

# TRIBUNE DIRECT COMPRESSED AIR PROJECT



## PROJECT SNAPSHOT

Customer	<b>Tribune Direct Northlake, Illinois</b>
Measures implemented	<b>Compressed air</b>
Total project cost	<b>\$116,942</b>
Estimated annual energy savings	<b>732,144 kWh</b>
Estimated annual cost savings	<b>\$53,447</b>
<i>Smart Ideas</i> incentive received	<b>\$34,597</b>
Estimated payback period without <i>Smart Ideas</i> incentive	<b>2.2 years</b>
Estimated payback period with <i>Smart Ideas</i> incentive	<b>1.5 years</b>

## PROJECT SUMMARY

Direct mail is big business any way you look at it, and Tribune Direct is a major player in this business. Tribune Direct's 300,000-square-foot facility in suburban Northlake, Ill., is equipped to produce and distribute nearly every type of mail anywhere in the United States. Each week, Tribune Direct produces and mails approximately six million shared-mail packages, as well as large volume solo mail pieces.

With business growth, Tribune Direct needed a new inserting machine: Hoppers hold the specific pieces that go into each tailored direct mail package, and the inserter puts each package into the correct wrapper.

Along with 70 percent of the manufacturing facilities in the United States, Tribune Direct uses compressed air to drive key pieces of machinery. Tribune Direct needed additional compressed air capacity for the new inserter, so Air Services Co., a *Smart Ideas* program trade ally, helped them find a way to get it while improving the efficiency of the system.

The use of compressed air is so common in manufacturing that it is often taken for granted. In fact, compressed air is one of the biggest energy expenses for an industrial facility. According to the U.S. Department of Energy, the annual energy cost for a compressed air system can be equal to the system's purchase price. And this does not factor in the annual cost for system maintenance—10 percent of the system purchase price each year.

The typical compressed air system consists of multiple compressors delivering air to a common plant air header. The demands on the system fluctuate dramatically and rapidly, causing the system itself to fluctuate by thousands of standard cubic feet per minute (SCFM) in minutes. Compressors are most efficient when they operate fully loaded. However, if a compressed air system is sized for peaks, the compressors can be idle most of the time, which means they operate inefficiently and inflate energy demand. A modulating compressor operating at 40 percent output could still consume 80 percent of its full load power requirement.

The new inserter is expected to demand a maximum of 294 SCFM when running and Tribune Direct estimates that it, like the existing inserters, will run about 50 percent of the time.

Tribune Direct had two fixed-speed air compressors, one 150 horsepower (HP) and another 50 HP, both of which ran 8,760 hours a year. The increased air system demand could be met by installing a new 150-HP modulating compressor and using it in combination with the existing 150-HP compressor.



But when Tribune Direct analyzed the option, projections showed that running two 150-HP compressors would cost around \$130,000 for the nearly two million kilowatt-hours (kWh) used per year. While this was a good solution, Craig Sipich, director of technology and engineering at Tribune Direct, wanted a more energy-efficient solution.

### THE SOLUTION

Air Services provided another option. Rather than a new 150-HP fixed speed compressor, they proposed a 227-HP variable speed compressor. This compressor would use a variable speed drive (VSD) and built-in controller to vary air production based on system demand.

A compressor equipped with a VSD varies compressed air flow in response to detected changes in air system pressure to maintain an exact and constant pressure level. Controls shut off unneeded compressors or delay bringing on additional compressor capacity until it is needed. Together, VSDs and controls match the compressed air supply to system demand and significantly improve energy efficiency and minimize energy consumption.

Tribune Direct and Air Services ran the numbers on this new option. While the variable speed compressor was more expensive than the fixed speed, the operating cost was considerably less. The variable speed compressor would cost less than \$80,000 a year to operate and about 1.1 million kWh. This compared favorably to the

\$130,000 and 2 million kWh it would cost to run two 150-HP compressors. project benefits

### PROJECT BENEFITS

“The cost of a piece of equipment like this is more than just the purchase price,” Sipich points out. “You have to look at the total cost, start to finish. We’re spending more now, but we’ll save in the long run.”

Sipich was sold on the idea of the more efficient compressor, so now he had to sell the idea—a capital expense—internally. “We have a certain ROI requirement we have to meet for all capital expenditures,” he says. “We would not have been able to get over the ROI hurdle without the help of the incentive from *Smart Ideas for Your Business*.”

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*You have to look at the total cost, start to finish. We’re spending more now, but we’ll save in the long run.*

- Richard Stuba, plant manager

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Compared to the standard solution, the variable speed compressor would save over \$50,000 per year and 732,144 kWh. A *Smart Ideas for Your Business* incentive of about \$35,000 meant the new compressor paid for itself in less than two years.

Craig Sipich advises other business owners and managers to do a little homework. “We worked with a knowledgeable contractor who did metering and measuring up front, so we could feel confident that the incentive amount would be accurate. They made it easy for us,” Sipich said. “And the *Smart Ideas* team did a good job of processing our application in a timely manner. I was pleasantly surprised at how quickly I got the check.”

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### ABOUT COMED'S SMART IDEAS FOR YOUR BUSINESS PROGRAM

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