



CASE STUDY

The Client: Kent Foundry
The Challenge: Maximize Compressed Air System Efficiency
The Conclusion: Quincy QSI-500 Quincy Efficiency Quotient Analysis



Complete Air System Evaluation Yields Significant Savings in Overall Efficiency

Kent Foundry, a leading manufacturer of Grey and Ductile iron castings, reduced compressed air loss and waste with continuous efficiency improvements. A non-stop effort to reduce pressure, leaks and wasted air creates bottom-line changes with staying power.

The Client

Kent Foundry Company, located in Greenville, Michigan, is a leading manufacturer of Grey and Ductile iron (or Nodular iron) castings for a variety of industries and market sectors, selling to customers throughout the USA. Kent Foundry concentrates on marketing castings from 100 to 1500 pounds and utilizes the no-bake molding process (using Pep-Set resins or binders) for all the molds it makes.

Kent Foundry specializes in low-volume and custom-formed casting of machine tool parts, valves and fittings.

The Challenge

While foundries in the United States were closing at an alarming rate, Kent's management was determined to use best practices to stay in business. David Ziny, Maintenance Supervisor, fearlessly took on the challenge and targeted opportunities to save money in the Foundry's compressed air system. Kent Foundry requires three distinct air systems, high pressure to run the grinders, medium pressure to

run a majority of the plant's other air requirements and low pressure to transfer sand from a storage tank to operations. Working diligently for 27 years at Kent, Ziny has made compressed air his passion. His dedication to squeezing productivity out of every pound of

KENT FOUNDRY



pressure not only produced significant energy savings, it has allowed Kent to stay competitive in a niche market, impact its bottom line and consider future expansion. In 1996, Ziny, knew that the five inefficient rotary vanes Kent Foundry used to generate compressed air to do

everything from ladle pre-heating to running air grinders were hurting profitability. Each of the 50 horsepower (hp) compressors consumed full-load power regardless of demand, devoured parts and ran non-stop.

"We weren't efficient. We wanted to grow the business, and it takes air to do that," Ziny explains, pointing out, "A lot of people think air is air. Compressed air is not just air. It's a utility."

In a move to reduce utility costs, Ziny and Kent Foundry management along with John deWaha of Michigan Air Solutions, an authorized Quincy Compressor distributor, agreed the first step was to replace the five rotary vanes with two Quincy QSI-500, 100 hp, air-cooled rotary screw compressors, equipped with the patented Power\$ync® capacity controls and variable displacement airends. Soon after, adequate air storage was added and made "useful" by including the installation of a steady pressure flow control valve. Storing the compressed air at 110 psig and releasing it

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to the plant air system at 79 psig created "useful storage" (potential energy). This lowered air demand, reduced leaks and provided a consistent system pressure at all load conditions. Equipment and tool performance improved, scrap rates fell and compressor energy requirements fell from 250 hp to the 150 hp range. Those initial



Dave Ziny, Kent Foundry and Bruce De Smith, Michigan Air Solutions worked non-stop to reduce utility costs and improve Kent's plant-wide operating pressure to 79 psig.

steps opened the door for Ziny to really dig into his system, and he agreed when deWaha recommended a system audit. The results yielded more energy savings with the addition of four more compressed air storage tanks. This allows just one of the foundry's QSI-500 compressors to meet the facility's entire needs at all times. Ziny also installed an automated motorized ball valve to shut the plant's main air lines at night, leaving only the sand transfer lines running, further eliminating leak losses.

"We weren't efficient. We wanted to grow the business, and it takes air to do that."

David Ziny
Kent Foundry

Ziny established a consistent, plant-wide operating pressure of 79 psig. "People say you can't run a plant at that low of a pressure," Ziny says. "Give them my phone number. We've run at that pressure for about six years."

The Conclusion

Taking a full-scale foundry from 250 hp to less than 100 hp and 110 psig down to 79 psig is a testament to how much a systematic approach can affect overall efficiency. Ziny and deWaha made significant manufacturing "lifestyle" changes. Rules were applied to air usage operation wide. "It was a tough sell at first because the whole system approach was new," Ziny says. "But Management was open

to allowing us to try new things. It sure was a learning process." The exercise has influenced energy and production efficiency, and the savings have created an acute awareness of compressed air costs. Things like equipment, tools and even hose selections are carefully considered to ensure optimal performance at the lowest flow and pressure, which translates into the lowest operating costs.

"It takes a lot of electricity to create compressed air," Ziny concluded. "Growing our business means adding more people and air users. To be profitable we must eliminate wasteful air practices. I think we have done a good job so far."

PRODUCTS AND SERVICES

Quincy's product line includes the following categories:

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 - QGD (40 hp - 60 hp)
 - QGS (5 hp - 15 hp)
- Reciprocating Compressors
 - QR-25 (1 hp - 25 hp)
 - QT (3 hp - 15 hp)
 - QP (3 hp 15 hp)
- Climate Control & Medical Systems
- Vacuum Pumps
- Air Treatment
- EQ Auditing Services

MARKETS AND INDUSTRIES

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- Automotive/Tire
- Climate Control
- Contractor/Builder
- Dry Cleaning
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- Pharmaceutical
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