Compressed Air Challenge: Air Compressor Failures — To Fix Or Replace?

11 June 2012 Ron Marshall, For The Compressed Air Challenge

From time to time, equipment failure forces us to choose to repair an old air compressor or select a new one. For a major component failure, the cost of the repair often may exceed 50% of the cost to buy a new compressor. This is when we should carefully consider not only replacement cost, but also the energy cost to keep the old equipment running. More often than not, the purchase of a new, more efficient unit will be an economic no-brainer.

You should realize the cost to purchase an air compressor is only about 12% of the 10-year cost of ownership. About 76% of the total ownership cost goes toward supplying the electricity to keep a compressor running. A typical continuously run, fully loaded 100 hp compressor will cost about $74,000 per year in electricity costs at 10 cents per kWh.

An effective first step in preparing for these decisions is to have your existing compressed air system analyzed—which will help you understand where you are now and how you could improve. This type of analysis can be done by your in-house personnel or by one of many compressor service providers in your area. Once this study is completed, should disaster strike your air compressors, you'll be ready with the information necessary to make that crucial repair-or-replace decision.

Times have changed: Keep in mind that the selection of newer equipment capable of running in more efficient operating modes can significantly improve your total air system efficiency—and even make your other compressor run better. Some things to consider:

- Over the years, manufacturers have optimized machine design and improved air compressor components such as motors and bearings, translating into increased efficiencies.
- Back when power prices were low, modulation mode was the typical compressed air control strategy. Today, substantial savings are possible by running your equipment in load/unload, capacity control or VSD mode. However,you must have compressors that are capable of this type of operation, as well as the components, like storage receivers and controllers, that go with them.
- Older compressors often can be too large for today's operations. Re-sized (smaller), less expensive units may be able to do the same job.
- Upgrading other system components like air dryers, filters and piping at the same time you purchase a new air compressor can further increase your savings.

To learn more about analyzing your compressed air system, check the Compressed Air Challenge (CAC) book, Best Practices for Compressed Air Systems, available on our Website, or attend one of our many live seminars around the country. You can also register now for our next compressed air Fundamentals Webinar, scheduled for September 10. Just visit www.compressedairchallenge.org. MT