



Mastercool[®] Inc.
"World Class Quality"

English

OPERATING INSTRUCTIONS

DIGITAL VACUUM GAUGE
with Bluetooth[®] Wireless Technology

MODEL#
98063-BT



FEATURES:

- Sintered bronze inlet filter to protect the sensor
- 5-digit LCD screen features an ultra-vibrant blue back-light allowing for easy readability
- Chemical resistant sensor for ease of cleaning
- Low battery icon displayed on the LCD indicates that the batteries are low and need to be replaced
- Calibration can be performed while in the field environment
- Audio and visual alarm when vacuum goes below a user adjustable set point
- Bluetooth® wireless technology provides communication to hand-held smart devices through the Mastercool Connect app

SPECIFICATIONS:

- Sensor: Glass bead thermistor with temperature compensation
- Connection Fitting: 1/4 SAE F-FL with stem depressor
- Operating Temperature: 32 to 120°F (0 to 45°C)
- Vacuum Units: Micron, Torr, mTorr, mmHg, mBar, Pa
- Range: 20,000 to 1 micron
- Accuracy: ±10% of reading (from 10,000 to 100 microns)
- Proof Pressure: 450 psi
- Auto-Off: Automatic after 10 minutes, blue backlight after 3 minutes
- Power: 2 AA batteries included
- Battery Life: 100+ continuous hours (depending on backlight use)
- Weight: 0.3 lb (0.13 kg) without batteries / 0.5 lb (0.23 kg) with batteries
- Dimensions: 1.9" x 6.3" x 1.4" (50 mm x 160 mm x 36 mm)

Specifications for Bluetooth® wireless technology:

- 260' (80m) maximum line-of-sight range
- Bluetooth® 4.2 and 5

WARNINGS

Wear Safety Glasses. Wear Gloves

Keep in a dry place. Do not allow moisture to enter the unit.

⚠ WARNING: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm.

REPLACEABLE PARTS

42010	Replacement gasket for 1/4" fitting
42014	Replacement depressor for 1/4" fitting
99333	1/4 FL-M x 1/4 FL-M x 1/4 FL-F tee (optional)


BATTERY**• BATTERY LIFE**

To insure the best accuracy and performance be sure to have sufficient battery life. It is recommended to have two bars or more.

• INSTALLATION

Slide to remove the battery compartment cover. Make sure to place the batteries into the compartment with the correct polarity. Replace battery cover.

BASIC SET-UP**• POWER**

Press the  button to turn the unit on. The vacuum gauge's display will count down during warm-up, then the vacuum will be displayed. Above 20,000 microns, dashes will be displayed.

• UNITS

Press the units button once to enter unit mode. Use the UNITS button to scroll through the units until desired selection is displayed. To save the selected units and return to sensing vacuum, press the ENTER button.

• VACUUM LEVEL TARGET ALARM

The alarm indicates when the vacuum has dropped below a set value. Press ALARM once to display the current setting. Use the ▲ and ▼ arrows to adjust the alarm setting. Press ENTER to save the new setting. To acknowledge the alarm and silence it, press any button. To keep the alarm from engaging, set the alarm to 0.

• BACKLIGHT

The backlight will turn on when the unit turns on. The backlight will automatically turn off after 3 minutes. To turn the backlight back on, press any key.

• AUTO OFF

The vacuum gauge will turn off after 10 minutes at atmospheric pressure. The vacuum gauge will not turn off at deep vacuum or if Bluetooth® is connected.

CALIBRATION

NOTE: The vacuum gauge comes calibrated from Mastercool. We recommend doing an atmospheric calibration before each use.


- Make sure the vacuum gauge is at a constant temperature for 15 minutes or longer before calibration.
- The vacuum gauge uses two-point calibration for greater accuracy. The two points are atmospheric pressure and a deep vacuum of less than 100 microns.
- To exit the calibration without changing the existing calibration, turn the vacuum gauge off.

FOR ATMOSPHERIC CALIBRATION:



1. Turn the vacuum gauge on.
2. With the vacuum gauge at atmospheric pressure and constant temperature, press and hold the ENTER button, then press the ALARM button. The display will read CAL – H.
3. Press ENTER to save the atmospheric calibration.

FOR DEEP VACUUM CALIBRATION:

NOTE: A reference vacuum gauge accurate at 1 to 100 microns is required for deep vacuum calibration. For best results, calibrate around 50 microns. If your reference vacuum gauge does not read in microns, the values will need to be converted to microns (mmHg or Torr x 10⁻³).

1. Turn the vacuum gauge on.
2. Press and hold the ENTER button, then press the  button. CAL XX will be displayed where XX is the calibration pressure. Use the ▲ and ▼ arrows to adjust the calibration pressure to match the reference vacuum gauge.
3. Press ENTER to save the deep vacuum calibration.


OPERATIONS

1. Press the  button to turn the unit on. The vacuum gauge's display will count down during warm-up, then the pressure will be displayed. Above 20,000 microns, dashes will be displayed.
2. Connect the vacuum gauge to the system and start the vacuum pump. Depending on the size of the system it may take some time for the numeric vacuum reading to appear on the LCD. The numbers descend from 20,000 Microns or corresponding units.
3. Press the  button to turn the unit off.


IMPORTANT NOTE REGARDING VACUUM LEAK TEST

When checking a system for leaks under high vacuum (less than 1000 microns), connect the vacuum gauge directly to the system. If additional connections are required use copper tubing (do not use rubber hoses) and high vacuum shut-off valves. Standard hoses and manifold gauge set shut-off valves may have a small amount of leakage under high vacuum.

When initiating a high vacuum test, the vacuum gauge reading may “drift” higher until the system has equalized. After this short stabilization period (5 minutes) the vacuum reading should hold steady. An upward “drift” of the vacuum gauge reading may indicate a leaking system.

 **WARNING!!** To prevent vacuum pump oil from getting in the vacuum gauge's sensor, isolate the vacuum gauge from the vacuum pump before turning the vacuum pump off. The vacuum in the gauge can draw in vacuum pump oil if the vacuum pump is not running. If the AC system has oil in it and is opened to atmosphere while the vacuum gauge is attached, this can cause oil to get into the vacuum sensor as well.

MASTERCOOL CONNECT APP

1. Press the  key to power on the device
2. Download the Mastercool Connect app to a mobile device from the App Store or Google Play.
3. Launch the Mastercool Connect app on the mobile device.
4. Touch “SEARCH” on the Mastercool Connect app. From the list of available devices, pick the digital vacuum gauge. The vacuum gauge should be listed as VGMastercool-xxx where xxx is a unique number for the vacuum gauge.
5. Once the connection is made the Bluetooth® wireless technology symbol will be displayed on the left hand side of the digital vacuum gauge screen.

NOTE: Incompatibility issues may arise due to changes passed down from Apple® and Android™ platforms. Mastercool will continually monitor and update our app software. Please contact us with any connectivity issues. Mastercool will not warranty claims based on app incompatibilities.

CLEANING THE SENSOR

Observe the gasket after each vacuum. If oil is present, it is possible that there is a presence of oil in the sensor chamber. Follow these instructions:

1. Remove the gasket and depressor from the assembly.
2. Clean the gasket and depressor with acetone.
3. Using a syringe insert acetone into the fitting opening. Repeat until all of the oil is removed.
4. Use a gloved finger to cover the opening and shake the vacuum gauge. Allow to sit for a few minutes.
5. Drain the solvent out into a suitable container for proper disposal.
6. Draw a vacuum on the sensor for 15 minutes to dry it out.
7. Repeat as necessary.

ERROR CODES

- E5 – Displayed momentarily if a deep vacuum calibration is attempted and the pressure in the sensor is too high.
- For E1 to E4, Return to Mastercool for repair.

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