



UE SYSTEMS INC.

THE ULTRAPROBE 3000 MANUAL

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START

Congratulations, your digital Ultraprobe 3000 is full of highly advanced technical features that will provide you with the ability to locate leaks, detect faulty steam traps, test bearings, store and download your test data.

OVERVIEW

INTRODUCTION

The Ultraprobe 3000 is a versatile instrument with many features that will make your inspections easy, fast and accurate. As with any new instrument, it is important to review this manual before you begin inspections.

THERE ARE TWO MODES THAT ARE IMPORTANT TO UNDERSTAND:

OPERATION MODE:

The operation mode will be described in detail under the operation mode section. In this mode, you will perform all inspection actions such as scanning, probing, “Click and Spin” activities, and store data.

NOTE: “Click” operations require pressing the dial. “Spin” operations require turning a dial.

SET UP MODE:

The setup mode will be described in detail under the Set Up Mode section. There are seven menu options that will be described in that section.



COMPONENTS

BASIC COMPONENTS OF YOUR KIT



PLUG-IN MODULES

SCANNING MODULE. This module is utilized to receive air borne ultrasound such as the ultrasounds emitted by pressure/vacuum leaks and electrical discharges. There one male plug at the rear of the module. For placement, align the plug with the corresponding receptacle in the front end of the pistol housing and plug in. The Scanning Module has a piezoelectric transducer to pick up the airborne ultrasound.



STETHOSCOPE (CONTACT) MODULE. This is the module with the metal rod. This rod is utilized as a "waveguide" in that it is sensitive to ultrasound that is generated internally such as within a pipe, bearing housing or steam trap. Once stimulated by ultrasound, it transfers the signal to a piezoelectric transducer located in the module housing directly behind the "wave guide". For placement align the plug with the corresponding receptacle in the front end of the pistol housing and plug in.



PISTOL-GRIP HOUSING

DISPLAY PANEL. In the Operation Mode, the Display Panel will show intensity levels (as dB and as a bar graph), Sensitivity Level, Storage location number, and Battery Level. Intensity levels are shown simultaneously as a numeric dB value and on a sixteen-segmented bar graph (with each segment representing 3 dB). This Ultraprobe receives ultrasound centered around 40 kHz and is non-adjustable.



Display Panel

Sensitivity Control/ Storage Entry Dial

Headphone Jack

SENSITIVITY/STORAGE ENTRY CONTROL DIAL. This is the most important control in the unit. It is used to adjust the sensitivity. When clicked, it changes functions such as store data or change the storage location number. It is also used to get into the "SET UP" mode (described later).

HEADPHONES JACK. This is where you plug in the headphones. Be sure to plug it in firmly until it clicks.

USB PORT. This port is used to download/transfer information from the Ultraprobe 3000 into the computer. It is also used to charge the instrument. Before downloading data be sure the cable is connected to both the USB port and to the computer. When charging, plug the recharger cable into the USB and then into the electric receptacle.

TRIGGER ON/OFF SWITCH. The Ultraprobe is always "off" until the trigger switch is pressed. To operate, pull in and hold the trigger. To turn the instrument off, release the trigger.

BATTERY COMPARTMENT.

The Handle contains the rechargeable battery. **Remove the battery only when it cannot hold a charge and needs to be replaced.** If the battery is to be changed, remove the cover and replace.

The battery is a rechargeable battery and is charged using the USB port.

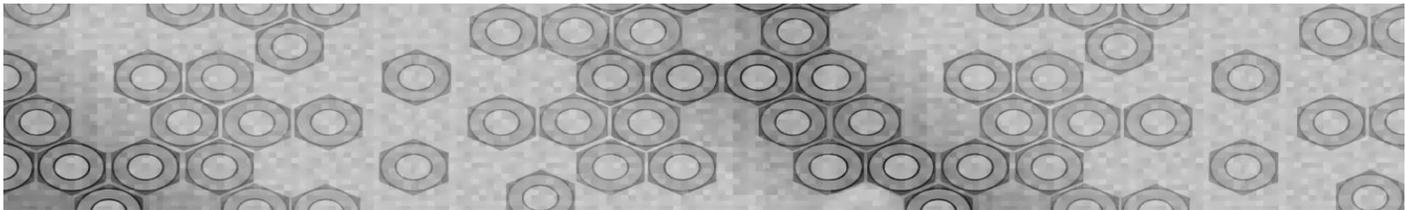
WARNING: ONLY USE UE SYSTEMS BATTERY RECHARGER #BCH-3L.

DO NOT use Unauthorized Batteries or Battery Rechargers! Doing so may be hazardous and may damage the instrument and will void the warranty.

Recharging the battery takes about 1 hour; continuous run time is about 2 hours. With normal operation (on-off between tests) the charge will last 4-6 hours. On the BCH-3L BATTERY RECHARGER, when the light is red the battery is charging and when it is green it is fully charged.

WRIST STRAP.

To protect the instrument, against unexpected droppage use the wrist strap.



ACCESSORIES

STANDARD ACCESSORIES

DHC 2HH. Headphone headset is for use with a hard hat. This heavy-duty headset is designed to block out intense sounds often found in industrial environments so that the user may easily hear the sounds received by the ULTRAPROBE. In fact, the headphones provide over 23 dB of noise attenuation.



WTG-1 WARBLE TONE GENERATOR.



The WTG 1 Tone Generator is an ultrasonic transmitter designed to flood an area with ultrasound. This Tone Generator is a WARBLE TONE GENERATOR. This internationally patented transmitter sweeps through a number of ultrasonic frequencies in a fraction of a second to produce a strong, recognizable "Warble" signal. The warble tone prevents a standing wave condition, which can produce false readings. This is typically used for Sensitivity Validation.

RUBBER FOCUSING PROBE. The Rubber Focusing Probe is a narrow rubber shield. It is used to block out stray ultrasound and to assist in focusing on the field of reception of the Scanning Module.



STETHOSCOPE EXTENSION KIT. This consists of three metal rods that will enable a user to reach up to 31 additional inches (78.7 cm) with the Stethoscope Probe.



OPTIONAL ACCESSORIES

LONG RANGE MODULE LRM. This uniquely designed module doubles the detection distance of a standard scanning module and provides a narrow (10°) sensing area making it ideally suited for locating ultrasonic emissions (such as a leak or electrical emission) at a distance.



OPERATION MODE

DISPLAY PANEL

When the trigger is pressed to turn the instrument on, the Display Panel will display the decibel and bar graph intensity levels. The sensitivity level will be displayed in the upper left corner. The storage location number will be shown in the upper right corner. The Battery Charge level is shown in the mid-right side of the display.

BAR GRAPH DISPLAY

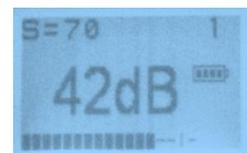
The bar graph has 16 segments. At the end of the bar graph is a vertical line, which indicates the maximum intensity. This is a maximum level hold function. When in operation, the bar graph will move up and down the scale as an indication of the amplitude of a sensed ultrasound. The maximum level indicator will remain at the highest sensed intensity during an inspection until: 1. A new maximum reading is detected, or 2. The trigger is released, and the instrument is turned off. At which time it will reset.



SENSITIVITY CONTROL/STORAGE ENTRY DIAL

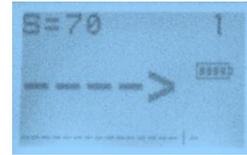
TO ADJUST THE SENSITIVITY

- Look at the display and note the "S =" value. If the instrument is within range, a dB (decibel) value will be displayed.
- The maximum sensitivity value is 70; the minimum is 0.
- To reduce the sensitivity/volume, rotate the dial counter clockwise. To increase the sensitivity, rotate the dial clockwise. The Sensitivity control dial increases/decreases the sensitivity of the instrument simultaneously with the sound level in the headphones.

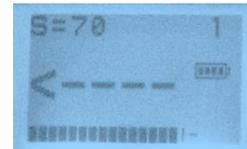


NOTE: *The instrument needs to be in range for accurate testing.*

If the sensitivity is too low, a blinking arrow pointing to the right will appear and there will be no numeric decibel visible in the display panel. If this occurs, increase the sensitivity until the arrow disappears (in extreme low level sound environments the arrow will blink continuously, and it will not be possible to achieve a dB indication until a higher intensity level is sensed).



If the sensitivity is too high, a blinking arrow pointing to the left will appear and there will be no numeric decibel visible on the display panel. Reduce the sensitivity until the arrow disappears and the numeric decibel value is shown.



NOTE: *The blinking arrow indicates the direction in which the Sensitivity Control Dial is to be turned when out of range.*

The Sensitivity Control Dial affects the bar graph display. The more sound that is received, the higher the bar graph. The less sound that is received, the lower the bar graph.

FREQUENCY

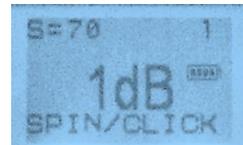
This instrument is set to the peak frequency response of the transducers which is 40 kHz. It is non-adjustable.

TO STORE A READING

There are 2 types of storage modes: **Normal** and **Quick**.

FOR "NORMAL" STORAGE

Firmly "Click" (press) the Sensitivity Dial. The Storage location will blink, and the phrase SPIN/CLICK will appear on the bottom of the display panel.



If you wish to use a storage location other than the one shown, "spin" the Sensitivity dial up (clockwise) or down (counter clockwise) to the desired location.



If the Storage Location is the one you chose to use, click the Sensitivity Dial again and you will see a prompt on the bottom of the display panel: **STORE? YES**. If you want to store the data, "click" the Sensitivity Dial once more and the record is stored at the set location. The Storage Location number will automatically move up to the next sequential number.



If you chose not to store the record, "spin" the Sensitivity Dial and you will see the word **NO**, "click" the Sensitivity Dial and you will return to the operation mode.

For “Quick” Storage - see **Set Up Mode, “Menu 05; Store Mode”** to change this setting

- Firmly “Click” (press) the Sensitivity Dial once and the record is stored. The Storage Location number will automatically move up to the next sequential number.



TO OVERWRITE DATA OR TO ENTER DATA IN A NEW LOCATION

- Click (press in) the Sensitivity dial button; the Storage Location number will blink.
- Spin the Sensitivity Dial until the desired storage location is displayed on the screen
- Click the Sensitivity Dial again and the prompt STORE YES? will appear.
- To store the new information in that location, “click” the Sensitivity Dial again and the record will be over written.

TO DOWNLOAD THE INFORMATION

- Refer to Setup Mode, “Menu [01] Send Records”

SETUP MODE

TO ENTER THE SET UP MODE

- Make sure the Ultraprobe is off.
- Press (Click) the Sensitivity dial and hold it in. while you pull/squeeze the trigger. Hold both the Sensitivity Dial and Trigger in until the screen displays: “**MENU [01] Send Records**”.

NOTE: Hold the Trigger in during any of the Set-Up Mode operations or the instrument will turn off.

- Once Menu 01 is displayed, you may move to any of the other Menu Modes by spinning the Sensitivity Dial up or down (clockwise or counter clockwise).
- When the desired Menu Mode is reached, click (push) the Sensitivity Control in to enter/use that menu function.
- You may spin to enter and exit any Menu mode in the Set-Up mode as long as the trigger is squeezed to keep the instrument on.



MENU [01] SEND RECORDS

NOTE: Before downloading data, be sure the Ultraprobe is connected to the computer via the USB cable.



TO SEND DATA FROM THE ULTRAPROBE TO YOUR COMPUTER

- Make sure the Ultraprobe is off.
- Click (Press) the Sensitivity dial and hold it in. while you pull/squeeze the trigger. Hold both the Sensitivity Dial and Trigger in until the screen displays: "MENU [01] Send Records".

NOTE: Hold the trigger in during any of the Set Up Mode operations or the instrument will turn off.

- When MENU [01] Send Records is shown, "click" the Sensitivity Control Dial and all the data will be transferred to the computer.

NOTE: For software management, refer to Ultratrend DMS™ Instructions.

MENU [02] DELETE RECORDS

TO CLEAR ALL RECORDS IN PREPARATION FOR YOUR NEXT ROUTE, YOU NEED TO DELETE RECORDS

- Enter Setup Mode...be sure to continue to hold the Trigger in.
- Spin clockwise to Menu [02] Delete Records
- You will see a prompt: *Delete Records Confirm?*
- To exit, select NO

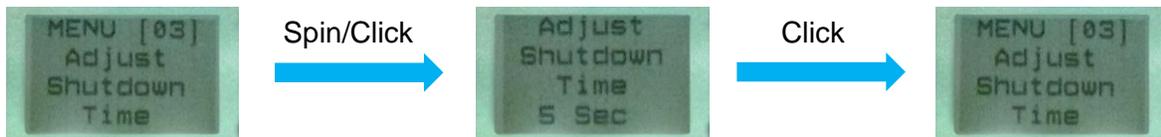


MENU [03] ADJUST SHUTDOWN TIME

The shutdown time allows you to select the time it will take to turn the instrument off once the trigger is released. You may select from 1, 5, 30, 60, and 300 seconds.

TO ADJUST SHUTDOWN TIME

- Enter Setup Mode...be sure to continue to hold the Trigger in
- Spin to MENU [03] Adjust Shutdown Time
- “Click” (press) the Sensitivity Dial in to enter
- The Spin to the desired turn off time
- Click to exit

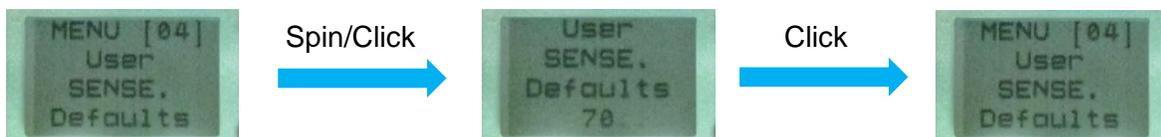


MENU [04] USER SENSE. (SENSITIVITY) DEFAULTS

With experience a user will know which sensitivity level to use as the highest level. This mode allows the user to adjust the default starting sensitivity level for inspection routes.

TO SET THE SENSITIVITY DEFAULT

- Enter Setup Mode...be sure to continue to hold the Trigger in.
- Spin to MENU [04] User SENSE. Defaults
- “Click” the Sensitivity Dial to Enter
- Spin to the desired level (00 to 70; 00 is the lowest; 70 is highest)
- “Click” to set



MENU [05] STORE MODE

There are two store mode selections: **Normal** and **Quick**.

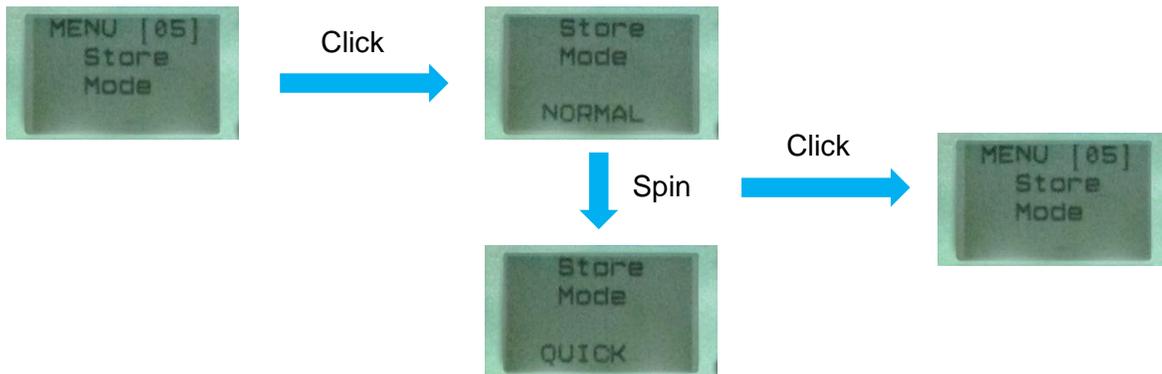
NORMAL STORE MODE - the store procedure includes three “Clicks” of the Sensitivity dial.

- The first click enters the Storage Mode where the user can spin to a different record location or stay in the current location.
- The second click allows the user to accept or decline the Store operation.
- The third click exits the Store Mode to the Main Screen.

The **Quick mode** requires one “click” to store the data. Every time you store data, the instrument will move up one record to the next storage location.

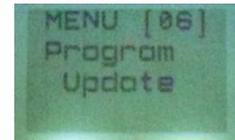
TO SELECT STORE MODE

- Enter Setup Mode...be sure to continue to hold the trigger in.
- Spin to MENU [05] Store Mode
- “Click” the Sensitivity Dial to Enter
- A prompt will blink NORMAL or QUICK
- To change, “spin” the Sensitivity Dial
- To select either Normal or Quick, when the desired mode is blinking, “click” the Sensitivity Dial



MENU [06] PROGRAM UPDATE

Whenever the operating system software is changed, the program can be downloaded off the UE Systems web site: www.uesystems.com. Upon receiving notice, Download the program to your computer and follow the procedure supplied by UE Systems.



CAUTION: Failure to follow the "Program Update" procedure may prevent the UP3000 from programming properly and result in the instrument being shipped back to UE Systems for repair.

MENU [07] EXIT (TO OPERATION MODE)

Click the Sensitivity Control dial and you will exit to Operation Mode.





USERS INSTRUCTIONS

SCANNING MODULE

- Plug in to front end.
- Align the plug located at the rear of the module with the receptacle in the front end of the Pistol Housing and plug in.
- Start to scan the test area.

METHOD OF AIRBORNE DETECTION

The method of air borne detection is to go from the "gross to fine". Start off at a high sensitivity level and if there is too much ultrasound in the area, reduce the sensitivity, following the sound to the loudest point. If necessary, place the RUBBER FOCUSING PROBE (described below) over the scanning module and proceed to follow the test sound to its loudest point constantly reducing the sensitivity while following the bar graph indicator on the display.

HEADPHONES

To use, firmly plug the headphone jack into the "Phones" receptacle on the pistol housing and place the headphones over your ears.

RUBBER FOCUSING PROBE

The Rubber Focusing probe fills two functions: it deflects stray ultrasounds and enhances the reception of weak airborne signals. To use, simply slip it over the front of the scanning module or the contact module.

NOTE: *To prevent damage to the module plug, always remove the module BEFORE attaching and/or removing the Rubber focusing Probe.*

STETHOSCOPE MODULE

- The metal rod acts as a wave-guide, directing structure borne ultrasounds directly to the receiving transducer with little impedance.
- Align the plug located at the rear of the module with the receptacle in the front end of the Pistol Housing and plug in.
- Touch test area

STETHOSCOPE EXTENSION KIT

- Remove the Stethoscope Module from the Metered Pistol Housing.
- Unscrew the metal rod in the Stethoscope Module.
- Look at the thread of the rod you just unscrewed and locate a rod in the kit that has the same size thread this is the "base piece".
- Screw the Base Piece into the Stethoscope Module.
- If all 31" (78.7 cm) are to be utilized, locate the middle piece. (This is the rod with a female fitting at one end) and screw this piece into the base piece.
- Screw third "end piece" into middle piece.
- If a shorter length is desired, omit step 5 and screw "end piece" into "base piece".

LONG RANGE MODULE

- Plug in to front end.
- Align the plug located at the rear of the module with the receptacle in the front end of the Pistol Housing and plug in. Start to scan the test area.

TO CHARGE THE UP3000

- The recharger has a 5-pin mini USB plug that connects to the 5-pin mini USB jack on the Ultraprobe.
- Plug the recharger into an electric outlet and then place the 5-pin mini USB plug into the 5-pin mini USB jack on Ultraprobe 3000.
- The LED on the charger will be flashing when charging and then turn solid green when fully charged. Charging will take about one hour.
- Remove the charger from the electric outlet when fully charged

WARNING: Use the supplied UE Systems recharger only. Use of unauthorized rechargers will void the warranty and may damage the battery and or instrument.

WARBLE TONE GENERATOR (UE WTG 1)

- Turn Tone Generator on by selecting either "LOW" for a low amplitude signal (usually recommended for small containers) or "HIGH" for high amplitude. In high, the Warble Tone Generator will cover up to 4,000 cubic feet (121.9 cu. meters) of unobstructed space.
- When the Tone Generator is on, a red light (located below the recharge jack in the front) flickers.
- To test the condition of the Warble Tone Generator battery, set to the LOW INTENSITY position and listen to the sound through the Ultraprobe at 40 kHz. A continuous warbling sound should be heard. If a "beeping" is heard instead, then a full recharge of the Warble Tone Generator is indicated.

TO CHARGE THE WARBLE TONE GENERATOR

- Plug the Tone Generator plug (yellow) on the Warble Tone Generator and then plug the recharger into an electric outlet.
- Make sure that the LED on the charger for the tone generator is flashing when recharging.
- The LED turns solid when the battery is charged.

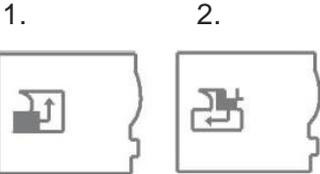
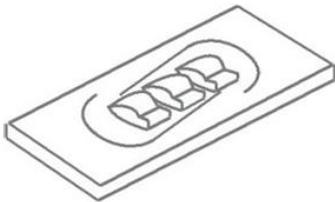


INSTRUCTIONS FOR SETTING COMBINATION ON CARRYING CASE

The combination is factory set at --0--0--0

SETTING YOUR PERSONAL COMBINATION

- Open the case. Looking at the back of the lock inside the case you will see a change lever. Move this change lever to the middle of the lock in a way that allows it to hook behind the change notch (drawing 1).
- Set your personal combination, turning the dials to the desired combination (i.e. birthday, phone #, etc.).
- Move the change lever back to the normal position (drawing 2).
- To lock, rotate one or more dials. To open, set to your personal combination.



INTERNATIONAL PATENTS PENDING

YOUR PERSONAL COMBINATION:



Ultraprobe® 3000 Specifications

Construction	Hand-held pistol type made with ABS plastic
Circuitry	Solid state analog and SMD digital circuitry with temperature compensation
Frequency	Frequency response: 35-45 kHz
Response Time	<10 milliseconds
Display	128x64 Graphic LED with LED backlight
Memory	400 storage locations
Battery	Li Polymer Rechargeable
Operating Temp.	0 °C to 50 °C (32 °F to 122 °F)
Output(s)	Calibrated heterodyned output, decibel (dB) frequency, USB data output
Available Probes	Scanning module and stethoscope (contact) module, long range module, RAS MT
Headset	Deluxe noise attenuating headphones. Over 23 dB of noise attenuation. Meets or exceeds specifications and OSHA standards
Indicators	dB, battery status and 16 segment bar graph, sensitivity setting, record number
Threshold	1×10^{-2} std. cc/sec to 1×10^{-3} std. cc/sec
Dimensions	Complete kit in Zero Halliburton aluminum carrying case 38.1 x 55.9 x 11.43 cm (15" x 22" x 5")
Weight	Pistol Unit: 0.45 kg (1 lbs) Carrying Case: 4.99 kg (11 lbs)
Warranty	1 year standard, 5 years with completed registration form

Need further support?
Want information regarding products or training?

CONTACT:

UE Systems, Inc. 14 Hayes Street, Elmsford, NY 10523 USA
T: 914-592-1220 | E: info@uesystems.com | W: www.uesystems.com

