

Curbing Contamination



Air compressors that provide 100 percent oil-free air eliminate any potential risk of oil contamination in food products.

Food manufacturers can learn a great lesson from the recent troubles that have plagued leading manufacturers in a wide range of industries, from auto makers to pharmaceutical companies: consumers and the news media will not tolerate faulty or substandard products, specifically faulty products that endanger the lives and well-being of consumers. Combine this fervor with the growing impact of social media outlets like Facebook and Twitter, which empower consumers and provide them with a loud and infectious voice, and the cost of lost assets, damaged brands, and wasted production quickly topple the expenses associated with quality control.

A product recall can prove to be especially damaging for food manufacturers – consumer confidence can erode, erasing years of trust and good service, and, more importantly, the public's health could be at risk.

While all reputable food manufacturers employ strict quality control measures to ensure their products meet and exceed the highest standards, one way to help mitigate the chances of product contamination is to eliminate the variables that can contribute to contamination, particularly in applications that demand the highest levels of purity.

A compressed air system, commonly referred to as the fourth utility, in addition to water, electricity and gas, fills a critical need in food processing and manufacturing facilities; compressed air moves large amounts of raw materials and powers mechanical linkage functions, conveyers and even product packaging functions.

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Published on Chem.Info (<http://www.chem.info>)

Air compressors, like internal combustion engines, have many moving parts and traditionally rely on oil to lubricate and cool these parts, making the potential for oil contamination in the manufacturing process a real possibility. Contamination by even the smallest quantities of oil in such purity-critical compressed air applications can result in wasted time, materials, and costly recalls, as well as slighted consumer confidence.

Even a minor oil contamination can, over time, compromise valves, effect air tool performance and contaminate the end product, creating unnecessary waste, possibly producing an avoidable health risk and polluting the environment. Immediate consequences also include damage to equipment or entire production batches, resulting in higher rejection rates and costly downtime and clean up. Why take the chance?

One sure way to avoid these issues is to utilize oil-free air for all critical manufacturing endeavors. Only ISO 8573-1 Class Zero oil-free compressors provide clean, 100 percent oil-free air, virtually eliminating any risk of oil contamination in food products and packaging materials within the manufacturing infrastructure. Oil-free compressors also reduce health risks, help prevent polluting the environment, and most importantly, provide peace of mind that your food product will not be compromised.

In addition to eliminating concerns from potential oil contamination, oil-free compressors also provide a number of options for energy savings, through heat recovery and variable speed drive technology, with unparalleled reliability.

Consider the following statistics from a recent report, the Assessment of the Market for Compressed Air Efficiency Services, issued by the U.S. Department of Energy:

- 70 percent of all U.S manufacturing facilities use compressed air in some form.
- Compressed air accounts for 10 percent of all electricity use in U.S. manufacturing facilities.

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A compressed air system is often referred to as the "fourth utility," behind water, electricity and gas, and fills a critical need in food processing facilities.

Heat recovered from the compression process can be used in a variety of peripheral manufacturing applications – offsetting up to 100 percent of the energy otherwise needed to perform these same functions. A natural by-product of the physical process of compressing air, heat can be used to pre-heat water fed to boilers, heat areas of the manufacturing floor or loading docks, heat water for hand washing or company showers, and can even aid in steam production to clean and sterilize equipment.

For plants and manufacturing facilities with continuous, 24/7 process operations, there are several money-saving options that improve efficiency and provide a quick return on investment. Variable speed drive (VSD) air compressors, for example, continually and automatically vary the production of compressed air to meet the ongoing demand requirements.

Analysis shows that more than 90 percent of all compressor applications are likely candidates for VSDs. When compared to a fixed drive compressor, a VSD sized for the same end applications uses about 35 percent less power. This, in turn, means energy costs are cut by one-third.

And these savings quickly pile up. Look at a case where a manufacturer was running a 200 horsepower air compressor 24 hours a day at three cents per kWh. These costs have doubled in the last five years, increasing in some areas to eight cents per kWh or more. The annual cost to operate that compressor at three cents per kWh was \$41,273. Today, at eight cents per kWh, that same compressor costs \$110,062 to operate every year, or more than \$550,000 over five years. Staying

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with this example, switching to a VSD compressor could save this facility \$38,521 annually or \$192,608 over five years.

Food manufacturers who seek the ultimate in savings and quality rely on a combination of variable speed drive and oil-free air compressor technologies to significantly reduce their facility's energy costs, while operating more efficiently and safely. That will help bring back customers, instead of tainted products.

For a free copy of Atlas Copco's 156-page Compressed Air Best Practices Guide, please send an e-mail to paul.humphreys@us.atlascopco.com [1]. Put "Manual - Oil Free" in the subject line and provide your delivery address in the body of the e-mail, and Atlas Copco will send you a complimentary copy.

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