BACHARACH®

The Measurable Difference

Tru Pointe® Ultra
Ultrasonic Leak Detector

Instruction 0028-9000
Operation and Maintenance
Rev. 1 - May 2010

WARRANTY

The Bacharach Tru Pointe® Ultra is warranted for one year to be free of manufacturing defects adversely affecting performance. Should an instrument fail within the one year warranty period, the unit will be repaired or replaced provided in the opinion of the factory, the instrument has not been tampered with or abused.

If defective, return to the factory for repair and re-calibration. Maximum liability of Bacharach shall be limited to replacement of unsatisfactory product.

Recommendations and product information are believed to be accurate, but the furnishing of it does not constitute the making of a good process warranty of Seller.

Bacharach warrants that this product conforms to the Product Description contained in this literature. **Bacharach makes no other warranty, whether expressed or implied, including warranties of merchantability or of fitness for a particular purpose or application.** No statements or recommendations contained herein are to be construed as inducements to infringe any relevant patent, now or hereafter in existence. Bacharach neither assumes nor authorizes any representatives or other person to assume for it any obligation of liability other than such as expressly set forth herein.

Under no circumstances shall Bacharach be liable for incidental, consequential or other damages from any alleged negligence, breach of warranty, strict liability or any other theory, arising out of the use or handling of this product.

Contents

1 About This Manual

Thank you for investing in a Bacharach Tru Pointe® Ultra Ultrasonic Leak Detector.

To assure operator safety and the proper use of the Tru Pointe® Ultra, please read the contents of this manual, which provides important information on the operation and maintenance of the detector.

Warning Statements

⚠ The use of the word WARNING (and the warning symbol at left) in this manual denotes a potential hazard associated with the use of this equipment. It calls attention to a procedure, practice, or condition, or the like, which if not correctly performed or adhered to, could result in personal injury or death.

Caution Statements

⚠ The use of the word CAUTION (and the caution symbol at left) in this manual denotes a potential hazard associated with the use of this equipment. It calls attention to a procedure, practice condition, or the like, which if not correctly performed or adhered to, could result in damage to the equipment.

1

2 Introduction

General Description

The Tru Pointe® Ultra Ultrasonic Leak Detector is an electronic instrument that detects the inaudible high frequency sound (ultrasound) of high pressure leaks and converts it to sound a human can hear. Using patented technology, the Tru Pointe® Ultra guides the user to a leak by quantifying the intensity of the ultrasound and converting it to sound the user can easily hear.

The Tru Pointe® Ultra has been specifically designed for air conditioning and refrigeration (HVAC-R) leak detection. The Tru Pointe® Ultra is the only test system that can simultaneously detect the vacuum and high pressure leaks that can occur in HVAC-R systems. Since the instrument detects only sound, it is gas-independent and can be used to detect leaks at the speed of sound, without the delay seen with gas dependent "sniffers."

What's in the Kit

0028-8000
Tru Pointe® Ultra Kit

Tru Pointe® Ultra	0028-7000
Instruction Manual	0028-9000
Carrying Case	0028-0005
6" Wave Guide	0028-0004
Touch Probe	0028-0003
Folding Hi-Fi Headset w/ Volume Control	0028-0002
9v Battery	0204-0024
Warranty Card	0006-8825

0028-8010
Tru Pointe® Ultra Kit w/ SoundBlaster®

Tru Pointe® Ultra	0028-7000
SoundBlaster®	0028-7006
Instruction Manual	0028-9000
Carrying Case	0028-0005
6" Wave Guide	0028-0004
Touch Probe	0028-0003
Folding Hi-Fi Headset w/ Volume Control	0028-0002
9v Battery	0204-0024
Warranty Card	0006-8825

Features

- Capable of detecting a 5 psi leak from a .005" hole from 20-30 feet (depending on background noise.

- Capable of detecting any gas that generates ultrasonic sound during flow, including vacuum leaks.

- Not affected by wind or high concentrations of leaked refrigerants.

- SoundBlaster® allows testing of items not under pressure. (0028-8010 only)

2

3 Specifications

Physical	
Dimensions	4.15"L X 2.4"W X .875"D (105 mm X 61 mm X 22.22 mm)
Overall Length	5.5" (140 mm)
Body Material	ABS
Body Finish	Blue ABS
Connector	3.5 mm Stereo
Weight	0.3 lb. (138 g) including battery
Electrical	
Sensitivity	-80 db/V-µbar
Ultrasound Converter Type	Heterodyne
Frequency Response	34kHz to 42kHz
Heterodyne Oscillator	Analog
Heterodyne Filter	4kHz
Controls	1 Button
Sensitivity Control	Continually Variable Slide
Output, Audio	0Hz to 4kHz
Output, Visual	10 Element LED Bar Graph
Battery Type	9 Volt
Run Time	80-120 hours

4 Operation

Physical

To begin using the Tru Pointe® Ultra, first take a moment to become familiar with the unit's controls in Figure 1 and 2.

Figure 1.

Figure 2.
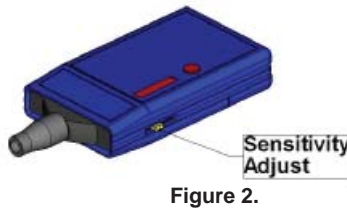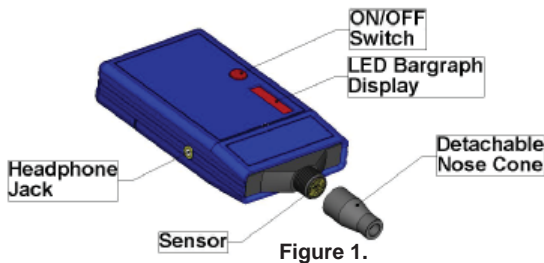
Taking Readings

General

1. Put on the Headphones and plug them into the Headphone Jack on the right side of the detector.

2. Slide the Sensitivity Adjust toward the top of the instrument until it stops. The Tru Pointe® Ultra is now at full sensitivity.

    NOTE: Always begin testing at full sensitivity and adjust as needed to reduce background noise.

3. Gently push and hold the On/Off Button to begin leak detection. Simultaneously adjust the sensitivity level to pinpoint the location of the leak.

    NOTE: The On/Off Button must be pressed to continue leak detection. Once the On/Off Button is released, the detector will shut off.

4

Airborne Leak Detection

The Tru Pointe® Ultra is capable of detecting airborne leaks from up to 40 feet away. When an ultrasonic signal generated from a leak is detected, it will be indicated by an increase in the LED meter and a rushing sound will be heard in the headset. This sound will become more intense, and the meter reading will increase as the instrument is drawn closer to the leak point.

The Tru Pointe® Ultra detects the ultrasound a gas makes as it leaks. Similar to the familiar hiss a leak makes, a gas leak generates ultrasonic sound that humans cannot hear. This ultrasonic sound propagates like a microwave (in straight lines) and this property makes it possible to find its source. It is a listening device not a Sniffer. Because of this, the Tru Pointe® Ultra can function in areas where strong winds or a concentration of fumes are present.

A leak is any unwanted flow of a substance out of a system, or with vacuum, into a system. The sound made by leaks (refrigerant, compressed air, tire leak etc.) is mostly ultrasonic and cannot be heard by humans.

The following describes how to effectively determine the location of an airborne leak using the Tru Pointe® Ultra.

1. Press the On/Off Button. If there is significant background noise and the LED Bargraph Display reads '10', reduce the sensitivity until the LED's disappear.

2. While pressing the On/Off Button, scan the area of the suspected leak in a side-to-side motion.

3. While scanning, listen to differences in the sounds detected.

> **Mechanical Noise:** Usually synchronized to machine motion in the system and easy to identify
>
> **Leak Noise:** A harsh hissing sound or bird song.
>
> **NOTE:** To become familiar with the different sounds detected by the Tru Pointe® Ultra, listen to the sound of an air hose at low pressure or an aerosol cleaning spray, then shake a set of keys. This demonstration allows the user to distinguish between mechanical noise and leak noise.

4. If there is leak noise in the area and the display is at '10', slowly reduce the sensitivity until the display reads '0'.

> **NOTE:** The LED Bargraph Display is only for relative measurements. If a scan of the system reveals an area with a reading of '2' and an area with a reading of '10', that can mean the detector is far from a leak, or there are two leaks of differing sizes in the same area.

5. Approach the suspected leak. If the LED Bargraph Display reading increases, reduce the sensitivity.

6. When the general location of the suspected leak is determined, adjust the sensitivity to so that 4-5 lights are illuminated when the leak area is scanned. This technique allows the user to accurately determine when the instrument is pointed at an area of increased ultrasound. If the LED Bargraph display increases, then the leak source is getting closer. If the display decreases, then the leak source is getting further away.

Operating Tips

1. If the test area is large, remove the nose cone. Without the nose cone the detection area of the Tru Pointe® Ultra increases from 15° to 90°.

2. If the leak is in a tight, or inaccessible area, use the supplied Wave Guide to determine the leak location. Longer sections of 1/4" tubing can be used at the expense of sensitivity.

3. When searching for vacuum leaks, you may need to pressurize the system with dry nitrogen to facilitate locating the leak under pressure.

4. Use as much pressure as permissible for the system. Increasing the pressure will multiply flow through the same orifice, increasing the ultrasound created by the leak.

5. Interference may be experienced from electronic ballasts, computer monitors, or other electronic devices. Place your body between the source of the sound and the leak point.

Electrical Arcing

Electrical arcing is an electric current flow in air and can be a very destructive and dangerous occurrence in electrical systems.

To search for electrical arcing, use the same methods described to search for airborne leaks, but scan around switches and electrical panels.

NOTE: Electrical arcing sounds like frying, including the occasional popping sound.

CAUTION! Observe all all safety precautions when working around electrical equipment. Arcing can lead to explosions.

Electrical Corona

Electrical corona is usually observed in higher voltage systems than electrical arcing. Corona usually occurs in insulators, substations or transmission towers.
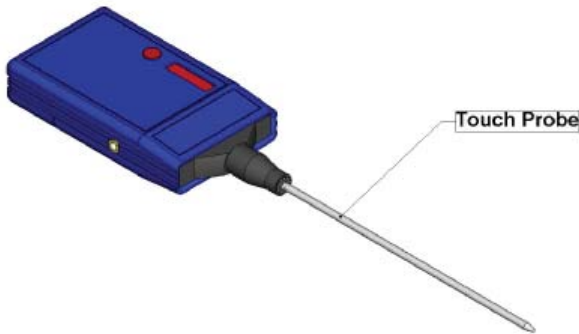
To search for electrical corona, use the same methods described to search for airborne leaks.

NOTE: Electrical corona sounds like frying or sizzling.

CAUTION! Observe all safety precautions when working around electrical equipment.

Using the Touch Probe

The patented Touch Probe accessory is a device that converts solid-borne sounds into airborne sound the Tru Pointe® Ultra can detect. For example, the sound of an internal leak in a water valve will travel to its surface. Touching the surface of the valve with the Touch Probe transfers the ultrasound into the probe and converts it to airborne ultrasound.
To install the Touch Probe:

1. Unscrew the nose cone from the Tru Pointe® Ultra.
2. Screw the Touch Probe onto the sensor.
3. The Tru Pointe® Ultra is now ready to detect solid-borne sound.

Thermal Expansion Valves (TXV)

The following steps can be used to detect leaks in a TXV using the Touch Probe.

1. Have a glass of ice water ready.
2. Remove the TXV capillary tube.
3. Rest the Touch Probe of the Tru Pointe® Ultra on the TXV and listen. Hold the capillary. The TXV should open and the sound of flowing refrigerant should be heard.
4. Place the capillary in the ice water. The TXV should close and the refrigerant flow diminishing should be heard. If the flow binds or makes too much noise, there may be a problem with the system.

Using the SoundBlaster®

Some Tru Pointe® Ultra kits include Bacharach's ultrasonic sound generator, the SoundBlaster®. The SoundBlaster® is used to artificially pressurize items and detect potential leaks using a 115dB ultrasonic tone. The Tru Pointe® Ultra can detect the tone as it escapes in areas that are not under pressure.

To use the SoundBlaster®:

1.   Press the On/Off Button once on the SoundBlaster®.

2.   Place the SoundBlaster® inside the item to be tested.

3.   Use the Tru Pointe® Ultra to detect the leaked ultrasonic waves generated by the SoundBlaster® using the same method as detecting a standard airborne leak.

> **NOTE:** Using the SoundBlaster® inside a symmetrical object (i.e. a cylindrical tank) can cause standing waves, which can result in hot and cold spots. For these situations push the 'Mode' button to turn the SoundBlaster®'s burst mode on.

Tips on Use:

1.   Sound waves lose strength with distance, so when checking a building for leaks, do not place the SoundBlaster® in the basement and attempt to find leaks in the roof.

2.   It is best to remove the nose cone from the SoundBlaster® when checking roofs

3.   If the SoundBlaster®'s tone is too strong, place a piece of sponge or foam in the nose cone.

4.   DO NOT place the nose cone flat on a hard surface, as the reflection of the generated sound could damage the SoundBlaster®.

8

SoundBlaster® Applications

The SoundBlaster® is an excellent tool for weatherizing buildings by detecting leaks in windows, doors and roofs. To effectively use the SoundBlaster® and Tru Pointe® Ultra to check for building leaks:

1. Place the SoundBlaster® in the room to be leak tested and turn it ON

2. From outside the room begin scanning for leaks with the Tru Pointe® Ultra around the perimeters of the doors and windows.

3. If the Tru Pointe® Ultra reading is at '10', reduce the sensitivity until the detector reads 4-5 and begin scanning again. Readings above the 4-5 threshold indicate a larger leak and should be fixed prior to leaks that register under the threshold.

4. A clear pattern of high and low readings should develop and pinpoint the location of the highest priority leaks.

Other SoundBlaster® applications include locating, air/water leaks in automobile windshields, trunk seal leaks, truck body leaks, and tanker leaks.

5 Care and Service

Cleaning

Both the Tru Pointe® Ultra and SoundBlaster® can be cleaned using dish soap and a damp cloth. Remove the batteries and close the Battery Door before cleaning. Do not allow water to enter the unit, especially near the sensor. After cleaning, the units can be dried with a paper towel. Any automotive vinyl cleaner will restore the units luster.

If you plan to store the units for an extended period, remove the batteries.

Battery Replacement

When it is time to replace the batteries, use only high quality 9 volt alkaline for both the Tru Pointe® Ultra and the SoundBlaster®, and use the following instructions.

1. Hold the unit with the Battery Door facing up.

2. Press lightly on the middle of the Battery Door and slide it toward the bottom of the instrument.

3. Remove the old battery and replace it.

4. Slide the Battery Door back on the instrument, making sure it is securely attached.