VG640TL
Wireless Vacuum Gauge

USER'S GUIDE

Version 1.04

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FEATURES

- Contaminant and oil resistant *Lifetime Sensor*
- Bluetooth® Low Energy (BLE) standard (v4.1)
- Configure in seconds with an iOS® or Android® device
- Instant warmup and response time
- Temperature compensated for accuracy
- Auto power shutoff
- Battery power up to 400 hours continuous use

SPECIFICATIONS

- Display resolution as low as 0.5 Microns
- Standard ¼" male flare fitting
- Vacuum range 0 to 19000 Microns (0 to 2600 Pascals)
- Units: Micron, milliBar, Pascal, Torr, milliTorr
- Accuracy +/-7% or +/-10 Micron (1.3 Pascal), whichever is larger, 50 to 2000 Micron at 75°F (24°C)
- 0.5 second update rate
- Operating temperature range 0°F to 150°F (-17°C to 65°C)

OPERATING CONTROLS

- To turn the unit on, press and release the Power button ⏻.

- To turn the unit off, press and hold the Power button ⏻, until the unit turns off. Pressing and releasing the Power button turns on the backlight.

- Changing the scale: Press the UNITS button 🔘 while in normal operation to change the display to the next scale. The scale order is: Micron, mTorr, Torr, Pascal, mBar. The VG640TL will keep the scale settings when the power is turned off.

- To turn off the Bluetooth® functionality, press and hold the UNITS button 🔘 until the Bluetooth® icon 🔵 on the display is not showing. Turning off Bluetooth® functionality increases battery life.

- To turn Bluetooth® functionality back on, press and hold the UNITS button 🔘 until the Bluetooth® icon 🔵 starts flashing on the VG640TL display.

CONNECTING THE VG640TL TO THE VACUUM SYSTEM

The VG640TL should be connected to the vacuum system through one of the ports one the VG640TL tee. The other port should normally be closed with the supplied cap. It is possible to connect the VG640TL in-line, however it may restrict flow and increase the evacuation time.

CLEANING THE VG640TL VACUUM SENSOR

Although the VG640TL *Lifetime Sensor* was designed to be highly resistant to contamination, it is recommended that the VG640TL sensor be cleaned periodically to maintain full accuracy. Oil and other contaminants slightly reduce the accuracy of the VG640TL unit. Follow the instructions below for cleaning.

- Remove the brass cap from one of the VG640TL ports. Keep the other port closed.
- Use an eyedropper to pour a few drops of ordinary rubbing alcohol into the open port.
- Replace the cap on the open port and tighten.
- Shake the VG640TL unit for approximately 10 seconds.
- Open the vacuum port. Empty the alcohol and let the sensor air dry.

90% of the vacuum gauge warranty returns that Supco® receives are due to contaminated sensors. For vacuum gauges that are heavily contaminated, leave the alcohol in the gauge overnight to clean the sensor more effectively.

SETTING THE ALARMS

SET LOW ALARM:

Press the SET button. The unit will display "Set Alarm Low" and show the current value of the low alarm.

Use the up (UNITS) and down (MUTE) buttons to set the alarm from 0 to 19000 Micron (0 to 2600 Pascal).

To turn the low alarms off, press the down button while the set low alarm is at 0 Micron, or press the up button while the set low alarm is at 19000 Microns. The VG640TL will show 'OFF' when the low alarm is turned off.

SET HIGH ALARM

Press the SET button when you are done setting the low alarm. The unit will now display "Set Alarm High" and show the current value of the high alarm.

Set the high alarm using the same buttons used to set the low alarm, and press SET when done.

Note that the VG640TL will not allow you to set the high alarm below the low alarm.

ALARM VALUES

To see the current value of the low and high alarms, press the SET button . The unit will show the current value of the low alarm. Press the SET button again to display the current value of the high alarm. Press the SET button again to return the unit to normal operation.

When the VG640TL unit is turned OFF, the value of the low alarm is retained, but the value of the high alarm is always set to OFF. This prevents the VG640TL from going into alarm mode when the unit is powered up while vacuum is not applied.

NOTE: When high alarm is set to anything but OFF, the unit will alarm when vacuum is not showing.

ALARM CONDITION

During an alarm condition, the unit will beep and the display backlight will flash red. The unit will flash "Alarm Low" or "Alarm High" to indicate which alarm is active.

To silence the alarm, press the MUTE button . The unit will still flash the red backlight and display the "Alarm Low" or "Alarm High" message even though the sound is off.

DISPLAY RESOLUTION INCREMENT

The vacuum display increment depends on the vacuum displayed and is as follows:

Micron Display Increment			*Pascal Display Increment*	

Vacuum Range	Display Increment
0 to 140	0.5
140 to 400	1
400 to 800	2
800 to 2000	5
2000 to 6000	20
6000 to 9000	100
9000 to 16000	200
16000 to 19000	1000
Above 19000	----is displayed

Vacuum Range	Display Increment
0 to 18	0.05
18 to 50	0.1
50 to 100	0.2
100 to 260	0.5
260 to 800	2
800 to 1200	10
1200 to 2100	20
2100 to 2600	100
Above 2600	----is displayed

LOW POWER MODE AND AUTO SHUTOFF

When the VG640TL is communicating with the Supco® TechLink™ App, the unit will turn OFF after about 8 hours of operation if no buttons are pressed on the VG640TL unit. While communicating with the Supco® TechLink™ App, the VG640TL unit will not enter the power save mode.

When the VG640TL is not communicating with the Supco® TechLink™ App, the unit will automatically turn off or go into power save mode if it detects no keypad activity.

If no alarms are set and no buttons are pressed, the unit will automatically turn off to conserve power, as follows:

• No Vacuum is showing: 10 Minutes

• Vacuum is showing: 1 Hour

When alarms are set, the unit will turn off after 8 hours of operation, if no buttons are pressed.

After 10 minutes of operation, if no button is pressed, the unit will enter a power save mode. POWER SAVE MODE will be displayed on the VG640TL screen. In this mode the unit updates the display every 7 seconds, instead of every 0.5 seconds.

This extends the battery life about 3 times. To exit the low power mode at any time, press any button on the VGT640TL unit.

USING THE VG640TL WITH THE Supco® TechLink™ App

Using the Supco® TechLink™ App enhances the functionality of the VG640TL.

With the App you can:

- Monitor the VG640TL vacuum gauge from up to 200 ft. (60 meters) away using a phone or a tablet
- Record and store the evacuation process data
- Track and record the time the system stayed below the target vacuum
- Track and record the vacuum and time during vacuum decay testing
- Generate customer specific reports for the entire evacuation process
- Save and export reports

THE TOOLBOX

The toolbox lists all the devices that the App has connected to.

In the toolbox you can:

- Add a new device to **My Tools** list
- Delete a device from **My Tools** list
- Rename a device from **My Tools** list
- Connect and disconnect from a device

To delete a device make sure that you are not connected to any devices. Swipe left on a device that you would like to delete, and click the **Delete** button that appears on the right.

To rename a device, swipe left on a device that is connected and click the **Rename** button that appears on the right.

TESTS

There are two tests available for the VG640TL in the Supco® TechLink™ App.

 System Evacuation (Low Alarm)

This test can be used to evacuate the system to a target vacuum. Once the low alarm target is reached, the VG640TL unit will sound an alarm, and the App will send you a notification. The App will record the lowest vacuum level reached and how long the system stayed below the target (low alarm) vacuum.

To end the test, click the (■ Stop) button.

A typical target vacuum for a domestic air conditioner is 500 microns (66 Pascal).

SYSTEM EVACUATION (LOW AND HIGH ALARM)

This test can be used to evacuate the system to a target vacuum, and then use a vacuum blank-off valve to isolate the vacuum pump and test the system for vacuum decay. This allows the technician to see if there are any leaks in the system, or if all the moisture was removed by the evacuation process.
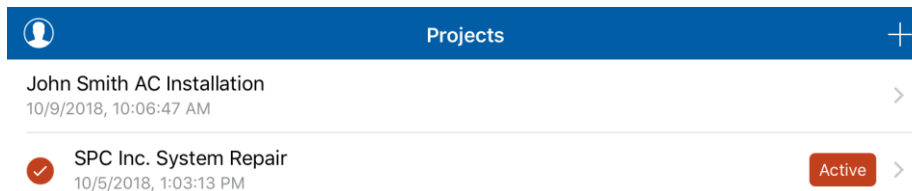
During this test, once the low alarm value is reached, blank off the vacuum pump and let the system vacuum decay to the high alarm value. The time the system spent between low and high alarm is stored by the Supco® TechLink™ App and can be used to diagnose a possible leak or moisture remaining in the system.

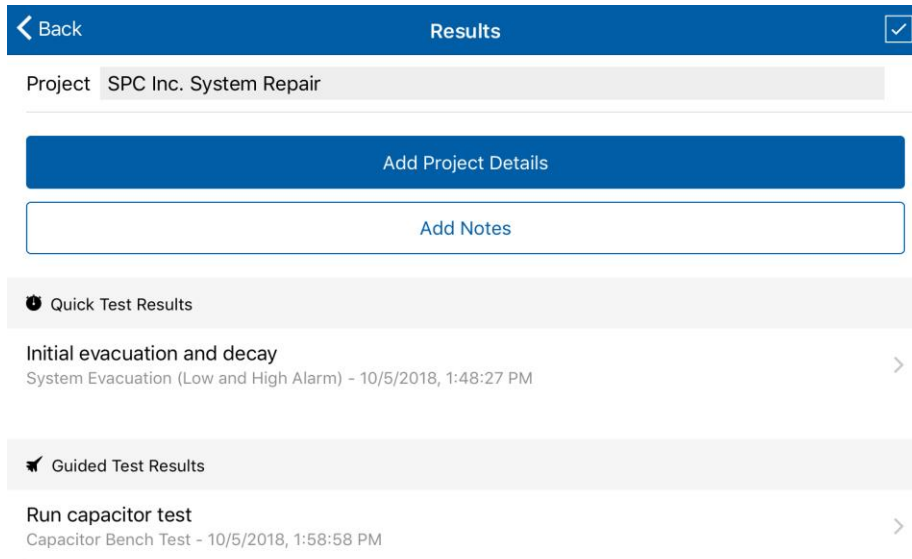To end the test, click the (■ Stop) button.

A typical target vacuum for a domestic air conditioner is 500 micron (66 Pascal). A typical vacuum decay target is 1000 micron (133 Pascal) over 10 minutes.

WORKING WITH RECORDED DATA

The Supco® TechLink™ App separates stored data into projects. Each project consists of a collection of tests. A project can be thought of as data collected for a single job. The recorded data is accessed through the **Results** button.

Test and recorded data is placed into the active project. Clicking on the project itself opens the project details that contain all the tests associated with the project.

This screen also allows you to enter customer information under **Add Project Details**, and any notes that you want to associate with the project.
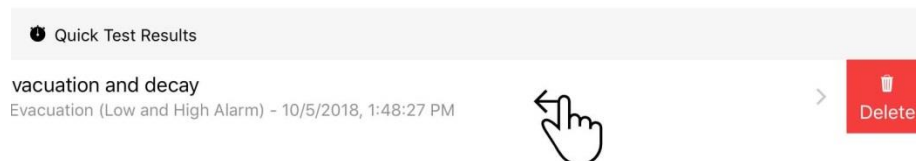
RENAMING PROJECTS AND TESTS

To rename the project or a test, click on the project or test you'd like to rename, and click on the project or test name at the top of the summary.

EXPORTING TEST AND RECORDED DATA

To share or export test data, click on the test you wish to export and click the **Share** button at the bottom of the test summary.
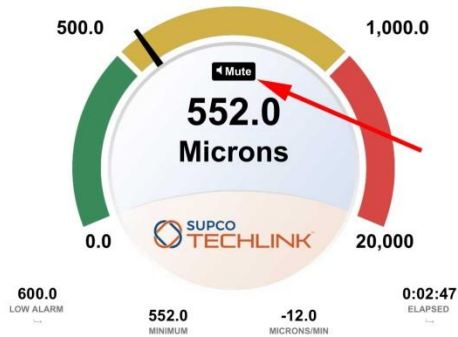
DELETING PROJECTS AND TESTS

Swipe left on a project or a test to uncover the **Delete** button.

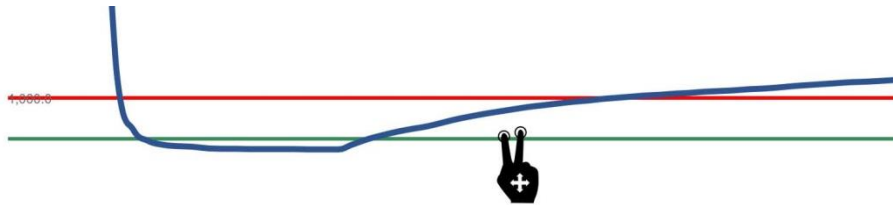## ADDITIONAL Supco® TechLink™ App FUNCTIONS

MUTE THE ALARM

To mute the VG640TL alarm from the App, press the **Mute icon** in the display wheel.

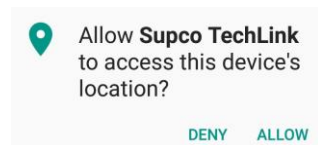To mute the alarm notification on your device, press the volume button.

DRAG THE GRAPH

The graph can be dragged using two finger drag.

LOCATION PERMISSION

On some Android® devices, in order to use Bluetooth® functionality, you must give the Supco® TechLink™ App permission to access your device's location. You will be prompted for this permission the first time you start the App:

If you deny the location permission, you will not be able to communicate with the VG640TL.

VG640TL WARRANTY

LIMITED TO TWO YEARS FROM DATE OF PURCHASE

Sealed Unit Parts Co., Inc. ("Supco®") warrants, for a period of two (2) years from the date of original purchase ("Warranty Period") when the Product is purchased through an authorized reseller, that the VG640TL shall be free of defects in materials and workmanship under normal applications, use and service conditions.

Supco® will, at its option, either repair or replace the product, or refund the purchase price, if the VG640TL becomes inoperable due to a defect in material or workmanship. This warranty does not apply if the VG640TL, in Supco®'s judgment, has been subject to misuse, neglect, or accident.

This warranty does not cover any transportation costs for the return of the VG640TL or any other damages or costs.

To the maximum extent permitted by law, this warranty and the remedies set forth above are exclusive and in lieu of all other warranties, remedies and conditions, whether oral or written, express or implied. Supco® specifically disclaims any and all implied warranties, including, without limitation, warranties of merchantability and fitness for a particular purpose