

COMPRESSED AIR LEAK DETECTION



Is your compressed air system operating as efficiently as it could? Leaks in compressed air systems result in a significant source of wasted energy and can be difficult to detect. In fact, the U.S. Department of Energy (DOE) estimates that leaks can waste up to 30% of a compressor’s output. Understanding and implementing a leak detection program can save you money, energy and improve your system’s operation.

Details



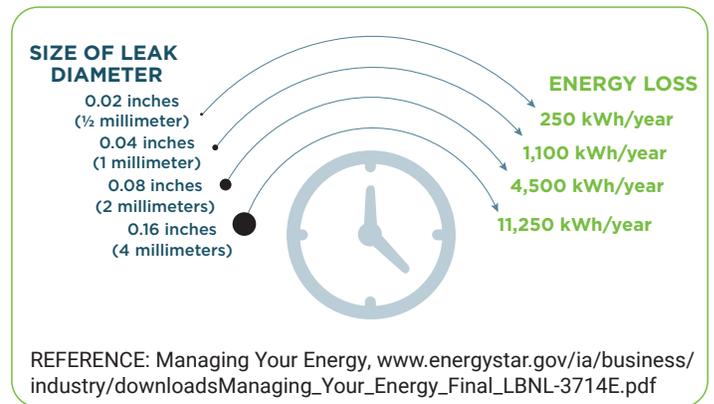
What You Need to Know

Compressed air leaks can wreak havoc on a system, but having a plan to monitor and fix leaks can make a big impact. Leaks often

occur at connections and joints at end-use applications. Other common areas include hoses, tubes, fittings, couplings and valves. If a leak exists, it can result in:

- Excess compressor capacity, which means higher operating costs
- Fluctuating system pressure, which can impact how well air-operated tools function
- Increased run time and unnecessary cycling, which equates to decreased service life and higher maintenance costs

Based on a compressor operating 2,500 hours/year at 6 bar (87 psi), the following losses would be experienced:



According to the Compressed Air Challenge, a plant that has a lax leak detection program can have a leak rate equal to 20% of its total compressed air production capacity.

Compressed Air Leak Detection Checklist

Use this easy-to-follow checklist to locate leaks in a compressed air system and implement an ongoing management plan to save money and energy.

- Establish a baseline** of compressed air usage.
- Determine leak loss** by starting the compressor when there are no demands on the system. Set the system at normal operating pressure, open the supply valves for all air-operated end-use equipment and use shut-off valves to isolate open, blowing applications. Take measurements to calculate the average time it takes to load and unload the compressor.
- Assess leak loss percentage.** A well-maintained system will experience a leak loss of less than 10%; poorly maintained system can have losses of 30%. Losses above 10% indicate a prime candidate for improvements.

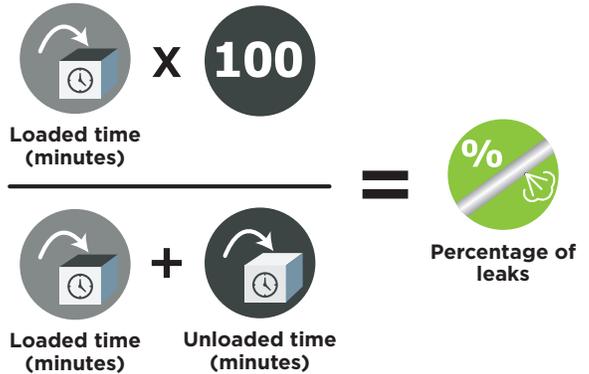
Calculate energy cost of leaks.

Repair or tag leaks. This process could range from tightening a connection to replacing a section of pipe. Use high-quality tubing, hoses, fittings and disconnects and ensure the thread sealant is applied properly.

Document leakage rates and cost savings. Compare results to the baseline to help gauge the effectiveness of the leak detection program and cost savings.

Set a target leak loss percentage, and establish a quarterly detection and repair program.

Leak Loss Percentage



Energy Cost of Leaks*



*Assumes electricity rate of \$0.10/kWh, constant operation and an efficient compressor.

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