Quincy COMPRESSOR

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EQ App on your iPad TODAY!

QuincyEfficiency Quotient "EQ"

A Performance & Financial Compressed Air System Analysis

Quincy Efficiency Quotient

The Science of Compressed Air

Advances Globally Competitive Technology:

- Applies "Best Practice" Solutions
- Generates Bottom-line Energy Savings
- Ensures Scientifically Proven Results

Your "Best Practice" for Energy Savings

In order to stay competitive in the global market, you need partners that offer proven "Best Practice" solutions. More than promises of energy efficiency, you need bottom-line accountability – and Quincy's "Best Practice" standards for compressed air deliver bottom-line results.

Best Practice Standards

Industry Examples	Compressor kWh per Industry Metrics
Aluminum Can Manufacturing	258 kWh per 100,000 cans
Foam/Plastic Cup Manufacturing	290 kWh per thousand cups
Pulp and Paper Mill w/ Woodyard	115 kWh per ton of paper
Corrugated Box Plant	640 kWh per million sq. ft.
Rubber Products Manufacturing	1088 kWh per 1000 tires

The generation of compressed air accounts for 10% of the total industrial energy used in the United States. More importantly, it's the cost of this energy that directly impacts your bottom-line. Our "Best Practice" standards allow you to compare your facility to the most efficient compressed air systems in similar industries.

Cost Savings Opportunity

EQ Rating	50 HP System	100 HP System	500 HP System
85%	$4,973	$9,944	$49,722
75%	$7,458	$14,917	$74,584
65%	$11,187	$22,375	$111,875

Note: Calculated at $0.07 /kWh. See page 6 for more on the EQ Rating.

It's the application of the patented Quincy Efficiency Quotient (EQ™) that allows us to quickly and accurately define the potential energy savings in your plant. And it's the bottom-line results that will make Quincy your "Best Practice" partner for energy savings.

Quincy's Commitment to Efficient & Competitive Industry in America

Efficiency is critical to success in the global marketplace and Quincy's commitment to efficiency is leading to innovative solutions that give American industry a competitive edge.

Quincy's extensive distributor network understands the global challenges you face every day. And because Quincy's distributors are independent businesses with ties to your community, they are committed to your success.

Since 1920, Quincy Compressor has been driven to making American industry more competitive. Quincy's EQ setting industry standards for efficiency is just one example of how we are reducing operating costs for our clients. Advanced R&D, state-of-the-art manufacturing and an uncompromised design philosophy make Quincy the value-added partner American industry needs in today's global economy.

The EQ Analysis Is a 3-Step Process

- Determine existing EQ Rating with a free plant walk-through
- Conduct EQ Analysis to quantify cost reduction opportunities
- Evaluate EQ Analysis report and Action Plan to reduce operating costs

Step 1 – Determine Your Existing EQ Rating

Your Quincy representative will conduct a free walk-through and complete the EQ Rating worksheet included in this brochure. This does more than just identify your existing EQ Rating, it estimates your current compressed air system operating costs and your cost reduction potential.

Step 2 – Conduct Quincy EQ Analysis

- A trained Quincy representative will come on-site and connect the EQ Analyzer.
- The EQ Analyzer records the power and performance of the compressors and air pressure levels in your compressed air system during normal production.
- The recorded data combined with information gathered from plant personnel and observation will then be analyzed.

Financials Summary

Constituent	Existing	Proposed	Variance
Electricity	$170,853	$113,144	$57,710
Maintenance & Repairs	$15,000	$9,000	$6,000
Cooling Water	$5,125	$3,394	$1,731
Rental Compressors	4,500	0	$4,500
Miscellaneous	0	0	0
Totals	**$195,478**	**$125,538**	**$69,941**
Estimated Retrofit Costs	$122,740	N/A	N/A
Projected Annual Savings	**$69,941**	N/A	N/A
Estimated Simple Payback	21 months	N/A	N/A

Step 3 – Deliver Quincy EQ Analysis Report and Action Plan

- Financial projections include a payback calculation on the recommended Action Plan and capital investment.
- System performance graphs and tables provide details on existing and proposed system performance.
- The Action Plan details the specific recommendations and estimated costs to raise your system's EQ.

Prioritized Costed Action Plan

Description	Capital	Install
Install Quincy QDHP 3100 micro-burst heated dryer	$49,560	$3,500
Install Quincy QGV 150 variable speed drive compressor	$56,600	$5,000
Install 1000 gallon header storage receiver	$3,300	$1,000
Replace 200 CFM open blowing applications with low pressure blower system	$3,000	$750
Subtotal	**$112,460**	**$10,250**
Grand TOTAL	**$122,710**	

Performance & Financial Compressed Air System Analysis

What's Your EQ?

EQ stands for Efficiency Quotient:

- **Industry standard for evaluating the overall efficiency of your compressed air system**
- **Innovative, patented method**
- **Based on proven "Best Practice" solutions**

Quincy Efficiency Quotient

Case Study #1: Machining & Assembly Facility Reduces Operating Costs More Than 38% and Turns Off a Compressor

A U.S. based machining and assembly plant was looking for an opportunity to reduce air system operating costs and improve system reliability. The air system pressure was elevated to support widely varying production demand – it also increased operating costs, forced a second compressor to operate, and caused the system pressure to fluctuate. The compressed air supply system was composed of two 60 hp rotary screw air compressors, a refrigerated dryer and a coalescing filter.

1) The Quincy EQ Rating: Identified the Potential for a 30-40% Reduction in Operating Costs

The 2 hour EQ Rating survey identified the most significant cost reduction opportunities as:

- Accurately controlling header pressure
- Eliminating artificial demand and other waste
- Turning off one part loaded compressor

Quincy EQ Rating

Supply Side EQ Rating	Demand Side EQ Rating	System EQ Rating	Operating Cost Reduction
77%	73%	**75%**	**>35%**

2) The Quincy EQ Analysis: Based on the EQ Rating, the EQ Analyzer Was Installed to Record System Performance

A local EQ trained distributor installed the EQ Analyzer™ at the plant and collected critical system information.

- Data collected by the EQ Analyzer and the site information was then uploaded to the EQ Web Site.
- Patent-pending technology calculated existing performance of the system and modeled multiple system configurations to determine the optimal system solution.
- Results of the EQ Analysis indicated the existing Power$ync® compressors were appropriate if header pressure was accurately controlled.

What's the Benefit of a High EQ Rating?

Optimizes your compressed air system:

- **Reduces energy consumption**
- **Stabilizes system pressure**
- **Improves system performance**
- **Enhances product consistency**
- **Improves plant productivity**

3) The EQ Analysis Report: Calculated the ROI at <14 Months for Implementing the Action Plan

- A Quincy Pressure Flow Control was installed to provide accurate control of header pressure.
- An additional 2500 gallon receiver was also recommended and installed.
- The existing Power$ync compressors were put in network mode allowing one of them to turn off.
- The increased storage and pressure control supports peak air demands without turning on the second compressor.

The Results: Operating Costs Reduced by More Than 38% ($11,936/yr), Stable Header Pressure, One Compressor Turned Off for Backup Use

- The plant header pressure is now stable, within 1 PSI vs. 28 PSI before the system upgrades.
- With the second compressor turned off, the plant now has a redundant system.
- The original system EQ Rating took less than 2 hours and accurately predicted >35%.

Financials Summary Analysis

Constituent	Existing	Proposed	Variance
Electricity	$25,946	$16,560	$9,386
Maintenance & Repairs	$5,100	$2,550	$2,550
Cooling Water	0	0	0
Rental Compressors	0	0	0
Miscellaneous	0	0	0
Totals	**$31,046**	**$19,110**	**$11,936**
Estimated Retrofit Costs	$13,450	N/A	N/A
Projected Saving/Year	$11,936	N/A	N/A
Estimated Simple Payback	<14 (months)	N/A	N/A

Quincy Compressor

At Quincy Compressor, efficiency is something we've built into the very structure of our business. You'll see it in our products, of course, but also in our processes. We've adopted a system we call "Total Customer Value" – a cycle of continuous improvement that drives us to ongoing innovation in everything we do.

You'll see the results of Total Customer Value in the efficiency of our compressors and the superior value they deliver for your purchasing dollar. To learn more about making your compressed air system as efficient as it can be, contact one of our expert partners. As trusted advisors, they can arm you with the information you need to make efficient and sustainable system choices.

Calculate your system's efficiency by downloading our EQ iPad app today!

Quincy Efficiency Quotient

Case Study #2: Bottling / Packaging Facility Reduces Operating Costs More Than 29% and Turns Off a Compressor

A California bottling and packaging manufacturer believed its air system operating costs could be reduced. While the air system pressure was elevated to prevent production shutdowns, it was also increasing operating costs, forcing multiple compressors to modulate and causing the system pressure to fluctuate. The compressed air supply system was composed of two 75 hp and one 40 hp rotary screw air compressors, a refrigerated dryer and a coalescing filter.

1) **The Quincy EQ Rating: Identified the Potential for a 25-30% Reduction in Operating Costs**

   The 2-hour EQ Rating survey identified that the most significant cost reduction opportunities result from actively supporting the wide variations in air demand:

   - Eliminate multiple modulated compressors
   - Stabilize header pressure
   - Reduce artificial demand and waste

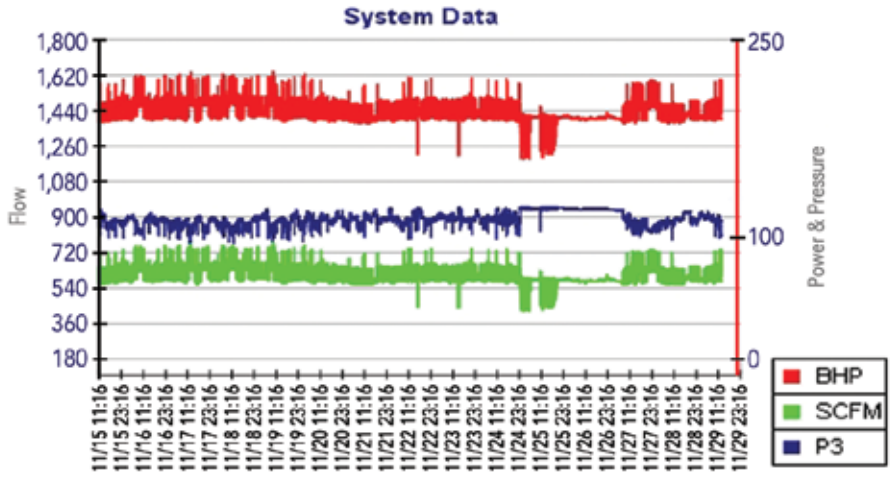
Quincy EQ Rating

Supply Side EQ Rating	Demand Side EQ Rating	System EQ Rating	Operating Cost Reduction
72%	81%	**77%**	**>25%**

2) **The Quincy EQ Analysis: Based on the EQ Rating, the EQ Analyzer Was Installed to Record System Performance**

   A local EQ trained distributor installed the EQ Analyzer™ at the plant and collected critical system information.

   - Data collected by the EQ Analyzer and the site information was then uploaded to the EQ website.
   - Patent-pending technology calculated existing performance of the system and modeled multiple system configurations to determine the optimal system solution.
   - The results of the EQ Analysis indicated a QGV-150 variable speed compressor could support the wide variations in air demand and reduce operating costs.



Frost & Sullivan Customer Service Innovation Award

Each year, Frost & Sullivan presents this award to a company that has demonstrated excellence in customer service innovation within the industry. The recipient company has developed and implemented new customer care systems that set unprecedented standards for customer interaction, timely response, and/or attention to customer needs.

"Quincy has focused on the novel concept of capacity building of customers and enabling them to make energy-saving decisions by themselves," says Frost & Sullivan Industry Manager Kishan Bhat. "At the core of this strategy is the new efficiency quotient (EQ) analysis that Quincy offers to all existing and prospective customers on its website."

2005 FROST & SULLIVAN Customer Service Innovation Award

3) The EQ Analysis Report: Calculated the ROI at <16 Months for Implementing the Action Plan

- A Quincy QGV-150 Variable Speed Compressor was installed to provide accurate control of system pressure.
- True PID Functions in the PLC controller adjusts the speed of the Quincy QGV to match the rate of change in air demand.
- Remote Pressure Signal Connection overcomes the pressure drop created by air treatment equipment and stabilizes header pressure.
- With turn-down capability as much as 85%, the Quincy QGV performs as the trim compressor in all production conditions.

The Results: Operating Costs Reduced by More than 29% ($44,000/yr) and Production Shutdowns Were Eliminated

- The plant header pressure is now stable within 2 PSI vs. 20 PSI before the system upgrades.
- The broad turn-down range of the Quincy QGV compressor eliminates the need to operate any part-loaded, inefficient compressors.
- The original system EQ Rating took less than 2 hours and accurately predicted a >25% operating costs savings and an attractive ROI.

Quincy Helps You Do More. For Less.

For more information on the Quincy Efficiency Quotient "EQ" or other air compression solutions, contact your Quincy representative or visit us online at QuincyCompressor.com.

Quincy EQ Worksheet

Supply Side EQ® Rating	Score	Enter Value for Each Condition the Applies	
Rotary/Recip Control Mode		0	VSD or Variable Displacement
		3	Load/Unload
		8	Modulation
Centrifugal Compressor Blowoff		0	No Blowoff Valve Ever Open
		3	One Blowoff Valve Open Occasionally
		5	One Blowoff Valve Open Often
		7	Two Blowoff Valves Open at Times
		10	More than Two Blowoff Valves Open
Supply Side Storage		0	10 Gallons / CFM of Largest Compressor
		1	5 Gallons / CFM of Largest Compressor
		2	3 Gallons / CFM of Largest Compressor
		4	2 Gallons / CFM of Largest Compressor
		6	1 or Less Gallons / CFM of Largest Compressor
Mulitple Compressor Sequencing		0	Intelligent Energy Control
		2	Single-Pressure Band Sequencer
		4	Pressure Switch Sequencer
		6	None - Manual Rotation
Compressor and Equipment Maintenance		0	Professional Service Contract
		1	In-house Preventive Maintenance
		3	Repair Only Maintenance
		6	Repair Only Maintenance; Experiencing Reliability Issues
Compressor Room Conditions (use all that apply)		0	Clean and Well Ventilated
		2	Elevated Temperatures
		2	Dusty or Dirty Air
		2	Poor Cooling Water Treatment
Air Treatment - Dryers		0	Cycling Refrigerated Dryers or No Dryers
		1	Non-Cycling Refrigerated Dryers
		2	Heat of Compression Dryers
		4	Heated Blower Desiccant Dryers
		6	Heated Desiccant Dryers
		10	Heatless Desiccant Dryers
Air Treatment - Total Pressure Drop		0	< 2 PSID
		1	< 5 PSID
		4	< 10 PSID
		7	> 10 PSID
Total Supply System Score		____	**Add up all scores above**
Supply System EQ Rating		____%	**Subtract Total from 100 (Relative to 100% of Potential Efficiency)**

Quincy EFFICIENCY QUOTIENT

EQ Rating Conducted by -

Name: _____

Company: _____

Phone: _____

Email: _____

EQ Rating Conducted for -

Company: _____

Contact: _____

Title: _____

Address: _____

City, State, Zip: _____

Phone: _____

Email: _____

Energy Calculations

Compressors	*HP		kW
#1		x 0.746/0.92	
#2		x 0.746/0.92	
#3		x 0.746/0.92	
#4		x 0.746/0.92	
#5		x 0.746/0.92	
#6		x 0.746/0.92	
Compressor kW Subtotal			
***Cooling kW Subtotal**			
Compressor + Dryer + Cooling = Total kW			
x Operational Hours/year			
x $/kW-Hr Local Rate			
=Operating Costs Estimate			**$**

Refrigerated Dryers	CFM Capacity	**Divide BY	kW
#1		200	
#2		200	
#3		200	
#4		200	
#5		200	
#6		200	
		Dryer kW Subtotal	

*Enter nominal motor hp if on, leave blank if off
**divide by 60 for heated desiccant dryers
***Calculated as 3% of compressor kW

Demand Side EQ Rating	Score	Enter Value for Each Condition the Applies	
Artificial Demand/Header Pressure		1	< 0 PSIG Plant Header Pressure
		3	80-90 PSIG Plant Header Pressure
		5	90-100 PSIG Plant Header Pressure
		8	>100 PSIG Plant Header Pressure
Open Blowing Applications		0	No Compressed Air Blowing or Use Low Pressure Blowers Only
		2	Minimal Blowing Applications Using Engineered Nozzles
		5	Some Compressed Air Blowing Using Tubing or Pipe Manifolds
		8	Significant Use of Comp Air Blowing on Product or Equipment
Inappropriate or Inefficient Uses (use all that apply)		0	No Inappropriate or Inefficient Uses Identified
		2	Vacuum Generators and Venturis Driven by Compressed Air
		2	Sparging–Mixing of Liquids with Compressed Air
		2	Vibrators or Agitators Powered by Compressed Air
		2	Other: Diaphragm Pumps, Filter Presses
		4	Large or Multiple Pulse Type Baghouses or Dust Collector
		5	Conveying of Material with Compressed Air (not blowers)
		7	Significant Use of Air <45 PSIG but Compressed to >90 PSIG
Leak Management		1	Aggressive Leak Repair Program Including Ultrasonic Scanning
		3	Semi or Annual Repair Effort
		5	No Leak Management but Do Repair Large or Obvious Leaks
		7	Minimal Effort on Leak Repairs
Idle Production Equipment		0	Automatic Shutoff of Air to Idle Production Equipment
		2	Manual Shutoff of Air to Idle Production Equipment
		4	No Shutoff of Air to Idle Production Equipment
Condensate Drain Losses		0	All Demand Stlye Drains Well Maintained
		2	Mix of Demand and Solenoid Drains
		4	Timed Solenoid Drains
		6	Partially Open Valves or Drain Bypasses
Total Demand Side Score		_____	**Add Up All Scores Above**
Demand Side EQ Rating		_____%	**Subtract Total from 100 (Relative to 100% of Potential Efficiency)**

Efficiency Quotient Summary

Supply Side EQ Rating	Demand Side EQ Rating	(Deamand EQ + Supply EQ) / 2
_____%	_____%	_____%

System EQ Rating of	System EQ Rating	
>95%	5%	Opportunities Exist, but Return On Investment May Be Limited
>90%	10%	Operating Cost Reductions of 5-10% Exist, Providing an Attractive ROI
>85%	20%	Operating Cost Reductions of 15-20% Exist, Providing an Attractive ROI
>80%	25%	Operating Cost Reductions of 20-25% Exist, Providing an Attractive ROI
>75%	30%	Operating Cost Reductions of 25-30% Exist, Providing an Attractive ROI
>70%	35%	Operating Cost Reductions of 30-40% Exist, Providing an Attractive ROI
>65%	45%	Operating Cost Reductions of >40% Exist, Providing an Attractive ROI
Operating Costs Estimate (from Energy Calculations Worksheet)		$
Cost Reduction Opportunity Based on EQ Rating		_____% (Copy in Reduction Opportunity Based on System EQ Rating)
Cost Reduction Opportunity		$

Quincy Efficiency Quotient

Quincy Efficiency Quotient Technical Advantages

Accurately Analyzes Existing Compressor Performance

- Simultaneous recording of all compressors analyzes system and compressor performance during normal, low, and peak production demand periods for the existing and proposed arrangements.
- Designed for all brands and types of compressors and compressor controls including rotary, reciprocating, and centrifugal.
- Determines the percent capacity and load on each compressor, correcting performance in power and flow for the effects of control type, discharge pressure, altitude, and inlet temperature.
- Corrects for the impact of system storage on compressor efficiency in load/unload control modes.
- Provides correction for off-design motor conditions such as voltage, power factor, and motor efficiency.
- Remotely located compressors can be logged and included in the analysis.

Accurately Analyzes Existing Air Treatment Equipment

- Calculates pressure drop across air treatment equipment and the energy impact of reducing that pressure drop.
- Calculates the actual load on each dryer and the energy impact of dryer technology and controls, i.e. cycling refrigerated dryers and desiccant dryer purge controls.
- Corrects desiccant dryer purge losses based on dewpoint controls and load.

Calculates Waste in the System

- Calculates artificial demand based on existing system pressure vs. lowest acceptable pressure, adjusting for the level of unregulated demand in the system.
- Adjusts desiccant purge losses for modified controls and dryer loads.
- Provides for all types of waste reduction including leak repairs, open blowing, inappropriate uses, drain losses, etc.

Models Multiple Proposed System Upgrades

- Allows multiple what-if scenarios to determine the optimum proposed compressed air system arrangement.
- Calculates the efficiency of recommended system modifications supporting the modified air demand after waste is eliminated based on:
  - New compressors, including control types and part loaded operating conditions
  - New air treatment equipment including dryer technology, purge losses, filter pressure drop, etc.
  - Lower, more stable system pressure from automation, pressure flow controls, or compressor control mode
  - Additional storage impact on compressor performance Repairs to malfunctioning compressor controls

Performs a Financial Analysis Based on Recommended Upgrades

- Determines the existing and proposed energy consumption in kWh, kW demand and dollars.
- System energy calculations include compressors, compressor cooling fan motors and pumps, dryer motors and heaters.
- Allows for other system costs including rental compressors, compressor maintenance and cooling water costs.
- Performs a financial payback calculation based on the Costed Action Plan that allows installation estimates to be included.
- Confirms the Existing EQ Rating and projects the Proposed EQ Rating after the Action Plan is implemented.
- Provides a report that contains:
  - Existing System Graphs of pressure, power and flow
  - System Performance Summary Table including optional peak and low production loads
  - Existing and Proposed Compressor Performance and Efficiency Tables
  - Constituents of Air Demand Table including waste reduction opportunities
  - Existing and Proposed Energy Costs Table and Graph
  - Costed Action Plan Table detailing all recommended upgrades
  - Financial Summary Table with payback calculations
  - Efficiency Quotient Rating Summary Tables

Quality Comes in All Shapes and Sizes– But Just One Color.

Quincy Has the Compressed Air Solution for Your Application.

Since 1920, Quincy's trademark blue compressors have been hard at work building our company's reputation for quality and performance in the world's most demanding applications and harshest environments.

Our Promise To You.

As a customer, you can always count on Quincy for a low cost of ownership through stable air pressure, easy maintenance and longer equipment life. And we back it all with one of the strongest warranties in the industry. No shortcuts and no substitutions – that's the quality of Quincy.

We're Still Making History.

Today, you'll find that same leadership in Quincy's next-generation compressed air solutions that feature everything from smart controls to green technologies. We know that your company is counting on our reputation, that's why every Quincy product is designed, constructed and proven to deliver exceptional customer value before it is worthy of wearing the Quincy name.

Made in the U.S.A
Performance You Demand.
Reliability You Trust.

Performance You Demand. Reliability You Trust.™

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