



## **The Impact of a Filter on Your Compressed Air System**

The amount of cleanup you should do to your compressed air depends on what the air is being used for. Besides the cost of the filter itself, you also have the cost of energy needed to push the compressed air through the filter. Every increase in pressure of 2 PSI translates into an increase in compressor power of 1%. If you add a filter to the compressed air system, you will likely need to increase compressor discharge pressure slightly in order to see no difference in pressure at the point of use. The resistance of a filter to flow is called pressure drop. As the filter accumulates contaminants, the pressure drop increases and the filter element must be changed.

### **Installing Filters**

After you've decided "how clean is clean" and picked out the type of filter you need, you want to make sure the filter is properly installed. For example, if you are using a fine coalescing filter to remove oil from your compressed air, you want to install a particulate filter upstream of it. Why? Because particulates will clog the fine pores of the coalescer very quickly, and you'll be replacing elements too often – this will become expensive. By having the particulate filter first, all that will reach the coalescer is the oil aerosols it's designed to handle. The same thinking goes for charcoal adsorption filters. These are designed to adsorb small amounts of oil in its vapor (gaseous) form. Once the charcoal has adsorbed its' fill, that's it – everything else goes through. Without a good coalescing filter upstream, the life of the charcoal element will be severely reduced.

In addition to which level of filtration you select, you have to consider where you're putting it in order to get the best performance. Putting a filter at the compressor and then letting the filtered air run through piping that's full of rust, water and oil just won't do the job. Expecting a filter of any kind to take all of the water out of compressed air is unreasonable. A filter can catch condensed water in the form of liquid or an aerosol but it can't catch water vapor. You need a compressed air dryer to do that. In a situation where all you have is a filter and you want to remove as much water as you can, install the filter as close to the point of use as possible.

Cal Supply can help you select the best filter for your application. Contact us with your needs and we'll find the best solution to your filtration problem.

**Locations in Cranston, RI & Woburn, MA**  
**Call 1-800-431-2212 for assistance**