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> [Mastercool 52246 Compact Subcool/Superheat Calculator Instruction Manual](#)

## Mastercool 52246

# Mastercool 52246 Compact Subcool/Superheat Calculator

## INSTRUCTION MANUAL

### Introduction

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The Mastercool 52246 Compact Subcool/Superheat Calculator is a versatile instrument designed for HVAC/R technicians. It combines a temperature gauge and a pressure-to-temperature chart into a single, easy-to-use device. This calculator simplifies the process of determining subcool and superheat temperatures, eliminating the need for manual chart lookups and complex calculations.

This manual will guide you through the proper use and care of your calculator to ensure accurate and reliable measurements.

### What's in the Box

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- Mastercool 52246 Compact Subcool/Superheat Calculator
- Clamp-on K-Type Thermocouple
- Battery (typically 9V Duracell, pre-installed or included)



Figure 1: Mastercool 52246 Calculator and included K-Type thermocouple.

## Setup

1. **Battery Installation:** Ensure a 9V battery is correctly installed in the battery compartment located on the back of the unit.
2. **Connect Thermocouple:** Plug the yellow K-Type thermocouple connector into the corresponding port on the side of the calculator.
3. **Power On:** Press the power button (**U**) to turn on the device.



Figure 2: Connecting the K-Type thermocouple to the calculator.

## Operating Instructions

The Mastercool 52246 calculator simplifies subcool and superheat measurements into three main steps:

### 1. Select Refrigerant:

- After powering on, use the **UP** and **DOWN** arrow buttons to scroll through the list of 37 pre-programmed refrigerants (e.g., R22, R32, R134a, R410A).
- Press the **ENTER** button to confirm your selection. The device will remember the last refrigerant used for convenience.

### 2. Enter Pressure:

- Read the pressure from your manifold gauges.
- Use the **UP** and **DOWN** arrow buttons on the calculator to adjust the displayed pressure to match your gauge reading. The calculator supports pressure displays in Kg/cm<sup>2</sup>, MPa, Bar, and PSI (0-600 PSI).

### 3. Clamp Thermocouple:

- Securely clamp the K-Type thermocouple onto the appropriate refrigerant line (e.g., suction line

for superheat, liquid line for subcool).

- The actual temperature will be displayed in the upper right corner of the LCD.

The calculator will instantly display the calculated subcool or superheat temperature based on your inputs.

### Additional Functions:

- **Toggle Subcool/Superheat:** Press the **SH/SC** button to switch between displaying subcool and superheat values.
- **Hold Function:** Press the **HOLD** button to freeze the current readings on the display. This allows you to record the values even if the thermocouple is disconnected or the unit is turned off. The held data will remain until the instrument is powered off.
- **Unit Selection:** Press the **UNITS** button to cycle through temperature units (°F or °C) and pressure units (Kg/cm<sup>2</sup>, MPa, Bar, PSI).



Video 1: Demonstration of the Mastercool Compact Subcool/Superheat Calculator in use. This video shows the step-by-step process of selecting refrigerants, entering pressure, and clamping the thermocouple to obtain readings.

## Maintenance

- **Cleaning:** Wipe the unit with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- **Battery Replacement:** Replace the 9V battery when the low battery indicator appears on the display. Ensure proper polarity during installation.
- **Thermocouple Care:** Handle the clamp-on thermocouple with care. Avoid bending or kinking the wire excessively. Clean the clamp jaws regularly to ensure good contact.
- **Storage:** Store the calculator in a dry, cool place away from direct sunlight and extreme temperatures.

## Troubleshooting

Problem	Possible Cause	Solution
Display is blank or dim	Low or dead battery; Incorrect battery installation	Replace the 9V battery; Ensure battery is installed with correct polarity.
Inaccurate temperature readings	Thermocouple not properly connected or damaged; Poor contact with refrigerant line; Incorrect refrigerant selected	Ensure thermocouple is securely plugged in; Check thermocouple for visible damage; Ensure clamp makes good contact; Verify the correct refrigerant is selected.
Calculator does not respond to button presses	Unit frozen; Low battery	Remove and reinsert battery to reset; Replace battery.

## Specifications

- **Model:** 52246
- **Refrigerants:** 37 pre-programmed (R22, R32, R114, R123, R124, R134, R134a, R141B, R142B,

R290, R401A, R401B, R404A, R407A, R407B, R407C, R407D, R407F, R408A, R409A, R410A, R411A, R411B, R414A, R414B, R417A, R421A, R422A, R422B, R422C, R422D, R427A, R434A, R437A, R438A, R441A, R507A)

- **Temperature Units:** °F or °C
- **Pressure Units:** Kg/cm<sup>2</sup>, MPa, Bar, PSI (0-600 PSI)
- **Display:** Bubble, Saturated, and Dew Point Temperatures
- **Included Accessory:** Clamp-on K-Type thermocouple
- **Power Source:** Battery Powered
- **Item Weight:** 0.32 ounces
- **Product Dimensions:** 7.6 x 4 x 2.2 inches



Figure 3: Dimensions of the Mastercool 52246 Calculator.

Mastercool products are manufactured to high-quality standards. This product is covered by a limited warranty against defects in materials and workmanship. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official Mastercool website.

## Customer Support

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For technical assistance, troubleshooting, or warranty inquiries, please contact Mastercool customer support:

- **Website:** [www.mastercool.com](http://www.mastercool.com)
- **Phone:** Refer to the contact information on the Mastercool website for your region.