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Serigraph – Compressed Air

Serigraph is a printing, molding, and custom graphics company that prints almost exclusively on plastic. They specialize in decorative, functional, and brand identity solutions for consumer and industrial products, point of purchase and promotions. The company's global headquarters is in West Bend.

Challenge

Serigraph uses compressed air primarily in its forming area, where printed flat sheets of plastic are formed into three-dimensional objects like dashboard displays for cars or nameplates for electronic equipment. Compressed air is also used in Serigraph's printing presses, which use suction cups to lift the sheets of plastic. In 2009, Serigraph spent \$43,000 on compressed air. In 2010, Serigraph's Energy Management Team targeted this as an area in which savings could be achieved.

Strategy

In August 2010, Serigraph's Energy Management Team worked with Focus on Energy to perform a compressed air leak audit. On a Sunday, when the plant was shut down, people from these two groups performed a walk-through of the plant and listened for the tell-tale hissing of compressed air leaking. The group found five minor leaks in the first audit. After this initial walk-through, Serigraph began performing a monthly compressed air audit.

Next, Serigraph examined the pressure setting of their air compressors. The company has two recently purchased 75-horsepower variable speed air compressors, and in summer 2010 they were set to maintain a system pressure of 120 pounds per square inch (psi). To determine whether a lower, more energy-efficient setting could meet the needs of processes that use compressed air, the Energy Management Team incrementally reduced the system's pressure. They did not notify operators, which allowed them to evaluate the pressure changes solely on compressed air performance rather than the perceived need for a certain minimum pressure setting.

At first, the team reduced the setting by 5 psi every two days. After several reductions, they continued with 2 psi reductions every two days. When the system pressure dipped below 100 psi, an operator in the forming area noticed that the plastic wasn't forming successfully and contacted the Energy Management Team as part of his troubleshooting. The Team had found the lower limit; they raised

the system pressure back to 106 psi, and are confident that their compressed air system meets the needs of their processes while consuming the least amount of energy possible.



Serigraph compressor room

Results

The five minor leaks found during the initial compressed air leak audit were estimated to waste \$400 per leak per year, so by repairing these leaks Serigraph is saving \$2000 per year. Their ongoing monthly leak audits prevent new leaks and further wasted money.

By reducing their compressed air system pressure from 120 psi to 106 psi, Serigraph saves 7% on the system's energy use, equal to an annual savings of \$3,000.

Since neither change required any capital investment, the payback on both compressed air projects was immediate.

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