

► Air Leak Audit Report



- Synopsis
- Analysis
- Quotation & Proposal

Air leaks can be a significant contributor to wasted energy in a compressed air systems, and in some instances lead to productivity losses. It is not unusual to encounter 20 to 30 percent of a compressor's output in the form of air leaks at typical industrial facilities. Proactive leak management programs (detection and repair) can reduce leaks to less than 10 percent of a plant's compressed air production.

In addition to being a source of wasted energy, leaks can also contribute to other operating losses. There is strong cause and effect relationship between the number and magnitude of air leaks with the overall compressed air system pressure.

As an example, lower air pressure can affect air tools and equipment by reducing the mechanical output and decreasing the resulting productivity of the process. Indifference to air leak management can lead to purchasing unnecessary air compressor capacity, thereby increasing capital expenses instead of freeing-up capacity and funds for other necessities.

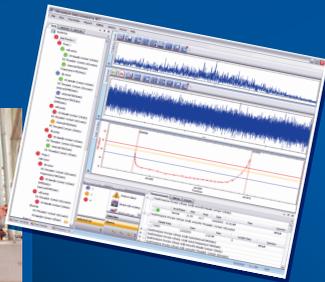
Experience has shown that air leaks occur most often at joints and connections. Fixing leaks can be as simple as tightening a connection, or replacing the root cause of the faulty equipment including :

- Couplings
- Fittings
- Pipe sections
- Hoses
- Joints
- Drain Traps
- Valve stems

Natural Resources Canada recommends additional advice for energy efficiency and tips to help prevent leaks from happening in the first place:

- Install fittings properly with appropriate sealants where applicable.
- Isolate non-operating equipment with a valve in the distribution system.
- Lower the air pressure of the system wherever possible. A lower pressure differential across an air leak reduces the rate of flow by a small amount. This, however, is not a cure for fixing air leaks.
- Select high quality fittings from reputable suppliers including air hoses, tubing, and disconnects.

Remember that once leaks have been repaired, the compressor control system often needs to be adjusted so as to achieve the true energy savings potential.



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An ultrasonic Leak Detector is used to track down the smallest leak with zero downtime. A common approach in the attempt of saving expenses is a walk through the facility after plant shutdown in an effort to look and listen for a leak. Keeping in mind that the smallest background noise may be a distraction from normal hearing (the human ear hears up to 15 kHz), misdiagnosis of air leaks can lead to increased capital expenses by purchasing unnecessary air compressor.

We perform air leak audits seamlessly to maintain your daily operation schedule. We then submit a written report within 10 days of the assessment, inclusive of quantifying leak rate appraisal of each surged leak, and its value in terms of dollars, in addition to ROI (return on investment) calculations.

The table below shows the approximate annual cost for electricity (\$0.10/kWh) for different size leaks based on one, two and three shift operation. Of course the type of compressor control can have a major effect on the results of any leak reduction effort.

Leak size	1 Shift (2250 hrs)	2 Shifts (4250 hrs)	3 Shifts (8400 hrs)
1/16" leak	200 \$	380 \$	750 \$
1/4" leak	3210 \$	6070 \$	11 990 \$
3/8" leak	7230 \$	13 650 \$	26 980 \$
1/2" leak	12 820 \$	24 210 \$	47 850 \$

**Annual Cost of Compressed Air Leaks
Based on \$0.10/kWh Electricity Cost**

(Courtesy Compressed Air Challenge)



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Air Leak Detection

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