

Conducting a Compressed Air Leak Survey Using the Ultraprobe 3000 (Self-Survey)

Request the Ultraprobe 3000.

1. Request the use of the Ultraprobe 3000 ultrasonic leak detector from your electric utility. (There is no fee to borrow the Ultraprobe.)
2. You may borrow the Ultraprobe for one week. Additional time may be available upon request.

Prepare for the leak survey.

1. Items you will need to conduct an air leak survey:
 - a. Ultraprobe 3000 and holster
 - b. clipboard and Compressed Air Leak Tracking Form to record leak locations
 - c. tags to affix to air leak locations
 - d. tools to repair simple leaks during the survey
 - e. digital camera (optional)
2. Agree to the Ultraprobe Terms of Use.
3. Review these instructions.
4. The Ultraprobe should be charged for one hour before use using the charger included in the case. A fully charged battery will provide about 2 hours of use. A green light on the charger indicates the battery is fully charged.

Using the Ultraprobe.

1. Attach the rubber focusing probe to the end (silver module) of the Ultraprobe.
2. Plug the headphones into the "Phones" jack on the Ultraprobe. The Ultraprobe headphones allow you to "hear" the turbulence caused by an air leak.
3. Press and hold the trigger of the Ultraprobe while using it to scan your compressed air system.
4. Leaks will be heard as a "rushing/whooshing" sound through the headphones. As you scan for leaks by sweeping the Ultraprobe over your compressed air system, start by adjusting the sensitivity volume to the maximum (S=70) by turning the Sensitivity knob clockwise. Reduce the sensitivity by turning the knob counter-clockwise if the ultrasound level is too high to identify the direction of the leak. Continue to adjust the sensitivity as you hone-in on the air leak. Follow the sound to the loudest point to identify a leak.

Search for compressed air leaks.

1. Clear the Ultraprobe memory:
 - a. Make sure the Ultraprobe is off.
 - b. Press and hold the Sensitivity knob on the Ultraprobe while you squeeze the trigger until the MENU is displayed.
 - c. Continue to squeeze the trigger during the remaining steps but release the Sensitivity knob.
 - d. Turn the Sensitivity knob clockwise one click until "MENU 02 – Delete Records" is displayed.
 - e. Push the Sensitivity knob in to select "Delete Records"
 - f. Turn the Sensitivity knob clockwise one click until "YES" is displayed.
 - g. Push the Sensitivity knob in to confirm "Delete Records"
 - h. After all 400 records have been cleared from memory, release the trigger.
2. Starting from your air compressor, use the Ultraprobe to scan your compressed air system piping, hoses, regulators and end-uses.

3. When a leak is found:
 - a. Hold the Ultraprobe so the tip of rubber focusing probe is about 12-15" away from the leak point. While maintaining that 12-15" distance, point the Ultraprobe at the leak from different angles until a maximum decibel reading is achieved on the display.
 - b. **Save the maximum decibel reading in the Ultraprobe's memory by pressing-in (clicking) the Sensitivity dial while the trigger is pressed.** The Record Number (1 to 400) will flash in the upper right corner of the Ultraprobe display. Click the Sensitivity dial two more times to store the reading under the displayed Record Number. (The record number advances automatically but can be manually changed by rotating the Sensitivity dial.)
 - c. Repair the leak immediately, if possible.
 - d. If the leak cannot be repaired immediately, write the Record Number for that leak (saved in the Ultraprobe) and your name and date on a tag and affix it to the leak location so it can be found and repaired after the leak survey. You may also want to take a picture of the leak location if you have a digital camera available.
Suggested info on leak tags:

AIR LEAK # _____ Date: Name: (Remove tag after this leak has been repaired.)

- e. For all leaks, write a description of the associated leak location and whether or not the leak was repaired on your Compressed Air Leak Tracking Form under the Record Number that corresponds to the record number of the Ultraprobe reading you stored in its memory.
4. Continue scanning your compressed air system until all leaks are identified, stored in the Ultraprobe's memory, recorded on the leak tracking form, and repaired or tagged.

Download the leak data from Ultraprobe.

After you have performed your air leak survey, you can either return your Compressed Air Leak Tracking Form and the Ultraprobe to your utility rep to download, or you can follow the instructions below to do this yourself.

1. Install air leak software program (Ultratrend DMS) provided on the CD or download the software from www.UESystems.com (in the Products/Software area of their site). The software program estimates how much your air leaks are costing you.
2. Connect the Ultraprobe to computer using the USB cable provided in the Ultraprobe case.
3. Start Ultratrend DMS program.
4. Create Hierarchy:
 - a. Select File (from top menu bar) → Create Plant
 - b. Step 1: Enter Plant Name
 - c. Step 2: Select Application Type → Leak
 - d. Step 3: Enter Group Name (enter "leak survey (Month) (Year)", example: "leak survey Nov 09")
 - e. Step 4: Select defaults by clicking the "next" button
 - f. Step 5 & 6: Select defaults by clicking the "next" button
 - g. Click the "Finish" button
 - h. Click "Yes" to save in default folder

5. Download saved Ultraprobe records:
 - a. Click on Group Name (leak survey (Month) (Year))
 - b. With Ultraprobe off, press and hold the Sensitivity dial and then hold trigger down until "Menu" is shown on Ultraprobe display (dial can then be released but trigger must remain pressed to keep Ultraprobe on).
 - c. Select Communication (from top menu bar) → Download Group
 - d. Click the "Ok" button to Import Data to Tree
 - e. Click the "Ok" button again
 - f. Input serial number (enter "1") and click the "Ok" button
 - g. Release the Ultraprobe trigger to turn the unit off
6. Export the report into Excel
 - a. Click on the "Reports" tab in the upper right part of the screen
 - b. Click the "Launch Export Wizard" button
 - c. Click "Next"
 - d. Select "Compressed Gas Spreadsheet" and click "Next".
 - e. Select location where Excel file will be saved.
 - f. Click "Finish"
7. Open exported Excel file.
8. Select the "Cost" tab:
 - a. Click on "New York" and use the dropdown arrow to select "Minnesota"
 - b. Click on the operational hours and days values and enter the actual operating hours and days of your compressor system
9. Select the current month/year tab. For each leak listed in report:
 - a. Enter leak locations
 - b. Enter problem/leak descriptions
 - c. Use the dropdown arrow to select the closest listed pressure at the leak
 - d. Identify which leaks have been corrected by entering a "Y" or "N" in column K on the leak summary report.
 - e. Save the report after entering all information.
10. Print leak summary report.

Repair your air leaks.

Customers must complete repairs and perform follow-up leak survey within 60 days of initial survey to qualify for utility rebate.

1. Repair the leaks that could not be repaired during the leak survey.
2. On your original Compressed Air Leak Tracking Form, identify which leaks have been fixed.

Verify Repaired Leaks.

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 - c. Continue to squeeze the trigger during the remaining steps but release the Sensitivity knob.
 - d. Turn the Sensitivity knob clockwise one click until "MENU 02 – Delete Records" is displayed.
 - e. Push the Sensitivity knob in to select "Delete Records"
 - f. Turn the Sensitivity knob clockwise one click until "YES" is displayed.

- g. Push the Sensitivity knob in to confirm "Delete Records"
 - h. After all 400 records have been cleared from memory, release the trigger.
 2. **Use the Ultraprobe to rescan the repaired leaks and store in memory by corresponding leak number listed your original Compressed Air Leak Tracking Form.** Take new readings of the corrected leaks and store them in the Ultraprobe so they can be compared to the original readings and be used to verify that the leaks have been repaired.
 3. You can either return your Compressed Air Leak Tracking Form (identifying the repaired leaks) and the Ultraprobe to your utility rep to download (repaired leak data), or you can follow the instructions above to do this yourself (see "Download the leak data from Ultraprobe" above).

Receive a rebate for repairing your compressed air leaks.

1. You can receive a rebate for repairing your air leaks if you meet the following requirements:
 - a. Customers must have a total of at least 10 horsepower of air compressors (excluding backup) that operate at least 2,000 hours per year.
 - b. Customers must document and verify that they have repaired at least 50% of the compressed air leaks identified during their leak survey.
 - c. Customers must complete repairs and perform follow-up leak survey within 60 days of initial survey.
 - d. Program is available to electric customers of SMMPA's 18 Member Utilities.
2. Complete the Compressed Air Leak Correction Rebate Form (available from your utility).
3. Attach a copy of your Compressed Air Leak Tracking Form identifying which leaks you repaired. Also include your leak summary reports from the Ultraprobe software (if you downloaded the Ultraprobe data from memory yourself).
4. Send the completed rebate form and copies of the tracking forms and leak reports to your utility for processing.
5. Rebate will be paid if at least 50% of the identified leaks have been repaired and rescanned to verify that they are fixed. Keep in mind that repairing all identified leaks maximizes your savings. A rebate will not be paid more than once per year for repairing the same leak.

Establish an ongoing air leak management program.

To ensure your compressed air system continues to operate as efficiently as possible, perform a leak survey of your system at least annually. We will send you an annual reminder.