set Well, 1-Hole (.750” Probe)</td>
<td>96100254</td>
</tr>
</tbody>
</table>

Note: Wells with other hole diameters available upon request
Food / Dairy / Beverage

Spot Check / Laboratory Testing Thermometers
Sanitary Bimetal Thermometers
Sanitary RTDs and Transmitters
Non-Contact Thermometers
Digi-Tel™ Sanitary Thermometers
Sanitary Pressure Gauges
Sanitary Pressure Transmitters

Industrial

Digi-Tel Thermometers
Bimetal Thermometers
Glow Dial Thermometers
Industrial RTDs and Transmitters
Pressure Gauges
Pressure Transmitters
Thermowells
Gas Actuated Thermometers
Vapor Tension Thermometers
Surface Thermometers
Non-Contact Thermometers