



Technical Information

Purchasing Compressed Air Systems

When you think of the tools in your small shop, the air compressor comes to mind as a reasonably costly piece of equipment. In a small shop it may be the largest single investment. In a machine shop or manufacturing facility, the compressor may be a small fraction of the investment. The purchase price is only the beginning!

In the case of a small shop, maybe a one man show, in a typical 6 day week of 10 hour days (typical for a one man show) the compressor will be in use for 60 hours per week... over 3120 hours per year. A 5 HP compressor which cost probably less than \$2,000 will consume approximately 4 KW or 12,480 KWH of electricity in a year of hard use. At Hawaii's cost of \$.20-.25 per KWH, that is an operating cost of \$2,496.00 - \$3,120 just for electricity.

Maybe you can see where I am going. With a "cost of ownership" this high, doesn't it make sense to spend a bit more up front for clean air? a refrigerated air dryer and filter system will add approximately \$1,000 to the cost of the compressor. Electrical costs are to run a 1/6 or 1/4 HP refrigeration compressor and a 1/20 hp fan. With a life expectancy of 10 - 20 years, the investment in a good 5 hp compressed air system is less than one dollar per day for the first 10 years.

The results are longer lasting tools, healthier air to breathe in the shop while using compressed air, and, if you are painting, much higher quality paint jobs. With a refrigerated air dryer and 2 filters your air will have a dew point of <40F, and less dust and oil than you breathe while driving on a freeway.

On a regular basis I talk to prospective compressor customers who repeat the refrain "I can't afford a good compressor right now". The truth is, no-one can afford a less than adequate compressor. New shop owners frequently buy "big box" or mail order specials that are really designed for home and hobby use. They are upset when these compressors put out excess oil and fail shortly after the warranty expires, or worse, find that local service is not available.

The advise I give my customers includes the following: 1. Buy the best quality available. There is a reason that cheap tools are cheap! 2. Calculate your air requirements and your future plans. Choose a compressor which will meet these needs. 3. Before considering any brand, read the warranty carefully and know who does warranty service and maintenance. 4. Consider a "Compressed Air System" including a dryer and filters to supply clean dry air. 5. Plan your installation to include proper piping, drainage and ventilation for the equipment. 6. Consult with a professional who is experienced in compressors and dryers.

. I use the term "compressed air system" rather than "air compressor" because the compressor is only one piece of the puzzle. When you purchase a compressor and other components, you are actually purchasing compressed air, hopefully of the quality that you need. The air quality issue is all too frequently ignored. think about the fact that the air produced by a simple 5 HP compressor will contain over one gallon of water in an eight hour shift.

What is in my compressed air? Imagine taking all of the pollutants which are in our air, and the humidity on a warm muggy day, and multiplying them by 7-10 times. Then throw in a little oil for flavor. You now have an idea of what typical compressed air is like. Then we run it through our expensive air tools and even use it to spray paint that may cost upwards of \$200 per gallon. What part of this makes sense?