



CASE STUDY

The Client: Mega Brands Inc.
The Challenge: Maximize Compressed Air System Efficiency
The Conclusion: Quincy Efficiency Quotient Analysis



MEGA Brands, a leading global manufacturer and marketer of children's toys and games, achieves significant efficiency improvements and energy savings by implementing Quincy Efficiency Quotient recommendations.

Quincy Efficiency Quotient Uncovers Major Savings and Efficiencies

The Client

MEGA Brands Inc. produces innovative, affordable and high-quality products designed to stimulate and nurture creativity in children. The company manufactures over 100 products including a broad assortment of construction toys, play sets, games, puzzles, and craft and activity products, as well as an extensive line of stationery, pens, pencils, markers and crayons. The Mega Bloks® system of interlocking plastic building bricks ranks as one of the top 10 toy brands in North America.

Founded in 1967 and headquartered in Montreal, Quebec, MEGA Brands is the world's second largest manufacturer and marketer of construction toys and the largest toy company in Canada. Its products are sold internationally in over 100 countries.

The Challenge

MEGA Brands' toy products are milled, assembled and distributed from its large production facility in Montreal. The plant's aging compressors required increasing maintenance and repair; management was ready to replace the

equipment. Before selling replacement equipment to MEGA Brands based on the capacity of the existing machines, Quincy Compressor's distributor in Montreal, Compresseurs Quebec, suggested an audit of the plant's air system to determine the efficiency level of the equipment and the potential for energy savings.



The Quincy Efficiency Quotient, or EQ, is a detailed performance and financial analysis of a facility's compressed air systems. Using advanced data-logging technology, the EQ monitors and evaluates functions from both the supply and demand sides – including control mode, system storage, compressor sequencing, equipment maintenance, ambient conditions, artificial demand, inappropriate/inefficient uses, leak management and more – and identifies and quantifies energy saving opportunities. At MEGA Brands, the

plant's air system was monitored and performance data was logged for an entire week.

The Conclusion

The EQ analysis of MEGA Brands' compressed air system uncovered significant opportunities to reduce the system's operating costs. According to the audit, the system was operating at an Efficiency Quotient of 71%, with the potential to increase overall performance to 81%.

Typically, energy costs account for approximately 80% of the 10-year life cycle costs of a plant's compressed air system – so efficiency is a key consideration when selecting new compressors or planning system upgrades. For the MEGA Brands system, a Quincy QGV variable speed rotary screw compressor was recommended to provide appropriate turndown for efficiently managing the variations in air demand. The QGV compressor is uniquely capable of accurately controlling header pressure and efficiently managing a stable pressure in the system. Plus, the EQ showed that a smaller compressor could satisfy the plant's requirements.

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WORLD'S BEST WARRANTY = 10-YEAR AIREND COVERAGE

When it comes to reliability, everyone is making the same promise. But when it comes to keeping the promise, Quincy Compressor stands alone. This is why Quincy Compressor has introduced its exclusive ten-year airend warranty, which covers both parts and labor on select models. Reliability is about confidence, performance, and trust – every day. Quincy Compressor's Royal Blue Warranty program is proving reliability for the next ten years.

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In industry, 50% of the compressed air generated is wasted. The EQ analysis indicated that MEGA Brands' system was maintaining 9 psi more pressure in the system than necessary, resulting in artificial demand of 300 scfm that contributed significantly to operating costs. The QGV compressor is designed to accurately control system pressure with its unique ability to sense pressure downstream of the air treatment equipment and react quickly

“The new installation eliminated the need to use multiple compressors which also helped in energy savings.”

Alain Sirois
Industrial Supervisor and
Quality Assurance

to variations in air demand. Based on the EQ analysis, an increase in total system storage from the existing 400 gallons to

1560 gallons was proposed to improve efficiency of the air system and reduce header pressure fluctuations.

The energy costs for MEGA Brand's existing compressed air system amounted to \$40,360 per year. Installing a Quincy QGV-100 compressor and additional storage volume translated into an energy reduction of nearly 367,000 kilowatt-hours – and annual savings of \$22,015. Based on costs to retrofit the system, the project

delivered a simple payback of 27 months.

“Besides the actual savings from the Quincy QGV variable speed equipment, the new installation eliminated the need to use multiple compressors which also helped in energy savings,” says Alain Sirois, MEGA Brand's industrial supervisor and quality assurance. “The installation also eliminated the extra maintenance on the previous equipment which had become old and unreliable.”

PRODUCTS AND SERVICES

Quincy's product line includes the following categories:

- Rotary Screw Compressors
 - QSI 50 - 300 hp
 - QGV 50 - 200 hp
 - QGB 10 - 60 hp
 - QSLP 10 - 200 hp
 - QSF 50 - 200 hp
- Reciprocating Compressors
 - QR25 1 - 25 hp
 - QT 3 - 15 hp
 - PLT 3 - 15 hp
- Climate Control & Medical Systems
- Vacuum Pumps
- Air Treatment
- EQ Auditing Services

MARKETS AND INDUSTRIES

- Agriculture/Farm
- Automotive/Tire
- Climate Control
- Contractor/Builder
- Dry Cleaning
- Energy Exploration
- Food & Beverage
- Low Pressure
- Manufacturing
- Medical & Dental
- Pharmaceutical
- Plastics
- Woodworking

UNDENIABLY THE WORLD'S FINEST

Quincy Compressor specializes in compressed air technology, offering top-notch products and services since 1920. Serving the industry nearly eight decades, Quincy is on the cutting edge, engineering reliability and quality into every offering. Award-winning accomplishments have allowed Quincy to build solid relationships with its customers and achieve compressed air systems best practices. Quincy's flagship products include the QSI and QGV rotary screw compressors, the reciprocating QR-25, QT and Climate Control packages along with its innovative Royal Blue Warranty, widely recognized as the industry's strongest warranty program.



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