

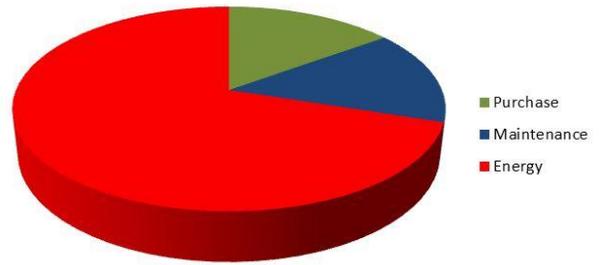


**COMPRESSED AIR AND NITROGEN
GENERATION SYSTEM ENERGY AUDITING**

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- Reduce Energy Costs
- Lower Maintenance Costs
- Increase Productivity
- Improve Equipment Reliability
- Reduce Capital Spending

Compressor Life Cycle Costs



ABOUT US ...

At Applied Compression we engineer, build and install some of the most reliable and energy efficient compressed air and nitrogen generation systems in the industry. But in today's world a successful business needs more than just great equipment to thrive and grow.

Increasing productivity and profitability for our customers means that we need to go beyond just the components to find creative solutions to the operating challenges that you face.

The challenges of operating a modern day compressed air or nitrogen generation system are becoming more and more complex. This is why Applied Compression's Compressed Air Audit Solutions can help!

Applied Compression's Audit Solutions takes a "wholistic" approach to your compressed air system, not only the compressors. We believe that compressed air is your fourth utility and provide solutions to make it as consistent and stable as your other utilities.

During an air audit, our trained personnel analyze the total process of producing compressed air... not just the compressors. They look at the demands on your system, how air flows from one part of your system to the next and how the air that's being produced is distributed throughout your plant.

The result is a thorough assessment of how your system is operating and where things can be improved to make it operate even more efficiently and reliably.

From that information we can offer cost-effective solutions to improve your return-on-investment and develop cost-efficient solutions.

WHAT WE DO...

During the audit process we will do an in-depth examination of your system that includes the following:

Data Log Power Consumption and Flow Rates: A key parameter in assessing a compressed air system is the demand-cycle of the compressor. Understanding the load characteristics provides in-sight into system performance and identification of potential energy savings.

To begin the process we will install a data logger and record how much energy is being consumed and what is the resulting volume of compressed air being produced over several shifts. This enables us to establish a base-line for current conditions.



Carefully Examine Your System for Leakage

Points: A quarter-inch air leak at 100 psi will cost you more than \$2,500 a year. Piping distribution systems older than five years can often have leaks consuming up to 25 percent of the compressor capacity. Because it takes energy to generate compressed air, any air leakage is money wasted. Approximately 80 percent of air leaks are not audible so ultrasonic detection is required to detect leaks.



Establish Inappropriate Compressed Air Usage:

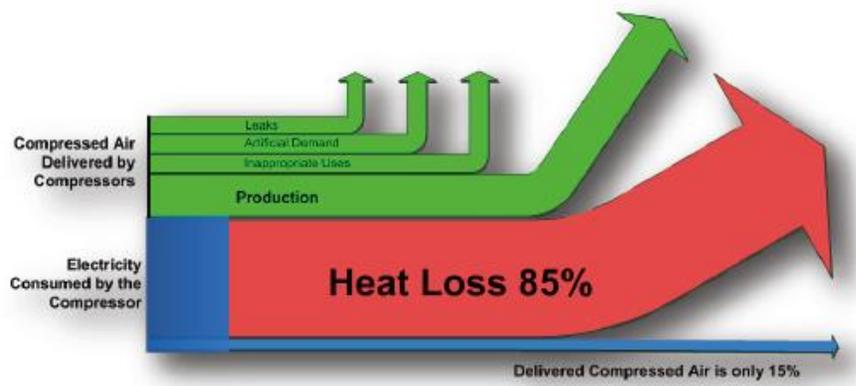
Inappropriate uses of compressed air include any application that can be done more effectively or more efficiently by a method other than compressed air. For example, high pressure air often is used for cooling or applications where much lower air pressure is required.

Review System Operating Pressures: We look for any potential to reduce operating pressures. Each two (2) psig reduction in pressure cuts energy consumption one percent.

Review Piping Infrastructure: A piping system design should optimize transfer of compressed air at the desired flow and pressure to the point of use. Increasing the size of a pipe from two to three inches can reduce pressure drop up to 50 percent. Shortening the distance air has to travel can further reduce pressure drops by about 20-40 percent.

The more flow through a pipe the greater the pressure drop will be. Pressure drop in a pipe increases with the square of the increase drop will increase four times. Air distribution piping should be large enough in diameter to minimize pressure drop.

Review Your Plant for Potential Waste-Heat Recovery: As much as 80 to 93 percent of the electric energy drawn by an industrial air compressor is wasted as heat. A properly designed heat recovery can recover 50 to 90 percent of the waste heat and use it to heat air or water. Common applications include supplemental space heating, industrial process heating, water heating, makeup air heating and boiler makeup water preheating. Heat recovery systems may also help facilities address negative plant pressure concerns. While most compressed air systems do not take advantage of heat recovery, the paybacks can be less than one year.



Review Maintenance Procedures: As with most industrial machinery, a compressor runs more efficiently when properly maintained. Proper compressor maintenance cuts energy costs around one percent and help prevent breakdowns that result in downtime and lost production.

WHY HAVE A COMPRESSED AIR ASSESSMENT?

Reduced Operating Costs: One main goal is to reduce operating costs by optimizing the system. Reductions in energy and maintenance and rentals will add more profitability to your business.

Trend Systems Performance: One cannot manage what is not measured. Knowing what your compressed air system is doing is the first step in reducing costs and improving productivity. The audit will provide a clear picture of how the system runs over time and a baseline in which to identify trends in the system for the future.

Enhance Productivity: Stabilize air pressure under all conditions at all points of use. Eliminate moisture, oil or contamination problems by determining the root cause, whether it is the equipment or the application. Solve production and process problems. Increase uptime of the compressed air system.

Environmental Health and Safety: Measuring the environmental impact your compressed air system has, will allow solutions to be created that will reduce the environmental impact your compressed air system will have.

Minimize Future Capital Costs: Increased demand may not necessarily mean additional compressors.

Turning off a compressor or reducing the load can create back up machines out of existing compressors. If your facility is on the brink of an expansion, an audit can help squeeze more out of the existing system either delaying the need for additional compressors and/or to help correctly size the new components instead of oversizing equipment "just in case". Saving money on both equipment and installation.



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