



## The Trouble with Air Leaks, Not Just Wasted Energy

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### **They know it better. They face it everyday.**

Most of us only think of air leaks in terms of energy costs - money that is blowing into thin air. The compressors work hard to satisfy the demands of production. The air dryers do their bit to ensure the air delivered is high quality. Then, we allow anywhere from 20-40% of that final, premium quality air to be just wasted to atmosphere thanks to our nonchalant attitude about leaks.

Most of the time we simply forget about air leaks – for as long as the compressors can fulfill demand we think we are fine. The reality is that we walk a thin line between being okay today, and out of capacity tomorrow. Once we have a leak, we will always have that leak. It cannot fix itself, and adding more capacity in the compressor room will only make leaks worse.

How does it relate to business? Leaks hit the bottom line hard. But just like compressed air, they hit the bottom line invisibly. When Accounts Payable receives the utility bill they pay it. The bill does not discern between wasted energy costs and necessary requirements. Nor does it mention the amount that could have been saved if leaks were minimized and energy consumption optimized. On average, depending on how your utility is set-up, you pay the energy cost and the demand cost that could be as high as \$0.65/kWH.



Aside from the obviously high cost of leaks, there's another issue that leaks bring which has more immediate and detrimental impact for operations - **contamination**. Contamination comes from the lubricants used in the compressors and from air leaks. An efficient compressed air supply system will produce clean and dry air. (Usually –40 degrees dew point). Downstream from there, moisture contamination infiltrates the system when wet air is introduced into the air line at the leak sites. As the compressed air travels to the different locations in the plant moisture accumulates with decreases in compressed air temperature.

The best way to avoid high moisture condition in the compressed air system is to make sure the supply side is working efficiently and leaks, which are prime entry points for moisture, are minimized.

**Pneumequip Inc.** is a One Source – One Solution for Compressed Air Systems. Located in Cambridge, Ontario, they have been in business for 20 years helping industries in North America. This ISO 9002 registered company is living their mission statement of *"providing products and services that fully meets or exceeds customer expectations using a management process designed to ensure continuous improvement."* Dino De Fillipis, President, proudly outlines their successes over the years citing a long list of happy and satisfied customers who give them repeat business and referrals. Pneumequip Inc. has built a strong business foundation that is based on dependable, reliable and honest workmanship.

The services and products they provide are offered with the customer's needs and satisfaction in mind. "For us to be able to provide the quality of services that our customers have come to expect from Pneumequip Inc., it is important that we use the best and most reliable tools in the market," Dino stressed. "When we go to our customers, we are there to solve problems and offer solutions and we can best do that when we are properly equipped."

A standard tool in Pneumequip's toolbox is the SDT Ultrasonic Detection System. Manufactured by SDT International, a world-class leader in Ultrasound Technology since 1985, the SDT unit is a high frequency detector that enables any inspector to find leaks even in a noisy environment. "When we do air audits, we don't always have quiet environments to work in, most of the time we are in very noisy areas.



The SDT detector enables us to find big and small leaks even in the most challenging situation." And it should. Any of the SDT's three models of Ultrasonic Detectors is capable of picking up only high frequency sounds, sounds that are above our hearing range. A gas leak produces ultrasound signal right at the leak site, which is detected by the internal sensor of the SDT unit. The narrow bandwidth of the SDT detector isolates other competing ultrasonic signals that may interfere in the inspections so that what is heard through the headset is the clear hissing sound of a leak. The rigid localization probe can be screwed into the front of the unit for focusing and pinpointing the source of the leak, especially helpful when there is more than one leak and they are close to each other. Built with the inspector's comfort and convenience in mind, the SDT unit is a one-hand operation detector. Sensitivity adjustment is only a thumb movement away. The generously sized screen displays the reading in dBuV and/or bar graph, depending on the model, and a strong backlight can be turned on as needed. If the inspector wants to save the reading, just press the memory button and it's done. Depending on model, the SDT unit has an on-board memory capable of saving 4,000 to 60,000 readings, which can then be downloaded to the PC for reporting and trending purposes.

Air leaks can be tricky or impossible to find without an excellent detecting device. Some leaks are so small they cannot be felt. Some leaks are big enough to be heard but pinpointing the location is time consuming, if not impossible. Trying to find air leaks with only our ears is rarely successful and the outcome is normally defined by the inspector's mood and hearing capabilities. The SDT Ultrasonic Detector assists the inspector to optimize his time and guarantee results.

Dino remembered a customer they recently provided an air audit to. The customer could not believe that he had 150 leaks in his facility. The leaks were identified, reported, and fixed. The immediate savings to the customer was \$15,000!



SDT has a line of accessories to address special situations in leak detection applications. A flexi-sensor allows the inspector to find leaks in tight or hard-to-reach areas. For distance capabilities, the Extended Distance Sensor (EDS) will allow leak detection at twice the distance capability of the



internal sensor. For example, a pinhole leak at 8 psi can be detected clearly 80 ft (18 meters) away using the internal sensor of the SDT detector. With the EDS, the distance capability on the same leak increases to 160 ft (36 meters). The type of leak and the pressure differential determines its detectability. The Parabolic Dish gives a farther distance capability than the EDS while maintaining the tight scanning angle for directionality. A laser sight on the parabola allows overhead leaks in pipe ceilings and dry sprinkler systems to be pinpointed and mapped from floor level.

"We had looked at other ultrasonic detectors before and we chose the SDT detector for its value and ease-of-use. It is a reliable instrument and built very well. We use it a lot for years now and we never had any problems with it," Dino stated. "I'd be happy to recommend it to anyone."